Important Public Finance Formulas PDF

Formulas
Examples
with Units

List of 18
Important Public Finance Formulas

1) Average Tax Rate Formula

Evaluate Formula

Formula

$$ATR = \frac{TP}{NI}$$

Example

$$0.125 = \frac{250000}{2000000}$$

2) Budget Balance Formula

Evaluate Formula

Formula

$$S = T - G - TR$$

Example

$$703000 = 820000 - 78000 - 39000$$

3) Budget Deficit Formula

Evaluate Formula

Formula

$$B_{def} = G_{exp} - G_{inc}$$

Example

$$800 = 4100 - 3300$$

4) Cost Benefit Analysis Formula

Evaluate Formula

Formula

$$BCR = \frac{\sum\left(x, 0, n, \left(\frac{CF_B}{(1+(0.01 \cdot DR))^x}\right)\right)}{\sum\left(x, 0, n, \left(\frac{CF_C}{(1+(0.01 \cdot DR))^x}\right)\right)}$$

Example

$$2 = \frac{\sum\left(x, 0, 6, \left(\frac{200000}{(1+(0.01 \cdot 12))^x}\right)\right)}{\sum\left(x, 0, 6, \left(\frac{100000}{(1+(0.01 \cdot 12))^x}\right)\right)}$$

5) Debt to GDP Ratio Formula

Evaluate Formula

Formula

$$D_{GDP} = \frac{TD}{GDP}$$

Example

$$2.4 = \frac{24000000}{10000000}$$

6) Laffer Curve Formula

Evaluate Formula

Formula

$$R = tax \cdot Tb$$

Example

$$128000 = 8 \cdot 16000$$

7) Marginal Propensity to Consume Formula

Evaluate Formula

Formula

$$MPC = \frac{C_{gs}}{DI \cdot (R - Tax)}$$

Example

$$0.2602 = \frac{2300000}{130 \cdot (128000 - 60000)}$$

8) Marginal Propensity to Save Formula

Evaluate Formula

Formula

$$MPS = \frac{\Delta S}{\Delta I}$$

Example

$$0.8333 = \frac{25}{30}$$

9) Marginal Tax Rate Formula

Evaluate Formula

Formula

$$MTR = \frac{\Delta TP}{\Delta TI}$$

Example

$$2.5 = \frac{15000}{6000}$$

10) Tax Buoyancy Formula

Evaluate Formula

Formula

$$TB_y = \frac{\%\Delta R}{\%\Delta GDP}$$

Example

$$5 = \frac{20}{4}$$

11) Tax Burden for Customers Formula

Evaluate Formula

Formula

$$TB_r = \frac{E_S}{E_D + E_S}$$

Example

$$0.3976 = \frac{0.33}{0.50 + 0.33}$$

12) Tax Burden for Suppliers Formula

Evaluate Formula

Formula

$$TB_r = \frac{E_D}{E_D + E_S}$$

Example

$$0.6024 = \frac{0.50}{0.50 + 0.33}$$

13) Tax Elasticity Formula

Evaluate Formula

Formula

$$TE = \frac{\%\Delta R}{\%\Delta E}$$

Example

$$6.6667 = \frac{20}{3}$$

14) Tax Incidence for Customers Formula

Evaluate Formula

Formula

$$TI = 100 \cdot \left(\frac{E_S}{E_D + E_S} \right)$$

Example

$$39.759 = 100 \cdot \left(\frac{0.33}{0.50 + 0.33} \right)$$

15) Tax Incidence for Producers Formula

Evaluate Formula

Formula

$$TI = 100 \cdot \left(\frac{E_D}{E_D + E_S} \right)$$

Example

$$60.241 = 100 \cdot \left(\frac{0.50}{0.50 + 0.33} \right)$$

16) Tax Liability Formula

Evaluate Formula

Formula

$$TL = TB \cdot 0.01 \cdot tax$$

Example

$$4000 = 50000 \cdot 0.01 \cdot 8$$

17) Tax Multiplier Formula

Evaluate Formula

Formula

$$TM = \left(\frac{1 - MPC}{MPS} \right)$$

Example

$$0.8706 = \left(\frac{1 - 0.26}{0.85} \right)$$

18) Tax Revenue Formula

Evaluate Formula

Formula

$$T = TL \cdot Tp$$

Example

$$800000 = 4000 \cdot 200$$

Variables used in list of Public Finance Formulas above

- **%ΔE** Change in Economic Activity
- **%ΔGDP** Change in GDP
- **%ΔR** Change in Tax Revenue
- **ATR** Average Tax Rate
- B_{def} Budget Deficit
- **BCR** Benefit Cost Ratio
- C_{gs} Consumption
- CF_B Cash Flow of Benefits
- CF_C Cash Flow of Costs
- D_{GDP} Debt to Gdp
- **DI** Disposable Income
- **DR** Discount Rate
- E_D Elasticity of Demand
- E_S Elasticity of Supply
- **G** Government Consumption
- G_{exp} Government Expenditure
- G_{inc} Government Income
- **GDP** Gross Domestic Product (GDP)
- **MPC** Marginal Propensity to Consume
- **MPS** Marginal Propensity to Save
- **MTR** Marginal Tax Rate
- **n** Number of Periods
- **NI** Net Income
- **R** Revenue
- **S** Budget Balance
- **T** Tax Revenue
- **tax** Tax Rate
- **Tax** Tax Imposed
- **Tb** Taxable Base
- **TB** Tax Base
- TB_r Tax Burden
- TB_y Tax Buoyancy
- **TD** Total Debt of Country
- **TE** Tax Elasticity

Constants, Functions, Measurements used in list of Public Finance Formulas above

- Functions: **sum**, sum(i, from, to, expr) *Summation or sigma (∑) notation is a method used to write out a long sum in a concise way.*

- **TI** Tax Incidence
- **TL** Tax Liability
- **TM** Tax Multiplier
- **Tp** Taxpayer
- **TP** Tax Paid
- **TR** Transfer Payments
- **ΔI** Change in Income
- **ΔS** Change in Savings
- **ΔTI** Change in Taxable Income
- **ΔTP** Change in Taxes Paid

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