

# Tax policy: lessons we can learn from microeconomics

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# Key topics in tax policy

- Optimal tax policy (does not concern most governments!)
  - Optimal revenue collection (public goods problem)
  - Allocation of taxes – optimal tax rates

## Given revenue goals:

- Effective tax rates
  - Revenue pool (tax evasion)
- Tax simulations
  - Distributive impacts

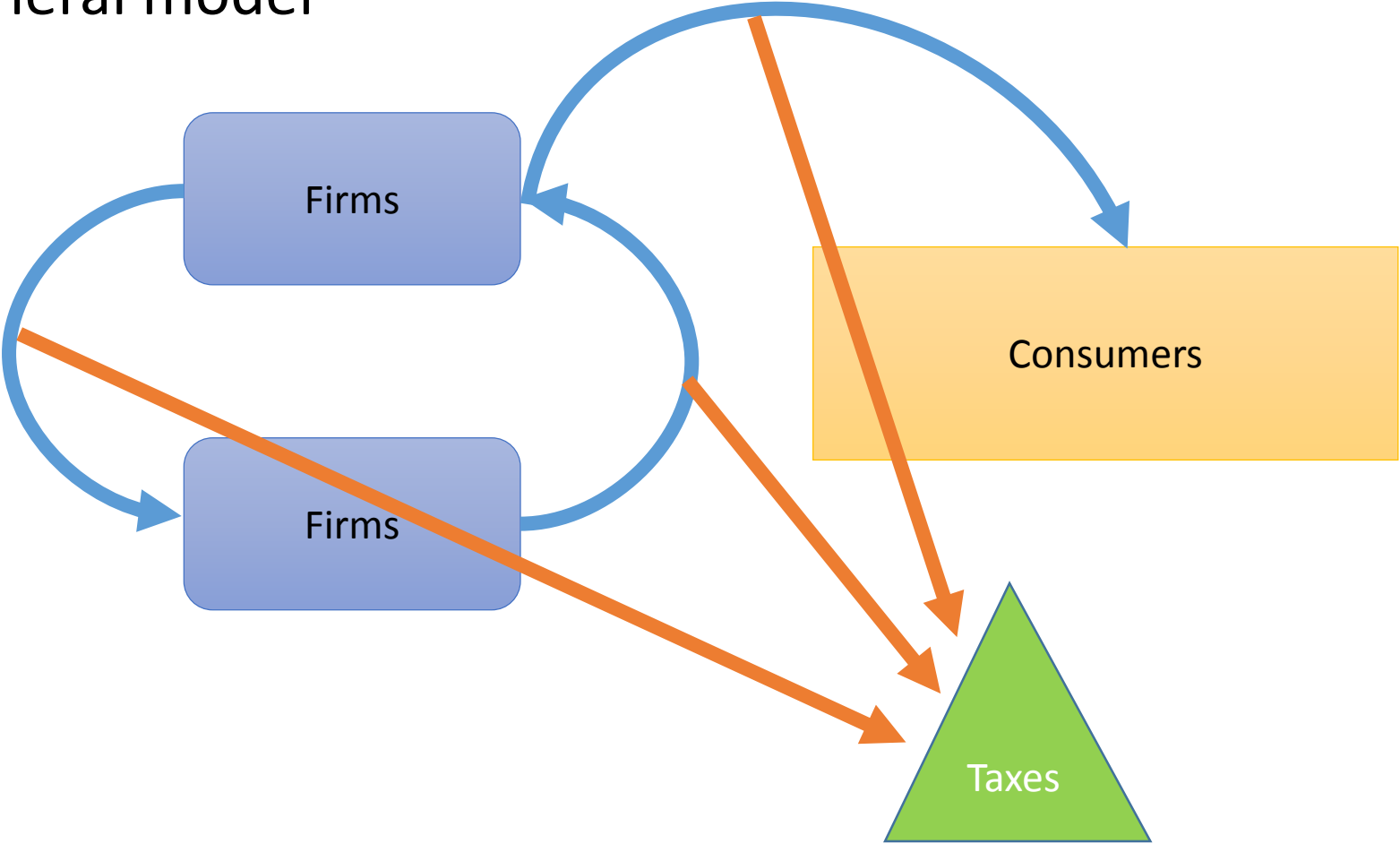
# Tax policy

Our focus in this presentation is entirely on indirect taxes

Also, we implicitly assume ad valorem taxes (VAT, GST etc.)

# Tax policy

A general model



# Tax policy

A general model

Tax collection

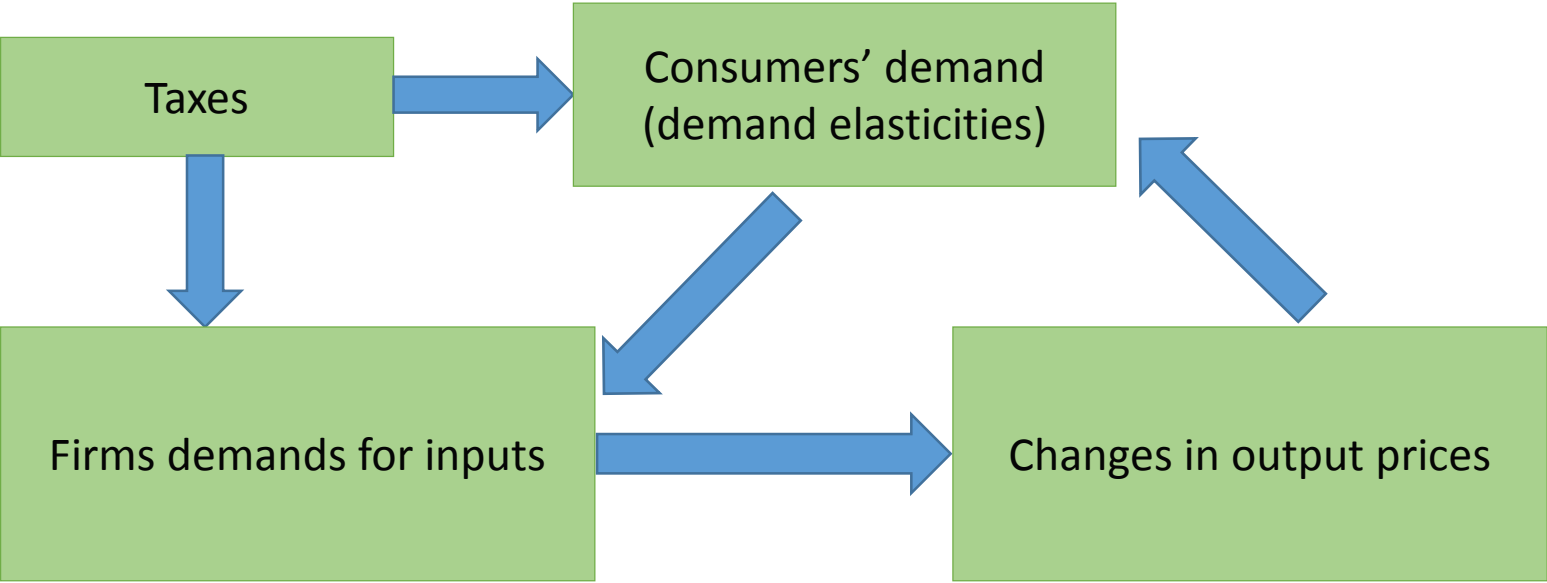
- Inter firm transactions (production/firm/industry surveys)
- Purchase of final goods (consumption surveys)

Tax simulation

- Elasticity of demand of producers (production/firm/industry surveys)
- Market organization (production/firm/industry surveys)
- Demand elasticity of consumers (consumption surveys)

# Tax policy

## A general model



# Tax policy

## A general model

This type of analysis is common in advanced countries like Germany, France, UK, USA etc. but more developing nations like Brazil, Mexico, Thailand etc. are incorporating such models in formulating their tax policies.

The implementation of a full blown model is difficult in a country like India because of its size and the implied financial costs.

# Tax policy

Consumer's budget equation:

$$\sum_i \tilde{p}_{xi} x_i(\tilde{p}_x) = E$$

$$\sum_i \tilde{p}_{xi} x_i(\tilde{p}_x) \frac{t_i}{(1 + t_i)} = TR$$
$$\tilde{p}_{xi} \equiv p_{xi}(t)(1 + t_i)$$



# Tax policy

Consumer's budget equation:

$$\hat{E} = \sum_i s_i \hat{E}_i$$

$$\hat{p}_{xi}(1 + \xi_{xij}) + \sum_j \hat{p}_{xj} \xi_{xij} = \hat{E}_i$$

$$\hat{p}_{xi} \equiv \hat{p}_{xi} + \frac{t_i}{(1 + t_i)} \hat{t}_i$$
$$\sum_i \left( \hat{t}_i + \sum_j \hat{p}_{xi}(1 + \xi_{xij}) \right) = \widehat{TR}$$

# Tax policy

Consumer's budget equation:

Can get an estimate of untaxed part...

from consumption surveys (**price data required**).

Spatial distribution of potential tax base.

Frontier (efficiency/corruption in tax policies) analysis.

# Tax policy

Firms' revenue and costs:

$$\sum_i (1 + t_i) \left( \pi_i + \sum_j p_{fij} f_{ij} \right) = \tilde{p}_{xi} x_i$$

where  $\pi$  denotes profit,  $f$  denotes the factors of production.

Red term is the firms' value added.