3. **STABILISATION POLICY (3 lectures)**

3.1 The need for macroeconomic stabilisation policy
3.2 The time inconsistency of discretionary policy
3.3 The time inconsistency of optimal policy rules
3.4 Achieving policy credibility: independent central banks
3.5 Central bank independence and inflation rates: the evidence

NGM ch. 14, Epilogue p.523
DEL ch. 13, 16.2, 16.3
DFS ch. 8
OBL ch. 17.2, 24
HVP ch. 10

**AIMS:**

- To discuss the objectives and problems of government macroeconomic policy
- To introduce the concepts of time inconsistency and credibility illustrate them under both discretionary policy and optimal policy rules
- To discuss how policy credibility can solve the time inconsistency problem
- To examine how an independent central bank might improve policy credibility
- To review the evidence on the effect of independent central banks on inflation rates
3. STABILISATION POLICY

OBJECTIVES:

♦ To learn about the goals of UK macroeconomic policy and the difficulties of achieving them
♦ To become familiar with stabilisation policy debate and the time inconsistency problem
♦ To understand how credibility solves the problem of time inconsistency
♦ To learn whether independent central banks can achieve lower rates of inflation more effectively than governments
3. STABILISATION POLICY
3.1 The need for macroeconomic stabilisation policy

What is stabilisation policy?

Economies are subject to demand shocks and supply shocks that cause short-run economic fluctuations.

Stabilisation policy consists of actions designed to reduce the severity of these short-run economic fluctuations i.e. to reduce variations in output and prices.

Key questions about the form of stabilisation policy

Are the shocks transitory or permanent?

Should stabilisation policy be active or passive?

Is intervention as straightforward as AD/AS analysis implies or does it do more harm than good?

Should politicians be involved in macroeconomic policy or should independent authorities be given the responsibility?

Should policymakers use their discretion in applying policy tools or should they follow simple policy rules?

How do expectations determine the effectiveness of policy?

How important is it that economic agents believe that policy announcements will be fulfilled?
The goals of current UK macroeconomic policy

“The Government’s central economic objective is to raise the rate of sustainable growth”

The key elements of the Government’s strategy are to “maintain a stable macroeconomic framework with low inflation and to maintain sound public finances in accordance with the Code for Fiscal Stability”

The Code requires keeping a balanced budget over the business cycle and maintaining a sustainable level of debt

Is the economy inherently stable or unstable?

Unstable ⇒ an active approach to stabilisation policy

Why? Recessions lead to high unemployment, low incomes and economic hardship, which could be less severe with appropriate stabilisation policies

Stable ⇒ a passive approach to stabilisation policy

Why? “Long variable and uncertain lags” (Friedman) Accurately forecasting the impact of stabilisation policies on macroeconomic outcomes is difficult Uncertainty about individuals’ responses
Problems in policy evaluation - lags

The inside lag: the time between the economic shock and the policy response

The outside lag: the time between the policy response and the impact on the economy

Advocates of passive policies argue that the long and variable lags of economic policy make active stabilisation policy impossible

Active stabilisation policy may itself be destabilising due to lags, the effects of policy responses may make it worse

Some policies, called automatic stabilisers, reduce the inside lag because they are activated without any policy change e.g. income tax rates, unemployment insurance

Problems in policy evaluation - forecasting errors

Forecasting is notoriously unreliable, especially in the presence of economic shocks

e.g. unemployment rate forecasts in the 1982 US recession [NGM, ch. 14, figure 14.1, p.384]
Problems in policy evaluation – individuals’ responses

Macroeconomic policy outcomes depend on how individuals respond to them i.e. they are contingent

Individuals’ responses depend upon their expectations of economic activity and of policy (how much of the policy change was already expected) – the Lucas critique

Uncertainty surrounds which economic model is correct

In summary – policy evaluation is not a precise science

The problem with politicians

Is economic policy too important to be made by politicians?

Politicians: maybe incompetent economists

are opportunistic

are often only after short-term electoral gain

are not concerned with long-term welfare

care mainly about the opinions of a minority of voters, rather than the welfare of the whole population
**Political business cycles**

The economic feel-good factor can substantially aid the incumbent government’s re-election chances

Many mini-booms are engineered for election years

Manipulation of the economy for political gain results in political business cycles

Politicians can move the economy along the short-run Phillips curve to higher employment and output levels

They boost aggregate demand for short-term gain, without the pain of higher inflation coming until later

However, this is only possible if voters are short-sighted

Further Reading

Grilli, Maschiandro, Tabellini (1991) – on supplementary reading list
**Rules Versus Discretion**

**Rules:** policymakers pre-announce how they will respond to future situations using policy rules

**Discretion:** policymakers allow themselves the freedom to respond to circumstances in ways they see fit

1. a constant monetary growth rate of 4% (passive rule)
2. (1) that varies with the unemployment rate (active rule)
3. an inflation rate target range (rules plus discretion)

Passive rules are also known as “open-loop” policies

Active rules are also known as “rules with feedback”

Who should have the authority to change the rules?

Should they be **pre-announced** to help economic agents to take the new policy into account in their forecasts?

Will the policymakers **stick** to their announced rules?

What are the consequences of **breaking** the rules?

**Further Reading**

Bernanke and Mishkin (1996), Mishkin (1999)
3.2 The time inconsistency of discretionary policy

A further argument against active stabilisation policy, when expectations are rational, concerns policy credibility.

Do economic agents believe the government will comply with their announced policy?

Have the policymakers developed a reputation for fulfilling their policy promises and sticking to their targets?

The Problem of Time Inconsistency

Policies that might seem optimal, when announced, may not be optimal after a period of time.

Such policies are termed “time inconsistent”.

The problem arises because policymakers influence current economic outcomes by announcing future policy targets.

If individuals form their expectations about the future, assuming such policies will be fulfilled, their economic behaviour today may change.

If their behaviour changes, the pre-announced policy may no longer be optimal for the government.

In other words governments have an incentive to renege on their announced policy in the future.
The time inconsistency trade-off

Governments can make short-term gains at the expense of their credibility for future policy commitments.

Economic agents become aware of the time inconsistency problem if governments renege on policy promises.

Hence, policymakers need to demonstrate their total and binding commitment to pre-announced policies if economic agents are to act on the policy changes.

In the long-run lack of policy credibility can seriously damage attempts by policymakers to affect real outcomes.

Governments that gain a reputation for pre-commitment, earn policy credibility and overcome the time inconsistency problem – agents believe and act on policy changes.

This is best done by sticking to simple, pre-announced policy rules, rather than by using discretionary policies.

These rules must be easily understood and it must be simple to verify whether they are being adhered to or not.

Transparency and accountability are crucial (see Mishkin (1999) for evidence).
The Kydland/Prescott (1977) Model of Time Inconsistency

[see Handout on Topic 3 and NGM, Appendix to ch. 14, pp.402-404 – for algebra; SMG ch. 17 or Stevenson, Muscatelli and Gregory (1998), Macroeconomic Theory and Stabilisation Policy, ch. 9.3.2 for diagrams]

The model has four main components:

**Long-run Phillips curve** (LRPC), vertical at the natural rate of unemployment

**Short-run Philips curve** (SRPC), describing the temporary trade-off between unemployment and inflation rates

**Rational expectations Hypothesis** (REH), expectations are formed rationally about future rates of inflation

Governments seek to minimise the *welfare lost* from higher rates of inflation and higher unemployment

**LRPC:** \[ \Pi = \Pi^e \text{ (and hence) } u = u^n \]

**SRPC (v = 0):** \[ u = u^n - 1/\beta (\Pi - \Pi^e) \]

**REH:** \[ \Pi_t^e = \Pi_t + \varepsilon_t , \quad \text{mean} (\varepsilon_t) = 0 \]
The welfare loss function

The government values the welfare of the country according to a weighted function of the unemployment rate and the rate of inflation.

It is convenient to write this as a welfare loss function (WLF), from which utility curves can be derived showing the combinations of unemployment and inflation rates yielding the same amount of welfare loss.

\[ WLF: \quad L(u, \Pi) = u + \gamma \Pi^2 \]

\( \gamma \) indicates how much the policymaker dislikes higher inflation relative to higher unemployment.

Discretionary Policy in the Kydland/Prescott (1977) model

First economic agents form their expectations of inflation rates (\( \Pi^e \)).

Second policymakers choose the actual inflation rate (\( \Pi \)), conditional on the expected rate, that minimises the welfare loss function.

Third unemployment is determined on the basis of \( \Pi \) and \( \Pi^e \), according to the SRPC and LRPC.
**What is the optimal rate of inflation?**

The government will choose the *welfare-maximising* rate of inflation i.e. that minimises welfare loss

WLF: \[ L(u, \Pi) = u + \gamma \Pi^2 \]

Substitute for \( u \), using the SRPC equation, gives:

\[ L(u, \Pi) = u^n - 1/\beta (\Pi - \Pi^e) + \gamma \Pi^2 \]

To minimise welfare loss, differentiate with respect to \( \Pi \):

\[ \frac{dL}{d\Pi} = -1/\beta + 2\gamma \Pi = 0 \]

(\( u^n, \Pi^e \) are constant, fixed beyond the government’s control)

The *welfare loss minimising* rate of inflation is therefore:

\[ \Pi_C = 1 / (2\beta\gamma) > 0 \]

\( \Pi_C \) is the *optimal* rate of inflation that policymakers choose i.e. it is the rate of inflation that maximises total welfare

So, with discretionary policy, the optimal inflation rate, chosen by the government is *greater than zero* inflation
What rate of inflation would economic agents expect?

If the **rational expectations hypothesis** holds, economic agents would be aware of the above model and would form their expectations knowing its predictions i.e.:

\[ \Pi^e = \Pi_C = 1 / (2\beta\gamma) \]

Hence the economy ends up on the LRPC, with \( u = u^n \)

The inflation rate is \( \Pi_C = 1 / (2\beta\gamma) \)

The short-run Phillips curve (SRPC\(_C\)) is consistent with expected inflation = \( \Pi_C \) (point \( C \) on the diagram)

But the actual inflation rate is **greater than zero**

Since the welfare loss function penalises any positive value of inflation this implies a **considerable welfare loss**

Could a lower rate of inflation be achieved with an alternative policy regime – such as a **policy rule**?
3.3 The time inconsistency of optimal policy rules

**Policy rules in the Kydland/Prescott (1977) model**

Suppose the policymaker announces a fixed monetary policy target of a specific rate of inflation ($\Pi^* = \Pi_D$)

If economic agents believe that the policy rule will be followed, and the target rate achieved, their expectations of inflation will equal the announced target ($\Pi^e = \Pi^* = \Pi_D$)

If the policy rule is the followed, actual inflation = expected inflation and the economy ends up on the LRPC, at the natural rate of unemployment ($u^n$)

The SRPC$_D$ ($\Pi^e = \Pi^* = \Pi_D$) is that which intersects the LRPC at inflation rate $\Pi_D$ (at D on the diagram)

Notice that the government is unable to influence the unemployment rate under this scenario

Therefore the optimal policy rule must be to target zero inflation, since this minimises the welfare loss function, given that unemployment will always be at its natural rate

If $\Pi^* = 0$, and is believed then $\Pi^e = 0$

If the rule is followed actual inflation = 0, and the economy ends where the LRPC intersects SRPC$_o$ (with $\Pi^e = \Pi^* = 0$) and inflation = 0, unemployment = $u^n$ (point O on diagram)
The time inconsistency problem with optimal policy rules

At point O the government has an incentive to cheat

Why? The government would willingly trade-off a little higher inflation for lower unemployment.

It would prefer to move the economy along SRPC\textsubscript{0} to point E where welfare loss is lower than at O.

Thus the optimal policy rule (\(\Pi^* = 0\)) is time inconsistent.

The consequences of time inconsistent policy rules

Under REH economic agents would know that \(\Pi^* = 0\) is time inconsistent and therefore lacks credibility as a rule.

They would not believe the policy announcement and would not change their expectations of inflation in response.

However, a policy target of \(\Pi^* = \Pi_C\) is time consistent.

Why? The government would have no incentive to cheat. It would be on the highest attainable utility curve.

Economic agents would expect \(\Pi^e = \Pi_C\) and the economy would end up at point C on diagram.

This policy (\(\Pi^* = \Pi_C\)) is time consistent and credible.
The importance of policy credibility

The gains to the government from breaking pre-announced policy commitments are only temporary.

When expectations are revised the economy moves back to the LRPC, and unemployment returns to its natural rate.

The long-run outcome of a time inconsistent policy rule is the same as the best outcome under discretionary policy (C).

However, the welfare loss at C is much greater than at O.

Therefore, the government would wish to move to O.

How? By gaining a reputation for policy pre-commitment i.e. by sticking to its announced policy rules.

If a government has policy credibility, optimal policy rules are unambiguously better than discretionary policy.

A policy target of \( \Pi^* = 0 \) becomes achievable, if economic agents believe the government will deliver on its promise.

Hence, the lowest sustainable level of welfare loss can be realised at point O, with unemployment at its natural rate.
3.4 Achieving policy credibility: independent central banks

**Independent Central Banks: the theory**

[see Blinder (1998) for an overview]

Recall: \[ \Pi_C = \frac{1}{2\beta\gamma} \]

where \( \gamma \) is the relative weight attached to higher inflation rates, versus higher unemployment rates, in the government's welfare loss function

\( \Pi_C \) is the **best** long-run outcome that can be achieved under discretionary policy and time inconsistent policy rules

A better outcome can be achieved by penalising high inflation to a greater extent in the welfare loss function

i.e. the larger is \( \gamma \) the lower is the long run inflation rate

One solution is to delegate monetary policy to an institution with a loss function that attaches a **higher penalty** to inflation than the government’s loss function i.e. larger \( \gamma \)

If that institution also is made, to some extent, **independent** of the political process and protected from frequent political interference, **policy credibility** may also be gained
**Independent Central Banks: Gain without Pain?**
[see Rogoff (1985)]

Rogoff (1985) pointed out that independent central banks may provide policy credibility, but **at some cost**

If inflation control is relatively more important for an independent central banker they may **over-respond** to shocks when trying to achieve its monetary policy targets

i.e. in order to achieve the same rate of inflation independent central banks would **tolerate more unemployment** than would the government

In other words, the **sacrifice ratio would be greater**, under an independent central bank, than that if the government retained control of monetary policy

The larger, and more frequent, the shocks to the economy, the greater is the loss to having an independent central bank controlling monetary policy compared with the government

i.e. they may increase the **volatility** of output

These welfare costs may offset the benefits of a lower inflation target and the policy credibility gains from independence – there is a **trade-off**
3.5 Central bank independence and inflation rates: the evidence

Measuring central bank independence
[see Alesina and Summers (1993)]

An index of independence can be constructed by examining the laws of different countries, taking into account both political and economic independence:

Political independence depends upon

- the institutional relationship between the government and the central bank
- the procedure by which the heads of the banks are appointed and dismissed
- the role of government officials on the bank board
- the length of bankers’ terms
- whether government approval for monetary policy decisions is required
- the frequency of contact between the government and the central bank
- whether the policy target is explicitly stated in the constitution
Economic independence depends upon

- the **freedom** to use policy instruments without interference from the government

- in particular, the ease by which governments can finance their budget deficits using credit from the central bank constrains economic independence

Alesina and Summers (1993) use an average of these two indices as their measure of central bank independence

**Independence and average inflation rates**

The greater the independence of the central bank the lower and more stable are the rates of inflation in cross-country analyses

[NGM, ch. 14, figure 14.3, p.398]
Independence and macroeconomic performance

There is no evidence of a correlation between the degree of independence of the central bank and measures of macroeconomic performance.

[Alesina and Summers (1993), figure 2a]

In particular, the average levels and volatility of

- unemployment rates
- real GNP
- GNP per capita growth rates
- real interest rates

are unrelated to the index of central bank independence.

Independence in transition economies
[see Loungani and Sheets (1997)]

Increased central bank independence is associated with lower inflation rates across 12 transition economies.

In a sample of 25 transition economies lower inflation rates result in higher real GNP growth rates.