



# Excise Taxes: Rationale, Analysis, Design, and Implementation

---

Richard M. Bird  
University of Toronto  
Seventh Meeting of Asian Tax Forum  
Siem Reap, Cambodia  
October 20-22, 2010



# Role of Indirect Taxes:

---

**All indirect taxes are intended to produce revenue; but some have other objectives also**

**For example, import duties or tariffs may be imposed for protection as well as revenue**

**Similarly, in addition to revenue, excises may have the objective of internalizing external costs. Both aspects need to be considered**



## Rationale for Separate Excise Taxes

---

- To apply higher rates than on other consumption
- For revenue purposes
  - Political feasibility
  - Administrative ease
- To improve economic efficiency
- To achieve non-revenue goals
  - Discourage consumption
  - Progressivity



## Excises for Revenue

---

- Excises may be very productive e.g. in ASEAN countries on average over 15% of taxes and 2% of GDP – almost as much as general consumption taxes.
- Moreover, when countries encounter fiscal problems, often the quickest and easiest way to close the gap is to increase excise rates.



# The Externality Argument

---

- The most important excises for revenue are usually those on petroleum products, alcoholic beverages, tobacco products, and motor vehicles.
- As it happens, these are also the products for which, because social costs exceed than private costs, there is a strong case for levying excises.
- Well-designed excises should thus not only produce revenue but also improve resource allocation and hence economic welfare.



# Some Issues in Designing An Excise System

---

- Scope of excise regime
- How high should the tax be?
- Specific or ad valorem rates?
- Rate differentiation
- Earmarking?
- Relation to other consumption taxes
- Administrative issues



# Scope of excise regime

---

- Most revenue from tobacco, alcohol, fuel, and perhaps vehicles? – the ATF(V) core
- Inclusion of substitutes – e.g. soft drinks?
- Within taxed goods, exclusion of ‘necessities’ – cooking fuel?
- Possible (and undesirable?) extensions
  - ‘Luxury’ goods (TVs, cosmetics, mobile phones)?
  - Services (gambling, hotels)
  - Producer goods (trucks? Cement?)



# The Level of the Tax Rate

---

- The revenue-maximizing rate
- The optimal rate
- The feasible rate





# The Revenue-Maximizing Rate

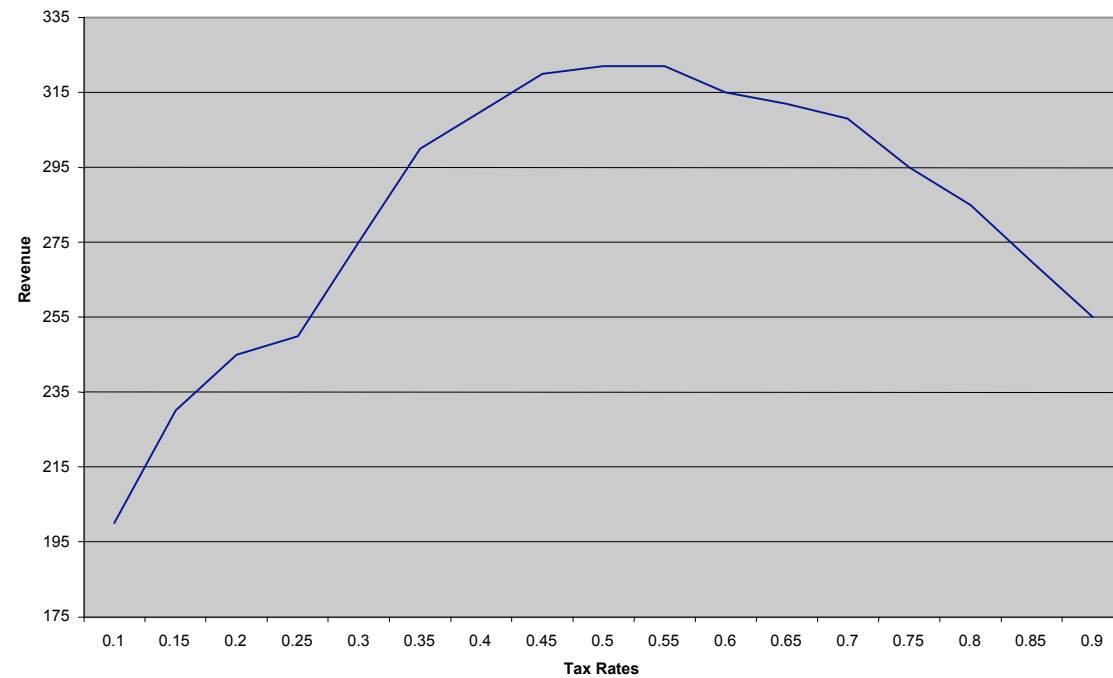
---

- With data on relevant elasticities (responses to price changes) of supply and demand, RMR is easy to calculate in principle
- For example, a recent calculation for Kenya and Tanzania suggests that the existing tax rate for beer is much higher than the RMR in Kenya and much lower in Tanzania.
- But assumptions are strong and data on demand elasticities are weak

# RMR – An example

---

Tax rates and Tax Revenue: Example





## RMTR on Beer in Kenya and Tanzania

---

Long-run own-price elasticity traditional brew	-1.11	-0.44
Long-run own-price elasticity market beer	-5.49	-0.312
Current tax rate on traditional brew	1.03	0.5
Current tax rate on market beer	1.33	0.75
Long-run RMTR on traditional brew	0.45	1.136
Long-run RMTR on market beer	0.091	1.603



## Maximizing 'Net Revenue'

---

- Need to adjust for effects on revenue from VAT and other (e.g. income) taxes
- If excise increased or reduced, VAT revenue may increase also but difficult to calculate by how much
- E.g. in one study (Ireland) estimated 30% of revenue lost when an excise was abolished was recaptured through other taxes



# Examples

---

- R. Bird and S. Wallace, Taxing Alcohol in Africa: Reflections and Updates, August 2010 (earlier version available as <http://www.rotman.utoronto.ca/iib/ITP0304.pdf>)
- R. Bahl, R. Bird, and M. Walker, The Uneasy Case against Discriminatory Excise Taxation: Soft Drink Taxes in Ireland, Public Finance Review, 31 (5, 2005): 510-533



# The Optimal Rate

---

- Economic analysis focuses on increasing people's well-being, not government revenue. The optimal rate (OR) not the RMR is what matters from this perspective.
- For example, studies in US and South Africa suggest doubling alcohol taxes to account for such externalities as increases in health costs, automobile accidents and violence. A recent study in India suggests that similar increases in tobacco taxes would not only maximize revenues but prevent millions of premature deaths.
- Again, however, underlying data is far from solid even in developed countries; consider the case of taxes on motor fuel



## Optimal Motor Fuel Taxes (\$US/

---

	Actual Tax	Optimal Tax	Difference
China	0.44	1.65	1.21
India	1.84	1.10	-0.74
U.S.	0.40	0.99	0.59
Canada	0.92	1.18	0.26
Australia	1.56	1.05	-0.51



# Calculating the Optimal Tax

---

- Pigovian tax - Marginal external cost (difference between social and private cost) e.g. carbon emissions and costs of pollution, congestion, and accidents
- Ramsey tax – Price and income elasticity
- Correct for pre-existing tax distortions





# Needed Information

---

- MEC (often assumed = average) costs of relevant externalities
  - Pollution
  - Accidents
  - Congestion
  - Public expenditure externalities?
- Marginal effective burden of other distorting taxes e.g. wage tax and wage elasticity of labour supply
- Market structure of industry
- Administrative effectiveness (smuggling etc.)



## And More...

---

- Own-price income and price elasticity of demand for vehicle miles
- Fuel efficiency (miles/gallon)
- Cross-price elasticities
- Producer (ex-tax) prices
- Tax rates
- Distributional weights



# Examples

---

- E. Ley and J. Boccoardo, The Taxation of Motor Fuel: International Compariso, world Bank Policy Research Working Paper 5212, February 2010 (available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1559729](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1559729))
- W. Chandoevvit and B. Dahlby, The Marginal Cost of Public Funds for Excise Taxes in Thailand, eJournal of Tax Research, 5 (1, 2006), 135-67 (available at [http://www.atax.unsw.edu.au/ejtr/content/issues/previous/paper6\\_v5n1.pdf](http://www.atax.unsw.edu.au/ejtr/content/issues/previous/paper6_v5n1.pdf))



# The Feasible Rate

---

- Other economic aspects
  - Effects of regulation
  - Links to other policy concerns – e.g. environment, energy
- Administrative aspects
  - Compliance and administrative costs
  - Smuggling
  - Informal economy
- Other aspects – the political dimension
  - Jobs and other good things
  - Urban sprawl and other bad things



## Still More Information Needed

---

- Administrative costs
- Compliance costs
- Size and nature of illegal (and 'informal') activities
- Effectiveness of regulations
- Policy weights for various 'goods' (e.g. jobs) and 'bads' (e.g. sprawl)



# Specific vs. Ad Valorem Rates (1)

---

- Advantages of Specific
  - Predictability of revenue
  - Ease of administration
  - Targeting to externalities
  - Discourage consumption
  - No disincentive to 'quality'
- Disadvantages of Specific
  - Unresponsive to price changes
  - Regressivity



## Specific vs. Ad Valorem Rates (2)

---

- If a primary purpose is to discourage e.g. smoking and drinking, a strong case can be made for specific excises—the same tax burden per cigarette or per unit of alcohol
- Given oil price movements, specific excises may also be best for petroleum products
- Ideally, perhaps motor vehicles may call for a mixture of specific and ad valorem taxes
- Always critical to adjust specific rates for inflation – but few do so adequately



# 'Hybrid' Rate Structures

---

- On base of 'administered' prices – like specific
- Control of production and inventory
- No transfer pricing problem
- Ease of adjusting price (no law needed)
- But:
  - Need to know prices
  - May need to adjust frequently
  - May be costly to inform all of changes





# Two Approaches to taxing Alcohol and Tobacco

---

- Economic Approach
  - Revenue Efficiency
  - Administration
  - Equity
  - Efficiency
- Public Health Approach
  - “Internalities” as well as “externalities”
  - E.g. if drunk driver kills himself, it may be a tragedy but it is not an externality; if he kills someone else, it is both



# The Public Health Approach

---

- Health costs of excessive drinking and smoking can be enormous
  - E.g. Indian tobacco tax study estimates that discouraging smoking through (more or less) doubling taxes will avert almost 20 million premature deaths
  - Similarly, less drinking is on the whole better for health
    - Are some forms of alcohol worse?
    - Are some substitutes (e.g. illicit) worse?
    - Are there special problems with the young
    - What about addicts?



## Some Questions on Rate Differentiation with Excises

---

- What should be the relative tax burden on beer (c.5 % alcohol), wine (12 % alcohol) and distilled spirits (40 % alcohol)?
  - Progressivity?
  - 'Cultural' style?
- Is there a case for protecting domestic producers (kretek cigarettes, small producers, low quality brands)?
- What should be the relative tax burden on diesel vs. gasoline vs. other fuels?
- Should the diesel excise be differentiated by end use?



# The Regulatory Dimension

---

- Licensing
- Limitations on consumption (age, location)
- Enforcement of these and other rules – e.g. drink driving
- Substitutes, complements or necessary infrastructure for excise tax policy?



# Issues in Excise Administration

---

- General: organization, training
- Registration and licensing
- Physical control – internal and external borders
- Bonding
- Stamps and seals
- Timing of payment
- Taxpayer focus: checking consistency across taxes
- The sub-national dimension



# Earmarking

---

- Traditional case against earmarking is that it creates rigidities in budgeting and therefore leads to inefficient budgeting
- Nonetheless, especially in countries in which there is a lack of confidence in government and the budgetary process there may be a lot of earmarking, often of excises.
- Much earmarking is more 'symbolic' than real in the sense that it does not actually affect budgetary decisions at the margin: its function is more to advertise good intentions than to affect resource allocation.



# Earmarking Excises

---

- Case for real earmarking is strongest for motor fuel excises (as part of a system of road user charges as well as perhaps correcting for pollution and even congestion externalities). But seldom found in practice
- Case is much weaker for other excises e.g. on tobacco and alcohol.
  - Such earmarking is often 'feel good' rather than 'do good'
  - And special pleading in disguise



# Relation to other consumption taxes

---

- Should all excise products be subject to VAT?
- Should VAT be applied to price including excise? If so, should excise be lowered accordingly?
- Should imports and domestic products be subject to same excises?





# Excise Taxes in Practice (1)

---

- In Jamaica fuel is exempted from VAT but vehicles are taxed under 66 different VAT rates (up to 154.545%). The average implicit rate is 55.17%.
- In Egypt motor vehicles are subject to 5 different rates (up to 45%) and not creditable. Average implicit effective GST rate is 18%.
  - Questions
    - In both countries, would it be better to obtain same revenue by applying excise(s) and standard GST rate?
    - Should fuel be subject to VAT in Jamaica (and excise rate adjusted accordingly)?



## Excise Taxes in Practice (2)

---

- Egypt levies specific excises on e.g. tea, sugar, and cement. It also levies specific excises on alcohol and gasoline. The equivalent ad valorem rates on these products are now less than half the level they were when first taxed.
- Questions:
  - Should the first group of products be taxed at all?
  - Should the specific rates be changed to ad valorem rates?



## Excise Taxes in Practice (3)

---

- Excise taxes on fuel and vehicles in Ukraine are earmarked for roads. Other excises on jewelry, mobile phones, etc. are earmarked to fund pension arrears.
- Ukraine changed many excises from ad valorem to specific rates. However, the rates on fuel and vehicles are imposed in Euros rather than the national currency.
- Ukraine also has substantial “excise arrears”.
- Questions:
  - Is such earmarking sensible?
  - Why might it make sense to state rates in a foreign currency?
  - Are “arrears” possible with a well-designed excise?



# Excise Taxes in Practice (4)

---

## ○ In Liberia:

- imported alcohol is subjected to higher excise rates than domestic. Soft drinks are taxed at same rate as beer.
- All fuel is imported and subject to both import and domestic taxes but rates are (regionally) very low and over 80% is tax-exempt.
- All vehicles are imported; no excise is imposed.
- Minor excises are imposed on e.g. imported construction materials and jewellery.
- All excises are specific

Any comments on this system?