

2. Limits of Economic Policy in a Complex World

- 2.1 Limits of knowledge
 - 2.2 Limits of representation
 - 2.3 Limits of confidence
 - 2.4 Limits of information
 - 2.5 Limits of benevolence
 - 2.6 Policy responses
 - 2.7 Conclusion
-

In Chapter 1, **economic policy** was presented as an **engineer's science**. A **single** supreme and benevolent **policymaker** was supposed to engage in **optimization**, taking social preferences as given, and relying for decisions on correctly estimated parameters. It is now time to challenge those assumptions.

We must say here that what is important is not only to realize the **extent of the criticism**. It is also important to understand **how to make the most of economic policy** in a complex and imperfect world.

This chapter is intended to provide a **basis** for the **policy-specific chapters** that will follow. Here we will **survey a number of limitations** of the traditional description of economic policy, and we will outline their **consequences** for the design and implementation of government intervention.

There are **five main limits** to the traditional approach to economic policy. **First**, governments have **imperfect knowledge** of the structure of the economy and of future risks. **Second**, firms and households devise their **own strategies**, and thus they **react** to economic policy measures by anticipation. **Third**, policymakers may not be able to **convince** private agents what they propose to do, and this **affects** the behaviour of private agents. **Fourth**, policymakers may not have the **information** they need to take decisions. **Fifth** and finally, policymakers may not pursue the **general interest**. In what follows, we look at each of those **limits** in turn, before discussing how economic policy has developed tools to address them.

2.1 Limits of knowledge

An **implicit** important **assumption** in most of Chapter 1 was that the government has **extensive knowledge** of the preferences of economic

agents and of the structure of the economy. This assumption can easily be **contradicted** by the following **four** real problems:

- **Model and parameter uncertainty**

First, **model uncertainty** [i.e. **model imprecision**] arising from the **choices** made by theorists and econometricians. For example, **questions** here could be: Should the interest rate be included in the consumption function? Or, are consumption, investment, and export functions linear? There are **many choices** that **model builders** can make, given the theoretical assumptions. Policymakers are not always aware that the analyses and recommendations they are presented with **rest heavily** on model choices by econometricians.

Second, for a given model, **parameter uncertainty** [i.e. **parameter imprecision**] which can arise from the **limited** range of observed data available to the econometrician. In fact, real-time data is often wrong.

- **Risk**

In any decision-making action, **risk** must be taken into consideration. In most instances, **private companies** do a better job than the **public sector** of taking into account the **distribution of risks** in their decisions. Generally, economists assume that agents **know** the **probability** of the various states of nature and **maximize** the expected value of their future utility, i.e. the **average of utility** in each state of nature weighted by its probability. Within this framework, the instrument used to model attitudes toward risk is **risk aversion**, which is related to the second derivative of the utility function (see box 2.2 in the manual, pp. 67-68). It is thus assumed that utility is a **concave function** of a variable, say consumption or wealth.

In recent time, crises like hurricane Katrina have forced governments to take **risk** into account; but when they focus on risk, policymakers **sometimes** ignore expected outcomes. Furthermore, they rarely take into account the **full distribution of risks**.

- **Extreme or unquantifiable risks**

This leads us to another issue, which has to do with the **distribution of risk**. Most economic models rest on the assumption that **shocks** are **normally distributed**, i.e. that their distribution has the well-known “bell curve” shape, with a given mean and standard error. However, there are **situations** in which this assumption cannot hold: **Shocks** may be **skewed**, in which case their median value is not equal to their mean,

or their distribution may exhibit **fat tails**, meaning that very **rare events** are more likely to occur than under a normal distribution. Therefore, rare but very damaging events are a **challenge** for policy decisions, but the distribution of risks is usually not well known, and in some cases it cannot even be quantified using traditional probabilistic methods.

- **The option value of waiting**

A last criticism that can be made of the traditional approach to economic policy in an **uncertain environment** is that it focuses in great detail on the **substance** [i.e. **body or essence**] of policy decisions, while the major question is often that of their **timing**. The key concept here is **irreversibility**. If all policy decisions were incremental and reversible, economic policy would be **state-contingent**: It would adapt at any point in time to the current state of the economy. However, in a world where decisions are **irreversible** or involve fixed costs, it can be **optimal to wait** until new information is available on their costs and benefits.

However, waiting creates **inaction** and obviously doing nothing has a cost of its own.

Facing the **dilemma** between acting and not acting, one would like to delineate a **precautionary principle** for economic policy which may justify waiting. However, this same principle can also in some circumstances justify a prompt action.

Implications for policy

Uncertainty and **risk** have strong potential **policy implications**. Many **errors** have been made because governments based policy on wrong parameter estimates or did not properly take risk and uncertainty into account. Policy thinking is thus **increasingly attentive** to these issues.

2.2 Limits of representation

So far we have highlighted the **existence of uncertainty** about the **value of parameters**, and have concluded that this should lead policymakers to exercise **caution** before taking decisions. But we did not question the policymakers' ability to obtain **unbiased estimates of the parameters**. In fact, **public intervention** becomes even **more questionable** if based on **systematically inaccurate parameter values**.

While **Keynesianism** was the **dominant** school of thought all over the

1960s, the last three decades of the twentieth century were marked by a heated debate on the rationale, the methods, and the limitations of public intervention. Since the beginning of 1970s, a number of **sharp criticisms** were launched by the **rational expectation school of thought** as regards the traditional methods of economic policy. These criticisms came primarily from economists who **objected to the very principle of government intervention**. In fact, their viewpoints were justified by the **failure** of the traditional macroeconomic policies to achieve their primary goals of **output stabilisation** and **price stability**, especially after the first oil shock.

Rational expectations

John Muth (1961) introduced the **notion of rational expectations**. In the traditional **Keynesian models**, the **expectations** of agents regarding the future values of economic variables were often **disregarded**. When they were taken into account, they were assumed to be extrapolated from the last observed trends. Muth showed that this assumption amounts to supposing that agents do not use all information available to them at the time of the decision, and are thus not rational. But he emphasized that **rational agents** in reality make use of all available information, including about current and expected policy action, and **forecasting errors** result only from events that are not foreseeable.

For the **modern Keynesian economists** [**new Keynesian school of thought**], the assumption that the **average economic agent** has **full knowledge** of the functioning of the economy and is able to **correctly anticipate** all variables is an **extreme case**. It overlooks the simple fact that gathering and processing all information requires **human capital** and involves **costs**. In accordance with the **rational expectation theory**, economic agents have **enough** economic culture, information, and computing skills to **anticipate** the effects of any economic policy. This viewpoint defies intuition.

However, the **alternative assumption** that individuals do not at all use information available to them is **not attractive** either. And the rational expectation hypothesis does not require them to **know** the full details of the economy, but only to **act** in accordance with them.

From a **methodological standpoint**, rational expectations merely impose a **consistency constraint** on model builders: It cannot be assumed that individuals make assumptions that contradict the [**true**]

model [or the laws of the economy]. They can also be seen as the **limit** on which expectations **converge** when individuals with initially **adaptive expectations** accumulate knowledge on the functioning of the economy.

Summarising, **rational expectations** should be considered as a **reference case**, from which one can then **depart** to enrich the description of reality.

The Lucas critique

Pushing the reasoning of the rational expectations theory further, Robert Lucas (1976) showed that it is **incorrect** to use a **macroeconomic model** to assess the consequences of **systematic** economic policy changes. This is because the model's parameters have been estimated over the **past**: Systematic policy changes will be **incorporated** into the agents' expectations and will affect their behaviour [**which in turn will imply a change in the parameters' structure**]. Therefore, economic policy cannot be based on an overly **naive** representation [**i.e. model**] of the behaviour of economic agents.

Not **all** empirical evaluations of economic policy are made **groundless** by the Lucas critique. Macroeconomic models remain relevant to the study of the effects of policy decisions that are **non-permanent** or **remain** within the [**limited**] range of policy changes observed in the past. This, for example, applies to **small-scale** changes in public expenditures, tax rates or the interest rate. However, they cannot be used to evaluate the effects of a change in the **policy regime**, which means a change of the principles and rules governing economic policy.

Implications for policy

The **Lucas critique** has contributed to making governments and central banks aware of the **limitations** of quantitative policy evaluations. By diminishing **confidence** in those evaluations, it has contributed to **weakening the technocratic approach** to policy choices that prevailed in 1970s. While evaluations with large-scale models are still carried out, they are used with greater **caution**, especially for substantial policy changes.

2.3 Limits of confidence

Rational expectations add complexity to the **representation** of the economy and of its **interactions** with **economic policy**. However, their impact goes beyond this mere technical difficulty. They may also directly **obstruct the effectiveness of public intervention**.

Credibility

According to the rational expectations theory, the **ineffectiveness** of public intervention arises from the **lack of credibility** of policy decisions, i.e. governments do not succeed in convincing private agents that they will indeed behave in the way they have committed to. This is so because governments have a natural opportunity and temptation to **mislead** the people in the name of the best interests of the society. As we will see elsewhere, **credibility problems** arise from **time inconsistency** of public policies.

As a rule, a **credible policy** is all the **more effective** as it not only mechanically affects private behaviour but also **steers expectations**. As we will see in Chapter 4, this is particularly **relevant** for monetary policy, the effectiveness of which is based to a large extent on **expectation management**. For example, an economy equipped with a **credible central bank** can better respond to inflationary shocks triggered by rises in the price of oil and raw materials because agents do not anticipate that these shocks will result in permanently higher inflation.

The **key issue** here is the **confidence** of the people as for governments' policies. This confirms the intuition of Keynes (1936) that the **state of confidence** is the **key variable** in an economy prone to instability.

Moral hazard

We have seen that when expectations are rational, economic policy can become inefficient if the government seeks to mislead private agents. But the problem can be just as serious if it seeks to help them. **Moral hazard** is a well-known problem in **insurance theory**. By reducing the expected cost of future damages, insurance **induces** more risk-taking. **Economic policy often provides insurance**: Directly when the central bank assists banks that face a liquidity shortage or when the government

rescues a distressed firm; indirectly when stabilisation policy prevents a recession. There is a **tension** between discouraging excessive risk-taking and helping involuntary victims of an accident.

In synthesis, **moral hazard** arises from **government intervention** that **alters** the **private behaviour** (e.g. IMF intervention, central banks provision to banks and public insurance). One **solution** of this problem is to provide only **partial insurance** which makes public intervention **costly** to private agents.

Time inconsistency

Lack of **credibility** and **moral hazard** are examples of what economists call **time inconsistency**: In both cases, the sequence of policy decisions that result from **optimising at each period** does not constitute an optimal policy, i.e. **ex-post** and **ex-ante** optimality do not coincide.

The resulting **inefficiency** [**from time-inconsistency problem**] was established by Kydland and Prescott (1977): They show that, except in specific cases, **optimum policies are not consistent over-time**.

To respond to **time-inconsistency problem**, Kydland and Prescott proposed to **rule out** the **discretionary policies** that consent the policymakers to decide which policy to follow at each point in time. In their view, economic policy should rather follow **fixed policy rules** that leave no or limited discretion to the policymaker, and economic policy **evaluation** should consist in **comparing** the performance over-time of **rules**. This view of economic policy has been immensely influential.

Implications for policy

Criticisms based on credibility and moral hazard emphasise the **intertemporal dimension** of policy choices and the **risks of adverse long-term effects** of seemingly optimal short-term decisions. They jointly lead to questioning of the traditional discretionary approach to policymaking and its call for leaving considerable latitude to the decision-maker.

Since the significance of the challenge began to be recognised in the 1970s, several strands of **policy responses** have been proposed and implemented. The **first** response has been **rules-based policymaking**,

an approach introduced in 1979 in the US when the Federal Reserve endorsed a monetarist strategy focused on pre-announced quantitative targets. This mechanistic approach was abandoned in 1987 once inflation had been controlled and it had become clear that monetary aggregates provided poor guidance to monetary policy, but it has become increasingly popular in the budgetary field. **Second**, in the 1980s and the 1990s many governments in European and emerging countries made use of **credibility-policy** through committing to keeping the exchange rate stable so as to attain a more credible and stable currencies. **Third**, starting in the 1980s there has been a general move toward granting **independence to central banks**, as a way to ensure **better credibility**. **Finally**, central banks themselves have introduced **greater transparency** in their objectives and decision-making procedures.

2.4 Limits of information

One must take into account the existence of **informational asymmetries** between agents in the economy. The consequences of such informational asymmetries for private and public behaviour have long remained underestimated, until economic theory started to explore them systematically in the late twentieth century.

Governments may not possess **full information** in order to design an appropriate economic policy. Economists have brought into the picture **imperfect information** and the **strategic behaviour** of government agencies and individuals bureaucrats, and they have altered and filtered their conception of government. Indeed, when **public or private agents** have **privileged information** and use it **strategically**, the **central decision-maker** is in a situation of inferiority and his decisions are **sub-optimal**.

For example, a telecommunications regulator may be tasked with controlling prices, but companies know technology and consumption patterns better than the regulator. Because of this, regulated prices are not established correctly. But the problems of informational asymmetries are **not specific** to the public sector. They are **pervasive** in market economies. An especially important **case** is that of the **contractual** relationship between a **principal** (e.g. shareholders of firms) and one or several **agents** (e.g. entrepreneurs or employees). The principal, who delegates a task to the agent, does not have full information about the agent's capabilities and performance, and this

generally leads to **suboptimal** situations.

The **solution** to this problem is to structure a **principal-agent contract** in a way that aligns the agent's interest with that of the principal and gives him **incentives to reveal the information** he has. This is what **contract theory** is about. Driven by expected profit, private agents (e.g. companies) endeavour to transform their informational advantage into pecuniary revenue. In response, governments **design contracts** that give them incentives to reveal the information they hold.

The method of **incentive-compatible contracts** has wide **implications** for **public management**, in areas such as public service delegation for infrastructure maintenance, waste disposal or water supply, public-private partnerships to build hospitals, schools, or prisons, or the regulation of natural monopolies such as rail infrastructures. The same approach can be applied **within** the government.

2.5 Limits of benevolence

So far we have not questioned the **government's objective**. It has been supposed to serve the general interest as defined in Chapter 1 through a social welfare function. Modern research has called into **question** this too naive vision of a **well-informed and benevolent government** that inspired **normative economics** and, in many countries, still constitutes the intellectual backbone of public service.

Why politicians may depart from the general interest

In addition to the informational dimension discussed above, **five main** non-mutually-exclusive **arguments** have been advanced against the idea of the benevolent government.

First, politically liable governments may easily be exposed to **lack of credibility** and **time inconsistency** because exposure to opinion polls, short mandates, or threat of losing a majority in parliament make difficult the investment in building-up the right attitude regarding policy choices.

Second, governments are exposed to pressures from **interest groups**. For example, **lobbying** politicians and civil servants is usually intermediated by organisations known as interest groups, such as trade

unions, consumer or environmental protection associations, industry representatives, and community groups. George Stigler (1971) spoke of a **capture of the regulator** by the very interests he or she is responsible for supervising.

Third, governments are subject to **re-election** and are naturally motivated by it. Governments may act in an opportunistic way and seek re-election by lowering taxes just before poll, by increasing its expenditures, or by delaying difficult decisions. This type of behaviour gives rise to a **political business cycle** (William Nordhaus, 1975).

Fourth, governments can be **partisan** and, rather than serving the general interest, they may take measures that correspond to their prejudices or favour the majority that supports them. Generally, **ideological division** leads to excessive public spending and debt. It is confirmed empirically that public debt is positively correlated with the degree of political instability.

Fifth, **divisions between regions**, or **between ethnic or social groups**, may lead to **inefficient spending**. In such situations, each fraction tries to extort from the government tangible benefits whose corresponding **macroeconomic costs** (higher public debt or inflation) will be distributed among the whole population. In this case, **theory** suggests that public spending will be too high, as well as public debt or inflation.

Modelling politicians' behaviour

Politicians' behaviour has been **modelled** in several ways. In the simplest theoretical models, politicians have no preferences on their own; their only objective is to be in power. Once elected, they seek to be re-elected. If this so, then decisions by politically motivated governments will coincide with the **maximisation of social welfare**. In fact, this is generally not the case.

The reason is the following: Majority vote gives a prominent role to the **median voter** (see Box 2.10 in the manual, pp. 99-100). The median voter model was introduced by Black (1948) and builds on the insights of Hotelling's (1929) model of competition. For example, in this model, if left-wing and right-wing parties disagree on the level of government transfers, voters will choose the **median level of transfers**, when half of the voters would like the level to be lower and half of them would like it to be higher. [Assuming only two parties, the tendency for these two is

to have political programs which are closer to the preferences of the medium voter]. This is quite a logical outcome in a **democracy**. However, except under very specific assumptions, this **does not coincide** with either of the **social choice objectives** outlined in Chapter 1. “Benthamian” choice would structure spending so as to maximise average welfare, while “Rawlsian” choice would concentrate transfers on the poorest.

Implications for policy

We have seen that politicians may depart from the general interest of the society. However, as we will see in the next section, taking on board the **political dimension** should not result in absolute scepticism relative to economic policy. We have only recognised that **political institutions** shape economic outcomes which bring us to the conclusion that they should be **structured** so that the outcome of **political processes** corresponds to that of the **general interest**. In this respect, the **political economy approach** can help in **designing and adopting policy institutions** that are conducive to socially desirable outcomes. For example, the policy of consenting to central banks the character of independent institutions can be replicated for budgetary or regulatory institutions.

2.6 Policy responses

Now that we are aware of the various **limits** of economic policymaking and the **necessity** of creating adequate institutions to address limits, let us then examine how economic policy decisions are made in **practice**.

In the last quarter of the twentieth century we could see the coming out of **two major governance technologies**: First, the creation and development of a number of specialised agencies or institutions with **independent** policymaking or monitoring power; second, a significantly greater reliance on **rules** that constrain the behaviour of policy authorities.

Delegation to independent agencies

Recently, the **proliferation** of independent agencies or institutions has been **criticised** from the left as well as from the right political views.

The **first question** is why and when it is preferable to remove certain fields of public decision from direct political influence.

The **second question** is how to conduct economic policy in a system where policy instruments are in the hands of independent bodies that may or may not coordinate with each other.

Apart from these questions, one must emphasise that the independent institutions are subject to **failures** in much extent **similar** to those of governments: For example, behavioural rigidities, insensitivity to the society's expectations, inability to trade-off between objectives, and lack of legitimacy to deal with decisions that involve a distributional dimension.

Political and **technocratic** decisions are thus two **imperfect methods of governance**. One needs **criteria** in order to decide in which cases responsibilities should be given to technocratic bodies. It is generally accepted that **technocratic decision** seems preferable when:

1. The economic matter is very **technical**;
2. Social preferences are **stable** and performance criteria are **well-defined**;
3. The decisions in question and their effects are **not easily** observable by **voters**;
4. The decisions are highly vulnerable to **time inconsistency**;
5. The decisions have a **limited impact** on income distribution **within** generations;
6. The decisions **[do not]** **significantly affect** the distribution of income **between** generations;
7. The decisions do not involve **trade-offs** between incompatible objectives;
8. The decisions entail **benefits** to groups that are likely to be involved in **political lobbying**.

Of course, no economic policy issue **completely** meets the eight criteria, but they provide a **useful** analytical framework. For instance, **monetary policy** meets all the criteria except the seventh and perhaps the fifth. However, the **weighting of objectives** can be specified once and for all in the statute of the central bank. As for **fiscal policy**, it does not satisfy criteria 2, 3, 5, [6] and 7. **These are compelling reasons to keep fiscal policy within the realm of political decision-making.**

We can conclude that the **choice** between political and technocratic governance is **less clear-cut** than it appears. But **intermediate solutions** do exist, like those in which elected officials choose the objectives and assign the responsibility for implementation to technocratic bodies that are granted operational independence.

Policy rules

Should government decisions be based on **rules** or should government decisions be established on **case-by-case optimising basis**? There has been a **continuing debate** about this issue. Rules are **prescriptions** for policymakers and other economic agents. They are **stable across time**. Because of this, they structure in a **precise manner** the policymaking and the private behaviour in the course of time, despite the fact they may be explicitly contingent on states of nature.

The approach of using **rules** has notably received much attention in the field of **firms' regulation**. However, **regulatory rules** [e.g. **price definition, capital requirement, and anti-trust laws**] are often **complex**. As a result of this, monitoring their implementation is **difficult**. They also always present **ambiguities** that can be exploited. Conversely, **principles-based (risk-focused) regulations** allow more discretion and may be less transparent, but under a strong, independent regulator, can deliver results that conform better to a set of social objectives embodied in such principles.

The debate about **rules** versus **discretion** in the area of **macroeconomic policy** has been of a different nature. The argument for rules has evolved over time, from a focus on the **lack of knowledge** of policymakers to a focus on **credibility** and the **time inconsistency** of optimal policies. Governance by rules originates in the lessons drawn from the literature on economic policy evaluation (see Section 2.2) and on time inconsistency (see Section 2.3). Robert Lucas's critique of traditional policy evaluation led him to advocate comparing policy **rules** rather than policy **acts**. His main point was that only the **results of rules** can be rigorously **compared** (Lucas, 1976). Kydland's and Prescott's preference for rules over discretion rested on a different argument, namely that "selecting the decision which is best, given the current situation, [...] either results in **consistent but suboptimal** planning or in economic **instability**" (Kydland and Prescott, 1977).

We will see in Chapter 4 how the **rules** were first tried with **monetary**

policy, and will see in Chapter 3 how they were introduced later in the **budgetary field**.

Rules at the present time are **less rigid** than those proposed in the early **monetarist** writings, and they aim at combining medium-term discipline with a degree of discretion by defining an **explicit policy strategy** but retaining a **degree of flexibility** for the policy in cases of unexpected developments.

2.7 Conclusion

We have illustrated the **limits** that constrain economic policies in the context of the actual **imperfect world**. To be **cautious** for the correct choices of public policies must be the **rule** to be followed. To determine what economic policy **can achieve** in the imperfect contextual settings, and on what **conditions** it can reach its goals, is the **objective** of the chapters that follow.