Module 4

Lecture 31

Topics

4.6 Rational Expectation

4.6.1 Policy irrelevance

4.6.2 Rules vs. Discretion

4.6.3 Rational Expectations in Empirical Work

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4.6 Rational Expectation

- One important strand of macroeconomics research after 1970s was directed towards modeling rational expectation.

- Two most important results coming out of the rational expectation school are policy irrelevance and rule vs. discretion debate.

4.6.1 Policy irrelevance

- One of the earliest and most controversial result of the rational expectation school was proposed by Sargent and Wallace.

- They asserted that systematic monetary policy is irrelevant in determining output and employment.

- They got this result by applying the principles of rational expectation in expectation augmented Philips curve.

- They reasoned this result by arguing that systematic monetary policy cannot generate unexpected inflation and therefore cannot affect unemployment.

- However, Stanley Fisher showed in his famous paper in 1977 that policy matters in rational expectation based models where wages are sticky. Hence, rational expectation is not key in bringing the policy irrelevance result.

- Nevertheless, Sargent-Wallace paper continued to be seen as the paper which pioneered the formal modeling of rational expectation in a macro model.

4.6.2 Rules vs. Discretion

- One of the most important questions that have been reexamined in light of the rational expectation model is whether public policy should be conducted by rule or by discretion.

- Many scholars were in favor of rule based public policy.

- The argument can be best explained by an example of politics -- policy about negotiating with terrorists over the release of hostages.

- The United States and many other nations have the policy that government will not negotiate over hostages. However, once hostages are taken no state can stick to their announced policy. This will encourage terrorists to take hostages.

- If it is possible to make government credibly commit to their announced policy (i.e. take away its discretionary power) then that will reduce the incentive for terrorists to take hostages.

- Similar problem arises in case of monetary policy making.

- Consider the case when government is trying to exploit the expectation augmented Phillips curve which depicts negative relation between unemployment and inflation.

- The authority wants everyone to expect a low inflation.

- But an announcement of a policy of low inflation is not credible. Once expectations are formed, the authority has an incentive to renege on its announcement to reduce unemployment.

- Private economic actors understand government's incentive to renege and therefore do not believe in the policy announcement in the first place.

- The key problem here is the inability of the monetary policy to credibly commit to their announced policies. Rule based policy regime make their promises credible by \tying their hands". Sometimes that generate better results.

- The essence of the problems of monetary policy and hostage crisis is known as the time inconsistency problem -- it appears where ex-ante optimal policy differs from ex-post optimal policy.

- This happens in variety of other situations. For example, government may announce exemption in capital tax to encourage accumulation. Hence, ex-ante optimal policy is to give tax exemption. However, once capital is invested the ex-post optimal policy is to tax capital. Now, rational capitalists would know about the divergence between ex-ante and ex-post optimal policies.

- Hence, announced policy would fail to attract investment.

4.6.3 Rational Expectations in Empirical Work

- Rational expectation had profound effect on empirical work in macroeconomics.

- For example, the permanent income hypothesis (PIH) of consumption has been extensively reexamined in the light of rational expectation theory.

- PIH asserts that people try to smooth their consumption over time and as a result, consumption reflects consumer's expectation about their future income -- consumption changes only when consumers revise their expectations about their future income.

- If consumers expects rationally, i.e. uses all available information optimally, the revisions in consumptions must follow random walk model --- it cannot be predicted.

- Hence, if consumption cannot be predicted by relevant lagged variables PIH must be correct. Hall's empirical analysis reconfirmed this result -- changes in consumption from one quarter to another are largely unexplained.

- In this seminal paper Hall turned the criterion of empirical testing upside down.

- Usually an empirical model is deemed to be good if it shows high R^2. In Hall's model the model is good if R^2 is low.

- This is because he argues that if the model is correct consumption should not be explained by any factors.

- Subsequent researchers show that Hall's contribution is more methodological than substantive.

- Hall's work changed the methodologies of empirical macro work permanently. Now, use of Euler's equation which evolved from Hall's work is now standard in any work of macro.

- Empirical tools coming out of rational expectation approach got a permanent place in empirical macro research.