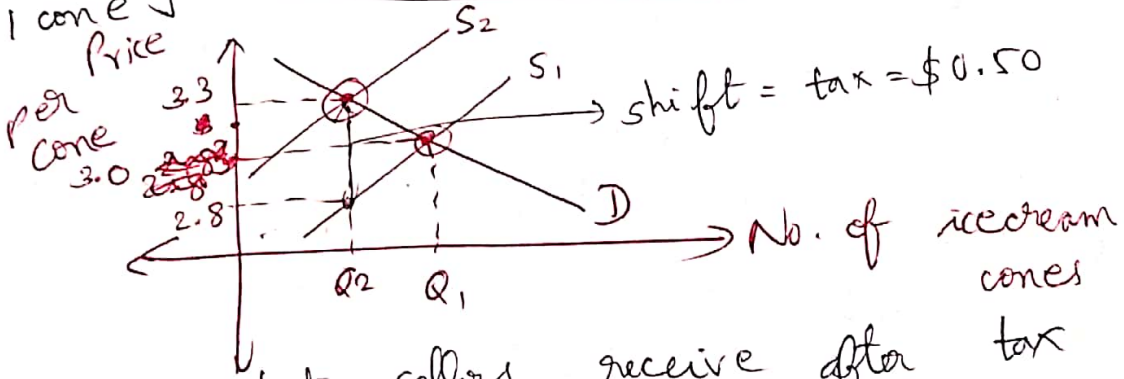
↳ Tax incidence → refers to how the burden of a tax is distributed among various people who make up the economy.

↳ How taxes on sellers affect market outcomes?

Tax ↑ ⇒ if sellers produce ↑ goods ⇒ price of food ↑ ⇒ discourages market activities & sellers produce ↓ goods. Supply curve shifts by the tax imposed per good.

Before Tax	Tax	After tax
Price of 1 cone → $3.0	$0.5/cone	$3.3



$2.8 = what sellers receive after tax

$3.3 = price per cone after taxation

$3.0 = price per cone before tax.

disadv → qty of goods sold in the new eq. is less

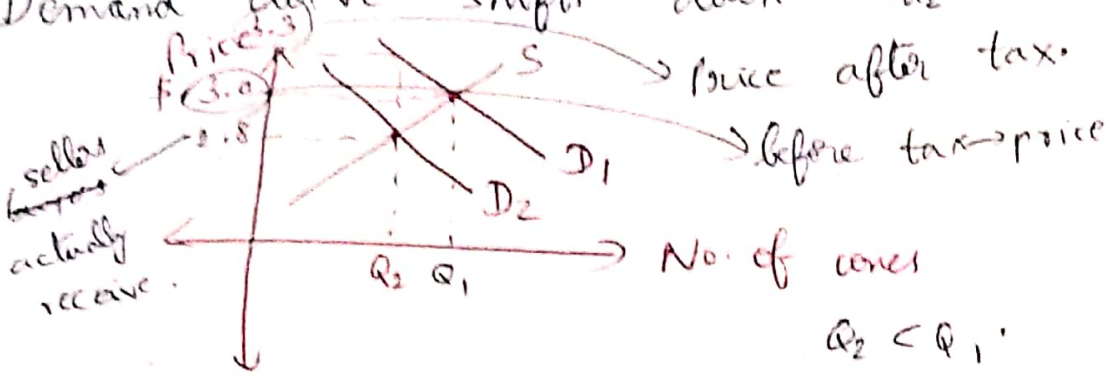
→ discourages market activities.

→ New equilibrium → price ↑ ⇒ buyers pay ↑ but sellers receive ↓ bcoz of tax.

↳ How taxes on buyers affect market outcomes?

Tax on buyer ⇒ demand for cone ↓ as if buyers buy ↑ cones ⇒ pay ↑.

Demand curve shifts down. $Q_{d_2} < Q_{d_1}$



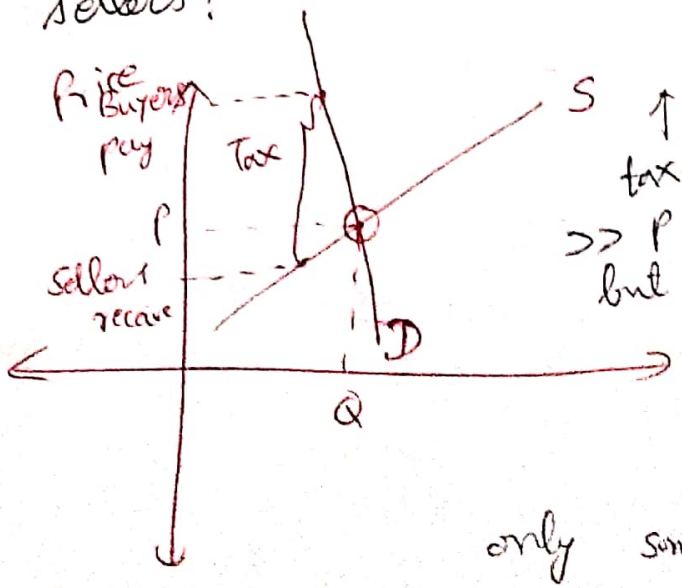
$Q_2 < Q_1$.

Shift in demand curve = Tax levied on buyer.

↳ Regardless of tax being levied on buyers/sellers, in the new equilibrium, buyers & sellers share the burden of tax. In both cases, what sellers actually receive is equivalent. Tax on buyer ⇒ buyer pays his money to Govt. Tax on seller ⇒ seller pays his money to the Govt.

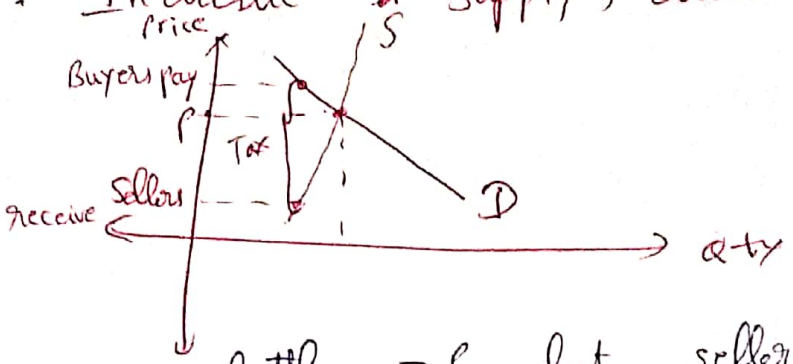
↳ How the burden of the tax is shared by buyers & sellers?

Case -(i) Elastic supply, inelastic demand



Buyers share ↑ burden of tax as they pay >> P (before tax price) but sellers receive only some amt < P.

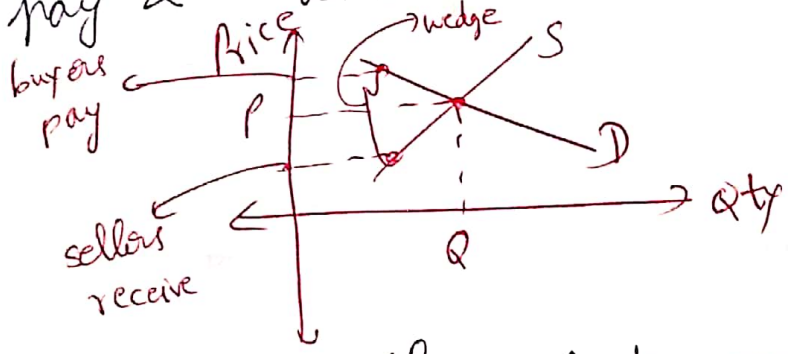
Case-(ii) : Inelastic supply, elastic demand



Buyers pay little > P but sellers receive << what they received @ P ⇒ Sellers share ↑ burden of tax.

↳ Elasticities of supply & demand curves determines how the burden of tax is shared b/w buyers & sellers.
(consumers) (producers)

↳ Dead-weight losses of tax → effects of tax:
Tax places a wedge b/w what buyers pay & what sellers actually receive.



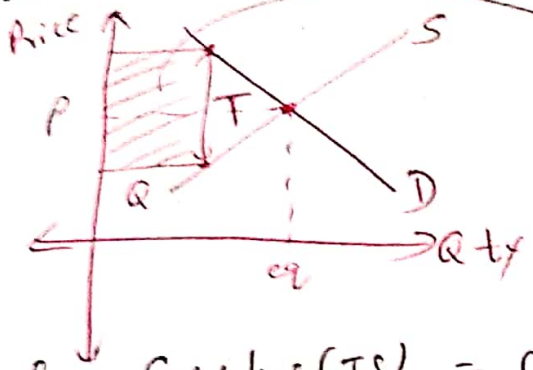
↳ Consumer Surplus = Amt consumers are willing to pay for the good – What they actually pay for it.
(benefit of consumer)

↳ Producer Surplus = Amt producers actually receive for their good – ~~that~~ actual price of the good.
(benefit of producer)

↳ Consumer Surplus (CS) → measures of economic welfare

Producer Surplus (PS)

↳ Tax revenue Govt. collects:

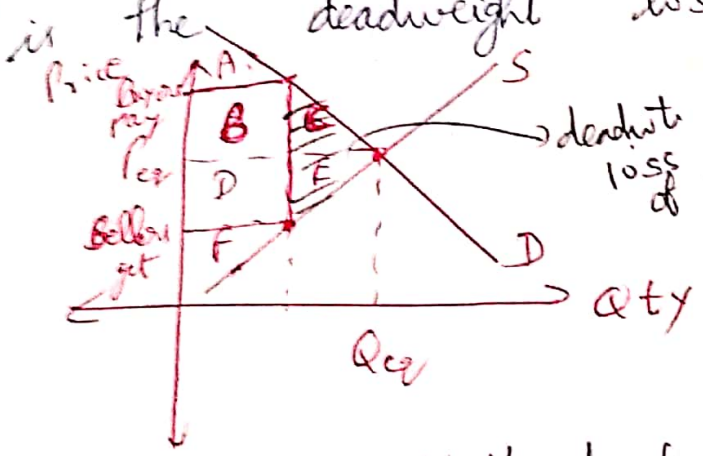


area of the rectangle = Tax (T) × Qty sold (Q)

↳ Total Surplus (TS) = CS + PS + tax (if any)

↳ Change in TS (Fall) = [TS with tax − TS without tax

is the deadweight loss of tax.



deadweight loss of tax.

CS = w.r.t. demand
= A + B + C

PS = w.r.t. supply
= D + E + F.

	Without tax	With tax
CS	A+B+C	A
PS	D+E+F	F
Tax	None	B+D
TS	A+B+C+D+E+F	A+F+B+D

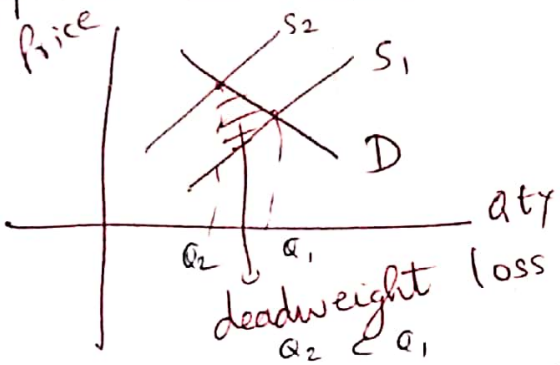
Change in TS = −(C+E) = fall in TS due to tax = deadweight loss of tax.

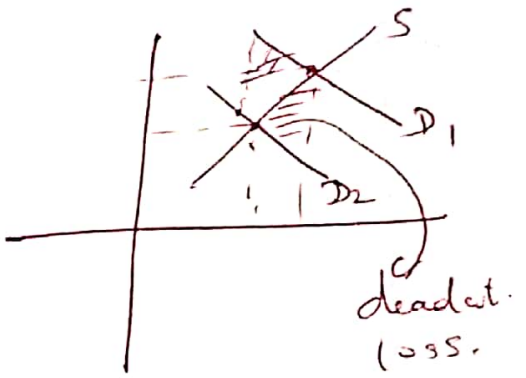
Taxes hence impose deadweight loss.

↳ Taxes ⇒ deadweight loss b'coz:

People respond to incentives.

As tax ↑ sel on buyers ⇒ buyers get an incentive to consume ↓ ⇒ sellers get the " " produce ↓ ⇒ shift in q ty supplied to lower in the new equilibrium



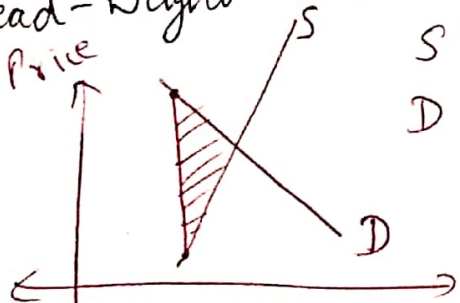


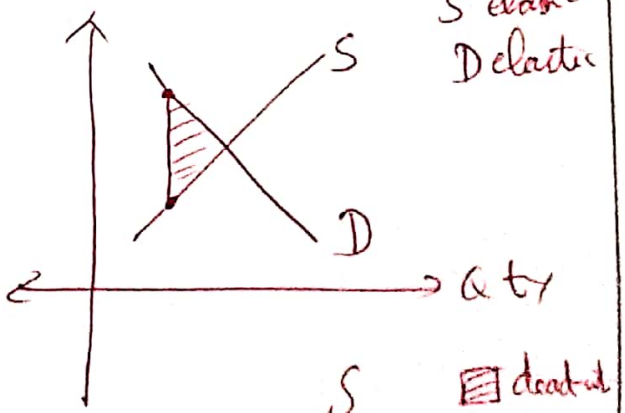
Leads to <u>dead-wt. loss.</u>

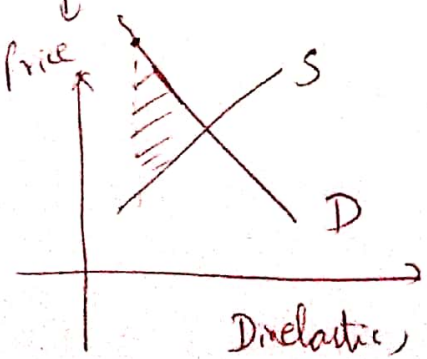
↓

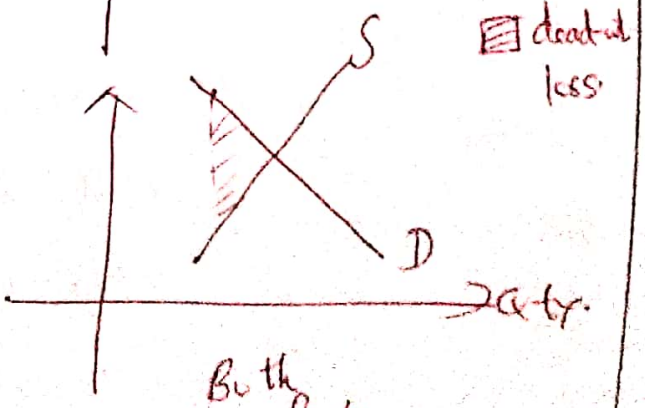
= loss to buyers & sellers in a market which is not offset by Govt. revenue.

↳ Dead-weight losses:

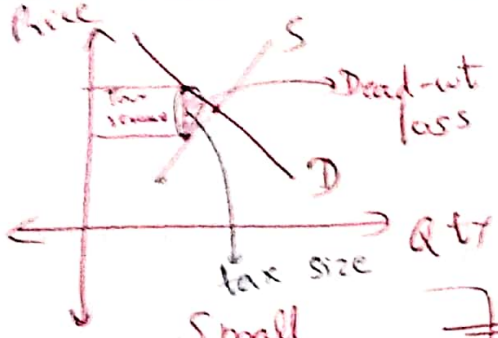




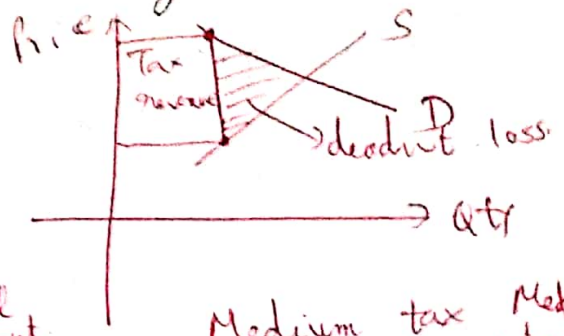




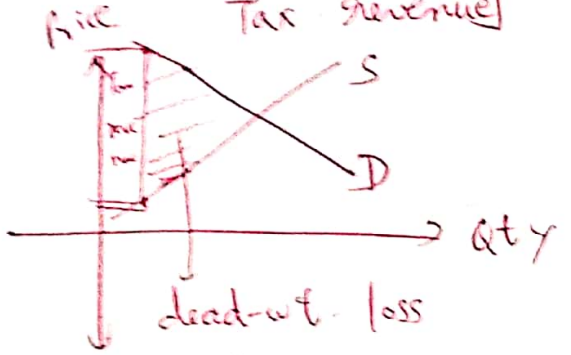
↳ Tax revenue and dead-weight loss:



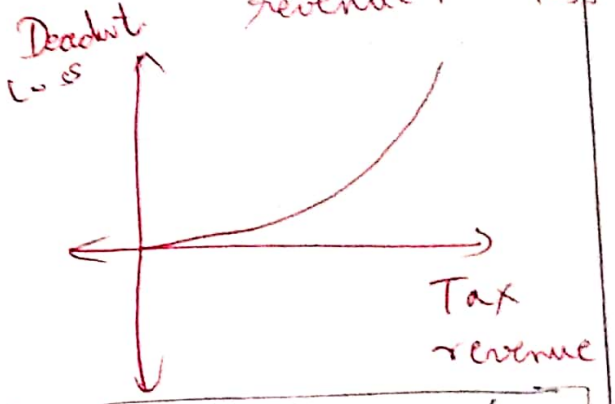
Small Tax revenue ⇒ Small dead-wt loss.



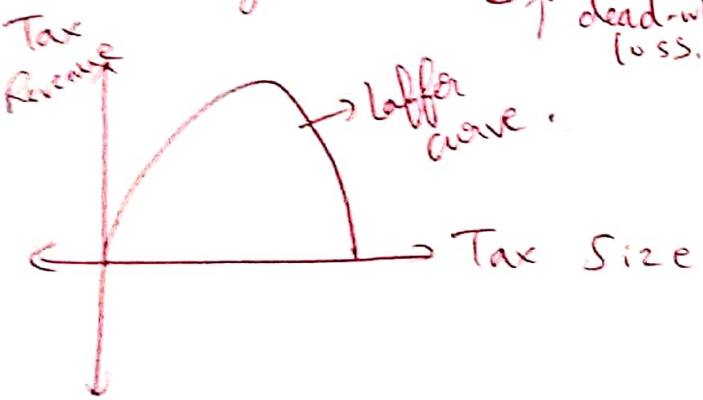
Medium tax revenue ⇒ Medium dead-wt loss



~~High tax revenue~~ ↑ dead-wt. loss.



Tax revenue ∝ dead-wt loss.



① tax size ↑ ⇒ tax revenue ↑

② Later, tax ~~size~~ revenue ↓ as tax size ↑

Income Tax:

→ Tax on income of ppl → ↓ incentive to save. Lost income compounds over time → better to tax consumption than income.

↓

Consumption tax (like VAT)

→ reduce incentive to save, long-run eco. growth & better for individuals' retirement income security.

Administrative burden:

→ time & money ppl spend to comply with tax laws.

→ Eg: Hiring CAs to reduce one's tax burden.

Equity → distributing the burden of taxes fairly.

Marriage Tax / ~~card~~ Penalty: (Couples with same income pay this)

→ Rise in the tax paid by a family when both the members of the family earn.

→ Eg: 25% → income tax. First $20,000 not taxed.

Case-1: Naina & Sameer both earn $50,000.

⇒ When they are unmarried, each pay tax = $\frac{25}{100} \times (50,000 - 20,000) =$ $15,000

Case-2: Sameer & Naina are married.
Total income of their family = ($50,000) × 2 (for married ppl)
= $100,000.

Tax paid = $\frac{25}{100} \times (100,000 - 20,000)$
= $\frac{25}{100} \times 80,000$
= $20,000

if first $40,000 is exempted from tax, then no marriage penalty when both earn.

∴ Marriage tax = $25,000 (20% of joint income = tax after marriage).

Marriage Subsidy: (couples with different incomes pay this)
→ ↓ in the tax bill after marriage → happens when only 1 member of a family earns.

→ if this policy is applied to all, for families where only 1 member earns.

Eg: 25% tax, first $40,000 exempted for married ppl and $20,000 exempted for unmarried. Sid earns $100,000 while Ishani earns $0. Before marriage, (Ishani → $0 ⇒ No tax)
tax paid by Sid = $\frac{25}{100}(100,000 - 20,000)$
= $20,000.

After marriage, Sid
tax paid by = $\frac{25}{100}(100,000 - 40,000)$
= $15,000.

Marriage subsidy = $5000 (↓ in tax bill)

↳ Marriage Taxes & subsidies cannot be avoided as it is mathematically impossible to:
→ Ensure that 2 different couples with the same total income pay same tax.
→ Marital status does not affect a couple's tax bill
→ No income ⇒ No taxes.
→ ↑ income tax-payers pay ↑ fraction of their income than ↓ income tax-payers.

↳ Tax incidence & Tax equity:
→ ↑ tax on sellers for elastic goods ⇒ all sellers are not rich.
→ So, tax incidence → decided based on vertical equity.

↳ Corporate Income Tax:
→ tax imposed by the Govt. on a corporate.
⇒ corporate is more like a tax collector.
→ Eg: Tax on a car company ⇒ ↑ price of cars, ↓ supply of cars, ↓ investment of cars ⇒ ↓ employing auto workers ⇒ burden on ppl buying cars.

Flat Taxes:

→ Tax system in which marginal tax rate is same for all tax-payers.

→ Income above a certain threshold → taxed @ const. rate

→ ↑ threshold ⇒ tax system ⇒ progressive.

→ Radically reduces administrative burden.

→ Not useful for people who benefit from accountants & badly need tax deductions.

DESIGN OF THE TAX SYSTEM.

↳ Efficient tax system ⇒ imposes ↓ deadwt. losses and ↓ administrative burdens. → effeciency & equity.

↳ Avg. tax rate = $\frac{\text{Total taxes paid}}{\text{Total income}}$

↳ Marginal tax rate = $\frac{\Delta \text{Tax paid}}{\Delta \text{dollar}}$ due to Δ dollar of income by 1.

Eg: A earns $60,000. Govt. → for first $50,000, tax is 20% & >$50,000 → 50% each then A pays $15,000 tax (avg. tax). Avg. tax rate = $\frac{15000}{60000} = 25\%$. Marginal tax rate = 50% - same

↳ Lump-sum tax: A tax is imposed by the Govt. on everyone irrespective of their earnings.

→ Most efficient tax possible. (effeciency with equity tradeoff)

→ Does not distort incentives. A person's decision does not alter the amt. he owes ⇒ lump-sum tax → ↓ deadwt. loss. → earning addl $1.

→ ↓ admin. burdens

→ Same tax charged on poor & rich → unfair.

→ Eg: $50,000 → income. Avg. tax ⇒ 20% + $4000 lump-sum tax. As in prev. Eg; the person pays 15,000 + 4000 = 19000 tax to Govt.

→ Marginal tax rate = 0.
↳ as tax paid = const. even when income ↑ by $1.

Principles of Taxation:

→ The Benefits principle:

- People should pay taxes to the Govt. based on the benefits they receive from the Govt.
- People who receive ↑ benefits from Govt. ⇒ must pay ↑ tax.
  Eg:→ Rich ppl have ↑ to protect ⇒ they use police force ↑ ⇒ they must pay ↑ tax.
- People who receive ↓ benefits from Govt → pay ↓ tax for the public goods.
  Eg: → Poor have ↓ to protect @ home ⇒ pay ↓ tax.
- Eg: → People who own vehicles → ↑ petrol ⇒ they must pay ↑ petrol taxes & these → used to build roads which these ppl use.

→ The Ability-To-Pay principle:

- A tax must be levied on a person based on how much burden the taxpayer can shoulder.
- All the citizens → equal sacrifice → for the country.
- Tax → based on citizens' income & other circumstances. [Poor → tax = $ 1000] = [Rich → tax = $ 10,000]

- Leads to two equities:

(Notions of equity)

→ Vertical equity → Taxpayers with ↑er ability to pay taxes should contribute a ↑er amt.

→ Horizontal equity → Taxpayers with same ability to pay taxes should contribute the same amt.

TAX SYSTEMS

- **Proportional** → Taxpayers (high and low income) pay same fraction of their income.
- **Regressive (indirect tax)** → Taxpayers with high income pay small fraction of income as tax
  - → Low income → large fraction of income as tax.
- **Progressive (direct tax)** → Taxpayers with high income pay higher fraction of their income as tax.

→ 2 Families earn the same income → $100,000.
Family-1 → ↑ medical expenses
Family-2 → ↑ medical expenses & ↑ tuition expenses on children. Though they earn same, →claim for tax deductions showing for proofs accordingly.

↳ Taxes :

↳ Main source of revenue to the Govt.

↳ Fee levied on income, goods and services.

Direct

→ Progressive

→ Taxpayer directly pays the tax

→ Tax evasion possible

→ $\downarrow^{ses}$ inflation

→ Eg: Taxable income/ wealth of assessee.

→ Tax paid by assessee

Indirect

→ Regressive

→ taxpayer shifts the burden of paying tax to consumer of goods & services (GST)

→ Tax evasion not possible.

→ $\uparrow^{ses}$ inflation

→ Eg: Purchase / Manufacture of goods & services.

→ Imposed on consumer & paid by assessee.