



Should the government spend in a recession?

A deep slump: how much to spend to close the gap, spending vs tax cuts, who gets the money, and what the US saw in 2009 and 2020.

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Problem · tool

gap

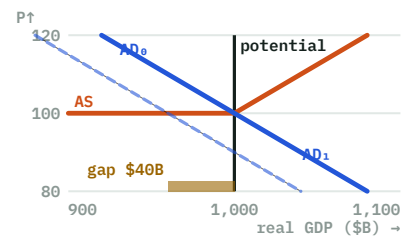
- **Recession** → spending ↓ ⇒ shops sell less ⇒ layoffs ⇒ spending ↓ again
- **Recessionary gap** = potential GDP – real GDP · toy: \$1,000B – \$960B = **\$40B**
- **Fiscal policy** = spending · taxes · transfers · set by **government + parliament** (budget) ≠ interest rate = central bank (Policy 7)

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Multiplier

rounds of spending

- \$1 → builder spends 80¢ → café spends 64¢ → ... = $1 + .8 + .64 + \dots$
- **MPC** = share of an extra \$ spent · **multiplier** = $1 \div (1 - \text{MPC}) = 1 \div 0.2 = 5$
- Deep slump ⇒ idle workers + machines ⇒ **AS** flat at price 100 up to potential, then rising ⇒ more output, **same prices**



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Close the gap

gap ÷ multiplier

- **Spending needed** = $\text{gap} \div \text{multiplier} = 40 \div 5 = \text{\$8B}$ (not \$40B) · gap \$60B → **\$12B**
- Spend more ⇒ AD past potential ⇒ real GDP stuck ⇒ **prices ↑** (overshooting: \$10B ⇒ Y \$1,005B, P 101)
- **Tax cut** · tax multiplier = $\text{MPC} \div (1 - \text{MPC}) = 4 \Rightarrow$ needed **\$10B** (families save 20¢ first) · MPC 0.75 → multipliers 4 and 3 ⇒ \$60B gap: **\$15B** spending or **\$20B** tax cut

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Who gets it

first round × 5

- AD shift = $5 \times \text{first round}$ · purchase \$10B → **\$50B** · jobless (90¢) → **\$45B** · families (80¢) → **\$40B**
- Tax 50¢ → \$25B · **rich (40¢)** → **\$20B** · savers (10¢) → \$5B ⇒ **targeted aid** = money that gets spent
- Tax multiplier < spending multiplier: purchases are spent in **full** in round 1

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Frictions

crowding out · lags

- **Crowding out** · borrowing ⇒ interest rate ↑ ⇒ investment ↓ · \$8B – \$2B = \$6B × 5 = **\$30B** (gap left \$10B) · rates stuck near zero ⇒ weaker
- To still close \$40B: net \$8B + \$2B crowded out ⇒ spend **\$10B**
- **3 lags** → recognition (see it) · decision (vote) · action (spend) · **automatic stabilizers** = benefits, taxes move on their own ⇒ **no vote**

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Evidence

US 2009 · 2020

- **2007-10** · recession Dec 2007 · named Dec 2008 (NBER) · law **Feb 2009** ≈ **\$800B** · recession ends Jun 2009 · ≈ **70%** spent by Sep 2010
- Unemployment **8.3%** (Feb 2009) → peak **10%** (Oct 2009) · fail? ⇒ need **counterfactual** = what would have happened without it (never seen, estimated)
- **CBO 2010** · GDP per \$1 · purchases **1.0-2.5** · benefits **0.8-2.1** · tax cut low/middle **0.6-1.5** · tax cut high pay **0.2-0.6** ⇒ real < toy 5 (taxes, imports, prices)
- **2020** · unemployment 4.4% → **14.8%** (Mar → Apr) · shock visible at once ⇒ law in March (\$2 trillion+, \$1,200 per adult, +\$600 a week) · Dec 2020: 6.7%

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Trade-off

policy card

- **FOR** idle workers and machines put to work · \$1 can add > \$1 · **AGAINST** late, crowding out, debt for future taxpayers
- **Positive** (dates, data can test) ≠ **normative** ("should always spend": values)
- Policy card: problem **\$40B gap** → tool **spend · cut taxes · transfers** → model **\$8B or \$10B closes it** → evidence **US 2009 ≈ \$800B, multiplier 0.2-2.5** → trade-off **jobs now vs lags · crowding out · debt**