

## Lecture 25: Ricardian Equivalence

### I. OVERVIEW

- In today's lecture, we will examine a sophisticated theory about the interplay between fiscal policy and the decisions of consumers in the economy.
- This theory, known as Ricardian equivalence, implies that the impact of taxing and spending decisions on the economy may be counter-intuitive to what we would expect from our basic IS-LM analysis.
- Therefore, the standard IS-LM analysis has to be modified somewhat if we take into account the ideas of the proponents of the theory of Ricardian equivalence.

### II. RICARDIAN EQUIVALENCE

- The theory of Ricardian equivalence was re-introduced into economics by Robert Barro. The essence of the theory is that fiscal policies that worsen the long-run budget position and require government's to issue more bonds don't stimulate the economy very much.
- Proponents of Ricardian equivalence, build their case on two assumptions. The first is that the government faced an inter-temporal budget constraint similar to that faced by a consumer.
- In other words, recall that the consumer faced a lifetime budget constraint (ignoring interest rates) that was of the form . We can derive a similar budget constraint for the government of the form

$$\sum_{t=0}^{\infty} \gamma_t = \sum_{t=0}^{\infty} \tau_t$$

- Here  $\Gamma_t$  is government expenditures at time t (I did not use  $G$  because that only refers to purchases of goods and services) and  $\tau$  is government revenues (I did not use  $T$  because that only refers to tax revenues).
- According to this budget constraint, the government can't run a deficit forever: therefore an increase in expenditure or a tax cut today that raises spending above revenues will have to be financed through a future tax increase or a future decrease in spending that raises revenue above spending.
- The second key assumption is that consumers, being rational, forward looking creatures will not increase consumption in response to a debt financed tax cut and will cut back consumption in response to a debt financed increase in government spending in anticipation of future tax hikes.
- These two assumptions have powerful macroeconomic implications. In particular, they imply collectively that tax cuts and spending increases financed by increasing government debt will not have an impact on the economy.

- Why? Consider a decision by the government to issue a tax cut. In the regular IS-LM analysis, this tax cut will increase consumer spending and thus raise GDP. In the Ricardian world, consumers will only increase their spending IF the tax cut does not worsen the government's long run budget position, forcing it to issue more debt. Otherwise, consumers seeing the increase in the current deficit will anticipate that the government will have to raise their taxes in the future to run the surpluses they need to pay off the increased debt. Since this is simply a trade off of lower taxes today for higher taxes tomorrow, consumers will not be richer in terms of lifetime income, and thus will not increase consumption.
- Similarly consider a decision by the government to increase  $G$ . In the regular IS-LM analysis, this increase in  $G$  will raise GDP. In the Ricardian world, however, consumers will keep a close eye on whether the government can afford this increase in  $G$ . If the government can't afford it, i.e. they will increase  $G$  by running a deficit and increasing the debt, consumers know that the government will have to raise their taxes in the future to run the surpluses they need to pay off the increased debt. Facing higher taxes tomorrow, consumers will be poorer in terms of lifetime income, and thus will decrease consumption; this fall in  $C$  will counter the increase in  $G$ .
- Ricardian equivalence also means that future budget situations can have macroeconomic impacts today. For example, the announcement of future cuts in government spending will increase current consumption because the government will not have to collect as much taxes in the future. So even without increasing  $G$ , in fact by announcing that  $G$  will in fact DECREASE, the government can stimulate the economy today.
- Economists have presented several counter-arguments to this Ricardian analysis including
  1. Consumer myopia
  2. Borrowing constraints.
  3. The timing of the expected future tax increase: may be on a future generation.
- Barro countered the last of these arguments by pointing out that people care about their kids and may not wish to burden them with tax increases: individuals may have infinite horizons.
- Even if you don't agree with the hyper-rationality of the true Ricardian you should consider this to be a good balance to the hyper-irrationality of the IS-LM model where consumers were completely indifferent to the fiscal situation of the government.