

Green Growth Knowledge Platform (GGKP)

Third Annual Conference

Fiscal Policies and the Green Economy Transition: Generating Knowledge – Creating Impact

29-30 January, 2015

Ca' Foscari University of Venice, Venice, Italy

Environmental Fiscal Reform

Zaid Asi

The GGKP's Third Annual Conference is hosted in partnership with the Ca' Foscari University of Venice, The Energy and Resources Institute (TERI) and the United Nations Environment Programme (UNEP).



Abstract: Environmental Fiscal Reform

1. Introduction

Environmental Fiscal Reform can be defined as the reengineering of tax systems into more friendly and environmentally growing ones; where the tax burden is shifted from income resources, and instead imposed exponentially on factors that adversely affect the environment such as pollution, consumption, resource depletion, non-recyclable waste, and civil construction. In other words, it is the process of shifting the tax burden from economically feasible projects/activities that are environmentally neutral (no eco-effect) into activities that generate negative environmental externalities that cannot be reversed. This reform is intended to protect the environment and attain future environmental goals, whilst generating sustainable revenues through exerting a variety of fiscal tools such as carbon financing, bio banking, green bonds, environmental Bond Schemes, and environmental taxation. On the other hand, EFR also includes phasing out harmful environmental subsidies; which promote the expansion of various economic sectors such as agriculture, transportation, and energy without taking into consideration the associated negative environmental externalities produced.

Most of the revenues generated from environment fiscal reform is derived from taxes imposed on energy (Gas, petroleum, fuel), and transportation (vehicle purchase, annual vehicle usage fee). However, environmental fiscal instruments (biodiversity focused) include:

- A. Taxes/Fees on pesticides or fertilizers that contain the following emissions: NO_x, SO₂, CO₂.
- B. Fees/taxes for national park/forest entry.
- C. Natural resource depletion (water, forests, fishing, hunting, etc.).
- D. Fees/taxes on wastewater discharge vs. incentives for the usage of grey water.
- E. Earmarking Revenue (Environmental Funds).

Moreover, EFR revenues can be categorized as follows:

1. Environmental Taxation

1.1 Taxes on Natural Resource Extraction

1.2 Taxes on Products, Pollutants and Emissions

2. Environmental Subsidies

2.1 Green/Cross/Targeted Subsidies

2.2 Reforming Environmentally Harmful Subsidies

3. Charges and Fees (Earmarking Environmental Revenue)

4. Markets for Environmental Goods

4.1 Certificate/Emission Trading

1. Environmental Taxation

1.1 Taxes on Natural Resource Extraction

Definition: Gathering of economic yields derived from the extraction of renewable & non-renewable resources.

Example: Royalties imposed on the extraction of non-renewable resources such as oil, timber, natural gas.

Strengths:

- A. Ability to effectively integrate existing tax collection systems into this modality.
- B. Sustainable and fixed source of income (with good potential to yield additional revenue).
- C. The positive correlation between natural resource depletion and imposed taxation will act as a benchmark allowing adequate monitoring for resource depletion, which allows for a better strategy composition.
- D. Creates jobs for local communities; increasing their income.
- E. Diversity of revenue sources (timber, oil, natural gas, etc)

Weakness:

- A. Requires a comprehensive information technology base/platform that is able to process vast amounts of data retrieved from various natural resource consumption figures.
- B. Requires a resilient and institutional fiscal framework; that will be accepted by communities.
- C. May be accompanied by non-predicted negative externalities.
- D. Requires alteration in governance, policies, and regulations.

1.2 Taxes on Products, Pollutants and Emissions

Definition: Product Tax: Tax is imposed and collected at the time of sale based on the amount/quantity of environmentally harmful substances forming the composition of the product/service.

Emission Tax: Tax imposed on quantifiable/intensity based fumes and emissions polluting the environment (noise, air pollution, water contamination, soil erosion).

Example includes taxes imposed on pesticides that contain environmentally harmful components.

Strengths

- A. Introducing new clean energy technologies will reduce the country's petroleum bill, which will consequently decrease local currency exposure and thus price fluctuations, which will ultimately allow for a more energy secure economy (solid macroeconomic positioning for the country).
- B. Low implementation/operational cost.
- C. Arising revenues can be harnessed to offset damage arising from Environmentally Harmful Subsidies.
- D. Increased financial resource mobilization.
- E. Allows for extensive R&D especially in the fields of clean technology and green economy.
- F. Carbon Financing Markets can be formed based on supply and demand allowing for increased economic development and integration.

Weakness

- A. Corporate corruption may cause firms to falsify their' pollution records.
- B. Governmental/national lobbies might exempt major polluting plants from abiding to the new eco-tax; creating increased discrepancies for the new environmental reform.
- C. Uncertainty of environmental and economic reactions.
- D. Imposing a tax on essential and naturally limited resources (such as water, oil, gas) within a relatively low per capita income country will face a lot of resistance and opposition.
- E. Environmental taxation can allow for risk competitiveness; which potentially leads to increased resistance shifting towards favorable environmental practices, accompanied by an increased demand on exemptions; which consequently leads to an inefficient Enviro-Business economy (energy exempt will cause increased fossil fuel consumption and increased pollution).

2. Environmental Subsidies

2.1 Green, Cross, and Targeted Subsidies

Subsidy Definition: Any measure that keeps prices for consumers below market levels, or for producers above market levels, or that reduces costs for consumers and producers.¹ Subsidies are harnessed into a particular economic development model in order to facilitate implementation and adherence of a new policy framework that ultimately serves to produce a nonprofit purpose; such as to conserve environmentally depleting natural resources; through exerting innovative mechanisms that solidify and augment the construction or production process (i.e., within manufacturing plants). There are three types of subsidies:

-Direct subsidies (grants, loans, and credits).

-Indirect subsidies (tax exemptions, preferred tax rates, and a below market rate provision for goods/services (electricity, sewer, water)).

-Direct price support for producers or consumers.

Strengths

- A. Prompt Environmental Influence.
- B. Increases and solidifies investments and procurement decisions (reduces cost increases profit).
- C. Increases competition between firms, incentivizes firms to expand locally, creates jobs, and boosts economic growth.
- D. Increases and encourages R&D.
- E. Facilitates and supports the introduction of innovative products and services that provide adequate economic benefits without producing harmful environmental externalities.

Weakness

- A. Produces variations and fluctuations within markets due to price variations for identical products/services; which will eventually result in an overall welfare loss and the initiation of a discrepant market.
- B. Increases the financial burden on the National Public Budget, jeopardizing essential governmental tasks such as health, education, and military.
- C. The presumption that a subsidy is taken for granted in terms of its associated revenues, will reduce or eliminate innovation, R&D, and commitment towards introducing pioneer products/services.
- D. Unequal distribution of wealth, which can lead to political corruption and social violence/friction.

2.2 Reforming Environmentally Harmful Subsidies

Environmentally Harmful Subsidy Definition: A subsidy that encourages more environmental damage to take place than would occur without the subsidyⁱⁱ In other words, environmentally harmful subsidies are often the result of an externality that has not been internalized within the price of that activity, supplemented by an income transfer or profit accumulation.

Strengths

- A. Increases the efficiency of the country's economy from a macro prospective.
- B. Enhances and facilitates the establishment of innovative clean energy technologies.
- C. Effectively reduces environmental damage and natural resource depletion through reforming subsidy channeling based on the associated overall environmental damage.
- D. Increases the general budget deficit by re-channeling reformed subsidies into more prioritized initiatives (health, education, job creation).

Weakness

- A. Risk of rechanneling reformed subsidies into non relevant/more environmentally harmful or non-prioritized initiatives (subsidy leakage).
- B. Various negative social externalities associated with cutting subsidies (theft, crime, vandalism).
- C. Parties receiving subsidies will oppose and reject the reform.
- D. Collapse of many SMEs during their initial startup period after subsidy removal.

3. Charges and Fees (Earmarking Environmental Revenue)

Charges and Fees Definition: Payments for particular services provided to the party paying the charges/fees. This financing reform tool collects and exerts proceeds to compensate for the expenditure of public services that are usually provided for free (or a small fee) by the government. Examples include the cost to treat and dispose sewage water, cost to dispose waste, water, visiting national parks).

Strengths

- A. Proceeds are earmarked for a specific environmental objective, and are not channeled back to the national budget (as in the case of general taxes).
- B. Reduces generated wastes and emissions; through adopting green technologies that save time, money, resources, and the environment.
- C. Reduces the national budget by freeing it from expenditures that were provided for free to the public.
- D. Freed up financial proceeds can be exerted to extend and enhance existing public service infrastructure (water, sewer,,etc).
- E. Natural Resource depletion/consumption is linked to the fee/charge percentage; correlating the environmental loss with a percentile penalty; thus increasing resource efficiency.
- F. Rational consumption of public services will occur; thus consumption will significantly drop.
- G. Relatively capable of monitoring consumption of public services provided to each household; thus charging the adequate fee accordingly (quantity of usable water pumped, volume of sewer generated, emission released by vehicles. etc).
- H. This will allow for a higher price elasticity of demand for public services provided (increased governmental revenue).

Weakness

- A. Theoretically, if those charges and fees accomplished their overall objective of protecting and conserving the environment, supplemented by reducing depletion and consumption of natural resources; this will cause the government to lose the majority of its clients, consequently reducing revenues channeled into the national budget.
- B. A social, political, and environmental tradeoff/offset will occur; causing discrepancies and insufficiencies to cover the basic expenditure of providing that public service.
- C. Will cause social disproportions especially for the poor demographics; since a service that was always provided for free will start charging. Besides, most rural areas where the poor demographic resides are not connected to basic public services (such as water, sewer, and electricity). However, this issue can be resolved through exempting certain low volume consumption households from paying that fee.
- D. Might promote/increase corruption and illicit transactions.

4. Markets for Environmental Goods

4.1 Certificate/Emission Trading

Certificate/Emission Trading Definition: is one of the financial resource mobilization schemes where the government establishes an emission trading market that is based on the supply and demand of emission certificates. Within this scheme, each plant/factory is allowed to release a certain volume of emissions per year based on various economic, environmental, and social factors. Once a company exceeds its quoted emission volume, it needs to purchase an additional emission permit from another entity that has not exceeded its maximum annual emission allowance volume. This trade between entities is based on an auction basis that allows prices to fluctuate up and down according to demand and supply; thus generating revenues for entities that release fewer emissions.

Strengths

- A. Promotes innovation and creativity in terms of identifying alternative resources instead of exploiting natural resources.
- B. Yields additional income for entities integrating green technologies that protect the environment.
- C. The Trade Scheme allows the creation of additional jobs within the market (lower unemployment rates).
- D. Adoption of green technologies increases efficiency, effectiveness, and reduces consumption.
- E. Governments can increase environmental revenues by reducing emission quota for each geographical region/demographic.

Weakness

- A. Enforcement and Compliance: Some companies might not adhere/comply with the trade scheme regulations; exceeding their set emission quota without offsetting it with a new sufficient emission certificate. Social, political, and financial pushing factors might be exerted to alter each entity's position which will create various discrepancies within the market.
- B. Market speculation might spread, especially when a more structurally capitalized corporation purchases emission certificates in advance from low-mediocre capitalized corporations, placing those relatively small firms under the risk of being obliged to repurchase its emission certificates from that other large firm in the future. This creates a risk perception among the market for well capitalized firms to entirely acquire small firms under one conglomerate which will consequently reduce market competition.
- C. Emission Trade Certificates possess a high price elasticity of demand; therefore it is crucial to maintain prices within the equilibrium to avoid a surplus in supply.
- D. Relatively high cost to establish a regulatory authority, supplemented by cutting edge monitoring and validation systems.
- E. Emission Trade Schemes are not an illusion within markets, thus they do exist and there needs to be a commitment from all stakeholders to buy and sell emission certificates based on each entities requirement within a transparent market.

2. Examples of revenues arising from EFR:

- In 2010, Revenues from environmental taxes within OECD member countries almost totaled 700 Billion USD. ⁱⁱⁱ
- In 2009, total revenues generated from environmental taxes within the EU was 287 Billion Euros. ^{iv}
- In 2010, Denmark was able to mobilize 461 Million DKK from the Danish Pesticide Tax.
- Between 2007-2008, Australia was able to mobilize 33 Million AUD from the New South Wales Load Based Licensing Scheme.
- Brazil was able to mobilize 170 Million USD within Parana State, through the Brazilian ICMS-E Fiscal Instrument. ^v

3. Result Driven EFR

In order to compose a result driven EFR that focuses on protecting the environment whilst generating revenues; the reform needs to carefully and comprehensively revise the following components:

- Fiscal Potency; which refers to how efficiently has EFR influenced the streaming/mobilizing of additional sources of revenue, whilst decreasing unsustainable financing, and reducing tax distortions. Fiscal and environmental potencies rely heavily on the price and tax elasticity of demand.
- Environmental Potency; which closely links potential targets with their associated damage; here the environmental tax per unit is equal to the marginal social/environmental damage.
- Administrative potency and commercial feasibility; which requires a well-established tax system capable of administering, managing, monitoring, and redistributing tax revenues in a transparent, accountable, and feasible manner.
- Equity; EFR will evidently create winners and losers due to creating different short/ long run consequences. Transitional channels that determine equity include prices, employment, assets, income transfers, taxes, and access to goods and services.
- Political Adaption; since EFR will benefit some, it will harm others. Therefore EFR adaption will depend on its' associated distributive effects and available alternative tradeoffs.

4. EFR Strategy

- A. Preliminary Research and setup.
- B. Policy Refinement and consolidation.
- C. Advocacy and Consultation with Decision Makers.
- D. Gradual/subsequent Implementation.
- E. Monitoring, evaluation, and Feedback.

References

ⁱ (OECD 1998)

ⁱⁱ (OECD 1998)

ⁱⁱⁱ Scaling up finance mechanisms for biodiversity

<http://www.oecd.org/env/resources/OECD%20Finance%20for%20Biodiversity%20%5Bf%5D%20%5Blr%5D%20WEB%20SM.pdf>

^{iv} Eurostat in Focus-Environment and Energy

http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-SF-11-067/EN/KS-SF-11-067-EN.PDF

^v Competitive Cities and Climate Change

<http://www.oecd.org/regional/regional-policy/44232251.pdf>

Abstract prepared by: Zaid Asi

Freelancer

Market Research-Business Analyst

Green Economy and Financial Mobilization Consultant

Amman- Jordan

Tel: +962-79-0994985

email: zaidasi86@gmail.com

LinkedIn: <http://www.linkedin.com/in/zaidmasi>