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Energy Taxes and Macroeconomic Policy Objectives

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Abstract

The European Commission and U.S. Government have proposed energy taxes as an effective tax instrument for achieving macroeconomic objectives of output and employment, and as an efficient vehicle for fiscal deficit reduction. This proposition is examined and it is concluded that, to the contrary, macroeconomic objectives are likely to be met more effectively by broad-based taxes rather than energy taxes.

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I. Introduction

This paper examines the policy discussion concerning the use of energy taxes for macroeconomic goals. Energy taxes have been proposed as a means of achieving macroeconomic objectives of output and employment as well as an efficient vehicle for fiscal deficit reduction. Environmental benefits of energy taxes have been advanced as a supplementary argument for their use. The paper concludes that macroeconomic objectives are likely to be met more effectively by broad-based taxes rather than energy taxes. However, this is not a case against the use of energy taxes per se but rather that using these taxes cannot be justified on macroeconomic grounds.

Energy taxes, and environment taxes generally, have been characterized as win-win policies on the grounds that they provide economic benefits-- increased output and employment--while simultaneously meeting environmental goals. The European Commission White Paper "Growth, Competitiveness, Employment" issued in December 1993 suggested that employment prospects can be improved by reducing charges on labor, such as social security contributions, and compensating these revenue losses by increases in other taxes, including energy taxes. The U.S. administration proposed an energy tax, in the form of a tax based on British Thermal Units (BTUs), as part of its deficit reduction plan in early 1993. The BTU tax "is a vehicle for deficit reduction. But at the same time we are encouraging a shift toward cleaner fuels, reducing pollution, encouraging conservation..." ^{1/} In essence these arguments have been interpreted by some to suggest that energy

^{1/} Mr. Lloyd Bentsen, Secretary of the Treasury, testifying before the Senate Finance Committee. See Bentsen (1993) p. 4. Although the U.S. administration proposed a BTU tax, in a compromise agreement with the Congress, a tax on the final consumption of gasoline was adopted.

taxes are the best available tax instrument because they will boost economic activity by imposing lower social costs on the economy compared to alternative tax measures. In most cases when taxes impose low social costs this is a sufficient condition for the adoption of these taxes because it means that they impose lower costs on output. However, this argument is not valid in the case of environment taxes; a low social cost of the tax can be associated with relatively significant negative output and employment effects. It is suggested in this paper that, as a general rule, the output and employment costs of energy taxes will exceed those of broad-based taxes, like value-added taxes (VATs), making them an inferior policy for securing macroeconomic objectives.

The structure of this paper reflects the macroeconomic policy objectives of energy tax reform. Section II examines the case made for a revenue-neutral substitution of energy taxes for other taxes, such as payroll or social security taxes, intended to reduce nonwage labor costs. It then focuses on the output effect (Section III) and the employment effect (Section IV) of energy taxes. Section V examines the importance of identifying the policy objective in choosing tax policy instruments. A final section provides conclusions.

II. The Macroeconomic Case for Energy Taxes

The case for using energy taxes to secure macroeconomic objectives draws on the "double dividend" characteristics of the tax: energy taxes involve low social costs, because they eliminate environmental

externalities, as well as generate revenue. 1/ The double dividend can be valid but does not justify using energy taxes for promoting macroeconomic objectives.

The macroeconomic arguments for using energy taxes were reflected in the debate on the introduction of a BTU tax in the United States. In testimony before the U.S. Senate Committee on Finance concerning the energy tax proposals of the Administration in April 1993 it was argued that: "it is critically important that we select taxes that impose as little penalty as possible on the economy--even better if you can find taxes that actually provide a net plus. Our traditional sources of revenues--payroll taxes, income taxes, and taxes on capital--hardly fit the bill. These penalize precisely those activities that are essential to economic progress: work, savings, investment, and entrepreneurship. ...A tax that moves energy prices toward full costs is not a distortionary tax; it is a corrective tax, and improves the allocative efficiency of the economy. Energy users tend to use energy excessively because the prices they face are less than the full incremental costs. If set correctly, an energy tax should yield net economic gains, and not economic losses." 2/ Environmental taxes have also been proposed as one part of a policy to address unemployment problems in Europe. 3/ The European Commission White Paper, "Growth, Competitiveness, Employment" suggested that: "In order to help maintain employment and create new jobs without reducing wage levels, therefore, steps must be taken

1/ The social cost or excess burden of a tax, discussed further in the next section, is the cost of the tax to taxpayers over and above the tax revenue and arises from tax-induced substitution effect.

2/ Testimony of Mr. Roger Dower of the World Resources Institute. See Dower (1993).

3/ See Commission of the European Communities (1993a), Chapter 9.

to reduce nonwage costs...in view of the need to keep budget deficits as small as possible, compensatory measures should be introduced to offset the reductions in statutory charges designed to reduce labor costs. ...environmental taxes, charged for example on the use of limited natural resources and energy, may be envisaged." 1/

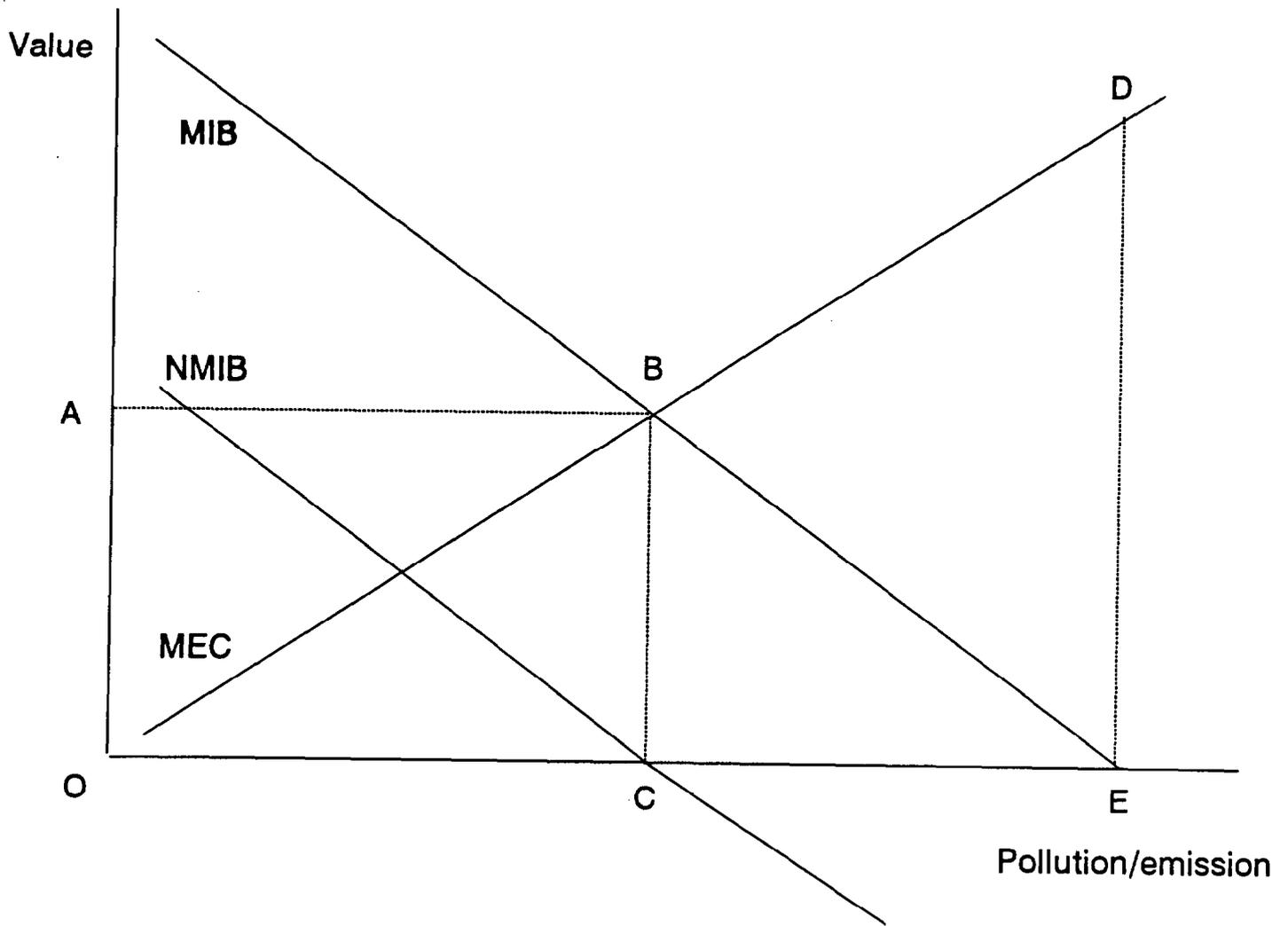
The proposal to use energy taxes is based on the argument that energy taxes (and environment taxes) provide a double dividend. First, they provide environmental benefits by reducing externalities, and second, through the revenue raised, they permit the reduction of other taxes which have distorting effects on labor supply, investment, or consumption. These nonenvironmental benefits of environment taxes could be significant. In the United States, for example, it is estimated that the social cost of raising \$1.00 of revenue is perhaps \$1.50 whereas environment taxes raise revenue with a zero marginal social cost. 2/ Consequently, economic output might be promoted if the use of energy taxes reduces the social cost or excess burden of the tax system.

The double dividend of environment taxes is illustrated in the Chart which depicts a standard externality problem. The units of pollution are shown on the horizontal axis and the marginal social cost of pollution is shown by the marginal external costs (MEC) curve. The marginal gain to the polluter from cost savings and additional profit on output from polluting

1/ The Commission of the European Communities (1993a) pp. 139-40.

2/ There are a number of general and partial equilibrium analyses of the marginal cost of public funds. Browning (1987) shows that estimates of the marginal cost of public funds are highly sensitive to a number of parameter values. Browning's preferred parameter values suggest the marginal cost of public funds in the United States lies in the range of \$1.32 to \$1.47.

Chart. The Pigouvian Tax "Double Dividend"



are reflected in the marginal internal benefit (MIB) curve. In the absence of an environment policy, the polluter will emit waste, shown by the amount OE, where the marginal benefit of polluting becomes zero. Social efficiency would require restricting pollution to OC where the marginal social cost and marginal private benefit are equated. A Pigouvian tax equal to the amount BC can be used to achieve social efficiency. This tax reduces the marginal internal benefit to the polluter such that it falls to zero at the socially efficient level of pollution; the net marginal internal benefit (NMIB) curve shows the marginal benefit to the polluter following imposition of the tax. Finally, the double dividend is evident. First, the reduction in pollution results in a net social gain, shown by the area BDE, reflecting the difference between the gross gain of beneficiaries of lower pollution, BDE, and the abatement cost incurred by polluters of BCE. Second, revenues, shown by the area OABC, are raised without imposing any marginal social excess burden.

For the purpose of this paper it is accepted that the double dividend is valid--revenues can be raised with a low social cost--however, this does not justify the conclusion that energy taxes are the best policy for promoting output and employment. 1/

III. Energy Taxes and Economic Output

To promote output, a revenue-neutral tax reform, involving the substitution of energy taxes for existing taxes, would need to reduce the effective tax burden on the private sector: there is a reasonable

1/ There are some caveats to the double dividend argument. For example, most energy taxes are not equivalent to Pigouvian taxes and impose their own efficiency costs.

presumption that an energy tax reform is inferior to alternative tax reforms in this respect. Although energy taxes may reduce the tax burden by replacing certain (high-excess burden) taxes, energy taxes are likely to be inferior to other taxes, particularly broad-based taxes such as VATs, that could reduce the tax burden further and thus promote economic output more effectively.

The cost to taxpayers of energy taxes is the sum of the tax payment and the excess burden. 1/ The excess burden, as noted above, is that part of the cost of a tax that is over and above the tax revenue. The excess burden arises from the tax-induced substitution effect that encourages the taxpayer to modify production or consumption decisions from the efficient decisions based upon pretax prices that reflect the actual opportunity costs of resources. The argument that energy taxes are superior to other taxes in promoting economic output is based on the proposition that energy taxes impose a lower social cost or excess burden. Although energy taxes may impose a lower social cost in aggregate, this arises from the net effect of two components--a benefit to those suffering the externality that outweighs the cost of abatement to polluters. It is the latter component that matters for the output implications of the tax. Thus, energy taxes are like any tax: if imposed on productive factors they lead taxpayers to modify production decisions and change the cost of capital goods; if imposed on consumer goods they lead taxpayers, inter alia, to change consumption. In the case of an energy tax, excess burden arises because the private sector is encouraged to reduce energy use--this adjustment, after all, is what yields environmental benefits that are anticipated to flow from energy

1/ The revenues from using alternative taxes are ignored in comparing the tax burden of alternative taxes because the reform is revenue neutral.

taxes. The excess burden takes the form of the abatement costs incurred by the taxpayer. 1/ In the Chart this excess burden is equal to BCE.

There are several considerations which influence the relative output consequences of using energy taxes versus other taxes. In many practical circumstances these factors mean that a broad-based tax, such as a VAT, is preferable to energy taxes although, from a theoretical perspective, it is not possible to determine definitively whether energy taxes will raise or reduce the private sector's tax burden.

1. A broad-based tax will, in general, impose a lower excess burden than narrow-based taxes. A tax is less likely to encourage taxpayers to modify their production or consumption behavior if it has a broad base because the tax will not change relative prices. Consequently, it is reasonable to presume that a broad-based consumption tax, such as a VAT, will impose a lower excess burden than an energy tax. A broad-based consumption tax could influence the choice between consumption and leisure whereas an energy tax influences choices on a number of margins:

1/ This discussion assumes that environmental externalities have no implications for productivity. If productivity is harmed by environmental damage, energy taxes can raise productivity and output to the extent that they alleviate damage. In these circumstances the excess burden incurred by taxpayers should reflect both abatement costs and improved productivity. In the case of industrial countries, and in the range of tax changes envisaged, it is assumed that the productivity implications of energy taxes can be ignored. However, in many developing countries--particularly in large cities--it has been estimated that environmental damage from fossil fuel consumption imposes substantial economic costs.

consumption, production inputs, saving and investment, as well as consumption leisure choices. 1/

2. An energy tax, designed to raise the same revenue as a broad-based consumption tax, will require a tax rate considerably higher than the consumption tax on account of the relative size of the two tax bases. The excess burden of a tax increases more than proportionally with its tax rate subject to the nature of pre-existing distortions. 2/ Consequently, a broad-based consumption tax is likely to impose a lower excess burden than an equal revenue energy tax. However, this result would not hold if energy is initially subject to relatively low taxation. To take an extreme example, if energy is being subsidized--as it has been in many developing countries and economies in transition in particular--there is probably a strong efficiency case for eliminating those energy subsidies, and perhaps imposing energy taxes, rather than imposing other taxes.

The form of the energy tax will influence the relative costs imposed on the economy. Thus, for example, the U.S. policy of using a gasoline tax on final consumers may well be more efficient, in a macroeconomic context, than the proposed BTU tax that it replaced. A tax on final gasoline consumption, unlike the BTU tax, does not influence producer input or savings and

1/ The argument in favor of a broad-based tax continues to hold in an optimal tax framework. A tax on consumption goods, at a variety of rates reflecting Ramsey rules, must be at least as efficient, and in practice certainly more so, than a tax on energy alone.

2/ In his classic article Harberger (1964) shows that the excess burden increases at the square of the tax rate. Subsequent literature indicated that the relationship of excess burden to the tax rate was complicated by the presence of other distorting taxes.

investment choices. A broad-based consumption tax is still preferable to a tax on final gasoline consumption.

Although it is not possible to arrive at a general conclusion, there is a reasonably strong presumption in favor of broad-based taxes and against energy taxes when the policy choice is viewed in terms of the implications for economic output. Nevertheless, empirical studies differ in their conclusions on the merits of using energy taxes to promote economic output. Most studies support strongly the presumption in favor of broad-based taxes, and in particular, consumption taxes whereas, a European Commission study suggests the opposite ranking of taxes--it favors an energy tax over an income tax with the VAT least preferred.

Most general equilibrium models show that the output costs of employing energy taxes exceed by a significant margin the costs of increasing alternative taxes such as a broad-based consumption tax. Goulder (1992), in a general equilibrium model of the United States, arrives at several conclusions. The double dividend from energy taxes, in this case a carbon tax, is quantified by finding that tax revenues used to finance a reduction in marginal tax rates of personal or corporate income taxes reduce the excess burden of a carbon tax by 25 to 32 percent compared to when the revenues are returned to taxpayers in lump-sum form. ^{1/} The excess burden of the carbon tax is 15 percent lower than otherwise on account of the pre-existing low relative taxation of fossil fuel industries in the United

^{1/} Shackelton et al. (1992) show, using a number of models, that the output cost of a carbon tax depends on the use of revenues. Studies of carbon taxes find that they impose costs to GDP growth but they often assume that revenues are returned to taxpayers in lump-sum form. See OECD (1992).

States illustrating that part of the tax eliminates a pre-existing distortion. Nevertheless, carbon and other energy taxes impose relatively high excess burdens and, in line with traditional theory, the costs of these taxes increase more than proportionally with the rate of tax.

Although using energy tax revenues to reduce distorting taxes can reduce the efficiency costs of energy taxes this does not justify a conclusion that energy taxes are the best tax instrument to promote economic output. Goulder (1992) found that a broad-based consumption tax is far superior to a carbon tax. Goulder (1993) extends this analysis to consider the BTU tax and a tax on gasoline consumption that were proposed in the U.S. deficit reduction debate. This study concludes that the output costs of employing these energy taxes exceed by a significant margin the costs of increasing personal or income taxes and, by a bigger margin, the use of a broad-based consumption tax. To illustrate, a consumption tax on gasoline would impose output costs equivalent to 82 percent of those of a BTU tax, an increase in the personal income tax would impose output costs equivalent to 64 percent of those of a BTU tax, and an increase in the rate of corporate income tax would impose output costs equivalent to only 32 percent of those of a BTU tax in the year 2000. A key factor driving the results is the relative narrowness of the energy tax bases--most of the higher output costs of the BTU tax flow from its relatively narrow base and the balance is attributable to the fact that the tax is levied on gross output rather than on final or net output.

Energy taxes would be expected to impose greater costs in Europe than in the United States in view of the considerably higher energy taxes already prevailing in Europe. However, a European Commission study of the

implications of financing a reduction in employer's social security payments by alternative taxes concludes that a carbon tax is more effective in promoting output (and employment) than an increase in personal income tax which, in turn, is superior to an increase in the VAT rate in achieving this objective. 1/ These results are exactly the reverse of those derived by the previously discussed empirical work and are counter-intuitive in the light of the theoretical discussion above. The conclusions appear to be based on a number of assumptions which are subject to debate and at least raise questions regarding the Commission's conclusions. 2/ According to the QUEST model, used to derive these results, a carbon tax encourages greater output, compared to an increase in VAT rates, because at least in part, the energy tax burden is shifted to oil exporters and Europe is able to sustain a price increase for its manufactured exports (implying that there is imperfect competition). This secures a terms of trade gain and improved wage performance. Losses in international market share for exports are more than compensated for by the increase in nontradable sector output. Tax incidence assumptions of the model are not spelled out, however, they may also be debatable because it appears, for example, that social security taxes, reduced as part of the tax reform, are borne entirely by firms.

1/ The proposal is for a combined carbon/energy tax based in part on the carbon content of fuels and in part on the energy component of fuels. The latter is equivalent in nature to the U.S. proposed BTU tax. See Commission of the European Communities (1993b).

2/ This model, along with other models of similar construction, are ill-suited to examining the medium-term implications of alternative policies because their dynamics are ad hoc and the intertemporal aspects of economic behavior are ignored.

IV. Energy Taxes and Employment

This section examines whether energy taxes, perhaps replacing taxes on labor in a revenue-neutral tax fashion, can promote employment. The European Commission envisages that use of energy taxes will result in substitution of labor for capital/energy. They suggest that nonwage labor costs, such as social security payments--particularly for unskilled workers--be reduced and the revenue loss compensated for by increases in excise duties on energy products and introduction of a carbon/energy tax. ^{1/}

It is unlikely that employment prospects can be increased markedly, if at all, by substituting an energy tax for taxes on labor. There are two avenues by which employment could be promoted. The first avenue by which employment could be promoted is via the output effect that was considered in the preceding section. In that case the tax reform could reduce the tax burden on the private sector and promote an increase in output that increased employment. However, energy taxes are likely to have negative implications for employment of labor to the extent that, as the previous section suggests, they impose greater output losses than alternative tax measures. The second avenue by which employment could be promoted is via a substitution of labor for other factors of production because labor becomes

^{1/} The European Commission QUEST model, discussed in the previous section, concludes that a carbon/energy tax is superior to a VAT because it encourages greater substitution of labor for energy than would a VAT. There are no details provided regarding incidence of the taxes. See Commission of the European Communities (1993b).

relatively more attractive than other factors of production. 1/ It is difficult to shift taxes away from labor suggesting that this avenue by which energy taxes might promote employment is also likely to prove ineffective. Nevertheless, there are a number of possible outcomes in considering whether employment will become relatively more attractive. The incidence of the energy taxes will determine whether the replacement of nonwage taxes on labor by energy taxes reduces the cost of labor. 2/ Some considerations concerning the likely incidence of the energy tax reforms are summarized below.

1. Taxes on energy inputs

The energy tax proposal of the European Commission envisages taxes that will include taxation of energy as an input. Labor, as the immobile factor of production, will bear the major part of the energy tax burden in cases where goods, produced using taxed energy inputs, are tradable. When a tax is imposed on a factor of production, consumers will not bear the tax if the final output can be imported because, in that case, prices are set by world markets. Factors of production will bear the tax according to their elasticity of supply which means, in effect, that factors which are least mobile will bear the tax. Both capital and energy factors are mobile even though, in the short run, physical capital is not mobile. Consequently, labor will bear the bulk of the energy tax, to the extent that it can be

1/ Even if relative prices change in favor of increasing employment it does not necessarily follow that this will boost employment. A key issue is the appropriate form of modeling labor market behavior. For example, in an "insiders" type of model the increase in labor demand may be reflected in increasing real wages of the insiders without any net change in employment.

2/ The incidence of a tax is concerned with the distribution of the actual tax burden as distinct from the legislated incidence of the tax.

regarded as the immobile factor of production, and thus will not benefit from the tax substitution.

Domestic consumers are likely to bear the tax in the case of nontradable goods. Consequently, if the energy tax is limited to nontradable goods then it is perhaps more likely that employment can be promoted by the tax substitution. ^{1/} However, just because the tax is borne by consumers does not ensure that employment prospects are promoted. Taxes that fall on consumers are discussed next.

2. Taxes on final consumption of energy

The European Commission energy tax proposal also envisages taxes on final consumption of energy and, in the United States, a tax on the final consumption of gasoline was introduced as part of the deficit reduction plan. Consumers are most likely to bear the burden of a tax levied on final consumption of energy. In this case it is conceivable that the taxation of labor can be reduced because labor income earners are a subset of consumers. The tax is borne by capital income earners and transfer recipients in addition to labor income earners.

However, taxes that raise consumer prices will interact with taxes on labor income adding to the distortion that reduces labor supply and discourages employment. A tax on final energy consumption will reduce real wages because it increases consumer goods prices that are used to deflate the nominal after-tax wage. The after-tax real wage is $(1-t_y)w/(1+t_i)p$ where t_y is the marginal income tax rate, w is the nominal wage, t_i the

^{1/} There will be other social costs from the distortions encouraged by this substitution.

average indirect tax rate, and p the price level--a higher value of p resulting from the energy tax will reduce the real wage and interact with the labor income tax wedge $(1-t_y)$. The reduction in real wages will lead labor to reduce its supply. The distortion to the labor supply introduced by raising energy tax rates (or other taxes influencing the price level) is a function of $(1-t_y)/(1+t_f)$. ^{1/} Thus, increases in taxes on final energy consumption, although falling on consumers, may do little to help or may even harm employment prospects. ^{2/}

3. International aspects of energy tax incidence

An earlier European proposal for a carbon tax, discussed in the next section, called on other OECD countries to introduce similar measures. These countries combined are major oil importers and it is plausible that the tax burden could, to some degree, be shifted to energy producers if they imposed energy taxes jointly. Consequently, an increase in energy taxes could, subject to assumptions about supply elasticity, result in a decline in oil prices and, for the countries imposing the tax, improve the terms of trade and boost employment at the expense of energy producers. This would, of course, not provide the anticipated environmental benefits of an energy tax.

Internationally mobile capital can be forced to bear a greater share of the tax burden if there is international coordination of tax policies.

^{1/} See Bovenberg and de Mooij (1992), and Poterba (1993).

^{2/} Bovenberg and van der Ploeg (1992) note that in addition, energy taxes could increase the excess burden of the tax system if the newly introduced energy tax reduces revenues from pre-existing taxes on energy by encouraging lower energy consumption. In these circumstances, to maintain revenue, it is necessary to raise the tax rates of other distorting taxes with the consequence that the marginal cost of public funds could increase.

However, it is not clear that shifting the tax burden to capital, even if the requisite international cooperation is deemed feasible, would improve employment prospects. The energy tax would, if borne by capital, increase the price of capital goods with the consequence that capital formation would decline and this might well result in a reduction in labor productivity. 1/ A decline in labor productivity could, depending on the flexibility of the labor market, worsen unemployment.

V. Policy Instruments and Objectives

It seems unlikely that energy taxes are the best available tax instrument to pursue macroeconomic objectives even though these objectives have been the primary motivation for their introduction and environmental considerations have been of secondary importance. This conclusion is not, however, a case against energy taxes. There are two questions to be posed: (1) what is the policy objective; and (2) what is the best tax instrument to achieve that objective?

An energy tax, in the form of a carbon tax, has been proposed by the European Commission on two occasions. This implicitly suggests that the same policy instrument, a carbon tax, is the best tax to achieve both macroeconomic and environmental goals. The first proposal for a carbon tax by the European Commission came shortly before the 1992 Earth Summit. 2/ This proposal was intended to secure the environmental objective, related to global warming concerns, of stabilizing European carbon dioxide emissions at

1/ It has often been pointed out that the sharp increase in oil prices that took place in the 1973 oil price shock coincided with the sharp decline in productivity recorded in many industrial countries.

2/ See Commission of the European Communities (1992).

1990 levels by the end of the decade. The second European Commission proposal (from the European Commission White Paper noted above) is also for a carbon tax but, instead of addressing global warming, is intended to promote growth and employment prospects by replacing taxes on labor.

The Commission's proposals illustrate the trade-offs between the attainment of different policy objectives if one policy instrument is employed to achieve both objectives. The Commission's carbon tax proposal, based on environmental objectives, recognized that achieving environmental goals will involve macroeconomic costs. Reflecting these costs, the Commission found it necessary to provide special provisions to maintain the international competitiveness of firms even though this implied significant loss in effectiveness in securing environmental targets. 1/ The carbon tax proposal provided for (1) graduated tax reductions for energy-intensive firms that may be disadvantaged relative to competitors in countries not having comparable tax measures; 2/ (2) tax incentives and temporary exemptions from the carbon tax for firms embarking on energy saving investment; and (3) introduction of the tax in Europe was conditional on other OECD countries introducing taxes or measures that have similar implications to those of the European carbon tax.

It is unlikely that a carbon tax can simultaneously meet both environmental and macroeconomic goals effectively. From the macroeconomic

1/ Carbon taxes, that some European countries have independently introduced, have similar provisions. For example, Danish concern over the competitiveness costs of its carbon tax resulted in the inclusion of tax refunds to VAT-registered companies and particularly for companies with high energy consumption.

2/ The graduated tax reductions are available to firms for whom energy costs exceed 8 percent of value added.

perspective, many of the special provisions of the proposed carbon tax are necessary to limit the magnitude of the tax on tradable goods and perhaps shift the major tax burden from producers toward final consumption. These special provisions can only be rationalized on the basis of a concern for the macroeconomic costs of the carbon tax. From an environmental perspective, however, the tax must be levied on use of fossil fuels at all stages, including on productive inputs, otherwise the environmental effectiveness of the tax is reduced because it does not encourage substitution away from fossil fuels. However, an effective environment tax will impose costs in terms of macroeconomic objectives. Consequently, although the energy tax policy may be suited to meeting environmental goals, there is a risk that neither macroeconomic or environmental goals will be met if the tax is modified in an attempt to simultaneously meet both goals.

VI. Conclusions

There has been considerable discussion by policymakers of the role of taxes in promoting economic activity and employment. The European Commission has suggested that taxes on labor should be reduced and, to avoid increasing the fiscal deficit, that energy taxes be introduced. The U.S. Government has also proposed an energy tax, and implemented a gasoline tax, as part of its deficit reduction plan. In each case it has been suggested by some observers that energy taxes are the best available tax instrument because such taxes impose lower costs on the economy thereby boosting economic activity relative to alternative tax measures. Environmental benefits of energy taxes have been cited to support the case that energy taxes reduce the costs imposed on the economy.

Policymakers are not concerned simply with aggregate efficiency and thus the conventional economic double dividend argument for energy taxes becomes irrelevant. The double dividend argument is that energy taxes reduce environmental damage (the first dividend) and, provide revenue without loss of efficiency that characterizes other taxes because of their environmental benefits (the second dividend). The problem for policymakers is that the second dividend is made up of two parts--an excess burden or cost in the form of lower output and employment and an excess benefit in the form of lower environmental damage that offsets the excess burden. Many policymakers are concerned with economic activity and employment and thus are concerned primarily with the excess burden of the energy tax. There is a reasonable presumption that energy taxes will impose a greater excess burden than alternative taxes such as broad-based consumption taxes like a VAT. Moreover, it is unlikely that shifting from taxes on labor to energy taxes will substantially reduce the relative tax burden on labor.

What does this mean for tax reform? First, energy taxes should be targeted to policy objectives, including environmental goals, where they may be the appropriate tax instrument. There is a reasonable presumption that energy taxes are less efficient than alternative taxes in promoting economic output. Second, tax reform should focus on use of broad-based taxes to reduce the excess burden of the tax system. Third, the scope for taxes to address labor market problems directly is limited. These tax reform principles are in the spirit of the suggestion by the European Commission White Paper that taxes should not impede the effective working of the labor market but question the conclusion suggesting that energy tax reform can directly promote output and employment.

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