Macroeconomics Topic 4: FISCAL POLICY
Taxes and Government Programs

MECN 450
Winter 2004

The agenda:

- What does the government spend and where do its revenues come from?
- Is there a budget surplus or deficit, and how big is the debt?
  - Assessing fiscal policy – measurement issues
- How does the government budget affect the rest of the economy?
Measurement issues and the budget

Business cycle effects
• surpluses tend to increase (or deficits tend to fall) during booms, and the reverse during recessions
• This is straightforward to understand and correct

Generally, the budget is a static (rather than dynamic) measure
• Uncounted liabilities are large
• The “current” surplus or deficit does not count future obligations, like pensions and social security

The government has no balance sheet
• Assets not accounted for are invisible: A tree worth $100 and sold for $10 shows up on budget as a gain of $10, not a loss of $90.

Nor does it have an earnings statement
• limited use of accrual => understatement of long-term commitments
• 2001 increase in military health benefits would have reduced the budget surplus by $388 billion, flipping the reported surplus to a deficit

Moreover, there is incomplete accounting for risk
Some examples where these uncounted liabilities have force:

- Emergency and disaster funding for future years
  - A regular multi-billion dollar surprise (?)
- Future Social Security obligations
- Government loan guarantees
  - Some mortgages, student loans, and pensions (PBGC) are all backed by the Federal Government

Let’s start with the most obvious case where we know we have a large future obligation...

yet strangely enough, this program actually makes the current (static) budget look better!

“Old Age, Survivor’s, and Disability Insurance”, OASDI, or

Social Security
Social Security

- Social Security in the US, as in most countries, is a “pay-as-you-go” system
  - Payroll taxes on current workers go directly to pay for the benefits of current retirees
  - There is no “account” with a future retiree’s name on it!
- Currently, there is one retiree for 3.5 workers
  - Current payroll tax receipts exceed payouts to retirees
- As the baby-boomers retire, the number of retirees increases (and the labor force declines)
  - By 2050, there will be one retiree for every two workers
  - A pay-as-you-go system is not sustainable (at current levels of benefits)

Number of Covered Workers Per OASDI Beneficiary

Source: Social Security Administration, 2004
According to the Social Security Administration

“the long run financing gap that program reforms must ultimately close is $10.5 trillion in present value”

This is approximately equal to annual US GDP.

So, if we think of Social Security obligations as a part of national debt, the Debt/GDP ratio is not 70%, it is 170%.
The US is not alone…

In addition to the explicit obligations of Social Security, the US government also has implicit obligations in the form of actual and perceived loan guarantees.

In some cases, like student loans and deposit insurance, the guarantee is explicit.

In other cases, such as home mortgages, the guarantee is only perceived.

<table>
<thead>
<tr>
<th>Country</th>
<th>1990</th>
<th>2030</th>
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<tbody>
<tr>
<td>Germany</td>
<td>24</td>
<td>54</td>
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<tr>
<td>Italy</td>
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<tr>
<td>United States</td>
<td>21</td>
<td>36</td>
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Source: *Long Term Budgetary Pressures and Policy Options*, Congressional Budget Office, May 1998, p. 4. This table shows the number of people age 65 and older expressed as a percentage of the number of people ages 20 to 64.
For example, in financial markets, “Fannie”, “Freddie” and the FHLBs loom large

- Government-sponsored-entities (GSEs) borrow at below-market rates, and earn a premium on credit guarantees, because of a perceived federal guarantee (too big to fail).

- Zero budget cost of subsidy because opportunity costs are not recognized.

- CBO estimated the economic cost of the implicit guarantee in a 2001 study.

![Fig. 1: GSE Subsidies (base case)](source)

Source: Congressional Budget Office, 2001
Note also that risk is poorly accounted for in most government budgeting

- All discounting in the budget is done at a risk-free government rate
  - This creates apparent arbitrage opportunities that can adversely influence policy.

- For example, a painless solution to the Social Security imbalance?
  - Borrow $1 billion at the risk-free government rate of 3%.
  - Invest the $1 billion in equities with an expected annual return of 11%
  - Discount expected perpetual revenues at risk-free rate of 3%
  - Result is an apparent “arbitrage profit” of $2.6 billion dollars

- But $1 of equity is $1 of equity, even for the government!

Even if every explicit and notional liability were included, long-run productivity makes fiscal policy a guessing game

- 1% higher productivity growth adds $10 trillion to the surplus over 10 years
  - Bush’s first tax cut was $1.3 trillion over 10 years = .13% productivity growth

- The wild card: uncertainty about productivity growth adds massive uncertainty to fiscal choices

  This uncertainty is not accounted for anywhere.
Uncertainty in the CBO's Projections of the Budget Surplus

The center (black) area represents the baseline estimate; the lightest gray gives the 90% confidence interval.

Yet, the argument for the recent tax cut was also that it would “stimulate the economy”

How does this work?
How does fiscal policy affect the rest of the economy?

- How does a tax cut (for example) affect the macroeconomy?
- Recall \( Y = C + I + G \) (in a closed economy)
- Holding government spending, \( G \), constant, how does the tax cut affect the rest of the economy?
- This depends on what happens to \( C \) and \( I \)

The effect of a tax cut on output depends on how it affects \( C \) & \( I \)

- Consumption typically rises
  - A tax cut increases disposable income, which stimulates spending
  - This may be dampened if future tax increases are anticipated (“Ricardian Equivalence”)
- But Savings and Investment typically fall
  - \( T - G = S_{\text{govt}} \) falls because revenue falls
  - The reduction in nat’l savings increases interest rates and reduces investment
A tax cut stimulates the economy by

- Increasing consumer spending
- But this may be dampened by
  - “crowding out” domestic investment
  - a tendency to save the tax cut to pay off future tax increases
Fiscal policy can also be “expansionary” by increasing government spending (instead of cutting taxes)
This has a similar effect on output.

- $Y = C+I+G$ tends to rise because expenditures (G) rise
- $T-G = S_{govt}$ falls, which tends to increase interest rates and reduce investment
- $Y$ may also be dampened if households increase their saving and reduce $C$

There is fairly strong evidence of “crowding out” – when government spending swings up (like in wars), private investment tends to fall

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 Shares of government purchases and investment in U.S. GDP, 1929-1998

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Fiscal policy can also have important effects on incentives!

- We usually focus on the effects of taxes and spending on the macroeconomy via the budget deficit and national saving.
- **Taxes also affect incentives to work, consume, and save**

Consider the progressive income tax....

- A *progressive* tax means that you pay a higher tax rate, the higher is your income
- There can be a large difference between your *average* tax rate and your *marginal* tax rate
  - Average tax rate = total taxes/total income
  - In the US, this is about 20% (federal)
Marginal tax rate =
share of an additional dollar earned that
would be paid in taxes
Highest statutory tax rate = 34%
The marginal tax rate can be much higher as
deductions phase out with higher income
(The highest marginal rate was as high as
75% in the 1970s in the US)

A person’s **marginal** tax rate affects the
decisions to work and to save.

Fiscal policy can also affect the
rest of the economy via monetary
policy

- Governments with big fiscal deficits
  often “monetize the debt”
- Instead of raising revenue from taxes,
  they simply print the necessary money
- This generates INFLATION
Countries with very high inflation often require both a fiscal reform and a monetary reform!

- Inflation is high because money growth is high.
- But money growth is high to finance the fiscal deficit.
- It’s easy to say, “Shut off the printing press!”, but this doesn’t pay the government’s bills….
- That requires a fiscal reform, to balance the government budget.

Even in low inflation countries, some revenue is generated by money growth

- The government prints money and uses it to buy financial assets.
- It gets an asset (usually a bond), but paid for it with worthless pieces of paper.
- The ability to do this generates revenue called “seignorage”.
- seignorage = inflation × (M/P)

$25.9 billion returned to Treasury by the Fed in 2000
(estate tax = $28b, corporate tax = $185b)
Summary of Fiscal Effects:

- Expansionary fiscal policy can increase output, but at the cost of higher interest rates and lower investment.
- Be careful of the incentive effects (not just the revenue) of taxes, too!
- Fiscal deficits can also fuel inflation if they are monetized by the Central Bank.