Some Institutional Problematics of Excess Burden Analytics

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Abstract

Excess burden is used widely throughout public finance, for both normative and positive analyses. While it is generally treated as a universal quality of all but lump sum taxation, I argue to the contrary that it is not a universal quality of taxation, but is at most a contingent feature of a subset of the possible institutional frameworks within which fiscal outcomes emerge. The conventional excess burden analytics transpose results from individual experiments where they do apply onto market experiments where they do not apply. In many respects, excess burden is like a grin without a cat, to borrow from Dennis Robertson’s assessment of Keynes’ liquidity preference theory of interest.

Author’s Note: I am grateful to Jürgen Backhaus, Roger Congleton, and Domenico Da Empoli for helpful discussions about some of the themes I advance here, though none of them can be held responsible for the product I offer.

Excess burden does a large amount of work, both normative and positive, in contemporary public finance. Inspired by the early formulations of Edgeworth (1897) and Ramsey (1927), fiscal scholars have made extensive use of excess
burden in their efforts to evaluate tax systems. Sometimes this evaluation proceeds directly in terms of minimizing the excess burden associated with raising some stipulated amount of revenue. At other times, it proceeds indirectly as an implication of using the state budget to maximize some social welfare function. Regardless of the particular way it is used, some notion of excess burden or welfare cost informs a good deal of normative work in public finance.

Excess burden also plays a notable role in efforts to construct positive models of tax politics. In this literature, which is presented comprehensively in Hettich and Winer (1999), a tax rate is what it is and not something else because there is a political equilibrium between those people who exert pressure for higher rates and those who exert pressure for lower rates. Excess burden plays an important role in these models, mainly in limiting the extent of taxation. This limit results in part because excess burden rises with the square of the tax rate, which in turn galvanizes increasingly strong resistance as tax burdens increase.

Despite the central position of excess burden in the theory of public finance, its analytical coherence seems severely problematical. This problematical character arises because the excess burden analytics typically provides neither motivation nor supporting analytical framework for the imposition of the tax. The tax is simply inserted into the analysis as a type of uncaused cause; it is presumed to strike a society as a form of hailstorm, an “imposta grandine,” to use a simile that James Buchanan (1960, pp. 39-40) attributes to Luigi Einaudi. This problematical character of excess burden brings to mind
Dennis Robertson’s (1940) appraisal of John Maynard Keynes’ liquidity preference theory of interest:

The rate of interest is what it is because it is expected to become other than what it is; if it is not expected to become other than it is, there is nothing left to tell us why it is what it is. The organ which secretes it has been amputated, and yet it somehow still exists—a grin without a cat (p. 25).

The theory of excess burden seems likewise to be a grin without a cat. It is possible to give an analytical representation of it, just as it is possible to represent a cat’s grin. Yet democracies contain no organ that can be said to secrete excess burden. It turns out that excess burden is not a universal property of all but lump sum taxation, but rather is at most a particular feature of some though not all institutional frameworks for fiscal governance. I start by reviewing the relationship between political regime and fiscal theorizing, then explain why democracies contain no organ that secretes excess burden, and close by noting some of the implications that result for fiscal theorizing.

The Relevance of Political Regime for Public Finance

There are two analytical polarities concerning the modeling of political regimes that are particularly relevant for fiscal theorizing. One of these polarities concerns allocative outcomes, the other concerns institutional processes of governance. With respect to allocative outcomes, James Buchanan (1960) observes that the Italian scholarship in public finance has proceeded largely
through the development of two polar models. One model invokes a cooperative state to explain fiscal outcomes. In that model, fiscal programs advance the common interests of everyone, evoking images of public goods and the benefit principle in the process. The other model advances a monopolistic or exploitive state to explain fiscal outcomes. In that model, fiscal programs secure advantages for dominant classes or groups at the expense of the remainder of society. The exploitive models assimilate the state more strongly to the practice of brigandage and rent extraction than to the supply of public goods.

The second polarity treats fiscal activity in terms of the institutional process through which fiscal phenomena are generated. The relevant options here are between modeling fiscal phenomena as someone’s optimizing choices and modeling fiscal phenomena as the resultants of spontaneous or catallactical interaction (Wagner 1993, 1997). In a widely noted paper, James Buchanan (1964) argued that the orienting vision of economics should aim at exchange or catallactics and not at individual maximization. This disjunction between a choice-theoretic and a catallactic orientation toward economics recurs throughout fiscal theorizing. The choice-theoretic orientation treats fiscal phenomena as objects of choice, with fiscal outcomes being assimilated to models of consumer or producer choice. The catallactic orientation treats fiscal phenomena as emergent and not directly chosen phenomena, and with the particular details of what emerges being guided by the institutional framework of fiscal governance.

With reference to historical development within the modern period of fiscal theorizing, Francis Edgeworth (1897) stands at the head of the choice-theoretic
orientation toward public finance while Knut Wicksell (1896) stands at the head of the catallactic orientation.

Which orientation toward fiscal phenomena is appropriate at any time or place depends on the political framework for fiscal governance that is in place. This connection between fiscal theorizing and political regime was recognized clearly by Knut Wicksell (1896), when he noted that

with some very few exceptions, the whole theory [of public finance] still rests on the now outdated political philosophy of absolutism. The theory seems to have retained the assumptions of its infancy, in the seventeenth and eighteenth centuries, when absolute power ruled almost all of Europe. . . . Even the most recent manuals on the science of public finance frequently leave the impression . . . of some sort of philosophy of enlightened and benevolent despotism (1958: pp. 82-83).

The choice-theoretic orientation necessarily invokes a ruler-subject relationship, as the phenomena of public finance arise out of some ruler’s choices. Public finance becomes the study of state intervention into the economy to accomplish something that the ruler chooses to accomplish. All ruler-subject relationships are despotic, in that they involve rulers using subjects as objects in the solution of their own maximization problems. To be sure, there are a variety of substantive formats a despotic relationship can take. In Puviani-like fashion (1903), this despotic relationship could be characterized as maximizing the present value of a ruler’s plundering, where the ability to plunder
depends on the ruler’s ability to promote and exploit fiscal illusions. For the most part, however, the choice-theoretic orientation has tended to convert plundering despots into enlightened despots, as represented by constructions whereby a ruler maximizes some social welfare function. Regardless of the form of despotism, the choice-theoretic orientation treats public finance as an interventionist act whereby rulers use subjects both as inputs and as constraints into their maximizing choices.

The catallactic orientation, exemplified cogently by Buchanan (1967, 1968), treats the phenomena of public finance as arising out of complex processes of exchange and domination. Within this orientation, public finance is the study of how people participate, either willingly or duressfully, through government to achieve their various ends. Fiscal phenomena emerge through complex interaction among people, and do not represent the choices of some ruler. In an exchange, each of the participants may well be modeled as maximizing utility, but there is nothing that is maximizing over the set of those participants. There stands no entity or person over those participants, who can use those individuals as inputs into the solution of some maximization problem. It is meaningless to ask what it is that is maximized by an exchange, though it is reasonable to ask each participant to an exchange what he or she derived from that exchange.

When Louis XIV exclaimed that “the state is me”, he could plausibly be described as facing a maximization problem, much as a plantation owner might also have done. But when Louis and the plantation owners are gone and self-
governance is in place, and where people have their purposes but there is no collective purpose that stands above or beyond them, constructs grounded in social maximization loose their substantive referant. Democratic outcomes, like market outcomes, are properly assimilated not to a theory of choice but to a theory of catallaxy, which in turn places particular emphasis on the institutional framework that governs the relationships among fiscal participants.

**Excess Burden Theorizing and its Problematics**

The fiscal analytics of excess burden are simple and straightforward, but may nonetheless warrant a brief visit to provide a launching pad for the subsequent discussion. Both the normative and the positive uses of excess burden in contemporary fiscal theory start from the same analytical point of departure, whereby a tax is said to distort some margin of choice. The analytical task is then to appraise the extent of the loss wrought by the distortion.

Figure 1 presents a standard, partial equilibrium representation of the excess burden of a tax. In an otherwise competitive economy, a tax is imposed on the consumption of some single product, X. Prior to the imposition of the tax, industry output was at \( X_1 \) and the product was priced at \( P_1 \). In Figure 1, the tax is reflected wholly in the increased product price, \( P_2 \). Industry output falls to \( X_2 \). Consumers transfer \( P_1 P_2 \) to government through the tax. In addition to this loss of disposable income, consumers suffer an additional or excess burden that is represented by \( abc \). This excess burden arises because the tax induces consumers to substitute other products for the taxed product. Prior to the tax,
those other products were revealed inferior to the taxed product. The loss in utility that results from tax-induced substitution generates an excess burden beyond the revenue generated by the tax. For the linear demand function shown in Figure 1, the excess burden would be one-half the product of the increase in price and the fall in quantity demanded. Excess burden would vary directly with the square of the tax and the elasticity of demand.

Figure 1 is a partial equilibrium representation that simplifies the exposition, and is presented here because it will be employed later to different effect. Because of its partial equilibrium character, Figure 1 neglects some important considerations. One such consideration is that the excess burden does not reside in the tax itself but in the substitution that the tax induces. The appropriate comparison is not between a positive tax and a zero tax, which is what Figure 1 would seem to suggest. The proper comparison is between a tax on X and a lump sum tax that raises the same revenue. The excess burden resides in the substitution that is generated through changes in relative prices and not through the decline in disposable income that the tax imposes, for the latter is simply a burden and not an excess burden.

Figure 2 shows a simple general equilibrium representation of the excess burden analytics. Suppose the undistorted, fully competitive price set is described by \( p_1 \). In light of that price set and the given production possibilities, the competitive allocation between X and Y is denoted by \( a \). The replacement of a lump sum tax with a tax on X rotates the price line clockwise around \( a \), as illustrated by \( p_2 \). The new equilibrium cannot be on \( P_2 \), however, because this
would violate the given production possibilities. The new equilibrium will be some such outcome as \( b \), where the relative prices described by \( p_3 \) are identical with those described by \( p_2 \), but where the outcome resides on the given production frontier. The excess burden resides in the loss of utility associated with the move from \( a \) to \( b \), for which compensating and equivalent variations are commonly used to construct monetary measures of the loss.

Regardless of whether excess burden is approached through partial or general equilibrium modeling, the original creation of the tax is left unexplained. This might be an acceptable analytical framework for characterizing the fiscal activities of an autocratic regime (Tullock 1987). In that regime, fiscal outcomes reflect a ruler’s optimizing choices. Whether the ruler collects revenue in lump sum fashion or through other forms of taxation will be determined through the ruler’s maximizing calculus. Despite the excess burden analytics, the ruler might use an excise tax over a lump sum tax because he thinks it might be less costly to administer or less subject to pilfering by his tax collectors. In any case, it is plain to see why the tax levies that emanate from an autocrat might be likened to a hailstorm. Such an autocrat might even be attuned to Puviani-like considerations in seeking to exploit illusions to increase the present value of his plundering. Excess burden could have a role to play in such analytics because an autocrat would have to be concerned about coups and revolutions whose likelihood might vary directly with the excess burdens his plundering places on his subjects.
In democratic regimes, however, taxation cannot be so readily assimilated to a monarchial-induced hailstorm. Democracy replaces a relationship between rulers and subjects with a relationship among citizens. In autocratic regimes, taxation is something that rulers do to subjects. In democracies, taxation is something that citizens do to themselves (Buchanan (1976), Backhaus (1992), Slemrod and Bakija (1996)). This, anyway, is the idealization of democratic taxation. The reality might be quite different, as illustrated by such arguments about democratic oligarchy as those advanced by Bertrand de Jouvenal (1961) and Anthony de Jasay (1985). However large or small the gap might be between the ideal and the real, taxation emerges from inside the body politic of taxpayers. In contrast, taxation emerges from outside the body politic of taxpayers in autocratic regimes, and represents a ruler’s intervention into that body politic. Within a democracy, however, there is no agent of intervention, but only different institutional frameworks that govern fiscal participation among citizens.

In a very different context, Don Patinkin (1965) explains that there are many analytical experiments that are sensible when applied to an individual, but which are not sensible when aggregated over all individuals and applied to a society. For instance, it is sensible to face an individual consumer with variations in the price of a single good. It is not sensible, however, to face all individuals simultaneously with such variation because it is impossible in the aggregate for one price alone to vary. Where an individual experiment can involve a change in one price alone, a market experiment must involve a consistent change in the pattern of price relationships.
This distinction between individual and market experiments has great significance for public finance. It is reasonable to take Figure 1 or 2 as representing an individual experiment. A single individual can be confronted with an excise tax or a lump sum tax, and some excess burden can be computed. Figure 1 or 2 can also be used to examine the impact of the tax extractions that an autocratic ruler imposes upon his subservient subjects. An autocrat can perform market experiments that vary tax rates on his subjects because he stands separate from the society over which he rules.

In a democracy, however, there is no autocratic ruler who can perform market experiments on subjects. There are no subjects who are ruled by some external, exogenous authority. Instead, there are citizens who participate through fiscal and political institutions in generating fiscal outcomes endogenously. Such constructions as Figure 1 and 2 are not able to give a reasonable account of democratic fiscal outcomes because they do not represent plausible market experiments within democratic regimes.

The plundering of an autocratic ruler might well lower utility for all subjects, as Figures 1 and 2 portray. Moreover, benevolence on the part of the ruler might perhaps even restore some of that utility. Regardless of the form that autocratic regimes might take, taxation in a democratic regime cannot lower utility for everyone. At least some people must gain utility, and in the limit everyone could gain. The distance between some people gaining and everyone gaining can, of course, be a large one, and that distance surely depends importantly on the institutional framework within which fiscal governance takes place.
Democratic taxation is an endogenous activity, so Figures 1 and 2 are seriously incomplete for representing democratic taxation. There are two general paths that can be taken to remedy this incompleteness. Both paths require a theory of endogenous collective action to generate the tax that is being analyzed. One path involves the capture of a universal gain for all, where everyone moves to a preferred position in the post tax situation. The other path is one where some people achieve preferred positions while others must move to inferior positions. Both paths are conceptually possible in a democracy. However, a path where everyone moves to an inferior position, as depicted by Figures 1 and 2, is impossible. In the remainder of this brief essay, I shall focus on the path of general gain, though I shall offer some remarks about the other path in closing.

Fiscal Institutions and Excess Burden Analytics

Within democratic institutions, it is unreasonable to inject exogenous tax changes into the picture because there exists no position of authority from which this can be done. A tax change will occur only because it allows some number of people to accomplish desired objectives that they otherwise could not accomplish. What that number might actually be in relation to the set of taxpayers is a variable that is influenced by political and fiscal institutions. The Wicksellian case illustrates a setting where the people who gain from collective action are identical with those who are taxed. It is also possible to describe fiscal arrangements where the gainers comprise a majority of taxpayers, as well as fiscal arrangements where the gainers comprise a minority. Whichever of these
situations holds in some particular instance, such constructions as those advanced by Figures 1 and 2 are inapt because they show everyone losing utility. The relevant options are that no one loses, a minority loses, and a majority loses, but never that everyone loses.

Consider three institutional arrangements for governing collective action that accomplish roughly the same allocative outcome. In all three cases there are individual orange growers who recognize that there are some activities that no individual grower would have any incentive to supply but yet might be beneficial to all growers. Examples of such activities might include research into the causes and treatment of blight, the development of standards of grading, and the organization of promotional activities for products that use oranges.

In case #1, the orange growers form a cooperative association to deal with these matters of common concern. The growers could finance the association by assessing themselves $1 per ton of oranges harvested. Alternatively, they could finance it by contributing one-half of one percent of sales. Both of these kinds of terms can be found in the actual organization of such endeavors. To be sure, it could be argued that the orange growers’ association is organized within the market, and excess burden pertains only to government. As a counter to this objection, let case #2 pertain to the creation of a special taxing district, whereby the orange growers are able to assess taxes on their production of oranges. As yet another institutional approach to public provision, let case #3 involve general fund financing within the Wicksellian
framework of parliamentary democracy, qualified majorities, and earmarked taxation (Wagner 1988).

These three cases illustrate three different institutional frameworks for organizing collective action, and with the tax emerging as one element of the collective transaction. Figure 3 (an elaboration from Buchanan 1968, p. 16) illustrates this case in a manner that is consistent with the typical excess burden analytics portrayed by Figure 2. Point A in Figure 3 represents the case where Prima and Segundo devote all of their effort to growing oranges and none to supporting cooperative activity. Point A here corresponds to point a in Figure 2. Figure 3 shows that both participants gain by the redirection of some of their labor to cooperative effort, as illustrated by the movement to point B. At this point Prima and Segundo are bearing tax burdens of \( A-T_P \) and \( A-T_S \) respectively. Far from there being an excess burden from taxation, or even no burden as illustrated by lump sum taxation, there is a gain, as Prima and Segundo both gain by the movement from A to B.

This point can be illustrated alternatively with reference to Figure 1, where the output axis is now oranges and point c denotes the market situation prior to collective action. Figure 1 shows the tax to raise price to \( P_2 \). The excess burden analytics, however, cannot come into play at this point because it incorporates no explanation for the creation of the tax. In the three cases presented above, the tax would not reduce output to \( X_2 \). To the contrary, the tax would be a means of financing programs that would increase the demand for oranges and thereby increase output beyond \( X_1 \). Alternatively, the cooperative’s actions might have
promoted some downward shift in supply, which would perhaps fit the blight illustration more fully. In either case, the excess burden analytics illustrated by Figures 1 and 2 do not describe a reasonable fiscal-market experiment in a democracy. The excess burden analytics make no relevant analytical contribution, and would seem to represent a grin without a cat.

To be sure, it could be claimed that a tax will induce substitution effects regardless of the institutional framework within which it is established. The orange growers may jointly agree to finance a program of grading and research, but the tax will still induce some substitution away from oranges, as compared with what would have happened had that program been financed in lump sum fashion. This is true, of course, but it is also irrelevant. All changes in prices involve substitution effects, and yet we do not speak of the excess burden of changes in market prices. The price of chain saws might rise in response to rising insurance costs to manufacturers. The price of CD recordings might rise in response to an increasing cost of policing infringements of copyright. As a result of these price changes, there will be some substitution away from chain saws and CD recordings, as compared with a situation where chain saws and CD recordings were somehow provided through lump sum taxation. Yet the provision of chain saws and CD recordings through lump sum charges is never a genuine option, just as collectivist planning without prices is never a genuine option for economic organization.

Changes in market prices as well as changes in fiscal prices induce substitution, but in no way can it be said that changes in fiscal prices involve
costs beyond those that accompany changes in market prices, at least so long as democratic governance proceeds along the Wicksellian-like path of general benefit to all. To the extent governance is mutually beneficial, as represented by models of fiscal exchange, there is no excess burden from taxation because taxation is the price that allows gains from trade to be exploited. This same point can be made in a somewhat different context, as noted in Wagner (1985). The deductibility of such things as mortgage interest from the income tax has often been criticized as creating a market distortion and, thereby, generating excess burden. This treatment fails to incorporate any plausible fiscal-market experiment that could generate the deduction in the first place. There are a number of ways this might be done. One possibility is a general recognition that it is better to live within a society of owners than within a society of renters. If so, mortgage deductibility might be a reasonable way of capturing this gain, particularly in light of realistic considerations concerning fiscal administration. Another possibility is rooted in majoritarian dominance: homeownership provides a readily formed coalition, and mortgage deductibility can serve as an effective vehicle for securing transfers. In either case, the fiscal process does not generate a loss for all, and excess burden. It may generate gains for nearly everyone, or perhaps only a majority, but the price changes that result are generated through interactions among market participants in any case, and without there being some categorical difference between market outcomes and fiscal outcomes.
4. Putting a Cat with the Grin

If there is a place for excess burden it perhaps resides in the realm of arbitrariness and capriciousness, and of domination and duress, where the domain of exchange prevails over only subsets of the population. This is the domain of the democratically exploitive state, in contrast to the domain of the democratically cooperative state. The relative sizes of the territories occupied by these two domains within democratic forms of governance is, of course, a topic of controversy, as illustrated by the widely varied reactions that greeted publication of Donald Wittman’s (1995) argument in support of the economic efficiency of democratic regimes. Within the domain of a cooperative democracy, excess burden, with its emphasis on a burden beyond the express terms of trade, would seem to conflict severely with exchange, and its emphasis on the gain that is secured through the trade, regardless of whether that trade is organized through fiscal or market institutions.

Within the domain of an exploitive democracy, dominant subsets are able to impose themselves on the remainder of society. Excess burden would seem sensible in those models, as a secretion from the dominant subsets that works to the discomfort of everyone else. While excess burden might have analytical relevance under such institutional frameworks, the practical import of excess burden would still seem to be quite limited. It could perhaps serve as instruction, either moral or prudential, to those dominant subsets to avoid excesses in their exploitive predations. But it is hard to see that excess burden could accomplish more than this. Within the context of democratic ideology, even if perhaps not
democratic practice, taxation would seem to be judged good or bad according to its ability to facilitate or impede mutually profitable fiscal exchange, and not according to some excess burden metric that is assessed independently of the fiscal process and the institutions that frame it. Excess burden would seem truly to be a grin without a cat.
References


   Cambridge: Cambridge University Press.


Figure 1: Partial Equilibrium Representation of Excess Burden
Figure 2: General Equilibrium Representation of Excess
Figure 3: Taxation and Gains from Fiscal Exchange