1. CONCEPTS

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This first chapter of the programme provides an introduction to the main themes of **economic policy analysis**. It does not enter into the analysis of the specific policy domains and issues that are the topics of the following chapters, except by way of illustration.

We start in **section 1.1** with a discussion of the **various approaches** to economic policy which could be adopted. In **section 1.2**, we discuss the arguments for and against **public intervention**, both from a micro- and macroeconomics points of view. In **section 1.3**, we examine some **decision criteria** for the **evaluation of economic policy choices**.

1.1 A Primer on Economic Policy

1.1.1 Three alternative approaches

The economist can adopt different approaches with regard to political decisions: (1) she can merely study the effects of public choices on the economy (**positive economics**); (2) she can seek to influence the public choices by making recommendations based on her expertise (**normative economics**); or (3) she can take political decisions as a topic for research and attempts to identify and explore the determinants of economic policy decisions (**political economy**).

It is relevant to observe that these three approaches coexist in today's economics.

a) Positive economics

In positive economics, the economist takes the point of view of an **outside observer** and aims at determining the channels through which public decisions affect private behaviour. For example, she examines the effects of a tightening of monetary policy, an increase in public expenditure, a tax reform, or a new market regulation. Economic policy choices are regarded as entirely **exogenous**, meaning that they impact on economic variables such as prices, output, or employment **without being influenced by these variables**.

b) Normative economics

The second approach is called normative economics. The economist here adopts the posture of an **adviser** to a supposedly Prince (Government) and examines which set of decisions can best serve explicit public policy purposes, such as reducing unemployment, improving the standard of living, or safeguarding the environment. The public decision-maker is regarded as a **social planner**, and the economist as a engineer who tells him how to select adequate means for reaching certain ends.

Normative economics relies on the knowledge base of positive economics in order to assess the effects of different possible decisions. However, it also requires a **metric** (another instrument) which provides comparisons between alternative situations.

Furthermore, normative economics frequently implies giving up the **first-best** solution that would be reached in the **absence** of informational, institutional, or political constraints for a **second-best** which is one that respects those constraints.

For the reasons given here, normative economics have to overcome difficulties that positive economics does not need to address.

c) Political economics

The third approach is what is called today **political economics** or **political economy**. Like positive economics, the political economy approach refrains from making prescriptions and takes the view point of an **external observer**. However, instead of considering the political decision-makers' behaviour as exogenous, it treats it in the same it treats private agents'

behaviour, i.e. as **endogenous** (determined by the state of the economy itself). **The government is therefore no longer regarded as a *Deus ex machina* that monitors and directs the private economy in the name of the general interest but, instead, as a machine directed by politicians, i.e. by rational players whose behaviour follows specific objectives and faces specific constraints**.

The political economy approach attempts to model the behaviour of governments' agents (technocrats and politicians) so as to determine how the governance and the mandate of these agents influence economic performance.

Political economy does not exclude normative judgments, but it does have implications as regards their scope which depends on **policy regime** (James Buchanan). On this issue, the viewpoint of Robert Lucas is interesting: the choice of an economic policy regime involves **normative** considerations, but the actual economic policy **decisions** are the result of political processes within the framework of this regime. It would therefore be pointless to exercise normative judgment on what must be regarded as **endogenous** variables.

The choice of a regime regarding product, capital, and labour market regulations involves **preferences** and **tradeoffs** between, say, efficiency and equity; economic **interests**, which can differ between, say, incumbents and newcomers; and **representations** (conceptions) of how the economy works, on which various players may disagree. From a knowledge perspective, it is therefore important to understand these disagreements, to identify the economic interests involved, and to clarify the nature of the disagreements. From a policy perspective, recognising and explicitly taking into account the intellectual and political environment of public decisions is as necessary as determining what is the first-best solution. **Political economy is then essential both from a positive point of view (to understand why economic policy does not achieve its objectives) and from a normative one (to evaluate the chances of success of various reform and intervention strategies)**.

Summarising, positive economics, normative economics, and political economics do coexist, and the modern approach of economic policy draws on all three methods. Positive economics remains necessary to the understanding of the likely effects of public decisions. Normative economics poses the issue of policy choices and addresses the trade-offs between these choices. However, because of their own limits, they are increasingly **supplemented** by political economics.

1.1.2 What do policymakers do?

Economic textbooks generally expand at length on economic structure and behaviour but they tend to represent policymaking in a very sketchy way. They frequently assume that a single agent – the government – has sovereignty to decide to increase spending, cut taxes, raise the interest rate, manipulate the exchange rate, or introduce a minimum wage. However, the actual situation is much more complex and diverse.

The **main tasks** of **economic policymakers** can be grouped into **six categories**:

1. **Set and enforce the rules of the economic game**. Economic legislation provides the framework for the decisions of private agents. Enforcement covers competition policy and the supervision of regulated markets such as banking and insurance. More examples could be given.
2. **Tax and spend**. Budgetary decisions affect households' and firms' income and behaviour through taxation and social insurance; they affect productivity through infrastructure, research, and education spending; and aggregate demand through changes in spending or overall taxation.
3. **Issue and manage the currency**. The choice of a monetary and exchange-rate regime is one of the most important single decisions a government can make. Defining and implementing monetary policy is the function of the central bank, which is responsible for setting interest rates, maintaining the value of the currency, and insuring that the banking system does not fall short of liquidity, even in the case of a crisis.
4. **Produce goods and services**. This is much less a government responsibility today than it used to be in the first decades after World War II, but most governments are still responsible for providing health care or education services, and some still own public enterprises in sectors like transport or energy.
5. **Fix problems or pretend to**. Ministers are frequently held responsible for a vast array of issues, from financial market turmoil to wage negotiations, company mergers, and plant closures and relocations. Many problems are beyond their means, but they can still try to influence private decisions – or at least pretend to.
6. **Negotiate with other countries**. Governments negotiate with other countries on trade liberalisation and the definition of global rules. They participate in the governance of global and regional institutions. They also participate in informal forums to hold discussions on global problems such as development, global warming, and so on.

In fact, economic policy means different things to different people and nations. Economic policy also means different things in different times. To speak of **economic policy in general** may thus be regarded as audacious. However, there are many common features of economic policymaking across various contexts, institutional setups, and time horizons. Thus they can be apprehended through a simple unified framework.

a) A simple representation of economic policy

To have the understanding of the common features of economic policy, let us start by distinguishing **objectives**, **instruments**, and **institutions**.

Objectives

The **objectives** of economic policy are numerous (and sometimes contradictory). Some examples: improving the standard living of population, achieving full employment, maintaining price stability, reaching a fair distribution of income, alleviating poverty, and many others. They are sometimes explicitly stated in official texts.

It is common in all countries that economic policy has **more than one objective** and is easily given ambitious targets, irrespective of the difficulty or even impossibility of reaching all of them simultaneously.

Instruments

Also the **instruments** are numerous. Traditional ones relate to **monetary policy** (the setting of official interest rates) and **fiscal policy** (the choice of the levels of public expenditure and taxes).

Economic policy is sometimes presented as a combination of these two instruments only. However, beyond them, it can and must rely on a variety of **microeconomic instruments**: regulation, direct and indirect taxes on households and companies, subsidies, social security transfers, and even case-by-case decisions, as for competition policy.

Institutions

Finally, **institutions** affect directly market equilibrium and the efficacy of policy instruments. Perdurable features of the organisation of products, labour, and capital markets (i.e. the bankruptcy code, the rules governing employment contracts, the legislation on takeovers) or of the framework for economic policy decisions (i.e. budgetary procedures, the statute of the

central bank, the exchange-rate regime, the rules governing competition, etc.) are regarded as institutions. This definition includes non-public institutions such as, for example, trade unions, which are private association but affect the functioning of labour markets.

Within this framework, institutions represent a kind of **social capital**. They are not eternal and can evolve, can be reformed, or can disappear, but they have some permanence and can be taken as given for the traditional analysis of policy choices.

b) Economic policy as a succession of trade-offs

Consider a government that targets n different economic variables, such as the unemployment rate, the inflation rate, and the current account (in this case, $n = 3$), and has a specific objective for each of them. The preferences of the government can be summarised by a **loss function** that depends on the **difference** between each target variable and its desired value.

Assume now that the government has p independent policy instruments, i.e. p variables that it can handle directly (for instance, the fiscal balance and the short-term interest rate, in which case $p = 2$). Economic policy then consists in setting the p policy variables such that the **loss function is minimized**.

If $p = n$, then the n policy objectives can all be achieved, because there is an equal number of instruments (see box 1.1). In our example, however, we have $p < n$ and the n objectives cannot be achieved simultaneously, which implies trading off one objective against another one. **More generally, to reach *n* independent policy objectives, the government needs at least an equal number of policy instruments.** This is known as the **Tinbergen rule**.

Governments generally have many objectives but only a limited number of instruments. Hence, trade-offs are part of governments' everyday life. Knowing trade-offs, choices are conditional on their preferences (for instance, how much more wage inequality they stand ready to accept to reduce the unemployment rate by one percentage point).

Box 1.1 Trade-offs and Economic Management – Formal Analysis

A government has n **target variables** $Y_1, Y_2, \ldots Y_n$ represented by a vector $Y = (Y_1, Y_2, \ldots Y_n)$, and n corresponding **objectives**. Its preferences can be

summarised by a loss function L that measures the welfare loss associated with a divergence between the values taken by the target variables Y_i and their objective values $\tilde{Y}_i$:

(B1.1.1) $$L(Y_1 - \tilde{Y}_1, Y_2 - \tilde{Y}_2, \ldots Y_n - \tilde{Y}_n)$$

L is a convex, continuously differentiable function with $L(0, 0, \ldots 0) = 0$. There are p independent policy instruments that can be grouped in a p-dimensional vector $X = (X_1, X_2, \ldots X_p)$. With I representing the institutions, the functioning of the economy can be represented by:

(B1.1.2) $$Y = H_I(X)$$

Economic policy then consists in selecting X such that L is minimised, conditional on (B1.1.2).

If $n = p$, then is usually possible to invert (B1.1.2) and find the vector X which allows Y to be exactly at its required target level.

If $n > p$, this is no longer the case, and the government faces a trade-off. In other words, the program leads to choosing values for $(X_1, X_2, \ldots X_p)$ such that, **at the margin**, it is not possible to improve on any of the targets without welfare declining due to a higher divergence on other targets. Analytically, this corresponds to a situation where:

$$dL = \sum_{i=1}^{n} \frac{\partial L}{\partial Y_i} \, dY_i = 0$$

i.e. for any pair (i, j) of target variables,

$$dY_i / dY_j = - \left. \partial L / \partial Y_j \right/ \partial L / \partial Y_i$$

The **marginal rate of substitution** between any two target variables is therefore equal to the inverse ratio of the partial derivatives of the loss function. This formula means that, at the **minimum of loss function**, any improvement in a target variable is (exactly) compensated by a decrease in another one implying thus that the value of L does not change.

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c) Changing the institutions: structural reform

The trade-offs just described are generally reversible. A good example here is the **apparent** trade-off between employment and productivity. In the 1980s and 1990s (and presently), persistent problems in growth and employment in Europe highlighted the **limits** of such economic management. In fact, trading off more jobs for less income per worker is unsatisfactory. In low-employment situation the true objective of economic policy should be to reach **at the same time** higher employment and higher productivity levels. This requires reshaping institutions: for example, stronger incentives to remain active and take up jobs, more investment in education, and an environment that fosters innovation.

In a more general way, **structural reforms aim at modifying economic policy trade-offs by changing the institutions**. A study by the International Monetary Fund (2004) defines them as entailing "measures that, broadly speaking, change the institutional framework and constraints governing market behaviour and outcomes". To see what this means, let us take the simple case where there are two objective (target) variables Y_1 and Y_2, with only one instrument X to reach them, and therefore:

(1.1) $$Y_1 = h_I^1(X), \quad Y_2 = h_I^2(X)$$

where I represents the institutions. The instrument X can be substituted in the two relations, giving an explicit formulation of the trade-off between Y_1 and Y_2, conditional on the institutions:

(1.2) $$g_I(Y_1, Y_2) = 0$$

Structural reform aims at substituting institutions J for institutions I to improve the trade-off between Y_1 and Y_2 (see Figure 1.3 in the recommended manual, p.19).

It is common, but **inaccurate**, to assimilate structural reform and supply-side policies. Making the central bank independent, choosing a new currency regime, or adopting a framework for budgetary policy are true structural reforms because they aim at improving existing trade-offs between various objectives. Contrarily, a change in tax rates, which is **mostly** a supply-side measure, does not have the character of a structural reform.

However, many of the structural reforms undertaken since the 1980s in advanced economies were admittedly of a supply-side nature. For example, widespread reform of capital markets through the elimination of credit controls, the removal of many deposit regulations, and the liberalisation of capital flows had major consequences.

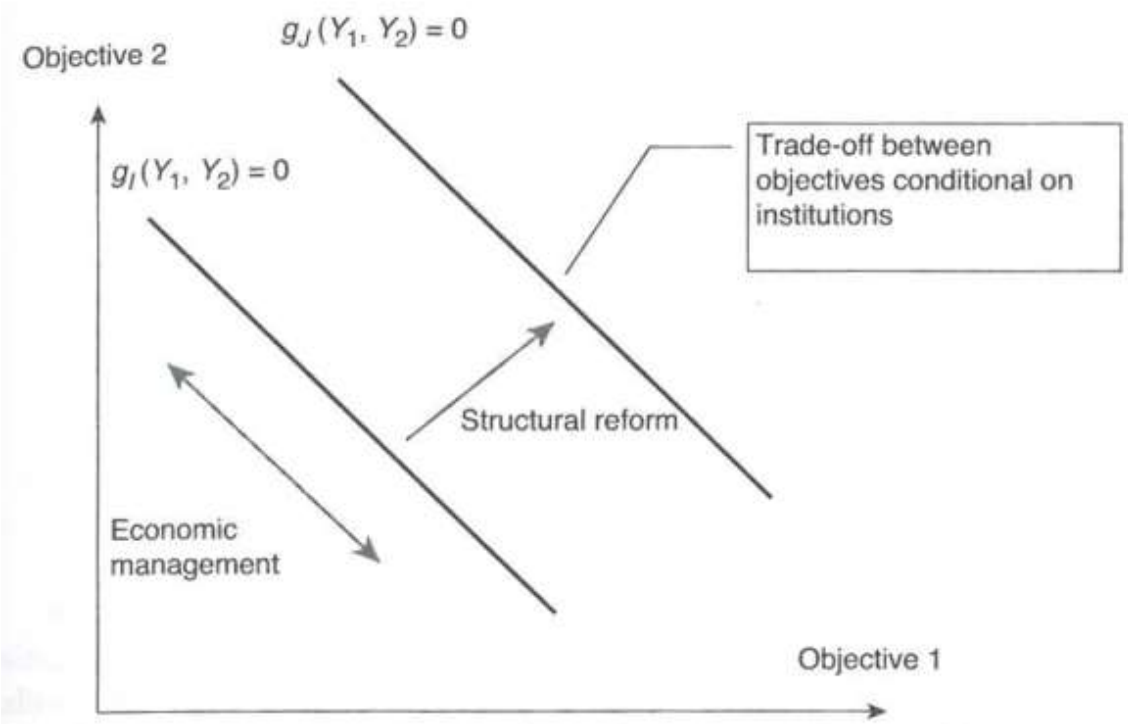

Figure 1.3 From managing trade-offs to reforming institutions: An illustration.

Structural reforms are often viewed as having **negative short-term but positive long-term effects**. The most telling example of such effects was, at the end of the twentieth century, the transition of the former planned economies of Central and Eastern Europe and the former USSR to market economies

Such **intertemporal effects** necessarily raise **political economy issues**. For a democratic government facing a re-election constraint, undertaking reforms that will antagonise voters and only yield benefits after its term expires can be a recipe for failure. How to surmount this political economy constraint is a major theme for research.

1.2 The Whys and Hows of Public Intervention

Having presented what policymakers do and how economic policy work, let us move to a common question: why is public intervention needed?

what are the objectives of public intervention? Here economic theory provides rather precise answers. Let us see how.

1.2.1 The three functions of economic policy

Musgrave and Musgrave (1989) have distinguished three essential functions of budgetary and, more largely, economic policy:

a) **Allocation of resources** (i.e. their assignment to alternative uses). This covers public interventions aiming at affecting the quantity or the quality of the factors (capital, unskilled and skilled labour, technology, land, etc.) available for production, and their sectoral or regional distribution. More generally, policies aiming at the provision of public goods such as infrastructure building or environmental preservation are included in this category.
b) **Macroeconomic stabilisation** in response to **exogenous shocks** that move the economy away from **internal balance** (defined as full employment together with price stability). This covers policies aiming at bringing the economy closer to balance – a role that Keynesian economists usually assign to monetary and budgetary policies.
c) **Income distribution** between agents or regions. This covers policies aiming at correcting the primary distribution of income. Progressive taxation policies and social transfers are key instruments to this end.

Redistribution has a different scope that either **allocation** or **stabilisation** since it addresses the distribution of income within society. However, allocation and stabilisation may seem to pursue similar goals. The distinction between them directly refers to the distinction between long-term output growth and short-term fluctuations around the trend: allocation policies aim at increasing the maximum level of output that can be reached without creating inflation – what is generally called **potential output** while stabilisation policies aim at minimising the divergence between actual and potential outputs, known as the **output gap** (see Figure 1.5 and Box 1.2 in the manual, pp. 21-24).

This distinction between three main functions is widely used in policy discussions. However, as we will see, there are many reasons why these three functions frequently interfere with each other, making economic policy choices less clear-cut than in this simple presentation.

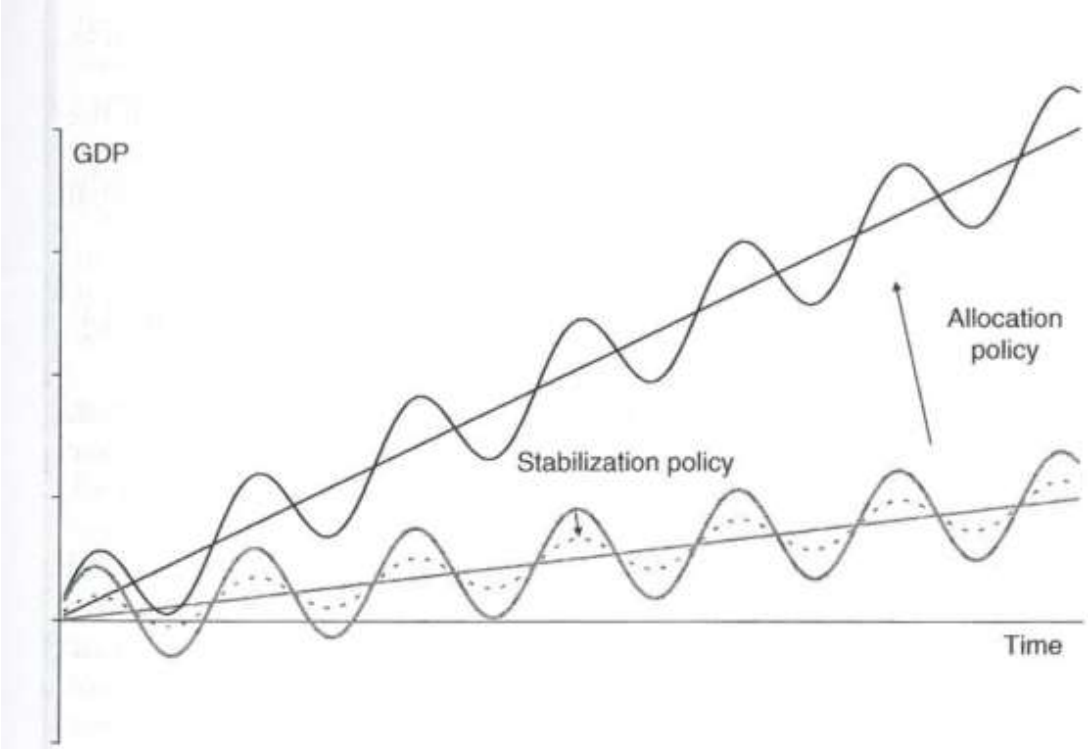

Figure 1.5 Stabilization versus allocation policies.

Box 1.2 Supply, Demand, and the Output Gap

In a simple model of the **supply side** of the economy, **potential output** is determined by the factors of production (mainly labour supply and the capital stock), as well as by the factors affecting productive efficiency. A standard representation is:

(B1.2.1) $$Y_t = F_t(K_t, N_t)$$

where Y is production, K is the capital stock, N is the employment, and F is the production function. K and N depend on time, so does F as improvements in technology allow more to be produced with the same amount of factors.

In the short-run K can be considered exogenous, so $K_t = \overline{K}_t$. Let us define $\overline{N}_t$ as the employment level that is reached when unemployment rate is at a level $\bar{u}_t$ called the **equilibrium rate of unemployment**. $\bar{u}_t$ cannot be zero, because at each point in time a fraction of the labour force is looking for a job. Its level depends on the efficiency of country's labour market institutions. So if $\bar{L}_t$ is the labour force,

(B1.2.2) $$\bar{N}_t = (1 - \bar{u}_t)\bar{L}_t$$

Potential output can thus be defined as:

(B1.2.3) $$\bar{Y}_t = F_t(\bar{K}_t, \bar{N}_t)$$

It is **exogenous** in the short-term but **endogenous** in the long-term as the capital stock adjusts.

The **output gap** can thus be defined as the difference between the demand-determined output Y_t and the supply-determined potential output $\bar{Y}_t$. It is generally measured as a percentage of the potential output, so:

(B1.2.4) $$output\ gap = {Y_t}/{\bar{Y}_t} - 1$$

A **negative** output gap means that production is below potential, implying non-equilibrium (or involuntary) unemployment. A **positive** output gap means that production is above potential. This may look strange if one thinks of the capital stock and the available labour force as a physical constraint. However, there are ways to adjust to a higher level of demand. For example, a standard response to excess demand is to have options in due course of time; or older equipment that was regarded as obsolete but had not been discarded can also be put to use again. However, such responses tend to be costly, implying a rise in the marginal cost of production and therefore a rise in aggregate price level.

1.2.2 Why intervene?

For economists, public intervention requires justification. This is because the **first theorem of welfare economics** establishes that any competitive equilibrium is a **Pareto optimum**. In other words, it is not possible to improve the welfare of an economic agent without reducing that of another one.

This is both a very **powerful** and a very **limited** result. It is powerful because if public intervention can improve the income of some agents only by decreasing that of others, this immediately raises the question of the moral basis and the acceptability of such an intervention. However, it is limited for two reasons. First, the Pareto criterion is silent on the distribution of income and wealth between economic agents (any distribution can be considered Pareto-optimal). Second, the conditions for

this result to hold are very strict ones. In fact, a **true competitive equilibrium** requires, inter alia, strictly competitive markets, the existence of a complete set of markets that allows the carrying out of transactions on all goods at all periods, and perfect information. Challenge, one of these hypotheses, and there is justification for public intervention.

a) Allocation

As for allocation, arguments are microeconomic in nature. Government intervention is justified when it is able to remedy market failures, i.e. to improve the efficiency of resource allocation in comparison to the market outcome. The most frequent reasons for such failures are the presence of **monopolies**, **externalities**, and the **existence of public goods**, **information asymmetries** between agents, **market incompleteness**, or **agent short-sightedness**.

These arguments, which have been extensively studied in microeconomics and public economics, traditionally provide **solid justification** for regulatory policies, corrective taxation, the public provision of a number of goods and services, or public subsidies (see box 1.3)

Box 1.3 Microeconomic Arguments for Public Intervention

Public intervention has justification when one of the hypotheses of the first theorem of welfare economics is violated.

Competition is Not Perfect

Profit maximisation by a company implies equalising the marginal cost (of producing an additional unit) and the marginal income (from selling an additional unit). Under perfect competition, the marginal income is the market price of the product and profit maximisation leads to a social optimum. If a firm holds a monopoly position or, more generally, has some **market power**, it takes into account the downward slopping demand curve for its product and the fact that its marginal income is less than the market price. In comparison with the perfect competition outcome, this leads the firm to reduce quantities sold and to increase the price, to the detriment of the consumer.

Public intervention can aim at restoring perfect competition conditions (for example, by blocking mergers leading to excessive market power). However, it is not always desirable to eliminate monopolies: when production involves **high fixed costs** or, in general, when there are **increasing returns to scale**, larger firms or even monopolies are more efficient than smaller ones. This is what is meant by **natural monopoly**. For example, it is more efficient to have the railway network managed by a single entity than by several, but this implies regulating its behaviour or subjecting it to potential competition (via granting it a fixed-duration contract only) in order to prevent it from exploiting its monopoly power.

Economic Activities Have External Effects

In the presence of **externalities**, the **private cost** of a resource or the **private benefit** from production does not coincide with the **social cost** or the **social benefit**. For example, this can be the case for a firm which consumes a natural resource such as clean water, or whose production technique spoils the environment, but which does not take the corresponding social costs into account in its profit maximisation. In such cases, the firm tends to **over-consume** natural resources and to **over-produce**. The reverse occurs when the externality is **positive** (i.e. if production has favourable non-marketable effects). For example, a research-and-development-intensive firm that establishes a facility in an area tends to exert positive effects on other firms through the development of local suppliers and subcontractors, the creation of a more liquid market for skilled labour, and links with university departments. However, those positive externalities are not taken into account in the decision by the firm to open a new facility, which leads to a **sub-optimal** number of such facilities. It is also the high negative externalities from the default of large financial institutions that justify rescuing banks in a financial crisis. The risk is that a bank default would make other financial institutions insolvent, thereby triggering a chain reaction.

Environmental economics largely rests on this type of argument, both as regards local pollution and global pollution. The **first-best economic response** generally consists in letting agents **internalise externalities** by taxing the negative ones and by subsidising the positive ones.

As regards the risk of letting a major financial institution default on its liabilities, the dramatic consequence of the Lehman Brothers bankruptcy in 2008 and the rescue of a series of other US and European banks in the following months illustrate the **importance of state intervention**.

Information is Imperfect

The **optimality** of the competitive equilibrium rests on a **perfect information** hypothesis. If information has a **strategic character** and if agents use it to their benefit, the market outcome is no longer necessarily **Pareto-optimum**. For example, Stiglitz and Weiss (1981) showed that when the creditor (bank) has less information than the debtor (company) on the risk incurred in lending, he or she cannot accurately price the risk in setting the interest rate on the loan. To prevent the pricing of credit without regard to debtor-specific risk resulting in selecting the riskiest borrowers (a phenomenon known as **adverse selection**), it is optimum for the creditor to ration credit, which is socially inefficient.

Imperfect information is **widespread** in an economy and **also affects policymakers**, who rarely enjoy an undisputed informational advantage. **Public policy** can foster the dissemination of market-relevant information, either in the form of aggregate statistics or through standardising the publication of company-specific information. Accounting and financial reporting standards, for example, are intended to ensure that financial markets benefit from undistorted information. However, this not an easy task to accomplish.

Markets Are Incomplete

The **optimality of the competitive market equilibrium** hinges on the existence of markets for all necessary transactions at all relevant horizons. When such markets are missing, **Pareto-optimality** is **not guaranteed**. For example, borrowing to finance one's education is made difficult by the absence of collateral, on which the loan can be guaranteed, and by the fact that the choice of a professional specialisation is hardly reversible. The **near-absence** of a market on which young people could borrow to finance investment in their own human capital tends to limit access to higher education, especially in developing countries. In the absence of **public intervention,** private investment in human capital is therefore **sub-optimal**, which harms growth. **State intervention** in this case shows to be relevant.

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b) Stabilisation

While **public intervention** in the name of **allocation** aims at altering the **long-run market equilibrium**, intervention carried out in the name of

stabilisation is intended to **limit short-term deviations** from it. The motive remains the search for **efficiency**, but it is not the possible inefficiency of the equilibrium that matters, but rather the **efficiency loss** resulting from not reaching it.

Keynes gave **two reasons** for such intervention. The first one is what he called **animal spirits**, the instability of private behaviour under the influence of **spontaneous expectations** leading to excessive optimism followed by excesses of pessimism.

Second, Keynes argued that **nominal rigidities** of wages and prices stop the self-correcting market mechanisms from operating and moving the economy back to equilibrium. Especially, **nominal wage rigidity** implies that the **real wage** does not fall in a downturn, preventing the restoration of full employment.

In the eyes of Keynes, the **combination** of private instability and ineffective self-correcting mechanisms provided a justification for relying on **counter-cyclical** monetary and fiscal policies to smooth out economic fluctuations and prevent economic depressions. As illustrated in Figure 1.5 (manual, p. 21), such stabilisation policies are **distinct** from allocation policies, which aim at making the economy more efficient, and hence at raising the growth rate of the economy in the long-run.

The **arguments for stabilisation policies** have since its inception been a matter for theoretical and empirical **disputes**, especially from the 1970s to the late of 1980s. The theory of **real business cycles** developed in the 1980s was a conceptually coherent attempt at explaining fluctuations by **shocks** to the production technology and **rational responses** to them by maximising agents – thus without relying in any significant way on irrational behaviour or nominal rigidities. However, in spite of the considerable literature devoted to this approach, its empirical relevance for the explanation of short-term fluctuations remains disputed.

Of the two explanations offered by Keynes, the first – the notion that economic agents are driven by **animal spirits** rather than by cool-headed rational calculation – was and remains in **contradiction** with the basic assumptions of economics. In other words, the animal spirits assumption remains **alien** to the methodological foundations of the economic profession.

The argument based on **nominal rigidities** is theoretically closer to mainstream economics, provided that an explanation is given for why and

how such rigidities affect economic outcomes. The standard response long remained the somewhat **ad-hoc argument** that agents enter into **contractual arrangements** that involve nominal rigidities. It was only in the 1980s that Keynesian economists provided convincing **micro-founded explanations** for nominal rigidities by showing that the gain to the microeconomic agent from changing prices **in response** to a shock can be much smaller than the corresponding macroeconomic benefit [discuss this point: in this case, if for example both prices and nominal wages decrease, then real wage may most probably decrease which will imply a loss for the microeconomic agent; thus nominal wage tend to be rigid.].

Where **contemporary macroeconomics** has been **successful** is in providing a **framework** for thinking about the **role of stabilisation policy**, and for distinguishing between situations where it is **effective** and situations where it is **ineffective**.

This **approach** is based on a **simple aggregate supply-and-demand framework** that depicts the relationship between potential output and the product price, on the one hand, and between aggregate product demand and the product price on the other. In the **short-run**, **aggregate supply** depends positively on the product price, as depicted by the aggregate supply curve (see Figure 1.6, manual, p. 33), because in the presence of nominal rigidities [of wages] a rise in the price level reduces the **real wage** and makes production more profitable [notice that we are thinking in terms of aggregate levels of variables]. In the **long-run**, **aggregate supply** is **fixed** as unemployment is at its equilibrium level [and capital is adjusted optimally], so the curve is vertical. **Aggregate demand** depends negatively on the product price, as a rise in prices reduces the real values of nominal assets [and income] and thereby reduces consumption. The two relationships are depicted by the aggregate supply and aggregate demand curves in Figure 1.6.

In this context **two distinctions** need to be made. The **first one** is between variations of the quantity supplied or demanded in response to a **change in the product price** (a move along the supply-and-demand schedules in Figure 1.6) and **exogenous perturbations** (movement of the whole schedules), interpreted as **shocks** to the economy. The **second one** is between **shocks to supply** and **shocks to demand**. **Supply shocks** and **demand shocks** have become part of every macroeconomic policymaker's toolkit.

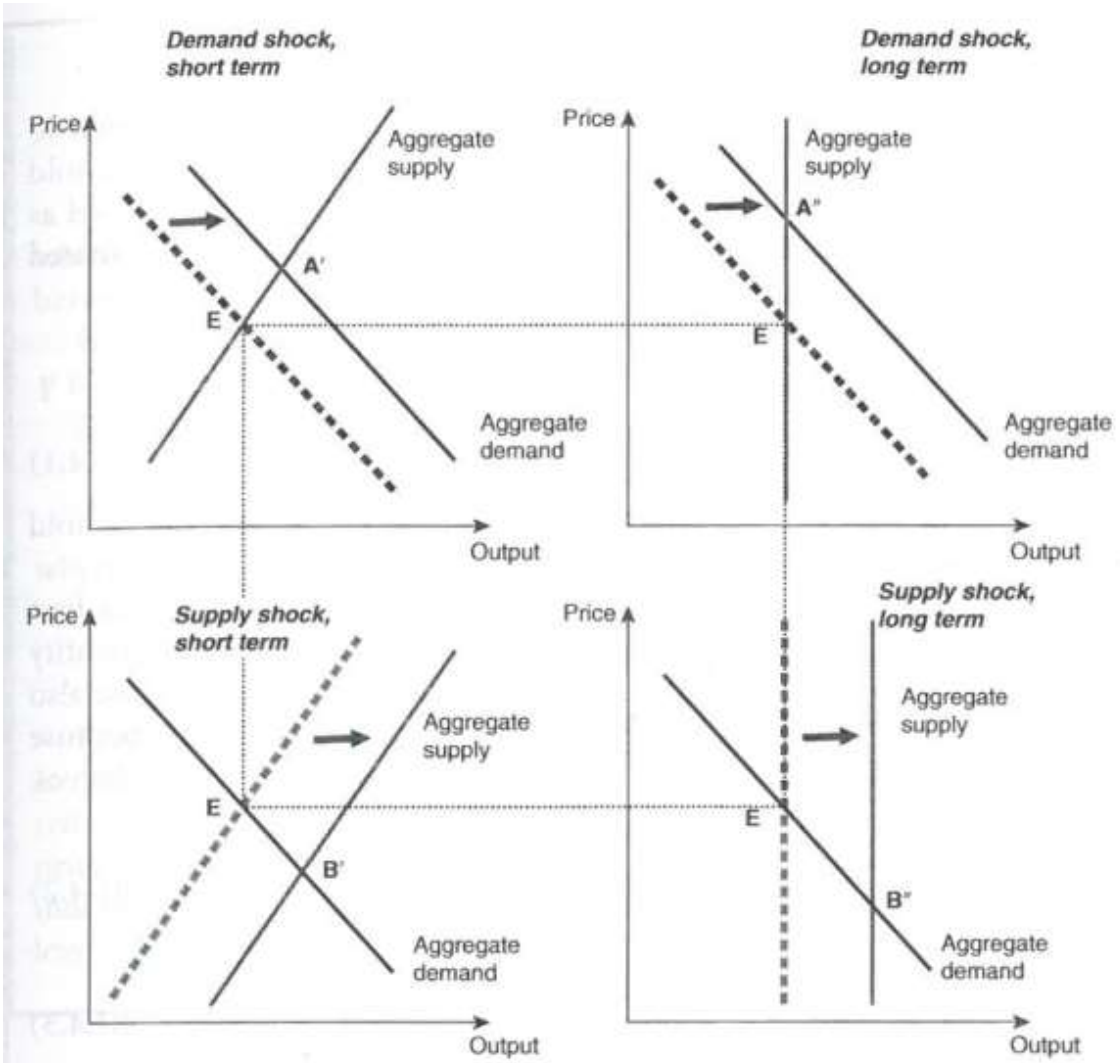

Figure 1.6 Supply and demand shocks in an aggregate supply–aggregate demand framework.

Although both kinds of shocks may result in a reduction or a rise in output, they hint **different policy responses** and it is important to distinguish one from the other. This can be understood through the formal representation of the balance between aggregate supply and aggregate demand represented in Figure 1.6.

A **positive demand shock**, in the **short-run**, shifts aggregate demand to the right, resulting in moving from the initial equilibrium *E* to *A'*, characterised by both a higher output and a higher price. A **positive supply shock**, however, shifts aggregate supply to the right, resulting also in a higher output but a lower price (see point *B'*). So the simple criterion for distinguishing demand from supply shocks is that for a similar effect on output they result in opposite changes in the price.

In the **long-run**, the **aggregate supply curve** becomes **vertical**, because capital adjusts fully and unemployment is supposed to be at its equilibrium level. The reasoning is the same except that a **positive demand shock** now **exclusively** results in a price rise as the equilibrium moves from *E* to *A''*. For a **supply shock**, the result is **qualitatively unchanged** as the equilibrium moves from *E* to *B''*.

The **end result** is that a **demand shock** either does not affect output [long-run] or moves it in the same direction as price [short-run], while a **supply shock** either does not affect price [in the long-run, capital may not adjust and unemployment rate may not change to new levels] or moves it in the opposite direction to that of output [short- and long-run].

This **framework** helps to understand **the role and the limits of stabilisation**. A **monetary or fiscal impulse** affects the demand curve and can therefore offset a demand shock. However, a fiscal or monetary impulse does not affect the aggregate supply curve [changes in prices only imply the movement along the curve], so they are **ineffective in response to a supply shock**. If the supply curve shifts to the left in response to a rise in the relative price of oil (which makes other products less profitable and therefore reduces supply), pushing aggregate demand to the right necessarily results in a further increase in the price level and is **fully ineffective in the long-run**. Therefore, demand policies are only effective to some categories of shocks.

As evident in Figure 1.6, the **effectiveness of demand policies** depends on the slope of the short-term supply curve. So the choice of a policy response depends both on the **identification of shocks** and on the underlying **properties of the economy**.

However, this **distinction** is **more delicate** than it seems, because the structure of the economy is not known with certainty. In the less-than-perfect information world that we live in, economists generally represent the structure of the economy by a **model**, in other words, by a series of relationships between **explained variables** (left-hand-side) and **explanatory variables** (right-hand-side), some of the latter being exogenous. To take a very simple representation, let a function *F* relates right-hand-side variables *X* to left-hand-side variables *Y*:

$$Y = F(X)$$

An observed change in the value of the *Y* variable can thus result from: (1) a change in the value of the *X* variables; or (2) a change in, or a perturbation to, the *F* relationship between *X* variables and *Y* variables.

In **real time**, policymakers are rarely able to separate **credibly** the former from the latter. For example, they observe a rise in the price level but do not know whether it represents a normal response to shocks to input prices (e.g. oil) or results from an accelerated inflationary development.

A standard approach is to start from observation and estimate equations like $Y = F(X)$ with **econometric techniques**. For example, household consumption can be written as:

$$C_t = a_0 + a_1 R_t + a_2 \frac{\Omega_t}{P_t} - a_3(u_t - \bar{u}_t) + \varepsilon_t \tag{1.4}$$

where *C* is consumption, *R* is real income, Ω is nominal wealth, *P* is price, *u* is the rate of unemployment, *t* is time, and *ε* is the residual from the estimation (the error term that captures the difference between fitted and actual values of *C*. In principle, a change in *C* can result from:

- Changes in the values of the explanatory variables;
- A temporary shock to the equation, thus a change in *ε*, or
- A change in the a_i coefficients representing a durable modification of the structure of the economy.

Each of these three factors may call for a different policy response, if any.
Beyond these discussions, the **effectiveness of macroeconomic policy** has been the subject of an equally **fierce controversy**. In this regard, it must be noted that **scepticism** toward active stabilisation policy remains widespread, especially in continental Europe.

c) Redistribution

As regards **redistribution**, the **central argument for intervention** is that the **equilibrium** market-determined distribution of income does not necessarily ensure **social justice**. The **prime motive** for intervention here thus stems from a **pure equity concern**.

A **normative criterion** is generally required to decide what constitutes an improvement in equity. Which criteria can be used to compare two income distributions is the topic of the next section. What needs to be made clear immediately is that an **improvement** in equity can take place at **constant**

efficiency, can be traded off against a **reduction** in efficiency, or can trigger an **increase** in efficiency. This happens when the government is able to modify the distribution of income through **lump-sum transfers** that do not affect economic incentives. **Trade policy** is a case in point: a **classic result** from **trade theory** is that, under fairly general assumptions, free trade improves **overall efficiency** and yields gains to all participating countries. However, the **same trade theorems** show that there are **losers** in the process. For example, **labour loses** and **capital wins** in a capital-rich country that opens to trade with capital-poor countries. Nevertheless, the overall gain from trade allows the government to **redistribute** the benefits from capital to labour in order to ensure that **free trade is Pareto-superior to protection**.

In **practice**, however, lump-sum transfers are almost impossible to implement. Assuming again the case of free trade, in general governments do not have full ***ex-ante*** **information** on the effects of liberalisation in order to determine the exact policy of taxation and redistribution. For this reason, **usually** taxes and transfers change **economic incentives** and affect the market equilibrium. **Equity cannot thus be separated from efficiency anymore**.

This is why redistribution often involves an **equity-efficiency trade-off**. The more income is redistributed, the higher is the efficiency loss, because both taxes and transfers reduce the quantity of production factors (labour and capital). However, the **opposite situation** also exists and redistribution can in some cases **improve** efficiency. For example, public policies aiming at ensuring access of the poor to education and health care frequently yield efficiency gains by improving the productivity of the labour force.

1.3 Economic Policy Evaluation: Decision Criteria

To evaluate economic policy choices, and especially to compare alternative policies, precise **criteria** are necessary. Here we ask: can a **single criterion** be used for efficiency, stabilisation, and equity? In theory this conceivable, but in practice economic policy choices are generally represented as implying **trade-offs** between different dimensions.

a) A single objective?

The most general purpose of economic policy is the satisfaction (or rising of **utility**) of resident households. Naturally, the utility of each household includes the consumption of goods and services, the amount of leisure (and therefore, by difference, the quantity of labour supplied), and the quality of the environment. A number of other variables, which influence the utility of a household, can also be considered.

For consumer *i* utility can be written in a very general formulation:

$$U_i^t = U(C_{i1}^t, C_{i2}^t, \dots C_{in}^t;\ N_i^t;\ E_i^t;\ \emptyset^t) \tag{1.5}$$

where C_{ik}^t $(k = 1 \dots n)$ is the amount of good *k* consumed by household *i* at time *t*, N_i^t is the quantity of labour supplied by household *i* in period *t*, E_i^t is a vector of variables representing working conditions (intensity of effort, painfulness ...), and $\emptyset^t$ is a vector of variables representative of the quality of the environment.

Instantaneous (static) utility is, however, insufficient. Based on such a criterion there would be no reason to invest (since **investment** increases the quantity of goods and services available for future consumption but **reduces** current consumption). An **intertemporal** approach is therefore needed. This requires defining a **discount rate** ρ in order to aggregate utility over-time:

$$U_i = \sum_{t=0}^{\infty} U_i^t/(1+\rho)^t \tag{1.6}$$

The intertemporal utility U_i of consumer *i* is thus the **present value** of her future utilities discounted at rate ρ. The utility U_i indeed brings into play the **future availability** of goods and services. This **criterion** can be used to assess the **desirability of structural reforms** (see box 1.5): it allows addressing the trade-off between present and future consumption. The same criterion can be used for assessing the **cost of policies** that fail to keep the economy at long-term balance.

Box 1.5 Structural Reforms and Intertemporal Trade-offs

Structural reforms generally aim at **medium-term** effects. However, they also have a **short-term** impact. It can be **positive** (a tax reform often stimulates demand, especially if it involves tax cuts) or **negative** (the

announcement of a future pension reform creates concern about the future, the reforms itself leads households to re-examine their expenditure plans and can reduce consumption). Therefore, structural reform often involve **intertemporal trade-offs**.

From a **public economics standpoint**, the **decision criterion** should be the present value of the net benefits from the reform. Thus, if V_t is the net increase in utility in period t of a reform carried out in period 0, a **criterion** for undertaking this **reform** is:

(B1.3.1) $$V = E(\sum_0^\infty {V_t}/{(1+\rho)^t}) \geq 0$$

where E is the expectation operator and ρ is the discount rate. V obviously depends on the discount rate chosen to compare benefits over-time. In public economics, it is the same as for any choice of investment.

From the **decision criterion principle**, it must be noted that much depends on the choice of the discount rate ρ: A **high discount rate** introduces a bias toward the short-term and immediate consumption; a **low discount rate** brings into play the welfare of future generations.

The **intertemporal utility function** introduced above is of a **single** household (supposedly representative). So the next step is to **aggregate** the utilities of heterogeneous individuals. This type of aggregation raises difficulties: Must the utility of all agents be equally weighted? Can the well-being of some be reduced to increase that of others? These questions have a long history in normative economics.

The **Pareto criterion** – according to which a policy improves upon the status quo if it increases the utility of at least one individual and does not reduce of any other – only makes it possible to compare a **limited set** of situations and policies. Figure 1.7 explains why. Let us consider two individuals 1 and 2, represent their respective utilities on the X and Y axes, and suppose that the AF locus gives all possible combinations of their respective utilities. According to Pareto criterion, C is superior to any situation on AC, and E is superior to any situation on EF, because moving to the North-East improves both utilities simultaneously. But there is nothing we can say about the points located on EC.

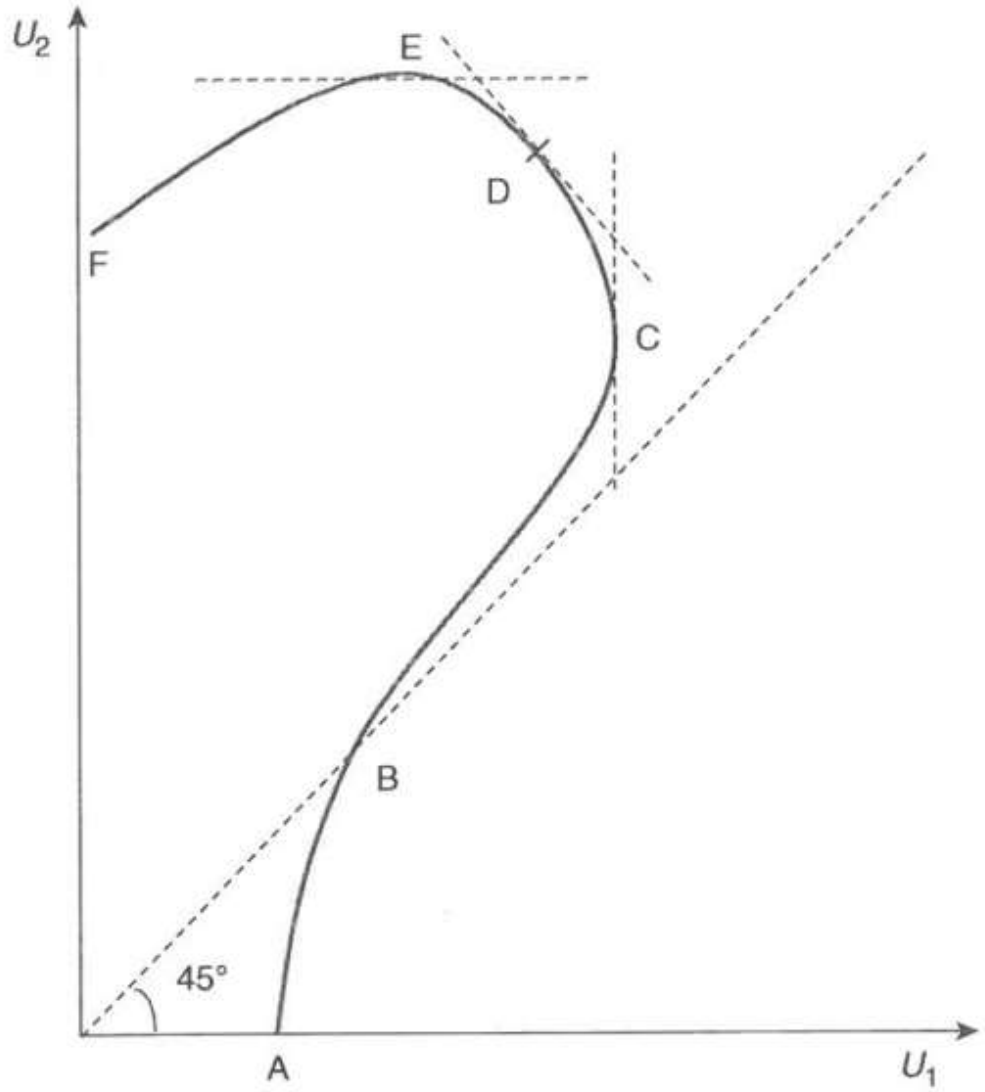

Figure 1.7 Individual utility and social choices: An illustration.
Source: Taken from Atkinson and Stiglitz (1980).

Choice then requires a **social welfare function**:

(1.7) $$\Gamma(U_1, U_2, \dots, U_m)$$

where 1 ... m represent the individuals or households. This makes it possible to **compare** two income (utility) distributions and to decide which is more desirable. The most usual **social welfare functions** are:

Benthamian function: $\Gamma = U_1 + U_2 + \cdots + U_m$

and

Rawlsian function: $\Gamma = Min\ (U_1, U_2, \ldots, U_m)$

The first function assumes that the distribution of utilities across individuals is of no importance and that only the **aggregate utility** matters. This means that the best point in the Figure 1.7 is *D* [where **marginal utilities** of individuals are equal] and thus where the **maximum aggregate utility** is reached. Notice that at this point the corresponding distribution of utility across individuals is uneven.

Thos who value **social justice** need a **more equitable criterion**. Strict equality would imply choosing point *B*, which is not Pareto-optimum. But should simultaneous increases in the utility of both agents be rejected, only because they would not be equally distributed? A **more satisfactory criterion** (first proposed by John Rawls) is to seek the **maximisation** of the utility of those who have the **least** of it. This **Maximin** principle leads to choosing the point *C* where utility of the least-favoured individual is maximum.

It is therefore **conceptually** possible to assign to economic policy a **single objective** that includes the **three motives** for public intervention: allocation, stabilisation, and redistribution. This requires choosing **ex-ante** an **appropriate** social welfare function. It is unlikely that a society would be able to reach consensus on such a function.

b) Specific criteria for allocation, stabilisation and redistribution

In **practice**, economic policy evaluation relies on separate, conceptually different instruments for allocation, stabilisation, and redistribution assessments. [**See box 1.6, which is not compulsory for the assessment of students**]. [Let us then finalise this chapter by pointing out that the **social welfare functions** of the type presented above are generally used for evaluating **allocation policies**, but most often in a simplified form].

1.4 Conclusion

In this chapter, we have outlined what economic policy aims and which instruments it relies on. But we have not explained why it is a **matter for disagreements**. The evidence is that **economic policy controversies** abound. So why is that reasonable people may **disagree** on economic policy?

This chapter provides some answers or at least some hints. Politicians can first pursue different social welfare functions: they may, for example, hold **contrasting views** about the **desired distribution of income**. Second, they can respond differently when confronted with **trade-offs**, for instance between **equality** and **efficiency**. Third, they may **discount** differently tomorrow's welfare, that is, they may have different **time preferences**. These three dimensions explain the familiar disputes between left-wing and right-wings parties.

Furthermore, disagreements also remain among academics and economists on the **nature** of economic policy. For example, Ravi Kanbur (2001) tried to shed light on the nature of disagreements on **international economic policy choices**. He posits that they can arise from differences in the **level of aggregation** adopted, the **time horizons** considered, and assumptions made on **market structure and power**. This especially applies to the debate between **proponents** and **opponents** of globalisation:

- **Aggregation**
  Proponents emphasise the **aggregate welfare** gains from trade openness, because income redistribution can be corrected by fiscal transfers. However, opponents doubt that such corrective policies will actually be implemented and they fear that the benefits of globalisation will accrue to the few and not to the many.

- **Time horizon**
  Proponents have a **medium-term horizon** of five-to-ten years and they neglect both the very short term and the very long term; opponents insist on **short-term** adjustment costs (in particular for the poorest, which relates to the previous point) and on **long-term** sustainability.

- **Market structure**
  Proponents generally suppose that markets are **competitive** and cleared by prices; opponents underline their **imperfection** and point out that market openness without government intervention has an adverse impact on income.

Although advances in **economic knowledge** have gradually reduced the scope for traditional disputes, **new controversies** have appeared. For instance, the **growth** and **employment** effects of tax policy are a matter for disagreement. Such controversies abound and regularly impact on the policy debate.

In concluding, however, it is worth mentioning that politicians remain free to ignore what economists think is true.