Microfoundations of Macroeconomics
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Module No # 06
Lecture No # 33
Monetary Policy III

Hi everyone so, let us start we are going to talk about the rest of this section that we have not yet covered in the last section or I would say last session. So, we will be going and talking about the monetary policy. We were talking about the monetary policy dynamics and what are the rules approaches through which the central bank tries to minimize the inflation risk and also tries to bring stability into the economy.

So, if you try and understand what we covered in the last session so, it was about the credibility nominal anchor. That if the central bank is going to play a very important role in deciding about price stability. How central government or the central bank makes sure that it achieves the inflation target the price stability target? So, in most of the economies you have dual mandate which means that the central bank is given the task to maintain the price stability plus the employment level.

Now from the price stability side there might be inflation target but from the employment level side, there are no specific targets. So, sometime it becomes really difficult for the central bank to bring equality on both parameters. Which; means that ensure equality on both parameters, which means that if the inflation rate if central bank is targeting. Then it may happen that there will be deviation from the output gap side employment fluctuate between will be there and also once I talk about employment flexibility.

So, it also talks about how we can understand the fluctuations in the macroeconomic parameters. So, in this particular session, we will be focusing on those dimensions and we will be trying to look at that. If we are saying that you have the macroeconomic targets given and central bank is having the utmost task to maintain the price stability. Then in what all scenarios the central bank will have difficulty in maintaining the price stability and the output level both same.

So, the natural rate of interest and natural level of unemployment at what level the central bank is able to maintain. Then we will be super imposing some more conditions underneath initial

framework. What are those conditions? That if you have a zero lower bound then how will be this reaction if we have the inflation expectation. So, in the last session we also discussed about the inflation expectations. That if the credibility of the central bank is really low then people will not bother about the central bank targets.

They will have the higher expectation about the inflation. Recent case has been the case if you are going through the newspaper then you may find the case of Turkey where the inflation rate has gone up quite substantially. So, the government and the central banks are trying to manage the inflation risk. But since, people have very less credibility about the government and about the central bank about the institutions.

So it is expected that whatever we have the headline inflation reported in the newspaper media. The actual inflation rate it is much higher, which means that we will have expectation that the number coming out from the central bank is not very credible. So, the actual number may be much more-higher. These are the cases of credibility where if the central bank is not efficient enough to communicate effectively to the commoners about the inflation targets.

Then they may have some expectations about higher inflation in future that will further destabilize the economy with respect to higher wages price level will be higher. And then the central bank again reacts with the rate of interest higher borrowing costs will be higher and inflation will be your investment will be impacted further. So, over all your business cycle may not function smoothly. So, it will be very difficult for the economy to smooth out the business cycle shock.

So, all these dimensions are important and then, post 2008 as I mentioned also. I think in the last session, when we discuss about that what happens, if the rate of interest has almost touched the bottom, but we do not see any rise in the inflation. So, normally when money supply increases, inflation is supposed to go up. But when we are not seeing that kind of situation, then in those situations how the central bank is going to react.

So, what will be the reactions of the central bank? Now, those dimensions are really importantand there will be talking about forward guidance. So, the term that we often use so, Reserve Bank of India also usually this mean in most of the unprecedented situations or uncertain scenario, the central bank gives the hint that there will be higher inflation in future.

Which; means that people will have expectation formation around and they will be also reacting in the same way.

So, some kind of signalling mechanism works in the market where the central banks can ways through different means of communication that the interest rates scenario may also change because inflation is going to be higher. But whether this particular announcement is actually going to be met or not, that is a different situation, right. So, you may be reading in newspaper that whenever you have some news coming from US that FED is going to increase the rate of interest federal funds rate that there is a policy that they have.

Then you will see a lot of buzz around this particular topic and there will be a lot of media debate and discussion, which means that in some or the other way. The FED reserve tries to pass on signal to the commoners that this is how the economy will look like interested scenarios will look like and then the rest of the agents in the economy, it is up to them to decide about how they should be maintaining the equilibrium.

So, those dimensions are also important it will be also touching upon the emerging schools of economic thought, which is the Neo-Fisherian wherein they talk about that the inflation. The nominal interest rate increase will lead to increase in inflation. Because if you are if you are going to break the liquidity trap or I would say the zero lower bound then the only scenario is that you should increase the nominal rate of interest, so, that your inflation should also go up.

These are the normal I would say a discussions and it will be interesting to link it with the real-life scenarios. And in this particular session we will be focusing on these dimensions. And let us complete the part that we were discussing about different approaches one was on the inflation targeting. So, for this session also, the reference book remains same the Mishkin I have referred.

(Refer Slide Time: 07:29)

Introduction Conduct of Monetary Policy: Rules or Discretion How to establish the central bank credibility Goal of the central bank and the New Keynesian m

Reference Book

- Williamson, D.S. (2018), Macroeconomics (6th Edition). Pearson International Edition, Boston, USA
- Mishkin, S.F. (2012), Macroeconomics: Policy and Practice. Addison-Wesley
- Bank for International Settlements (2019): Unconventional monetary policy tools: a cross-country analysis, CGFS Papers No. 63, October.
- Unconventional Monetary Policy in Times of COVID-19 https://www.rbi.org.in/Scripts/BS_ViewBulletin.aspx?Id=20141

Wasim Ahmad IIT Kanpur Microfoundations of Macroeconomics 4

And here you have the Bank for International Settlement as I also mentioned about unconventional monetary policy. These 2 references are for the forward guidance, if you want to know about zero lower bound. So, all those dimensions are being covered. But for; the core part that we are going to discuss nominal anger, credibility and also about the different approaches of central banking.

So, this comes from Mishkin Williamson, we have referred for New Keynesian school through that we try to understand that. How difficult it is for the central bank to maintain the equilibrium level of output gap and also about the expectations about the inflation. So here, we will be talking about those things.

(Refer Slide Time: 08:17)

Introduction Conduct of Monetary Policy: Rules or Discretion How to establish the central bank credibility Goal of the central bank and the New Keynesian m

Key Learning Objectives

- Understanding the conduct of monetary policy
- Different rules of monetary policy
- Central bank credibility and inflation targeting
- Neo-Fisherian school of thought
- Construct the New Keynesian model under rational expectations, and show what happens in the model in response to changes in the nominal interest rate.

Wasim Ahmad IIT Kanpur Microfoundations of Macroeconomics 6

So, here we are talking about the conduct of monetary policy, different rules of monetary policy, central banker ability and inflation targeting. Neo-Fisherian school of thought that we and mentioned. I think this will remain same. So, now, we are going to the role of central bank credibility that we were talking about.

(Refer Slide Time: 08:36)

Introduction | Conduct of Monetary Policy: Rules or Discretion | How to establish the central bank credibility | Goal of the central bank and the New Keynesian m

The Role of Credibility and a Nominal Anchor

- The monetary policy credibility is capable in stabilizing inflation/economic activity when faced with positive/negative demand shocks in the short-run.
- The monetary policy credibility can produce better outcomes on both inflation and output in the short run when faced with negative supply shocks.

Wasim Ahmad IIT Kanpur | Microfoundations of Macroeconomics | 16

So, here we were talking about that what will be the approaches through which the credibility and the nominal anchor problem become important.

(Refer Slide Time: 08:47)

Introduction | Conduct of Monetary Policy: Rules or Discretion | How to establish the central bank credibility | Goal of the central bank and the New Keynesian m

Approach 1: Inflation targeting

- **First** Keeping inflation under control. And inflation targeting should have following elements:
  - Public announcement of medium-term numerical targets for inflation.
  - Inflation targeting should be part of institutional commitment and as long-run strategy to ensure the price stability.
  - Multiple-indicator approach in making decisions about monetary policy
  - Transparency in monetary policy through proper communication with general public and financial markets.
  - Increased accountability of the central bank for attaining its inflation objectives.
- Inflation targeting countries are New Zealand, Australia, Canada, Norway, Sweden, Switzerland, the United Kingdom, Brazil, India, Chile, Czech Republic, Hungary, Israel, Mexico, Peru, Philippines, Poland, South Africa, and South Korea.

Wasim Ahmad IIT Kanpur | Microfoundations of Macroeconomics | 17

So, here we have first is the inflation targeting. So, what is that here we are talking about the keeping inflation under control, this is one of the main objectives of the central bank. So, here is that one is about the public announcement of medium-term numerical targets. So, there will be advanced announcement and this rate will be fixed or this threshold of inflation will be fixed for certain periods.

And then the based on examination that whether the; central bank has been able to meet the target or not. Then it will be decided inflation targeting should be part of the institutional commitment and as long run strategy to ensure price stability, multiple indicator approach will be used right in making decisions about monetary policy transparency I would say transparency in the monetary policy through proper communication.

So, if you look at the global figure, then most of the countries you will find that they have gone for inflation targeting mechanism. Which is New Zealand, Australia, Canada, Norway, Sweden, Switzerland, United Kingdom, Brazil, India, Chile, Czech Republic, Hungary, Israel, Mexico, Peru, Philippines, Poland, South Africa and South Korea. So, these are the institutions where they work.

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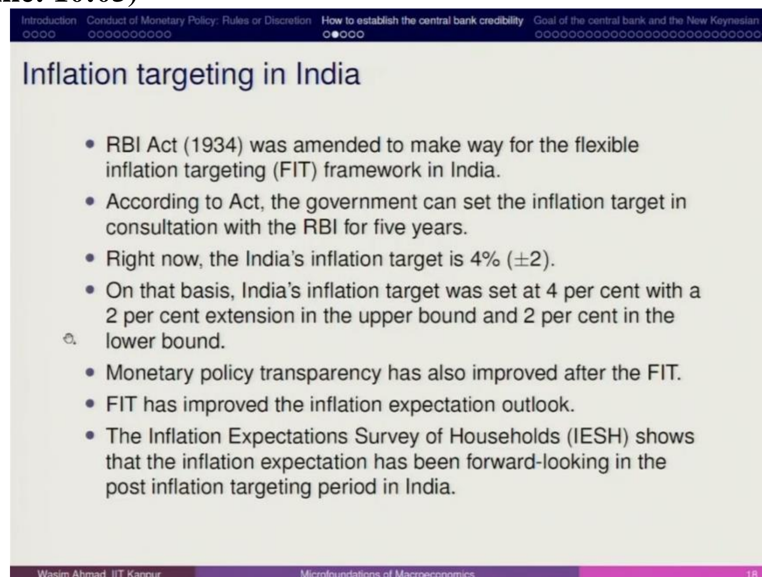

Now here we have the less focus on India. How is the mechanism in India? So inflation targeting India has been adopted recently in 2016 we adopted what is called flexible inflation targeting which is a fit framework. And this has been incorporated into the RBI act 1934 which is still dominates the monetary policy framework in India. Now, according to this act, government can set the inflation target in consultation with the RBI for 5 years.

As of now, we have gone for setting the inflation target of 4% with the tolerance level of plus minus 2 which means that the upper bound can be 6% lower bound can be 2%. So, 4% is the base level the average higher than this will create a scenario for nominal interest rate becoming higher. It will be talking about the increase in the nominal interest rate lower if it goes below 2% then central bank is supposed to react, but tolerance level of 2% for the case of India.

Which is an emerging economy looks quite decent and acceptable. On that basis, India inflation target was set 4% with a 2% extension in the upper bound and 2% in the lower bound. Now, if you see the performance t what has been reported and it has been found also that after the implementation of flexible inflation targeting. The performance of Indian economy has gone up.

Which; means that monetary policy transparency has also increase and there has been a further substantiation in the monetary policy transmission mechanism. Through which the central bank passes on the benefits of interest decrease to the commoners or the household and firms or also the increase in the interest rate. Which; means that if you are going to lend then you are going to get benefit.

Now, flexible inflation targeting which is also called a fit has improved the inflation expectation outlook. What is that? That under inflation expectations survey for household unlike earlier where people were more bothered about just or they were having some kind of expectation formation. Based on the previous period inflation, they were not relying more on the past data and multiple indicator approach. They were simply having a tendency to go for adaptive expectation kind of scenarios.

But with the recent improvement in the flexible inflation targeting framework and with; the multiple indicator approach. It has been found that individuals are also forward looking and they arenot weighing that much to just to past inflation, they are looking beyond that, which means that they examine certain demand supply factors also. Not just that in the previous period was 5% inflation.

So, the next period will it will be also 5% they have some kind of rational expectation mechanisms. And I have already mentioned that, if in the economy as you have a more and more well- educated class, they will always look for new data analyse their expectation. And then form the expectations based on that. So, it will not be so smooth.

(Refer Slide Time: 13:30)

Introduction Conduct of Monetary Policy: Rules or Discretion How to establish the central bank credibility Goal of the central bank and the New Keynesian m

Approach 2: Appoint "Conservative" Central Bankers

- Economists have argued that the central bank should be headed by a person who has strong aversion to high inflation.
- Less tempted to pursue expansionary monetary policy and does everything to maintain the inflation target.
- Kenneth Rogoff has characterized these central bankers as "conservative" although a better prescription would be "tough" or "hawkish on inflation".

Wasim Ahmad IIT Kanpur Microfoundations of Macroeconomics 19

Now second which is very interesting is that appoints conservative central bankers which means that. If the central bank governor is hawkish about inflation, which means that he are inflation hours. Which; means that he does not take into account inflationary scenario. He takes very seriously the inflationary scenarios and he goes against the high inflation he takes majors. That kind of conservative thought making Governor or the central bank head will make the difference.

Paul Walker case in case of US during nineteen seventies, eighties is quoted as the inflation champion. And he has been credited with the heavy control of inflation in the case of US when Jimmy Carter was the president. So, at that time, so Paul Walker is very famous name in the field where when we talk about personalities playing very important role. There we talk about that the central bank activism coming into picture and through that they try to control the inflation.

So economists have argued that the central bank should be headed by a person who has a strong aversion to high inflation. Less tempted to pursue expansionary monetary policy, because if you are pursuing expansionary monetary policy. One of the downsides of the inflationary or expansionary monetary policy is that. It creates a very high expectation about higher inflation in future and if the central bank fails to have higher credit credibility.

And this will create a very I would say discretionary kind of scenarios where the short run adjustment will have higher impact on long term adjustment. So, we are talking about that. Kenneth Rogoff has characterized the central bankers as conservative, although a better prescription would be tough or hawkish on inflation. These days, when we are in the COVID

period, and where; we are saying that we are having a constant increase in inflation globally, and most of the central banks are finding it difficult to have a full grip on the inflation rise.

At these moments, these topics have come up again and you will find that with the help of different types of data with the help of different statement analysis. So, if you are good in coding and we are good in the documentation, reading kind of models, where you can find out the important key words and work on. So, those we call it as the textual analysis. Through that also, people try to understand the behaviour of central bankers, how these central bankers when they are in a position, when they are leading the institution, then how they react to inflation.

In which all scenarios they expect that the higher inflation may not be suitable, and when they if they see a higher rise in inflation, then how they react to that. So, those angles are quite important to understand. So, approach to is quite I would say, not easy to digest, but these are the angles where people are focusing on. So with different set of variables, different set of data sets they try to find it out then. Then here you have the independent central bank

(Refer Slide Time: 16:57)

Introduction | Conduct of Monetary Policy: Rules or Discretion | How to establish the central bank credibility | Goal of the central bank and the New Keynesian m

Approach 3: Independent central bank

- Central bank should have more independence with regard to inflation targeting and more independence from the political process.
- The time-inconsistency problem may arise from politicians who are short-sighted because they focus on pursuing policies that will help them win the next election.
- A politically insulated central bank is more likely to be concerned with long-run objectives and thus be a defender of price stability.

Wasim Ahmad IIT Kanpur | Microfoundations of Macroeconomics | 20

So in case of independent central bank, what typically happens is that? Here we focus on whether the central bank should be independent if the central bank is going to be independent then how this inflation targeting and also about the personality cut is playing an important role. Because it has been found that the political business cycle which; means that politicians always try to have some kind of influence on the central bank, and they also go for populist majors at the time of elections.

So, that they can win the election and come back to power. There are also instances where in the strong governments have compromised the independence of the central banks and this has become an important topic and it has come back again. So, you will find that central bank should have more independence with regard to inflation targeting. Because if it has more independence and it can think about when it has to go with the higher interest rate and when it has to target the inflation.

If the country is following multiple indicator approach, then it also becomes really important to what extent this particular indicator or this part of the central bank has to react. The time inconsistency problem may arise from politicians who are short sighted. Because they focus on pursuing policies that will help them win the next election. So, this particular angle also matters a lot.

A politically insulated central bank is more likely to be concerned with long run objectives and thus be a defender of price stability. So, we have to make sure that if the central bank is not going to target the long-term objectives. And then if it is not having the political insulation, then it will create trouble and ultimately the central bank may have may compromise on meeting the long-term targets.

And this again will lead to what we call it as the time inconsistency problem. Which; means that if the central bank is not independent, then it may happen. That it will not have full control on deficit financing linked inflation are also on the monetary policy or inflation targets. You will be surprised that in most of the countries now we have the compromised central banking structure where the government has taken over the space of the central banks.

Even in India, we have formed the Monetary Policy Committee under that we have the government nominated individuals and they decide about the monetary policy decisions. Because earlier it was found that there was some kind of conflict of interest between the government and the central bank. So, in order to pursue a common goal of price stability and the higher growth, they thought that is good to form a committee and then we can target.

But at the same time on many occasion we have found that the reaction of central bank has not be very hawkish, when they see a rise in inflation rather, they have some kind of lags in reaction. So, those things may not happen, if you have the independent central bank if you are giving more power to the central bank. So, in that case, it becomes really important.

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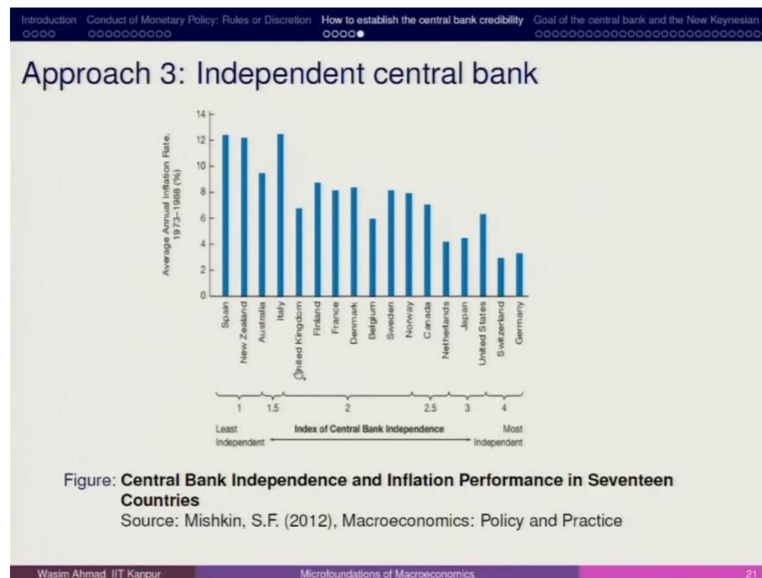

Figure: **Central Bank Independence and Inflation Performance in Seventeen Countries**
Source: Mishkin, S.F. (2012), Macroeconomics: Policy and Practice

If you; look at the central bank independence and inflation performance in 17 countries. So, here the lower is the score, which means that least independent higher is the score, which showed that is most independent. So, we find the in case of Germany, in case of Switzerland in case of United States in case of Japan Netherland Canada and the compromised central banks are here where you have this Spain, New Zealand then Australia, Italy, United Kingdom and this is the data from 1973 to 1988.

On y-axis, we have the average inflation in annual rate and on the x axis here we have the index of central bank independence. Now, you can find that the countries which are having higher inflation are the most compromised. Which; means that the central bank in these countries is least independent and the countries which are having independent central banks, they have gone for better management of inflation.

The inflation rate is much lower, that shows that if you are allowing the central bank to function independently without much of the government interference, then your inflation outlook are going to be better, you will have better grip on the inflation targets. Whereas in case of the compromised or the least independent central bank, we find that here you have a higher inflation target higher inflation rates.

So, these economies experienced higher inflation, because the central bank did not have that much power. So, this is what I wanted to mention. So, let me summarize what we have covered. So, what we had have in mind that if you are going to have proper credibility into the central banking system. Then you have to identify first the nominal anchor which variable you want

to target the most, in order to enhance the credibility, these are the approaches through which central bank can go for one is the inflation targeting,.

Second is about the appointment of the central bank head that can be a conservative or he may be a more hawkish on inflation rather than simply tough. So, hawkish is the popular term, which we often use in case of central banking. And then you have the most important and crucial approach is that there should not be interference in the daily affairs of the central bank, central bank should be independent.

So, I hope these dimensions have added some kind of have given you a sufficient understanding about how we can understand the role of the central bank in the economy. So here, from here onwards, we will be taking to the next level, where we will be trying to connect with the New Keynesian School of economic thought; we will be trying to see that we will be putting up the scenarios.

And we will be trying to see that how those scenarios they will walk for the central bank. If the central bank objective is to either control inflation or go for employment maintain or employment, higher employment level maintenance then in that case, it becomes really important.

(Refer Slide Time: 24:20)

Introduction | Conduct of Monetary Policy: Rules or Discretion | How to establish the central bank credibility | Goal of the central bank and the New Keynesian m

Cost of inflation

- High inflation depreciates the value of currency and people do not hold cash for any period of time.
- The role of anticipated and unanticiapted inflation becomes crucial.
- Economic decisions are often impacted by the inflation expectation.
- For instance, if inflation is unexpectedly high, then this will tend to redistribute income from lenders to borrowers.
- New Keynesian model exploits the relevance of Phillips curve in inflation determination and monetary policy stand in controlling inflation.

Wasim Ahmad IIT Kanpur | Microfoundations of Macroeconomics | 22

So, let us focus first on the inflation when we talk about inflation, then it mentioned that the high inflation it has the impact on the value of the currency. So, here it works that people will not hold people will not like to hold the cash, rather they will be simply as simply going for some alternative holdings the role of anticipated and unanticipated becomes important.

So now we are moving towards an understanding where we will be seeing that if you have the anticipated expectation or anticipated inflation as an exogenous variable and on. Inflation gives you some kind of pricing behaviour for some firms and some firms may not like to change the price. So, typically in the economy if you have inflation, then the individuals will be forming the expectation about future.

Whether; they should increase the price immediately or they should wait for some more time when and if they are if they are planning to wait for some more time. Then there must be having some expectation that when they will get the next chance to revise the price. So, most of the shopkeepers most of the businessmen when they see rise in inflation then you will find that they may not be revising their prices immediately.

They will be waiting for some period and then they see that okay after one month, if the inflation remains same at the same level. Or if it goes by 2% points then I will be changing or I will be revising the prices. But if some firms which are not changing prices as per the assumption if we are assuming that it is very difficult for the firm to change the price in the short run.

Then in that case, it becomes really difficult that how some firms changing the prices based on the expectation. Some firms are not allowed to change. So, the profitability or the demand scenario for both firms will not be the same. So that is why the anticipated and unanticipated inflation plays a very important role. Economic decisions are often impacted by the inflation expectations that some firms may be reacting.

If inflation is unexpectedly high, then this will trend to redistribute income. Think about borrower and lender. If borrower is if the inflation rate is higher lender is going to lose. So, with this understanding, we will be moving to the new Keynesian school of economic thought. And under new Keynesian school of economic thought we will be trying to see the role of Phillips Curve in understanding the expected inflation and output dynamics.

So, I will be stopping here and in the next session. I will start from this and we will be talking more about the new Keynesian understanding. Thank you so much for your attention.