A Case Study for the HIID 1995 Asia Environmental Economics Policy Seminar

Greening the Budget and Earning a Double Dividend in the Process

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"The problem is not to have new ideas, but to get rid of the old ones".
-Maynard Keynes

Introduction

The Cabinet Ministers filed one by one into the teak-panelled chamber where they held their weekly meetings. But this was no ordinary cabinet meeting. It was the mid-term review of the government's performance in office that came under increasing criticism by a disaffected public. The Prime Minister was emphatic about wanting them to be there before sunrise. He had his reasons. The traffic jams in the capital were legendary and power cuts and brown-outs were a daily mid-morning occurrence.

The Ministers of Environment and Finance were the first to arrive. Except for the usual pleasantries, they rarely ever talked to each other; they felt they had little in common. But this time the Environment Minister wanted to know how her already meager budget allocation was going to be affected by the Finance Minister's proposed deficit-cutting austerity measures. "Considering the pressing need to cut the deficit and at the same time finance the expansion of our electricity and water supply and provide assistance to our farmers and industries, I propose a 10% cut in all non-essential expenditures, and that, I'm afraid, includes the environment," the Finance Minister responded matter-of-factly. The Environment Minister was quick to point out that her budget was only 2% of the government budget and less than one half of a percent of GNP, having already been cut twice in the last two years. "With due respect, our urban clean-up and rural reforestation projects are just as essential as the energy and agricultural subsidies and a lot better for the environment," she protested.

The Finance Minister did not respond. The Prime Minister had already arrived and called the meeting to order. "Ladies and gentlemen, as you have already gathered, this is not going to be a usual Cabinet meeting," the Prime Minister began against the background of deafening traffic noise and the morning sun rising behind a screen of gray haze.

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"As you all know, we are in the middle of our five year term in office and today we gather here to take stock of our accomplishments and failures. I took the highly unusual step of inviting representatives of the private sector and of the NGO community as well as the directors of several important government agencies and state enterprises to join us. You will recall that we were swept into office on a campaign promise to put our nation on a sustainable development path. We promised to promote economic growth to improve income distribution, and to protect the environment. We promised to do all this while cutting the deficit without raising taxes. We took our mandate seriously. Each of us went about our separate portfolios with unusual commitment and determination. Our hard work paid off. We registered the highest growth in a decade, though still modest by regional standards; our exports are up, our employment is up and our inflation is down. We have even made it into the World Bank's list of success stories!

Despite our obvious success, I still feel something went wrong. Just look out of the window: the traffic is at a standstill, the smog is choking our cities, the daily brown-outs are as predictable as the growth of our deficit. Water shortages increased and so did water subsidies. Deforestation did decrease, but only because there is little left to cut. And as the esteemed Minister of Finance can tell you, our treasury is not bursting with revenues, despite our respectable growth rate. Regrettably, we did go back on our promise not to raise taxes; yet the deficit just keeps growing. And I am fully aware of the need to spend more money to double our power generation, to upgrade our infrastructure, to expand our water supply, to build waste treatment facilities and to reforest our watersheds. Nor did I forget that there are pending requests from the Minister of Agriculture to raise farm subsidies in support of our farmers and from the Minister of Industry to provide additional tax incentives and low-cost electricity to industry for export promotion.

"All these important requests deserve our most favorable consideration, but I must admit that for the past six months, I have been having serious concerns that we might be digging ourselves deeper with every new budget we approve. The more we tax our people this year in order to finance all these good things, the more money we need to raise the following year for the same purpose and the less able we are to collect it. Perhaps what we have succeeded in doing is to move faster on the old track rather than switching tracks.

"For this reason, I quietly commissioned a small working group (that included academics and retired public officials and business executives) under the chairmanship of Professor X to study the issues we are facing and to propose innovative ideas to get us out of our predicament and to chart for us a more sustainable path. I will now give a few minutes to the Professor to present the findings and recommendations of his working group.

Findings of the Sustainable Development Working Group

"Based on our detailed study of the structure of the budget, the state of our environment, and the pattern of our development, we concluded the following. The state of our budget and the state of our environment are intrinsically related. We are spending millions of dollars to deplete our forests, to waste our water, and to despoil our environment. We are paying our people to over-consume and even waste scarce energy and water resources, to mine rather than farm their lands, to poison rather than protect our streams, to destroy rather than rehabilitate our watersheds, to use the most damaging means of transport available and to cultivate our most fragile lands. A good part of our public expenditure creates new problems and new needs for expenditures without ever solving the old ones. Many of our subsidies have outlived those whom they were created to help. We have conservatively estimated that around 5% of our GNP, or 20% of the government budget, goes to finance environmentally and economically damaging subsidies. Examples include subsidies for fossil fuels, electricity, water, pesticides, fertilizers, logging, land clearing, construction materials, industrial chemicals, and even mass tourism from abroad, to mention only a few. Again, conservatively, we estimated the damages to our health, our productivity, our properties, our natural resources, and our environment to be around 10% of our national product. And this is after spending another 3% of our GNP on defensive and replacement expenditures, such as health care, pollution abatement, soil conservation, reforestation, and the like, not to mention private sector expenditures.

"It is not only that our public expenditures create more problems and the need for more expenditures, it is also that our tax system is such that it creates all the wrong incentives. It taxes work, income, profits, savings, and value added and leaves untaxed, even subsidizes leisure, consumption, resource depletion, and pollution. The implicit reduced incentives for work, savings, investment, conservation and pollution prevention, and the increased incentives for leisure, consumption resource depletion, and environmental degradation result in lower economic output (and hence, lower tax revenues) and more needs, demands, and damages than would have been the case had the incentives been the reverse. To give you an example: our failure to properly price transport fuels, to adequately tax motor vehicles, to regulate urban development, and to price public infrastructure is costing us annual losses of nearly 5% of our GNP in lost working time and fuel, damage to health and property, medical costs and repairs. Half of that amount would suffice to provide our capital city with one of the world's most efficient, rapid, and clean mass transit systems. Even the mental and intellectual development of our children is being damaged from lead emissions because of our failure to make unleaded gasoline available; and now that it is finally available, it costs 15% more than leaded.

"A great many of our problems, such as traffic congestion, water pollution, energy brownouts, water shortages, etc. arise from a growing mismatch between private investment and public infrastructure. The problem is not just the failure to collect adequate tax revenues or to

approve and complete infrastructure projects in time. The problem is one of underpricing of public services and of disassociation between demand and supply, between those who benefit and those who pay. In principle, private investment and economic growth enlarge the tax base, thereby making more resources available for public infrastructure. In practice, private investors are able to free ride through a variety of tax exemptions and tax shelters, if not outright tax evasion, while the existing infrastructure, being unpriced or underpriced, suffers from excessive use and poor maintenance. Based on our findings we have several recommendations to make:

Recommendations

1. Comprehensive subsidy reform to phase out all distortionary and environmentally harmful subsidies, such as subsidies on energy, transportation, irrigation, domestic water use, deforestation, agrochemicals, land clearing, construction materials, toxic chemicals, etc. Phasing out these subsidies makes a quadruple contribution to sustainable development:

(a) it frees up budgetary resources to spend on poverty alleviation, resource conservation, women's education, and other similar investments that advance sustainable development;

(b) it removes a major economic distortion, thereby improving efficiency and raising economic growth, a *sine qua non* condition for sustainable development;

(c) it improves income distribution since most taxes are regressive and subsidies disproportionately benefit the rich (e.g. waste and energy subsidies);

(d) it improves the environment not by spending new money but by saving money and realigning the incentive structure in favor of environmentally sound practices (e.g. from pesticides to integrated pest management).

2. Privatization of state enterprises to save a substantial portion of the national budget for sustainable development investments as well as to improve economic efficiency and reduce waste with the provision that public services and other products currently produced by state enterprises. This can be effected through competitive bidding with adequate safeguards for equity and environmental protection.

3. Marginal cost pricing of public utilities such as water and electricity to eliminate government subsidies and to generate surpluses in the face of rising supply price to finance watershed protection and environmental improvement. Meeting growing energy demand by improving energy efficiency and conservation through full cost pricing of energy rather than by expanding supply, reducing the need for new power plants and hence the need for funds to finance scrappers to reduce SO_2 emissions.

4. Removal of existing distortionary and environmentally harmful tax exemptions, tax shelters, tax incentives, and accelerated depreciation allowances for capital equipment and depletion allowances for natural resources.

5. Greening of existing taxes through tax rate differentiation to internalize externalities and thereby shift resources from environmentally harmful to environmentally friendly activities. For example, apply higher excise or value added tax rate to high sulfur and high carbon fuels such as coal and heavy oil and lower rates to cleaner fuels such as natural gas; analogously with leaded and unleaded gasoline.

6. Fiscal reform to reduce conventional taxes such as income tax, corporate tax, sales and excise tax, and value added tax, and replace them with environmental taxes such as effluent and emissions charges, product and input taxes (differentiated on the basis of their polluting effects), and resource user taxes. Even if such reform is designed to be revenue neutral, so as not to increase the overall tax burden, its net effects will be (a) increased efficiency and economic growth, (b) reduction in pollution and resource depletion, and (c) reduction in government expenditures on environmental regulation and pollution control. The efficiency gains of a revenue neutral tax reform towards environmental taxes arises from the fact that conventional taxes are distortionary (involve deadweight loss) while environmental taxes are corrective of a market failure (externality). When corrective taxes are used to replace distortionary taxes, a double dividend emerges. For example, replacement of revenues lost through income tax reduction by the introduction (or increase) of energy taxes results in both increased incentive for work and increased energy efficiency."

"The objective of our recommendations is not simply to make environmental and fiscal policies compatible but to make them mutually reinforcing, to turn the present double deficit (both fiscal and environmental) into a double dividend (both economic and environmental). The fiscal reform that the esteemed Minister of Finance has been advocating for some time now offers an excellent window of opportunity to green our national budget on both the revenue and the expenditure side.

The Objectives of Tax Reform

This last statement of the Professor was too much for the Minister of Finance, a veteran advocate of tax reform, to listen to in silence. "I want to inform my dear Professor that he totally misunderstood the objectives of the tax reform that has already been introduced in other countries and which I want to see done here as well. The main objectives of the fiscal reform are:

a) to reduce the number of taxes. We have now 50 different taxes; this is what I call tax saturation and taxpayer fatigue, which leads to tax evasion. How can the Professor suggest adding new taxes?

b) to simplify the tax system by reducing the number of brackets and to have, as much as possible, a uniform tax rate for most if not all products. Again, here we are told to introduce as many rates as there are products, for it must be true that there are no two products with the same environmental costs.

c) to simplify the assessment and collection of taxes in order to reduce collection cost and to reduce the administrative efficiency of the system. How can we do this with effluent and emission taxes, which require measurement and monitoring of discharges at every pipe and every smokestack?

d) to move towards a "neutral" tax system which does not try to promote economic and social objectives which are better left to non-fiscal measures. But the Professor and his group wants us to implement environmental policy with our tax system, the ultimate in tax interventionism.

e) Finally, I would like to remind the Professor of a basic theoretical principle of public finance, which as an economist, I am sure he knows better than I: In the absence of externalities, an efficient tax system will not tax production inputs and will ensure that any indirect taxes are confined to goods and services purchased by households. This is why we allow businesses to deduct any VAT paid on input purchases from any VAT due on their sales. If I understand correctly, the Professor advocates environmental taxes on polluting inputs such as industrial fuels and chemicals.

Effects on Competition

The representative of the Federation of Industries was furious with the "greening the budget" proposal because he not only saw his favorite energy subsidies, tax shelters, and allowances under threat but he also saw new taxes being advocated. He asked for the floor and passionately defended the industrial subsidies and expressed grave concerns about the effect of environmental taxes on the industry's production costs and international competitiveness. The Minister of Industry said that he shared similar concerns and that the country should not consider introducing environmental taxes unilaterally, risking pricing itself out of the world market. "International agreement on harmonization of environmental standards or changes is a different story," he added, "but we are not there yet."

Distributional Implications

The Minister of Welfare and Social Services thought the idea of shifting from taxes on value to taxes on vice was an intriguing one but expressed grave concern about the distributional consequences of raising user charges for water and electricity, the regressivity of product taxes, and the impact on the poor of the possible removal of agricultural and other subsidies. She characteristically stated that "the tax burden of product taxes that affect the prices of commodities such as food, clothes, and shelter, on which the poor spend a larger portion of their income than the rich, will fall disproportionately on the poor. I am also concerned about higher water tariffs for poor urban households and higher production costs for poor farmers and small businesses." She concluded that she would reserve final judgment until after seeing quantitative analysis of the likely impact of different environmental taxes and subsidy reductions on different socioeconomic groups as well as concrete plans for cushioning any negative distributional effects.

The Minister of Agriculture said that he shared similar concerns because farmers are among the lowest socioeconomic groups in the country. He was particularly worried about the impact of higher priced pesticides and fertilizers which would inevitably result from replacement of the generous subsidies by environmental taxes that would reflect the rather substantial damages of agriculture-related non-point pollution. He also expressed concern about the recommendation that farmers be charged a water fee for irrigation water to reflect the true scarcity of water. "Farmers cannot afford to pay for water, let alone compete with urban centers, industries, and tourists for water," he said characteristically.

Environmental Effectiveness

The Prime Minister was already wondering about the silence of the Environment Minister and the environmental NGOs. Subconsciously, perhaps, he hoped that they would come out in support of what he thought was an innovative idea: to green the national budget and earn a double dividend in the process. But he was soon to be disappointed. The Chief Executive of the association of local environmental NGOs stated in no uncertain terms that "paying to pollute" was clearly unethical and against the principles of his organization. Moreover, he had serious concerns about the environmental effectiveness of charges and taxes. In his words, "You never know how much pollution reduction you are going to get with pollution taxes; at least with standards you know what you're going to get. I know that economists like this flexibility, but frankly, I don't want exposure to radiation or to toxic waste to be a matter of response to economic incentives and the object of trading.

The Environment Minister was last to speak. She shared the concerns of the environmental NGOs, especially regarding the uncertainty about the level of control that could be achieved with economic instruments such as taxes and charges. She knew that she could address the problem

with a system of fixed number of tradeable permits but she did not want to be accused of granting or even selling rights to pollute. Moreover, she had serious concerns as to the applicability of the systems to a developing country with limited monitoring and enforcement capability. "As you know," she began, "we have in place some of the strictest environmental laws and standards in the developing world. They are tough and fair. We require a uniform reduction of pollutants by all polluters; we mandate by law that all industrial plants should have the best available environmental technology and are all on a time schedule to establish their own treatment facilities. For land we have zoning regulations and for resource management, minimum allowable harvests, and we require detailed management plans from all extractive industries. Admittedly, we are not always able to enforce these laws and to monitor performance, but this is purely a matter of lack of money, not of need for replacement of our regulations by alternative management systems. And here economic instruments such as taxes and charges hold great promise of raising the financial resources we need to establish the necessary monitoring stations, to hire inspectors, and to prosecute violators. In fact, we are already using a limited system of pollution charges and fines as our main source of revenues. The meager resources we receive from the central government budget are barely enough to pay our salaries.

Thus, we are pleased to hear the Professor suggest a more extensive system of environmental taxes and charges, which can potentially raise all the revenues we need for our ambitious environmental investments and institutional development plans that we had to shelve last year because of lack of funds. But I have some serious concerns since no mention was made of earmarking the revenues for environmental expenditures. We have no objections to having the Finance Ministry collect these taxes and charges but if the revenue is not earmarked and find its way into the central budget, we will not see it again. Therefore, let me reserve my judgment until the issue of earmarking has been clarified.

Allocation, Stability, and Predictability of Revenues for Green Taxes

The Finance Minister, as most of his colleagues expected, was swift in objecting strongly to any form of earmarking for the usual reasons that he chose not to repeat because he had more fundamental concerns about the so-called "greening" of his budget. "Environmental taxes are not likely to be a reliable or stable source of revenues," he lamented. "What if the polluters change their behavior and pollute less, what if the drivers drive less, what if resource exploitation slows down, then our revenues will decline. This already happened to us with the anti-smoking campaigns of the anti-tobacco lobby and of my friend the Health Minister; our revenues from the special tax on cigarettes are down by 30%. You all know we need rising, not falling, revenues. How can one seriously suggest to reduce our income and corporate taxes and replace the lost revenues by unpredictable environmental taxes? How do the proponents of green taxes propose to set the tax rates, predict and maintain stable, even rising, revenues over time?

What about the effects of such taxes on production costs and prices, employment, and most importantly, on our exports and balance of payments. You all know that I rarely agree with my colleague from Welfare and Social Services, but this time I do. We are committed to progressive taxation, at least in principle, but any shift from income or corporate taxes to consumption taxes and user charges for basic necessities and public services is bound to be regressive. As a Minister of Finance responsible for our fiscal health and financial solvency I would oppose the so-called greening of budget unless I am given convincing answers to these questions. And as you all know, I am more proficient in reading numbers than words . . .

The Conclusion and Follow-Up

The Finance Minister was cut in mid-sentence by a brown out. "It must be 10:45 am, and this is our cue that this meeting has gone on for too long," the Prime Minister shouted from the other end of the room, trying to make light of the situation which grew increasingly tense as the debate went round back to square one. "Let me sum up," he continued. "We have heard about our serious predicament of having fiscal and environmental policies that are working at cross purposes; that throwing good money after bad will not solve our problems, it will make them that much worse. I heard no one here challenge the working group's findings. No one even attempted to argue that we are on a sustainable development course. Yet everyone objected strongly to the innovative ideas proposed for his or her own narrow sectoral interests; but no one proposed any alternative except the continuation of status quo. We hear that business as usual is not that bad after all, especially if we can collect more tax revenues, or secure more external assistance to carry us through the next fiscal year. You can already tell I am not happy about the outcome. You all have legitimate concerns that need to be addressed. I myself have several concerns about the practicality and political feasibility of the proposed greening of the budget: how environmental taxes might be implemented with minimal amount of disruption and resistance; how we can build the necessary public support if we choose to follow this route. I am just as concerned about competitiveness, employment, and income distribution as you all are. We need to study the proposed reforms critically but constructively and consider the alternatives. This is what I propose we do between now and our next meeting. For this purpose, I propose to expand the sustainable development working group to include a senior member from each of the agencies and organizations represented here, and to have the group work together with you to address all your legitimate concerns. Thank you.

Back to the Drawing Board

As a senior member of the sustainable development working group, you are working with other group members to reconcile fiscal and environmental policies and furthermore to make them mutually reinforcing. Your task is to help provide answers to the many concerns and questions raised at the cabinet meeting about the proposed greening of the budget by phasing out distortionary subsidies, incorporating environmental considerations in existing taxes, and introducing new environmental taxes as substitutes or complements to existing taxes. Following is a list of the most important concerns raised and questions asked to which you are expected to provide answers.

Questions to Think About

1. *How do you reconcile the introduction of environment-based tax rate differentiation as well as new environmental taxes with the traditional objectives of fiscal reform: tax simplification, fiscal neutrality (not affecting behavior), etc.?*

2. *With the exception of a lump-sum tax, all conventional taxes have distortionary costs in the form of affecting the tax payers' economic behavior: work-leisure choice, consumption-savings allocation, etc. Wouldn't environmental taxes have the same deadweight loss by affecting consumption and production behavior?*

3. *What is the distributional incidence of environmental taxes? Or, who benefits and who loses from specific taxes? How can distributional concerns, a major constraint to the acceptability of environmental taxes, be addressed in a satisfactory way?*

4. *How do you address international competitiveness concerns raised by industry with regard to (unilateral) introduction of environmental taxes?*

5. *At what level should taxes on particular products be set in order to reflect the environmental costs associated with their production and use?*

6. *How can one predict the effect of input taxes on emissions, government revenue, and other variables such as prices, employment, and competitiveness?*

7. *How can one predict the effect of differential product taxes on emissions, government revenue, and other economic variables?*

8. *What is the preferred type of environmental taxes? What determines the choice between direct taxes (on emissions) and indirect taxes (on products and inputs)?*

9. *What determines the choice (or balance) between changes in the structure of existing taxes on goods and services (e.g. excise, VAT) and the introduction of new product and input taxes?*

10. *What is the difference between taxes and charges? Under what conditions are environmental taxes and charges identical? Which do you feel is politically more acceptable?*

11. *How much do environmental taxes need to be increased over time to keep emissions constant (or on a declining path) with economic* growth?

12. *How do you make the introduction of environmental taxes socially and politically more acceptable? How do you ensure public and political support? In other words, how might environmental taxes be introduced with the minimal amount of resistance and disruption?*

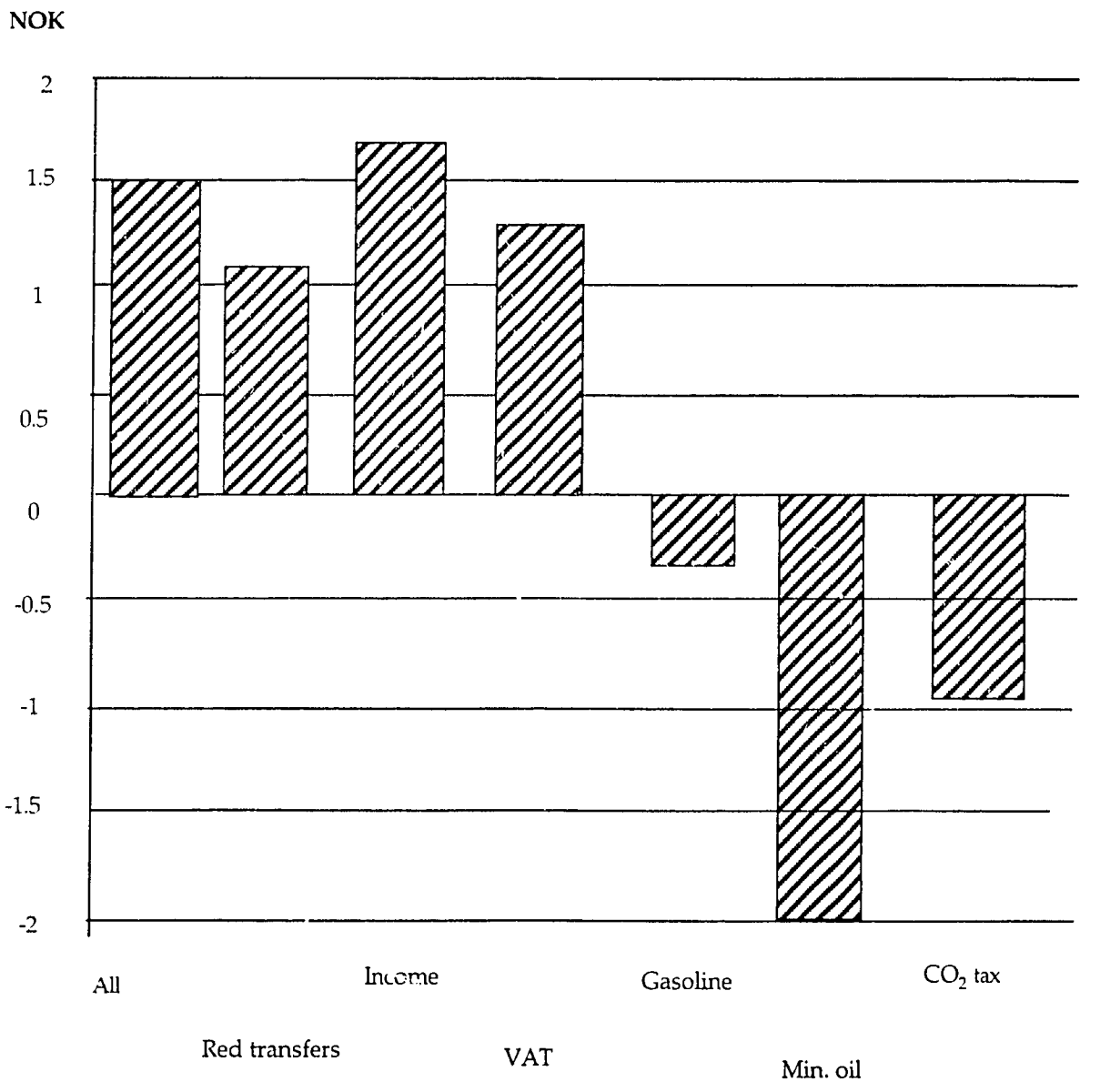
13. *What determines a country's ability to achieve revenue neutrality in environmental taxes?*

14. *Is there a strong case for earmarking environmental tax revenues for environmental expenditures and under what circumstances? If environmental taxes are introduced as incentive systems (rather than as revenue raising mechanisms) shouldn't environmental investments be financed by general tax revenue? What are the usual reasons for objecting to earmarking the Finance Minister alluded to?*

15. *What is the empirical basis for the double dividend? Are there countries that have actually implemented integrated environmental and fiscal reforms? What can be learned from their experience?*

16. *When introducing environmental taxes what do you do with existing command and control? Why are environmental taxes not appropriate?*

Figure 1. Cost of increasing taxes and duties by one NOK



Source: Statistics Norway "Natural Resources and Environment 1993," Oslo 1994.

Table 1. Effects of an Increase in Petrol Duty of 55 Pence Per Gallon (by Quintile of gross household income)

	Quintile of Income				
	Poorest	*2*	*3*	*4*	**Richest**
ALL HOUSEHOLDS					
Household income (£ p.w.)	53.70	112.65	196.10	291.70	520.35
Spending on petrol before tax change (£ p.w.)	0.92	3.19	6.64	9.14	14.86
Increase in tax paid (£ p.w.)	0.21	0.76	1.64	2.34	14.86
Change in petrol consumption	-12.1%	-11.1%	-9.8%	-9.2%	-8.3%
Percentage with use of car	*14%*	*46%*	*71%*	*86%*	*95%*
HOUSEHOLDS WITH USE OF CAR					
Household income (£ p.w.)	104.75	196.15	271.43	353.39	596.33
Spending on petrol before tax change (£ p.w.)	6.96	9.26	9.86	12.85	16.64
Increase in tax paid (£ p.w.)	1.63	2.28	2.56	3.26	4.51
Change in petrol consumption	-11.3%	-10.1%	-10.2%	-9.0%	-7.8%

Source: Pearson and Smith, 1990, pp. 30-31.

Table 2. Illustrative Options for Environmental Charges, by Category

I. Effluent or Emissions Charges
1. on water effluents permitted under NPDES system
2. on toxic releases documented in Toxic Release Inventory
3. on vehicular emissions in Clean Air Non-attainment Areas
4. solid waste collection and disposal charges

II. Charges on Environmentally Damaging Activities
1. recreational user fees on public lands
2. highway congestion tolls
3. noise charges on airport landings
4. impact fees on installation of septic systems, underground storage tanks, construction projectswith environmental impacts, etc.

III. Product Charges
1. taxes based on the carbon content of fossil fuels
2. gasoline taxes
3. excise taxes on ozone-depleting substances
4. taxes on agricultural chemicals
5. taxes on virgin materials

IV. Deposit-Return Charges
1. on vehicles
2. on lead-acid and nickel-cadmium batteries
3. on vehicle tires
4. on beverage containers
5. on lubricating oil

V. Reduction of Tax Benefits and Subsidies
1. percentage depletion allowances for energy and other minerals
2. percentage depletion allowances for groundwater extraction
3. charging market royalties for hardrock mining on public lands
4. eliminating below-cost timber sales
5. charging market rates for grazing rights on public lands
6. charging market rates for state and federal irrigation water
7. charging market rates for federal power

Repetto R. et al Green Fees: How Tax Shifts Can Work for the Environment and the Economy, World Resources Institute, Washington,1992

Table 3. Recent Environmental Tax Reforms from EC/OECD Countries (1990)

Australia
proposals for "Polluter Pays Principle" laws

Belgium
proposals to tax waste water and solid waste

Denmark
(a) has a CFC tax and a tax on rubbish;
(b) refundable deposits on drink containers, planned for car batteries;
(c) new legislation to triple rubbish charge and increase cost of raw materials in process

Finland
(a) introduced a carbon tax;
(b) removed sales tax from "green products";
(c) increases in taxes on single-trip containers, waste oil and phosphate fertilizers

France
(a) charges business for air and water pollution and uses the revenue to subsidize investments in pollution control by industry;
(b) is considering redesigning water charges to discourage farmers from using nitrate fertilizers

Germany
(a) introduced tax incentives on catalytic converters on cars, plans to tax cars on noise and emissions basis, not engine size;
(b) charges for industrial pollution emissions -- reducing the charge in the early years of the installation of pollution control equipment;
(c) has more environmental economic measures than any other EC country (but less than Finland and Sweden)

Holland
(a) introducing a new environmental plan;
(b) plans energy taxes and tax on carbon dioxide emissions;
(c) recent call for environmental disclosure in financial statements

Italy
(a) introducing a range of taxes on non-biodegradable materials;
(b) implementing new taxes on sulphur dioxide, particulates, plastic products, herbicides and non-biodegradable industrial waste;
(c) taxes on airport noise pollution

Norway
(a) raised tax on patrol and charge a toll in cities;
(b) refundable deposit on oil and batteries;
(c) tax on CFCs being introduced

Sweden
(a) recently increased taxation of pesticides and fertilizers;
(b) VAT on energy;
(c) specific taxes on carbon dioxides, sulphur and nitrous oxide emissions;
(d) carbon tax introduced;
(e) car-usage taxation is rising and likely to rise much further

Source: Gillies, A.N. "Protecting the Environment and Reducing Canada's Deficit," IESD Winnipeg, 1994.