Academy of Economics and Finance

Ways of Teaching Public Choice: Introduction to the Symposium

Joshua C. Hall[1] and Edward J. López[2]

Abstract

This symposium intends to shed light on distinctively public choice approaches to economic education. This introductory essay provides an overview of this symposium and its contributors. We first provide our rationale and motivation for assembling the special issue. We then describe the papers and their interactions.

Introduction

Before you is a special issue of the *Journal of Economics and Finance Education* entirely devoted to public choice approaches in economic education. The eight original papers in this symposium suggest a wealth of insights, strategies, and tips that any economics educator can use to incorporate more public choice reasoning into their pedagogy.

It behooves this project to begin with a solid understanding of public choice, which can be conceived in a number of mutually inclusive ways. First public choice is a subject area or sub-discipline of economics whose subject matter encompasses collective action in non-market settings. This includes political subjects such as voting, legislative processes, dictatorship, international relations/trade, rent seeking, constitutions, and more. In practice, however, public choice is not confined to politics. It also includes non-market decision making within the legal system, organized sports, organized crime, churches, higher education, and anything that involves collective action outside market settings.

Its economic research methodology distinguishes public choice from other approaches to collective action. Public choice begins with three presuppositions about collective action, namely: *methodological individualism* (only individuals make choices; group decisions are understood as the aggregation of a group's individual members' choices); *rational choice* (individuals make deliberate, utility-maximizing decisions); and *politics as exchange* (all areas of non-market decision making can be analyzed as the pursuit of mutually beneficial though non-money exchange). So although public choice is typically known as the economic analysis of politics, in practice the scope is broader. Public choice is the economic analysis of non-market decision making in general, of which politics is a part.

When the school of thought took shape in the early 1960s, the fledgling group called themselves the Committee on Non-Market Decision-Making. Anchored by James Buchanan and Gordon Tullock at University of Virginia, and joined by the luminaries like William Riker, Mancur Olson, James S. Coleman, and Vincent Ostrom, the group first met in April 1963 at a conference organized and hosted by Buchanan and Tullock in Charlottesville. The meeting was a success, and the group continued to meet annually while growing in number and reach across disciplinary boundaries. This group spawned a successful academic journal, *Public Choice,* founded by Gordon Tullock in 1966 and now edited by a contributor to this symposium, Bill Shughart. Meanwhile the group formally named itself The Public Choice Society and has held its annual meetings each March for 53 years and counting. Three of the Society's past presidents have been awarded the Nobel Memorial Prize in Economic Science: James Buchanan in 1986, Vernon Smith in 2002, and Elinor Ostrom in 2009. Additional Nobel laureates whose work overlaps significantly with

---

[1] Managing Editor and Co-Editor for Economics, *Journal of Economics and Finance Education* and Association Professor of Economics and Co-Director of the Center for Free Enterprise, College of Business and Economics, West Virginia University, Morgantown, WV, 26506. email: joshua.c.hall@gmail.com.

[2] Guest Editor, *Journal of Economics and Finance Education*, Professor of Economics and BB&T Distinguished Professor of Capitalism, Western Carolina University, College of Business, Cullowhee, NC, 28723. email: edwardjlopez@gmail.com.

public choice include John Nash, Douglass North, Gary Becker, Ronald Coase, George Stigler, and F. A. Hayek.

As a school of thought with a rich tradition, public choice is also a canon of literature and scholarship, with great works at its foundation, with intellectual histories of key thinkers, and with various surveys, anthologies, and other collections that gather and summarize different parts of this work. As a result, seasoned and novice readers alike suffer no shortage of starting points for becoming more familiar with public choice literature. Recent research collections include the revised edition of Reksulak, Razzolini, and Shughart's *Elgar Companion to Public Choice* (2013), a new collection on the political economy of rent seeking edited by Roger Congleton and Arye Hillman (2015), and *The Encyclopedia of Public Choice* edited by Rowley and Schneider (2004). Any of these would be excellent gateways for interested scholars to explore the key models, contributions, and holes in the ongoing literature. As for applications, a fruitful area has been the legal system including the recent research handbook by Farber and O'Connell (2010), the casebook/textbook by Zywicki and Stearns (2009), and edited volumes of new research by McChesney and Shughart (1995) and Lopez (2010). In the textbook area, Mueller (2003) has been the graduate level gold standard for two generations, while Holcombe (2000) offers the most thorough infusion of public choice into an intermediate public finance textbook. At the principles level, Fike and Gwartney (2015) provide a recent survey of public choice coverage in the top texts. For general readers and undergraduates, a good selection of primers and introductions would include Smith and Yandle (2014), Leighton and Lopez (2013), Simmons (2011), and Tullock et al. (2002). In addition, each of the papers in this symposium give the right amount of background and context of public choice. In particular, the first chapter by Bill Shughart begins with a foundational survey of public choice concepts and history.

The papers contained in this special issue were mostly presented during a pair of economic education sessions organized for the 2013 meetings of the Association of Private Enterprise Education. The *raison d'être* of the sessions was to get economics educators together to discuss the distinctively public choice dimensions in their work with students. Many of the presenters included their papers here, and one or two hopped on board afterward. We want to thank the authors and the referees for making ours easy work. For us as editors, we had a straightforward reason for organizing these papers: as students and educators, we can grasp economic life more deeply when we break it down as the interaction of rational individuals in settings of market and non-market exchange. This basic principle underlies and guides the process of incorporating public choice into economic education.

What better way to kick off the symposium than with a paper by William F. Shughart, who has taught public choice at the undergraduate and graduate level for virtually his entire career and who is senior editor of the flagship journal, *Public Choice*. Bill addresses his paper to teaching public choice in sections that have advanced business school undergraduates, mostly economics majors, combined with master students in economics and political science. This diversity of background and training in economics, plus there being no ready-made textbook for a course like this, together pose some pedagogical challenges. To meet these challenges while also covering a broad range of public choice topics, Bill's paper explains his use of Structured Learning Modules throughout the semester. These are hands on applications and activities that allow students to see political processes unfold before them, and which focus on specific topic areas such as rational ignorance, rent seeking, individual choice versus collective choice, and so on. And as we mentioned above, Bill's paper also provides a nice overview and history of the field and public choice scholarship.

The paper in the symposium by Peter T. Calcagno moves from the Masters level to the advanced undergraduate level, specifically the popular course known as Public Finance. Many public finance textbooks treat public choice as a modular topic, often cordoned off into its own separate chapter. So Peter's paper seeks out ways to integrate public choice into the entire sequence of a public finance curriculum. The neoclassical welfare model assumes certain decision patterns will obtain in politics. However, by applying the neoclassical maximizing model to individual voters, politicians, bureaucrats, parties, and interest groups, a theory comes into view about how tax rates, spending allocations, and other decisions that are important to public finance topics actually get made. Following the typical pattern of a traditional public finance curriculum, Peter shows each step of the way how to incorporate public choice reasoning to offer a complete analysis and pedagogy.

The second half of this symposium is rounded out with papers on teaching public choice at the intermediate and principles levels. Traditionally public choice is thought of as a predominantly micro field, an extension of public finance or a sub-discipline within public economics. However, these two paper here are about teaching public choice in macro classes. Tony Caporale's paper traces public choice on top of the

models that are typically used in macro classes at the advanced undergraduate and graduate levels. His approach is to discuss specific contributions in the public choice literature, and how they can be incorporated into this mainstream approach, toward a richer understanding of the political context of macroeconomic policy making. In parallel fashion, although pitched at the principles level, the paper by Robert Subrick seeks to juxtapose the public choice approach against the predominant approach taken in principles textbooks. For a broad range of subjects common to macro principles, Bob's paper offers a variety of practical tips and resources for introducing reality through public choice insights.

The next two papers focus on very different types of skills. Alberto Batinti's paper illustrates how a workhorse public choice model – the median voter model – can be used to teach a number of important concepts typically covered in a mathematical economics course. From Nash equilibrium, maximization procedures, to the envelope theorem, public choice economists who find themselves teaching mathematical economics should find this article of great value. Likewise, those individuals tasked with teaching writing-intensive courses should find much of the discussion in the subsequent paper to be useful. In that article, Joshua Hall and Kaitlyn Harger present their case for getting students to 'do' economics through a series of writing assignments in an undergraduate public economics course. They present some evidence that encouraging students to participate in public choice analysis through structured writing assignments not only encourages students to pursue economic or policy related careers but assists them on the way to graduate school.

The penultimate paper in the symposium, by Dirk Mateer and Frank Stephenson, seeks to mine Hollywood movies as a database of insights into public choice education. From "All the King's Men" to "The Simpson's Movie," and from "The Distinguished Gentleman" to "The Dallas Buyer's Club," Mateer and Stephenson chronicle an impressive and entertaining portrayal of public choice artifacts in film. Any economics educator will find a pedagogical trove in this clever and well researched paper. Finally, Andrew Young finishes off the symposium with a paper on employing different analytical frameworks in the undergraduate curriculum. While economics is positive analysis, most students and citizens are interested in economics because they want to know what should be done. Building off his experience teaching a course in the Moral Foundations of Capitalism at West Virginia University, Young argues that a constitutional political economy (choice among political rules) can be helpful pedagogically in getting undergraduates to think about whether particular political rules are welfare-enhancing.

With these eight papers we offer a public choice approach to economics education. Overall, we think these contributors to this symposium provide economics educators with useful resources to help think about their pedagogy and specific pointers to give their teaching a public choice shot in the arm. You don't have to be a self-identifying public choice economist to fruitfully incorporate public choice aspects into your courses. Indeed, we should end by noting that this special issue is not an attempt to suggest that one must be a public choice economist or fellow traveler to be an effective economic educator. Rather, the rationale behind this special issue is simply that our teaching is improved when we reflect on our teaching. For many economists unfamiliar with public choice, the essays in this issue are an opportunity to reflect on the sometimes subtle (and sometimes not) differences between their teaching and the other interesting and enlightening approaches described in these chapters. Our modest hope is that economics education will be improved by absorbing and borrowing from the included papers.

References

Congleton, Roger D., and Arye L. Hillman. 2015. *Companion to the Political Economy of Rent Seeking*. Northampton: Edward Elgar Publishing.

Farber, Daniel A., and Anne Joseph O'Connell, editors. 2010. *Research Handbook on Public Choice and Public Law*. Cheltenham: Edward Elgar.

Fike, Rosemarie, and James Gwartney. 2015. "Public Choice, Market Failure, and Government Failure in Principles Textbooks." *Journal of Economic Education* 46: 207-18.

Holcombe, Randall G. 2006. *Public Sector Economics: The Role of Government in the American Economy*. Upper Saddle River: Prentice Hall.

Leighton, Wayne A. and Edward López. 2012. *Madmen, Intellectuals, and Academic Scribblers: The Economic Engine of Political Change*. Palo Alto: Stanford University Press.

López, Edward J., editor. 2010. *The Pursuit of Justice: Law and Economics of Legal Institutions*. New York: Palgrave Macmillan.

McChesney, Fred S., and William F. Shughart, editors. 1995. *The Causes and Consequences of Antitrust: The Public-Choice Perspective*. Chicago: University of Chicago Press.

Mueller, Dennis. 2003. *Public Choice III*. Cambridge: Cambridge University Press.

Reksulak, Michael, Laura Razzolini, and William F. Shughart II, editors. 2013. *The Elgar Companion to Public Choice, Second Edition*. Northhampton: Edward Elgar Publishing, Inc.

Rowley, C. K., and F. Schneider. (eds.) (2004). *The encyclopedia of public choice*. Dordrecht and Boston: Kluwer Academic Publishers.

Smith, Adam, and Bruce Yandle. 2014. *Bootleggers & Baptists: How Economic Forces and Moral Persuasion Interact to Shape Regulatory Politics*. Washington: Cato Institute.

Simmons, Randy T. 2011. *Beyond Politics: The Roots of Government Failure*. Oakland: Independent Institute.

Stearns, Maxwell and Todd J. Zywicki. 2009. *Public Choice Concepts and Applications in Law*. St. Paul: West Academic Publishing.

Tullock, Gordon, Arthur Seldon, and Gordon Brady. 2002. *Government Failure: A Primer in Public Choice*. Washington: Cato Institute.

Teaching Public Choice at the Master's Level

William F. Shughart II[1]

Abstract

This article summarizes the pedagogical approaches I have taken in teaching public choice in a course that enrolls advanced business school undergraduates (majors in economics, mainly) as well as master's students in economics and political science. It starts with a brief overview of the field and then describes the course's content. I reproduce a recent syllabus and two representative homework assignments. Some learning "modules" are suggested and ways of evaluating students' mastery of public choice principles are discussed.

Introduction

I taught a one-semester course in public choice at the Ph.D. level for about a dozen years at the University of Mississippi, after proposing that it be added to the graduate catalog and included, along with public finance and applied public policy analysis, in a three-course sequence comprising an optional "field" in public economics for doctoral students. During my first year at Utah State University (2011–2012), I designed a course in public choice and taught it for the first time during spring 2013. Because Utah State no longer offers a Ph.D. degree in economics and the department's M.S. program is comparatively small,[2] enrollment in ECN 5700 ("The Economics of Public Choice") is open to advanced undergraduates as well as to students pursuing master's degrees in economics and political science.[3] Because my public choice students do not come to the first day of class with the same backgrounds in economic theory, quantitative methods, or both, I have grappled with pedagogical issues not typically encountered in courses open exclusively to advanced undergraduates or to graduate students in economics. In what follows, I summarize how, under the given constraints, I organize my public choice course, highlighting the pedagogical strategies I use in the teaching (and, it is to be hoped, in the learning) of public choice principles.

Before doing so, I define the field of public choice and provide a brief overview of it. I then summarize the instructional materials provided to my students, which include one required textbook and supplementary readings, and my methods for evaluating their mastery of the course's subject matter. Because I also teach a course in public finance to the same student audience at Utah State, wherein I bring public choice reasoning to bear on issues relating to fiscal policies at the local, state and federal levels of government, all of which have, to greater or lesser extents, important implications for the macroeconomy, the following discussion focuses on applications of *micro*economic theory to collective choice processes.

What is Public Choice?

Public choice often is defined as the academic field of study that explores decision-making problems lying at the intersection of the disciplines of economics and political science. More generally, though,

---

[2] Utah State does offer a Ph.D. in applied economics, housed administratively in the College of Agriculture. The master's program in the Department of Economics and Finance runs on two tracks, economics (MSE) and financial economics (MSFE). The faculty of the Departmental of Economics and Finance recently approved a public choice "emphasis" for the MSE degree.

[3] Other than fulfilling the business school's general requirements for taking upper-division classes, intermediate microeconomics (ECN 4010) is the sole prerequisite for ECN 5700. I normally waive that requirement for M.A. students in political science.

public choice is the study of *nonmarket* decision-making wherein collective choices must be made in the absence of explicit price and profit signals.[4] It is, in the late James Buchanan's (1979/1999) apt phrase, "politics without romance."[5]

Multiple meanings are conveyed by those three words. First is that public choice is founded on the rock of "methodological individualism": individual human beings serve as the fundamental unit of analysis because only individuals are capable of making choices; groups of people, such as "society", "the government", or "legislatures", do not choose in any meaningful sense. Perhaps more to the point, public choice analyses start at the level of the individual in order to bring to bear the predictive power of the economists' model of rational choice – the familiar (and often mischaracterized) *Homo economicus* – to explain human behavior in the context of political as well as non-market decision making (by, for example, committees, juries or family units) more broadly.

Second, public choice applies the economists' rational choice model to *all* individuals regardless of the institutional setting in which they interact. Consistent with the assumptions of microeconomic (or price) theory, voters, legislators, bureaucrats and judges are portrayed as being motivated mainly (but not solely[6]) by their own self-interests and therefore to strive to make themselves as well off as possible. That is, in other words, to maximize their personal senses of wellbeing ("utility") within given behavioral constraints, such as income or wealth and the relative prices of the things that contribute to personal satisfaction. This assumption "closes the behavioral system" (Buchanan 1972), meaning that any differences observed between individual choices and collective choices are explained by differences in the incentives and constraints on human action in the two settings and not by differences in the goals animating human action. People, in other words, are not guided primarily by their own self-interests when making decisions in ordinary markets and then guided by the "public's interest" when participating in collective decisions. The person who casts a ballot on Election Day or issues a ruling from the bench is the same person, behaviorally speaking, who shops at the grocery store or searches for a new car.

Third, as implied in the previous paragraph, the institutional decision-making context matters. In the ordinary markets studied by economists, individual choices by and large are taken unilaterally: each participant decides how to allocate his or her limited income across the myriad goods and services available at various prices, how to allocate that income between consumption and savings, or how to allocate his or her time between work and leisure by consulting only his or her own tastes and preferences.[7] And in determining the relationships between means and ends, the benefits and costs of the choices made are salient in the sense that the consequences of the choices made fall squarely on the shoulders of the decision maker, assuming of course, minimal externalities, minimal transaction costs and well-defined peoperty rights. The immediacies of the outcomes of individual market choices mean that individual consumers face fairly strong incentives to gather information about the relevant "facts" (prices and product qualities, for instance), even though that information never will be perfect because searching for it is itself costly and, hence, an optimal stopping point eventually will be reached at which it no longer pays to continue the search.

Collective decisions, in contrast, are, by definition, multilateral. No public choice can be made in such settings unless all (or some predetermined subset of three or more individuals) agree to pursue the same course of action. The problem then becomes one of specifying the way in which the diverse and often conflicting preferences of self-interested individuals get expressed and then aggregated into a group "choice." In other words, what fraction of the group will be empowered to choose for all? Will it be a plurality (the largest percentage of the group's total membership, even if that is less than half of the total), a simple majority (fifty percent plus one), a supermajority of two-thirds or three-fourths, or is unanimous

---

[4] Indeed, for three years after Gordon Tullock launched the field's flagship journal in 1966, it was published as *Papers on Non-Market Decision Making*. See Shughart (2013) for a summary of the history of the journal called *Public Choice* ever since. A short introduction to the field of public choice can be found in Shughart (2008a), available both in print and online at http://www.econlib.org/library/Enc/PublicChoice.html.

[5] The romantic view of politics, still distressingly prevalent, is that "government is generally benevolent, often benign, and seldom dangerous" (Simmons 2011, p. 2).

[6] "Thick" conceptions of utility accommodate "other-regarding preferences" in which one's welfare depends on the well being of children, parents, spouses and other family members, close friends and, sometimes, even strangers; "thin" utility functions typically include only income or wealth as the driver of personal feelings of satisfaction. Caplan (2014) is useful here.

[7] For expositional purposes, I ignore, but do not intend to downplay, the incentives of participants on the supply sides of ordinary markets.

consent required? Under any and all of those rules, the benefits and costs of collective choices necessarily are shared. The sharing of benefits, of costs, or both leads, *inter alia*, to weaker incentives for gathering relevant information about the consequences of collective decisions than of market-mediated individual choices (voters rationally are more ignorant than buyers and sellers[8]), opens the door to strategic misrepresentation of personal preferences and, indeed, suppresses incentives to participate in collective choices in the first place (Downs 1957).

It turns out that the "optimal" voting rule minimizes the (vertical) sum of two costs associated with collective decision making. One component of the costs comprises those of decision making itself (negotiating and reaching agreement on a preferred course of action), which roughly are nil if one individual (a dictator) can choose for all and then rise as the number of decisive group members increases; the other comprises the external costs of collective action, denominated in terms of the losses of wealth or utility imposed by the decisive subset of the group (called the "k-majority") on those members who oppose the collectively chosen option (the indecisive "minority"). Those costs are at a maximum under a dictator who consults only his or her own preferences, and then fall as more members are added to the decisive group, reaching zero when unanimous consent is required because, under that rule, any one person can veto a proposal that would reduce his/her welfare relative to the status quo, thereby ensuring that the collective choice is Pareto superior: at least one person is made better off and no one is worse off (Buchanan and Tullock 1962).[9] That analysis implies that simple majority rule neither is sacrosanct nor necessarily is the "best" decision-making rule for all collective choices.

In the Buchanan-Tullock framework, a plurality-voting rule tends to be optimal when decision-making costs are high relative to external costs; a supermajority rule tends to be optimal when external costs are high relative to decision-making costs. To illustrate, the constitutions of some of the U.S. states require legislative supermajorities to approve tax increases; amendments to the U.S. Constitution require approval by two-thirds of the House and Senate, followed by ratification by three-fourths of the 50 state legislatures. It also is important to recognize that, short of requiring unanimous consent, not all collective decisions necessarily should be put to a vote. "There is no reason why there should not be things which nobody has power to do" (Hayek 1960/1978, p. 107). So, for example, the First Amendment to the U.S. Constitution begins with "Congress shall make no law…." The domain of issues subject to collective choice processes cannot be extended willy-nilly: "the ideal of democracy, originally intended to prevent all arbitrary power," can transform into "the justification for a new arbitrary power" (ibid., p. 106), i.e., the tyranny of the majority feared above all else by the founders of the American constitutional republic.

The scholarly literature of public choice, now 50 years or more beyond its origins, is extensive and in many of the contributions to it, often sophisticated, both mathematically and in the econometric techniques applied in empirical testing of the theory's predictions. How can an instructor of a course designed to teach (and have students learn) public choice principles possibly offer more than a thumbnail sketch of the field's basic models and methodologies? That is especially true in a one-semester class open to undergraduates from a business school, majoring in economics, as well as to students pursuing master's degrees in economics or political science. I do not pretend to answer that question fully or the many others related to it, but I enter the fray below.

Pedagogy

No one who has taught public choice at the undergraduate or master's level should be surprised to hear that textbooks appropriate for those courses are few and far between. For many years, several comprehensive texts and scholarly handbooks have been available for classroom use (e.g., Shughart and Razzolini 2001; Mueller 1997, 2003; Rowley and Schneider 2004; Reksulak, Razzolini and Shughart

---

[8] For an extended discussion of some of the reasons why voters are ignorant and, hence, view political choices rationally through a very distorted lens, see Caplan (2008), who portrays voters as being "rationally irrational."

[9] A rule requiring something less than unanimous consent may satisfy the Kaldor-Hicks criterion, which says that departures from the status quo will improve society's welfare if the "winners" potentially can compensate the "losers." But Kaldor-Hicks requires impermissible (to economists) interpersonal comparisons of utility, bargaining over the amounts of compensation payable to the individual losers and, moreover, as Buchanan (1959) teaches, is consistent with a rule of unanimity *only* if such compensation actually is paid.

2013), but those works are targeted mainly at researchers in the field and are more appropriate for doctoral students than for those who have not gotten that far.[10]

Textbook(s) and Supplementary Reading Assignments

What is the instructor to do? Over the past several years, I have settled on Shepsle (2010) as the main textbook for my course in public choice. That book is aimed at (Harvard) undergraduates, but it is so well written and provides such clear explanations of the wide range of public choice topics it covers that I have found it to be readily accessible to my students, an opinion they seem to share based on unsolicited verbal comments and their written end-of-semester course evaluations, as unscientifically valid as that survey evidence may be. Despite its many merits,[11] *Analyzing Politics*, like all textbooks, cannot for obvious reasons possibly remain abreast of the current literature. Moreover, the literature of public choice is by now both so broad and deep that no instructor can do full justice to the field in one semester. And many instructors, especially those actively engaged in the public choice research program, predictably will approach the course with idiosyncratic preferences about the particular subset of topics they plan to emphasize and those they will downplay or avoid altogether. The foregoing considerations combine to demand, in my judgment, the assignment of supplemental readings.

I choose supplementary reading assignments prior to the beginning of every semester and occasionally in their midst. In the appendix to this article, I reproduce in part my syllabus from spring 2013. As can be seen there, I sometimes require students to purchase and read selected chapters from *The Calculus of Consent*, but I now think that it is better (and cheaper!) to point them to the searchable online version of the book that can be downloaded from the Liberty Fund's website.[12]

Uncorrected page proof for selected chapters from *The Elgar Companion to Public Choice, Second Edition* (Reksulak, Razzolini and Shughart 2013) account for about half of the supplementary readings I assigned in spring 2013 (that volume was not in print until the semester was nearly at an end).[13] Scholarly journal articles also were assigned to fill in some gaps or to focus more tightly on particular topics. All such readings were posted as PDFs on Canvas®, the course management system adopted at Utah State before the start of the 2012–2013 academic year in place of the more familiar Blackboard® software, which no longer is supported here. In any case, the materials I assigned reflect my own preferences for topical coverage. Other instructors of public choice of course remain free to choose other supplementary readings.[14]

Writing Assignments

In addition to providing students with opportunities to go beyond the covers of assigned text(s) (to "think outside the book", as it were), supplementary readings supply them with alternative points of entry into the vast public choice literature. That is particularly true of book chapters or journal articles written as surveys of strands of that literature. Such roadmaps are essential for students to fulfill my course's writing requirements ("homework").

The oral tradition of public choice says that the practice of assigning students to write and submit for grading numerous short (two- to three-page typed, double-spaced) papers on selected topics began with

---

[10] Simmons (2011) could work well in a public choice class open only to undergraduates; instructors interested in situating public choice in the context of the history of economic thought might require master's students to read Leighton and López (2013).

[11] Among the advantages is that the book is available in an inexpensive paperback edition (Amazon sells it for $31.12). That price comes as so much of a welcome relief to students in an era of textbook prices frequently far to the north of $100 that almost all of them actually buy *Analyzing Politics*!

[12] Navigate to http://www.econlib.org/library/Buchanan/buchCv3.html. The version there is vol. 3 of *The Collected Works of James M. Buchanan*, edited by Geoffrey Brennan, Hartmut Kleimt and Robert D. Tollison, published by Liberty Fund in 1999. That edition of the book also is available in a Liberty Fund paperback for a mere $9.97 from Amazon.com and also as vol. 2 of *The Selected Works of Gordon Tullock*, edited by Charles K. Rowley, published by Liberty Fund in 2004.

[13] I had test driven some first or second drafts of the same chapters when I last taught the course (to M.A. and Ph.D. students) at the University of Mississippi in spring 2011. The first and second editions of *The Elgar Companion to Public Choice* have been published in paperback and electronic versions of both now are available online. Call your librarian to arrange access!

[14] I also include on my syllabus a list of "other useful references", telling my students that no one is expected to read anything on the list now, but that it is provided for those who want to dive more deeply into the public choice literature prior to or after enrolling in a Ph.D. program.

James Buchanan. I (and every other instructor of public choice of whom I am aware) have followed Buchanan's pedagogical lead. Those assignments are due on at most two weeks' notice, are tied to recent or current in-class lectures ("chalk and talk"; "dry erase maker and talk" doesn't have the same euphonious ring) and, as the attached syllabus indicates, count heavily in computing final course letter grades.

Each assignment and its due date are posted on Canvas®. As with the supplementary reading assignments, the topics I choose are idiosyncratic: some of them are public choice chestnuts, such as asking students to explain variations in voter turnout rates across states, variations in the sizes of state legislatures, the observable consequences of the different methods of selecting state court judges, or to propose a way of distinguishing empirically between "instrumental" and "expressive" motives for voting.

Other homework topics are driven by current events. During the spring 2013 semester, for example, Kenya held its third post-colonial presidential election, in which Uhuru Kenyatta (Jomo Kenyatta's son) garnered enough votes to defeat the sitting prime minister, Raila Odinga. The news reports on that election triggered my interest, owing to my own research on Kenyans' rejection of a constitutional referendum in 2005 (Kimenyi and Shughart 2010). The events in Kenya prompted me to assign two papers: the first asked my public choice students to summarize Kenya's constitutional history following the 2005 referendum; the second assignment focused on the 2013 presidential election returns. It turns out that Kenyans approved a new constitution in 2010, which provides that in order to be elected to office a presidential candidate is required to garner a simple majority of the popular vote nationwide *and* to win simple majorities in at least half of Kenya's "counties" (which replaced the country's former provinces).

Those assignments (see below) generated considerable student interest and led to some very good papers, which I encouraged some writers to expand into journal-length articles, possibly in collaboration with a classmate or two, and eventually submit for publication. That is one of the ultimate goals of such homework assignments, but there are others, including helping the students to become better writers.[15]

All of the homework assignments require the gathering of data and the presentation of empirical evidence that speaks (for or against) the hypothesis the student decides to test. Sophisticated econometric analysis neither is necessary nor sufficient for earning a good grade. Economics students typically have a comparative advantage at that part of the homework task; political science students are much better at searching for and referencing relevant articles and books. So, everyone has something to learn and, because I am a journal editor and use my red pen liberally to offer specific suggestions as to style and substance, papers improve considerably as the semester proceeds.[16]

Assignment #5: Kenya I

The first new constitution submitted to Kenyan voters after independence and decades of Kikuyu rule under Jomo Kenyatta and his hand-picked successor Daniel arap Moi was defeated soundly in 2005 (see Kimenyi and Shughart, "The Political Economy of Constitutional Change"). Two presidential elections were held following that event, the first of which was marked by considerable ethnic bloodshed and the latter of which narrowly was won by Jomo Kenyatta's son Uhuru, who happens to have been indicted by the International Criminal Court for crimes committed in the violence that erupted after the last presidential election.

This assignment asks you to determine whether Kenya now operates under a new constitution ratified after 2005 and, if so, when was it ratified, what are its major provisions and in what respects does it differ from the one defeated in 2005?

Due: Thursday, April 4, at or before 5:00 p.m.

---

[15] Although it is aimed at doctoral students, Cochran (2005) supplies much valuable advice for writers of academic papers at all levels of competence, not excluding authors of articles to be submitted to scholarly journals!

[16] A homework assignment in spring 2015 asked for an analysis of the results of the referendum held on September 18, 2014, asking voters whether Scotland should become independent of the United Kingdom. The "nays" prevailed.

Assignment #6: Kenya II

Uhuru Kenyatta was elected recently as president of Kenya, "narrowly crossing the threshold that requires a first-round winner to get more than 50% of the vote..." (*Economist*, March 16th 2013, p. 49). Runner up, garnering 43% of the vote, was Raila Odinga, the sitting prime minister who held his post in a power-sharing arrangement with incumbent president Mwai Kibaki, himself the prime mover behind the "new" constitution defeated by popular referendum in 2005.

This assignment asks you to locate, if possible, the 2013 Kenyan election results and to explore the extent to which they were influenced by tribal politics involving power struggles amongst Kenya's main ethnic groups, the Kikuyus, the Luos, the Luhyas, the Kalenjins, and others, which clearly were in play in the 2005 constitutional referendum.

Due: Thursday, April 18, at or before 5:00 p.m.

Structured Learning Modules

Courses in public choice can lead topically in many different directions. I offer below some suggestions relating to the main subsets of the literature I strive to cover. Except for the first of them, these "modules" can be reordered at the individual instructor's discretion.

Individual Choice versus Collective Choice

It is critical at the outset of the course, in my judgment, to compare and contrast the rational-choice model of decision-making in ordinary private market settings and collective decision-making in political and other nonmarket settings. As mentioned above, individual consumers and producers take private choices unilaterally in light of the clear and salient price and profit signals generated spontaneously by the market process. And, in such settings, decision makers typically bear the full costs and capture the full benefits of their own choices. Mistakes certainly are possible, but rational choosers receive immediate feedback that allows them to avoid repeating the same errors.

Collective choices, by definition, cannot be taken without the agreement of at least one other person and, hence, the benefits and costs of any action necessarily are shared in some way. As such, attention is shifted immediately to the various rules available for determining collective choices, which run the gamut from dictatorship, wherein one person chooses for all, through qualified majorities to unanimous consent, in which one person can veto any proposal whose adoption would make him or her worse off than in the prevailing status quo.

During the first week of the course, the instructor also should emphasize that the same rational choice model to which students were introduced in their principles of economics and intermediate microeconomic theory classes will be applied in explaining and predicting the behavior of all actors to be encountered later in the term, whether they have jobs in or out of government. The notion that elected officials and public employees, especially so in the cases of law enforcers and judges, are guided by the public's interest dies hard. But students must be challenged to reexamine such ingrained, "romantic" preconceptions early on, even if unconvinced initially by the public choice way of thinking.

Why are some Choices taken Collectively?

Almost all students majoring in economics will have been exposed to (but may need refreshers on) the various theories of why private markets may fail to achieve "ideal" results, at least in comparison with the textbook model of perfect competition. Informational asymmetries between buyers and sellers deserve mention here, as do externalities (both positive, e.g., inoculations against communicable diseases, and negative, e.g., environmental pollution), monopolies and, especially, the supply of both pure and impure public goods. Because analyses of most of these "failures" will be encountered from time to time later in the course, I usually confine myself to defining the market circumstances under which such failures may arise, paying particular attention to public goods and to common pool resources, and emphasizing that we

will learn later that private alternatives to public provision exist and often turn out to be superior to public solutions to the same problems.

Motives for Voting

A fundamental challenge confronting public choice scholars is to explain why individuals participate in collective choice processes in the first place. As Anthony Downs (1957) showed, if votes are cast for "instrumental" reasons, that is, individuals select the option (candidate or policy proposal) that benefits them the most personally net of the explicit and implicit (opportunity) costs of voting,[17] it is irrational for anyone to vote in a large-scale election. That conclusion follows because voting "pays off" only if the vote cast is "decisive" ("pivotal") in determining an election's outcome. And, because the probability of casting a decisive vote is nearly zero,[18] the expected benefit of voting almost never will exceed the costs of becoming informed about the candidates and issues on the ballot and of turning out on Election Day. That prediction plainly is disconfirmed by observed voter turnout rates, especially so in mass national elections for which tens of millions of voters go to the polls.[19] The only implication of Downs's theory that survives empirical testing most of the time is that more voters participate in elections that are expected to be "close," which increases the probability of casting a decisive vote (Geys 2006).

Instrumental voting's failure to explain a fundamental aspect of democratic processes (turnout on a large scale) led to a theory of "expressive" voting in which, on one interpretation, voters vote precisely because they know that individual votes will not be pivotal and, thus, voting offers a low-cost way of expressing their personal preferences.[20] It helps explain *why* voters vote and *how* they vote, even though they know they cannot affect voting outcomes. The evidence on expressive voting is mixed: some studies support its predictions (e.g., Laband et al. 2009); other scholars (Karahan and Shughart 2004; Reksulak, Karahan and Shughart 2007) conclude that expressive voting is observationally equivalent to instrumental voting. In any case, discussing these two theories of voting offers much food for thought and teaches an important lesson about the unanswered questions of public choice.

Aggregating Individual Preferences

When collective choice processes are invoked, a way must be found for combining the diverse and often conflicting preferences of the individual voters into a decision with which everyone must comply. If the voters are faced with only two options, the number of voters is odd or a tie-breaking rule is in place for an even number of voters, simple majority rule obviously works quite well (it decisively selects the option preferred by at least half of those participating in the collective decision). The collective decisions of even fully rational individuals can easily be shown to be collectively irrational when three or more voters face three or more alternatives. Several lectures usually are necessary to ensure that students grasp Condorcet's "paradox of voting" – the idea that voting by simple majority rule can be indecisive, generating endless cycles wherein majorities can be found to prefer every option to every other option in pairwise votes.[21] That

---

[17] The benefits of voting in Downs's model usually are conceived of in material terms, that is, increases in financial wellbeing (e.g., lower taxes or larger transfers) associated with the election of the voter's preferred candidate. The voter's vote must decisively elect that candidate, that is, be instrumental in achieving the desired outcome.

[18] Even when confronted with just two alternatives, one person's vote will be decisive only if all other voters are split equally between the two candidates or ballot propositions.

[19] Downs's theory also cannot explain why voter turnout rates for local (city and county) elections are substantially lower than in national elections, even though the probability that one individual's vote will be pivotal is much larger in the former than in the latter setting and small-scale election outcomes arguably often are more salient for voters' personal wellbeing than large-scale election outcomes.

[20] Put differently, an expressive voter is free to vote against his or her own instrumentally preferred option(s). The benefits of voting to the expressive voter do not depend on an election's outcome. See, e.g., Brennan and Brooks (2013) for a recent and fuller discussion of the theory of expressive voting.

[21] Neufeld, Hausman and Rapoport (1994) is a very good supplemental reading to assign for this module insofar at it provides evidence of vote-cycling in the U.S. Congress over public versus private ownership of the Tennessee Valley Authority, along with a proposal to "kick the can down the road" by creating a special commission to study the ownership issue. So, too, is Riker's (1982, pp. 213–232) summary of the politics of America's "peculiar institution" of slavery, with special attention to enactment of the Wilmot Proviso and the U.S. presidential election of 1860, as preludes to the War Between the States.

discussion leads naturally to consideration of the power of an agenda-setter to ensure that his or her most preferred option ultimately is the group's choice, assuming that voters are "sincere", as well as the ability of a "strategic" voter to defeat the agenda-setter's plan. Kenneth Arrow's (1963) "Impossibility Theorem", explained concisely in Shepsle (2010, pp. 76–84) should hold pride of place here.[22]

The instructor then can move on immediately to analyses of alternatives to simple majority rule, such as plurality and more complicated methods of tallying votes like the Borda count, point voting, approval voting, the single transferable vote (STV, otherwise known as the Hare system), instant runoff elections, and so on, endlessly it seems. Or that material can be delayed until later in the course, as I did last spring. The critical conclusion to convey is that no scholar has yet identified a method of aggregating individual preferences into a collective choice that reliably identifies the Condorcet winner, is not vulnerable to strategic voting, or both.

Spatial Models of Majority Voting

The prior discussion of methods of aggregating individual preferences into a collective choice assumes a unidimensional issue space – left-right, up-or-down, candidate A versus candidate B, and so on. That discussion could have included Duncan Black's median voter theorem (MVT),[23] which assumes that all voters' preferences are "single-peaked" (display for each of them a unique, most preferred option along a bounded line on which the two alternatives are arrayed), that politicians seek to maximize their individual vote shares and that everyone votes (no abstentions allowed). In such a stylized setup, the preferences of the median voter (the one whose first-best option divides the distribution of voters in half) determine the election's outcome. Extensions of voting models to three or more dimensions do not, unfortunately, overcome any of the serious problems of simple majority rule, such as indecisiveness or vulnerability to strategic voting. Although the MVT can be generalized to multiple dimensions (assuming that voters' preferences have the technical property of "radial symmetry", the multidimensional analog of "single-peakedness"), no voting rule in such contexts ensures the selection of the Condorcet winner nor eliminates the potential power of an agenda setter or that of a strategic voter. Indeed, consistent with Richard McKelvey's (1976) "chaos theorem", "anything can happen" (Shepsle 2010, p. 109).

Public Goods: Interjurisdictional Competition, Clubs and Common Pool Resources

The inability of the private, for-profit sector to supply "pure" public goods (non-rivalrous in consumption and non-excludable, even to "free riders" who do not contribute to financing their provision) is one of the main justifications for collective action. The public sector can, in principle, produce such goods on its own account (or enter contracts with outside suppliers) and then exercise its coercive taxing powers to raise the revenue required to defray the costs of providing them. But doing so requires solving two problems for which government is not well suited: Both problems essentially are one of gathering and exploiting information about citizens' individual demands for a public good and, hence, their willingness and abilities to pay for its provision. Solving the first problem is one of selecting the optimal capacity, that is, determining how much of the good should be supplied. Homey examples include deciding how wide a highway should be, how may square feet of exhibit space a museum will occupy, how lavish the fireworks display on the Fourth of July will be, and how many acres will be set aside for local public or national parks. The second problem is one of assigning tax shares to everyone who will be forced to finance the provision of the public good or, alternatively, pricing access to it by users.

After showing that such difficulties are unlikely to be overcome by "public servants" facing weak incentives to gather relevant information and the very strong and predictable incentives of diverse and rational voter-taxpayers strategically to misrepresent their demands for public goods, it is in my view instructive to turn to discussions of alternative solutions to similar problems. I start with Charles Tiebout's (1956) model of interjurisdictional competition, in which individual households are assumed to be (1) fully informed about the quantities and qualities of public goods on offer by multiple and independent political authorities, along with the tax prices charged for accessing them, and (2) freely inter-jurisdictionally

---

[22] See Riker (1982) for further examples of the problems of simple majority rule and discussion of alternatives to it.

[23] Black's most important contributions to the public choice literature were published in the late 1940s and early 1950s. Those contributions are collected and reprinted in book form in Black (1987).

mobile. Households therefore can "vote with their feet" by moving to jurisdictions where the quantities, qualities and tax prices most closely match their own preferences. If local governments compete for tax bases, such rivalry helps ensure that tax prices are aligned with individuals' demands for public goods. Parents who value high quality public schools and are willing to pay for them, for example, move to jurisdictions offering very good schools and levying (property) tax rates commensurate with high-quality provision.

The supply and pricing of public goods becomes, in Tiebout's framework, one of the appropriate scale and scope of governance, especially so in the presence of either positive or negative interjurisdictional externalities. Where should the boundaries of any one jurisdiction be drawn? The answer, of course, is that "it depends", but the theory does not preclude (and in some cases demands) that independent, otherwise autonomous governments cooperate in cases where the spillovers geographically are widespread. Caution nevertheless must be exercised lest the assignment of authority to higher levels of governance lead to situations in which a centralized and powerful "Gargantua" displaces and undermines the benefits of polycentricity (Ostrom, Tiebout and Warren 1961; McGinnis 1999).

Private clubs solve the same two problems, namely capacity provision and access pricing to ensure efficient utilization of the capacity actually supplied (Buchanan 1965). The key assumption here is that clubs can be "cloned" whenever the demand for the collectively supplied good exceeds one club's optimal capacity. The memberships of private golf clubs neither are infinitely large, nor do they all offer the same amenities for the same membership and greens fees.[24] This module also allows instructors the opportunity to discuss the management of common pool resources so as to overcome the chronic overuse problems associated with such resources, such as inland waterways, fisheries and other natural resources, usually taught (uncritically) under the heading of "tragedy of the commons" (Hardin 1968).[25] The work of Nobel laureate Elinor Ostrom (summarized by Shepsle 2010, pp. 335–348) is quite apt here insofar as it documents the diversity and innovativeness of private solutions to the free riding and overuse conventionally thought to plague commonly owned resources as well as the importance of access rules (governing group membership and individual use rights), compliance monitoring and enforcement. Myriad case studies suggest that rules imposed from above typically are less successful in promoting natural resource sustainability than the rules adopted voluntarily and collectively by the group members themselves, which frequently emerge from context-specific social norms and customary practices.

The common thread running through much of this literature is that institutional opportunities exist for individuals to cooperate in providing collectively consumed goods without being coerced into doing so by some third-party enforcer. *Governance* does not require *a government*. Successful collective good provision requires voluntary agreement to the rules of the game, including ex ante acceptance of ex post sanctions for violating those rules, the ability to exit from the group if a member's expectations of the benefits from cooperation are not met. Although the freedom to express dissatisfaction ("voice") sometimes is helpful in resolving intragroup disputes peacefully, the availability of an "exit" option likely is more powerful (see Hirschman 1970, 1986/1992 for insightful discussions along these lines). Moreover, studying why voluntary collective goods supply sometimes succeeds and sometimes fails helps shift the analytical focus from problems of resource allocation and so-called market failure toward the study of mutually beneficial exchange relationships (Buchanan 1964).

The Interest-Group Theory of Government

Grounded in the early contributions to the economic analysis of economic regulation (Stigler 1971; Peltzman 1976), the interest-group theory of government (McCormick and Tollison 1981) models legislatures and the regulatory agencies "sponsored" by them as brokers of wealth transfers from less well organized and, hence, politically impotent special interest groups to well organized ones.[26] Consistent with

---

[24] Clubs typically adopt two-part pricing strategies: a membership or initiation fee covers the capital costs of capacity provision and a separate user fee ensures efficient use of that capacity. If a per-use fee is not charged, the club good will tend to be over-utilized, resulting in situations wherein, according to the famous philosopher Yogi Berra, "no one goes there anymore because it's too crowded."

[25] Buchanan and Yoon (2000) provide an analysis of mirror image of the "tragedy", produced by multiple and competing rights to block access to the commons.

[26] Becker (1983) also merits mention as an important contribution to this literature.

the logic of collective action (Olson 1965), Stigler's model predicted that the public agencies responsible for regulating prices charged by (and conditions of entry into) the industries subject to economic regulation would be "captured" by and operated for the benefit of the regulated business entities themselves – public utilities supplying water, power, and telephone and transportation services, at least initially. Originating in the United States in the late 19th century, public regulation was justified as being designed to protect the public's (read consumers') interests against the abuses of government-granted monopoly power. Stigler's evidence from some of the regulatory regimes in place at the state and federal levels during the first half of the 20th century (including the regulation of railroads, over-the-road motor carriers and other surface transportation modes, the commercial airlines and electricity) showed that few, if any, of regulation's ostensible consumer benefits actually had materialized.

Peltzman's generalization and extension of the theory beyond the bounds of a stylized producer- versus consumer-interest framework laid the foundations for scholarly study of interest-group influence on the promulgation and enforcement of social regulations (such as rules applying to employment policies, workplace safety and environmental protection). It did so by introducing into the model the self-interests of the regulators themselves, albeit as bloodless and reflexive maximizers of the "political support" required for reelection or reappointment to regulatory office. In sharp contrast to previous work, Peltzman's model is able to explain why regulatory controls might be applied to firms and industries operating in otherwise competitive markets (farming, surface transportation and cable television, for instance) where the orthodox theory of "natural monopoly" does not hold. The model helps in understanding the onset of regulation and also, somewhat less successfully, the adoption of initiatives to dismantle existing regulatory regimes (Peltzman 1989/1998). Interest-group theory has found fruitful applications in scholarship on topics ranging the gamut from enforcement of the antitrust laws (Shughart 2008b); to the behavior of public prosecutors and the judges who rule in civil and criminal disputes (Fleck and Hanssen 2013); to the laws of tort, the trial lawyers and proposals for reforming the tort system (Rubin and Shepherd 2013); to the doctrines of the Medieval Catholic Church and the causes and consequences of the Protestant Reformation (Ekelund and Tollison 2013).

Rent Seeking

Rent seeking (Tullock 1967, 1980; Krueger 1974) is a core concept of public choice. I typically introduce this learning module by defining a "rent" in the context of economic theory, i.e., the return to the owner of a resource in excess of that resource's value in its next best alternative use. Examples that will be familiar to the students include the salaries of superstar athletes, entertainers and college football coaches; the compensation of government employees, which exceed that of comparable workers in the private sector, especially at the entry and mid-career levels. I then play a simple rent-seeking game with the members of the class.

In that game, I offer to sell a $20 bill to the highest bidder. The students are told to write down their bids privately on an index card without communicating with any other member of the class, that the game will be played one time only and that the bids of the participants will not be refunded – that, in other words, I will pay $20 to the winner and pocket the difference. (That instruction is revealed to have been a lie after the bids have been submitted since I am sure that my dean would object strongly to learning that I had made money at my students' expense.) In any case, classes of a dozen or more members bid substantially more than $20 in total. The optimal bid is $0 since offering any small, but positive sum risks being outbid easily; offering any amount up to $20 ($19.99, say) is rational for any one bidder because such a bid promises a small, but positive return on the student's "investment." But, the sum of the offers in my experience is something like $80 or as much as $172.01! "Over-dissipation" of the value of the prize – spending more than $20 to capture $20 – demonstrates the social waste associated with rent seeking even in "common-value auctions" wherein participants are competing for a prize of obvious and readily determined value.

Once the auction's results have been announced to the class, it then is instructive to invite consideration of rent seeking in the context of offering $20 not to the highest bidder, but to the student who convinces me in person or in other ways of being the most deserving winner. Such "convincing" involves investments of real resources, such as the value of alternative uses of any one student's time. It is the redeployment of resources from productive to directly unproductive political lobbying that expands the social welfare cost of monopoly and other artificial restrictions on output from the familiar deadweight loss triangle (Harberger 1954) to the area of the trapezoid that includes some, all, or more than the value of the rent on

offer. The extent to which rents are dissipated depends on how rent seekers' efforts affect their probability of winning, attitudes toward risk and other assumptions made about the underlying "contest success function."[27]

Other Learning Modules

The topics that potentially can be covered in a public choice course are limited only by the academic term's time constraint, the capacities of the students who enroll in the class, and the specialized interests and research agenda of the instructor. As the syllabus I have included herein shows, I incorporate materials on the "industrial organization of legislatures," including the sizes and compositions of the specialized oversight committees of the U.S. Congress (the distinction between "open rule" versus "closed rule" committees is especially relevant here; see Shepsle 2010, pp. 134–141); on what I call the bureau-dominant model of the relations between legislatures and the executive branch's bureaucracy (Niskanen 1971, 2001) versus the modern congressional dominance model of bureaucratic behavior (summarized in Sobel and Pellilo 2013); explicit logrolling amongst legislators or implicit logrolling in the form of "omnibus" appropriations bills; the origins of the state (Mueller 2013); the political economy of war and peace (e.g., Coyne and Mathers 2011); transnational terrorism (Arce M. 2013; Shughart 2006, 2011, among many others); and modern theories of anarchy (not to be confused with "chaos"), of voluntary social contracts and of customary practices and social norms, as, for example, laid out in the important work of Peter Leeson (2007, 2009, 2013).

Concluding Comments

The field of public choice was launched in the late 1950s and early 1960s by a remarkable group of scholars then on the faculty of the University of Virginia's economics department. It is for that reason that others following the trail blazed in Charlottesville sometimes refer to themselves collectively as members of the Virginia School of Political Economy (VPE), distinguishable to greater or lesser extents from the schools of thought that emerged at the University of Chicago, the University of Rochester and Bloomington, Indiana (Indiana University). Much less overlap exits between VPE and a "new" political economy (NPE) out of Europe (e.g., Perrson and Tabellini 2002, 2005) and Cambridge, Massachusetts (Acemoglu and Robinson 2005, 2012). As a matter of fact, even though the latter group of scholars studies problems falling squarely within the domain of VPE, they almost never acknowledge the shoulders of the public choice giants on which NPE stands.

The literature of public choice is broad and deep. In this article I have attempted to outline how an instructor of a course in that field might teach its basic principles to classes open to students majoring in economics and political science at the master's level as well as a smattering of advanced undergraduate students from those same two disciplines. Since its origins a half-century ago, the theories and methods of public choice have colonized the field of political science so successfully that purely descriptive studies of political outcomes (and expressions of surprise and concern about public policy failures) have been almost wholly displaced in that field's mainstream academic journals by hardnosed rational choice models of political behavior that stress analyses of collective decision making processes by diverse individuals within given institutional and behavioral constraints.

Many specialized topics are available for coverage in a public choice class aimed primarily at students pursuing either an undergraduate or a master's degree, but the overarching goal of such a course is, in my judgment, to get the students to grasp some of the implications of behavioral models assuming that all individuals, in or out of the public sector, are guided primarily by their own self-interests and that all known methods of collective decision making other than dictatorship frequently fail to produce outcomes consistent with their conceptions of majority rule. There is, in fact, nothing approximating a Rousseauvian "general will." One must therefore become reconciled to the acknowledged defects of democratic processes. After all, as Winston Churchill once remarked, "democracy is the worst form of government, except for all the others."

---

[27] See Hillman (2013) for a recent summary of rent seeking theory's wide-ranging applications; Shughart and Thomas (2014) delve deeply into the model's implications in the realm of economic regulation.

References

Acemoglu, Daron and James Robinson. 2005. *Economic Origins of Dictatorship and Democracy*. Cambridge, MA: MIT Press.

Acemoglu, Daron and James Robinson. 2012. *Why Nations Fail: The Origins of Power, Prosperity, and Poverty*. New York: Crown.

Arce M., Daniel G. 2013. "Collective Action and (Counter) Terrorism." In *The Elgar Companion to Public Choice, Second Edition*, edited by Michael Reksulak, Laura Razzolini and William F. Shughart II. Northampton: Edward Elgar.

Arrow, Kenneth J. 1963. *Social Choice and Individual Values*, 2nd ed. New Haven: Yale University Press.

Becker, Gary. S. 1983. "A Theory of Competition among Pressure Groups for Political Influence." *Quarterly Journal of Economics* 98: 371–400.

Black, Duncan. 1987. *The Theory of Committees and Elections*. Boston: Kluwer Academic Publishers.

Brennan, H. Geoffrey and Michael Brooks. 2013."Expressive Voting". In *The Elgar Companion to Public Choice, Second Edition*, edited by Michael Reksulak, Laura Razzolini and William F. Shughart II. Northampton: Edward Elgar.

Brennan, H. Geoffrey and Loren E. Lomasky. 1997. *Democracy and Decision: The Pure Theory of Electoral Preference*. Cambridge: Cambridge University Press.

Buchanan, James M. 1959. "Positive Economics, Welfare Economics, and Political Economy". *Journal of Law and Economics* 2: 124–38.

Buchanan, James M. 1964. "What should Economists Do?" *Southern Economic Journal* 30: 213–22

Buchanan, James M. 1965. "An Economic Theory of Clubs." *Economica* 32: 1–14.

Buchanan, James M. 1972. "Toward Analysis of Closed Behavioral Systems." In *Theory of Public Choice: Political Applications of Economics*, edited by James M. Buchanan and Robert D. Tollison. Ann Arbor: University of Michigan Press.

Buchanan, James M. 1979/1999. "Politics without Romance: A Sketch of Positive Public Choice Theory and its Normative Implications." In *The Collected Works of James M. Buchanan*, Vol. 1: *The Logical Foundations of Constitutional Liberty*, edited by Geoffrey Brennan, Hartmut Kliemt and Robert D. Tollison. Indianapolis: Liberty Fund.

Buchanan, James M. and Gordon Tullock. 1962. *The Calculus of Consent: Logical Foundations of Constitutional Democracy*. Ann Arbor: University of Michigan Press.

Buchanan, James M. and Yong J. Yoon. 2000. "Symmetric Tragedies: Commons and Anticommons." *Journal of Law and Economics* 43: 1–14.

Caplan, Bryan. 2008. *The Myth of the Rational Voter: Why Democracies choose Bad Policies*. New edition. Princeton: Princeton University Press.

Caplan, Bryan 2014. "Week 4: Voter Motivation I: Selfish, Group and Sociotropic Voting." Lecture, George Mason University, http://econfaculty.gmu.edu/bcaplan/e854/pc4.htm; last accessed September 14, 2014.

Cochrane, John H. 2005. "Writing Tips for Ph.D. Students." Unpublished working paper, Graduate School of Business, University of Chicago, https://gsbwww.uchicago.edu/fac/john.cochrane/research/Papers/; last accessed July 21, 2013.

Coyne, Christopher J. and Rachel L. Mathers (eds.). 2011. *The Handbook on the Political Economy of War*. Northampton: Edward Elgar.

Downs, Anthony. 1957. *An Economic Theory of Democracy*. New York: Harper & Row.

Ekelund, Robert B. Jr. and Robert D. Tollison. 2013. "Public Choice and Religion." In *The Elgar Companion to Public Choice, Second Edition*, edited by Michael Reksulak, Laura Razzolini and William F. Shughart II. Northampton: Edward Elgar.

Fleck, Robert K. and F. Andrew Hanssen. 2013. "Judges: Why do they Matter?" In *The Elgar Companion to Public Choice, Second Edition*, edited by Michael Reksulak, Laura Razzolini and William F. Shughart II. Northampton: Edward Elgar.

Geys, Benny. 2006. "Explaining Voter Turnout: A Review of Aggregate-Level Research." *Electoral Studies* 25: 637–63.

Harberger, Arnold. 1954. "Monopoly and Resource Allocation." *American Economic Review Papers and Proceedings* 44: 77–87.

Hardin, Garrett. 1969. "The Tragedy of the Commons." *Science* 162: 1243–8.

Hayek, Friedrich A. von. 1960/1978. *The Constitution of Liberty*. Chicago: University of Chicago Press.

Hillman, Arye L. 2013. In *The Elgar Companion to Public Choice, Second Edition*, edited by Michael Reksulak, Laura Razzolini and William F. Shughart II. Northampton: Edward Elgar.

Hirschman, Albert O. 1970. *Exit, Voice and Loyalty: Responses to Decline in Firms, Organizations, and States*. Cambridge: Harvard University Press.

Hirschman, Albert O, 1986/1992. "Exit and Voice: An Expanding Sphere of Influence." In *Rival Views of Market Society and Other Recent Essays*, by Albert O. Hirschman. Cambridge: Harvard University Press.

Karahan, Gökhan R. and William F. Shughart II. 2004. "Under Two Flags: Symbolic Voting in the State of Mississippi." *Public Choice* 118: 105–24.

Kimenyi, Mwangi S. and William F. Shughart II. 2010. "The Political Economy of Constitutional Choice: A Study of the 2005 Kenyan Constitutional Referendum." *Constitutional Political Economy* 21: 1–27.

Krueger, Anne O. 1974. "The Political Economy of the Rent-Seeking Society." *American Economic Review* 64: 291–303.

Laband, David N., Ram Pandit, John P. Sophocleus and Anne M. Laband. 2009. "Patriotism, Pigskins, and Politics: An Empirical Examination of Expressive Voting Behavior." *Public Choice* 138: 97–108.

Leeson, Peter T. 2007. "Better off Stateless: Somalia before and after Government Collapse." *Journal of Comparative Economics* 35: 689–710.

Leeson, Peter T. 2009. *The Invisible Hook: The Hidden Economics of Pirates*. Princeton: Princeton University Press.

Leeson, Peter T. 2013. "Gypsy Law." *Public Choice* 155: 273–92.

Leighton, Wayne A. and Edward J. López. 2013. *Madmen, Intellectuals, and Academic Scribblers: The Economic Engine of Political Change*. Stanford: Stanford University Press.

McCormick, Robert E. and Robert D. Tollison. 1981. *Politicians, Legislation, and the Economy: An Inquiry into the Interest-Group Theory of Government*. Boston: Martinus Nijhoff.

McGinnis, Michael D. (ed.). 1999. *Polycentricity and Local Public Economics: Readings from the Workshop in Political Theory and Policy Analysis*. Ann Arbor: University of Michigan Press.

McKelvey, Richard D. 1976. "Intransitivities in Multidimensional Voting Models." *Journal of Economic Theory* 12: 472–82.

Mueller, Dennis. C. 1997. *Perspectives on Public Choice: A Handbook*. Cambridge: Cambridge University Press.

Mueller, Dennis C. 2003. *Public Choice III*. Cambridge: Cambridge University Press.

Mueller, Dennis C. 2013. "The Origins of the State." In *The Elgar Companion to Public Choice, Second Edition*, edited by Michael Reksulak, Laura Razzolini and William F. Shughart II. Northampton: Edward Elgar.

Niskanen, William A. Jr. 1971. *Bureaucracy and Representative Government*. Chicago: Aldine.

Niskanen, William A. Jr. 2001. "Bureaucracy." In *The Elgar Companion to Public Choice*, edited by William F. Shughart II and Laura Razzolini. Northampton: Edward Elgar.

Neufeld, John L., William T. Hausman and Ronald B. Rapoport. 1994. *Political Research Quarterly* 47: 423–38.

Olson, Mancur. 1965. *The Logic of Collective Action: Public Goods and the Theory of Groups*. Cambridge: Harvard University Press.

Ostrom, Elinor. 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.

Ostrom. Vincent, Charles M. Tiebout and Robert Warren. 1961. "The Organization of Government in Metropolitan Areas: A Theoretical Inquiry." *American Political Science Review* 55: 831–42.

Peltzman, Sam. 1976. "Toward a More General Theory of Regulation." *Journal of Law and Economics* 19: 211–40.

Peltzman, Sam 1989/1998. "The Economic Theory of Regulation after a Decade of Deregulation." In *Political Participation and Government Regulation*, edited by Sam Peltzman. Chicago: University of Chicago Press.

Perrson, Torsten and Guido Tabellini. 2002. *Political Economics: Explaining Economic Policy*. Cambridge: MIT Press.

Perrson, Torsten and Guido Tabellini. 2005. *The Economic Effects of Constitutions*. Cambridge: MIT Press.

Reksulak, Michael, Gökhan R. Karahan and William F. Shughart II. 2007. "Flags of Our Fathers: Voting on Confederate Symbols in the State of Georgia." *Public Choice* 131: 83–99.

Reksulak, Michael, Laura Razzolini and William F. Shughart II (eds.). 2013. *The Elgar Companion to Public Choice, Second Edition*. Northampton: Edward Elgar.

Riker, William H. 1982. *Liberalism against Populism: A Confrontation between the Theory of Democracy and the Theory of Social Choice*. Prospect Heights: Waveland Press.

Rowley, Charles K. and Friedrich Schneider (eds.). 2004. *The Encyclopedia of Public Choice*, 2 vols. Boston: Kluwer.

Rubin, Paul H. and Joanna M. Shepherd. 2013. "Public Choice and the Law." In *The Elgar Companion to Public Choice, Second Edition*, edited by Michael Reksulak, Laura Razzolini and William F. Shughart II. Northampton: Edward Elgar.

Shepsle, Kenneth A. 2010. *Analyzing Politics: Rationality, Behavior, and Institutions*, 2nd ed. New York: Norton.

Shughart, William F. II. 2006. "An Analytical History of Terrorism, 1945–2000." *Public Choice* 128: 7–39.

Shughart, William F. II. 2008a. "Public Choice." In *The Concise Encyclopedia of Economics*, edited by David R. Henderson. Indianapolis: Liberty Fund.

Shughart, William F. II. 2008b. "Regulation and Antitrust". In *Readings in Public Choice and Constitutional Political Economy*, edited by Charles K. Rowley and Friedrich Schneider. New York: Springer.

Shughart, William F. II. 2011. "Terrorism in Rational Choice Perspective." In *The Handbook on the Political Economy of War*, edited by Christopher J. Coyne and Rachel L. Mathers. Northampton: Edward Elgar.

Shughart, William F. II. 2014. "Supplying Private Goods and Collective Goods at *Public Choice*." In *Experiences of Economics Journal Editors*, edited by Michael Szenberg and Lall Ramrattan. Cambridge: MIT Press.

Shughart, William F, II and Laura Razzolini (eds.). 2001. *The Elgar Companion to Public Choice*. Northampton: Edward Elgar.

Shughart, William F. II and Diana W. Thomas. 2015. "Regulatory Rent Seeking". In *A Companion to Rent Seeking and Political Economy*, edited by Roger D. Congleton and Arye L. Hillman. Northampton: Edward Elgar.

Simmons, Randy T. 2011. *Beyond Politics: The Roots of Government Failure*. Revised and updated. Oakland: The Independent Institute.

Sobel, Russell S. and Adam Pellilo. 2013. "The Politics of Elections and Congressional Oversight." In *The Elgar Companion to Public Choice, Second Edition*, edited by Michael Reksulak, Laura Razzolini and William F. Shughart II. Northampton: Edward Elgar.

Tiebout, Charles M. 1956. "A Pure Theory of Local Expenditures." *Journal of Political Economy* 64: 416–24.

Tullock, Gordon. 1967. "The Welfare Costs of Tariffs, Monopolies, and Theft." *Western Economic Journal* 5: 224–232.

Tullock, Gordon. 1980. "Efficient Rent Seeking". In *Toward a Theory of the Rent-Seeking Society*, edited by James M. Buchanan, Robert D. Tollison, and Gordon Tullock. College Station: Texas A&M University Press.

Appendix

Utah State University
ECN 5700: Economics of Public Choice
Spring 2013

Class meets:	TR 12:00–1:15 p.m. in Lilly 6
Instructor:	Dr. William F. Shughart II
Office location:	Bus 808
Office hours:	TR 9:00–11:30 a.m. and W 2:00–4:30 p.m.
Email:	william.shughart@usu.edu

*Goals and Objectives***:**
Public choice deals with topics that lie at the intersection of economics and political science. It emerged as a distinct field of study in the 1960s when a small group of economists at the University of Virginia under the intellectual leadership of James Buchanan and Gordon Tullock became interested in the application of essentially economic methods to problems traditionally studied by political scientists. Public choice has retained strong traces of economic methodology, but new and fruitful analytical techniques have been developed which are not recognizable by economists.

Public choice can best be described as "politics without romance". It is the study of non-market decision making, or the study of decisions taken collectively, given some voting rule for aggregating individual preferences, in settings where decision makers are not guided by explicit price and profit signals. The topics addressed by public choice scholars range across the breadth of issues of interest to traditional political scientists, including the impact of alternative voting rules on political outcomes in a representative democracy, legislative processes, the "independent" judiciary, bureaucracies and other complex organizations, the provision of public goods, the design of constitutions, the politics and economics of regulation, and the growth of government.

Prerequisite: ECN 4010.

Required textbooks:
- ❖ James M. Buchanan & Gordon Tullock. *The Calculus of Consent: Logical Foundations of Constitutional Democracy*. Ann Arbor: University of Michigan Press, 1962. Reprinted as volume 2 of *The Selected Works of Gordon Tullock*, ed. by Charles K. Rowley. Indianapolis, IN: Liberty Fund, 2004. ISBN 978-0865975323 (paper).
- ❖ Kenneth A. Shepsle, *Analyzing Politics: Rationality, Behavior, and Institutions*, 2nd ed. New York and London: Norton, 2010. ISBN 978-1843763871 (paper).

*Other useful references***:**
- Caplan, Bryan (2008). *The Myth of the Rational Voter: Why Democracies Choose Bad Policies* (new edition). Princeton and Oxford: Princeton University Press.
- *The Federalist*.
- Leeson, Peter T. (2011 [2008]). *The Invisible Hook: The Hidden Economics of Pirates*. Princeton and Oxford: Princeton University Press.
- Miller, Gary J. (1997). "The Impact of Economics on Contemporary Political Science", *Journal of Economic Literature* 35 (September): 1173–1204.
- Mueller, Dennis C. (ed.) (1997). *Perspectives on Public Choice: A Handbook*. Cambridge: Cambridge University Press.
- Mueller, Dennis C. (2003). *Public Choice III*. Cambridge: Cambridge University Press.

- Olson, Mancur (1965). *The Logic of Collective Action: Public Goods and the Theory of Groups*. Cambridge: Harvard University Press.
- Reksulak, Michael, Laura Razzolini & William F. Shughart II (eds.), *The Elgar Companion to Public Choice Second Edition*, Northampton, MA, USA and Cheltenham, UK: Edward Elgar, 2013.
- Shughart, William F. II & Laura Razzolini (eds.), *The Elgar Companion to Public Choice*. Northampton, MA, USA and Cheltenham, UK: Edward Elgar, 2001.
- Simmons, Randy T. (2011). *Beyond Politics: The Roots of Government Failure* (revised and updated). Oakland, CA: The Independent Institute.
- Szpiro, George G. (2010). *Numbers Rule: The Vexing Mathematics of Democracy, from Plato to the Present*. Princeton and Oxford: Princeton University Press.
- Tideman, Nicolaus (2006). *Collective Decisions and Voting: The Potential for Public Choice*. Aldeshot, Hampshire, UK and Burlington, VT, USA: Ashgate.
- Wittman, Donald (1995). *The Myth of Democratic Failure: Why Political Institutions are Efficient*. Chicago: University of Chicago Press.

*Supplementary readings***:**
Additional readings will be assigned periodically from *The Elgar Companion to Public Choice, Second Edition* (uncorrected page proof of selected chapters) as well as from scholarly journals. All such readings are posted as PDF files on Canvas under "Files".

*Exams***:**
There will be two exams, a midterm and a *comprehensive* final. They count 20% and 40%, respectively, of the final course grade. Both exams will consist of a mixture of short and long-answer essay questions.

Homework assignments:
I will post biweekly assignments requiring each student to write a short paper, no longer than three typed, double-spaced pages, that address a topic of current interest to public choice scholars, e.g., why are the judges in some state court systems elected by popular vote and appointed by the governor in others? Alternatively, do judges behave differently while serving on the bench (hear fewer cases, impose harsher or lighter sentences, etc.) depending on the method by which they are selected? Other possible homework assignments include explaining the sizes of state legislatures, the functioning of the committee system of the U.S. Congress, and the purposes and effects of the Electoral College.

Each completed assignment will state the problem addressed, review very briefly relevant public choice or political science literature, formulate a testable hypothesis and then present evidence that supports or fails to support that hypothesis. The data analyzed should not be taken from an existing scholarly article or book, but be gathered by the student from governmental or other publicly available sources. Each student is required to present the final assignment of the semester in class during the week of April 25–27. Fifty percent of the grade on that assignment will be based on my subjective evaluation of the quality and professionalism of the presentation.

The literature on which the completed assignment relies must be cited fully following standard style guidelines for authors and publishers, such as the 16th edition of *The Chicago Manual of Style*.

The average of all homework grades during the semester counts 40% of the final grade.

Course Schedule and Reading Assignments

Dates	Topic	Reading(s)
Jan.		
8–10	Preliminaries	*Calculus*, introduction and chaps 1 & 2; Shepsle, chaps 1 & 2
15–17	The individualistic postulate	*Calculus*, chaps 3 & 4; Brennan, "Homo economics and Homo politicus: an introduction"; Rowley, "Public choice: the origins and development of a research program"; Munger, "Political science and public choice"; Shughart, "Public choice"
22–24	Collective action	Shepsle, chaps 3, 4, 8 & 9; *Calculus*, chaps 5–8
29–31	Decision-making costs under simple majority rule	Shepsle, chap 5; *Calculus*, chaps 9–14
Feb.		
5–7	Qualified majority rule, representation and the legislative nexus	*Calculus*, chaps 15–17; Shepsle, chaps 11–12 & 16; Crain & Crain, "Legislatures"; Padovano, "Parliaments"
12–14	Intermission: anarchy and the origins of the state	Leeson, "Better off stateless"; Mueller, "The origins of the state"; Hamlin, "Constitutional political economy"
19–21	*Monday class schedule on Tuesday*; **midterm exam on Thursday**	
26–28	Instrumental and expressive theories of voting	Brennan & Brooks, "Expressive voting"
Mar.		
5–9	Alternatives to simple majority rule	*Calculus*, Appendix 2; Shepsle, chaps 6–7
12–14	**SPRING BREAK**	
19–21	Bureaucrats	Shepsle, chap 13; Sobel and Pellillo, "The politics of elections and congressional oversight"
26–28	Federalism	Holcombe, "Federal Systems"
Apr.		
2–4	Rents and rent seeking	Hillman, "Rent Seeking"; Shughart & Thomas, "Regulatory Rent Seeking"
9–11	Public goods	Shepsle, chap. 10; Ostrom, Tiebout & Warren, "The organization of government in metropolitan areas: a theoretical inquiry"
16–18	The "independent" judiciary	Shepsle, chap. 15; Fleck & Hanssen, "Judges: why do they matter?"
23–25	Presentations of last assignments	
30	**FINAL EXAM, 11:30 a.m. – 1:20 p.m**.	

Teaching Public Choice Economics in a Public Finance Course

Peter T. Calcagno[1]†

Abstract

Public choice economics is often considered a sub or a separate field from public finance. Traditional public finance courses focus on public goods, externalities, and the solutions to these issues with an emphasis on expenditure and tax policy, addressing different types of taxation at different levels of government. This paper provides a means of integrating public choice theory into a public finance course to highlight the differences in these fields, but also the complementarity. While traditional textbooks touch on political decision-making and themes of public choice, I will explain how an instructor could incorporate these themes throughout the course.

Introduction

Economists often consider public choice economics as a sub or separate field from public finance, and while there are differences in the two areas, they are related. I argue that public choice is a more encompassing field that helps to provide context for students studying public finance. While it would be worthwhile to have two courses that constitute an area of public economics that would allow students to fully develop public finance and public choice topics, most undergraduate programs have only a single public finance or public sector course. Teaching these subjects in separate classes would allow students greater exposure to the nuances of these fields and provide students the opportunity to realize how these areas are intertwined. However, instructors can easily integrate these subjects, and I demonstrate here how I combine them into a single course. Public finance courses that focus on expenditure and optimal tax theory, for instance, without incorporating public choice ideas on institutional structure are incomplete. Public choice theory provides a context for students to understand how and why the tax system exists and functions the way it does. The purpose of this paper is to demonstrate how to integrate public choice theory and themes into a traditional public finance course to create a more complete course for students.

Traditional public finance addresses the issues of public goods, externalities, and the structure of taxation. While public finance provides the theoretical framework for determining economically efficient outcomes for these topics, it ignores the institutional environment of how government enacts tax and spending policies. By contrast, public choice focuses on the institutional framework under which actors in the public sector engage in political decision-making. One can start with the basic premise that individuals act the same regardless of the sector in which they operate. Individuals are rationally self-interested in both the private and public sectors, and public choice allows us to employ economic tools to examine collective decision-making. One of the main rationales for integrating these topics is to provide students with a context in which government officials evaluate public goods, externalities, expenditures, and tax policy. The initial assumptions about the incentives of government officials can vary or are absent altogether from the analysis, depending on the public finance textbook and course design. By integrating public finance and public choice, students not only learn the traditional tools for examining public sector activities, but also a means to evaluate the effectiveness of these tools and policies.

---

[1] Professor of Economics, Department of Economics, College of Charleston, 66 George Street, Charleston, SC 29424, phone: 843-953-4279, email:calcagnop@cofc.edu

The outline of the paper is as follows. First, I provide a brief overview of public finance and public choice. The next section provides a review of public finance textbooks and the degree to which they address public choice theory. Section 4 presents the material I use in my public finance course, discusses how to incorporate public choice theories, and suggests how to introduce public choice topics on their own. I provide all the references to reading material I use in my course in Appendix 1 of the paper.[2]

Brief Overview of Public Finance and Public Choice

Textbooks on public finance treat the subject of public choice with varying degrees of detail. In this section, I want to provide a broad overview of public finance and public choice based on the work of two influential figures in these fields Richard Musgrave and James Buchanan, respectively. The classic textbook on public finance is Richard Musgrave's 1959 treatise *Theory of Public Finance.* Musgrave (1959) addresses public choice theory and is sympathetic in some respects. James Buchanan argues Musgrave is at best "sympathetically critical" (Buchanan 1989). Musgrave himself claims to have an interest in "fiscal sociology;" however, he remains doubtful of the core public choice concept of self-interest motivating private and public actors (Buchanan 1989). Buchanan (1989) claims that public finance theory was suffering from a confusion of ideas from economists Alfred Marshall, A.C. Pigou, F.Y. Edgeworth, and Paul Samuelson. Some topics in public finance have been around since Adam Smith and the birth of economics. Other topics that are more formal in theory start with Marshall's tax incidence. In particular, Marshall was the first to address externalities and Pigou further develops the concept. Edgeworth developed welfare theory and criteria using the Edgeworth box to examine exchanges and determine if they are economically efficient. Samuelson was the first to present a formal theory of public goods. This mixture of welfare economics, principles of taxation and public goods theory was not cohesive. Musgrave provided a taxonomy and cohesion to the field that helped to establish the modern understanding of public finance. Thus, Public finance economists consider Richard Musgrave the father of modern day public finance. Most public finance economists today have modeled their textbooks based on Musgrave's analysis of the allocative function of the public sector.

Public choice economics emerged at the same time as public finance with its intellectual pioneer being James Buchanan. Like Musgrave's work, Buchanan was rooted in the European intellectual tradition. Specifically, the work of Swedish economist Knut Wicksell inspired Buchanan. Wicksell's focus on the role of institutions led James Buchanan and Gordon Tullock to write *The Calculus of Consent: Logical Foundations of Constitutional Democracy.* Gwartney and Wagner (1988) argue that *The Calculus of Consent* is the origin of the public choice revolution, and what would become the Virginia School of Political Economy. Similar to Musgrave, Buchanan identified a gap in the intellectual tradition, but each took a different approach as to what they perceived as the deficiencies. As Buchanan (2003) explains, public choice economics reflects three main elements:

1) methodological individualism - decision making occurs only with individuals.
2) Rational choice - individuals make decisions by weighting the costs and benefits and choose the action with the greatest net-benefit.
3) Political exchange - political markets operate like private markets with individuals making exchanges that depending on context can be mutually beneficial.

As noted above, the primary difference between Musgrave and Buchanan - or public finance and public choice - is the incentive structure of decision makers. Musgrave argued that public sector officials will not always act to further their own self-interest. Traditional public finance economists try to rely on positive analysis and often think that public choice analysis moves into normative analysis (Buchanan 1989).

Buchanan (1999) argues that public choice theory is broader than traditional public finance because it allows public agents to behave in ways that would not benefit the public's interest. The main difference between Buchanan's view of public sector economics and Musgrave's view is the need for constitutional restraints. If we allow for self-interested public agents, then the institutions that will limit their behavior become relevant. Buchanan (1999) attributes the difference in their views to due to where they grew up.

---

[2] I reference several specific readings I use throughout this article, but in addition to the ones listed in the appendix, instructors might want to consider Heckelman (2004) and Baker and Elliot (1997) for additional readings to use in their course. For a more novel approach, instructors could review Mateer and Stephenson (2011), which discusses how to use movie clips to teach public choice.

Musgrave grew up in Europe, which is why Buchanan argues Musgrave still implicitly trusts government. While Buchanan growing up in the U.S, and particularly the south, fundamentally distrusts government. Buchanan (1999) claims that the U.S. has a unique political view and experience relative to the rest of the world. One can incorporate these differences into a traditional public finance course. Public choice economists, such as Buchanan, envisioned it as a return to the ideas of Adam Smith's Political Economy and in this regard, Buchanan is working in the tradition of Smith. Thus, there is more to public choice economics than merely how individuals make "public choices."

By explaining these differences to students, public finance instructors can offer their students a richer field of study one that examines not only the consequences and incidence of tax policy, but also the political decision making that creates the policy. It allows instructors to introduce students not only to what is the optimal tax policy, but also to examine what institutional arrangements will lead to or away from the adoption of that tax policy. Incorporating public choice theory into public finance allows students to understand the concept of market failure and government failure. One can introduce students to the idea of comparative systems where economist examine private and public solutions to collective decision making to determine which system may best or better improve economic efficiency and well-being. I would argue that not exposing students to this broader view of public economics, of how government makes collective decisions, gives them an incomplete understanding.

Brief Review of Public Finance Textbooks

In this section, I provide a brief review of public finance textbooks. This is not a complete review, but it expands and updates past reviews. Mitchell (1968) provides a discussion of how public finance textbooks have not incorporated political analysis into the discussion. He notes that Buchanan (1960) was one of only three texts examining these topics. Mitchell acknowledges that public choice was still a young field and has a follow up review. Mitchell (1982) provides a review of public finance textbooks and articles that address various topics related to public choice to incorporate into a public finance or political science course. Venkateswarlu (1986) conducts a review of material instructors are using in public finance courses across the country. Hewett (1987) provides a thorough review of public finance textbooks by topic.[3] I limit my review to how the current edition of texts addresses public choice topics.

As noted above, Musgrave's 1959 textbook was the first major treatise in the area of public finance and, while now out of print, one can argue that it continues to provide the blueprint for current textbooks. Musgrave's original work does have references to Buchanan's work in a section regarding voting, but it has no detailed discussion of public choice. Buchanan's text *Public Finances* (1960), which became Buchanan and Flowers was last printed in 1986 and is now out of print as is Wagner's (1983) text. According to Hewett (1987), those out of print texts covered more public choice topics than any other textbook on the market at the time.

Musgrave and his wife Peggy Musgrave published the next generation Musgrave and Musgrave in 1973. This text does expand its coverage of public choice economics; however, in a footnote at the beginning of chapter 6 they write, "hidebound economists can skip this chapter" (Musgrave and Musgrave 1980, p. 107). In this chapter, they cover what most economists would consider the highlights of public choice theory, addressing Arrow's Impossibility Theorem, cyclical voting, the median voter model, logrolling and self-interested politicians. Finally, there is a discussion of the role of bureaucrats and a brief discussion of interest groups. However, there is no discussion of the consequences of these theories in the context of public finance.

Harvey Rosen and Ted Gayer's textbook, now in its tenth edition, is the standard for traditional public finance textbooks (Rosen and Gayer 2010). The textbook has twenty-two chapters and only one that addresses public choice issues entitled "Political Economy." In the chapter, they discuss majority and cyclical voting (Arrow's Impossibility Theorem), logrolling, and the median voter model. Rosen and Gayer (2010) go a step further than Musgrave and Musgrave and use William Niskanen's (1968) model of bureaucracy, which is in the public choice tradition. They discuss the role of special interests groups, but only briefly mention rent seeking. They merely define it, but have no discussion of the deadweight losses or

---

[3] Hewett (1987) has ten areas that he examines: Welfare theory, expenditure theory, revenue theory, public choice, cost benefit analysis, macro public finance, fiscal federalism, expenditure issues, revenue issues, and other.

other negative consequences associated with it. The chapter ends with a discussion of ways of controlling government, including constitutional rules.

David Hyman's public finance textbook is another popular text now in its tenth edition. It also has one chapter on public choice entitled "Public Choice and the Political Process" (Hyman 2011). This chapter is relatively thorough in covering the main topics of public choice including median voter models, rational ignorance, logrolling, special interest groups, and bureaucracy, but it does not discuss the core consequence of special interest group legislation – rent-seeking.

One of the more recent public finance textbooks on the market is by MIT economist Jonathan Gruber (2011). Similar to the other texts, he has one chapter on public choice entitled "Political Economy." Gruber (2011) covers the same areas as the others: majority voting, Arrow's Impossibility Theorem, cyclical voting, median voter model, bureaucracy, and lobbying where he addresses special interest groups. Gruber goes into more depth than the others in his treatment of public choice, as he covers Lindahl pricing in this chapter, and introduces readers to public choice theory. His is the only mainstream textbook that addresses two important issues of the Virginia Political Economy School: government failure and Leviathan. Like the other texts, there is no formal discussion of rent-seeking.

Nobel Prize winner Joseph Stiglitz has a textbook entitled *Public Sector Economics*. With a broader sounding title than merely public finance, one might think that he would better address some of the issues of political economy and public choice economics. Like the other texts, Stiglitz (2000) has one chapter entitled "Public Choice", but he employs the term in its purest form discussing what constitutes public choices and not the theory of the Virginia Political Economy School. In fact, he refers to work of James Buchanan as social choice theory. His chapter is mainstream, covering majority voting, cyclical voting, Arrow's Impossibility Theorem, and the median voter model. He has one section of the chapter on "Politics and Economics" were he discusses some of the topics associated with public choice economics including why individuals vote and the role of special interest groups. The last topic in this section is "The Altruistic Politician?" where he argues that politicians, like other individuals, may at times behave in an altruistic fashion, but we cannot be sure that even "principled" stands may be in the politician's self-interest. He ends this section noting that when politicians behave in a self-interested manner it usually reflects the preferences of their constituents.

Thus, most mainstream public finance texts have one stand-alone chapter in an attempt to cover the topics of public choice theory. These authors make little effort to integrate this material into the rest of the text or to show how public choice explains observed governmental outcomes differ from the efficient ones described in their texts.

One public finance textbook still in print stands apart from the others because it offers a thorough treatment of public choice economics. Randall Holcombe's (2006) text originally published as Public Finance was re-titled *Public Sector Economics*. Unlike Stiglitz's text with a similar title, Holcombe addresses the whole of the public sector and not just public finance issues. Holcombe covers the same public choice topics in the mainstream texts, but rather than sequestering them into one chapter, he provides extensive treatment of these topics in four chapters giving many of them their own chapters. I use this text in my public finance course. The downside of using this text is that while it is still in print it there has not been update since 2006. However, updating tables on government revenues expenditure and other tax tables is easy to do and this data is readily available online.[4] The outline of text and its subjects are similar to the outline that I present in the next section of the paper. Holcombe's approach to public finance is how I think economists should teach the areas of public finance and public choice as an integrated approach. In the preface, Holcombe addresses the point I note in my introduction:

> The unifying theme of this text - that government activity is the result of a democratic decision-making process - is significant for two reasons. *First, one's understanding of public finance will be incomplete unless one understands the process by which democratic decision making has created the existing public sector institutions* [emphasis added]. Second, unlike the invisible hand of the market that is the result of human action but not of human design, the public sector of the economy is the result of conscious human design, so that every voter plays a part in the process. The better the process is understood, the more likely we are to design public sector institutions that behave as we

---

[4] I recommend the Tax Foundation a non-partisan independent organization providing analysis of federal and state tax policy since 1937 as a source of this data. See http://wwww.taxfoundation.org

intended. By analyzing public revenues and expenditures in the United States economy as a product of the democratic decision-making process, the many aspects of public finance can be presented as a unified body of knowledge rather than as a collection of different models of the public sector (Holcombe 2006, p. xxiii).

Outline of Topics and Progression of Public Finance to Public Choice

As Holcombe (2006) suggests, one must understand the concepts of public finance in the context of the process of collective decision making and the institutional arrangements under which those decisions are made. I break the course down into three broad sections: 1) an introduction to public finance and public goods, 2) tax principles and policy, and 3) the theory of collective decision-making and public choice. In all three sections, public choice themes are woven into the discussion, and are then presented with additional detail and context at the end.

To develop further the differences and complementarity of public finance and public choice I assign two short writing assignments. The first is a book review. Students read *Public Finance and Public Choice: Two Contrasting Visions of the State* by James Buchanan and Richard Musgrave (1999). This book is a transcript of a conference where Buchanan and Musgrave each presented several papers and provided discussion of the other's work. Students are thus exposed to these ideas directly from the work of these two pioneers and the themes of these two views become well established for the course. In addition, students write two policy memos. One must address a public finance theme the other a public choice issue. This exercise requires the students to make the distinction between the two areas. Both of these assignments help to reinforce the way the two areas fit together to make a complete picture of public economics.

I start the course by explaining public finance in a very mainstream context with Musgrave's idea of the allocative function of the public sector. I present a history of government revenues and expenditures to put the size and scope of the public sector in historical perspective. We discuss the role of government and address the protective and productive functions of government. On the protective function of government, topics include the role of property rights, market efficiency, and the relationship between economic efficiency and property rights. Next, we discuss situations in which we have poorly defined property rights and common pool problems. This creates the transition to the productive function of government and introduces the idea of market failure. Students are introduced to the idea that there can be conditions where the market on its own will not lead to the optimal outcome. At this point, we discuss various criteria that economists use to evaluate efficient or optimal outcomes including utilitarianism, cost-benefit analysis, the social welfare function, and Pareto optimality. Each criterion is explained in the context of the private and public sector. Arrow's impossibility theorem is presented as a means of discussing social welfare functions. This is one of the first opportunities to bring in public choice themes. Instructors can associate two public choice themes with these subjects. The first is the idea of government failure. I suggest to students that if we acknowledge that the concept of market failure exists that we have to acknowledge that there is the possibility of government failure. The second theme that I introduce with these topics is methodological individualism. Explaining that the criteria used to judge market efficiency becomes more difficult to evaluate when we move beyond the individual. Finally, we examine the difference between private versus government ownership. I use two particular outside readings for these topics Boettke and Leeson (2002) and Alchian and Demsetz (1973). Boettke and Leeson (2002) address the ideas of collective decision making and put Arrow's contribution on the social welfare function into historical context, demonstrating how Arrow's work is consistent with the views of Hayek and Buchanan on democratic decision-making. Alchian and Demsetz (1973) examine the determination of property rights and the distinctions between private, common, and government owned property.

The next part of this section focuses on two broad types of market failure: externalities and public goods. We start with externalities. I think historical context of this subject is important so we briefly discuss Alfred Marshall, A.C. Pigou, Knight, and Coase and each one's contribution to the theory. I first present a mainstream approach, discussing the difference between positive and negative externalities. I focus on the idea that an externality involves a component that is "external" to the market, and that poorly defined property rights are often the reason that the externalities exist. I am careful to ensure that students understand what policy relevant externalities are, and therefore make distinctions between pecuniary and technological as well as depletable and undepletable externalities. Only externalities that are technological and involving undepletable resources are the relevant ones that potentially require government involvement. We discuss various solutions for externalities starting with the traditional Pigouvian

corrective taxes and subsidies, regulation, and the Coase Theorem. While Coase may not directly be thought of as a public choice economist, the Coasian solution of exchange to settle collective action problems is a public choice oriented concept. In other words, economists should always look for solutions involving voluntary market exchange when possible. I argue whether government intervention, of regulation or taxation, is always the best solution, or if instead we should examine solutions that lower transactions costs and clearly define property rights.

As with externalities, I start the topic of public goods with a mainstream approach, providing the definition of a public good having the characteristics of collective, or non-rivalry, in consumption, and non-excludability. Students are presented the theory of why public goods may not be provided in the optimal quantity in the private sector, and how to determine the optimal allocation of a public good using vertical summation of the individual demand curves. We discuss whether individuals have the incentive to reveal their true preferences and what problems that presents for the application of this theory. A key point in this discussion is there are few pure public goods that meet both criteria. Rather, I emphasize that there are degrees of public good characteristics. In addition, we note that many goods that are collective in consumption eventually have limits or experience congestion issues.

We address the free rider problem of public goods and the possible government solutions to the public goods problems. I present the traditional government solutions for public goods: subsidies and or government production of the good. The concept of Lindahl pricing, taxing each citizen according to the value they receive from the public good is introduced. Again, the discussion over revealing true preferences (self-interest) is addressed, and one can reinforce the idea of methodological individualism as a criterion of evaluation. Finally, there is an emphasis placed on the public goods being defined by the characteristics of the good and not whether the good is produced in the private or public sector. It is important for students to understand that markets can solve public goods problems such as over - the - air broadcast signals. One way to integrate public choice theory at this point is to examine why many of the goods produced by the public sector are not public goods.

The second major section of the class examines the principles and policies associated with taxation and subsidies. We begin by addressing the simple cases of per unit and ad valorem taxes and the idea of tax shifting. Here we can discuss that intention and statutory obligation of the tax laws does not imply that those individuals will be the ones that bear the burden of the tax. We can examine various cases of elasticity on the supply and demand sides of the market and determine the true incidence of the tax. In addition to recognizing that the legislation does not determine who bears the tax, I introduce the concepts of deadweight loss and excess burden. This is an important concept to connect to the provision of public goods according to Bohanon et al (2014), as many leading public finance textbooks either do not address the topic or do so at a much later point in the text. Students learn that taxes introduce excess burdens and wealth transfers to the government and that smaller excess burdens mean a relatively more efficient tax. We can raise issues of equity versus efficiency here, as inelastic products tend to be "necessities". There are two public choice themes to examine here: first, whether politicians would choose to tax products that are inelastic and why; second, which businesses, industries, and products do policy makers choose to tax or be tax exempt and why?

Turning to issues of tax policy, we present normative arguments about who should be taxed and how much they should be taxed. We discuss topics including the benefits versus ability to pay principle and horizontal and vertical equity. I place emphasis on students understanding the implications of these normative policies. In addition, we can introduce another public choice theme, who sets the standard and what are we assuming about the motivations of the individuals creating these tax policies? Again, this is a theme and question we will address in the next section of the class, but the seed is planted for students to consider whether policy makers are benign, which is the assumption for most public finance classes, or have other motivations.

Finally, we discuss progressive, proportional, and regressive tax systems, and the various types of taxes that might fit these patterns. The life cycle of income is discussed along with whether taxes should be progressive over one's life cycle or based on income level at that moment. I explain how the use of tax exemptions and deductions can change the tax system. For instance, policy makers can design a progressive system to be less so, or they can make an otherwise regressive system be proportional, or even progressive. I note again, these issues are normative and they are not based on economic efficiency, and therefore we cannot identify one of these systems as superior to the other.

At this point in the course, we turn to issues that would expressly fall into the area of public choice economics. I begin by introducing the idea of collective decision-making, by defining it and then discussing

how it functions in the context of Pareto optimality. We can tie back how Pareto optimality works in markets and discuss rules of unanimity and the need for majority rule decision making. As noted in the earlier section, Holcombe's textbook is unique presenting the material on collective decision-making in detail over several chapters. We return to the ideas of protective and productive functions of government but begin to put it in a different context. Instructors can explain that institutions, or the rules of the game, make a difference in how government fulfills its role. We raise issues of conflicts in policy goals, and we discuss how the free rider problem and the holdout problem emerge in this context. Students are introduced to the idea of club goods and when they might be an appropriate alternative to public goods and the mechanisms used to enforce the rules.

Chapters 7- 9 of Holcombe (2006) begin the section of the text entitled "An Economic Analysis of Democracy." These chapters are the bulk of the public choice material I cover from the text. The concepts from the previous sections on public goods and taxes are examined again in these chapters in the context of collective decision-making, majority voting and decision making criteria. Optimal collective decision-making rules are examined by introducing the ideas of decision-making costs and external cost. It is important that students understand that the decisions of policy makers are not costless either to themselves or to their constituents. Policy makers must weigh out political cost and benefits of the decision and minimize the costs in the decision making process. To make the transition from a public finance to a public choice mindset, students read Calcagno (2010) and Gwartney and Wagner (1988). These articles explain the origins of public choice, the main issues it develops, and why the area emerged from the issues economists were examining in public sector economics. In addition, students return to Buchanan and Musgrave (1999), specifically Chapter 2's summary of what each scholar identifies as the focus of their research agenda and how the two views compare. This chapter reminds students of the differences of these two scholars and fields in their own words and sets up the discussion for the rest of the class.

I would argue one of the fundamental differences between public finance and public choice is that while public finance focuses on the issue of supplying public goods, public choice also examines public sector demand. We start this section by discussing differences in decision making in the private versus public sector. Students read Buchanan (1954), a seminal work that clearly illustrates how individuals face different institutional arrangements between private and public choices and that the incentives are different even though the motivation - self-interest - is not. From here we can discuss the cost and benefits of voting, the rational ignorance of voters and the median voter model. I emphasize to students that we are using our economic tools to explain these collective decisions, and there is a supply and demand for public policy. Finally, we can introduce the role of special interest groups and the concept of concentrated benefits and dispersed costs. Under the institutional arrangements of collective decision-making, special interest groups can influence public policy that will benefit them and the politician at the expense of the voters at large. Now we can re-visit the issue of regulation to solve externalities and examine why businesses favor regulatory "solutions" that are not as efficient and may not fully internalize the externality. We work through the concepts of competing interest groups, regulatory capture, and Yandle's (1983) Bootlegger's and Baptists theory of regulation. As Yandle explains

> The most successful ventures of this sort [of regulation] occur where there is an overarching public concern to be addressed (like the problem of alcohol) whose "solution" allows resources to be distributed from the public purse to particular groups or from one group to another (as from bartenders to bootleggers) (Yandle 1983, pp. 14).

We discuss how tax policy such as raising taxes on high-income individuals, and public goods, like schools and roads, often have that overarching public concern that Yandle discusses in his article.

Our last section drills down deeper into the issues of supply and demand in the public sector. Now that we have the framework of voter as consumer of public policy and public officials as supplier of public policy we can discuss how political decisions are often made. I present a framework to explain that the decisions related to tax policy are not made in a vacuum, but by flesh and blood people that are motivated by self-interest and have the incentive to favor special interest groups as well as their constituents at the expense of others. We can now return to the question posed earlier about why policy makers tax or exempt particular products, businesses, or industries. This discussion demonstrates that these decisions are not based on the pure theory of horizontal or vertical equity. The public choice view demonstrates that the political decisions being made are more complex than identifying whether the product is a public good, or which tax policy will minimize the deadweight loss.

Instructors have to do more than merely suggest that there exists a supply and demand for public policy. Rather one has to demonstrate how politicians can pass legislation that may not be favorable to their constituents as a whole, but is favorable to special interest groups. Introducing logrolling, the ability of politicians to trade votes, allows one to explain politics in the form of economics, specifically politics as exchange. A politician sponsoring a bill for an infrastructure project, a public good, in their state trades or exchanges her vote to support a tax change sponsored by a politician, in another state, in exchange for their vote. This trade like any other is mutually beneficial to the politicians whether the policies are economically efficient or not. The incentive to trade is same in the private and public sector, but the outcomes are different.

Agenda control is another key issue to present at this point. Explaining to students that the ability to control the agenda helps to determine not only what is voted on, but also the outcome of the vote. I return to the topic of Arrow's impossibility theorem here and the issue of cyclical voting. One can explain to students that the ability to control the agenda can help to increase or minimize the degree of cyclical voting that occurs.

The final topic that we address is rent-seeking, which, unlike the mainstream textbooks surveyed earlier, is covered in Holcombe. For a deep look at the early literature, I have my students read the well-known survey by Tollison (1982). In addition, they read Tullock (1967), his seminal work on rent seeking, and Tullock (1975). These articles specify the effect of special interest group legislation in the form of rent-seeking and demonstrate that the costs of rent-seeking are greater than the inefficiencies introduced by the intervention, i.e. the Tullock rectangle. Therefore, instructors should emphasize that when a special interest group rent-seeks to increases a tax on a particular product (perhaps a competitor's) the deadweight loss is more than the excess burden we associate with taxation—it includes resources invested in the political competition for the tax. In addition, the argument associated with the transitional gains trap helps to explain why once a policy is in place why it is difficult to repeal. Thus, students learn that the political process determines policy decisions whether it is funding for a public good, setting income tax rates, or taxing an externality. One can introduce the ideas of the political entrepreneur and political profit. Instructors can explain how engaging in logrolling, agenda control, and rent-seeking the political entrepreneur is attempting to acquire this political profit (Boettke and Coyne 2009). Thus, the public sector is not always the world of the benign policy maker or bureaucrat, but of the public official that potentially seeks to maximize something other than the public interest.

The above outline is merely suggestive of how one could present this material. An instructor could intertwine the public choice chapters from Holcombe (2006) discussing the public finance issues and then the public choice issues. For instance, one could introduce the chapters on collective decision making immediately following the discussion of public finance and public goods. This would establish the public choice framework prior to the discussion of tax principles and tax policy. Holcombe (2006) has the material on taxes as the later chapters in the text so my order of topics rearranges the order from how he orders them in the text. As noted above, I introduce the theme of public choice all throughout the course even before getting to the formal part of the discussion.

Conclusion

Traditional public finance courses focus on the supply and allocation resources in the public sector. Often textbooks present the theory as if benign or public interested officials make these political decisions. The purpose of this paper has been to demonstrate that while public finance and public choice can each stand on their own they can be combined in a way that complement each other. Identifying the right texts and incorporating outside reading are important to offering a rigorous course. I have tried to provide a guide for how one can incorporate public choice topics into a traditional public finance course and exhibit the merits for wanting to incorporate this material. By introducing students not only to the fundamentals associated with public finance, but giving them a framework to understand how the political decisions are made gives them a more thorough understanding of the topic. Incorporating these themes throughout the course as well as an outline that works from public finance to public choice topics can integrates both areas and provides a better pedagogical experience for your students. My hope is that this attempt to demonstrate how to integrate these two topics proves fruitful to other instructors and students of public finance.

References

Baker, Samuel H., and Catherine S. Elliott. 1997. *Readings in Public Finance*. Boston: Delmar Thomson Learning.

Boettke, Peter J., and Christopher J. Coyne. 2009. *Context Matters: Institutions and Entrepreneurship*. Hanover: Now Publishers Inc.

Bohanon, Cecil E. John B. Horowitz, and James E. McClure. 2014. "Saying Too Little, Too Late: Public Finance Textbooks and the Excess Burdens of Taxation." *Econ Journal Watch* 11: 277-96.

Buchanan, James M. 1960. *The Public Finances*. Homewood: R. D. Irwin.

Buchanan, James M. and Maryland R. Flowers. 1986. *The Public Finances*. 6th ed. Homewood: R. D. Irwin.

Buchanan, James M. 1989. "Richard Musgrave, Public Finance, and Public Choice." *Public Choice* 61: 289-91.

Buchanan, James M. 2003. "Public Choice: The Origins and Development of a Research Program." Fairfax, Va.: Center for Study of Public Choice, George Mason University.

Gruber, Jonathan. 2011. *Public Finance and Public Policy*. 4th ed. New York: Worth Publishers.

Gwartney, James, and Richard E. Wagner. 1988. "The Public Choice Revolution." *The Intercollegiate Review* 23: 17-26.

Heckelman, Jac. 2004. *Readings in Public Choice Economics*. Ann Arbor: University of Michigan Press.

Hewett, Roger S. 1987. "Public Finance, Public Economics, and Public Choice: A Survey of Undergraduate Textbooks." *The Journal of Economic Education* 18: 425-35.

Holcombe, Randall. 2006. *Public Sector Economics: The Role of Government in the American Economy*. New Jersey: Prentice Hall.

Hyman, David. 2011. *Public Finance: A Contemporary Application of Theory to Policy*. 10th ed. Ohio: South-Western Cengage Learning.

Mateer, G. Dirk, and E. Frank Stephenson 2011. "Using Film Clips to Teach Public Choice Economics." *Journal of Economics and Finance Education* 10: 28-36.

Mitchell, William C. 1968. "Public Finance Textbooks: A View from Political Science." *Public Choice* 5: 121-24.

Mitchell, William C. 1982. "Textbook Public Choice: A Review Essay." *Public Choice* 38: 97-112.

Musgrave, Richard, A. 1959. *The Theory of Public Finance: A Study in Public Economy*. New York: McGraw-Hill.

Musgrave Richard, A. and Peggy B. Musgrave. 1989. *Public Finance in Theory and Practice*. 5th ed. New York: McGraw-Hill.

Niskanen, William A. 1968. "The Peculiar Economics of Bureaucracy." *The American Economic Review Papers and Proceedings* 58: 293-305.

Rosen, Harvey, and Ted Gayer. 2010. *Public Finance.* 10th ed. New York: McGraw-Hill.

Stiglitz, Joseph E. 2000. *Public Sector Economics*. 3rd ed. New York: W.W. Norton & Company.

Venkateswarlu, Tadiboylina 1986. "Public Finance: Survey of Course Reading Materials in Academic Institutions," *American Economist* 30: 62-8.

Wagner, Richard E. 1983. *Public Finance*. Boston: Little, Brown.

Appendix 1: Sample Course Outline and Readings

Required Text:

Holcombe, Randall. 2006. *Public Sector Economics: The Role of Government in the American Economy*. New Jersey: Prentice Hall.

Alchian, Armen, A. and Harold Demsetz 1973. "The Property Right Paradigm." *The Journal of Economic History* 33: 16-27.

Boettke Peter J. and Peter T. Leeson 2002. "Hayek, Arrow and the Problems of Democratic Decision Making" *Journal of Public Finance and Public Choice* 20: 9-21.

Coase, R. H. 1960. "The Problem of Social Cost." *Journal of Law and Economics* 3: 1-44.

Holcombe, Randall. 2006. *Public Sector Economics: The Role of Government in the American Economy*. New Jersey: Prentice Hall. Chapters 1-2.

Holcombe, Randall. 2006. *Public Sector Economics: The Role of Government in the American Economy*. New Jersey: Prentice Hall. Chapter 3.

Holcombe, Randall. 2006. *Public Sector Economics: The Role of Government in the American Economy*. New Jersey: Prentice Hall. Chapter 4.

Holcombe, Randall. 2006. *Public Sector Economics: The Role of Government in the American Economy*. New Jersey: Prentice Hall. Chapter 5.

Sobel, Russell S. 2004. "Welfare Economics and Public Finance," Chapter 2 in *Handbook of Public Finance*, Edited by Jurgen G. Backhaus and Richard E. Wagner, Kluwer Academic Publishers.

Buchanan, James M., and Musgrave, Richard. A. 1999. *Public Finance and Public Choice: Two Contrasting Visions of the State.* Cambridge: MIT Press.

Holcombe, Randall. 2006. *Public Sector Economics: The Role of Government in the American Economy*. New Jersey: Prentice Hall. Chapters 10-11.

Buchanan, James M. 1954. "Individual Choice in Voting and Markets." *Journal of Political Economy* 62: 334-43.

Calcagno, Peter, T. 2010. "Public Choice." In *21st Century Economics: A Reference Handbook*, edited by Rhonda Free, California: Sage Publications.

Gwartney, James, and Richard E. Wagner. 1988. "The Public Choice Revolution." *The Intercollegiate Review* 23: 17-26.

Holcombe, Randall. 2006. *Public Sector Economics: The Role of Government in the American Economy*. New Jersey: Prentice Hall. Chapter 6.

Holcombe, Randall. 2006. *Public Sector Economics: The Role of Government in the American Economy*. New Jersey: Prentice Hall. Chapters 7-8.

Holcombe, Randall. 2006. *Public Sector Economics: The Role of Government in the American Economy*. New Jersey: Prentice Hall. Chapter 9.

Tollison, Robert, D. 1982. "Rent-Seeking: A Survey." *Kyklos* 35: 575-602

Tullock, Gordon. 1967. "The Welfare Costs of Tariffs, Monopolies, and Theft." *Western Economics Journal* 5: 224-32.

Tullock, Gordon. 1975. "The Transitional Gains Trap." *The Bell Journal of Economics* 6: 671-678.

Yandle, Bruce. 1983. "Bootleggers and Baptists: The Education of a Regulatory Economist" *Regulation* 7: 12-16.

Can Public Choice Theory Help Make Classroom Macroeconomics More Useful?

Tony Caporale[1]

Abstract

Classes in macroeconomics typically present versions of the dynamic aggregate demand/ aggregate supply framework to analyze short term fluctuations and optimal monetary policy responses to economic conditions. In these models an output market equilibrium condition is usually combined with a short run Phillips Curve and a monetary policy reaction function. Output, inflation and real and nominal interest rates are shown to respond to (exogenous) supply and demand shocks and interact with one another over time. These models fail to incorporate the fact that policymakers must be modeled as responding to their incentives given their constraints. Policy isn't usefully modeled as an exogenous variable and fifty plus years of Public Choice theory has enriched the insights gained from studying non-market decisions. This essay explains how incorporating the research from Public Choice Theory into macroeconomics can better help us understand real world political institutions and allow for a richer classroom analysis of macroeconomics and macroeconomic policy.

Introduction

"Social planners" and "representative consumers" do not exist."
Alberto Alesina (1988)

Classes in macroeconomics typically present versions of the dynamic aggregate demand/ aggregate supply framework to analyze short term economic fluctuations as well as optimal monetary policy responses to economic conditions. In these models, an aggregate supply = aggregate demand equilibrium condition is usually combined with a short run Phillips Curve and a monetary policy reaction function. Output, inflation and real and nominal interest rates are shown to respond to (exogenous) supply and demand shocks and interact with one another over time. Long- run classical elements are tweaked by introducing coordination failures, imperfect information or wage and price rigidities to bring out short-run cyclical features of the models. These models are often expanded to incorporate open economy factors such as exchange rate fluctuations and capital flows. These stylized models, while analytically elegant, often leave out the issue that an analysis of economic policy must incorporate the fact that policymakers must be modeled as responding to their incentives and constraints. Policy isn't usefully modeled as an exogenous variable and fifty plus years of Public Choice theory has enriched the insights gained from studying non-market decisions. This essay explains how incorporating the research from Public Choice Theory into macroeconomics can better help us understand real world political institutions and allow for a richer classroom analysis of macroeconomics and macroeconomic policy.

The literature on the political economy of macroeconomics is vast and growing and this paper does not purport to be a comprehensive Journal of Economic Literature type survey. Even for the subtopics I choose to cover, my goal is not to be comprehensive but rather to point out models and empirical research that, in my opinion, can most usefully be integrated into the teaching of macroeconomics at the undergraduate and

---

[1] Professor of Economics, Department of Economics and Finance, University of Dayton, Dayton, OH 45469. email: caporale@udayton.edu.

M.A. level. This essay focuses on several topics; political business cycles, politics and monetary policy, central bank independence, and rent-seeking and economic growth, each of which can be introduced in a more rigorous (and realistic) classroom setting.

Political Business Cycles

"We've really got to think of goosing it … late summer and fall of this year [1971] and next year [1972]. As you know there's a hell of a lag."
- *Richard Nixon to Arthur Burns March 1971*

Perhaps the most well-known integration of Public Choice theory into macroeconomics is the "political business cycle" model first developed by Nordhaus (1975). In that model, office motivated politicians manipulate an exploitable Phillips Curve and thus generate a boom prior to an election. The instrument used to execute this policy is Federal Reserve open market operations. Voters are assumed to be non-rational since they do not understand that they are systematically fooled by the politicians. In fact, they are backward-looking since they form expectations adaptively but also vote based on past incumbent performance. The most troubling problem with the Nordhaus model is its reliance on irrational behavior on the part of voters**.**

A well-known econometric test of PBC theory was McCallum's (1978) study of U.S. unemployment fluctuations before elections. He set up patterns in dummy variables to simulate possible electoral cycles and fails to reject the insignificance of nearly all of them. Grier (1987) however, shows that a political cycle in unemployment can be found if fewer restrictions are imposed on the PBC lag structure. An interesting study (Grier and Grier (2000)) investigates the macroeconomic effects of elections for Mexico and finds a postelection economic collapse but no pre-election boom, in contrast with predictions of the traditional political business cycle model.

A related application of Keynesian macroeconomics into political science is the influential "Rational Partisan" model of Hibbs (1977). He argued that the optimal choice between inflation and unemployment depends on the interests that parties represent. Assuming the constituencies of left parties are more concerned about unemployment than inflation compared with the constituencies of right parties, the model predicts that different types of regime will choose different points along a Phillips Curve. Since the model relies upon an exploitable Phillips Curve, the Hibbs' (1977) work is subject to many of the same criticisms as Nordhaus (1975).

Alberto Alesina (1987) presents a game-theoretic model in which two parties with different objective functions strategically interact with each other and with a rational public. Rightwing governments are assumed to be more inflation averse than leftwing governments. Voters are modeled as rational, an assumption which also applies to them as economic agents forming inflation expectations. The central implication of the rational partisan model is that in an economy with sluggish wage adjustments, that changes in the inflation rates associated with changes in electoral outcomes create temporary deviations of real economic activity from its natural level. The prediction of Alesina's rational partisan model is that in the U.S. one would observe recessions at the beginning of the Republican administrations and no differences in growth for the second half of either party's term. Alesina and Sachs (1988) test the model on post-War U.S. data and obtain results that largely support the model. More recently Heckelman (2006) constructs a panel of OECD nations allowing for asymmetric partisan effects and finds that his regression results are not consistent with the Alesina model.

Politics and Monetary Policy

All the political business cycle models discussed up until now operate through political influence over monetary policy. However, there is an extensive macro literature on Federal Reserve reaction functions for which the current state of the art is a politics-free interest rate rule model (Taylor, 1993). Taylor's (1993) influential study recommends an optimal monetary policy as a rule for setting the interest rate based on economic conditions. The exact form of the rule is chosen to minimize some combination of the variance of inflation and real output. The rule for determining the Federal Funds Rate is presented as:

$$FF_t = r_t + \pi_t + .5(y_t - y_t^*) + .5(\pi_t - \pi_t^*) \tag{1}$$

Where FF is the federal funds rate, r is the real interest rate, π is the average inflation rate over the previous 4 quarters, π^* is the target inflation rate, y is real GDP and y^* is trend real GDP. Taylor argues that the Fed funds rate should be set so that the real rate of interest moves to offset deviations of CPI inflation from its target value and output (real GDP) from its trend value. Taylor clearly views this rule as prescriptive; Taylor describes sustained deviations of the funds rate from the level implied by the rule as policy mistakes.

Although the Taylor rule is currently the gold standard for the analysis of monetary policy, there has also been a substantial literature on political influence over central bank policy which has proven useful in explaining some of the Taylor rule "mistakes". Alesina and Sachs' (1988) influential study present results that supports the "rational partisan" view that monetary policy (measured using monetary growth rates) are less expansionary during Republican administrations. This supports models which rely on Executive Branch influence over monetary policy. In a search for the causal mechanism of executive influence Havrilesky (1988) developed an index of monetary policy signals from the Presidential Administration to the Federal Reserve (SAFER) and shows that these signals have a statistically significant (and Granger-causal) effect on the money supply. Grier (1991) showed that US monetary base growth responded systematically to changes in the party of the President, along with changes in leadership of the Senate Banking Committee that oversees Fed operations. Policy was less expansionary under Republican presidents and more conservative (measured using Americans for Democratic Action scores) congressional leadership. Caporale and Grier (1998) use the federal funds rate as a measure of policy and find that political changes predict systematic and predictable changes in monetary policy. This result is robust to controlling for internal Fed turnover. Chappell, Havrilesky and McGregor (1993) investigate the channels through which partisan influence from a Presidential administration could affect monetary policy. Influence could be a result of direct Presidential pressure exerted on members of the FED (see Abrams (2006) and Abrams and Butkiewicz (2012) for the classic example of this by Richard Nixon) or it could be a result of partisan considerations in Presidential F.O.M.C appointments. Estimating monetary policy reaction functions that vary across individual members of the FOMC, they find that the appointments process is the primary mechanism by which partisan differences in monetary policies arise.

Central Bank Independence

The time inconsistency models of Kydland and Prescott (1977) and Barro and Gordon (1983) are used in classroom discussions about why central banks may choose a higher than optimum level of inflation. Those models explain that discretion leads to sub-optimal outcomes even when the central bank seeks to minimize a simple social loss function. Public Choice research, building on these models, argues that institutional features of the central bank can have important effects on inflation outcomes. For example, Alesina and Summers (1993) find that nations with a higher degree of central bank independence are associated with lower and more stable rates of inflation.

The political economy of central bank policy was pushed forward by Rogoff's (1985) influential paper. In that model the social-loss function weights deviations of both output and inflation from optimal levels, and dynamic inconsistency produces higher inflation than is socially optimal. This bias can be reduced, as Rogoff points out, by entrusting monetary policy to conservative central bankers who weights inflation deviations more heavily. Independence, combined with anti-inflation preferences gives the central bank a credibility tool which lowers inflation expectations.

Posen (1998) questions whether the link between central bank independence and low inflation is truly causal. Nations with preferences for less inflation may well have preferences for (or be more likely to adopt) more independent banking institutions. If the favorable effects of greater independence is due to enhanced credibility we would expect disinflations to be less costly (i.e. lower sacrifice ratios) when undertaken by more independent central banks. Posen (1998) finds that independence does not have a significantly negative effect on the cost of postwar disinflations he considers using a panel of 17 OECD nations. Cukierman (1992) also argues that the negative correlation between CBI and inflation among industrialized countries may reflect merely the common influence of a national aversion to inflation that affects both inflation and central bank independence since nations with less aversion to inflation will tend to have less independent central banks However, Cukierman et. al (1993) deal with reverse causation and show that growth and central bank independence remain significantly positively correlated even when an instrumental variables procedure is used. There are clearly many unsettled questions in the political

economy of central banking; however, there is no doubt that the questions asked in the literature can better enrich courses in macroeconomics.

Politics and Economic Growth

Neo-classical models of growth use the production function of the form $Y = f(K, L)$ to work through the implications of the Solow model and to derive its convergence implications. Although both non-conditional and conditional convergence in per capita output are implied by the neoclassical growth model, most of the empirical evidence finds little evidence for either. An interesting paper by Grier and Grier (2007) finds that although inputs in the production function such as human and physical capital, as well as institutional quality, seem to be converging in a large subset of nations that levels of output still continue to diverge.

In general, it is safe to say that standard textbook models of growth still usually leave out political economy elements when discussing their topic. Below I cover several important exceptions to this general rule.

Alesina and Rodrick (1994) explain how distributional considerations affect the choice of growth in a political equilibrium. Since politics decides the rate of taxation on capital and labor and since those tax policies impact incentives for capital accumulation, the political equilibrium can be modeled as a choice between growth and redistribution. They find that the greater the inequality of wealth and income, the higher the rate of taxation, and the lower growth. In particular, their empirical results show that inequality in land and income ownership is negatively correlated with subsequent economic growth.

Mancur Olson's influential ***The Rise and Decline of Nations*** (1982) stressed the importance of institutional and political factors in explaining differences in rates of economic growth. Olson argues that stable democracies will, over time, tend to accumulate distributional coalitions that lead to the adoption of growth retarding policies. One way to achieve coalition member goals is to demand public goods that make the economy more productive (Olson's "encompassing interest"). An alternative path is to lobby for redistributive, rather than efficiency enhancing, policies. Since these redistributive policies impose social costs and reduce overall economic efficiency, Olson (1982) describes democratic nations that succumb to such pressures as suffering from "institutional sclerosis." Since interest groups tend to be more redistributive the longer they are around, more stable societies should be associated with the growth of redistributive or rent-seeking coalitions and to a decline in aggregate growth rates.

Although it is notoriously difficult to formulate a clean test of the Olson hypothesis, several empirical studies such as Barro's (1996) comprehensive analysis of 100 nations, which finds that democracy has a slightly negative influence on growth is at least consistent with the Olson thesis.

An alternative influential theory of interest group dynamics and rent seeking is presented by Gary Becker. Becker (1983) models political pressure groups as lobbyists for subsidies. These groups get their wishes according to the amount of pressure exerted which depends on the group's relative ability to prevent free riding. Once government decides to grant protection, it will tend to choose efficient (rather than less efficient) ways of redistributing income. Any protection entails deadweight losses and therefore, as a result of pressure group competition, government actually pursues more efficient redistribution policies (i.e. find the method of redistribution that minimizes deadweight loss for a given level of redistribution).

A recent import work by Acemoglu and Robinson (2012) focuses most directly on the role of politics and political institutions in explaining differences in growth across nations and over time. Although many of their themes overlap nicely with Olson, Acemoglu and Robinson (2012) argue that failure is associated with "extractive" institutions" – institutions designed to extract any value created in society for the benefits of an elite. Growth success stories occur under "inclusive institutions" which manage to include most of society in the benefits of political and economic activity. Its emphasis on the link between institutions and growth makes *Why Nations Fail?* the latest in the long and valuable political economy literature applied to macroeconomic problems.

Concluding Comments

Obviously, the topic of fiscal policy naturally opens up political economy issues such as spending vs. tax changes, transfers vs. government consumption, the distributional impact of deficits and debt vs. tax finance, etc. These subjects have traditionally led to a more natural incorporation of public choice insights into undergraduate discussions. In contrast, monetary policy has often been presented as technocratic and

apolitical. In this paper I argue that this apparent teaching dichotomy is illogical and unwarranted. I suggest topics and research from the public choice literature that can fit into a standard macroeconomics course. A similar argument can be made when broaching the topic of economic growth. Public choice is not a special side topic. Rather, it has to be integrated to present a more coherent, useful and practical classroom macroeconomics.

References

Abrams, Burton A. 2006. "How Richard Nixon Pressured Arthur Burns: Evidence from the Nixon Tapes." *Journal of Economic Perspectives* 20: 177-88.

Abrams, Burton. A. and J. L. Butkiewicz. 2012. "The Political Business Cycle: New Evidence from the Nixon Tapes." *Journal of Money, Credit and Banking* 44: 385–99.

Acemoglu, Daron, and James A. Robinson. 2012. *Why Nations Fail: The Origins of Peace, Prosperity, and Poverty*. New York: Crown.

Alesina, Alberto. 1988. "Economics and Politics." *NBER Macroeconomics Annual 1988* 3: 13-62.

Alesina, Alberto. 1987. "Macroeconomic Policy in a Two-Party System as a Repeated Game." *Quarterly Journal of Economics* 102:651-78.

Alesina, Alberto, and Jeffrey Sachs. 1988. "Political Parties and the Business Cycle in the United States, 1948-1984." *Journal of Money, Credit and Banking* 20: 63-82.

Alesina, Alberto, and Dani Rodrick. 1994. "Distributive Politics and Economic Growth." *Quarterly Journal of Economics* 109: 465-90.

Alesina, Alberto, and Nouriel Roubini. 1992. "Political Cycles in the OECD." *Review of Economic Studies* 59: 663-88.

Barro, Robert J. 1996. "Democracy and Growth." *Journal of Economic Growth* 1: 1-27.

Barro, Robert J**.,** and David B. Gordon. 1983. "A Positive Theory of Monetary Policy in a Natural Rate Model." *Journal of Political Economy* 91: 589-610.

Becker, Gary. 1983. "A Theory of Competition among Pressure Groups for Political Influence." *Quarterly Journal of Economics* 98: 371-400.

Caporale, Tony, and Kevin B. Grier. 1998. "A Political Model of Monetary Policy with Application to the Real Fed Funds Rate." *Journal of Law and Economics* 41: 409-28.

Chappell, Henry, Thomas Havrilesky, and Rob Roy McGregor. 1993. "Partisan Monetary Policies: Presidential Influence through the Power of Appointment." *Quarterly Journal of Economics* 108: 185-218.

Cukierman, Alex. 1992. *Central Bank Strategy, Credibility and Independence: Theory and Evidence.* Cambridge: MIT Press.

Cukierman, Alex, Pantelis Kalaitzidakis, Lawrence Summers, and Steven Webb. 1993. "Central Bank Independence, Growth Investment, and Real Rates." *Carnegie-Rochester Conference Series on Public Policy* 39: 95-104.

Grier, Robin, and Kevin B. Grier. 2000. "Political Cycles in Nontraditional Settings: Theory and Evidence from the Case of Mexico." *Journal of Law and Economics* 43: 239-64.

Grier Kevin B., and Robin Grier. 2007. "Only Income Diverges: A Neoclassical Anomaly." *Journal of Development Economics* 84: 25–45.

Grier, Kevin B. 1987. "Presidential Elections and Federal Reserve Policy: An Empirical Test." *Southern Economic Journal* 54: 475–86.

Grier, Kevin. 1991. "Congressional Influence on U.S. Monetary Policy." *Journal of Monetary Economics* 28: 201-20.

Havrilesky, Thomas. 1988. "Monetary Policy Signaling from the Administration to the Federal Reserve." *Journal of Money, Credit and Banking* 20: 83-101.

Heckelman, Jac. 2006. "Another Look at the Evidence for Rational Partisan Cycles." *Public Choice* 126: 257–74.

Hibbs Douglas. 1977. "Political Parties and Macroeconomic Policy." *American Political Science Review* 71: 1467–87.

Kydland, Finn E., and Edward C. Prescott. 1977. "Rules Rather Than Discretion: The Inconsistency of Optimal Plans." *Journal of Political Economy* 85: 473-92.

McCallum, Bennett. 1978. "The Political Business Cycle: An Empirical Test." *Southern Economic Journal* 42: 504-15.

Nordhaus, William D. 1975. "The Political Business Cycle." *Review of Economic Studies* 42: 169-90.

Olson, Mancur. 1982. *The Rise and Decline of Nations*. New Haven: Yale University Press.

Posen, Adam. 1998. "Central Bank Independence and Disinflationary Credibility: A Missing Link?" *Oxford Economic Papers* 50: 335-59.

Rogoff, Kenneth. 1985. "The Optimal Degree of Commitment to an Intermediate Monetary Target." *Quarterly Journal of Economics* 100: 1169-90.

Taylor, John. 1993. "Discretion versus Policy Rules in Practice." *Carnegie-Rochester Conference Series on Public Policy* 39: 195-314.

Political Failure in the Short- and Long-Run

J. Robert Subrick[1]

Abstract

This paper reviews the use of public choice throughout my principles of macroeconomic course. I highlight the numerous avenues that public choice can be used to explain macroeconomic policies and their consequences. These include fiscal, monetary, and trade policy and economic growth and development. By emphasizing the self-interested behavior of public officials, public choice can illuminate both short- and long-run macroeconomic outcomes.

Introduction

Introductory macroeconomic courses devote chapters to a number of topics that could easily include public choice yet they do not. Monetary and fiscal policy represents the confluence of special interest groups, political institutions, and citizens' beliefs. Trade policy does too. When issues related to economic development arise, increasing attention focuses on political institutions and their role in protecting contracting and property rights.

Yet, most textbooks avoid or at least marginalize the role of public choice. It does receive a mention here and there (e.g. central bank independence, political business cycle), but most textbooks do not fully incorporate it as easily as they could. Gwartney (2014) reviews 23 principles of economics textbooks and found that about half mention public choice. Several prominent authors including Mankiw, Krugman and Wells, and Baumol and Blinder do not include public choice. A quick review of the macroeconomic portions of the textbooks yielded a smaller percentage of public choice issues since most of the discussion takes place in the microeconomic portion of the book. Instead, an implicit benevolent and omniscient social planner lurks in the background of macroeconomic policy discussions. If aggregate demand falls, then increase government expenditures or have the central bank lower the interest rate. Public officials simply respond to economic conditions and behave intelligently and sympathetically. They have a passive role in maintaining the equality of potential and actual output.

This paper provides illustrations from my principles of macroeconomics course where I include public choice discussions. They cover all the major topics of macroeconomics. These include short-run questions involving fiscal policy, monetary policy, trade policy, the balance of payments, and the long-run issues of economic development and growth. In my class, there is no social planner. Only cognitively challenged public officials pursuing their self-interest permeate the policy discussion.

The Basic Framework

After beginning with some discussion of the major macroeconomic indicators such as Gross Domestic Product, the Consumer Price Index, and the unemployment rate, I move on to explain why governments do what they do.[2] We begin with some basic supply and demand analysis and then move onto the theory of market failure.

I begin by asking what do many economists mean when they say market failure? Usually the responses reveal the normative leanings of the students. After some time, we identify a better definition. Markets fail when the observed outcomes differ from some ideal state. Markets fail when the allocation of resources differs from the allocation made by a benevolent and omniscient planner. In other words, when social

---

[1] Associate Professor of Economics, James Madison University.

[2] Of course, public choice considerations pervade these areas as well.

marginal cost and social marginal benefit differ from the point of view of the social planner. A bright student will eventually ask, "Do markets always fail"? I answer, yes.

The visible hand of the social planner looms throughout short-run macroeconomics. When actual output is less than potential output, the government becomes the spender of last resort. When measured unemployment exceeds the rate consistent with full employment, the government provides benefits to those without jobs. Positive externalities associated with education lead to calls for public subsidies. Practically omnipresent information asymmetries require a regulatory agency to protect consumers from themselves.

Of course, real people pursuing their self-interest work in government agencies and seek election to various offices. And students know this. By making explicit the assumptions behind the conventional policy prescriptions, public choice enters the analysis. We no longer assume some kind of motivational transformation takes place as people leave their homes in Northern Virginia and cross the Potomac River into Washington, DC.[3]

By introducing the self-interest assumption, new questions arise. In particular, I emphasize a new dimension in public policy: political exchange that concentrates benefits and disperses costs so as to attain and maintain political power. Government agents have the option to pursue their self-interest rather than the public's interest. We can no longer assume they pursue efficient policies. Rather they may trade-off social well-being for private. Bribery becomes an option. Macroeconomic policies involve explicitly addressing the trade-off between the costs of market failure and the costs of government failure (see Acemoglu and Verdier 2000 for a formal analysis).

Having a theory of market failure and a public choice style theory of government behavior allows me to move on to fiscal, monetary, and trade policy. Public choice explanations no longer appear as add-ons to the discussion. They have a central role in explaining the real world rather than stylized blackboard or Powerpoint presentations. They highlight the exchange that takes place between public officials, lobbyists, and the citizenry through political markets.

The Short-Run

Most introductory macroeconomic courses focus on short-run questions. Why does GDP fluctuate around a trend? Why are some components of GDP more volatile than others? Why does unemployment vary over time? Why does the price level exhibit a secular upward trend? What can the government realistically do to improve these indicators? Public choice offers explanations for each of these. I now turn to some examples.

Example #1: Fiscal Policy

The most likely topic in an introductory macroeconomics course to have a public choice component is fiscal policy. How governments spend money is the bread and butter of public choice. The logic of concentrated benefits and dispersed costs pervade explanations for patterns of government spending. When governments enact stimulus bills, they provide an abundant number of public choice in action examples.

Consider the simple government expenditure multiplier, $1/(1-MPC)$, where MPC is the marginal propensity to consume. Often classroom examples will assume a MPC of 0.9 which implies a multiplier of 10. Most estimates for the multiplier have an upper bound of 2.0 (Ramey 2011). Assuming the best-case scenario for the efficacy of government spending that implies the MPC is 0.50. Estimates for the MPC range from 0.75 to 0.95 suggesting the basic multiplier story needs revision. Why the enormous discrepancy between theory and evidence? Public choice offers an explanation beyond crowding-out, open-economy considerations, and the timing of fiscal policy.

A lot of government spending has little basis in meaningful cost-benefit analysis. Rather special interest politics explain the patterns and, with rent-seeking behavior, comes deadweight losses. Resources move towards their highest valued use which, in this case, means they move to the politically connected. Elected officials look towards the next election and pass bills that improve their odds of winning. They provide observable short-run benefits with costs that few citizens notice, at least immediately. No doubt some of the

---

[3] Sometimes for fun, following Tullock (1998), we assume that the public sector pursues their self-interest and the private sector acts benevolently.

spending goes to alleviate economic hardships but by no means does this approach explain the observed patterns even during the worst of recessions.

Two historical examples help to illustrate the public choice aspects of fiscal policy. First, the Great Depression offers a popular example of the usefulness of government spending. Many students when asked about what ended the Great Depression will respond by claiming the New Deal did. Shughart (2011) summarizes a large literature going back to the 1960s analyzing the allocation of New Deal spending and provides a public choice explanation. Rather than confirming the prior beliefs of the students, the evidence indicates public choice hypotheses explain the policy decisions of the 1930s. Members of Congress and the President directed spending in the direction of their supporters. Shughart (2011, pp. 539) writes

> the Great Depression was deepened and prolonged by the policies of the New Deal, not because Washington spent too little in an attempt to prime the economic pump, but because what it did spend was influenced more by FDR's strategy for reelection to the White House in 1936 than by the economic misery into which the nation had been plunged.

That is, President Roosevelt and the Democratic Congress spent money with an eye towards re-election rather than solely alleviating poverty. Influential committee members allocated resources towards their constituents rather than needier and possibly unemployed citizens in other districts. This reduces the size of the multiplier since spending is not necessarily going to idle resources. By including public choice analysis, new perspectives about the efficacy of New Deal spending arise.

The Great Recession offers another example of how to bring public choice into fiscal policy discussions. The American Recovery and Reinvestment Act (ARRA) passed in 2009. With interest payments, the bill's cost exceeded $800 billion. Overall, the results have not been impressive. Unemployment remained persistently high (especially after adjusting for the number discouraged workers). Even after adjusting for transfers to state governments and tax cuts, the impact of the ARRA is less than stellar. Sobel and Young (2013) offer a public choice explanation. Once again, spending did not follow economic hardship and unused resources. Rather government expenditures moved in the direction of those with political power. They summarize their findings as

> we have documented statistically significant effects associated with majority party House of Representative appropriations subcommittee and authorization committee membership. The evidence suggests that Democratic members of these committees were able to channel more funds towards their respective states.

Spending patterns did not match the predictions of the benevolent social planners.

If those with political power transfer resources in the direction of their constituents without much concern for the productivity of the expenditure, then it should come as no surprise that the multiplier is smaller than expected. Public officials traded public welfare for private. The spending patterns reduce the efficiency of government spending. Estimates for the multiplier make much more sense.

The financial crisis of 2008 offers another illustration of the usefulness of public choice theory to explain fiscal policy. Jagdish Bhagwati (1998) identified the "Wall Street Treasury" complex. A revolving door between Wall Street and the Treasury had led to convergence of interests between the two. As a result, regulations that protected large financial institutions from the costs of excessive risk taking came into existence. If they made bets that yielded large profits, then the financial sector reaped the rewards. If they made poor decisions that led to losses, then the costs would be spread over the taxpayers.

Simon Johnson (2008) poignantly applied public choice insights to explain the origins of the 2008 financial crisis. He argued that a 'quiet coup' had taken place where the financial sector had successfully persuaded both political parties in the United States to equate the health of Wall Street with the health of the overall American economy. Successful rent-seeking by the financial sector contributed to the emergence of the 'too big too fail' institutions. An implicit understanding that the Treasury would protect the large financial institutions from major losses encouraged excessive risky decisions. In the fall of 2008, the implicit understanding became public policy.

Example #2: Monetary Policy

Principles textbooks discuss the importance of central bank independence on inflation. Elections for central bank governors would lead to disastrous outcomes because the debt-ridden citizenry would vote for inflationary policies without recognizing its long-run effects. By assumption, non-elected central bankers would adopt policies to keep the economy near potential output and full employment. Monetary policy is the realm of enlightened technocrats.

As in the case of fiscal policy, central bankers are neither omniscient nor benevolent. Their job tenure depends, in part, on political support. In the United States, the President nominates the members of the Federal Reserve's Board of Governors. If the President's economic policies depend on his or her party's re-election prospects, why would we expect her choice of central banker to advocate policies the President opposes? In other words, when has the Federal Reserve and the White House publicly clashed over the appropriate monetary policy?

Many introductory textbooks (e.g. McConnell, Brue, and Flynn; Taylor and Weerapana) do include the political business cycle. This is a public choice explanation of short-run variations in GDP. In their attempt to get re-elected, presidents persuade the Federal Reserve to adopt easy money policies to exploit the Phillips curve trade-off between inflation and unemployment. If timed correctly, then economic prosperity occurs during an election year and inflation arrives during non-election years.

Abrams (2007) documents how President Nixon influenced Federal Reserve Chairperson Arthur Burns to secure re-election in 1972. The transcripts reveal how an American President successfully dictated monetary policy to the chairman of the Federal Reserve.

> "My relations with the Fed," Nixon said, "will be different than they were with [previous Federal Reserve chairman] Bill Martin there. He was always six months too late doing anything. I'm counting on you, Arthur, to keep us out of a recession."
> "Yes, Mr. President," Burns said, lighting his pipe. "I don't like to be late."
> Nixon continued. "The Fed and the money supply are more important than anything the Bureau of the Budget does." Burns nodded. "Arthur, I want you to come over and see me privately anytime..."
> "Thank you, Mr. President," Burns said.
> "I know there's the myth of the autonomous Fed..." Nixon barked a quick laugh. ". .. and when you go up for confirmation some Senator may ask you about your friendship with the President. Appearances are going to be important, so you can call Ehrlichman to get messages to me, and he'll call you, and he'll call you."

Clearly, President Nixon influenced monetary policy. He laughed at the notion of central bank independence ("myth of the autonomous Fed"). Monetary policy served the interest of the incumbents.

In my own class, I stress that monetary policy often does not operate independent of fiscal policy. A truly independent central bank does not exist. In some cases, monetary policy reacts to fiscal policy. As is well-known, public debt can crowd out private investment. Government spending decisions affect the interest rate. Suppose that the central bank announces a policy of interest rate targeting. If the government understands the logic of crowding out, then elected officials know they can borrow and spend and the central bank will accommodate them. Increasing amounts of public debt will not increase the interest rate because the central bank offsets the upward pressure through expansionary policy.

Selgin and White (1999) offer another avenue to highlight the public choice dimensions of monetary policy. They argue that government control of the money supply stems from the desire to raise revenue through seignorage. When raising revenue through taxation becomes limited and private investors do not voluntarily loan money to the government, inflation becomes a viable option. Public debt arose for public choice reasons but now the government lacks the means to pay their bills, they respond by debasing the currency.

Sargent (1982) provides a historical examination from four hyperinflations that illustrates how public debt can cause inflation. Once debt attains levels that the tax base cannot support, government turns to the central bank to pay the bills. Yet again, decisions by the government to spend beyond its means leads to a reliance on the printing press to pay its bills. His analysis modifies Milton Friedman's dictum, inflation is everywhere and always a monetary phenomena. It becomes the public choice lesson that hyperinflation is everywhere and always a fiscal phenomena.

Of course Adam Smith recognized the timeless aspects of public choice explanations for government behavior. Smith (1976 [1776]: pp. 929-930) wrote

> When national debts have once been accumulated to a certain degree, there is scarce, I believe, a single instance of their having been fairly and completely paid. … publick bankruptcy has been disguised under the appearance of a pretend payment. … When it becomes necessary for a state to declare itself bankrupt, in the same manner as when it becomes necessary for an individual to do so, a fair, open, and avowed bankruptcy is always the measure which is both least dishonorable to the debtor, and least hurtful to the creditor. The honour of a state is surely very poorly provided for, when in order to cover the disgrace of real bankruptcy, it has recourse to a juggling trick of this kind … Almost all states, however, ancient as well as modern, when reduced to this necessity, have upon some occasions, played this very juggling trick.

First comes unsustainable debt, then inflation, and finally bankruptcy. This basic lesson offers the public choice framework to explain the economic history of many countries.

Example #3: Trade Policy

Every textbook explains why deadweight losses arise from tariffs and other trade restrictions. They show (explicitly or implicitly) that net exports equals net foreign investment. They also explain why net exports makes up a substantial portion of the current account and that the current account is the same size as the capital account except opposite in sign. Yet they do not link these ideas to public choice.

Consider why trade protectionism exists. At least since David Ricardo's statement of comparative advantage, economists have made the case for free trade. Economics teachers have taught the logic for free trade for almost two hundred years yet trade protectionism persists. Why? Straightforward applications of public choice highlight the role of concentrated benefits and dispersed costs. Special interest groups lobby for legislation that enhances their profits. Consumers do not organize to counter the lobbying efforts of domestic producers. Agricultural interests such as sugar or tomato producers illustrate this principle in action.

Superficially non-public choice arguments for trade protectionism offer a number of potential explanations. For example, textbooks often include infant industry arguments while others highlight national security concerns. In each case, public choice concerns enter the analysis.[4]

Infant industry arguments claim that at some future date, a country will have comparative advantage in producing some good or service. The benevolent government in its efforts to promote prosperity provides protection until the selected industries attain a level of efficiency. Then they can compete against international competition. Once competitive, the government removes the protection.

Often the protected firms do not attain a level of efficiency necessary to compete internationally. Instead, they remain akin to the child who goes to college and then moves into the basement for an indeterminate amount of time. They claim that they need more time to improve their skills. Protectionism creates a vested interest that can lobby successfully for prolonged safeguards from foreign competition.

At least since 2001, national security concerns have appeared in textbooks. For example, suppose a bioterrorist attack takes place within the United States that wipes out the existing corn crop. The costs would be so great as to justify any deadweight loss associated with protection for farmers. But this argument opens up an avenue for just about every producer to make the case their product is in the national security interests of the country.

Cowen and Tabarrok (2011) illustrate the public choice aspects of the national security argument. They note that in 1954 the fleece of the Angora goat was a national security issue because of its use in military uniforms. Producers of the Angora goat received subsidies for decades until the American government repealed the program in 1993. However, in 2002, the government re-instated the program in response to the war on terror.

The logic of concentrated benefits and dispersed costs provided a powerful explanation for trade protectionism. But I like to go a bit deeper into the analysis. I look at the voters themselves. Do they

---

[4] This does not exhaust the list of rationales for trade protectionism.

support protectionist measures? Quite frequently the answer is yes. Mayda and Rodrik (2005) identify a number of non-economic reasons for the support of protectionism. They identify close-knit communities, those who have a strong sense of national pride, and those who identify with the national interest as supporters of trade protections. In essence, the protectionism exists and persists because people want it. They have a preference to help out others like them, i.e. their community.

Finally, Caplan (2007) provides support for the hypothesis that American voters support protectionist policies. He defines the anti-foreign bias as "a tendency to underestimate the economic benefits of interaction with foreigners." Naturally this arises in discussion of why trade policy persists. The voters like protectionist policies because they do not recognize the gains from trade. They see the worker who loses her job from international competition but they do not take notice of the less obvious gain. If true, then the adoption of such policies is no mystery.

Trade policy is usually emphasized in principles of microeconomic courses. In a macroeconomics course, it offers a natural way to go from net exports to net foreign investment and finally the balance of payments. By understanding the microeconomics of trade policy, students better understand how net exports arise. After manipulating GDP to show them that net exports equals net foreign investment, I turn to the balance of payments and the role of the exchange rate and capital mobility in maintaining equilibrium. Each has a public choice component as special interest groups form to capture the gains or mitigate the costs from policies (See Eichengreen 1995).

Trade policy offers numerous avenues to explain public choice. From the basic logic of concentrated benefits/ dispersed cost to the implementation of voter's preferences, why trade policy exists and persists can be easily explained. In addition, by examining trade policy and the balance of payments, public choice takes on an international dimension.

The Long-Run

Although included in textbooks, economic growth takes up a small portion of principles of macroeconomics discussions. Yet in a globalized world, people increasingly wonder why the United States has so much stuff and so many countries do not. As Yali asked in Diamond (1997: 3), "Why is that you white people developed much cargo and brought it to New Guinea, but we black people had little cargo of our own?" Similarly, Lucas (1988: 5) wrote

> Is there some action a government of India could take that would lead the Indian economy to grow like Indonesia's or Egypt's? If so, *what,* exactly? If not, what is it about the 'nature of India' that makes it so? The consequences for human welfare involved in questions like these are simply staggering: *Once one starts to think about them, it is hard to think about anything else.* [emphasis added]

And once you begin to think about these questions, you start thinking about public choice. What role, if any, do political institutions have on the world's income distribution? It turns out that they have a large role.

Most discussions of economic growth examine the Solow growth model and its well-known result that technology drives economic growth. He found that capital accumulation explained very little cross-section variation in economic growth. The remaining residual became "technology" although Moses Abramovitz offered a more accurate interpretation. He referred to the Solow residual as 'a measure of our ignorance.' The Solow model ignores public choice.

Acemoglu (2013) provides a simple diagram to frame the relevant questions for long-run macroeconomic questions (see Figure 1). He divides the sources of growth between fundamental and proximate causes. The latter stress the Solow-type explanations for economic growth including technological change and investments in human and physical capital. The fundamental factors highlight the roles of culture, geography, and institutions.

Institutions provide the rules of the game that forms the basis of markets. They affect the security of contract and property rights. They influence the rates of return to various activities such as rent-seeking and entrepreneurship. They affect the flow of resources across and within countries. They shape the extent of financial markets, the negotiations that take place within labor markets (which affects the natural rate of unemployment), and efficacy of the court system. They are part of the fundamentals of economic growth.

Figure 1: Modern Development Economics in One Figure

<u>Fundamental Causes</u>

Institutions (?)   Geography (?)   Culture (?)

↓

<u>Proximate Causes</u>

Low Investment

Low human Capital

Poor technology

↓

Low Living Standards
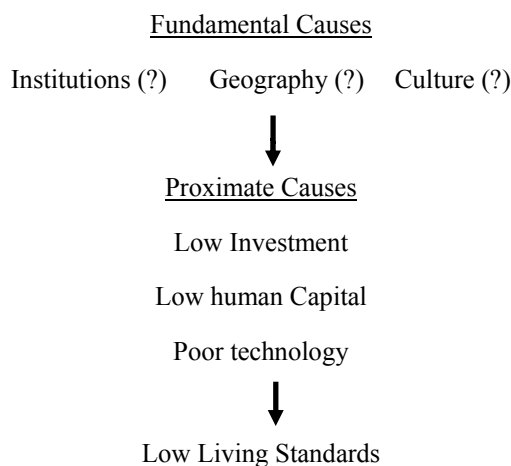
Source: Acemoglu (2013), p. 174.

Example #1 Assume Anarchy?

Often in economics courses, teachers assume the existence of property rights and quickly proceed to illustrate how supply and demand diagrams explain how markets work. When studying static aspects of those countries that have attained high levels of income per capita, this makes sense. But when addressing questions in a dynamic economy that may or may not have high levels of income, quickly using supply and demand makes less sense. Secure contract and property rights do not exist in many of these countries.

As Rajan (2005) argued, development policy that relies on the assumption of perfect or near perfect markets leads analysis astray. One cannot assume that a non-corrupt, efficient judicial system exists. Nor can an analyst take a merit-based technocracy for granted. Assuming the existence of non-existent institutions leads to poor policies and offers little, if any, understanding of the world's income distribution.

Beginning without the existence of well-defined and enforceable property rights highlights the role of creation and maintenance of institutions. Enter public choice. Interest groups negotiate with each other over which set of rights will be defined and enforced. They bargain over these rights and conflict resolution mechanisms emerge. The legal and political institutions do not come from the mind of a benevolent government seeking to maximize social welfare. Self-interested public officials and persons create them. The outcomes affect the allocation of resources both in the short-run and in the long-run.

Acemoglu and Robinson (2012) offer numerous examples of how public choice affects institutional development and long-run growth. For example, the Glorious Revolution of 1688 altered English institutions that formed the basis of the Industrial Revolution. It was a 'critical juncture' that better secured property rights by altering the relationship between the Crown and Parliament. They also highlight the role of interest groups seeking changes in policies that increased the security of contract and property rights. In England, merchants held political power and they successfully passed Acts to better protect property and contracting rights.

In contrast, Argentina under Peron went from one of the wealthier countries in the world to a poor country by adopting poor policies such as the nationalization of business and trade protectionism. Before Peron, institutions protected property and contract rights because they served the interests of the political elite. After their removal, institutions changed to reflect the new political equilibrium.

Example #2 Supply of and Demand for Corruption

When former World Bank Group President James Wolfensohn delivered his "cancer of corruption" speech in 1997, corruption became a topic of international development policy and the broader discussions of why some countries are rich and others are not. It offered a powerful explanation for the ineffectiveness

of foreign aid in many countries. Rather than use the resources for wealth creating investments in public goods such as paved roads or law and order, the kleptocrats kept the aid for themselves.

Corruption arises from public choice considerations. Once governments no longer serve the public interest and act in their own self-interest, then opportunities for bribery emerge. But why do public sector officials engage in corruption? First, they may receive low salaries. They respond by taking bribes in order to increase their incomes. They extort the private sector. Second, corruption may arise simply because it greases the wheels of commerce. Regulations prevent wealth-increasing transactions from occurring so businesses offer public officials a bribe to look the other way. In each instance, corruption emerges as a natural consequence of rational behavior, given the institutions.

Corruption has a large impact on economic development. First, the more resources used for corrupt activities, fewer resources are available for wealth creation. Second, when uncertainty arises as to who to bribe, it reduces investment as entrepreneurs cannot make reasonable cost calculations. They lack the information about who and how much to offer and this reduces the returns to investment. Third, rent-seeking has an increasing returns to scale component. Rent-seeking activities often have a large fixed cost, such as establishing a legal system. If there are a large enough number of rent-seekers, then the likelihood of getting caught is lower and the return to wealth redistribution increases. It becomes a tolerated form of behavior. Once rent-seeking activities attain some threshold, then society can become trapped in a low level of output equilibrium where little wealth-creating investment takes place. Finally, rent-seeking reduces innovation. New firms and innovators do not have a lobbying presence. They have not become part of the political "elite." In many societies, innovative firms lack access to credit to make their ideas turn into realities as politicians use their influence to stifle new firms (Shleifer and Vishny 1998). As a result, economic growth declines.

By including corruption into class discussion, I can endogenize politics to a degree. People often associate high levels of corruption with market failures. If this perception prevails, citizens demand more regulation of economic affairs to reduce corruption. They support policies aimed at altering market outcomes (Di Tella and MacCulloch 2009). This seems especially useful to understand the political-economic dynamics in societies characterized by crony capitalism. If people believe that corporations and other big businesses have captured the public policy process, people advocate for increased regulations on the private sector.

Example #3: Democracy and Economic Growth

Students often enter the classroom with an incomplete understanding of democratic politics. They assume that democracy is some kind of panacea. That democratic countries grow faster than autocratic countries is self-evident. But the data does not support this. China offers an obvious counterexample. Since the reforms of 1978, China's output has expanded more rapidly than any other country. Millions have moved out of poverty. And this has taken place in the absence of democracy. Given the importance of secure property rights, China's example draws attention to the mechanisms by which democracy affects growth. Many other non-democratic countries have experienced high rates of economic growth in recent decades. Vietnam and Equatorial Guinea immediately come to mind.

The ambiguous nature of the relationship between democracy and economic growth highlights the tensions in democratic politics. On the one hand, democracies tend to devote more resources to education than non-democratic countries. If elected governments respond to the demands of their citizenry, then we expect them to spend more on education than dictators who act largely independent of the people's preferences do. Education raises productivity which, in turn, increases income. On the other hand, democracies often discourage physical capital accumulation because they impose higher tax rates than dictatorships. High taxes reduce the rate of return to investment and discourage it (Tavares and Wacziarg 2001). Thus, democracies face a trade-off between income increasing human capital investment and growth reducing tax policy. [5]

---

[5] Tavares and Wacziarg (2003) also highlight how democracies affect income inequality and government consumption.

Conclusions

Public choice offers a simple and powerful framework to understanding numerous macroeconomic phenomena. The policies implemented by public officials cannot be explained without reference to their self-interested behavior. Fiscal, monetary, and trade policy abounds with examples of the logic of concentrated benefits and dispersed costs. Economic growth depends, in part, on public choice considerations. There are other topics in a principles of macroeconomics course could that include public choice such as the regulation of financial markets, the scope of labor market regulations, and the politics of public debt in a democratic society. In my own experience, the inclusion of public choice considerations have improved class discussions, facilitated conversations about current events, and increased the scope of relevant readings for the students to read and engage.

References

Abrams, Burton. 2006. "How Richard Nixon Pressured Arthur Burns: Evidence from the Nixon Tapes." *Journal of Economic Perspectives* 20: 177-88.

Acemoglu, Daron. 2013. "Economic Growth and Development in the Undergraduate Curriculum." *Journal of Economic Education* 44: 169-77.

Acemoglu, Daron and Robinson, James. 2012. *Why Nations Fail*. New York: Crown.

Acemoglu, Daron, and Thierry Verdier. 2000. "The Choice between Market Failures and Corruption." *American Economic Review* 90: 194-211.

Bhagwati, Jagdish. 1998. "The Capital Myth: The Difference between Trade in Widgets and Dollars." *Foreign Affairs*. 18 Nov. 2014.

Caplan, Bryan. 2007. *The Myth of the Rational Voter: Why Democracies Choose Bad Policies*. Princeton: Princeton University Press.

Cowen, Tyler, and Alex Tabarrok. 2011. *Modern Principles: Macroeconomics*. New York: Worth.

Eichengreen, Barry. 1995. "The Endogeneity of Exchange Rate Regimes," in *Understanding Interdependence*, edited by Peter Kenen. Princeton: Princeton University Press.

Di Tella, Rafael, and Robert MacCulloch. 2009. "Why Doesn't Capitalism Flow to Poor Countries?" *Brookings Papers on Economic Activity*: 285-332.

Gwartney, James. 2014. "The Public Choice Revolution in the Practice and Teaching of Economics," Paper prepared for the Annual Meeting of the Public Choice Society.

Johnson, Simon. 2009. "The Quiet Coup," *The Atlantic*. 17 September 2014.

Lucas, Robert. 1988. "On the Mechanics of Economic Growth." *Journal of Monetary Economics* 22: 3-42.

Mayda, Anna Maria, and Dani Rodrik. 2005. "Why are Some People (and Countries) More Protectionist than Others?" *European Economic Review* 49: 1393-1430.

Rajan, Raghuram. 2005. "Assume Anarchy?" *Finance and Development* 41: 56-7.

Ramey, Valeri. 2011. "Can Government Purchases Stimulate the Economy?" *Journal of Economic Literature* 49: 673-85.

Pettis, Michael. 2013. *The Great Rebalancing: Trade, Conflict, and the Perilous Road Ahead for the World Economy*. Princeton: Princeton University Press.

Sargent, Thomas. 1982. "The End of Four Big Inflations," in *Inflation: Causes and Effects*, edited by Robert Hall. Chicago: University of Chicago Press.

Selgin, George, and Lawrence White. 1999. "A Fiscal Theory of Government's Role in Money." *Economic Inquiry* 37: 154-65.

Shleifer, Andrei, and Robert Vishny. 1998. *The Grabbing Hand*. Cambridge: Harvard University Press.

Shughart, William. 2011. "The New Deal and Modern Memory." *Southern Economic Journal* 77: 515–42.

Smith, Adam. 1776. *An Inquiry into the Nature and Causes of the Wealth of Nations*. Indianapolis: Liberty Fund.

Sobel, Russell and Young, Andrew. 2013. "Recovery and Reinvestment Act Spending at the State Level: Keynesian Stimulus or Distributive Politics?" *Public Choic*e 155: 449-68.

Taveres, Jose, and Romain Wacziarg. 2001. "How Democracy Affects Growth." *European Economic Review* 45: 1341-78.

Tullock, Gordon. 1998. "Externalities and Governments." *Public Choice* 95: 411-15.

Teaching Mathematical Economics Using Public Choice: The Median Voter Model

Alberto Batinti[1]

ABSTRACT

The median voter model (MVM) is a core model in public choice comparable to the demand and supply competitive market model in microeconomics. In this paper I introduce and discuss the mathematical treatment of a simple version of the model. This allows instructors to apply a wide range of concepts commonly introduced in a first undergraduate class in mathematical economics. The approach will help students to understand the interplay of concepts separately introduced during the first phase of the course. Hopefully the method will foster an interest in public choice through the study of one of its most important benchmark models.

Introduction

In academia, many economists end up teaching one course or so a year in their favorite area or field, with the remainder of the teaching load being devoted to introductory or service courses for the major, such as quantitative methods, econometrics, and mathematical economics. While there is some literature on using the work of Nobel Laureates (Becker and Greene, 2005), Monte Carlo studies (Kennedy, 1998), and the popular press (Becker, 1998) to teach quantitative methods and econometrics, there is very little literature on how to enliven the teaching of mathematical economics.

The aim of this paper is to show how to use the median voter model (MVM) – a key model from public choice – to illustrate various concepts taught in the typical mathematical economics course. In particular, the paper shows how a wide range of techniques and tools can be applied while developing and explaining the MVM. Textbooks in mathematical economics typically present short problems tailored to the particular technique under discussion; this is a traditional method when students are first introduced to the concept. However, in the long run, the same method that helps them staying focused on the material by illustrating one topic at a time becomes a source of confusion. Students tend to miss the "big picture", to lose sight of the general interdependence of several mathematical tools, and finally they may not be able to grasp the importance of the concepts' relative contribution to the development of a unique theoretical framework. Seldom in fact, can useful mathematical models be explained and understood without knowing the appropriate technique to be applied at different stages of their development. Maintaining a single technique/single problem approach can be described as teaching musical notes and scales for the whole semester, without letting students to see how they are used in a piece of music. Consequently, both the teacher and the students may feel frustrated. The semester may end with the overall feeling of not having reached the main objective of the course, which should be helping students understand the links between assumptions and conclusions of a set of core economic models, a critical prerequisite for consistent economic thinking.

One of the main objectives of this paper is to propose a method to avoid this outcome. It addresses instructors in mathematical economics that want to show how multiple techniques can be put at work together and complement each other in order to develop an economic model. This allows the understanding of the relationships between the model's assumptions and outcomes. Such relationships can be identified,

---
[1] Corresponding Author. Assistant Professor, School of Public Economics and Administration, Shanghai University of Finance and Economics (SHUFE). 777 Gouding Rd,Yang Pu District, Shanghai,China 200433. Contact information: a.batinti@mail.shufe.edu.cn / albertobatinti@yahoo.com. Phone: (+86)65908865. Web: www.albertobatinti.com. This paper was prepared for presentation at Session A.1.2 Economic Education and Public Choice – at the 50th Anniversary Conference of the American Public Choice Society, New Orleans, March 2013. I am particularly grateful to Joshua Hall, Robi Ragan, other session participants, and two anonymous referees for useful and valuable comments. Usual caveats and disclaimers apply.

understood, and criticized through the careful and sequential application of the techniques proposed. I hope that this method becomes also a useful tool for the broad audience of teachers of mathematical economics, and of course for those researchers working in the field of public choice. The second objective is to offer support for using public choice models in courses where the discipline, I think, is a useful and effective option to teach mathematical economics. The reader can easily verify that standard books in mathematical economics offer examples from consumer and producer decision making, industrial organization, optimal investment theory, growth and macroeconomics only to cite some, but rarely spatial models of economic and political competition are considered. This paper acknowledges such imbalance and attempts at filling this gap. Finally, the choice of the MVM, among multiple options available within the field of public choice, is motivated by the positive pedagogical properties of the model as an introductory tool to the field. In fact, more complex models in public choice stem from its extensions and refinements more than from its rejection.

The techniques that follow are drawn from optimization, comparative statics, and game theory. For the rest of the exposition it is assumed that students have already been introduced to the mathematics of demand and supply, and to foundational concepts in game theory. I will illustrate them in eight different *Mathboxes* that precede the analysis of their applications in the specific context of the MVM. Two simple proofs by construction are also presented at the end of the paper. The mathematics of the MVM shows how the techniques learned previously in the semester interact in the development of the model, and how they facilitate proceeding in a logical consistent way from assumptions to conclusions. Moreover, such an approach offers the opportunity to expose students to one of the most important and markedly useful models in public choice.

The exposition is limited to single variable optimization. It is worth noting that a wide set of micro-founded models can be solved by transforming a multivariate into a single variable optimization problem through the substitution of the constraint/s into the objective function. This technique is still widely used to develop models published in economics journals, and in several cases it is an efficient way to solve them. However, the model can be easily set to be solved through the use of multivariate techniques if the instructor feels that this is an important part of the course. Finally, despite the relatively wide range of techniques included, some topics are not covered because of the limited space allowed in a single article.

The structure of the paper follows: in section II, I describe the main characteristics of the median voter model. In section III, I introduce the supply-side of the model, explained in terms of spatial competition between two office seeking candidates in a representative democracy. In sections IV and V, I introduce and develop the main assumptions about the demand-side of the model. Mathematics is used to explore the comparative statics of the model that are crucial to understanding its main conclusions. Section VI concludes.

The median voter model and public choice

Founded on the rational approach to decision making in politics, public choice uses formal models to explain the interactions between the political and economic systems. Most of the progress of the research in public choice comes in the form of refinements, extensions, and mixes of archetypical models previously proposed. Among them, the median voter model (MVM) plays a central role. Congleton (2003) offers several reasons for the use of the MVM as a benchmark model to introduce, learn, and do research in public choice. The MVM is relatively simpler than other models in public choice and efficiently transfers knowledge from one learner/researcher to the other. Second, the MVM is a flexible theoretical framework and for this reason it can be easily modified or expanded to capture institutional and structural details according to the specific policy under analysis. For example, its main features can be mixed with interest groups and constitutional political economy analysis to take into account a wider set of institutional and behavioral factors. Finally, simple models such as the MVM are generally dependable, capture what matters and any extension of them would exploit an unfavorable trade-off between explanatory power, tractability, and complexity.[2]

The most important elements in a MVM are the majoritarian voting decision rule (the winner, being a policy or a candidate, is the one who gains 50% + 1 of the votes), and a binary aggregation rule (round-

---

[2] Both Congleton (2003) and Holcombe (1989) observe that the MVM in general receives empirical support, and that its exposition to the students achieves the educational goal of a smooth transition from economics to politics. Put differently, it carries out a function similar to the one performed by the pure archetypical competitive model in economic theory.

robin tournament) that allows for determining the existence of a Condorcet winner (CW). The CW will be the policy that is preferred by the majority of the voters when challenged by any other policy option. The presence of a CW policy implies the existence of a political equilibrium that allows comparative statics analysis in the same fashion as it would be done in an economic framework with standard supply and demand analysis. However, there are preferences' orderings on policies that do not guarantee the existence of a CW. For some sets of orderings, a political equilibrium cannot be found and majorities will be cycling. Arrow (1951) shows that this impossibility is persistent under very general and plausible assumptions. The existence of a political equilibrium can be justified relaxing Arrow's assumptions. One of them is to restrict individual policy preferences so that a CW exists. In this paper I discuss these types of restrictions and discuss the political equilibrium when policy preferences are single-peaked or single-crossing. My goal in the next sections is to show how mathematical concepts are applied to develop specific applications of the MVM, with particular reference to its spatial version in a representative democracy, where candidates are voted to implement policy platforms.

The Supply-Side: Office Seeking Candidates in a Representative Democracy

The MVM has been used to explore the properties of majoritarian decision making in direct-democracy/referenda setting (Bowen, 1943), in committee decision making (Black, 1948) and in representative democracies (Downs, 1957). Besides the majoritarian and the binary-aggregation rules, these models add two important assumptions. They limit preferences' heterogeneity about policies in order to guarantee the existence and uniqueness of a CW. Policy preferences are in fact restricted to being single-peaked or single-crossing.[3] Moreover, policies can be ordered in a spatial spectrum from smallest to largest, as for example in the case of tax rates or budget spending levels. The result of the restrictions is that a CW exists and is unique. The citizen whose most preferred policy is the CW will be the median voter. In a representative democracy, the addition of a supply-side to the model, characterized by the spatial competition between two office seeking candidates, does not change the main result.[4] However, it provides additional structure that avoids those issues emerging from strategic voting, when more than two policy platforms are proposed.[5]

To illustrate the process through which two candidates converge towards the median policy platform, students should already have been introduced to the basics of game theory, and to the proof that, if a strategy profile is a strictly dominant strategy equilibrium, then it is also a Nash Equilibrium.[6] *MathBox #1* shows the definition of weak and strict dominance.

MathBox #1. Definition of weak and strict dominance

A strategy $\overset{*}{s}_i$ weakly dominates s_i iff $u_i\left(\overset{*}{s}_i, s_{-i}\right) \geq u_i(s_i, s_{-i})$ with $s_{-i} \in S_{-i}$ and $\exists\, s_{-i} \in S_{-i}$ s.t.
$u_i\left(\overset{*}{s}_i, s_{-i}\right) > u_i(s_i, s_{-i})$;

A strategy $\overset{*}{s}_i$ strictly dominates s_i iff $u_i\left(\overset{*}{s}_i, s_{-i}\right) > u_i(s_i, s_{-i})$ with $s_{-i} \in S_{-i}\ \forall\, s_{-i} \in S_{-i}$ s.t.
$u_i\left(\overset{*}{s}_i, s_{-i}\right) > u_i(s_i, s_{-i})$;

Let us assume a game with *i* players. The iterative elimination of strictly dominated strategies implies that no matter what the other *–i* players' strategies are, player *i* eliminates the strategies that are strictly dominated. If all players have a single strictly dominant strategy, the strategy profile of the dominant strategies will be also a Nash equilibrium. This concept can be applied to clearly describe the competition between the two office-seeking politicians. Suppose that voters are evenly distributed on a left-to-right

---

[3] More about these properties and their formal definition is provided in the following sections.

[4] The spatial competitive model was first introduced in economic analysis by Hotelling (1929). Downs (1957) transferred the idea in a representative democracy.

[5] The process explaining how this result is obtained is formally developed in this section through the application of the concept of Nash Equilibrium in strictly dominated strategies. Put differently, this type of competition is represented through a game that is dominance solvable. The iterated elimination of strictly dominated strategies will push the competitors towards the center of the policy space.

[6] The usual example to illustrate how such an equilibrium occurs is the Prisoners' Dilemma game.

policy space where the 10% placed on the outmost left are extremely liberal citizens while the 10% on the outmost right are extremely conservative (see Figure 1).[7] Moreover, when candidates' locations overlap, votes in that cell are equally shared between the two candidates. Preferences are assumed to be single-peaked, which means that citizens have an ideal policy and the farther the alternative policies are from the ideal one, the less the policies will be preferred.[8]

Figure 1

Strategies	1 (10%)	2 (10%)	3 (10%)	4 (10%)	5 (10%)	6 (10%)	7 (10%)	8 (10%)	9 (10%)	10 (10%)
CI	X	X								
CII										

From the perspective of candidate I, strategy 2 strictly dominates strategy 1. $u_I(i,j)$ is Candidate I's utility from occupying position "i" while Candidate II occupies position "j". The utility function has two arguments; the first represents the strategy chosen by Candidate I and the second is the one chosen by Candidate II. In order to explain how to reach this result it is shown that Candidate I will always do better in choosing strategy 2 with respect to strategy 1, no matter where Candidate II decides to locate herself:

$u_I(1,1) = 50\% < u_I(2,1) = 90\%$
$u_I(1,2) = 10\% < u_I(2,2) = 50\%$
$u_I(1,3) = 15\% < u_I(2,3) = 20\%$
$u_I(1,4) = 20\% < u_I(2,4) = 25\%$
[iteration of the procedure]

As a consequence, strategy 1 and, by symmetric reasoning, strategy 10, are respectively strictly dominated by strategies 2 and 9 and can be deleted from the strategy space. If the process is iterated, the set of strategies for Candidate I will be progressively restricted. A possible mistake at this point could be evaluating that $u_I(2,1) = 90\%$ and $u_I(3,1) = 85\%$, with the conclusion that it is not true in general that 3 dominates 2. However, Candidate II will never play strategy 1 by the iterative process of strategy deletion. For the same reason Candidate I will not play strategy 1. The strategy set to be considered to avoid possible mistakes is the one shown in Figure 2.

Figure 2

Strategies	2	3	4	5	6	7	8	9
CI	X	X						
CII								

Thus, by iteration:

$u_I(2,2) = 50\%; u_I(3,2) = 80\%$
$u_I(2,3) = 20\%; u_I(3,3) = 50\%$
$u_I(2,4) = 25\%; u_I(3,4) = 30\%$
$u_I(2,5) = 20\%; u_I(3,4) = 35\%$
[iteration of the procedure]

---

[7] This example follows Lecture #3 of Benajmin Polak's Open Yale's Courses – Game Theory Class. http://oyc.yale.edu/economics/econ-159/lecture-3. Note that the game is symmetric, so what applies to Candidate I applies also to Candidate II.

[8] At this stage this definition works well to explain the supply-side of the model. The next sections provide a more formal and accurate definition of single-peaked preferences.

Strategies 2 and 9 can now be deleted. The iteration of the process will lead to the following restricted strategy space (in Figure 3) where 5 and 6 are indifferent for both candidates. There is an equilibrium with one candidate playing strategy 5 and the other 6.

Figure 3

Strategies	5	6
CI	X	X
CII		

This may not be surprising given that politicians are office-seekers and target the policy preferred by the median voter. Another possible source of confusion is the convergence towards the median and the average. The fact that it is actually the median and not the average can be verified by changing the distributions of voters along the policy space. For example, consider the distribution of voters in Figure 4: clearly the policies at the center of the policy space are not the most preferred by the median voter. By repeating the same process, it will be found that the two candidates will locate themselves in position 3. Note also that the policy platform is the bliss/most preferred point of only 6% of the electorate. Nevertheless, it will be the CW.

Figure 4

Strategies	1 (20%)	2 (25%)	3 (6%)	4 (3%)	5 (6%)	6 (20%)	7 (5%)	8 (7%)	9 (7%)	10 (1%)
CI	X?									
CII										X?

The Demand-Side of the MVM

In section III it has been shown that two office-seeking candidates will converge towards the median policy. However, two important aspects have not been discussed: first, once it is known that candidates will converge towards the median policy, it is also worth knowing how that policy is determined. Second, in order to put the iterated deletion of strictly dominated strategies to work, it has been assumed that voters have single-peaked preferences and prefer candidates who offer policies that are closer to their bliss point. The next sections discuss more in depth both points, showing how a quite rich set of mathematical concepts can be put to work. I will start with the less complex setting in which policy preferences are single-peaked by assumption; then in section V, I relax this assumption of exogeneity of policy preferences and present a model where the interaction between economic and political decision making is explored, and where the shape of political preferences will depend on citizens' private maximization.

Voters with Well-Behaved and Exogenous Policy Preferences

When introducing single variable maximization, students learn the conditions under which a function $f(x, \boldsymbol{\theta})$ has an interior local maximum or minimum, with $\boldsymbol{\theta}$ being a vector of exogenous variables. The conditions are:

MathBox#2. First and second-order conditions
If $f'\left(\overset{*}{x}, \boldsymbol{\theta}\right) = 0$ (first-order condition) and if $f''\left(\overset{*}{x}, \boldsymbol{\theta}\right) < 0$ (second-order condition), then $x = \overset{*}{x}_{max}$, or if $f''\left(\overset{*}{x}\right) > 0$ then $x = \overset{*}{x}_{min}$

Assume now that policy preferences over G (consider it a level of public good to be provided by the government) of voter/citizen "i" are defined by the following utility function: $W_i(G; \boldsymbol{\theta})$, with $\boldsymbol{\theta}$ being the

vector of parameters $[k, \alpha_i]$. α_i represents citizen i's intensity of preferences for the public good G. k is a common positive constant. Equation (IV.1) represents the policy preferences.

$$W_i(G; k, \alpha_i) = k - (G - \alpha_i)^2 \tag{IV.1}$$

The quadratic specification is used to show that this is a concave function in G. Students are now required to find the most preferred level of $G = \overset{*}{G}_{imax}$. This means that they will have to calculate the first-order condition (IV.2):

$$W_i' = 0 \tag{IV.2}$$

(IV.2) implies that $-2\left(\overset{*}{G}_i - \alpha_i\right) = 0$. Solving this equation gives the result $\overset{*}{G}_i = \alpha_i$. In order to verify that a maximum has been found, the inspection of the second-order condition W_i'' is needed. Because $W_i'' = -2 < 0$, $\overset{*}{G}_i$ is a max. Suppose now that there are three citizens (i = 1,2,3) in society and that $\alpha_1 = 5$, $\alpha_2 = 20$, $\alpha_3 = 25$ (see Chart 1 below). It is assumed an utilitarian aggregate Social Welfare (SW) utility function, i.e., $SW = \sum_{i=1}^{N} u_i$. The social maximization problem will be: $\max_{G} SW$. This means that, by applying the first-order condition for an utilitarian social welfare maximizer $\left(\frac{\partial SW}{\partial G} = 0\right)$, equation (IV.3) will be obtained.

Chart 1
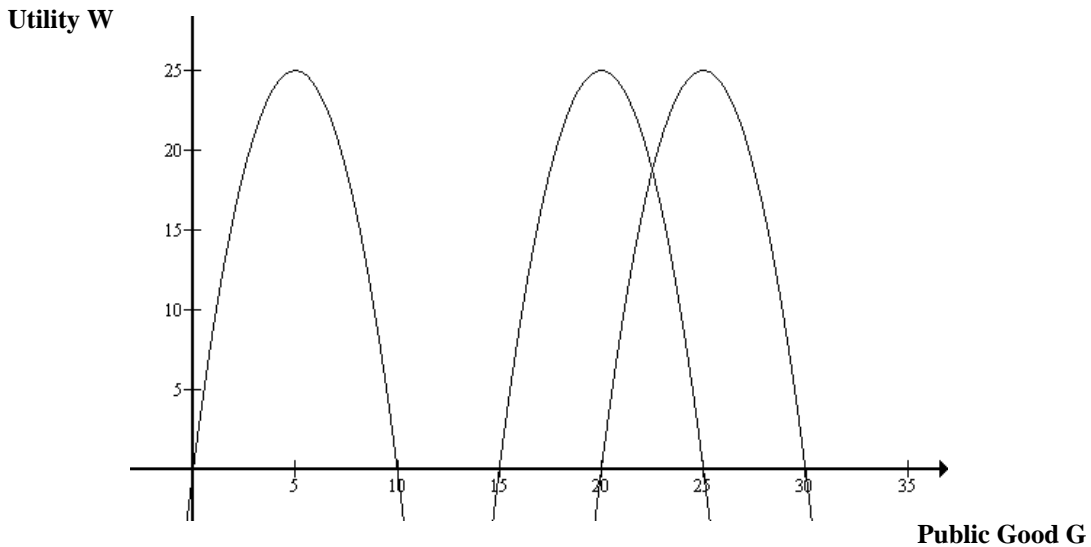
$$-2\left(\overset{*}{G}_W - 5\right) - 2\left(\overset{*}{G}_W - 20\right) - 2\left(\overset{*}{G}_W - 25\right) = 0 \tag{IV.3}$$

The solution to (IV.3) is $\overset{*}{G}_W$ equal to 16.6 units of public good G. However, if the collective decision making process followed a majoritarian rule through the mechanism of binary comparisons among the optimal levels of the public good, the CW policy, labeled $\overset{*}{G}_M$, will be equal to 20. As a result $\overset{*}{G}_M > \overset{*}{G}_W$, which means that the level of G provided under a majoritarian collective decision rule is greater than the one that maximizes our definition of social welfare. Students can also be required to verify that $G_M = 20$ is the actual CW, i.e., the policy that, by definition, is voted by the majority of the citizens when competing with any other option. Preferences among the three bliss points are illustrated in Figure 5 below:

Figure 5

α_1	5	20	25
α_2	20	25	5
α_3	25	20	5

When 5 challenges 20, α_1 will vote for 5 while α_2 and α_3 will vote for 20. Following the same voting scheme we have that 5 (voted by α_1) will lose when challenged by 20 (voted by α_2 and α_3); the vote between 25 and 20 will decide again for 20. 20 is thus the CW policy, the favorite policy of the median voter. It will also be a stable and unique political equilibrium.

The "Two Stage" Median Voter Model

An increasing part of the mathematical training in economics is based on game theory. In particular, I focus here on subgame-perfection and backward induction in perfect-information extensive-form games. Introducing foundational concepts of game theory in mathematical economics classes is extremely rewarding in terms of the applications that an instructor can use in class. *MathBoxes* 3 and 4 introduce the definitions of Perfect Information Extensive Form Games (PIEG) and Subgame Perfect Equilibrium (SPNE).

MathBox#3. Definition of PIEG (Definition 4.3.2 in Leyton-Brown & Shoham, 2008).
A Perfect Information Extensive-Form Game (PIEG) can be defined by a set of elements: $PIEG = \{N, A, H, Z, \varphi, \rho, \sigma, u\}$ where: N are the number of players; A is the set of actions for all players; H is the set of non terminal choice nodes in the game; Z is the set of terminal nodes in the game; $\varphi: H \rightarrow 2^A$ is an action function; $\rho: H \rightarrow N$ is the player function; $\sigma: HXA \rightarrow H \cup Z$ s.t. $\forall h_1, h_2 \in H \wedge a_1, a_2 \in A$ if $\sigma(h_1, a_1) = \sigma(h_2, a_2) \rightarrow (h_1 = h_2 \wedge a_1 = a_2)$; $u = (u_1, ..., u_N)$ with $u_i: Z \rightarrow R$ is the vector of utility functions of players.

In these games, the set of pure-strategy Nash-Equilibria does not select out those obtained under non-credible threats. For this reason the refinement of subgame perfection has been developed.

MathBox#4. Definition of Subgame Perfect Equilibrium (SPNE) (Definition 4.3.2 in Leyton-Brown & Shoham (2008)). "*The subgame perfect equilibria (SPE) of a game G are all strategy profiles "s" such that for any subgame G' of G, the restriction of "s" to G' is a Nash equilibrium of G'.*"

The example in this section is taken from Persson and Tabellini (2000).[9] A median voter model is developed in what can be considered a two-stage (the political and the economic) perfect-information extensive game. In this model, the labor taxation policy t is decided in the first stage and the private choice of labor supply l in the second. The exogeneity assumption used in section IV is relaxed and the properties of the model are investigated under this extension. Citizens solve a maximization problem with respect to the economic variables in the second stage, and, depending on the shape of policy preferences, the conditions for the existence and uniqueness of a median voter equilibrium are analyzed and discussed in the first stage. The model is solved using backward induction by solving first the second stage maximization problem.

---

[9] More precisely, the example is a simplified version of the Meltzer-Richard (1981) model of redistributive government. Since its publication, the model has undergone several critiques both from the theoretical and empirical perspectives. However, I think it is a useful model form a pedagogical point of view and a clear representation on how a median voter model works.

Second stage: the Choice of Labor Supply: Optimization and Comparative Statics

The model assumes quasi-linear preferences (equation V.1):

$$u_i = c_i + V(x_i) \qquad (V.1)$$

where c_i is consumption, and leisure x_i is expressed in terms of the fraction of time not dedicated to work. $V(x_i)$ is an increasing and concave function ($V_x > 0$; $V_{xx} < 0$). Disposable income $y_d = (1 - t) * l_i + f$ is spent for consumption c_i. $t \in (0,1)$ is the labor tax rate. $w = 1$ is the hourly wage, it is assumed exogenous and normalized to 1. When the budget is binding, the total amount of consumption for citizen i will be given by equation (V.2):

$$c_i = (1 - t) * l_i + f \qquad (V.2)$$

The second constraint (V.3) is the time-endowment constraint:

$$(1 - \alpha_i) = x_i + l_i \qquad (V.3)$$

The assumption about the distribution of the productivity parameter is the following (V.4):

$$\alpha_i \in [0,1], \, \alpha_i \sim (\alpha, \alpha_m, \sigma_\alpha^2) \qquad (V.4)$$

note that the *highest* productivity level is $\alpha = 0$, while $\alpha = 1$ is the value that corresponds to the *lowest* productivity value. So α measures the inverse of productivity. It is also assumed that a citizen with median productivity α_m is less productive than a citizen with average productivity α, thus $\alpha < \alpha_m$. This problem can be solved by building the Lagrangian function which will require multivariate optimization techniques.[10] However, an alternative strategy is substituting the two constraints into the objective function, expressing the utility of citizen/agent "i" as a function of labor supply. The problem is transformed in one where citizen "i" optimally chooses her labor supply. After substitution of the constraints (V.2) and (V.3) in the utility function (V.1), the following maximization problem is thus derived:

$$\max_{l_i} u_i(l_i; t, \alpha_i) = (1 - t) * l_i + f + V(1 - \alpha_i - l_i) \qquad (V.5)$$

following the standard maximization procedure illustrated in the previous section, the first and second-order conditions are derived. The first-order condition is in equation (V.6):

$$\frac{\partial u_i}{\partial l_i} = (1 - t) - V_x \left(1 - \alpha_i - \overset{*}{l_i}\right) = 0$$

$$V_x \left(1 - \alpha_i - \overset{*}{l_i}\right) = 1 - t \qquad (V.6)$$

the second-order condition (V.6 bis) is negative by the concavity assumption of the V function, in fact:

$$\frac{\partial}{\partial l_i}\left(\frac{\partial u_i}{\partial l_i}\right) = V_{xx} < 0 \qquad (V.6 \; bis)$$

the optimal labor supply $\overset{*}{l_i}$ is expressed by equation (V.7):

---

[10] In this case the problem will be set using the Lagrangian:

$\max_{c,x,l} c_i + V(x_i) + \lambda_1(f - c_i - (1 - t) * l_i) + \lambda_2((1 - \alpha_i) - x_i + l_i)$, and it will be solved using multivariate optimization techniques.

$$\overset{*}{l_i} = l(t, \alpha_i) = 1 - \alpha_i - V_x^{-1}(1-t) \qquad\qquad \text{(V.7)}$$

$\overset{*}{l_i}$ is the labor supply that maximizes the utility of a citizen with productivity α_i. V_x^{-1} is the inverse of the first derivative of $V(x_i)$. Once the optimal labor supply has been determined, the optimal demands for consumption and leisure (V.7 *bis* and *ter*) can be derived using the budget and time-endowment constraints.

$$\overset{*}{c_i} = c(t, \alpha_i, f) = (1-t) * (1 - \alpha_i - V_x^{-1}(1-t)) + f \qquad\qquad \text{(V.7 bis)}$$

$$\overset{*}{x_i}(t) = \overset{*}{x}(t) = 1 - \alpha_i - \overset{*}{l_i} = 1 - \alpha_i - 1 + \alpha_i + V_x^{-1}(1-t) = V_x^{-1}(1-t) \qquad \text{(V.7 ter)}$$

Note that in equilibrium, because of the assumptions on the functional forms used, not all the endogenous variables depend on the whole set of exogenous parameters. The optimal labor supply $\overset{*}{l}$ depends on the tax rate, but not on f, the lump sum redistribution. The reason is that, as it is well known in public economics, the lump sum transfer does not distort the relative price of labor with respect to leisure. Moreover, labor supply does not depend on disposable income. This is because by using a quasi-linear utility function, we assume that all the income effects are absorbed by consumption. Consumption depends on all the exogenous parameters of the model, while leisure x depends on the tax rate t but not on the productivity parameter α. This means that the optimal labor supply adjusts to productivity in order to keep leisure constant. All of them depend on the shape of the concave component of the utility function, V, which plays a crucial role in the analysis. In order to discuss the next steps of the model, *Mathbox#5* shows the proof of the inverse function theorem.

Mathbox#5. The inverse function theorem
An effective shortcut often used in economics is the inverse function theorem. The theorem states that "The inverse of the derivative is equal to the derivative of the inverse function." The proof is simple and follows:

$y = f(x) \Rightarrow x = f^{-1}(y) \Rightarrow dx = [f^{-1}(y)]'dy \Rightarrow \frac{dx}{dy} = [f^{-1}(y)]';$

But $\frac{dx}{dy} = \frac{1}{f'(x)} \Rightarrow \frac{1}{f'(x)} = [f^{-1}(y)]'$ *QED.*

For example, $f(x) = y = x^{\frac{1}{2}} \Rightarrow x = y^2 \Rightarrow dx = 2ydy \Rightarrow \frac{dx}{dy} = 2y \Rightarrow \frac{1}{\frac{1}{2}x^{-1/2}} = 2y.$

Substituting back the value of y we have in fact $\frac{1}{\frac{1}{2}x^{-1/2}} = 2x^{\frac{1}{2}}.$

Use of the Inverse Function Theorem for Comparative Statics Analysis

We know from the assumptions of the model that $V(x_i)$ is invertible because increasing and concave. By using the inverse function theorem it is possible to determine the signs of the first and second derivatives of the inverse function, namely V_x^{-1} and V_{xx}^{-1}. The signs of these derivatives allow finding the directions of the comparative statics effects of the model by differentiating the explicit form of the labor supply.[11] Moreover, the signs of these functions will also be needed in order to discuss the properties of the policy preferences in the next section. In order to find the signs of the first and second-derivative of the inverse function, the inverse function theorem needs to be applied twice.

(i) Given an arbitrary constant k, $V(1 - \alpha_i - l_i) = k$ implies that $1 - \alpha_i - l_i = V^{-1}(k)$. Now, differentiating both sides of the equation we have $d\left(1 - \alpha_i - \overset{*}{l_i}\right) = [V^{-1}(k)]'dk$; finally, dividing both sides by dk, we obtain $\frac{d(1 - \alpha_i - l_i)}{dk} = V_x^{-1}$, where $x_i = 1 - \alpha_i - l_i$ by the time endowment constraint of the model. Note, however, that by definition $\frac{d(x_i)}{dk} = \frac{1}{V_x} = V_x^{-1}$; because $V_x > 0$ by assumption, V_x^{-1} will thus be positive.

---

[11] Alternatively, if an explicit form of the labor supply cannot be found it is possible to apply the implicit function theorem. This will be done in the next sub-section to verify that both methods produce the same results.

(ii) The process used in (i) is repeated to find the sign of V_{xx}^{-1}: we know from the optimal labor-supply function that $V_x\left(1 - \alpha_i - \overset{*}{l}_i\right) = 1 - t$. This implies $1 - \alpha_i - \overset{*}{l}_i = V_x^{-1}(1 - t)$. Differentiating we obtain $d\left(1 - \alpha_i - \overset{*}{l}_i\right) = V_{xx}^{-1}\, d(1 - t)$. Finally, dividing both sides by $d(1 - t)$, we obtain $\dfrac{d\left(1 - \alpha_i - \overset{*}{l}_i\right)}{d(1-t)} = V_{xx}^{-1}$. Recall that $d(1 - t) = V_{xx}\, d\left(1 - \alpha_i - \overset{*}{l}_i\right)$, by consequence $\dfrac{d\left(1 - \alpha_i - \overset{*}{l}_i\right)}{d(1-t)} = \dfrac{1}{V_{xx}}$. It follows that $\dfrac{1}{V_{xx}} = V_{xx}^{-1} < 0$ because, by assumption, $V_{xx} < 0$.

Comparative statics of the model

It has been found that the optimal labor supply $\overset{*}{l}$ will depend on two parameters of the model (tax rate and productivity). We are interested now in knowing what will be the direction of the effects of their change on the optimal labor supply $\left(\dfrac{\partial \overset{*}{l}}{\partial \alpha}; \dfrac{\partial \overset{*}{l}}{\partial t}\right)$. Recall equation (V.7) in (V.7.1):

$$\overset{*}{l}_i = l_i(t, \alpha_i) = 1 - \alpha_i - V_x^{-1}(1 - t) \qquad \text{(V.7.1)}[12]$$

through straight differentiation we obtain:

$$\frac{\partial \overset{*}{l}}{\partial \alpha} = -1 < 0 \text{ and } \frac{\partial \overset{*}{l}}{\partial t} = V_{xx}^{-1} < 0 \qquad \text{(V.7.2/3)}$$

A decrease in productivity and an increase in taxation will both decrease the labor supply. These effects are derived through straightforward differentiation of the explicit expression of labor supply. This is possible because of the quasi-linear utility function used. However, there may be cases where more general assumptions about the shape of the utility function do not allow finding an explicit expression for $\overset{*}{l}_i$. In such cases, it is possible to use the implicit function theorem to derive the comparative statics effects by the sole use of the first-order condition. By consequence, this theorem is another important tool to be familiar with, because it allows further exploration of the results of the model when explicit solutions of the demand and supply functions cannot be found. *Mathbox#6* introduces the implicit function theorem; then I show how the theorem allows an alternative exploration of the comparative statics of the model.

> *Mathbox#6. The implicit function theorem*
> *Let $f(x, \theta) = k$, with k being a constant. This condition implicitly defines x as a function of the parameter θ. So we can rewrite $f(x(\theta), \theta) = k$. Differentiating with respect to θ we apply the chain rule and obtain $f_x \dfrac{dx}{d\theta} + f_\theta = 0$, and rearranging the terms: $\dfrac{dx}{d\theta} = -\dfrac{f_\theta}{f_x}$*

Instead of referring to equation (V.7), we consider the first order condition in (V.6) and use the results derived in (V.7.2/3) to apply the inverse function theorem and verify that this procedure produces the same results as the ones obtained through implicit differentiation. Equation (V.6) implicitly defines the optimal labor supply as a function of productivity and taxation. It is rewritten in the following form (V.6.2):

$$\frac{\partial u_i}{\partial l_i} = (1 - t) - V_x\left(1 - \alpha_i - \overset{*}{l}_i(\alpha_i, t)\right) = 0 \qquad \text{(V.6.2)}$$

Differentiating with respect to α_i, and rearranging the terms, equation (V.6.3) is obtained:

---

[12] Despite the redundancy of such an approach, I find that for pedagogical reasons, it is very effective to have students recall the previous results of the model.

$$V_{xx}\left(-1 - \frac{\partial \overset{*}{l}}{\partial \alpha}\right) = 0 \text{ or } \frac{\partial \overset{*}{l}}{\partial \alpha} = -1 < 0 \qquad \text{(V.6.3)}$$

which is consistent with equation (7.2). The same is done with respect to t; equation (V.6.4) shows the result.

$$-1 + V_{xx} * \frac{\partial \overset{*}{l}}{\partial t} = 0, \text{ or } \frac{\partial \overset{*}{l}}{\partial t} =$$
$$\frac{1}{V_{xx}} < 0 \qquad \text{(V.6.4)}$$

By the inverse function theorem, (V.6.4) and (V.7.3) are equivalent expressions.[13] Once the rationale behind the implicit function theorem has been grasped, the algebraic rearranging of the terms can be bypassed. In each case, in fact, the comparative statics effects are found dividing the cross-partial derivative of the utility function in (V.5) with respect to the labor supply and one of the parameters of interest by the negative value of the second-order condition in (V.6bis).

$$\frac{\partial \overset{*}{l}}{\partial \alpha} = \frac{u_{l\alpha}}{-u_{ll}} = \frac{V_{xx}}{-V_{xx}} = -1 < 0$$
$$\text{and} \qquad \text{(V.6.5/6)}$$
$$\frac{\partial \overset{*}{l}}{\partial t} = \frac{u_{lt}}{-u_{ll}} = \frac{-1}{-V_{xx}} = \frac{1}{V_{xx}} < 0$$

From (V.7) it is known that the expected labor supply will be $E\left(\overset{*}{l_i}\right) = 1 - \alpha - V_x^{-1}(1 - t)$. This term represents the labor supply of a citizen with average productivity, and, as will be clear in the next section, it is directly related to the expected government revenues from taxation. Note also that the expected labor supply is not dependent on the individual-specific productivity parameter, but only on the tax rate variable, t, whose size will be decided (endogenous) at the political stage, and on the expected productivity parameter α, which will remain endogenous by assumption throughout the model. In particular, $\frac{\partial E\left(\overset{*}{l_i}\right)}{\partial t} = V_{xx}^{-1} < 0$. It is also worth noting that, being the average labor supply $L(t) = E\left(\overset{*}{l_i}\right) = 1 - \alpha - V_x^{-1}(1 - t)$, the individual labor supply can also be defined in the following way:

$$\overset{*}{l_i}(\alpha_i; t, \alpha) = L(t, \alpha) - (\alpha_i - \alpha) \qquad \text{(V.8)}$$

the indirect utility function W is given in equation (V.8.1):

$$W_i(t, \alpha_i) = (1 - t)\, l(t, \alpha_i) + f + V(1 - \alpha_i - l(t, \alpha_i)) \qquad \text{(V.8.1)}$$

The political problem now is to determine what will be the optimal tax rate given the utility function in (V.8.1). Again, the first-order condition is applied and produces equation (V.8.2).

$$W_t = -l(t, \alpha_i) + (1 - t)l_t - V_x\big(1 - \alpha_i - l(t, \alpha_i)\big)l_t$$
$$= -l(t, \alpha_i) + l_t\big[(1 - t) - V_x\big(1 - \alpha_i - l(t, \alpha_i)\big)\big] \qquad \text{(V.8.2)}$$

The envelope theorem is then applied to simplify the expression. *Mathbox#7* explains how to derive the result of the envelope theorem:

---

[13] For a useful exercise, students may be invited to verify that the two procedures, when both are applicable, lead to the same results.

Mathbox#7. The envelope theorem

Consider the indirect objective function (or value function) F found once the optimal choice $\overset{*}{x}(\boldsymbol{\theta})$ is plugged into the original objective function:

$$F = f\left(\overset{*}{x}(\boldsymbol{\theta}), \boldsymbol{\theta}\right)$$

The envelope theorem states that the total derivative with respect to any of the components j of vector $\boldsymbol{\theta}$ is equal to the partial direct derivative of the value function with respect to that parameter, mathematically:

$$\frac{dF}{d\theta_i} = \frac{\partial f}{\partial x}\frac{\partial x}{\partial \theta_i} + \frac{\partial F}{\partial \theta_i} = \frac{\partial F}{\partial \theta_i}$$

The proof is straightforward. The first-order condition imposes in fact $\frac{\partial f}{\partial x} = 0$.

By the envelope theorem, the term multiplied by l_t, i.e., $\left[(1-t) - V_x\big(1-\alpha_i - l_i(t,\alpha_i)\big)\right] = \frac{\partial u}{\partial l} = 0$, is equal to zero by the first order condition in (V.6). Moreover, note that $W_t = -l_i(t,\alpha_i) < 0$. The optimal tax rate at the private stage is thus 0. However, this will *not* be the case when the public budget constraint is added, and f, the lump-sum transfer from government, will depend on t. An increase in taxation will in fact increase the amount of f through the public constraint, creating an incentive for taxation that is not present at the private stage. This property is explored in detail in the next subsection, where the interdependency with the public budget constraint is analyzed.

The "Public Choice" Stage of the Model

At this stage the interdependency with the budget constraint is considered. $E(f)$, the expected lump-sum transfer, is determined by the balanced budget constraint equation (V.9.1):

$$E(f) = t * E\left(\overset{*}{l_i}\right) = t * L(t) \tag{V.9.1}$$

The individual expected lump sum transfer will be equal to the tax rate times the expected individual labor supply. The indirect utility is expressed in equation (V.9.2):

$$W_i(t,\alpha_i) = (1-t)l_i(t,\alpha_i) + f + V(1-\alpha_i - l_i(t,\alpha_i)) \tag{V.9.2}$$

(V.9.2) represents policy preferences for t once the private choice problem has been solved. Now the optimal value of labor l_i and the expression for f from the public budget constraint in (V.9.1) are substituted into the utility function. Moreover, considering that $\overset{*}{l_i}(\alpha_i; t, \alpha) = L(t, \alpha) - (\alpha_i - \alpha)$, the policy-preference function is obtained:

$$W_i = (1-t)\big(L(t) - (\alpha_i - \alpha)\big) + t * L(t) + V(1-\alpha_i - L(t) + (\alpha_i - \alpha)) \tag{V.9.3} \text{ [14]}$$

after rearranging. (V.9.3) is expressed in (V.10):

$$W(t_i; \alpha_i, \alpha) = L(t_i, \alpha) + V(1 - L(t_i, \alpha) - \alpha) - (1-t_i)(\alpha_i - \alpha) \tag{V.10}$$

a median voter equilibrium will exist if preferences are single-peaked in *t*. A sufficient condition for preferences to be single-peaked is that W is concave in *t*. In order to verify this possibility the first and second-order conditions are explored. The first-order condition is:

$$W_t = L_t * (1 - V_x) + (\alpha_i - \alpha) = 0 \tag{V.11}$$

by the first-order condition in (V.6) we found that $t = 1 - V_x > 0$. So, substituting, we have:

---

[14] Note: $W_t = -\big(L(t) - (\alpha_i - \alpha)\big) + (1-t)L_t + L(t) + tL_t - V_x L_t = L_t(1 - t - V_x) - \big(L(t) - (\alpha_i - \alpha)\big) + L(t) + tL_t$, with $(1 - t - V_x) = 0$ by the first order condition in (6). It follows that $W_t = -\big(L(t) - (\alpha_i - \alpha)\big) + L(t) + tL_t = tL_t + (\alpha_i - \alpha). W_{tt} = L_t + t L_{tt}$. L_t is certainly negative, while the same cannot be stated for the term L_{tt}.

$$W_t = L_t\left(\overset{*}{t_i}, \alpha\right) * \overset{*}{t_i} + (\alpha_i - \alpha) = 0 \ ^{15} \tag{V.11.1}$$

or,

$$\overset{*}{t_i} = \frac{(\alpha - \alpha_i)}{L_t\left(\overset{*}{t_i}, \alpha\right)} \tag{V.11.2}$$

The optimal tax $\overset{*}{t_i}$ depends on the value of the right hand side of the equation, whose denominator L_t is negative. Let us *assume* first that the second-order condition holds. Policy preferences for t will be single-peaked and citizens with productivity below average will demand a strictly positive tax rate. The optimal tax rate for citizens with productivity above average will be 0. Assuming that the median value α_m is above the average value, the voter with median productivity will demand a strictly positive tax rate. Such rate will be higher the larger the distance between the median and average productivity levels.

As said, the conclusion above is based on the assumption that policy preferences are single-peaked. This condition can be verified if policy preferences are concave, i.e., if the second derivative of W with respect to t is negative. However, we *do not* know if $W_{tt} < 0$. Though the direct utility is "well behaved", the derived policy preferences may not be. Preferences for policy t may not be single-peaked. In fact, by observing (V.12), it is clear that W_{tt} cannot be signed.[16]

$$W_{tt} = L_{tt} + V_{xx} L_t^2 - V_x L_{tt} = L_{tt}(1 - V_x) + V_{xx} L_t^2 \tag{V.12}$$

This problem may be solved by choosing a specific function for V in order to obtain $W_{tt} < 0$.[17] However, this additional restriction is not necessary. Another property of the policy preferences for t allows us to state that, no matter how V is specified, a median voter exists and will be the voter with median productivity. In this section it is shown that a median voter equilibrium exists also if single-peakedness is not verified. The indirect utility function in (V.9.3) in fact satisfies the *single-crossing property*.[18] It is then proved that the definition of single-crossing property in *Mathbox#8* applies to the policy preferences represented in equation (V.10).

Mathbox#8. Single-crossing properties (SCP) definition
Consider any two-productivity parameters $\alpha_1 < \alpha_2$. This means that citizen α_1 is more productive than α_2. Consider then two tax rates $t_1 < t_2$. Consider now any two productivity parameter values $\alpha_2 < \alpha_3$. This means that citizen α_2 is more productive than α_3. Consider then two tax rates $t_2 < t_3$. If:

> *(i) $W(t_1; \alpha_2) \geq W(t_2; \alpha_2)$ implies that $W(t_1; \alpha_1) \geq W(t_2; \alpha_1)$,*
> *(ii) $W(t_3; \alpha_2) \geq W(t_2; \alpha_2)$ implies that $W(t_3; \alpha_3) \geq W(t_2; \alpha_3)$,*
> *(iii) this is true for $\forall \ t$ and α,*

then policy preferences are single-crossing.

This condition may seem complex, but simply implies a regularity in preferences according to which, if the voter with lower productivity α_2 prefers the smaller tax rate t_1, then, by the single-crossing property, the more productive voter α_1 will prefer it as well. On the other hand, if the voter with higher productivity α_2 prefers the higher tax rate t_3, a voter with smaller productivity α_3 will prefer the higher tax rate as well.

---

[15] Or, $\overset{*}{t} = \frac{\alpha - \alpha_i}{L_t} = (\alpha - \alpha_i) * V_{xx}\left(1 - \alpha_i - \overset{*}{l_i}\right)$

[16] Though $V_{xx} L_t^2 \leq 0$ and $(1 - V_x) \geq 0$ by the first-order condition, L_{tt} cannot be signed.

[17] Recall that the first-order condition imposes $1 - t - V_x = 0$ (i.e. $t = 1 - V_x$) and $L_t = \frac{1}{V_{xx}}$, the expression in (V.12) can be simplified to $L_{tt}t + L_t$. While L_t is negative, the sign of $L_{tt}t$ will depend on the sign of $L_{tt} = \frac{V_{xxx}}{(V_{xx})^2}$, so in order for $W_{tt} < 0$ we need to have $\frac{1}{V_{xx}} + t\frac{V_{xxx}}{(V_{xx})^2} < 0$ or $t\frac{V_{xxx}}{V_{xx}} > -1$, which can be true only for some functions chosen *ad-hoc* for V.

[18] An introduction to single-crossing properties can be found in Gaertner (2009); the original discussion is in Gans & Smart (1996).

Mathbox#8 defined single-crossing preferences. What is most important, however, is the implication of this property to determine the existence of a unique political equilibrium. The next two simple proofs by construction show that, if policy preferences are single-crossing, then a CW policy will exist, and will be the optimal policy chosen by a voter with median productivity α_m.

> *Proof #1 (by construction).* The proof follows a separation argument. Assume in fact that the optimal tax rate of the median productivity (α_m) citizen is t_m. Then, by definition, the median productivity citizen will prefer t_m to any $t_j > t_m$. Moreover, by the single-crossing property, the majority of citizens that are more or equally productive ($\alpha_i \leq \alpha_m$) will also prefer t_m to any $t_j > t_m$. The same reasoning will hold for $t_j < t_m$, considering the majority of citizens that are less or equally productive ($\alpha_i \geq \alpha_m$). Thus t_m is the CW policy.   *Q.E.D.*

Proof#1 has shown that if preferences are single crossing, then a CW does exists. It is slightly more complex to show that the policy preferences derived in this model possess the single-crossing property. The proof here exploits the continuity of the indirect utility function W. However it could be proved in more general conditions.

> *Proof #2 (by construction).* Suppose that $\alpha_1 < \alpha_2 < \alpha_3$. Consider first α_1 and α_2. For infinitesimal changes in the tax rate, if $W_t(\alpha_2) = L_t * (1 - V_x) + (\alpha_2 - \alpha) < 0$, then $W_t(\alpha_1) = L_t * (1 - V_x) + (\alpha_1 - \alpha) < 0$ as well, because $\alpha_1 < \alpha_2$. Moreover, by (V.11) it is known that $L_t * (1 - V_x) < 0$.   It follows that $W_t(\alpha_1) < W_t(\alpha_2) < 0$. Put differently, $W_t(\alpha_2) - W_t(\alpha_1) > 0$. A limiting condition reduces this property to $W_{t\alpha} > 0$. The same is done for α_2 and α_3. $W_t(\alpha_2) = L_t * (1 - V_x) + (\alpha_2 - \alpha) > 0$ implies $W_t(\alpha_3) = L_t * (1 - V_x) + (\alpha_3 - \alpha) > 0$. This means that $W_t(\alpha_3) > W_t(\alpha_2)$ *or* $W_t(\alpha_3) - W_t(\alpha_2) > 0$. It is easy to check that this reduces again to $W_{t\alpha} > 0$.   *Q.E.D.*

If W is both continuous and differentiable in t and α, the simple condition that the cross derivative is positive is sufficient to prove that the profile is single-crossing over the tax rates. In fact, in this particular case, we could also have verified that $W_{t\alpha_i} = 1 > 0 \; \forall i$. In other words, preferences can be defined as single-crossing by simple inspection of the cross-partial derivative when the indirect utility is continuous. This means that the marginal utility from policy t is higher for people with lower productivity (i.e., *higher* α_i). In the given scenario, these individuals gain more from redistribution and thus prefer higher government size over increased effort in labor.[19] The single-crossing property allows also a more intuitive definition of the median voter. In general, we are allowed to say that the median voter is the voter or set of voters whose most preferred policy is the CW. This requires to identify the CW policy and then understand for which voter/s such a policy is optimal. However, when voters can be ordered through a single parameter (in this case productivity), and provided that preferences are single crossing, the search for the median voter is simpler because the median voter will be identified by the median value of the α parameter. So the median voter is the voter with median productivity and its optimal policy is easily found.

Conclusion

In this paper I review the mathematical analysis of one of the most important models in public choice: the median voter model. The study of the simplified Meltzer-Richard version allows the discussion and the application of common concepts studied in mathematical economics. The mathematical concepts are applied to proceed through the analysis of the model, leading the student from the set of assumptions to the set of conclusions. Among those topics are Nash equilibrium, maximization procedures, the envelope and the implicit function theorems, and other concepts commonly studied in mathematical economics. I show how the use of the median voter efficiently addresses the double objective of allowing students to apply several tools in a single framework while at the same time introducing them to the practice of the "politics without romance."

---

[19] At this point the instructor could spend some time on the available empirical evidence supporting or contradicting such conclusion.

References

Arrow, Kenneth. 1951. *Social Choice and Individual Values*. New York: Wiley.

Becker, William. E. 1998. "Engaging Students in Quantitative Analysis with Short Case Examples from the Academic and Popular Press." *American Economic Review* 88: 480–86.

Becker, William E., and William H. Greene. 2005. "Using the Nobel Laureates in Economics to Teach Quantitative Methods." *Journal of Economic Education* 36: 261–77.

Black, Duncan. 1948. "On the Rationale of Group Decision-Making." *Journal of Political Economy* 56: 23–34.

Bowen, Howard R. 1943. "The Interpretation of Voting in the Allocation of Economic Resources." *Quarterly Journal of Economics* 58: 27–48.

Buchanan, James. M. 1984. "Politics Without Romance: A Sketch of Positive Public Choice Theory and its Normative Implications." In *The Theory of Public Choice II* (pp. 11-22). University of Michigan Press.

Congleton, Roger. D. 2003. "The Median Voter Model". In *The Encyclopedia of Public Choice* (pp. 707–712). Springer.

Coughlin, Peter. J. 1992. *Probabilistic Voting Theory*. Cambridge University Press.

Downs, Anthony. 1957. *An Economic Theory of Democracy*. New York: Harper and Row.

Enelow, James. M., and Melvin J. Hinich. 1984. *The Spatial Theory of Voting: An Introduction*. Cambridge: Cambridge University Press.

Gaertner, Wulf. 2009. *A Primer in Social Choice Theory: Revised Edition*. Oxford: Oxford University Press.

Gans, Joshua. S., and Michael Smart. 1996. "Majority Voting with Single-Crossing Preferences." *Journal of Public Economics* 59: 219–37.

Holcombe, Randall. G. 1989. "The Median Voter Model in Public Choice Theory." Public Choice 61: 115–25.

Hotelling, Harold. 1929. "Stability in Competition." *Economic Journal* 39: 41–57.

Kennedy, Peter E. 1998. "Using Monte Carlo Studies for Teaching Econometrics." In William Becker and Michael Watts *Teaching Economics to Undergraduates: Alternatives to Chalk and Talk*. Cheltenham: Edward Elgar.

Leyton-Brown, Kevin., and Yoav Shoham. 2008. "Essentials of Game Theory: A Concise Multidisciplinary Introduction." *Synthesis Lectures on Artificial Intelligence and Machine Learning* 2: 1–88.

Meltzer, Allan. H., and Scott F. Richard. 1981. "A Rational Theory of the Size of Government." *Journal of Political Economy* 89: 914–27.

Persson, Torsten, and Guido Tabellini. 2000. *Political Economics: Explaining Economic Policy*. Cambridge: MIT Press.

Polak, Benjamin. "Game Theory" (Yale University: Open Yale Courses), http://oyc.yale.edu/economics/econ-159/lecture-3 (Accessed January 2013). License: Creative Commons BY-NC-SA.

Appendix: List of the sources of the examples used throughout the text

The examples in this paper are offered for non-commercial/not for profit intent. They heavily borrow from the following sources:

Section III "The Supply Side: Office Seeking Candidates in Representative Democracy" offers an example drawn from lecture 3 in Polak (2013).

The game theoretical definitions in the various sections (Perfect Information Extensive Form Game, Subgame Perfect Equilibrium) of the paper are taken from the textbook: Leyton-Brown and Shoham (2008).

The two-stage median voter model follows Persson and Tabellini (2000). In particular, I follow the example on pages 24–25 of the book.

The final remark using the definition of public choice as "politics without romance" is from James Buchanan's (1984) article.

Teaching Students to "Do" Public Choice in an Undergraduate Public Sector Course

Joshua C. Hall and Kaitlyn R. Harger[1]

ABSTRACT

This paper discusses one approach to using writing assignments in an undergraduate public economics course to get students actively involved in doing public choice. Our goal is to provide an overview of the course and its writing assignments with an emphasis on how the scaffolding of assignments helps contribute to the development of interesting and publishable ideas in public choice. A course in public economics provides a good opportunity for an instructor to develop student interest in applied public choice.

Introduction

Despite numerous calls from economic educators to increase the use of active learning in the classroom in order to improve teaching effectiveness, the primary method of instruction within principles of economics courses remains lecture based (Becker and Watts 2001; Watts and Becker 2010).[2] Evidence from three national survey waves (1995, 2000, and 2005) shows that economics professors rely more heavily on traditional "chalk and talk" style instruction compared to professors in other disciplines (Watts and Becker 2010). When combined with the finding that students are unable to apply economic concepts taught in principles courses several years later (Allgood et al. 2004), this has led economic educators to explore different pedagogical approaches that emphasize active learning in the hope of stimulating deep learning. For example, one common approach has been to suggest ways to use popular culture such as music (Hall and Lawson 2008; Lawson et al. 2008), television (Hall 2005; Gillis and Hall 2010), and movies (Mateer and Stephenson 2011; Deyo and Podemska-Mikluch 2014) to get students to actively apply economics to the situations described or observed within the popular culture.

The benefits from active learning are well documented. The use of active learning in the economics classroom forces students to achieve a deeper level of understanding of economic concepts, requiring them to apply the economic way of thinking to real-world problems (Salemi 2002). Active learning also requires students to communicate their ideas and arguments with other students, facilitating feedback on both positive and negative aspects of arguments (Salemi 2002). This feedback allows for correction of misconceptions about the course concepts and in turn, continuance of understanding of the material (Salemi 2002). Feedback is also beneficial because it facilitates classroom interaction with other students, forcing them to realize the weaknesses in their arguments and challenge the weaknesses in others (Salemi 2002). Additionally, communication with other students during active learning exercises allows students to experience different problem solving approaches than their own (Salemi 2002; Chamlee-Wright and Hall 2014).

Another benefit from active learning is that it allows for a variety in teaching styles that are otherwise unexplored via the chalk and talk method of lecture. Alternating between lecture and active learning exercises allows professors to help more students than just lecturing (Salemi 2002). Active learning may also improve student attitudes towards learning and may create some accountability of students for understanding the knowledge presented in the classroom so that they can effectively communicate with classmates (Salemi 2002). Also, active learning allows students to discover the relevance of economics in relation to real-world issues for themselves, rather than simply though lectures by the professor (Gillis and Hall 2010).

---

[2] Two prominent examples of active learning given in the literature are classroom experiments and cooperative learning.

The purpose of this article is to again encourage a movement away from the chalk and talk standard and towards active learning within economics by describing how one might employ writing to engage students in an upper-level public sector economics course with a substantial public choice component. Active-learning based courses in the field of public choice hold special importance given that this field overlaps with the daily lives of all citizens since everyone who votes will be engaged in the economic analysis of politics at some point in their lives (Klein 2001). Instruction that moves towards students engaging in public choice research, rather than simply being taught the concepts, is important for furthering economic thinking, producing better students in all disciplines, and promoting deep learning of economic principles that can later be applied to real-world problems.

Internalizing the benefits of active learning is especially important for public economics courses given that the concepts relate to the daily lives of all citizens, especially those that continue onto careers in public policy, economics, the financial sector, etc. Over time, as more students realize the importance of public choice analysis, in the future more citizens will use these concepts to analyze issues that affect their everyday lives. It is important to create a cycle of consistent application of the economic way of thinking to all areas of life so that these concepts will not just be something taught in an undergraduate economics course but instead are used by students to better understand the world around them.

Another goal of improvement in teaching of public choice analysis is to encourage students to contribute to the public choice literature, especially if they are considering graduate school. Research suggests that involving undergraduate students in research helps the students understand how the econometric techniques taught in class apply to real-world analysis of issues (Ehrenberg 2005). Experience in empirical research during the undergraduate period promotes the use of the economic way of thinking and often introduces students to policy analysis of both economic and non-economic issues. Additionally, allowing students to try research, allows them to decide whether they are interested in graduate school (Ehrenberg 2005). This research also promotes a closer mentor relationship with undergraduate students, which often serves as the catalyst for interest in graduate school (Ehrenberg 2005). In fact, many Ph.D. economists decided to go to graduate school as a result of a suggestion by a mentor during their undergraduate career (Ehrenberg 2005). By allowing students to 'do' public choice, we can allow them to decide for themselves whether research is something they would like to pursue as a career through graduate school, a job at a think tank, or a public policy career.

The benefits from involving students in public choice analysis reach beyond those realized by the public choice field. Active learning, especially writing, is beneficial for all students regardless of what type of degree or career they pursue (McElroy 1997; Simpson and Caroll 1999; Green et al. 2013). Research on writing in economics shows that writing assignments help improve students' understanding of concepts due to the argumentative nature of writing (Greenlaw 2003). In order to complete a writing assignment in economics, students are required to test different arguments that have already been presented in the literature and form their own opinion using economic concepts. By practicing different types of argumentative styles, students also learn how to recognize weaknesses in other economic arguments, both within and outside the classroom (Cohen and Spencer 1993; McElroy 2007; Greenlaw 2003; Smith et al. 2005). Additionally, writing gives students a better understanding of how to make a well-constructed economic argument (Cohen and Spencer 1993; McElroy 1997; Smith et al. 2005). Analysis and evaluation of other arguments, allows students to form a deeper understanding of the economic concepts presented in those arguments.

The remainder of the paper proceeds as follows. Section 2 discusses the institutional setting and the syllabus of the public economics course described in the remainder of the paper. The third section discusses the approach to writing a term paper employed in the class and how the "scaffolding" of a writing assignment lets the professor provide students with individualized attention while simultaneously allowing students to slowly acquire the skills necessary to produce a good piece of scholarship. The fourth section concludes.

Institutional Setting and Syllabus

This paper is based on one of the author's experiences teaching five sections of public sector economics at Beloit College, a residential liberal arts college in Wisconsin. At Beloit, public sector economics is one of three senior-level electives and it is only offered in the spring semester. Public sector economics, like most courses at Beloit College, is a four credit-hour course, providing more time for in-depth coverage of material. While it is possible for a very advanced junior to enroll in the course, the structure of Beloit's economics major, combined with other elements of Beloit's curriculum, made it so that nearly every student enrolled in the course was a senior economics major. The primarily factor that restricted the course to advanced economics majors was the requirement that all students have a course in quantitative methods in order to enroll in the course. This quantitative methods course, in

addition to being known as one of the most difficult courses at Beloit College, was also a writing course where students had to write up "client reports" every week. Students who successfully passed quantitative methods therefore not only knew how to do basic regression analysis but how to describe and interpret their results. This background is important as the empirical writing assignment described in this paper requires a background in basic econometrics in order to be effectively employed during a one semester course.[3] The typical class size was between eight and twenty students.[4]

Public economics is a big and broad field and it can be difficult to conceptualize what should be covered in a fifteen-week undergraduate course. Clearly the course cannot cover all of the topics that fall under the heading of public economics. Thus it is necessary when designing the course to think about what the goals of the course are and to make those goals concrete in the syllabus. This has the benefit of setting clear expectations for students from day one (Chamlee-Wright and Hall 2014).

The syllabus should clearly identify the goal of the course to be active learning. The following is an example from the public sector economics course at Beloit.

> This course focuses on the way in which individual preferences are translated into public sector policies through the political process. I have a couple of objectives for this course. One goal is to provide you with an overview of the field of public sector economics through class lectures and the reading of seminal articles. This will provide you with a general framework for understanding non-market decision making, including the distinction between normative public sector economics and positive public sector economics.
>
> In addition to the reading and discussion of seminal ideas in public economics, you will be exposed to the ongoing conversation in the field of public economics through the reading of recent research building on these seminal articles. By seeing how current research builds off these core ideas, over the course of the semester you will become familiar with field that you can contribute to the conversation. You will work on effectively organizing and developing an original idea in public economics and presenting it in writing and in person.

Notice that this excerpt explains the two goals of the course. The first is to provide students with the skills to approach decision making through an economic lens. This goal emphasizes the importance of students using the concepts taught in class to evaluate problems faced outside of the course. The second goal is for students to contribute to the field of public economics. By requiring students to contribute to the field as part of the course, the instructor requires students to not only apply the economic framework of thinking to a current issue within the literature, but also to evaluate and dissect other arguments present within the literature using this economic approach. Both of these goals require the act of 'doing' economics, rather than just learning economics as presented through lectures.

In the public sector economics course at Beloit College rather than assigning a textbook such as Gruber (2009) or Holcombe (2005) to guide the course, readings were chosen to show how these ideas have developed over time and how individuals have taken seminal ideas in economics and added to the literature. An excerpt from Pigou (1920) is followed by Coase (1960). An excerpt from Mill (1848) on lighthouses is followed by Coase (1974). Through carefully selected readings students can see how public economics is a conversation that occurs through books and journal articles. Unlike a course focused solely on public finance, a course in public sector economics gives students the opportunity to see how normative public finance can engender positive political choice insights in addition to providing a standard by which to evaluate the real world.[5]

Structuring the reading list in this way also can show students how to develop ideas for research papers by showing to them how other paper ideas seem obvious *ex post*. While paper ideas can come from anywhere, in our

---

[3] In addition to quantitative methods, most students enrolled in the course were simultaneously taking Econometrics where they would learn more advanced econometric techniques such as time-series analysis.

[4] The approach described in this chapter should not be seen as appropriate only for individuals teaching at a selective liberal arts colleges with small classes and a curriculum that ensures some econometric background before taking the class. As one referee pointed out, this approach would work very well for students enrolled in a terminal masters program. In addition, the approach could be easily adapted for larger classes by limiting the amount of revision or utilizing peer grading on early drafts. Likewise, in situations where not all students had a quantitative background the course could focus instead on writing government-style reports from the Joint Economic Committee or Congressional Research Service, which typically eschew econometrics.

[5] Full syllabus not included due to space considerations but available from the authors upon request.

experience they are most likely to come from a couple of sources. One source of paper ideas is empirical puzzles or situations in the real world. Showing students puzzles and then how the resulting literature has tried to provide an answer can be helpful in getting students to develop interesting research ideas. For example, in public sector economics at Beloit College students were presented with data showing the growth of government as a percentage of GDP since the founding of the United States. This was followed by reading Chapter 1 of Higgs (1987) and then papers by Husted (1997), Lott and Kenny (1998), and Holcombe (1999). Another example of an empirical puzzle is Mikesell (1987) who tries to explain why so few members of Congress avail themselves of the franking privilege.[6] The world is filled with empirical puzzles that fall into the domain of public economics that are ripe for potential use by undergraduate students in a term paper.

Pairing important articles with secondary literature inspired by those articles is another way to inspire paper ideas, as well as to show students the importance of reading papers critically. A good example of a well published paper that was inspired by closely reading a classic paper is Wagner and Sobel (2004). In that paper, the authors empirically test a hypothesis raised by Tullock's (1971) classic paper on the charity of the uncharitable. Similarly, students can be introduced to a workhorse model such as the empirical congressional dominance model employed in papers like Garrett and Sobel (2003), Young et al. (2001), or Beaulier et al. (2011). By showing how the model can help explain the role that political factors might play in FEMA disaster payments, IRS audits, or military base closures, papers like these demonstrate to students how public sector economists might explain the allocation of resources through the political process and start them down the path towards applying the model to a topic they are interested in analyzing further.

By including papers from a variety of journals and at different levels of contribution, students can see how they might be able to contribute to the literature. Reading papers by Kenneth Arrow, James Buchanan, or Gordon Tullock that were published in the *Journal of Political Economy* or *Quarterly Journal of Economics* can be intimidating. If those papers, however, are followed up with a more modest paper, the juxtaposition can create a bridge for students. In practice, this often works best when including an example from the instructors own research where applicable. For example, Tullock's (1967) seminal work on rent-seeking has been followed by Sobel and Garrett's (2002) empirical attempt to measure rent-seeking in state capitols and then updated by Hall and Ross (2009). Other examples of this sort are available on the full reading list, which is available upon request.

Writing Assignments and Scaffolding

The use of writing assignments to enforce active learning is fundamental to the construction of an undergraduate public sector course. One approach to writing assignments within the course is through the use of scaffolding, which is a step-by step process that gives the student enough guidance until the process is clear, at which point the scaffolding can be removed. Previous economic education research on scaffolding finds that the use of scaffolding throughout courses in an undergraduate economics program gives students the tools of economic analysis necessary to empirically analyze research questions on their own (Green et al. 2013). Additionally, the skills developed throughout these writing assignments are helpful in all career trajectories, not just economics (McElroy 1997; Simpson and Caroll 1999, Green et al. 2013).

Table 1: Writing Assignments

Item	Words	Points
Book Review	800-1000	75
Book Review Revision	800-1000	25
"Quickfire Challenge"	100	10
Short Idea Paper	1500-2000	75
First Full Draft	4000-6000	75
Revised Final Paper	4000-6000	40

Table 1 lays out the assignments for one possible approach to scaffolding writing assignments throughout the semester.[7] The first assignment is a book review. Although most economics journals no longer publish book

---

[6] This paper inspired a student paper, which eventually became Hall et al. (2012).

[7] In a typical course, the writing assignments equaled 50 to 60 percent of the final grade, with the remainder of the class points coming from the midterm and final.

reviews, the process of reading and reviewing a book gives students an overview of a topic in public economics for which they might be interested. Reading a well-written book on a topic can be like doing a thorough review of the literature on a topic as well as providing possible inspiration for the final project. Assigned at the beginning of the term, they are also helpful in getting students to write early in the semester before they have learned much public economics. Here is an example of the assignment provided to the students:

> Both normative and positive public economics can be applied to just about every public policy issue. For an overview of how the material in this course can be used to better understand and critique the ongoing policy debate for a variety of public policy issues, read one of the following books and write a 1000 to 1200 word summary and critique. Your grade will be determined by the clarity of your thinking as well as the quality of your writing, including spelling, grammar, and style. It is your job to obtain your book by purchasing it or getting it through the school library.

1) John Murray, *Origins of American Health Insurance: A History of Industrial Sickness Funds*. New Haven: Yale University Press, 2007.
2) Joyce Yanyun Man and Yu-Hung Hon (editors), *China's Local Public Finance in Transition*. Cambridge: Lincoln Institute for Land Policy, 2010.
3) Daniel H. Cole and Elinor Ostrom (editors), *Property in Land and Other Resources*. Cambridge: Lincoln Institute for Land Policy, 2011.
4) D. Bruce Johnstone and Pamela N. Marcucci, *Financing Higher Education Worldwide: Who Pays? Who Should Pay?* Baltimore: Johns Hopkins University Press, 2010.
5) Pauline Lipman, *The New Political Economy of Urban Education: Neoliberalism, Race, and the Right to the City*. New York: Routledge, 2011.
6) Edward Lopez (editor), *The Pursuit of Justice: Law and Economics of Legal Institutions*. New York: Palgrave Macmillan, 2010.
7) Emily Chamlee-Wright and Virgil Henry Storr, *The Political Economy of Hurricane Katrina and Community Rebound*. Cheltenham: Edward Elgar, 2010.
8) Richard Wagner, *Fiscal Sociology and the Theory of Public Finance: An Exploratory Essay*. Cheltenham: Edward Elgar, 2007.
9) Paul Dragos Aligica and Peter J. Boettke, *Challenging Institutional Analysis and Development: The Bloomington School*. New York: Routledge, 2009.
10) William A. Fischel, *Making the Grade: The Economic Evolution of American School Districts*. Chicago: University of Chicago Press,

> First, choose a book that interests you and obtain it through the bookstore, Amazon.com, or the library. Please do so early because I will not accept late reviews because you "had trouble getting the book." Second, read some examples of academic book reviews of this type that I have provided on the course webpage to get a sense of what I'm looking for in the review. Feel free to ask me any questions you might have about the assignment, but basically I'm looking for a well-written summary and critique (you should have an opinion of the book, pro or con).

Note that the book review assignment begins by giving students a well-defined list of possible books to use. This is done for two reasons. First, it heads-off the inevitable conversations which will occur with students about what is and what is not public economics should students be allowed to choose any public economics book. Second, by changing the books every semester to more recently published books the chance of students finding reviews to copy from is minimized. Consideration was also given to providing a wide variety of possible topics to satisfy diverse student interests. (This has the added advantage of making grading easier since it is more interesting to read a bunch of different reviews of books students might be interested in than a dozen similar reviews of a book only a couple of students like.) It is not necessary for the faculty member to have read each of the books in question before assigning the review – in fact it can often help the grading to put yourself in the shoes of a reader who wants more information about the book in question.

After choosing a book, students read the book on their own, use the tools of economic analysis they already possess to identify the strengths and weaknesses of the arguments, and summarize their thoughts on the book in a

first draft. By providing students with a general framework to work within (book recommendations, instructions to critique and summarize, etc.), the assignment allows students to begin to read critically and form their own opinions about the quality of scholarly work. After receiving their first draft, comments are provided to the students on the form and substance of their reviews, and they are required to incorporate those comments in a revised draft, with the subsequent revision only graded with respect to how well it incorporates instructor feedback.[8] At the end of the revision process some of the reviews are quite good and several Beloit College students over the past several semesters have been able to publish their reviews in academic and policy journals.[9]

From the book review, students move onto the "Quickfire Challenge." Taken from the show "Top Chef," the idea is to come up with an interesting (or at least palatable) paper topic in a short time period. When students arrive in class on a day shortly after the book review assignment is finished, they are surprised with a presentation on public economics journals, EconLit, and data sources in public economics are provided. They are then given 24 hours to come up with a paper title, abstract, and three references. As help in developing a topic, they are given a couple of prompts. First, they are provided with a list of interesting data points or empirical puzzles. Here are but two examples that of the more than dozen that are typically provided. Given the harsh penalties for non-compliance with selective service requirements, why do several states have compliance rates well below 100%?[10] Why do some states allow medical marijuana and others do not?[11] The students who latch onto one of these ideas are then encouraged to research the topic through EconLit to find three relevant papers on the topic. The second prompt students are provided is to read issues of the journal *Public Choice* from the 1980s. The students are told that then editor Gordon Tullock had an eye for interesting papers, which is why the journal's ranking continually rose during his tenure. However, empirical articles from that period were limited due to data availability and/or computing power. Students are encouraged to see if others have improved upon those papers and, if not, how they might do so.

Starting with these two prompts, students are required to return to the instructor via email a paper title and 100 word abstract along with three references within 24 hours. This "quickfire challenge" forces students to quickly grab onto an idea and see if it is at all interesting and workable, rather than vaguely mulling around an idea in the back of their mind for most of the semester. Again, this is just the beginning of a multistep process that guides students through the process of developing a testable research idea in public economics. Evidence shows that the use of a multistep process of this type, which helps students move from well-defined tasks to the analysis of a complex real-world problem, is beneficial in teaching students to use the economic concepts taught in class as a method of thinking (Green et al. 2013).

Once students determine which topic they would like to research, they are required to submit a full paper towards the end of the semester. This paper is also broken down into steps, to ensure scaffolding takes place. The first step asks students to submit a title and an abstract. This requires students to concisely describe their proposed research in abstract format before embarking on the research fully. This initial abstract requirement forces the student to clearly define their research question before delving into research itself, which benefits the student by narrowly focusing the topic early on.

The second step in this process requires students to provide a proposed layout of their paper in fewer than five pages. This layout includes an introduction, a literature review, a description of the data, and summary statistics. Moving from the abstract to the layout shows the progression away from a well-defined task. Additionally, this progression into research allows students to "try ideas on" before spending a semester or longer working on bad ideas or research they are uninterested in. The introduction and literature review require students not only to motivate their research questions but also to confirm that their approaches are unique from previous research. By requiring motivation early on through the introduction, students are forced to explain why other scholars should care about their proposed research. If a student cannot motivate within their introduction why their research matters, then this forces them to reevaluate their research question and potentially search for a better topic. The literature review is equally important, as the process allows students to avoid duplicating research questions that have already been pursued. Once students determine that their research can be motivated and is unique, the next step, data description, requires them to check whether data are available to test their hypotheses. Again, this is another step within this

---

[8] Revision is an important part of the writing process as it forces students to respond to written criticism. In the absence of a required revision, very few students will reflect on comments on their writing provided by instructors.

[9] See, for example, Slusher (2012), Cohen and Hall (2012), VanMetre and Hall (2010), and Nattinger (2011). While not all reviews were of publishable quality, Beloit students generally read the entire book and did a good job of trying to summarize and critique the book for a lay reader.

[10] This prompt led to Hall and Hawkinson (forthcoming).

[11] This prompt led to Hall and Schiefelbein (2011), which then led to Malivert and Hall (2013).

multi-step process that requires students to ensure that their research is feasible, while still in early stages of the work. An additional advantage of this short paper is that it gives the instructor an additional opportunity to provide feedback to students to keep them on the right track.

Next, students are asked to complete a first full draft, filling in the remaining sections of the paper. After the first full draft has been submitted, the professor reviews all drafts and issues referee reports to all students. These reports give the students comments on where improvements should be made for the final draft. Then a final draft incorporating the comments is due at the end of the semester.[12] The paper assignment uses scaffolding and moves from well-defined tasks into open-ended tasks throughout the semester, allowing students to gradually learn how to apply economic concepts and improve writing.

Concluding Thoughts

Research in economic education emphasizes the importance of active learning yet chalk and talk style lectures remain the primary method of instruction for most principles of economics courses (Watts and Becker, 2010). This paper presents an active learning based approach to an undergraduate public sector economics course that emphasizes the use of scaffolding and writing to encourage students to 'do' economics. By employing several multistep assignments throughout the semester, the professor allows students to learn to conduct economic research by moving from initially well-defined narrow tasks, to open-ended writing for final drafts by the end of the semester.

Evidence from this analysis suggests that a course of this type encourages students to pursue economic or policy related careers post-graduation as well as assist them in graduate careers outside of economics or public policy. Students from this course have gone on to work for economic consulting firms doing cost-benefit analysis, state-based think tanks doing budgetary policy, doctoral study in health care policy, economics, and international relations, and law school.[13] This provides support for Ehrenberg's (2005) argument that getting students involved in research may increase the likelihood of entrance into an economics related field or graduate school. This may be because learning to do research while an undergraduate sparks an interest in continued research, either through graduate school or in future careers, that otherwise would not be present. Additionally, understanding how to pursue research questions and complete valuable, interesting research is of upmost importance for acceptance into graduate school or for obtaining economics-related employment after college.

Ultimately, however, the types of writing and the process of scaffolding should help students become better writers no matter what their ultimate career. Many careers beyond economics and academia require refined writing and research skills and this active learning and scaffolding approach ensures that all students in the classroom are benefitting from 'doing' research regardless of their career goals.

References

Allgood, Sam, William Bosshardt, Wilbert van der Klaauw, and Michael Watts. 2004. "What Students Remember and Say about College Economics Years Later." *American Economic Review* 94: 259-265.

Beaulier, Scott A., Joshua C. Hall., and Allen K. Lynch. 2011. "The Impact of Political Factors on Military Base Closures." *Journal of Economic Policy Reform* 14: 333-342.

Chamlee-Wright, Emily, and Joshua C. Hall. 2014. "Some Brief Syllabus Advice for the Young Economist." In *Beyond the Margin: New Developments in Economic Education*, edited by Franklin J. Mixon, Jr. and Richard J. Cebula. Northampton: Edward Elgar.

---

[12] Since their final draft is only responding to the referee report it is often a lot less work than the first full draft. That is why the final draft is worth less than the first full draft.

[13] These results were certainly the highlights of the course. Even students who earned non-A grades, however, learned some unique knowledge about a topic and writing skills that they could take pride in and take with them upon graduating. By focusing on issues at a city, state, or local level, they immediately became more knowledgeable about a topic than all but a handful of individuals in the world.

Coase, Ronald. 1960. "The Problem of Social Cost." *Journal of Law and Economics* 3: 1-44.

Coase, Ronald. 1974. "The Lighthouse in Economics." *Journal of Law and Economics* 17: 357-76.

Cohen, Avi J., and John Spencer. 1993. "Using Writing across the Curriculum in Economics: Is Taking the Plunge Worth It?" *Journal of Economic Education* 24: 219-30.

Cohen, Emillea, and Joshua C. Hall. 2012. "Review of *The Cultural and Political Economy of Recovery.*" *Journal of Social, Political, and Economic Studies* 37: 543-45.

Deyo, Darwyyn, and Marta Podemska-Mikluch. 2014. "It's Just Like Magic: The Economics of Harry Potter." *Journal of Economics and Finance Education* 13: 90-8.

Ehrenberg, Ronald G. 2005. "Involving Undergraduates in Research to Encourage Them to Undertake Ph.D. Study in Economics." A*merican Economic Review* 95: 184-88.

Garrett, Thomas A., and Russell S. Sobel. 2003. "The Political Economy of FEMA Disaster Payments." *Economic Inquiry* 41: 496-509.

Gillis, Mark T., and Joshua C. Hall. 2010. "Using *The Simpsons* to Improve Economic Instruction through Policy Analysis." *American Economist* 55: 84-92.

Green, Gareth P., John C. Bean and Dean J. Peterson. 2013. "Deep Learning in Intermediate Microeconomics: Using Scaffolding Assignments to Teach Theory and Promote Transfer." *Journal of Economic Education* 44: 142-157.

Greenlaw, Steven. 2003. "Using Writing to Enhance Student Learning in Undergraduate Economics." *International Review of Economics Education* 1: 61-70.

Gruber, Jonathan. (2009). *Public Finance and Public Policy*, 3rd edition. New York: Worth Publishers.

Hall, Joshua C., and Billy Hawkinson. Forthcoming. "Interstate Variation in Selective Service Compliance." *Romanian Business and Economic Review*.

Hall, Joshua C., and Jesse Schiefelbein. 2011. "The Political Economy of Medical Marijuana Laws" *Atlantic Economic Journal* 39: 197-8.

Hall, Joshua C., and Matthew Nattinger. 2012. "Determinants of Private School Attendance: Evidence from Wisconsin School Districts." *International Advances in Economic Research* 18: 245-6.

Hall, Joshua C., and Robert Lawson. 2008. "Using Music to Teach Microeconomics." *Perspectives in Economic Education Research* 4: 23-36.

Hall, Joshua C. and Justin Ross. 2009. "New Empirical Estimates of Rent-Seeking: An Update of Sobel and Garrett [2002]." *Journal of Public Finance and Public Choice* 27: 125-36.

Hall, Joshua C., Todd Nesbit, and Ricky Thorson. 2012. "The Determinants of Congressional Franking: Evidence from the 110th Congress." *Journal of Applied Economics and Policy* 31: 25-34.

Hall, Joshua C. 2005. "Homer Economicus: Using *The Simpsons* to Teach Economics." *Journal of Private Enterprise* 20: 165-176.

Higgs, Robert. 1987. *Crisis and Leviathan: Critical Episodes in the Growth of American Government*. New York: Oxford University Press.

Holcombe, Randall. 1999. "Veterans Interests and the Transition to Government Growth: 1870-1915" *Public Choice*

99: 311-26.

Holcombe, Randall. 2005. *Public Sector Economics: The Role of Government in the American Economy*. Upper Saddle River: Prentice Hall.

Husted, Thomas A., and Lawrence W. Kenny. 1997. "The Effect of the Expansion of the Voting Franchise on the Size of Government." *Journal of Political Economy* 105: 54-82.

Klein, Daniel B. 2001. "A Plea to Economists Who Favor Liberty: Assist the Everyman." *Eastern Economic Journal* 27: 185-202.

Lawson, Robert A., Joshua Hall, and G. Dirk Mateer. 2008. "From ABBA to Zeppelin, Led: Using Music to Teach Economics." *Journal of Economic Education* 39: 107.

Lott, John R., and Lawrence W. Kenny. 1998. "How Dramatically Did Women's Suffrage Change the Size and Scope of Government?" *Journal of Political Economy* 107: 1163-98.

Malivert, Roland, and Joshua C. Hall. 2013. "The Effect of Medical Marijuana Laws on Extralegal Marijuana Prices." *Atlantic Economic Journal* 41: 455-6.

Mateer, G. Dirk, and E. Frank Stephenson. 2011. "Using Film Clips to Teach Public Choice Economics." *Journal of Economics and Finance Education* 10: 28-36.

McElroy, Jerome L. 1997. "The Mentor Demonstration Model: Writing with Students in the Senior Economics Seminar." *Journal of Economic Education* 28: 31-5.

Mikesell, John. L. 1987. A Note on Senatorial Mass Mailing Expenditure and the Quest for Reelection. *Public Choice* 53: 257265.

Mill, John S. 1848. *Principles of Political Economy with some of their Applications to Social Philosophy*, 7th edition. London: Longmans, Green and Co.

Nattinger, Matthew. 2011. "Book Review of *The Price We Pay: Economic and Social Consequences of Inadequate Education.*" *Education and Urban Society* 43: 642-45.

Pigou, Arthur C. 1920. *The Economics of Welfare*. London: Macmillan and Co.

Salemi, Michael K. 2002. "An Illustrated Case of Active Learning." *Southern Economic Journal* 68: 721-31.

Simpson, Murray S., and Shireen E. Carroll. 1999. "Assignments for a Writing-Intensive Economics Course." *Journal of Economic Education* 30: 402-10.

Slusher, Thomas. 2012. "Book Review of *Fiscal Sociology and the Theory of Public Finance*: *An Exploratory Essay.*" *Public Finance and Management* 12: 175-7.

Smith II, Harlan M., Amy Broughton, and Jaime Copley. 2005. "Evaluating the Written Work of Others: One Way Economics Students Can Learn to Write." *Journal of Economic Education* 36: 43-58.

Sobel, Russell, and Thomas Garrett. 2002. "On the Measurement of Rent Seeking and its Social Opportunity Cost." *Public Choice* 112: 115-36.

Tullock, Gordon. 1967. "The Welfare Costs of Tariffs, Monopolies, and Theft." *Western Economic Journal* 5: 224-32.

Tullock, Gordon. 1971. "The Charity of the Uncharitable." *Economic Inquiry* 9: 379-92.

VanMetre, Benjamin, and Joshua C. Hall. 2010. "Review of *The Origins of American Health Insurance*." *Journal of the James Madison Institute* 45: 53-6.

Wagner, Gary A., and Russell Sobel. 2004. "Expressive Voting and Government Redistribution: Testing Tullock's 'Charity of the Uncharitable'." *Public Choice* 119: 143-59.

Watts, Michael, and William E. Becker. (2010). "A Little More than Chalk & Talk: Results from a Third national Survey of Teaching Methods in Undergraduate Economics Courses." *Journal of Economic Education* 39: 273-86.

Young, Marilyn, Michael Reksulak, and William F. Shughart II. 2001. "The Political Economy of the IRS." *Economics & Politics* 13: 201-20.

Using Film Clips to Teach Public Choice Economics: Take Two

G. Dirk Mateer and E. Frank Stephenson[1]

Abstract

Recent years have seen a trend away from "chalk and talk" toward alternative pedagogical approaches to teaching economics. Media clips, in particular, have been touted as a way to provide students with memorable and exciting exposure to economic concepts. Media clips are especially well-suited for teaching public choice economics because of the plethora of films and television shows depicting government activity. This paper documents how clips from popular movies and series such as "Cloudy with a Chance of Meatballs" and "House of Cards" can be used to teach public choice economics.

Introduction

In motivating our recent paper on using film clips to teach public choice economics (Mateer and Stephenson 2011), we noted that the last decade has seen a burgeoning literature on ways to teach economics other than traditional "chalk and talk" lectures. Those alternative approaches include using literature (Watts 2003), music (Mateer and Rice 2007; Hall and Lawson 2008; Hall et al. 2008), popular television shows such as "Seinfeld" (Ghent et al. 2010), and film (Formaini (2001), Leet and Houser (2003), Becker (2004), Dixit (2005), Mateer (2005), Sexton (2006), and Mateer and Li (2008)). The literature on alternative approaches for teaching economics has continued to expand since our recent paper; Hall (2012) discusses the use of Econtalk podcasts, Kuester et al. (2014) analyze the economics of "The Office," Engel et al. (2014) showcase economics-themed memes, Deyo and Podemska-Mikluch (2014) analyze the economics of Harry Potter, and Hall and Podemska-Mikluch (2013) explain the use of short "op-ed" writing assignments. Likewise, the number of films with public choice themes has continued to expand. So this paper updates our previous paper to include clips from recent movies illustrating public choice concepts as well as a few older movies we've learned about since our first paper was published. We also include a brief foray into television shows with public choice themes.

The clips we discuss are suitable both for introductory courses containing public choice content and for upper level courses devoted entirely to public choice or public economics. We refer readers back to our previous paper for a discussion of some advantages of using film clips and some advice to help instructors effectively integrate film clips into their courses.

Since the remainder of the paper assumes readers have at least a basic familiarity with public choice, it is worth a brief interlude before the main attraction to provide some background on public choice economics. Our intent is not to provide a traditional literature review but rather to point readers who have less than a rudimentary knowledge of public choice to some useful resources. Our paper is organized into five sections on fundamental elements of public choice economics: foundational assumptions, bureaucracy, voting, logrolling, and rent seeking. The first five chapters of Tullock et al. (2002) provide basic introductions to the public choice concepts covered in our five sections.

There are also excellent resources available for readers who already have a rudimentary knowledge of public choice and who are looking for more depth. The other papers in this issue of the *Journal of Economics and Finance Education* are an excellent starting point. Nobel laureate James Buchanan (1979/1999) explains that public choice is the application of economic analysis to government activity (and to non-market decision-making more generally). Shughart et al. (2013) is a compendium of leading public choice scholars providing detailed coverage of public

---

[1] Mateer: Senior Lecturer and Gerald Swanson Chair in Economics Education, University of Arizona, McClelland Hall 401J, Tucson, AZ 85721, dirkmateer@email.arizona.edu. Stephenson: Professor of Economics, Berry College, Box 5024, Mount Berry, GA 30149, efstephenson@berry.edu.

choice topics. Recent, and very readable, applications of public choice include Leighton and López (2012) and Smith and Yandle (2014).

Now on with the show. In the following sections of the paper we outline some film clips and a few television episodes that can be used to teach major concepts from public choice economics. For some concepts, we present several films with relevant clips; in these cases instructors might want to focus on the one or two films that best match their presentation of the material at hand. In some cases, the relevant public choice topic develops over several scenes of a film so the film will have multiple times listed. Instructors who don't want to skip from one scene to another may, of course, run longer film segments rather than skipping action unrelated to the public choice concept. See Appendix Table 1 for movie clip times; episode numbers for television shows are listed in the text.

Foundations of Public Choice Economics

The hallmark of public choice economics is the assumption that people act purposefully in pursuit of their desired, often self-enriching, ends in the political arena just as they do in other aspects of their lives. The public choice approach stands in contrast to a bifurcated view of human behavior in which people make "economic" decisions such as consumption and labor supply based on self-interest while making "political" decisions with an eye toward "the public interest." Tullock et al. (2002, p. 5) explain:

> [I]ndividuals who enter a supermarket and purchase items of their choice are assumed, when they enter the voting booth, to vote not for the politicians and laws that will benefit themselves, but for politicians and laws that will benefit the nation as a whole. People in the supermarket mainly buy [the goods] that benefit themselves and their families. However, when individuals become politicians, a transformation is assumed to occur so that a broader perspective guides them to make morally correct decisions rather than follow the course of behavior that pleases the interest groups that supported them or the policies that may lead to reelection.

In treating the person who enters the voting booth or holds elective office as the same person who enters the supermarket public choice assumes, in the words of McChesney and Shughart (quoted in Tullock et al. 2002, p. 3), that "homo politicus and homo economicus are the same."

James Buchanan, who won a Nobel Prize for his pioneering work in public choice, referred to public choice economics as "politics without romance." The first seasons of two popular television shows provide a clear contrast between the "romantic" and public choice approaches to government. In "The West Wing," which chronicles the administration of fictional president Jed Bartlet, we see an administration guided by lofty ideals and disdainful of grubby politics. For example, episode 8 ("Enemies") epicts the Bartlet administration overcoming a congressional logrolling scheme in which a banking regulation bill favored by the president would be attached to a provision allowing strip mining in Montana that is opposed by the president. By contrast, the first season of the Netflix series "House of Cards" documents the ruthless ambition of Representative Frank Underwood (Kevin Spacey). Rep. Underwood is currently the majority whip but has his sights set on higher office and will engage in seemingly any behavior, including murder, to achieve his goal. Episode after episode features transactional politics in pursuit of Underwood's relentless drive to obtain more power.

The fundamental self-interestedness premise of public choice is evident in 1992's "The Distinguished Gentleman." Eddie Murphy plays a small time con man who, after overhearing his congressman (played by James Garner) and a key supporter talking about the perks that the congressman receives from being in office, remarks "I am definitely in the wrong business." The congressman dies soon thereafter and we observe Eddie Murphy's character telling his con job partners that he's going to run for Congress because "Washington, D.C., that's where the money is."

We also see the same principle illustrated in "Cloudy with a Chance of Meatballs," an animated film from 2009. The mayor of a remote island with a declining sardine fishing industry creates a theme park called Sardine Land ostensibly to attract tourists. His real motive, as he tells us in the clip, is bolstering his public image because he aspires to be "one big mayor." The mayor's desire for self-aggrandizement can foster a discussion of non-remunerative gains such as power or prestige that self-interested politicians might seek. Politicians' career ambitions can also be discussed using episode 13 of the fourth season ("Final Grades") of the television series "The Wire." In this episode, fictional Baltimore Mayor Tommy Carcetti declines state money to help his city's budget woes because having to publicly ask the state's governor for financial assistance would hurt Carcetti's gubernatorial ambitions (he expects to run against the sitting governor).

The classic 1939 film "Mr. Smith Goes to Washington" has a snip that allows a deeper discussion about the public choice perspective of politicians. In the scene, Sen. Jefferson Smith (portrayed by Jimmy Stewart) confronts the long serving and ethically compromised Sen. Paine (played by Claude Rains). Paine responds to Smith's moral indignation (Smith has just learned that Paine is part of a corrupt dam deal) by saying that he came to Washington with Smith's idealism but learned to cut deals on behalf of his constituents. The suggestion is that politicians respond to their institutional environment rather than being morally flawed (or flawless) characters.

One incentive that politicians seeking re-election might have is the use public funds to curry favor with voters. "All the King's Men," winner of the 1950 Oscar for Best Picture, depicts Gov. Willie Stark (a thinly disguised version of Louisiana Gov. Huey Long in an Academy Award winning performance by Broderick Crawford) building bridges, schools, and other public works and having them named for him. Similar behavior is implied in a brief clip from 1998's "Pentagon Wars." Gen. Partridge (played by Kelsey Grammer) is on the phone explaining how military procurement has been used to influence the voters of states represented by Congressmen and Senators who support military spending. We hear Gen. Partridge saying of one member of Congress that the Pentagon has "papered his state with contracts." Relatedly, the use of government spending as a way of rewarding party loyalists or providing an opportunity for graft by political supporters is implied by a scene from 1940's "The Great McGinty" in which a party boss informs the newly-elected Governor McGinty of the political usefulness of roads, dams and a new state capitol.

Of course, politicians also make rhetorical appeals to voters. A humorous illustration of a politician pandering for votes appears in "The Campaign" from 2012. In the scene, North Carolina Senate candidate Cam Brady (Will Farrell) tells a series of constituents including farmers and "Filipino tilt-a-whirl operators" that they are "our nation's backbone." More sinister is the possibility that politicians will deliberately mislead the public in order to enhance their electoral fortunes. This possibility is illustrated by 2003's "The Pentagon Papers" in which intelligence analyst Daniel Ellsberg (James Spader) finds that secret Department of Defense documents indicate that several presidents misled the American public about the U.S. role in Vietnam.

Recognizing that politicians often act out of self-interested motives, the sub-field of public choice known as constitutional political economy considers issues such as the design of constitutions in order to restrain politicians' behavior (Brennan and Buchanan, 1985). A good introduction to this topic is a clip from the 2012 film "Lincoln" in which President Lincoln (Daniel Day-Lewis) talks about claiming executive powers during wartime, confesses to ignoring the authority of courts, and admits the questionable legality of the Emancipation Proclamation.

Bureaucracy

Rather than viewing bureaucrats as selfless public servants, Niskanen (1971) presents a model of a budget-maximizing bureau. Clips from several films are useful for discussing Niskanen's work and other aspects of bureaucratic behavior.

In 2009's "Public Enemies," we see J. Edgar Hoover (portrayed by Billy Crudup) testifying before a Congressional committee in an attempt to obtain additional funds for the FBI. Senator McKellar (played by Ed Bruce) says Hoover wants more money for the bureau than crooks have stolen and denies Hoover's request. Hoover then instructs his press aide to leak criticism of Sen. McKellar to newsman Walter Winchell and says of McKellar "we will not contest him in this committee room but we will fight him on the front page." Hoover also instructs his agents to go after the high profile bank robber John Dillinger in order generate favorable publicity for the bureau and holds a press conference to declare that the pursuit of Dillinger will be the country's "first war on crime."

Budget-maximizing bureaucratic behavior is also implied by a clip from 1998's "Pentagon Wars." Air Force Col. Burton (portrayed by Cary Elwes) is appointed by Congress to oversee development of the Army's Bradley Fighting Vehicle. Although Col. Burton tries diligently to do his job, he encounters a Pentagon bureaucracy that is more interested in pushing the Bradley into development than in building a weapons system that is effective and protects the soldiers who will use it. (A longer clip, illustrating the rapidly escalating development costs of the Bradley Fighting Vehicle as it goes from being a light scout vehicle to an armored personnel carrier could also be used to discuss budget-maximizing bureaucrats.)

In addition to maximizing their budgets, the public choice suggests that bureaucrats may act in ways that make accountability for their performance difficult. To illustrate this point, one might show a clip from "The Wire" ("Time After Time," season three, episode one) in which high ranking police officials discuss manipulating crime statistics to play down Baltimore's crime problem.

"Canadian Bacon," a 1995 film by Michael Moore, illustrates another implication of public choice theory of bureaucracy. With the Cold War over, the U.S. military establishment and defense contractors have lost their *raison*

d'être. In a series of clips we see a presidential aide, a general, and a defense contractor maneuver the U.S. into a military confrontation with Canada thereby demonstrating bureaucracies' adapting to justify their continued existence.

Other aspects of bureaucratic behavior can be explored using film clips. One is the fundamental public choice assumption of self-interested actors. Although public choice does not assume that bureaucrats are inherently corrupt, self-interest may sometimes lead bureaucrats to seek inappropriate financial gain. In 2007's "The Simpsons Movie" Russ Cargill, the head of the Environmental Protection Agency, orders a glass dome placed over Springfield to contain an environmental disaster caused by the bumbling Homer Simpson. He then happily notes that he owns the firm that produced the dome.

The 2004 Academy Award winner for Best Foreign Language Film, "The Barbarian Invasions," also offers a useful scene for discussing self-interested behavior of bureaucrats. A man is dying of cancer and is receiving treatment in a crowded hospital (we see patients on beds in the hallway). Yet the hospital has an unoccupied floor. The man's son approaches the hospital's administrator and union leader about arranging for the dying father to be moved to a room on the unoccupied floor. They refuse until offered side payments by the dying man's son. Their behavior is clearly motivated by self-interest rather than an idealistic devotion to serving the hospital's patients.

Such self-interested bureaucratic behavior is also evident in 2008's "Lower Learning" when elementary school principal Harper Billings (played by Rob Corddry) solicits a $15,000 bribe from a father in exchange for guaranteeing his daughter all A grades.

Another aspect of bureaucracy that can be illustrated using film clips is deadweight loss. 1998's "Pentagon Wars" also contains a scene that humorously demonstrates this concept. Col. Burton wants to obtain some sheep to place inside a Bradley Fighting Vehicle during a test firing to assess the vehicle's worthiness for carrying soldiers. After encountering the Pentagon's Office of Ruminant Procurement which wants to take over one year to determine specifications for sheep that will be used in such tests, Col. Burton simply buys some from a farmer.

Voting

In a famous scene from 1975's "Monty Python and the Holy Grail," King Arthur encounters two peasants who question how he became king and why he is entitled to be their ruler. After hearing the Arthurian legend, one peasant remarks, "Strange women lying in ponds distributing swords is no basis for a system of government." The seeming absurdity of such a method of government provides an excellent jumping off point for introducing voting paradoxes, the possible randomness arising from using voting for collective decision making, or agenda setting (Tullock 2002). Instructors might then choose to discuss Arrow's (1951) well-known result that no voting system can simultaneously fulfill five seemingly reasonable and basic conditions (Rosen 2005, pp. 120-122).

Another aspect of voting of interest to public choice scholars is how people's behavior is affected by the costs and benefits of voting. A clip from 1940's "The Great McGinty" would facilitate a discussion of this topic. In the scene, a big city political machine is paying voters $2 plus free soup to vote for mayor, and we also see some voters deciding not to vote because of inclement weather. Hence, the clip clearly illustrates voters responding to both the costs and benefits of voting.

The median voter model, which posits that the person whose preferences fall in the middle of a policy continuum will be the decisive voter, is a mainstay of public choice research (Downs 1957). An important implication of the median voter model is that candidates will move to the middle of the policy space to try to win elections. A fabulous film for introducing the median voter model is 2008's "Swing Vote." Kevin Costner plays a good ole boy, Bud, who is accidentally thrust into the role of being the median voter in a U.S. presidential election. (When Bud plays pool instead of meeting his daughter as promised at the voting precinct, his goody-goody daughter sneaks into the polling place to cast his vote but miscasts it when she fears being caught by the precinct workers.) After election night neither candidate has a majority of the Electoral College votes, and the remaining state, New Mexico, is tied pending Bud's recasting his miscast vote. Over the next few days, as Bud is trying to decide which candidate to support, he seems to reveal preferences on policy issues such as abortion and gay marriage. We then see candidates adapting their positions to his utterances: e.g., the Democratic candidate (played by Dennis Hopper) comes out against abortion rights and the Republican candidate (played by Kelsey Grammer) endorses gay marriage. (The film also shows the Republican candidate endorsing environmental stewardship and the Democratic candidate endorsing gun ownership rights, though we do not include those in the clip time listed above.) Hence, the clip shows candidates moving toward the center as the median voter model predicts.

Instructors could also use the 2011 film "The Ides of March" to extend their presentation of the median voter model to incorporate strategic voting, the possibility that a voter in a multi-candidate or multi-stage electoral process

may vote for a less favored candidate in order to make an eventual winner of his/her most preferred candidate. The film contains a scene in which Paul Giamatti, who plays the advisor to a very liberal Democratic candidate for president, tells Ryan Gosling, who plays the advisor to a more centrist Democratic candidate, that conservatives will vote for the liberal candidate in Ohio's open presidential primary in order to have a Democratic nominee who would be easier to beat in the general election. (This portion of the film's plot may have been motivated by Rush Limbaugh's encouraging conservatives to vote for Hillary Clinton in Indiana's open primary in 2008, a topic analyzed by Stephenson (2011)).

Public choice scholars also examine the rationality of voting (Downs 1957). Since any single voter has an extremely low probability of being decisive, the act of voting appears irrational because the costs of voting outweigh the expected benefits. Short clips in two films address this issue. In "Wag the Dog", one character tells another not to vote because "it's futile." And in "Election," a candidate for student body president expresses skepticism that elections matter and whether people should vote by telling other students in her campaign speech "don't vote for me; don't vote at all."

A related concept is rational voter ignorance, the notion that because voters bear the full costs of becoming informed voters but share the benefits with the entire polity that it is rational not to become well-informed about candidates and their stances on important issues. "The Distinguished Gentleman" contains two clips that illustrate rational voter ignorance. A con man named Thomas Jefferson Johnson (played by Eddie Murphy) runs for Congress as "Jeff Johnson" following the death of the sitting Congressman (played by James Garner) who had the same name. In the clip, we see Murphy's character urging voters to vote for "Jeff Johnson, the name you know" while avoiding being seen (thereby giving away that he couldn't possibly be the Jeff Johnson who had represented the area because one is black and the other is white). We also see a couple entering their polling place and one remarking to the other "we always vote for Johnson."

Logrolling

In the public choice literature, the practice of vote trading or exchanging political favors is known as logrolling (see, for example, Tullock 1970). Several films contain examples of this concept.

The 2008 film "Milk" starring Sean Penn and Josh Brolin as members of San Francisco's Board of Supervisors contains a scene in which Harvey Milk (Penn's character) asks Dan White (Brolin's character) to support a proposed ordinance banning employment discrimination against gays. White responds by pointing out that he's interested in keeping the city from locating a planned psychiatric hospital in his part of the city and asks Milk, "What do you say we watch out for each other's interests? I would really like that." Milk responds, "I'd really like that too, Dan."

"Charlie Wilson's War," a 2007 film starring Tom Hanks as the Congressman who secured U.S. funding for Afghan guerillas in the 1980s, contains several scenes depicting logrolling. In one clip, Rep. Wilson agrees to a request to serve on the House Ethics Committee (because the Speaker thinks he'd be lenient) in exchange for being appointed to the Kennedy Center's Board of Directors (which would give Wilson free tickets to the Center's performances). In another scene, Rep. Wilson tells a CIA agent (played by Philip Seymour Hoffman) that he can secure $40 million in funding for the Afghan fighters because he has accumulated many IOUs by providing his colleagues with yes votes on legislation that is important to them. We then see a brief example of this sort of vote trading when Wilson tells some of his colleagues that he can get the Black Caucus to support their farm subsidy legislation if they will support his Afghan funding initiative.

1995's "The American President" also illustrates logrolling. President Andrew Shepherd, played by Michael Douglas, drops his support for an environmental bill in exchange for getting some key senators to support his crime bill. This exchange of political favors angers the President's environmental lobbyist girlfriend Sidney Wade (played by Annette Bening) because he had promised to support her environmental legislation.

Politicians trading votes for personal benefits rather than voting in the public interest is illustrated in 1994's "The Madness of King George." In the scene, the British Parliament is voting on a motion to appoint the Prince of Wales as Regent instead of his incapacitated father George III. We see Mr. Fox (played by Jim Carter), the Prince's leading supporter in Parliament, telling the Prince (Rupert Everett):

> These are the nation's representatives. Some come to Parliament in the hope that they might serve their country. But most of them, being human, are here to fill their pockets. Pitt [the King's Parliamentary leader] and your father have done them very well... pensions, places... bribes. Once it is plain that Pitt is finished and there is no more swill in the trough, your Royal Highness will be made regent.

2012's "Lincoln" also provides a clear illustration of politicians trading votes for personal gain. In an early scene, President Lincoln (Daniel Day Lewis) and William Seward (David Strathairn) discuss offering patronage jobs to 20 House Democrats who are leaving office following an election in exchange for their voting for the 13th Amendment. Subsequent scenes give updates on the vote buying for patronage scheme.

The HBO series "Veep" also contains a nice example of logrolling. In the first season's second episode ("Frozen Yoghurt"), we see the Vice President (Julia Louis-Dreyfus) meeting with a senator because she wants his support to change the filibuster rules in the Senate. In return, he wants to keep oil interests off of a green jobs committee.

Rent Seeking

Rent seeking, the political pursuit of gains that would not be earned engaging in the market process (Tullock 1967), is a common theme in many films.

In 2003's "Daddy Day Care" Eddie Murphy plays a character who starts a daycare center after he loses his corporate job. The new daycare is fun for kids and lures customers away from an expensive and stuffy daycare center run by a character portrayed by Anjelica Huston. In response to losing customers in the market place, Huston's character attempts to stifle the competition from Murphy's new center by having the local daycare licensing bureau hassle Murphy's center over safety code violations.

A similar sequence is presented in the 2005 Iranian film "Border Café." A widow tries to re-open a family café after the passing of her husband. She is told by her brother-in-law who runs a competing café that, under Islamic law, women don't run cafes. When she insists on continuing to operate her café and leaves his business with few customers, he prompts the police harass the woman and ultimately close her café. One could also use this film to introduce Yandle's (1983) bootleggers and Baptists hypothesis that regulatory action is often prompted by a combination of moral persuasion and economically self-interested parties (see also Smith and Yandle, 2014). While some people might oppose the widow's working on moral grounds, her brother-in-law's opposition is motivated by remunerative gain rather than moral judgments.

Another film that includes a bootleggers and Baptists example is 1987's "Dragnet." The film includes a conversation between a pornographer (played by Dabney Coleman) and a moralizing minister (played by Christopher Plummer) in which they discuss colluding to eliminate a bothersome mayor.

While rents are unearned transfers, the true cost of rent seeking is the dissipation of resources by those trying to obtain rents. This concept would be easy to introduce to students using a clip from 2012's "Lincoln." In the scene, a Missouri couple visits President Lincoln at the White House to complain about their losing the right to be exclusive toll collectors. That the couple must have spent several days traveling to Washington to lobby President Lincoln for the reinstatement of their toll concession provides a vivid example of rent dissipation. The toll rents would be further dissipated by President Lincoln's request that the couple lobby their Representative in exchange for getting their toll collecting privilege restored.

In 1992's "The Distinguished Gentleman," newly elected Rep. Johnson (Eddie Murphy) is seated at a table with lobbyists from industries such as tobacco and asbestos. One lobbyist offers to sponsor a fund raising event for the new congressman thereby illustrating rent dissipation via lobbying and campaign contributions. In a subsequent scene, a congressional leader tells Rep. Johnson that he should join the Power and Industry Committee because "there's no better committee on the Hill if you're interested in fundraising." This clip's suggestion that Representatives might choose certain committees to gin up campaign contributions both reinforces the fundamental self-interestedness assumption of public choice and provides an excellent basis for instructors to turn the discussion of rents to McChesney's (1997) work on rent extraction. Instructors wanting a more explicit clip on rent extraction might instead be interested in a clip from 1940's "The Great McGinty" in which a big city mayor extracts a $75,000 payment from a constituent for the right for him to operate a bus line.

With clips from the acclaimed 2004 film "The Aviator," the discussion of rent seeking can be broadened to include the related concept of regulatory capture (Stigler 1971). After Pan Am leader Juan Trippe (played by Alec Baldwin) is unable to convince TWA's Howard Hughes (portrayed by Leonardo DiCaprio) not to offer competing flights across the Atlantic, Trippe turns to Senator Owen Brewster (played by Alan Alda) to introduce a Civil Aviation Bill that would hamper TWA's ability to compete with Pan Am. The clips illustrate the gains, in this case campaign contributions, prestigious committee chairmanship, and personal travel, that politicians can receive from pushing rent seeking legislation such as that favoring Pan Am.

A similar process involving regulatory capture is at work in "Tucker: The Man and His Dream" which chronicles the real life attempt of Preston Tucker (played by Jeff Bridges) to build a better automobile in the 1940s. The automobile that Tucker creates is way ahead of its time and comes with safety features that will be very expensive for other carmakers to add to their vehicles. The "Big Three" automobile companies in Detroit do not want to

compete with a new company so they devise a strategy that will put Tucker out of business through political pressure and maneuvering.

Regulatory capture is also present in 2013's "Dallas Buyers Club." To help alleviate AIDS patients' suffering, a buyers club has been set up to distribute medications smuggled from Mexico. Although the medications reduce some symptoms of the disease, the Food and Drug Administration seizes unapproved drugs being distributed by the buyers club. The clip suggests that the FDA's actions were motivated more by a desire to protect the market share of an ineffective drug that it has approved rather than genuine concern for patient safety since AIDS at that time was ultimately fatal for most patients.

Conclusion

In recent years, there has been an increasing emphasis on moving from traditional "chalk and talk" lectures toward alternative means of teaching. An alternative pedagogy is the use of multimedia materials to introduce or illustrate material related to the course objectives. In this paper, we catalog many films that can be used to teach concepts of public choice economics.

References

Arrow, Kenneth J. 1951. *Social Choice and Individual Values.* New York: John Wiley and Sons.

Becker, William E. 2004. "Good-bye Old, Hello New in Teaching Economics." *Australasian Journal of Economics Education* 1: 5-17.

Brennan, Geoffrey and James M. Buchanan. 1985. *The Reason of Rules: Constitutional Political Economy*. Indianapolis: Liberty Fund.

Buchanan, James M. 1979/1999. "Politics without Romance: A Sketch of Positive Public Choice Theory and its Normative Implications." In *The Collected Works of James M. Buchanan*, Vol. 1: *The Logical Foundations of Constitutional Liberty*, edited by Geoffrey Brennan, Hartmut Kliemt and Robert D. Tollison. Indianapolis: Liberty Fund.

Deyo, Darwyyn, and Marta Podemska-Mikluch. 2014. "It's Just Like Magic: The Economics of Harry Potter." *Journal of Economics and Finance Education* 13: 90-98.

Dixit, Avinash. 2005. "Restoring Fun to Game Theory." *Journal of Economic Education* 36: 205-19.

Downs, Anthony. 1957. *An Economic Theory of Democracy.* New York: Harper and Row.

Engel, Russell, Patrick Ryan Murphy and Chuck Fisk. 2014. "Economics Memes: How to use Memes to Teach and Learn Economics." *Journal of Economic Education* 45: 75-6.

Formaini, Robert. 2001. "Free Markets on Film: Hollywood and Capitalism." *Journal of Private Enterprise* 16: 123-9.

Ghent, Linda, Alan Grant, and George Lesica. 2010. *The Economics of Seinfeld*. http://yadayadayadaecon.com/

Gwartney, James D., Richard L. Stroup, Russell S. Sobel, and David A. Macpherson. 2011. *Economics: Private and Public Choice* (13th ed.). Mason: South-Western Cengage Learning.

Hall, Joshua C. 2012. "Incorporating EconTalk Podcasts into the Principles Classroom." *Journal of Private Enterprise* 28: 113-8.

Hall, Joshua and Marta Podemska-Mikluch. 2013 "Teaching the Economic Way of Thinking through Op-Eds." Available at SSRN 2266044.

Hall, Joshua, and Robert A. Lawson. 2008. "Using Music to Teach Microeconomics." *Perspectives in Economic Education Research* 4: 23-36.

Hall, Joshua, Robert Lawson, and G. Dirk Mateer. 2008. "From ABBA to Zeppelin, Led: Using Music to Teach Economics." *Journal of Economic Education* 39: 107.

Kuester, Daniel D., G. Dirk Mateer, and Christopher J. Youderian. 2014. "The Economics of *The Office*." *Journal of Economic Education* 45: 392.

Leet, Don, and Scott Houser. 2003. "Economics Goes to Hollywood: Using Classic Films to Create an Undergraduate Economics Course." *Journal of Economic Education* 34: 326-32.

Leighton, Wayne A., and Edward J. López. 2012. *Madmen, Intellectuals and Academic Scribblers: The Economic Engine of Political Change*. Stanford: Stanford University Press.

Marshall, Alfred. 1920. *Principles of Economics* (8th ed.). New York: The Macmillan Company.

Mateer, G. Dirk. 2005. *Economics in the Movies.* Mason: Thomson South-Western.

Mateer, G. Dirk, and Herman Li. 2008. "Movie Scenes for Economics." *Journal of Economic Education* 39: 303.

Mateer, G. Dirk, and Andrew Rice. 2007. "Using Music Synchronized with Lyrics to Teach Economics." *Perspectives on Economic Education Research* 3: 53-64.

Mateer, G. Dirk, and E. Frank Stephenson. 2011. "Using Film Clips to Teach Public Choice Economics." *Journal of Economics and Finance Education* 10: 28-36.

McChesney, Fred S. 1997. *Money for Nothing: Politicians, Rent Extraction, and Political Extortion*. Cambridge: Harvard University Press.

Niskanen William A. Jr. 1971. *Bureaucracy and Representative Government*. Chicago: Aldine-Atherton.

Rosen, Harvey.S. 2005. *Public Finance* (7th ed). New York: McGraw-Hill/Irwin.

Sexton, Robert L. 2006. "Using Short Movie and Television Clips in the Economics Principles Class." *Journal of Economic Education* 37: 406-17.

Shughart, William F, II, Laura Razzolini, and Michael Reksulak (eds.). 2013. *The Elgar Companion to Public Choice, Second Edition*. Northampton: Edward Elgar.

Smith, Adam, and Bruce Yandle. 2014. *Bootleggers and Baptists: How Economic Forces and Moral Persuasion Interact to Shape Regulatory Politics*. Washington: Cato Institute.

Stephenson, E. Frank. 2011. "Strategic Voting in Open Primaries: Evidence from Rush Limbaugh's 'Operation Chaos'." *Public Choice* 148: 445-57.

Stigler, George J. 1971. "The Theory of Economic Regulation." *Bell Journal of Economics and Management Science* 2: 3-21.

Tinari, Frank. D., and Kailash Khandke. 2000. "From Rhythm and Blues to Broadway: Using Music to Teach Economics." *Journal of Economic Education* 31: 253-70.

Tullock, Gordon. 1967. "The Welfare Costs of Tariffs, Monopolies, and Theft." *Western Economic Journal* 5: 224-32.

Tullock, Gordon. 1970. "A Simple Algebraic Logrolling Model." *American Economic Review* 60: 419-26.

Tullock, Gordon, Arthur Seldon, and Gordon L. Brady. 2002. *Government Failure: A Primer in Public Choice*. Washington: Cato Institute.

Watts, Michael (ed). 2003. *The Literary Book of Economics.* Wilmington: ISI Books.

Yandle, Bruce. 1983. "Bootleggers and Baptists: The Education of a Regulatory Economist." *Regulation* 7: 12-16.

Appendix Table 1: Detailed Clip Times for Each Movie (in the order mentioned)

Film	Clip Times	Topic	Year
The Distinguished Gentleman	7:50-9:35, 15:00-16:35	Foundations	1992
Cloudy with a Chance of Meatballs	9:05- 9:40, 10:40-11:20, 14:05-14:35	Foundations	2009
Mr. Smith Goes to Washington	1:19:15-1:22:00	Foundations	1939
All the King's Men	1:22:25-1:24:05	Foundations	1950
Pentagon Wars	7:50-8:35	Foundations	1998
The Great McGinty	1:03:30-1:08:00	Foundations	1940
The Campaign	2:05-2:38	Foundations	2012
The Pentagon Papers	40:12-42:00, 1:03:13-1:03:50	Foundations	2003
Lincoln	26:40-29:45	Foundations	2012
Public Enemies	16:35-20:20	Bureaucracy	2009
Pentagon Wars	17:30-23:2523:25-34:20, 53:55-57:00 1998	Bureaucracy	1998
Canadian Bacon	11:25-14:55, 23:30-24:55, 31:00-32:40, 39:15-41:00	Bureaucracy	1995
The Barbarian Invasions	16:25-20:15	Bureaucracy	2004
Lower Learning	7:10-8:40	Bureaucracy	2008
Monty Python and the Holy Grail	8:50-12:00	Voting	1975
The Great McGinty	7:00-12:20	Voting	1940
Swing Vote	1:16:15-1:20:05	Voting	2008
Wag the Dog	27:30-28:00	Voting	1997
Election	40:15-42:15	Voting	1999
The Distinguished Gentleman	13:40-19:20, 21:10-24:15	Voting	1992
Milk	1:02:15-1:03:50	Logrolling	2008
Charlie Wilson's War	8:15-9:25, 55:35-57:00, 1:19:50-1:20:10	Logrolling	2007
The American President	1:21:40-1:23:25, 1:28:10-1:28:50	Logrolling	1995
The Madness of King George	48:50-51:30	Logrolling	1994
Lincoln	12:55-14:45, 34:20-35:10, 42:10-45:05	Logrolling	2012
Daddy Day Care	27:50-28:05, 34:50-35:05, 39:35-39:50, 41:25-42:55, 48:30-50:00, 1:02:15-1:04:40, 1:07:45-1:08:10	Rent Seeking	2003
Border Café	32:50-34:00, 45:50-47:15, 49:55-51:30, 1:07:55-1:08:05, 1:18:00-1:20:30, 1:35:00-1:37:00	Rent Seeking	2005
Dragnet	1:15:06-1:16:30	Rent Seeking	1987
Lincoln	15:40-18:40	Rent Seeking	2012

The Distinguished Gentleman	35:20-36:35, 44:40-45:50	Rent Seeking	1992
The Great McGinty	46:00-48:25	Rent Seeking	1940
The Aviator	1:24:50-1:26:45, 1:31:30-1:32:35, 1:35:40-1:36:50, 1:56:05-2:03:10	Rent Seeking	2004
Tucker: The Man and His Dream	1:32:50-1:44:00	Rent Seeking	1988
Dallas Buyers Club	1:18:05-1:19:30, 1:41:08-1:42:30	Rent Seeking	2013

Choosing Political Rules under Rule Utilitarianism: Constitutional Political Economy and the Moral Foundations of Capitalism

Andrew T. Young[1]

ABSTRACT

Economics is positive analysis. Undergraduates, however, are ultimately interested in economics because it informs normative worldviews. Many undergraduates begin, at least implicitly, with consequentialism (and, more specifically, utilitarianism) as an ethical framework. Principles-level analysis informs what Yeager (2001) refers to as *act utilitarianism*, but exploring broad political ethical questions with act utilitarianism is problematic. I argue that the alternative *rule utilitarianism* is preferable and can be informed by a *constitutional political economy* analysis. I give examples based on Buchanan and Tullock's (1962) framework for considering government decision-making rules.

Introduction

In nearly every introductory economics class, undergraduates are taught by rote that economics is a *positive* rather than a *normative* science. Despite this fact, one way or another there are normative prescriptions that come in to play. Indeed, how can instructors ever hope to excite undergraduates about economics by dismissing its relevance to the questions of *ought* in society?

Of course, a thoughtful and careful instructor always frames these prescriptions as conditionals. *If* we do not desire to create unemployment, *then* we should not raise the minimum wage. *If* we do not want a shortage of rentals and landlords who have little incentive to maintain their properties, *then* we should not institute rent controls. Instructors often choose the *if*s to be uncontroversial amongst students. The fact that *more unemployment* and *shortages of rentals* can be introduced uncontroversially as *bad* indicates the consequentialist and, more specifically, utilitarian framework that the typical undergraduate brings to the table.[2] Policies, laws, and rights are judged to be *good* if they lead to desirable consequences and *bad* otherwise.

Given this utilitarian prior, Yeager (2001) provides an excellent discussion that distinguishes between what he terms *act* versus *rule* utilitarianisms. The economic analysis that we provide in principles-level classes most clearly informs the normative framework of *act utilitarianism* which "calls for the action in each individual case that seems likely, apart from any general principles, to yield the best results on the whole" (p. 86). Policies are judged case by case and, indeed, moment by moment. The principles-level economic analysis of popular textbooks is well-suited to inform an act utilitarian perspective. Unfortunately, act utilitarianism is an exceedingly problematic framework for political ethics. For one thing, act utilitarianism ignores the importance of institutions in social cooperation towards individuals' well-beings. By their very nature, institutions cannot be evaluated and updated on a case by case, moment by moment basis. Also, broad discussions of the proper roles of government in an act utilitarian framework are absurd.[3] For example, *given that it is acceptable for government to interfere in labor markets*, principles-level economic analysis can inform an act utilitarian discussion of what level (including possibly zero) the minimum

---

[1] College of Business and Economics, West Virginia University, Morgantown WV, 26506-6025; Andrew.Young@mail.wvu.edu.

[2] *Qua* economists, we cannot judge whether consequentialism is the right framework to bring to the table. However, we can recognize undergraduates' priors and the fact that some form of consequentialism is the only type of normative framework that positive economics can meaningfully inform.

[3] Yeager (2001, p. 86) argues bluntly that "it is hard to believe that any philosopher actually advocates it."

wage should be set at. But the intersection of economics and act utilitarianism is silent on "Big Picture" questions of political ethics: e.g., *Should a government, in principle, be constrained from interfering in labor markets?*

These sorts of political ethical questions are the ones that undergraduates are often passionately interested in. Students are at points in their lives when the perceived opportunity costs of thinking idealistically are relatively low. And idealistic thinking is "Big Picture" thinking. Principles-level textbooks typically provide students with tools that inform an act utilitarian perspective and, as a result, economics is often perceived as irrelevant to broad questions about the proper roles of government.

However, an alternative to act utilitarianism is *rule utilitarianism*. Rule utilitarianism focuses on institutions that allow individuals to best plan and coordinate their actions in mutually beneficial ways. It is all about *rules that further social cooperation*. Yeager's (1978) support for this alternative, rule-based utilitarianism is what led him to favor liberalism as a policy criteria over the Pareto criterion (which is the embodiment of an act utilitarian perspective). In the field of economics, such "Big Picture" questions fall under the domain of *constitutional political economy*. Constitutional political economy (CPE) is given scant attention in introductory economics textbooks, yet it constitutes the tools of positive analysis that can inform a rule utilitarian perspective. CPE can inform rule utilitarianism; furthermore, its insights can be presented at a level that is accessible to principles-level undergraduates and portrays economics as meaningful and relevant to the "Big Picture" issues of political ethics.

The Choice of Political Rules

The discussion in this paper is drawn largely from my experience teaching "The Moral Foundations of Capitalism" (MFC) class at West Virginia University. As the name would suggest, MFC is built around broad questions of political ethics, and yet it is offered through the economics department and seeks to "connect the dots" between positive economic analysis and the sorts of normative statements that are ultimately interesting to students. As the name would also suggest, the class devotes a lot of time to "Big Picture" issues – capitalism versus socialism as alternative economic systems; consequentialism versus natural rights as alternative foundations for political ethics.

A number of authors whose approaches I would characterize as rule utilitarian are covered in MFC. Friedrich Hayek's (1960) *The Constitution of Liberty* emphasizes the sorts of institutional frameworks that allow individuals to solve knowledge problems and, in doing so, obtain the means towards increasing their happiness: "Above all, we should provide the maximum opportunity for unknown individuals to learn of facts that we ourselves are yet unaware of and to make use of their actions" (p. 30).[4] Alternatively, Ludwig von Mises' (2009) *Liberty and Property* emphasizes the institution of private property as the foundation of an economic system geared towards the "right" ends: "The characteristic feature of capitalism [...] was its principle of marketing" and "[c]apitalism is not simply mass production, but mass production to satisfy the needs of the masses" (p. 16).

Teaching the class has led me to the conclusion, more generally, that the principles-level discussions of efficiency (Pareto optimality; deadweight loss triangles; etc.) provide undergraduates with little that is meaningful and relevant to the broad normative questions that interest them. Alternatively, an introduction to CPE provides foundations for a consideration of what government should and should not be doing in the first place. Beyond a MFC-type of course, these CPE foundations can be introduced to supplement the rudimentary tools of price theory in a principles-level economics course. Students will often intuitively understand that the evaluation of government's role in many realms (e.g., health care provision; public education; social security) goes beyond case-by-case policy choices; rather it involves questions of whether or not the government should be active in certain realms to begin with. CPE foundations can facilitate principles-level students beginning to think about these broader normative questions with some basic tools of positive analysis.

Rule utilitarianism suggests that we seek rules that further social cooperation. A government's *constitution* is the set of rules that it follows, ideally towards facilitating collective action towards citizens' well-being. In this context, collective action is social cooperation. The constitution institutionally constraints the government in what it cannot do; it provides the government with the "rules of the game" (North, 1990, p. 30). As noted by Yeager (2001, p. 87): "The logic of rule utilitarianism requires people to abide by the rules almost unquestioningly and automatically." The case by case, moment by moment judgments of act utilitarianism are impermissible. Ethically permissible action is action that is consistent with the rules. The same logic applies to governments; hence the rule of law.

---

[4] Hayek's (1945) famous article, "The Use of Knowledge in Society", is really a specific example of his general worldview; one that focuses specifically on the institution of the market price system.

James Buchanan and Gordon Tullock (1962) introduce a CPE analysis of government decision-making rules. Those rules are defined in terms of the proportionate amount of a citizenry's consent necessary for a collective action to be undertaken. The choice of a decision-making rule is based on the minimization of costs. Those costs are expected, over the time that the decision-making rule constrains the government; they are considered in terms of their present value. Buchanan and Tullock's work is part of the bedrock of the Public Choice School of economics. Though the *Calculus of Consent* is itself a daunting book for undergraduates to tackle, the basic insights are easily made accessible. A wonderful example (which I also use in MFC) is Peter Leeson's (2011) *The Invisible Hook* which uses Buchanan and Tullock's analysis to explore and make intelligible 18th century pirate constitutions and the decision-making rules that they institutionalized. (The meta-choice of a constitution involves a decision-making rule for establishing a government's decision-making rules.)

Simple Graphical Tools for CPE Analysis

Consider the choice of a particular collective action to be constituted as a role for government. Any particular collective action does not simply occur out of nowhere; its course has to be *decided* upon. Therefore, it requires a decision-making rule. A simple way to characterize decision-making rules is in terms of the proportionate consent that they require. At the one extreme there is an autocratic decision-making rule where one individual has complete and unchecked authority over the decision. At the other extreme is unanimity where each and every citizen must agree on a particular course of action. Majority rule is a center point along the spectrum. While these characterizations simplify real world political processes, they provide meaningful approximations. For example, the US President is an autocrat during a war. However, a war can only be declared by Congress with a majority of both Houses. And if we want to amend these decision-making rules as enshrined in the US Constitution doing so requires a supermajority in Congress and of US state governments.

Figure 1: Analyzing Decision-Making Rules Using a CPE Analysis
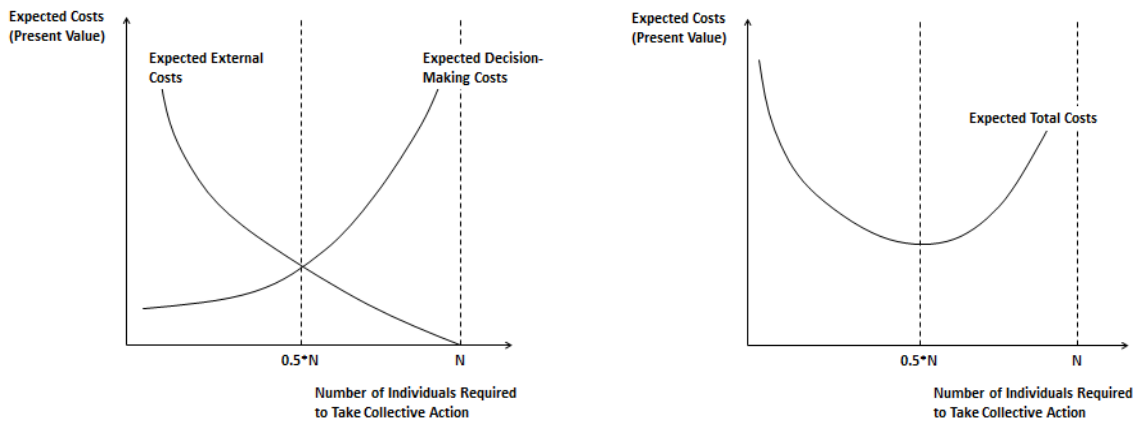

Buchanan and Tullock assume that a given decision-making rule will entail two types of costs over time: *external costs* and *decision-making costs*. External costs are costs that are imposed on those individually made worse off by collective actions. (For example, if majorities in Congress vote to declare war, pacifists are left as unhappy objectors.) Decision-making costs are transaction costs that are associated with deciding on a particular course for a collective action. Both of these (taken as present values) will generally be functions of the number of individuals whose consent is necessary for the collective action to be undertaken. In **figure 1** "N" denotes the total number of individuals. Decision-making costs are increasing in "N". The more individuals necessary to consent to a particular course of collective action, the more difficult (costly) it will be to determine that particular course. The external costs are decreasing in the number of individuals consenting and become zero at "N". If one individual autocratically decides the course of collective action, the potential for external costs is very high. Alternatively, if everyone's consent is necessary then each individual has an effective veto on any and all external costs that might be imposed upon them. (These cost curves are illustrated in the first panel of Figure 1.)

Zero expected external costs associated with unanimous consent embodies an important benchmark of rule utilitarianism: "Voluntary cooperation accords better than coercion with each person having projects, purposes, and ideals of his own and with his having only one life to live" (Yeager, 2001, p. 82). Unanimity results in wholly

voluntary collective action; that is collective action independent of government. Moving away from purely voluntary cooperation and towards collective action that is undertaken with less that unanimous consent, one "expects no [incredible] feats of prediction, calculation, and benevolence" (Yeager, 2001, p. 87). There is a meeting of the Public Choice assumption of rational and self-interested political agents with Hayek's (1945) highlighting of the problems of decentralized knowledge. Policymakers make decisions within the institutions of the government's constitution. Particular collective actions will never be Pareto optimal; there will always be external costs. Alternatively, the autocracy extreme embodies a (benevolent or otherwise) social planner benchmark.

In the second panel of Figure 1 the two cost curves are combined into one total costs curve. This will be a somewhat "U" shaped curve and will have a minimum that is likely in the neighborhood of the intersection of the external and decision-making cost curves. This is not necessarily true and I have drawn the minimum precisely only for the purposes of exposition. Also for the purposes of exposition I have drawn that minimum to correspond to "0.5*N" individuals. If this were indeed the case then the analysis would suggest a decision-making rule of simple majority: a particular course of collective action is pursued if 51% of the population or more can agree to it.

**Figure 2: High External Costs Lead to Decision-Making Rule Requiring Greater Consent**
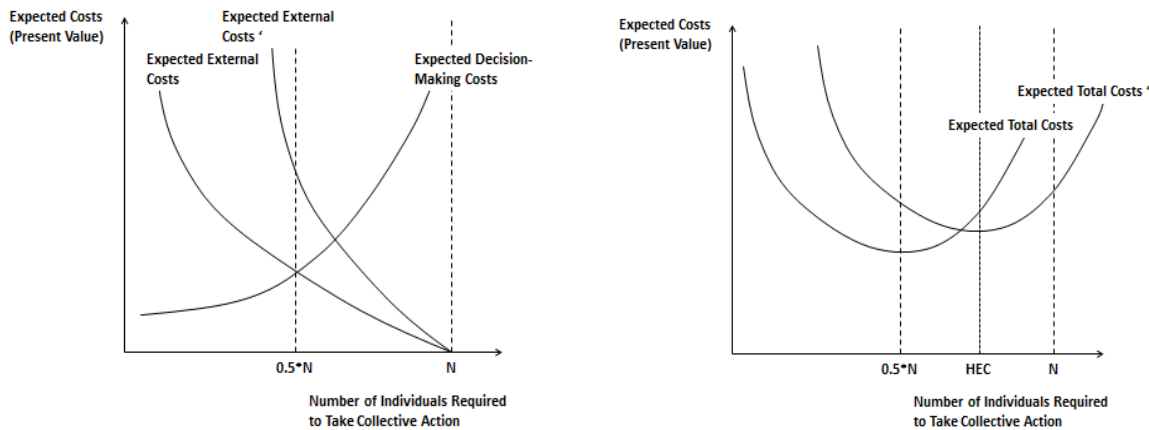
Some roles, if permitted to the government, will be expected to have higher external costs at all levels of consent (save for unanimity where, again, expected external costs are always zero by assumption). An example of this might be the government rationing of health care. For those who do not agree with the rationing scheme, their lack of access to voluntary exchange puts their very lives and limbs at risk. In Figure 2 we see the CPE analysis of a potential role for government that is expected to carry higher external costs (than the benchmark Figure 1 example). The expected external costs curve is shifted upward and expected total costs curve is shifted into a position where its minimum corresponds to "HEC" rather than "0.5*N". This implies a supermajority decision rule. Note that this does not mean that government rationing of health care will not occur; rather that, in recognition of higher external costs, the government is constrained to require more than a majority of its individuals to sign on. (This is where the potential benefits of government rationing come into play; if a "HEC" supermajority finds the policy to be net beneficial, then it will be undertaken.) Another example of a potential role for government where expected external costs are likely to be high relative to decision-making costs is the regulation of religion. To the extent that individuals with different beliefs view their spiritual (eternal) well-being as a function of their religious practices, policies will impose large external costs on those forced to alter or cease their practices.

Alternatively, some potential government roles may be expected to entail particularly high decision-making costs. Consider a more local government example: should police be able to enter private property when they perceive evidence that someone on that property is in imminent risk of harm? For example, a neighbor reports that they hear a child screaming for help from inside a house. When the police arrive the expected decision making costs are very high; every minute that is spent seeking greater consent is a minute during which a child might be harmed or even killed. Figure 3 illustrates a case (relative to the Figure 1 benchmark) of high expected decision-making costs at any level of consent. The expected decision-making costs curve is shifted upward and the expected total costs curve now has a minimum corresponding to "HDMC" rather than "0.5*N". The preferred decision-making rule requires relatively less consensus. This sort of CPE analysis makes intelligible in a systematic (rather than

simply intuitive) way why police may not required to obtain warrants when there is probable cause that someone's life and limb is at immediate risk. Another example of a potential role for government with high decision-making costs is (defensive) military policy. If a country finds itself under attack, the opportunity costs associated with deliberating while the bombs are falling are likely to be severe.

Figure 3: High Decision-Making Costs Lead to Decision-Making Rule Requiring Less Consent
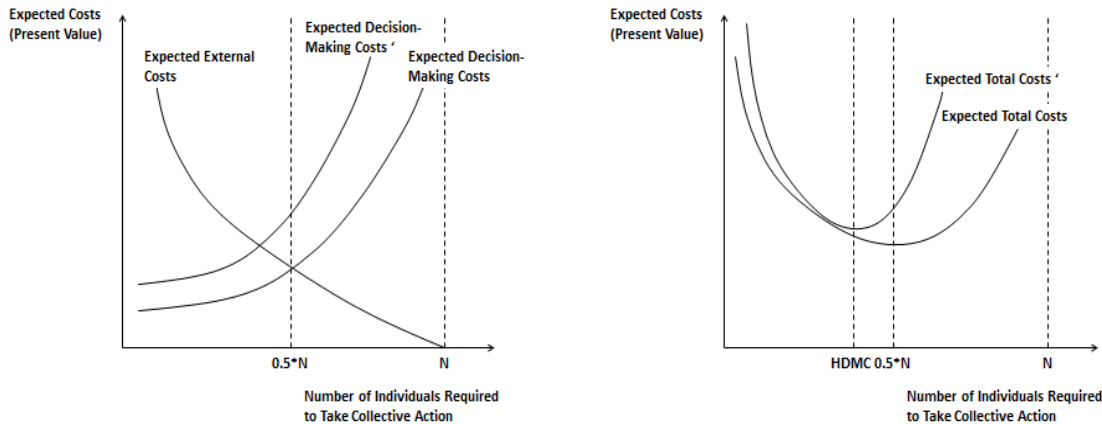
While the standard principle-level textbook analysis is poorly suited to inform a rule utilitarian perspective and address "Big Picture" questions of political ethics, the CPE approach generalizes to many textbook examples. Consider the ubiquitous Econ 101 policy question: should policymakers impose a minimum wage? A textbook analysis leads the conclusion that a minimum wage has offsetting employment and wage effects on workers' surplus.[5] The most famous empirical US study of the minimum wage is without doubt Card and Kruger (1994). This study is still cited in support of minimum wage increases. Using the "natural experiment" of New Jersey raising its minimum wage while neighboring Pennsylvania did not, Card and Kruger report to show that the minimum wage hike *increased* employment in the fast food industry. However, Neumark and Wascher (2000) demonstrate that, using payroll data rather than Card and Krueger's telephone survey data, the conclusion is the opposite.[6] Given the offsetting employment and wage effects, then, the takeaway for undergraduates is sometimes murky.

From an alternative and/or complementary perspective, undergraduates may ponder whether government should be free to interfere in labor markets in the first place; whether government should be *constituted* with such interference as a proper role. There are external costs of minimum wage policy that are borne by individuals who are willing to work at a lower wage but are legally barred from doing so. These individuals are likely to be low-skilled individuals; many of them young and trying to get their first job, or trying to earn money for college or technical training. In either case, many of these individuals are denied opportunities for not only income but also the acquisition of skills. This implies not only large initial external costs (individuals with no independent income presently) but also persistent costs (individuals cannot accumulate human capital that would make the minimum wage inapplicable to them in the future). If relative to other potential government roles regulating minimum wage rates imposes large external costs, then we are back to the scenario illustrated in Figure 2. Government is constrained to entail higher decision-making costs to offset the expectation of higher external costs.

A broad (and truly "Big Picture") lesson for students to glean from the CPE analysis is that a comparison of capitalism versus socialism can be framed in terms of a comparison of external and decision-making costs under these two ideal economy-types. Under socialism, decision-making is centralized and the external costs are likely to be large relative to under a capitalist system where well-defined and enforced property rights lead individuals to

---

[5] In my experience undergraduates' ethical prior is that minimum wage law should be evaluated based on how it affects employees rather than their employers (i.e., based on workers' surplus rather than total surplus). There are, of course, excellent reasons to argue educate against that perspective. For example, shareholder well-being matter as well. Also, shareholders constitute demand for goods and services produced by other workers; ignoring this ignores important general equilibrium effects.

[6] Neumark and Wascher (2000) examine fast food industry data from the same two US states.

internalize the costs of their actions. A comparison of decision-making costs is less clear. On the one hand, centralized planners can certainly make policies quickly and decisively. However, individuals can also act quickly and decisively; and when decision-making is decentralized individuals face lower information costs that the arguably insurmountable costs of gathering and processing information faced that are faced by central planners (Hayek, 1945). In my mind, the CPE analysis supports a strong case (form a rule-based utilitarian perspective) for the institutional setting of capitalism vis-à-vis socialism. In any case, the CPE framework provides a powerful tool for undergraduates to consider the relative virtues of comparative economic systems.

This comparative economic systems perspective fits nicely with Buchanan and Brennan's (1985, p.9) characterization of the objective of CPE provided by: "to understand the workings of alternative political institutions so that choices among such institutions (or structures of rules) can be more fully informed." In comparing capitalism to socialism this is clear; as it is in the comparison of democracy versus dictatorship. However, I have essentially been arguing in this paper that a CPE framework can also be fruitfully applied as a pedagogical tool in undergraduate economics classes to evaluate a wide variety of potential roles for policymakers: health care provision, the regulation of religion, interference in labor markets, and defensive military action, to name a few.

Conclusion

If I ask my undergraduates to provide a positive analysis of the costs and benefits to government banning a particular religion, they will probably be somewhat befuddled. *Government shouldn't be in the business of banning religions!* I might reply: well, should not a government decide that on a case by case basis? Should not a government ask what are the costs and benefits of banning Catholicism; and then move on to Judaism; etc.? If forced to reply to these questions, my undergraduates would probably fall back on the US Constitution, noting that there are some realms (religion being one of them) that we have deemed (for whatever reasons; some perhaps economic) it best for our government to steer clear of.

Can undergraduate economics provide students with insights into these constitutional questions? Can we "connect the dots" between positive economic analysis and the sorts of "Big Picture" normative questions that are often of great interest to students? Given that most undergraduates come to the table with utilitarian priors in discussing these sort of questions, the Constitutional political economy (CPE) approach offers them a framework for thinking about what sort of political constraints are likely to be welfare enhancing. In other words, a CPE positive analysis can inform a rule-based utilitarianism. In this paper I have sketched such an analysis and applied it to a couple of examples (government health care rationing; interference with market wage outcomes) that are common topics in undergraduate economics courses.

My initial experience with the introduction of these tools to undergraduates was in a class that called the Moral Foundations of Capitalism (MFC). The MFC class was, by design, a blend of economics and political philosophy. However, I hope that I have demonstrated that a CPE analysis can be a useful supplement in undergraduate economics courses generally, including those at the principles-level. Whereas price theory provides students with some basic tools to evaluate policies in their proper realms, CPE analysis provides them with a framework for thinking about what exactly those proper realms might be.

References

Buchanan, James M., and Gordon Tullock. 1962. *The Calculus of Consent: Logical Foundations of Constitutional Democracy.* Ann Arbor: University of Michigan Press.

Buchanan James, M., and Geoffrey Brennan. 1985. *The Reason of Rules: Constitutional Political Economy.* Indianapolis: Liberty Fund.

Card, David and Alan B. Krueger. 1994. "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania." *American Economic Review* 84: 772-93.

Hayek, Friedrich A. 1945. "The Use of Knowledge in Society." *American Economic Review* 35: 519-30.

Hayek, Friedrich A. 1960. *The Constitution of Liberty.* Chicago: University of Chicago Press.

Leeson, Peter T. 2011. *The Invisible Hook: The Hidden Economics of Pirates*. Princeton: Princeton University Press.

Mises, Ludwig von. 2009. *Liberty and Property.* Auburn: Ludwig von Mises Institute.

Neumark, David and William Wascher. 2000. "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania: Comment," *American Economic Review* 90: 1362-96.

North, Douglass C. 1990. *Institutions, Institutional Change and Economic Performance.* Cambridge: Cambridge University Press.

Yeager, Leland B. 1978. "Pareto Optimality in Policy Espousal." *Journal of Libertarian Studies* 2: 199-216.

Yeager, Leland B. 2001. *Ethics as Social Science: The Moral Philosophy of Social Cooperation*. Northampton: Edward Elgar.