



Evolution, uncertainty, and the asymptotic efficiency of policy

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Abstract

Politics, like any social system, involves selection mechanisms. This paper presents a model of politics as an evolutionary process. Our model yields three main results. First, the political process selects for efficient policies in the long run. We call that attribute *asymptotic efficiency*. Second, bargaining amongst interest groups bounds the inefficiencies that can exist in the short run. Potential inefficiency declines when organizing interest groups becomes less costly. Finally, policies that appear to be inefficient in a static analysis can be efficient once economists consider the dynamic nature of political decisions. We argue that viewing the political process as a selection mechanism allows political economists to use efficiency as a criterion for positive economic analysis. In our approach, applied political economy involves looking for relevant costs that make the policy efficient. However, our approach does not rob political economists of the ability to make meaningful normative statements; it only constrains the type of statements made.

Keywords Real options · Political Coase theorem · Evolution · Efficiency · Alchian

JEL Classification D70 · D72 · P16

Individuals belong to particular groups—defined by occupation, industry, income, geography, age, and other related characteristics—that are assumed to use political influence to enhance the well-being of their members. Competition among these pressure groups for political influence determines the equilibrium structure of taxes, subsidies, and other political favors (Becker, 1983, p. 372).

... the common allegation that special interest groups and political lobbies significantly deteriorate the quality of a democracy [is] too narrowly conceived. If such political associations really did so detract from the efficiency of the democracy, their

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victims would rationally pay-off their potential members as long as the potentially injurious association remains dormant” (Thompson & Hickson, 2001, p. 117).

1 Introduction

Do inefficient policies exist? Surely, some economists tend to think so. For example, Michael Clemens (2011) argues that “trillion-dollar bills [are left] on the sidewalk” by immigration policy, making current policy extremely inefficient. Less extremely, but along the same lines, Bassetto and Sargent (2006, p. 1167) estimate that a simple budgeting rule not currently used by the US government “substantially improves efficiency.” Recently, no economist polled by the Chicago Booth School’s Initiative on Global Markets forum agreed with the statement that “Imposing new US tariffs on steel and aluminum will improve Americans’ welfare.”¹ Nevertheless, the tariffs became policy. At a microeconomic level, Chetty et al. (2016, p. 898) argue that “The common practice of putting families on wait lists to receive a housing voucher may be particularly inefficient.” At an institutional level, Douglass North (1994, p. 350) argued in his Nobel lecture that “Institutions are not necessarily or even usually created to be socially efficient...” Boettke et al., (2007, p. 130) summarize that viewpoint succinctly by saying that “when we examine policy reality in light of ... economic theory we see inefficient policies all the time.”²

Scholars have offered a variety of explanations for the existence of such inefficiencies. For example, Olson (1971) argues that policy is likely to favor special interests at the expense of others owing to the free-rider problem. If the benefits are concentrated and the costs are dispersed, a small special interest group has incentives to organize to capture the expected gains. On the other hand, the larger group that bears the costs likely will not organize since the per capita costs are quite small. Olson (1971) calls such groups “latent”. Along similar lines, Baron (1994) and Grossman and Helpman (1996) argue that politicians support special-interest policies in exchange for campaign contributions. Weingast et al. (1981) claim that inefficient policies can arise in political bargaining. For example, suppose that a group of politicians would like to pass an inefficient policy, but lack the majority’s support. The first group of politicians could approach a second group that favors a different inefficient policy and propose a quid pro quo. As a result, both inefficient policies are enacted. Other scholars, such as Downs (1957), argue that since information is costly, voters are rationally ignorant about policy consequences.

Yet, an important political economy tradition, identified most notably with George Stigler, Gary Becker, and the Chicago School of political economy, suggests that in liberal representative democracies the political process essentially reflects the preferences of

¹ See IGM Forum (n.d.).

² While many definitions of “efficiency” are possible and it is not always clear what individual authors have in mind, we mean Kaldor-Hicks efficiency, whereby an outcome is efficient if the benefits outweigh the costs and could, in principle, involve transfers to make the policy Pareto efficient, whether or not those who benefit actually compensate anyone. Buchanan (1959) discusses criticisms of Kaldor-Hicks efficiency, notably that side-payments (compensation) to those who lose from policy changes are almost always hypothetical. Without actual compensation, “the whole controversy over the appropriate tests [for welfare-enhancing policy] becomes meaningless” (Buchanan, 1959, p. 128). Our arguments extend Buchanan’s insight. We discuss Buchanan’s (1959) paradigm for doing welfare economics more fully in the Conclusion. However, in our model, compensation is paid, so the distinction does not matter: Kaldor-Hicks efficient policies are Pareto efficient.

interest groups, which themselves are comprised of individual voters. According to that view, interest groups push for transfers and policies to accomplish particular goals. The process of competition amongst interest groups leads to efficient transfers and the most effective policies for accomplishing them. The only way that inefficient policies exist is if they are *efficiently inefficient* in the sense that while a more effective policy might be known, the cost of switching to the more effective policy would exceed the inefficiency of the current policy. The policy is inefficient only if we ignore some of the actual costs of policy change.

In theory, elections should discipline the behavior of politicians. Even rationally ignorant voters can acquire certain types of information costlessly. For example, voters readily can observe their own economic circumstances as well as the conditions of the general macroeconomy. Even individuals who otherwise are (rationally) ignorant rely on such observations to make voting decisions. Such retrospective voting is supported by evidence that voters reward incumbents for economic performance (Fiorina, 1981).

The modern literature on political accountability and dynamic elections emphasizes that voters select candidates based on prospective net benefits, but that past observations help voters update their estimates of the policy bundles offered by incumbents. A general conclusion in both the theoretical and empirical literatures on political accountability suggests that politicians do indeed respond to electoral incentives (Ashworth, 2012; Duggan & Martinelli, 2017). Nonetheless, even a responsive democracy can produce suboptimal policy outcomes. For example, when candidates have to choose between multiple tasks, they have to decide how to allocate their limited time budgets. Since interest groups can monitor the behavior of politicians at a lower cost than individuals can, democracies might be most responsive to interest group influence (Lohmann, 1998). Similarly, politicians might choose a suboptimal policy even when they know that it is suboptimal because it is favored by rationally ignorant voters. In other words, responsive politicians might engage in pandering (Fox, 2007; Maskin & Tirole, 2004). Of course, such pandering just adds another potential layer to a dynamic political process, namely, the entry of new interest groups.

For policy to be efficient, the political process must have some mechanism for selecting efficient policies. As a non-political analog, in a market setting the profit mechanism selects firms that have made better profit-making choices (Alchian, 1950). Firms that do not adopt the lowest cost alternatives will be displaced and the market will tend toward efficient production. In a representative democracy, what might be considered obvious selection mechanisms (e.g., voting) are cruder than profit and loss. Nonetheless, one might wonder about the frequencies with which political mechanisms select efficient policies.

In this paper, we study politics as a selection mechanism to assess the efficiency properties of political decision-making within democratic societies. In addition to Alchian (1950), we draw on the work of Stigler (1971), Peltzman (1976), Posner (1974), Becker (1983), Tollison (1988) and Wittman (1989) by focusing on the role of interest groups and, in particular, the decisions of those groups to enter politics. For any policy that exists, potential groups of individuals have the option of entering the political sphere and bearing the cost of changing the policy. Furthermore, the costs and benefits of the policy might vary over time. New interest groups will tend to emerge when the costs associated with existing policies are sufficiently high that potential members can justify financing the organizational costs necessary to form a political coalition to overturn the existing policy. The observation that changing policy requires a sufficiently interested party that is willing to incur a fixed cost resembles the evolutionary analyses of the common law by Rubin (1977), Priest (1977) and Gennaioli and Shleifer (2007). In our paper, we argue that, like the common law, an evolutionary force pushes towards efficiency for *legislation*. Because we assume in

the model that it is feasible for interest groups to enter the political sphere and change policy, we focus our broader discussion—like the contributions mentioned above—on democratic societies wherein it is feasible for interest groups to form.

Our model suggests that over the long run, the endogenous entry of interest groups creates the necessary conditions for the political process to select efficient policies (Proposition 1).³ That conclusion mirrors how the entry of competing firms into a market drives prices down to marginal cost. In the long run, entry is sufficient and policies are efficient. In the short run, inefficient policies persist only if the policies are not too inefficient (Proposition 2). In other words, inefficient policies are efficiently inefficient in the sense that the cost to the prospective interest group of entering and eliminating the policy exceeds the cost of the policy itself. For example, if the economist could snap his fingers to eliminate tariffs with appropriate transfers, efficiency would improve. However, once we account for organizational costs, the policy may or may not be efficient if it survives in the short run. In contrast, any policy must be efficient if it survives in the long run. What that line of reasoning suggests is that long-lasting policies are either efficient or inefficient with moderate costs relative to the organizational costs, as suggested by Stigler (1992, p. 459). Organizational costs impose an upper bound on the level of political inefficiency. Finally, we show that our dynamic, evolutionary approach leads to different conclusions than does a static analysis of political bargaining. In particular, policies that appear to be inefficient in a static model are efficient in a dynamic model (Proposition 3). When uncertainty exists about the costs and benefits of a policy and changing policy incurs a fixed cost, interest groups can capture value by waiting for some uncertainty to resolve before overturning the policy. Therefore, static models that ignore the value of learning about the current policy—or ignore the fixed costs as pointed out in the case of regulation by McCormick et al. (1984)—will over-diagnose inefficient policies. Our emphasis on dynamics in an evolutionary context distinguishes our model from other studies of political efficiency, such as Wittman (1989).

Our conclusion should give pause to economists, pundits, and policy advisors who argue for an urgent need to replace long-lasting policies they deem to be inefficient. Our model suggests that the very fact that the policies are long-lasting reflects either a policy's efficiency or its moderate net cost relative to the organizational costs. Persistent policies therefore are likely to be efficient because (a) the inefficiency cost is substantially less than suggested by the economist's model or (b) the organizational costs of changing them are sufficiently large.

Our conclusion also raises an important point about interest groups. While it is true that interest groups are better able to monitor politicians and bias political outcomes in their own favor than individuals are, that advantage need not imply that policy is inefficient over the long run. When existing policies are particularly costly, political entrepreneurs have incentives to enter and overturn the policy. Skeptics of that perspective often have argued that successful entry requires that the issue at hand be salient in voters' minds (Lohmann, 1998, p. 810). Indeed, what our model shows is the importance of the threshold of a

³ By efficiency, we are referring to what we call “planner efficiency”. In doing so, we follow how most economists use the term, which implicitly ignores the political costs of implementing a policy. Our result that policies are efficient (in that sense) in the long run is stronger than saying that they are efficient once we account for all costs, a criterion adopted by Cheung (1998) and Leeson (2020), among others. We elaborate on the distinction in the next section.

policy's net cost at which the issue becomes salient. More important, our model implies a bound on the extent of inefficiency of any particular policy.

2 Defining efficiency

Throughout the present paper, we will be focused on “efficiency” in the Kaldor-Hicks sense. If the benefits of a policy exceed the costs, then the policy is considered efficient. Nonetheless, when it comes to political economy, that definition of efficiency is not sufficient. One must be clear about how to measure the benefits and the costs. In doing so, we propose two distinct measures of efficiency.

The first type of efficiency is what we call *planner efficiency*. When asking if a policy is planner efficient, the political economist considers different hypothetical worlds wherein the possible policies are in place *ex nihilo* and computes the costs and benefits in each world. The world with the largest net benefit is called efficient. The political economist implicitly puts himself in the position of a social planner that could snap her fingers and implement a policy costlessly, subject to the relevant resource and incentive constraints. That meaning of efficiency is the uppermost efficiency standard. While planner efficiency might seem unrealistic in the context of any policy we observe in the world, it is the standard benchmark in public economics and cost–benefit analysis. It obviously provides an important yardstick for economists and we want to retain it.

The second type of efficiency is what we call *political efficiency*. In that case, the calculus also must consider relevant political costs. The political costs acknowledge that a status quo always is in place and, hence, it is costly to change existing policies. Actors must organize to take the steps necessary to effect policy change. In addition, interest groups have captured rents in the status quo and might need to be “bought out”. Once such political costs are taken into consideration, it is easier to label the status quo as efficient.

The different definitions of efficiency tend to muddy the waters of the debate. For example, scholars who rely on planner efficiency are likely to overstate the costs of particular policies, especially if the social scientist solving the planner problem might have misspecified it. She might assume the wrong objective function or ignore a relevant constraint. If one solves a planner's problem but ignores the relevant political constraints, the policy will tend to look more costly. To some extent, the excessive cost is understandable. The benevolent social planner can command resources without political constraints. However, when the modeler applies the solution to the planner's problem in arguing for obvious policy improvements, the failure to achieve such improvements in reality might simply reflect the political constraints ignored by the planner's analysis.

On the other hand, scholars who take account of political constraints explicitly often are criticized for arguing that *everything* is efficient. However, that criticism often misses the point. As Leeson (2020) emphasizes, the idea that “everything that is, is efficient” logically follows from maximizing behavior, but only when *all* relevant costs are considered. The efficiency statement does not imply that “everything that is, is good.” Similarly, it doesn't even follow that “everything that is, is planner efficient.” To argue that the efficiency-always result associated with political efficiency is equivalent to both statements is either mistaken or deliberately misleading.

What our paper does is to evaluate the tendency of policy toward planner efficiency, the implicit benchmark in most of public finance. In the process, we clearly delineate the notion of political efficiency from planner efficiency. Our model demonstrates that everything that

is, is politically efficient. If it weren't, it would not persist. Political efficiency therefore is a useful concept for the positive economic analysis of policies and institutions.

Furthermore, by adopting a dynamic framework of endogenous and costly entry of new interest groups, we are able to elucidate the relationship between political and planner efficiency. What we demonstrate is that inefficiency, as defined by the planner's problem, is possible in equilibrium. However, such inefficiencies are bounded by the organizational costs of entry for new interest groups (i.e., political efficiency holds even when planner efficiency does not). Furthermore, when the planner inefficiencies of policy exceed that bound, new interest groups enter and produce planner efficiency. The results presented herein demonstrate that scholars who argue that "whatever is, is efficient" are correct when all costs (including political costs) are considered. In addition, it necessarily follows that the degree of planner inefficiency that exists is bounded by the costs associated with political constraints.

3 Interest groups and efficiency: a sketch of the selection mechanism

An evolutionary approach to policy should begin with reference to initial conditions. At a state's founding, the policies and institutional structure are chosen (or have evolved) to fit the preferences of the country's founders (Thompson, 2008). One can think of the initial policies and institutions as a set of reaction functions that the founders communicate to the rest of society. Given the hierarchical structure between the country's founders and the rest of society, the institutions and policies adopted not only reflect the preferences of the founder(s), but also are Pareto efficient (Thompson & Faith, 1981). In addition, one should expect the founders to design a system of governance that preserves the status quo (Thompson, 2008) and interest groups to form to protect and maintain those policies.

It is important to note that the Pareto efficiency of the early policies is conditional on the reaction functions communicated by the founders. As time goes by, both political actors and circumstances change. As such, a desire might arise within society to implement new policies or change existing policies. To do so, individuals with common interests in policy change will form new interest groups. The new policies always will be judged against the status quo. As a result, our analysis will focus on the durability of the status quo and the endogenous entry of interest groups.

The importance of the status quo is central to any interest group theory of public policy, in which existing legislation represents durable contracts between legislators and interest groups. According to the interest group theory of public policy, legislation should be considered in the context of supply and demand. The demand for legislation comes from groups that seek to use legislation to generate value in the form of a wealth transfer to the group. On the other hand, "those who 'supply' wealth transfers are individuals who do not find it cost effective to resist having their wealth taken away. In other words, it costs more than one dollar to resist having one dollar taken away" (Tollison, 1988, p. 343).

Political actors are the specialist arbiters who match interest-group demanders with suppliers. It is a statement of what political actors do; the statement does very little to describe how they accomplish their tasks. Like Alchian's (1950) model of firms, political actors can be thought of as entrepreneurs who experiment and imitate to achieve their

desired objectives. We model political actors as individuals seeking to acquire wealth through the political process.⁴ We need not imply that political actors are crooks or otherwise disreputable. On the contrary, political actors attempt to acquire wealth through successful political careers that can be fulfilled only by implementing policies that keep them employed in their chosen activities. Thus, political actors have an incentive to view particular interest group policies as objectives to put into effect. Politicians have an incentive not only to implement policies that achieve the objectives of existing interest groups but also to identify possible policies that potential interest groups would be willing to support. Politicians can achieve success by imitating policies that have been executed successfully elsewhere and experimenting with new policies that achieve the specific objectives of supporting interest groups.

In keeping with Alchian's discussion of evolution and survival, the efficiency of public policy depends on the selection mechanism. In a market setting, the profit mechanism selects firms that are better at earning a profit than their competitors. In a political setting, the selection mechanism for relatively efficient policies hardly is obvious. In what follows, we present a sketch of the selection mechanism and then a formal model of it.

A crucial insight of the Coase theorem (Coase, 1960; Stigler, 1966, p. 133) is that organizational costs, including any bargaining costs, are the sources of inefficient actions.⁵ In politics, that means inefficient legislation. To understand that point, consider the following example. Suppose that the world is free of bargaining and organizational costs. One interest group, let's call it Group 1, wants to enact a policy that would provide a benefit, B , to the group's members. The cost to the rest of society is C . If the net benefit of the policy is positive, $B > C$, the policy will become the law. However, if $C > B$, then others will organize into Group 2. An entrepreneurial political actor will then negotiate on behalf of the new interest group to effectively offer to pay Group 1 an amount $B + \epsilon < C$ not to enact the policy. In that scenario, the only policies that would be enacted are those in which the benefits exceed the costs.

The foregoing argument leads to a straightforward proposition. If we define efficient policy as planner efficiency, in which the benefits exceed the costs, then in the absence of organizational costs, the political process will select efficient policies. The proof is obvious and follows from the example above and, again, is nothing more than the Coase theorem applied directly to politics. If any interest group proposed legislation for which the costs exceeded the benefits, an opposition interest group would form effectively to bribe the interest group proposing the legislation to abandon their proposal. The bribes would result in a Pareto improvement relative to the implementation of the policy; inefficient policies are prevented from emerging.

A corollary to this proposition is that inefficient policies from the planner's perspective can result only if external costs, such as organizational and bargaining costs, are associated with forming opposition interest groups and negotiating the bribe. We can illustrate that conclusion with an example. Suppose that the cost of organizing for Group i is given as O_i . If $B - O_i > 0$, an incentive exists for an interest group to form since the net benefit of entry is positive. In keeping with our previous example, let's call

⁴ We could similarly assume that political actors maximize some measure of "political success", such as votes. However, for simplicity, we assume that they maximize wealth, since the rest of our analysis is framed in terms net of simple cost and benefits.

⁵ While it is referred to as the "Coase" theorem, the theorem is credited to George Stigler and bears little resemblance to Coase's interpretation of his own paper. See, e.g., Medema (1994), McCloskey (1998) and Albrecht and Kogelmann (2020). On the application of the Coase theorem to politics, see Acemoglu (2003), Parisi (2003), and Munger (2019).

that interest group, Group 1. Now suppose that $B < C$. It follows that the cost to society exceeds the benefit to the group and the policy therefore is inefficient by definition. For the rest of society to block its adoption, a competing interest group would have to emerge to bribe the original interest group. Again, let's call it Group 2. The cost of the bribe is $B - O_1 + \epsilon + O_2$. If $B < C$, but $B + \epsilon + (O_2 - O_1) > C$, then Group 2 never will materialize and the inefficient policy will be enacted. It is not worthwhile for the members of society who will bear the cost of the policy to organize in opposition to it.

What the analysis illustrates is that policies that are inefficient from the planner's perspective will be adopted if the costs of organizing are sufficiently large that the group harmed by the policies would be better off living with the costs of them than organizing in opposition. Furthermore, the example illustrates the idea described by Olson (1971) of concentrated benefits and dispersed costs. If the benefits of a particular policy are concentrated within a small number of firms in an industry, but the costs of the policy are dispersed across thousands of its customers, the organizing costs for consumers are likely to be substantially higher than for the firms, i.e., $O_2 \gg O_1$. All else equal, the inequality makes inefficient policies more likely to be enacted.

Nonetheless, they are static examples. What we are concerned with is evolution and selection, which requires dynamic analysis. Thus, while the examples are useful for explaining the emergence of inefficient policies, they cannot explain why inefficient policies should persist. The example is like a one-time vote with no future prospect of reversal. Actual political processes are not like that. To discuss evolution and selection, we need a dynamic analysis. For example, suppose that firms in a particular industry earn a flow of total profits each period and have deployed their interest-group influence to obtain a benefit, B , each period. The present value of that wealth transfer over an infinite horizon is B/r , where r is the real interest rate. To bribe the interest group into giving up the flow of benefits, another interest group would have to enter the political market and pay the existing group $B/r + \epsilon$ to get rid of the policy. Under what conditions would another group emerge? Consider that the per-period cost of the policy is once again given by C . However, suppose that C follows a random walk. An example consistent with that idea would be a tariff on steel imports. Thus, B would be the marginal flow of profits each period to domestic firms associated with restricting foreign competition. If the productivity of steel manufacturing (or the quality of steel) in foreign countries follows a random walk and the tariff is set sufficiently high, then the costs of the tariff will follow a random walk as well. Under that scenario, if the costs rise sufficiently, the consumers bearing the tariff's burden will have an incentive to organize and bribe steel producers to eliminate the tariff. In other words, a threshold, C^* exists that is a function of B , ϵ , O_2 and the time-series properties of C , such that consumers will be willing to incur the costs of organizing opposition.

Several important implications follow from the extended model, which will be made more explicit in the formal model and propositions in the next subsection. First, in the long run, policies that are inefficient from the perspective of the planner should tend to be eliminated unless the benefiting interest group does everything it can to keep the moderate the policy's costs (Proposition 1). Second, an upper bound is placed on the level of planner inefficiency. The only inefficient policies that can persist over time are those with moderate costs (Proposition 2). Third, the threshold is increasing in the cost of organizing (Corollary 2.1). Thus, any institutions or policies that reduce organizational costs will tend to accelerate the elimination of planner-inefficient policies. When combined, the results imply that long-lasting policies will either be those that impose moderate net costs or those that are efficient. An argument that a particular long-lasting policy is inefficient must consider the

selection process. In other words, the longer the policy has lasted, the more willing the economist observing the policy should be carefully to reconsider the assumptions of their model conjecturing inefficiency. All else equal, a long-lasting policy is either efficient or only moderately costly.

4 A formal model

Time is continuous and infinitely long. Suppose that a policy already is in place that generates a flow of benefits, B , for an interest group and imposes a flow of costs on other members of society, C . The cost of organizing an interest group is O . If a new interest group is formed, the group will bribe the beneficiaries of the existing policy to eliminate the policy. It follows that the net benefit of entry for the new interest group at time t is:

$$\text{Net benefit} = \underbrace{E \int_t^\infty e^{-\rho t} C(t) dt}_{\text{Expected Cost Saving}} - \left(\underbrace{E \int_t^\infty e^{-\rho t} B(t) dt + \epsilon}_{\text{Expected Bribe}} \right) - \underbrace{O}_{\text{Entry Cost}}$$

Or, alternatively,

$$\text{Net benefit} = \underbrace{E \int_t^\infty e^{-\rho t} [C(t) - B(t)] dt - \epsilon}_{\text{Expected Net Cost Saving}} - \underbrace{O}_{\text{Entry Cost}} \tag{1}$$

Let $N = C - B$ denote the net cost of the policy that could be avoided upon its repeal. Furthermore, suppose that from the perspective of the prospective interest group, the net cost of the policy varies exogenously over time (i.e. beyond the control of the prospective interest group) and is specifically assumed to follow a geometric Brownian motion:

$$\frac{dN(t)}{N(t)} = \mu dt + \sigma dz, \tag{2}$$

where $\mu \geq 0$ is the expected rate of change in the net cost, σ is the conditional standard deviation, dz is an increment of a Wiener process (i.e., $dz = \epsilon \sqrt{dt}$, where ϵ is drawn from a standard normal distribution), and $N(0) = N_0$. The choice of geometric Brownian motion to model the policy’s net costs captures two key assumptions. The first assumption is that the net cost of the policy is exogenous to the prospective interest group because it has no control over those net costs without entry into the political, or legislative, market. The second assumption is that Brownian motion implies that the time path of the policy’s costs is unpredictable with the possible exception of a general drift (μ) over time.⁶

To model the entry decision of the prospective interest group, it is important to note that the group has the option to enter the political, or legislative market, and put an end to the costly policy. The option to enter has value in the same way that a financial option has value. Thus, we can determine when a prospective interest group will enter the market in two steps. First, we can compute the value of that option as a function of the net cost of existing legislation. Second, we can determine the precise amount of the net cost at which the prospective interest group will decide to enter the market.

⁶ Note that we have assumed that $\mu \geq 0$. If $\mu < 0$, then the net costs of the policy would have a negative drift over time and eventually would be insignificant without any action needed.

We start by deriving the value of the option of entering the political market as a function of the policy's net cost. Let $V(N)$ denote the value of the option of entering the political market. The value of the option satisfies the following recursive representation:

$$V(N, t) = \frac{1}{1 + \rho\Delta t} EV(N', t + \Delta t),$$

where ρ is the rate of time preference, E is the expectations operator, and N' is the net cost of the policy after a time interval of length Δt . The formula states that the value of the option today is equal to the expected discounted value of the option next period. Note that the equation has the following continuous time representation⁷:

$$\rho V(N) = \frac{1}{dt} EdV$$

Applying Ito's Lemma it can be written as

$$\rho V(N) = \frac{1}{dt} E[V'(N)dN + \frac{1}{2}V''(N)(dN)^2].$$

Substituting Eq. (2) into the equation and simplifying yields:

$$\frac{1}{2}\sigma^2 N^2 V''(N) + \mu N V'(N) - \rho V(N) = 0. \quad (3)$$

Equation (3) is a second-order differential equation that has a known solution of the form:

$$V(N) = \alpha_1 N^{\beta^+} + \alpha_2 N^{\beta^-}, \quad (4)$$

where α_1 and α_2 are positive constants and β^+ and β^- are the positive and negative solutions, respectively, to the quadratic equation:

$$\frac{1}{2}\beta^2 + \left(\mu - \frac{1}{2}\sigma^2\right)\beta - \rho = 0. \quad (5)$$

Economic intuition simplifies the solution shown in Eq. (4). Applying that intuition requires two assumptions. First, we assume that the value of the option to enter the political market becomes worthless as the net policy cost becomes arbitrarily close to zero. Formally, that assumption implies that

$$\lim_{N \rightarrow 0} V(N) = 0$$

For that condition to hold, it must be true that α_2 in Eq. (4) is equal to zero. The solution thus reduces to.

⁷ Multiplying both side of the discrete time representation by $1 + \rho\Delta t$ and rearranging yields.

$$\rho V(N) = \frac{1}{\Delta t} EdV,$$

where $EdV := EV(N', t + \Delta t) - V(N, t)$. Taking the limit as Δt goes to zero yields the continuous time representation.

$$V(N) = \alpha_1 N^{\beta^+}. \tag{6}$$

Second, let N^* denote the net cost at which the interest group decides to enter. At that point, the interest group will be indifferent between holding the option and entering the market. Furthermore, recall that upon entering the market the interest group receives a benefit consistent with Eq. (1). It follows that when the interest group enters:

$$V(N^*) = \alpha_1 (N^*)^{\beta^+} = \frac{N^*}{\rho - \mu} - O,$$

where, for simplicity, we assume that $\epsilon \approx 0$. Solving this expression for α_1 yields:

$$\alpha_1 = (N^*)^{-\beta^+} \left(\frac{N^*}{\rho - \mu} - O \right).$$

Plugging this solution for α_1 into Eq. (6) yields:

$$V(N) = \underbrace{\left(\frac{N}{N^*} \right)^{\beta^+}}_{\text{Stochastic Discount Factor}} \times \underbrace{\left(\frac{N^*}{\rho - \mu} - O \right)}_{\text{Value at the Exercise Point}} \tag{7}$$

We now have a solution for the option value and a straightforward economic interpretation for it. As shown, the value of the option is the product of a stochastic discount factor and the value of the option at its exercise point. The tradeoff faced by the prospective interest group is as follows. All else equal, the decision to enter when net costs are high yields a larger benefit when the interest group is formed, thus raising the option’s value. However, waiting for a higher net cost threshold means that, on average, the prospective interest group will wait longer to enter. Waiting reduces the discount factor and therefore the present value of the option. To balance the tradeoff optimally, the prospective interest group can choose N^* to maximize the option value of entry. The value of N^* that maximizes Eq. (7) is given as.

$$N^* = \left(\frac{\beta}{\beta - 1} \right) (\rho - \mu) O, \tag{8}$$

where the superscript on β has been suppressed for notational convenience. The threshold for entry by the prospective interest group therefore is directly proportional to its organizational cost. Whenever $N \geq N^*$, the interest group will enter the political market and bribe the benefitting interest group to overturn the inefficient policy. Since N is stochastic, the length of time that an inefficient policy will last likewise is stochastic. Let \tilde{T} denote the time of interest-group entry. It follows that

$$\tilde{T} = \inf\{t \geq 0 | N \geq N^*\}.$$

The inefficient policy will persist until the earliest point in time at which the net cost meets or crosses the threshold. Assuming that the analysis begins in period $t = 0$, it follows that inefficient policies will last for \tilde{T} periods before prospective interest groups enter and overturn the policy.

5 Discussion

The model in the previous section is sufficiently broad that it easily is generalizable to any policy. For example, for any policy j , the entry threshold can be written as.

$$N_j^* = \left(\frac{\beta_j}{\beta_j - 1} \right) (\rho - \mu_j) O_j, \quad (9)$$

where

$$\beta_j = \frac{(\sigma_j/2) - \mu_j + \sqrt{\left(\mu_j - \frac{\sigma^2}{2}\right)^2 + 2\sigma_j^2\rho}}{\sigma_j^2}$$

Given that we already have solved for the threshold, N_j^* , the following proposition follows almost immediately.

Proposition 1 (Asymptotic efficiency). *The probability that any inefficient policy j survives goes to zero as time goes to infinity.*

Proof. Recall that the stopping time is given as $\tilde{T} = \inf\{t \geq 0 | N \geq N^*\}$. The proposition is equivalent to stating that the stopping time is finite, or $P(\tilde{T} < \infty) = 1$. That is a known result for Brownian motion with a constant barrier, such as N^* . See Stokey (2008, Theorem 5.1). QED. \square

Several important implications follow from the model. First, since prospective interest groups will enter whenever $N_j \geq N_j^*$, it follows that a *selection mechanism* eliminates inefficient policies. Moreover, that selection mechanism leads to the higher, planner efficiency standard. How quickly a particular society can eliminate planner inefficient policies by the endogenous entry of interest groups depends on the initial net cost of the policy $N(0) = N_0$ in comparison with the threshold for entry. Taking the initial cost as given, inefficient policies will tend to be eliminated faster as N_j^* declines. \square

Proposition 1 is a mathematical formulation of George Stigler's famous remark that "every durable social institution or practice is efficient, or it would not persist over time" (Stigler, 1992, p. 459). However, notice that we have not simply assumed that institutions are efficient by relying on a weaker efficiency standard. Instead, we have provided a proof that durable institutions must achieve planner efficiency.

The second important result, which is of more practical relevance, is that an upper-bound can be placed on the net cost of every planner inefficient policy. Since new interest groups will enter whenever the net cost of a current policy exceeds some threshold, it follows that the only policies that can persist over the very long run must either be planner efficient or planner inefficient with moderate costs relative to organizational costs. That conclusion is stated formally in Proposition 2. Again, given the work presented above, the proof is straightforward.

Proposition 2 (Bounded inefficiency). *For any parameters ρ, μ_j, σ_j , an upper bound exists on the level of policy inefficiency.*

Proof. If a policy is still in place at time t , the implication is that its net cost to society $N_j(t)$ is less than N_j^* . □

Using that result and rearranging Eq. (9) we have

$$\frac{N_j(t)}{\rho - \mu_j} \leq \left(\frac{\beta_j}{\beta_j - 1} \right) O_j,$$

which sets an upper bound on the level of planner inefficiency. QED.

What the foregoing suggests is that the expected discounted net cost of the policy over an infinite horizon is less than or equal to a multiple of organizational costs at the optimal entry point for prospective interest groups. Thus, any policy that persists over the long run must either have moderate costs associated with planner inefficiency, the organizational costs must be very large, or the policy must be planner efficient. That implication is important for policy analysis. In light of it, economists who want to argue that a particular long-lasting policy is inefficient and costly should be willing to reconsider the magnitude of the policy's cost or even its inefficiency solely on the basis of the fact that the policy has lasted a sufficiently long time. Otherwise, they must explain why the organizational costs of prospective interest groups opposing the policy block their entry.

Corollary 2.1 (Comparative inefficiencies). *The upper limit on policy inefficiencies is increasing in the organizational costs, O_j .*

Thus, societies with lower organizational costs will tend to have more efficient policy regimes. At the same time, it is important to understand the difference between static analysis and the dynamic analysis of our model.

Proposition 3 (Dynamic efficiency versus static efficiency). *Policies exist that are dynamically efficient but are statically inefficient.*

Proof. In a static environment, interest groups will enter the market if.

$$E \int_0^\infty e^{-\rho t} C_j(t) dt \geq E \int_0^\infty e^{-\rho t} B_j(t) dt + O_j.$$

Or, alternatively,

$$E \int_0^\infty e^{-\rho t} [C_j(t) - B_j(t)] dt = E \int_0^\infty e^{-\rho t} N_j(t) dt = \frac{N_j}{\rho - \mu_j} \geq O.$$

In other words, if the cost of organizing an interest group to oppose the policy is less than or equal to the policy's net cost, the prospective interest group should enter the political market.

In the dynamic model, it follows that the prospective interest group should enter if.

$$N_j^* \leq N_j(t).$$

Or, using the solution for N_j^* ,

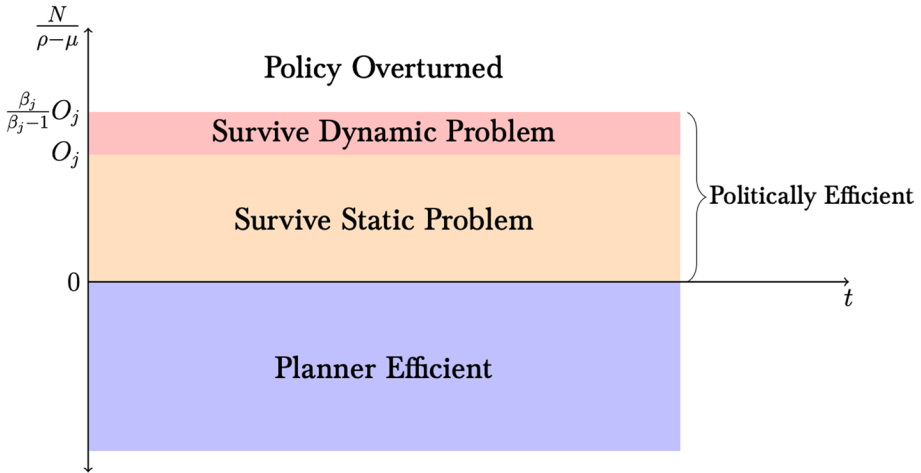


Fig. 1 Visualizing planner efficiency, political efficiency, and the upper bound on planner inefficiency

$$O_j \leq \left(1 - \frac{1}{\beta_j}\right) \frac{N_j(t)}{\rho - \mu_j}.$$

Note that since $\beta_j > 1$, it follows that organizational costs must be lower in the dynamic model than in the static model to overturn an inefficient policy. QED.

From a practical perspective, Proposition 3 means that economists who do not consider the dynamic nature of policy reform will over-diagnose inefficiencies. Proposition 3 is explained by uncertainty about the net costs. In the dynamic model, since organizing an interest group is costly, prospective group members would prefer to wait and see if the net costs are moderate before incurring the organizational costs. So long as the costs remain moderate, members of the prospective group will be willing to tolerate them. What tolerant waiting implies is that it is possible to observe planner inefficient policies that also are politically inefficient from a static perspective but which actually are politically efficient in a dynamic environment. Nonetheless, Proposition 1 ensures that a selection mechanism operates in the dynamic model to overturn planner inefficient policies if the costs exceed moderate values.

Overall, the results of our model can be visualized in Fig. 1. As shown there, when $N < 0$, the benefits exceed the costs. That is planner efficiency. When $N > 0$, the policy's costs exceed the benefits. Nonetheless, policies that are inefficient from the planner's perspective remain politically efficient if the costs of organizing opposition groups are sufficiently large. In addition, as the figure shows, the set of policies that are politically efficient in dynamic decision-making encompasses more things than are politically efficient in a static decision-making process. Overall, what the analysis shows is that any policy that is inefficient from the planner's perspective, but is not overturned, is politically efficient. Nonetheless, political efficiency does not guarantee planner efficiency. Our framework therefore reveals how societies select planner efficient policies while also explaining how policies that are inefficient from a planner's perspective can survive if their costs are moderate enough to produce a politically efficient outcome.

6 What should political economists do?

Instead of concluding by re-summarizing our results, we end by considering what implications our argument have for the role of political economists.

Our argument calls into question economists' predilections for calling certain policies (minimum wages, agricultural subsidies, carbon taxes) inefficient. Just as economists would be hesitant to tell people in markets that they are leaving \$20 bills on the ground, so should economists be hesitant to claim that \$20 political bills are unclaimed. Thus, our analysis leads to a presumption of efficiency (Breton, 1993).

Some scholars seem to think of the presumption of efficiency as implying that economics can help one to understand the world but renders economics unable to improve the world. Our paper has much to say about that viewpoint. First, before one can improve the world, one must understand it. To the extent that the presumption of efficiency biases economists towards learning, well-intentioned efforts to improve things that don't need improving would be minimized. Second, while our model might imply that some economists need to re-orient their analyses, we reject the idea that our argument renders economists unable to improve the world. In fact, our model implies that the path to planner efficiency requires human action.

Our model suggests two possible roles for the economist. The first, as already pointed out by James Buchanan, is simply to make policy suggestions. In that approach, the economist makes suggestions to a political entrepreneur, in a manner similar to how consulting economists can sometimes help firms increase their profitability. By providing economic knowledge to political entrepreneurs, economists can affect the relative prices or the constraints that others face, which in turn influences the institutions that are efficient in specific contexts and, hence, the institutions adopted (Leeson, 2020, p. 148). If the proposed change is a \$20 bill, the political entrepreneur can pick it up. That could be the economist's role in the policy process.

More important, our paper suggests an Alchian-esque approach to political economy. A focus on the political process as evolutionary moves the role of the political economist to a focus on the constitutional rules of the game (Buchanan, 1949, 1975, pp. 227–228, 1987, p. 223) and, more recently, Aghion et al. (2004) and Barbera and Jackson (2004). Given institutions X that have organizational costs Y , a particular bound exists on the level of political inefficiency that can occur. However, if we consider an institutional change to X' that lowers organizational costs to Y' , then the original policy could change. More generally in our framework, a constitutional change that lowers organizational costs allows the evolutionary process to select efficient policies more effectively.

However, the political economist cannot simply point to a policy that does not match the efficient policy in some simple model and blithely assert inefficiency. Instead, the political economist needs to examine the political process in full flesh, along with the special circumstances of time and place that led to a specific policy and allowed it to survive. In a world of the second-best, some policies that appear to be inefficient in a baseline model turn out to be effective ways of dealing with other distortions in the world.

For example, capital taxation often is shown to be inefficient in canonical models (Chamley, 1986; Diamond & Mirrlees, 1971; Judd, 1985). And yet, the taxation of capital is prevalent in reality. Three approaches to such results are possible. The first is to say the capital taxation we see in the world is inefficient and poor political incentives allow capital taxation to remain in place. The second is to construct a more elaborate model to rationalize capital taxation, such as by incorporating private information (Golosov et al., 2003) or

international trade (Keen & Wildasin, 2004). In that approach, the takeaway must be that those other, simple models finding capital taxation to be inefficient are missing an important feature of the real world.

Our suggested approach is to look at the reasons advanced throughout history for explaining why capital taxation emerged *and then survived*. If one does so, one finds that, historically, capital taxation frequently was imposed to correct other distortions and was adopted extensively by economically successful societies (Hendrickson, 2019, 2020; Hendrickson et al., 2018; Thompson, 1974; Thompson & Hickson, 2001). Those societies that failed to tax capital accumulation properly did not prosper, while those that set up effective systems for taxing capital did prosper. For example, Thompson and Hickson (2001) rely on an evolutionary approach to explain the policies and institutions that emerged to fulfill critical defense-related objectives. Along the same lines, Thompson (1979) offers a national defense-based, rational explanation for subsidizing particular industries. Similarly, Hendrickson et al. (2018) argue that Britain's superior ability to tax capital accumulation, relative to China, played a key role in the two countries' economic power reversals in the eighteenth and nineteenth centuries. We think that the same point is generalizable. For example, we see four different ways of approaching open questions in the literature. The first two approaches trace originally to public finance. In the first approach, economists write down a model that includes some sort of friction, solve for the equilibrium, and compare the equilibrium to the allocation that would maximize social welfare. That is the approach taken by standard market failure theory, but also somewhat by Acemoglu's (2003) politics-as-conflict. Here, one compares an ideal to a model's equilibrium. In the second approach, economists start with the outcome and the constraints and work backwards to find the objective function.⁸ The third approach is like the dual of the second approach and is found in the "efficiency always" proponents, as elaborated by Cheung (1998). In that approach, the economist starts with the outcome and the objective and searches for the constraints that make the outcome efficient. The fourth approach is identified with public choice and political economy, in which the economist models the behavior of the political actors in the process. Our approach aligns more with the second and third approaches, suggesting that the first and fourth over-identify inefficiencies.

In addition to the theoretical innovation that allows us to speak of asymptotic efficiency and bounded inefficiencies, our approach suggests an alternative perspective on more applied policy work, and the role of the economist in public discourse. Buchanan (1959) argued that the way to "test" whether policy changes are improvements is whether the proposed changes can secure the unanimous consent of interested parties. Economists can contribute to crafting efficiency-enhancing policies at the margin by proposing political bargains that expand the size of the social product, while simultaneously containing distributional elements that make the proposals acceptable to existing stakeholders. Such proposals essentially are political buyouts and represent applications of the political Coase theorem (Acemoglu, 2003; Munger, 2019; Parisi, 2003).

We argue for applying and extending Coase's (1960) framework. By proposing Pareto-improving policies and institutional changes, economists are neither shoehorning reality into our preconceived models nor binding themselves to stubborn Panglossianism. Economists can be political-institutional entrepreneurs who specialize in studying the implications of institutions with particular attention to organizational costs and political

⁸ For recent work, see Brendon (2013), Lockwood and Weinzierl (2015), Lockwood and Weinzierl (2016), and Heathcote and Tsujiyama (2021).

bargaining, proposing ways to repackage side payments or loosen constraints in ways that meet the requirements of all interested parties while increasing the size of the social product. Admittedly, such proposals work only if economists are not themselves actively participating in the vagaries of day-to-day politics, qua economists. But ample room remains for economists to be social *scientists* as well as *social* scientists.

Yet, how effective economists are in such endeavors depends crucially on the notion of efficiency that they bring to the bargaining table. The difficulty is this: the planner's efficient allocation hinges on the planner's problem proposed by the economist. Unless one defines efficiency in the sense discussed herein economists will not know how to structure the buyout, or even whom to buy out in the first place. That is because a policy that looks inefficient can be, and perhaps frequently is, efficient. Identifying the constraints that make policies durable and, hence, asymptotically efficient, is necessary before we can even come to the table to talk about buyouts. If we fail to identify the relevant constraints, economists will be fooled into proposing political Coasean bargains that do not secure the consent of all affected parties and be left scratching their heads as to why.

In other words, the efficacy of a political Coase theorem presupposes agreement about *how* policy should change. But economists cannot discuss *how* policy should change meaningfully unless they have first correctly identified *what* policy should change. That identification involves grappling with hidden constraints that only a rational choice theory of politics can uncover. Our framework helps to identify the *what*.

While the argument above shows how our framework assists theoretical analysis of institutions, we argue that it also is fruitful for *applied* work in political economy. Other economists have adopted the same approach for a long time, although without our evolutionary emphasis. For example, our approach is closely related to Cheung (1998, p. 518), who explains that he relied on Pareto optimality as a tool for positive economics:

My reinterpretation of Pareto optimality renders the condition worthless in welfare economics, but significantly enhances its role in positive analysis. In specifying constraints to derive testable propositions, whenever the Pareto condition fails to hold, we would immediately know that some constraints are missing: it would then be up to us to decide whether the omitted constraints are relevant to the observations we are seeking to explain.

He applied that approach to market settings, such as sharecropping, fisheries, and the market for bees (Cheung, 1968, 1970, 1973).

However, the same logic can be applied to non-market settings, as has been shown by the work of Peter Leeson. For example, Leeson (2012, p. 691) considers the use of "ordeals", a practice whereby "For 400 years the most sophisticated persons in Europe decided difficult criminal cases by asking the defendant to thrust his arm into a cauldron of boiling water and fish out a ring". Instead of accepting the conclusion that ordeals are part of an obviously inefficient system (as done by other writers, see references therein), Leeson uses the system's survival as a reason to search deeper for the hidden costs and benefits of the institutions of torture. From that search, Leeson (*ibid.*, p. 712) concludes,

In a dramatically less technologically advanced state, such as that which prevailed in the Middle Ages, or even in a technologically advanced state where individuals believe strongly that trials of fire and water are *iudicia Dei*, medieval-style judicial ordeals could again be the efficient option.

Notice that Leeson does not adduce normative conclusions; he does not argue that modern societies *should* use ordeals. Instead, he searches for the relevant institutional constraints that

are missing from previous analyses. In our formulation, we rely on the fact that institutions are subject to a selection mechanism as a tool for applied work. Why was it selected? What were the relevant interest groups and organizational costs? We believe that such an approach is extremely fruitful and we have highlighted a few ways forward down the path for understanding non-market decision-making.

References

- Acemoglu, D. (2003). Why not a political Coase theorem? Social conflict, commitment, and politics. *Journal of Comparative Economics*, 31(4), 620–652.
- Aghion, P., Alesina, A., & Trebbi, F. (2004). Endogenous political institutions. *The Quarterly Journal of Economics*, 119(2), 565–611.
- Albrecht, B. C., & Kogelmann, B. (2020). *Coasean causal inference: Using models as foils* [working paper]. https://www.briancalbrecht.com/Albrecht_Kogelmann_Coasean_Inference.pdf
- Alchian, A. A. (1950). Uncertainty, evolution, and economic theory. *Journal of Political Economy*, 58(3), 211–221.
- Ashworth, S. (2012). Electoral accountability: Recent theoretical and empirical work. *Annual Review of Political Science*, 15(1), 183–201.
- Barbera, S., & Jackson, M. O. (2004). Choosing how to choose: Self-stable majority rules and constitutions. *The Quarterly Journal of Economics*, 119(3), 1011–1048.
- Baron, D. P. (1994). Electoral competition with informed and uninformed voters. *The American Political Science Review*, 88(1), 33–47.
- Bassetto, M., & Sargent, T. J. (2006). Politics and efficiency of separating capital and ordinary government budgets. *The Quarterly Journal of Economics*, 121(4), 1167–1210.
- Becker, G. S. (1983). A theory of competition among pressure groups for political influence. *The Quarterly Journal of Economics*, 98(3), 371–400.
- Boettke, P. J., Coyne, C. J., & Leeson, P. T. (2007). Saving government failure theory from itself: Recasting political economy from an Austrian perspective. *Constitutional Political Economy*, 18(2), 127–143.
- Brendon, C. (2013). *Efficiency, equity, and optimal income taxation* [working paper]. <https://cadmus.eui.eu/handle/1814/27937>
- Breton, A. (1993). Toward a presumption of efficiency in politics. *Public Choice*, 77(1), 53–65.
- Buchanan, J. M. (1949). The pure theory of government finance: A suggested approach. *Journal of Political Economy*, 57(6), 496–505.
- Buchanan, J. M. (1959). Positive economics, welfare economics, and political economy. *The Journal of Law and Economics*, 2, 124–138.
- Buchanan, J. M. (1975). A contractarian paradigm for applying economic theory. *The American Economic Review*, 65(2), 225–230.
- Buchanan, J. M. (1987). The constitution of economic policy. *Science*, 236(4807), 1433–1436.
- Chamley, C. (1986). Optimal taxation of capital income in general equilibrium with infinite lives. *Econometrica*, 54(3), 607–622.
- Chetty, R., Hendren, N., & Katz, L. F. (2016). The effects of exposure to better neighborhoods on children: New evidence from the moving to opportunity experiment. *American Economic Review*, 106(4), 855–902.
- Cheung, S. (1968). Private property rights and sharecropping. *Journal of Political Economy*, 76(6), 1107–1122.
- Cheung, S. (1970). The structure of a contract and the theory of a non-exclusive resource. *The Journal of Law and Economics*, 13(1), 49–70.
- Cheung, S. (1973). The fable of the bees: An economic investigation. *The Journal of Law and Economics*, 16(1), 11–33.
- Cheung, S. (1998). The transaction costs paradigm. *Economic Inquiry*, 36(4), 514–521.
- Clemens, M. A. (2011). Economics and emigration: Trillion-dollar bills on the sidewalk? *Journal of Economic Perspectives*, 25(3), 83–106.
- Coase, R. H. (1960). The problem of social cost. *The Journal of Law & Economics*, 3, 1–44.
- Diamond, P. A., & Mirrlees, J. A. (1971). Optimal taxation and public production I: Production efficiency. *The American Economic Review*, 61(1), 8–27.
- Downs, A. (1957). *An economic theory of democracy*. Harper Collins.

- Duggan, J., & Martinelli, C. (2017). The political economy of dynamic elections: Accountability, commitment, and responsiveness. *Journal of Economic Literature*, 55(3), 916–984.
- Fiorina, M. P. (1981). *Retrospective voting in American national elections*. Yale University Press.
- Fox, J. (2007). Government transparency and policymaking. *Public Choice*, 131(1/2), 23–44.
- Gennaioli, N., & Shleifer, A. (2007). The evolution of common law. *Journal of Political Economy*, 115(1), 43–68.
- Golosov, M., Kocherlakota, N., & Tsyvinski, A. (2003). Optimal indirect and capital taxation. *The Review of Economic Studies*, 70(3), 569–587.
- Grossman, G. M., & Helpman, E. (1996). Electoral competition and special interest politics. *The Review of Economic Studies*, 63(2), 265–286.
- Heathcote, J., & Tsujiyama, H. (2021). Optimal income taxation: Mirrlees meets Ramsey. *Journal of Political Economy*, 129(11), 3141–3184.
- Hendrickson, J. R. (2019). *U.S. maritime policy and economic efficiency* (SSRN Scholarly Paper No. 3486330). Social Science Research Network.
- Hendrickson, J. R. (2020). *Usury enforcement as an alternative to capital taxation in pre-modern states* (SSRN Scholarly Paper No. 3652489). Social Science Research Network.
- Hendrickson, J. R., Salter, A. W., & Albrecht, B. C. (2018). Preventing plunder: Military technology, capital accumulation, and economic growth. *Journal of Macroeconomics*, 58, 154–173.
- IGM Forum. (n.d.). *Steel and aluminum tariffs*. <https://www.igmchicago.org/surveys/steel-and-aluminum-tariffs/>
- Judd, K. L. (1985). Redistributive taxation in a simple perfect foresight model. *Journal of Public Economics*, 28(1), 59–83.
- Keen, M., & Wildasin, D. (2004). Pareto-efficient international taxation. *American Economic Review*, 94(1), 259–275.
- Leeson, P. T. (2012). Ordeals. *The Journal of Law and Economics*, 55(3), 691–714.
- Leeson, P. T. (2020). Logic is a harsh mistress: Welfare economics for economists. *Journal of Institutional Economics*, 16(2), 145–150.
- Lockwood, B. B., & Weinzierl, M. (2015). De gustibus non est taxandum: Heterogeneity in preferences and optimal redistribution. *Journal of Public Economics*, 124, 74–80.
- Lockwood, B. B., & Weinzierl, M. (2016). Positive and normative judgments implicit in U.S. tax policy, and the costs of unequal growth and recessions. *Journal of Monetary Economics*, 77, 30–47.
- Lohmann, S. (1998). An information rationale for the power of special interests. *The American Political Science Review*, 92(4), 809–827.
- Maskin, E., & Tirole, J. (2004). The politician and the judge: Accountability in government. *American Economic Review*, 94(4), 1034–1054.
- McCloskey, D. (1998). The so-called Coase theorem. *Eastern Economic Journal*, 24(3), 367–371.
- McCormick, R. E., Shughart, W. F., & Tollison, R. D. (1984). The disinterest in deregulation. *The American Economic Review*, 74(5), 1075–1079.
- Medema, S. G. (1994). The myth of two Coases: What Coase is really saying. *Journal of Economic Issues*, 28(1), 208–217.
- Munger, M. C. (2019). Tullock and the welfare costs of corruption: There is a “political Coase Theorem.” *Public Choice*, 181(1), 83–100.
- North, D. C. (1994). Economic performance through time. *The American Economic Review*, 84(3), 359–368.
- Olson, M. (1971). *The logic of collective action: Public goods and the theory of groups*. Harvard University Press.
- Parisi, F. (2003). Political Coase theorem. *Public Choice*, 115(1), 1–36.
- Peltzman, S. (1976). Toward a more general theory of regulation. *The Journal of Law & Economics*, 19(2), 211–240.
- Posner, R. A. (1974). Theories of economic regulation. *The Bell Journal of Economics and Management Science*, 5(2), 335–358.
- Priest, G. L. (1977). The common law process and the selection of efficient rules. *The Journal of Legal Studies*, 6(1), 65–82.
- Rubin, P. H. (1977). Why is the common law efficient? *The Journal of Legal Studies*, 6(1), 51–63.
- Stigler, G. J. (1966). *The theory of price* (3rd ed.). MacMillan Publishing.
- Stigler, G. J. (1971). The theory of economic regulation. *The Bell Journal of Economics and Management Science*, 2(1), 3.
- Stigler, G. (1992). Law or economics? *Journal of Law and Economics*, 35(2), 455–468.
- Stokey, N. L. (2008). *The economics of inaction: Stochastic control models with fixed costs*. Princeton University Press.

- Thompson, E. A. (2008). *A rational alternative to social contract theory and correspondingly new theory of optimal government* [working paper]. Available from authors upon request.
- Thompson, E. A. (1974). Taxation and national defense. *Journal of Political Economy*, 82(4), 755–782.
- Thompson, E. A. (1979). An economic basis for the “national defense argument” for aiding certain industries. *Journal of Political Economy*, 87(1), 1–36.
- Thompson, E. A., & Faith, R. L. (1981). A pure theory of strategic behavior and social institutions. *The American Economic Review*, 71(3), 366–380.
- Thompson, E. A., & Hickson, C. R. (2001). *Ideology and the evolution of vital institutions*. Springer.
- Tollison, R. D. (1988). Public choice and legislation. *Virginia Law Review*, 74(2), 339–371.
- Weingast, B. R., Shepsle, K. A., & Johnsen, C. (1981). The political economy of benefits and costs: A neo-classical approach to distributive politics. *Journal of Political Economy*, 89(4), 642–664.
- Wittman, D. (1989). Why democracies produce efficient results. *Journal of Political Economy*, 97(6), 1395–1424.

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