

■ Graciela Chichilnisky Addresses President Clinton's Energy Tax

Graciela Chichilnisky, Professor of Economics at Columbia University and a noted scholar on environmental economics, recently met with Sanjay Mongia, Senior Research Associate at The Jerome Levy Economics Institute. The following are excerpts of their discussion of President Clinton's proposed energy tax.

Mongia: What are some of the underlying factors that have made debate over President Clinton's proposed energy tax so controversial?

Chichilnisky: The subject of energy taxes is not for the faint of heart. It is connected with the price of oil, and thus with money, nationalism, hate, and war. But for the economist, the most exciting aspect of the oil crisis is the well-known difference between two statistics: the short- and long-run price elasticities of demand. These measure the responsiveness of oil demand to prices; the demand does not vary much with prices when the elasticity is small, but it adjusts significantly when it is large.

What makes the oil market fascinating is that the long-run elasticity is more than twice as high as the short. In this difference lies the key to contradictory views and facts about oil prices. It explains all we fear about energy taxes: inflation and recessionary effects, loss of international competitiveness, balance of payment deficits, and regressive effects on the incomes of lower income groups.

But these are all short-run responses. In the intermediate to long-run, these responses are reversed. This reversal makes the oil market difficult to predict: However, the facts show that the long-run responses to oil prices are generally positive.

Mongia: Among the arguments cited by critics of the energy tax is a threat to U.S. competitiveness and productivity. For obvious reasons,

the American Petroleum Institute and other interest groups representing the oil industry are opposed to the energy tax. How much credence do you lend to their concerns?

Chichilnisky: In countries like Japan or Germany, with extraordinary productivity and growth in the past twenty years, and the best records in product innovation and international competitiveness, consumers pay on average between two and three times the oil prices paid in the U.S.

The countries that have no oil resources and pay the highest oil prices are also those that have had some of the most stable monetary regimes, lowest rates of interest, high investment and employment rates, and the lowest inflation rates in the world for sustained periods. The newly industrializing countries in Asia all follow this pattern. In fact, the U.S. itself increased remarkably its productivity in terms of oil use during the period of high oil prices, 1979-1984.

Mongia: President Clinton's proposal would tax the energy content of fuels as measured in British thermal units. What are some of the regional and global implications of enacting a broad-based energy tax?

Chichilnisky: The North American Free Trade Agreement (NAFTA), some say, is oil price insurance in disguise. The close ties contemplated between the U.S. and Mexico, and even between Canada and Mexico, do not overlook the fact that Canada and Mexico are strategic resources for the U.S. in the area of energy resources.

This matter is of no small import. The U.S. consumes about 25% of all the petroleum produced in the world. It consumes about twice as much oil per unit of output as do its main competitors, Germany and Japan. In 1991 U.S. imports totalled 6.6 million barrels a day or 40% of its oil use; the U.S. Department of



The Jerome Levy Economics Institute of Bard College

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Energy estimates imports will rise to 108 billion barrels daily, or 56% of consumption, by the year 2000. Most of its oil is imported from Mexico, Venezuela, and Ecuador, although the U.S. itself has 50% of the total recoverable oil reserves in the world.

Mongia: In supporting the energy tax, you emphasize the difference between short- and long-run price elasticities of demand. As a layperson, please explain to me why this distinction is so important.

Chichilnisky: The short-run price elasticity for oil in the U.S. is small. There is general agreement that for several months after prices increase, the demand for oil does not change. Consumption does not adjust, and oil users bear the full brunt in the form of an increase in expenditures of about the same magnitude as the tax.

The low short-run elasticity means that the patterns of use change very little in the short-run, despite the change in prices. People cannot trade in their cars swiftly; they simply pay more for gasoline. If the tax increases gas prices by, say, 20%, then the user purchases just about the same amount of oil and simply pays about 20% more for it. This includes households and producers: It affects the transportation and heating costs of a family, as well as the costs of a firm that uses oil as an input to produce plastics or paint, to move a truck fleet, or to fly airplanes.

Mongia: Do the short-term and intermediate-term macroeconomic effects replicate the impact on household behavior?

Chichilnisky: In the short-run, as prices increase, users pay more for the same quality, and through the chain of inputs and outputs, all other prices increase and the economy inflates. Firms are less profitable, since their costs increase. Some of these costs are passed

measures against the incentives that these prices themselves create. Are we paying with increased regulation and expensive legislation for unrealistically low energy prices? Are we overconsuming oil, and overpolluting accordingly, because oil is too cheap?

Mongia: Your previous work on environmental economics has addressed the problem of market externalities. How is that concern applicable to the broad-based energy tax?

Chichilnisky: The economics of markets with externalities is not a simple matter. One reason why market prices for energy resources do not reflect the full value that society places on these resources is that the international market amplifies the effects of these externalities. Most oil imported by the U.S. comes from developing countries that do not, or cannot, account properly for the externalities from resource production, thereby leading to overproduction and to lower market prices in nearly every commodity.

A traditional way of looking at this problem is to blame the market structure for "market failures" and argue for intervention. Another view is to identify externalities with missing markets, as Coase proposes. This requires the establishment of overall quotas, and, subsequently, the creation of property rights for environmental resources that are used in common, such as clean air. Finally, the market must be allowed to operate freely. This is the nature of tradeable permits for CO₂ and for SO₂, the latter now traded in the Chicago Exchange.

Mongia: Unintended as it may be, is one of the consequences of the energy tax to tackle the problem of unmitigated resource exploitation in developing countries?

Chichilnisky: While property rights take their natural time to emerge, energy taxes could offer corrective signals to the market. If taxes

are steady and predictable, the market incentives are right for public transportation systems to emerge. They are right for the development of new products, such as converters and clean biomass fuels; new financial instruments, such as tradeable permits; debt for nature swaps; and profit-sharing deals for the preservation of biodiversity in developing countries. In the long-run, energy prices are powerful incentives for conservation, cleaner air, international competitive advantage, even for product innovation and growth.

The perceived link between abundant and inexpensive resources and economic growth derives from a misunderstanding of markets. Markets are far more complex and less linear than we often understand them to be. It is because of the efficient price mechanism that we internalize the value of scarce resources. The more we value resources, the more productive we become.

Mongia: Even among supporters of the broad-based energy tax, there is debate over the appropriate use of new revenues. Is dedicating all new revenues to deficit reduction the optimal strategy? Would you favor devoting a predetermined share (e.g., 10%) of new revenues accrued via the energy tax for improvements in public infrastructure or mass transit?

Chichilnisky: Yes, I would favor such policies. According to the Center for Budget and Policy Priorities, the accumulated revenue over five years will be about \$328 billion. Revenues from the energy tax would contribute approximately \$71.4 billion over the five-year period. This should make a healthy dent in the U.S. government budget deficit, which is about 5% of GDP at present, so that a time profile for buying this back also seems in order.

To a great extent, the matter then is one of political choice, and is mathematically related to the four-year cycle of the American democratic system. But there are other choices

ahead; economists and politicians can devise policies that carefully match the short with the long aspects.

Mongia: Are there provisos that can be introduced prior to enactment of the broad-based energy tax that would make its implementation more palatable to critics?

Chichilnisky: For one, tax increases can be gradual and predictable. This means that a tax can be imposed with an agreed schedule over time. Also, taxes can be made somewhat flexible. At present the National Taxpayers Union estimates that under the proposed plan, the household of average income (\$30,000-\$50,000) will pay an additional \$157-\$212 in 1994 energy costs. More than half the tax increase would be borne by those making more than \$100,000 per year, and virtually none by households with incomes of less than \$30,000 per year. Why not offer also a time profile along with the income profile? Why not adjust taxes gradually to follow the curve of elasticity of demand?

All statistics confirm that in the U.S., as in Europe and in Asia, taxpayers do adjust significantly their patterns of energy use in the long-run. In fact, as already mentioned, the U.S. consumer and producer have shown themselves to be capable of significant adjustments, by decreasing oil use by 40% in the five-year period from 1979 to 1984. Japan and Germany have as well, and increased their growth and productivity to boot. The newly industrializing countries in Asia have shown remarkable adjustments, and an efficient pattern of oil use.

My proposal is to devise a time profile for energy taxes—in conjunction with the income profile—to adjust taxes very gradually over a five-year span. This would follow the elasticity curve of demand, and avoid potential inflationary or recessionary effects.

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