

## Public Debt, Cost Theory, and the Fiscal Illusion

### I. Introduction

To what extent does the presence or absence of a "public debt illusion" affect the temporal location of debt burden? This question is important in itself, but in exploring it I hope also to clarify some of the points that remain obscure in the recent literature. Puviani in his unique and highly original work on the fiscal illusion specifically included public debt as one institution through which such illusions may be generated.<sup>1</sup> In the more recent discussion, Vickrey and others have explicitly made reference to a "public debt illusion," and, at least to some extent, the phenomenon of postponing debt burden through time is held to depend on the presence of some illusion.

Clarification of the term "illusion" is needed at the outset. Following normal usage, illusion will be used here to refer to a phenomenon that appears to be what it is not, at least to some of the persons who encounter it. By implication, errors in behavior may arise because of the presence of illusion, errors that could be avoided by more complete knowledge. Economists are, of course, familiar with the "money illusion," a phenomenon that causes

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This paper was written in its original form during the academic year, 1961–62, and it was presented as lectures at both the London School of Economics and at the University of Frankfurt. It has been substantially modified from its original version. In undertaking this revision, in 1963–64, I have benefited from several discussions with my colleagues James Ferguson and Emilio Giardina.

1. A. Puviani, *Teoria dell'illusione finanziaria* (Palermo, 1903).

people to interpret money values as real values. Presumably, the introduction of a monetary calculus has the effect of "hiding" or "distorting" the underlying real values of the alternatives that are confronted for choice. Men could be predicted to behave differently from the way they do behave were this illusion not present.

A public debt illusion may be defined similarly. It is, or may be, a phenomenon, inherent in the institution of public credit, that causes some men in the political group to behave differently from the way that they would behave in the absence of any illusion. Two different, but related, forms of an illusion will be discussed; these are considered in Sections II and III. I shall demonstrate that the presence or the absence of an illusion does not modify in any essential respects the elementary proposition that the real cost of public expenditures that are financed through debt tends to be shifted forward in time.

### II. Undervaluation of Future Tax Liabilities

Vickrey suggests the most familiar form of a public debt illusion when he says: "if we assume a 'public debt illusion' under which individuals pay no attention to their share in the liability represented by the public debt . . ." (p. 133).<sup>2</sup> This prompts the question: What is an individual's share in the liability that an issue of interest-bearing public debt represents?

I should specify, first of all, that I am concerned here with the individual as he participates, directly or indirectly, in a collective decision-making process where the creation of public debt is one among several fiscal alternatives. In short, I concentrate on the role of the individual as "voter-taxpayer-beneficiary." I shall assume that public debt, if chosen, will be issued independently of tax payments in subsequent time periods. In such a model, debt is serviced from general governmental revenues that are not earmarked in advance. Under such circumstances, the voter-taxpayer, if he is wholly free of illusion, will recognize that the contractual terms upon which debt is created embody claims upon his income, or that of his heirs, in future account-

2. William Vickrey, "The Burden of the Public Debt: Comment," *American Economic Review* 51 (March 1961): 132–37.

ing periods, claims that the government will implement through some ordinary taxing process. These claims may be discounted and some present value estimated.

If present values, so computed by each individual, are summed over all members of the political group, the aggregate liability so expressed need not be equal to the value of the public debt that is marketed. A divergence may appear between these two magnitudes because of the limited time horizons upon which individual plans are made. Individuals do not expect to live forever, and they may not treat their heirs as linear extensions of themselves for economic decisions. It does not seem appropriate to define as illusory behavior that stems from mere limitations on time horizons. However, I do not want to introduce here the many problems of "rational" behavior that the limitations of human life impose. I shall, therefore, examine the public debt illusion under the simplifying assumption that all persons act "as if" they expect to live forever. Even in this model, the single individual will find it difficult to determine his own particular share in the liability represented by public debt. The distribution of taxes required to service the debt will be independently chosen in each time period, in the absence of tied sources. This political fact requires that the individual consider a probability distribution of outcomes for his own share. Again, however, we assume that he does carry out the necessary calculations, and that each person arrives finally at a certainty equivalent for his own expected tax liability. In this highly rarified model, the sum of the present values separately estimated for all individuals should approximate the value of the debt that is to be issued.

No public debt illusion exists in this model. There is no net undervaluation of the future tax obligations that the debt represents. The question now is one of determining the difference in behavior between this model and one in which an illusion is explicitly assumed to be present. Is it correct, as Vickrey suggests, to say that "elimination of this factor eliminates the shifting to the future entirely . . ."?<sup>3</sup> Is the "burden of public debt" wholly concentrated on the "present generation," in the "here and now" of the initial period, in the absence of an undervaluation illusion?

The answer to each of these questions is, I think, negative. And the failure of economists to recognize this is based, in part, on an elemental, but near-

3. Ibid., 135.

universal, confusion in the theory of costs.<sup>4</sup> The presence or absence of an illusion, defined in the sense of some failure to discount properly future tax liabilities, is irrelevant to the question of "shifting" a burden of debt to the future periods. The illusion is important, and relevant, only in its effects on *decisions* made at the moment of the original debt issue or creation. Its presence or absence at this moment determines the individual's estimate of the *subjective cost* that a decision to finance public expenditures with debt issue involves. The illusion has no bearing on the distribution of the *objective cost* of this decision *over time*.

Before elaborating this point, it is useful to clarify the distinction between subjective cost and objective cost in a more general setting unrelated to public debt. Many economists overlook this difference, despite repeated warnings.<sup>5</sup> Subjective cost is the obstacle to decision; it consists in the alternative that is foregone *at the moment of choice*, an alternative which can, because it is rejected, never be attained or realized. This cost is wholly within the "mind" of the individual chooser, and it can never be measured by an external observer. It exists temporally only in the moment preceding an act of choice, if it can be dated at all. It results from the sense of anticipating enjoyments that must be foregone. All subjective cost is anticipatory in this sense; hence, conceptually, there is no distinction between an alternative foregone immediately subsequent to decision and one foregone years afterward. Both are, once and for all, given up once a positive choice is made. For this reason, the subjective cost involved in debt issue, as conceived by the voter-taxpayer who is "choosing," must be concentrated in the moment of decision, despite the fact that this cost arises wholly from some current expectation of future

4. In my own earlier writings on public debt, I shared this confusion; hence, my failure to be more explicit concerning the meaning of "burden" in my whole analysis (*Fiscal Theory and Political Economy: Selected Essays* [Chapel Hill: University of North Carolina Press, 1960], especially pp. 51–59; *Public Principles of Public Debt* [Homewood, Ill.: Richard D. Irwin, 1958]).

5. Notably by G. F. Thirlby, "Economists' Cost Rules and Equilibrium Theory," *Economica* 27 (May 1960): 148–57, and "The Subjective Theory of Value and Accounting 'Cost,'" *Economica* 13 (February 1946): 32–49; but also by F. A. Hayek, "Economics and Knowledge," *Economica* 4 (February 1937): 33–54; L. Robbins, "Remarks upon Certain Aspects of the Theory of Costs," *Economic Journal* 44 (March 1934): 1–18; and J. Wiseman, "Uncertainty, Costs, and Collectivist Economic Planning," *Economica* 20 (May 1953): 118–28.

tax liabilities. The debt illusion that Vickrey mentions has to do with the individual's estimation of this subjective cost. If illusion exists, there may be some undervaluation of the alternative with which debt issue is compared, and, because of this, errors may be made which would, in the absence of illusion, be avoided.

Subjective cost need not be equal to what is here called objective cost, if equality is meaningful at all between these two magnitudes. The fact that, in competitive equilibrium, the ability of the buyer-seller to adjust his behavior to a set of uniform market-determined prices converts subjective costs into an objectively-measurable quantity does not imply that, in nonequilibrium situations of choice, any equality need hold. Objective cost is defined as actual resource services that are "given up" or "paid out" to attain the alternative that is chosen. Conceptually, objective cost can be measured by some person external to the decision maker; a real flow of resource services can be observed. Objective cost is *never* realized until *after* decision. The nature of time itself prevents the simultaneity of choice and consequence that is assumed in so much of economic analysis. For many purposes, of course, this temporal gap between the incurring of subjective cost at the moment of definitive choice and the incurring of objective cost subsequent to choice may be ignored. But the distinction clearly cannot be neglected in any discussion of debt, public or private, since the essence of debt is the postponement of objective cost in time.<sup>6</sup>

It is, of course, the objective cost of the public project that is debt financed which is shifted to the future or postponed. Subjective cost or "burden," that which serves as an obstacle to decision, cannot be shifted, by the fact of decision itself, and it is this cost that is affected by illusion. The resource services that are actually committed upon a decision to borrow, to create debt, that actually must be "paid out" or "given up" in exchange for the benefits

6. The failure to see that *two* costs are associated with any act of choice, a subjective cost and an objective cost, has plagued much of the recent discussion on public debt, including my own. Note, especially, how the recognition of this point clarifies the ambiguity raised in footnote 1, page 746, in Franco Modigliani's paper "Long-Run Implications of Alternative Fiscal Policies and the Burden of the National Debt," *Economic Journal*<sup>71</sup> (December 1961): 730–55. Among the recent contributors, only Tibor Scitovsky seems to note a distinction, but he erroneously labels objective costs as "social" and, because of this, misinterprets its meaning ("The Burden of the Public Debt: Comment," *American Economic Review* 51 [March 1961]: 137–39).

of the debt-financed collective services can be dated at the time that resource services are transferred from individuals to the fisc, to the extent that these are drawn from current consumption.<sup>7</sup> This transfer takes place in periods subsequent to debt issue as interest and amortization charges come due. This is as true for private debt as for public debt. There is no conceptual difference between the two other than the greater likelihood that the illusion herein discussed will be present under public rather than under private debt due to the complex probability calculus that is necessary to determine individual liability. To the extent that the illusion arises in public debt, more mistakes are likely to be made, but no difference in the temporal location of objective cost is generated.

In the complete absence of illusion, the sacrifice of resources may have been fully anticipated when the initial decision to borrow was made. This does not modify the conclusion, however, that, had the project been tax financed and debt not issued, resource services in the amount of current interest-amortization charges could remain in the possession of the individual during those periods when debt service is necessary.

The concepts of national income accounting, when combined with the failure to distinguish properly between subjective and objective cost or "burden," have been largely responsible for the widespread acceptance of the fallacious idea that there is no postponement of cost involved in the creation of internal public debt. If we look at the fiscal operation from an aggregative or "social" point of view, resources are, of course, "given up" during the time period in which the public expenditure project is undertaken. The members of the group who bear this objective cost, who suffer this "burden" in terms of sacrificed potential consumption in the period of debt creation, are *not* the "purchasers" of the public project, the voters-taxpayers-borrowers-beneficiaries. Those who bear this initial-period objective cost are, instead, those members of the group who choose to buy the government securities that are offered for sale in a wholly private, voluntary, noncollective transaction. These persons will also suffer a subjective cost upon their deci-

7. If the taxes levied for the purpose of servicing the public debt should cause individual taxpayers to draw down capital rather than consumption funds, the objective costs of the collective services are postponed even farther into the future. See the discussion on this point below.

sion to lend current resources to the collectivity. And the objective cost which they bear arises when they "pay out" current purchasing power, current command over resources, to the public treasury in exchange for the bonds. Their exchange is not, however, for the benefits of the project that is being financed through the fiscal process but is, instead, for the future income stream that inheres in the debt instruments, the government securities. The central feature of public credit lies in its facilitation of this dual exchange between the taxpayer-borrower and the bond purchaser-lender. Two decisions are involved, as there must be in any exchange, since two parties to the exchange are present, and each decision has associated with it both a subjective and an objective cost element. The theory of public debt that I have called elsewhere the "new orthodoxy" is based on an oversight of these embarrassingly simple facts.

### III. Failure to Distinguish Owned and Non-owned Assets

Puviani stressed a slightly different, although related, form of public debt illusion from that which has been discussed above. Let us begin with the familiar Ricardian equivalence between a debt obligation, which embodies the levy of an annual tax in perpetuity, and an extraordinary tax, which collects the full capital sum in the initial period. In such an equivalence, any illusion of the Vickrey type is absent, and, also, the model remains at the level of individual decision. To introduce the standard numerical example, the individual is confronted with the choice of paying a tax of \$2,000 once and for all, or paying the sum required to service a debt of this amount through an annual levy of \$100 in perpetuity, assuming a discount-interest rate of 5 per cent. Puviani suggested that, even here, the individual will not be indifferent between these two alternatives, but that he will tend to choose the annual tax in perpetuity. He will do so, not because he undervalues future tax obligations, but because he will not treat the acknowledged claims as diminution in the value of his owned assets in the same way that he would treat the once-and-for-all current tax alternative. In the first case, argued Puviani, the individual knows that he will continue to administer the same total assets, undiminished in productive power. The fact that the debt, as embodied in the annual tax in perpetuity, alienates a certain share of these assets will not be

fully appreciated even though, in strict balance-sheet terms, the tax liability is fully capitalized. In this sense, therefore, a "public debt illusion" may exist.<sup>8</sup>

This argument applies to debt generally; there is no particular difference between public and private debt in this respect. When a decision to borrow is made, alternatives are, as of that moment, foregone. If we assume that loan contracts are enforced, the moment of decision to borrow and spend removes, once and for all, any opportunity that the individual or group may have for utilizing a certain share of income during subsequent time periods. This remains true independently of the rationality of the borrowing-spending decision. As suggested earlier, the subjective cost, which exists solely in the anticipation of foregone opportunities, is present only at the moment of choice when, to any external observer, nothing actually "happens." Resources are only "paid out" by the borrower to the lender as interest and amortization charges come due over time. This pay-out does have a temporal sequence that may be observed. And this pay-out always reduces potential consumption opportunities below what they would be otherwise, but this need not impose any "burden" in the subjective or "felt" sense. Psychologically, however, the alienation that would be required to eliminate all subjective burden here becomes almost impossible to imagine. At the moment of a borrowing decision, it is conceivable that the individual could "chop off" or "earmark" a sufficient portion of his total capital value, produced by discounting his future earnings stream, so that the servicing of the debt could take place "outside" his internal calculus. He could, in this way, simply treat this portion of his "assets" as if it were owned by his creditors. Or, in the extreme, he might actually implement a transfer of title. Note, however, that human as well as nonhuman capital must be included in total assets here, and, both institutionally and behaviorally, it is difficult to think of a transfer of ownership of human capital assets.

If such a complete alienation is not made, however, there will appear to be a "burden" of debt, in some genuinely subjective sense. If the borrower retains what we may call psychological or behavioral ownership of assets, even when these are offset by liabilities, he will "receive" income and then "transfer" this to his creditors. He will, as Puviani implies, suffer some "bur-

8. See the citation from Puviani contained in M. Fasiani, *Principii di scienza delle finanze*, vol. 1, 2nd ed. (Torino, 1950), chap. 3.

den" here, a feeling of deprivation, even though he has no alternative open to him. That is to say, he is confronted with no choice; hence, the subjective burden that he suffers here is not analogous to the subjective cost of decision, previously discussed, which arises precisely because he does have alternatives for choice. Indirect evidence of this Puviani-type of asset illusion is to be found in common or ordinary language where reference is universally made to the "burden" of carrying debt, public or private. By contrast, when an individual is observed to have purchased ordinary commodities, we do not find reference to his suffering a "burden of potatoes."

The temporal aspects of life itself make a Puviani-type illusion plausible. The individual who lives in the moment subsequent to choice is not the same person who has chosen, at least in all respects. The individual who inherits the consequences of past commitments, even those made by himself, in some physical sense of continuity, will always consider "what might have been," and the alternatives as seen retrospectively must look different from those contemplated at the time of choice.<sup>9</sup> The institution of debt, public or private, makes this attitude especially likely to arise since the individual debtor must, in an objectively observable sense, transfer resource services to creditors, resource services that he "might have" retained had not the borrowing commitment been made at some earlier point in time.

Thus, the Puviani hypothesis implies that the individual, when faced with a pure Ricardian choice, will prefer the debt–annual tax alternative, but also that in subsequent periods, despite the full discounting of future taxes that is inherent in the Ricardian equivalence, he will "feel a burden of debt." This should not be taken to suggest that there exists any shifting of the subjective cost of the debt-issue decision to future periods. It is possible that the subjective cost at the time of decision can be accurately estimated (as it is in the Ricardian equivalence), that no Vickrey-type illusion exists at all, and yet there may remain a subjective "burden" during periods of resource transfer. The fallacy to be avoided here is that of assuming that subjective or "felt" burden need add up to any particular sum. "The coward dies a thousand deaths."<sup>10</sup>

9. For an interesting treatment of the intertemporal inconsistency of decision, see the paper by R. H. Strotz, "Myopia and Inconsistency in Dynamic Utility Maximization," *Review of Economic Studies* 23 (1956): 165–80.

10. The analysis developed in this section has much in common with that discussed by

A contrast between debt issue and capital consumption illustrates the Puviani illusion. Analytically, an act of borrowing is not different from "using up" or "eating up" capital. In either case, the subjective cost, the negative side of the account that is relevant for decision, the rejected alternative, is represented in the mind of the chooser by some present value of an income stream over subsequent time periods, an income stream which will come into being if a debt-creation or capital consumption decision is not made, but which can never come into being at all if a positive option for either debt creation or capital consumption is exercised. The objective cost appears to be different in the two cases, but this apparent difference is due strictly to the institutional realities that reflect the presence of the Puviani illusion. The effective transfer of resource services, in the case of capital consumption as well as debt, occurs in future periods. By definition, capital, as capital, embodies potential consumption in future periods. Converting capital into current consumption potential represents a transfer of resource services away from potential consumption in the future. But capital, once consumed, once "eaten up," appears to be consumed. The alienation of assets appears to be made immediately after decision despite the fact that current consumption is no different here than it would be under borrowing. The individual living in periods after capital is overtly consumed has no sensation of "owning" assets that have already been destroyed in some "eating up" process, or of transferring income (potential consumption) from these nonexistent assets to "creditors." Hence, the presence of a "felt" burden of past decisions is much less likely to exist under capital consumption than under debt. In any time period, a person's income is, of course, in part the consequence of past decisions on the accumulation and decumulation of capital, private and public, human and nonhuman. But one does not, normally, feel overburdened by these past decisions. What is done is considered to be done, and that is that.

This attitude is in evident contrast to that which arises when debt obligations are outstanding. As suggested, the objective cost stream is identical in the two cases. Borrowing does not, however, carry with it the same alienation

James Ferguson, included elsewhere in this volume. Although these treatments were developed independently in the initial stages, I think that there now exists substantial agreement between us on the relevant issues in the controversy.

of claims to assets that capital consumption does. Assets are not really "destroyed" for the individual in the same behavioral sense under these two institutional operations.

In their recent contributions to the debt-theory discussion, Modigliani<sup>11</sup> and Vickrey<sup>12</sup> have stressed the point that taxation, insofar as it impinges on capital formation, involves a shifting to the future of the objective cost of the public project that is financed. Insofar as the taxpayer chooses to meet his current obligation by drawing down his rate of capital formation instead of restricting consumption, he is, of course, reducing his income over future periods. The objective cost of the project is, to this extent, effectively shifted forward or postponed. Where Modigliani, Vickrey, and, also, Musgrave<sup>13</sup> err is in their suggestion that public debt issue involves such a postponing of objective cost *only if, in the aggregate*, the rate of capital formation in the economy is less than it would be under the tax alternative. This extension of an argument that is basically correct represents a lapsing back into a sophisticated version of the national accounting fallacy that has distorted the more naïve discussions of public debts. Even if those persons who purchase the bonds should do so wholly out of funds otherwise destined to current consumption, the public debt, as such, still involves a shifting of objective cost to future periods, by the individual members of the political group, considered in their role as "purchasers" of the debt-financed public project, that is, as taxpayers-borrowers. The fact that, in the aggregate, the expanded public utilization of resources on behalf of these persons, or persons acting as taxpayers-borrowers-beneficiaries, is just offset by the reduction in resources devoted to consumption by the lenders-bond purchasers, or persons acting in this capacity, has no relevance for any fiscal decision. It is both meaningless and misleading to talk here in terms of "social" or "global" aggregates. For the individuals, as taxpayers-borrowers, as purchasers of the desired collective goods project, the issue of public debt is a *means of consuming* capital. That is to say, the operation is for them analytically equivalent to the imposition of a capital

11. "Long-Run Implications."

12. "Burden of the Public Debt."

13. Richard A. Musgrave, *The Theory of Public Finance* (New York: McGraw-Hill Book Company, 1959), chap. 23.

levy upon themselves to finance the same project, assuming away distributional differences and the Vickrey-type illusion. The capital levy is not normally considered for reason of the Puviani illusion.

As a taxpayer-borrower, the individual's income stream (his potential consumption) in future periods is reduced by the full amount of the debt service charges that are imposed upon him. He could prevent this only if, when the debt is initially created, he should set aside resources and *create capital* sufficient to generate an income equivalent to that necessary to meet future debt service charges. The individual, as taxpayer-borrower, could, in this manner, convert the future objective cost into a current-period objective cost. If, however, the model of political choice is assumed to be a voluntaristic one, the "representative" taxpayer-borrower could accomplish this purpose far more simply by accepting current tax financing rather than debt financing for the public project. Just as capital consumption is the analytical equivalent of debt creation, so capital creation is the analytical equivalent of debt retirement. Hence, capital creation designed to offset the temporal effects of debt creation can occur only if the debt creation is imposed on the individual externally, and not chosen by him.

The point to be emphasized is that whether or not the bond purchaser draws funds from his own consumption or from investment during the initial period is wholly irrelevant to the taxpayer-borrower, except in a remote and indirect way. The aggregate rate of capital formation in an economy is, of course, affected by the source of the funds used to purchase public debt instruments. This rate is a meaningful datum for some purposes. But such an aggregate rate of investment does not directly affect or influence the decisions of individuals as they participate in fiscal decisions made on behalf of the whole collectivity. In this capacity, individuals recognize only that public debt, regardless of the source of funds, will impose an objective cost upon them that is represented by a necessary transfer of resources away from them in future periods. If they do not want to incur this temporal pattern of resource pay-out they will not choose to create debt in the first place.

The fact that the totality of the saving-investing decisions in the whole economy acts to insure that the rate of capital formation shall be such-and-such cannot, directly, modify the essential elements in debt creation as a fiscal operation.

#### IV. Conclusion

Public debts probably generate fiscal illusions of both the Vickrey and the Puviani sort. Individuals, for many reasons, probably do undervalue the future tax liabilities that an issue of debt embodies, and, even if they do not, they should probably still prefer debt to the current tax alternative. The analysis of this paper has demonstrated, however, that the presence or absence of illusion does not affect the temporal pattern of resource payment which debt issue must involve. The presence of a Vickrey-type illusion may affect the subjective cost estimates involved in making a decision to borrow, and, because of this, it may produce errors in the behavior of individuals as they participate in collective choice processes. Once a decision is made, however, the objective cost of the debt-financed project can be located only in time periods following that in which the debt is created and the funds expended for the provision of collective services.

The Puviani illusion acts to create a behavioral distinction between capital consumption and borrowing, despite the analytical equivalence between these two institutions. This distinction allows us to explain the "felt" burden of debt, even when future tax liabilities have been fully and accurately capitalized in the estimate for subjective cost at the time of decision. A recognition of this analytical equivalence also leads to the conclusion that taxation, insofar as individuals draw down capital funds to meet current tax obligations, can also involve a postponement of objective cost in time. Here, as in the case of debt, the relevant conversion decisions are made by individuals, and serious confusion can result from an undue concentration on "social" aggregates, considered apart from individual choices. Individuals, as taxpayers-borrowers, who are observed to choose public debt as a fiscal alternative, will confront an objective cost in future income periods. This remains true independently of the sources from which the funds that are used to finance the public project are originally drawn.

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