

WHICH ECONOMIC SYSTEM IS LIKELY TO SERVE HUMAN SOCIETIES THE BEST? THE SCIENTIFIC QUESTION

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The purpose here is to establish a framework within which scientists could bring their testimony to the Catholic Church about a highly relevant and much disputed issue. The fate of people very much depends on the institutions which shape societies, and knowledge of this dependence is a scientific question which motivates thought and research. The challenge concerns in particular what scientists can say about which economic system should be chosen.

The testimony discussed here is meant to come from economists and to be addressed to the social teaching of the Church. With this limited scope we shall, first, outline the historical development of the issue; second, describe in broad strokes the main framework within which improvement in scientific knowledge has to be achieved; and third, give some hints about answers to three sub-questions, which are taken as illustrative of what economists discuss.

I. THE STATE OF THE ISSUE

Speaking here of the past development of objective views on our subject will simply serve to remind us of the historical background to the present question and the difficulties which were encountered in producing a scientific attitude towards it. This will be done by four selective glances: at the early history of the literature on the subject; at the hesitations which marked the twentieth century; at the present social teaching of the Church; and finally at a recent message from a few academic economists on how to manage the market economy so as to meet the development objectives of the Third World.

1. *Notes about the early history of literature on the subject*

Explaining and judging the economic system that emerged at the time of the industrial revolution was the main motivation of those intellectuals of the eighteenth and nineteenth centuries who were after a short time called economists. They were striving for objectivity, but they could not meet the standards that modern science would require. Moreover, what will be said in the next part of this paper about the conditions applying today in economics, was already the case to some extent in those times. Only in the last part of the nineteenth century did systematic use of data and rigorous formalisation begin to penetrate the discipline.

However, ideas were progressively taking the shape of theories. Those presented in the main books of, respectively, Adam Smith and Karl Marx, are good examples for anyone who wants to reflect on the positive contents of the two main strands of ideas which inspired the economists of those times.¹ As is well known, the positive assessments which were expressed did not convey the same vision. According to Smith, given the institution of free exchange the pursuit of self-interest leads to a natural order in which prices regulate economic activities and lead to efficient specialisation. According to Marx, capitalism, which had emerged at a particular historical time and provided the most suitable institutional structure of society, was subject to contradictions which would lead to its replacement by another form of social structure. But both Smith and Marx attributed a large role in their respective analyses to the theory of prices.

It was precisely in order to provide the theory of prices with stronger foundations that in the last decades of the nineteenth century a few economists engaged in what was to become a well structured research programme. This programme was pursued even beyond the middle of the twentieth century and resulted in rigorously formalised theoretical models deductively derived from sets of axioms. Such models now serve as inescapable reference points for any serious study of economic systems.

For what will follow we must note that the theory of prices, established in order to provide foundations for studies of the whole economic system, made only informal references to facts. But, mostly for other purposes in economics, a systematic use of statistical data was also needed. Starting in the first decades of the twentieth century, another important research pro-

¹ A. Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, 1776; K. Marx, *Das Kapital*, Band I, 1867, Band II, 1885, Band III, 1894.

gramme was initiated. It later developed into establishing an inductive methodology which sought to be appropriate to the conditions within which quantitative economic knowledge can be reached.

2. Hesitations in the twentieth century

The feasibility of the socialist planning of production and distribution was, by as early as 1900, the subject of heuristic discussions. Socialist thinkers claimed that whatever the market system could do could also be done by intelligent planning, which could even do things better, at least in terms of equity and fairness.

This basic insight became the subject of what was called 'the economic theory of socialism'. The theory used clean mathematical specifications, and in particular the theory of the general competitive equilibrium, for the representation of the market economy, in addition to another somewhat similar model which supported the instinctive perceptions of socialist thinkers. Around 1960, three broad conclusions were drawn from this theory. First, that it is precisely under the conditions which make the market system work best that socialist planning could also work well, and perhaps even better. But, second, that these conditions were not realistic – the theory had neglected a crucial difficulty in our complex economies, namely the pervasive imperfections of information, of private agents, and of governments. Third, that this difficulty was probably even more damaging for economies run by state planning than for market economies.

Ideas were also evolving in the less formalised schools or branches of economics, particularly in those trying to draw lessons from economic history. As a significant example, I may mention here the hopes entertained by many in the immediate post-World War II period, notably by a number of Christian thinkers: with less involvement of the state than was the case in the Soviet Union, economic planning was feasible in democracies. Such an approach, it was thought, could install economic systems which would be more stable, more efficient and more favourable to solidarity than the systems that had prevailed during the inter-war period. Although fewer and fewer economists shared these hopes over the subsequent decades, planning was still considered as a possible option.

In October 1963 the Pontifical Academy of Sciences held a study-week on 'The Econometric Approach to Development Planning'.² It had been

² *Pontificiae Academiae Scientiarum Scripta Varia*, N° 28, vols. I and II, 1965.

organised by the statistician and Pontifical Academician, Boldrini, and was attended by eighteen rather well-known economists, including some who were very involved in planning methods. These economists did not agree with each other fully and the debate was often tense. However, they were able to issue a common 'Final Statement' printed at the end of the proceedings (which, by the way, ran to more than 1200 pages). This statement deals with a number of points, for instance with the role of the then newly-born discipline of econometrics and with useful research directions. But it is indicative of the ideas of the time that the possible comparative advantage of the market system in ensuring efficiency in the allocation of resources is not mentioned in the 'Final Statement'. Just one paragraph comes close to questioning the ability of governments to plan economic development. Its main sentences run as follows:

Our discussions also made clear the need for a better understanding of the capabilities as well as the limitations of various instruments of economic policies which governments can use in the pursuit of their short and long-run goals. Research on the nature of the instruments available has been neglected...This neglect has led to the adoption of goals that could not be attained by means of the available instruments and to overestimating the effectiveness of some instruments. In short, more research is needed into what governments can and cannot do in trying to foster economic development and stability.

In the two last decades of the twentieth century, prevailing ideas moved at an accelerating rate away from confidence in governments' claims to control the economy or even simply to intervene in it. Roughly speaking, the main reason was experience rather than deduction: the failure of Soviet planning became manifest; even in OECD countries people became more and more aware of costly inefficiencies in the operation of the welfare state, and more generally in public economic management; and the internationalisation and globalisation of economies made claims relating to central national direction less and less credible.

3. *The social teaching of the Church*

Although the social teaching of the Church had developed down the ages ever since the Bible, the encyclical *Rerum Novarum* (1891) of Leo XIII marked a revival in Catholic reflection on the socio-economic system. Concerned about the social problems of industrial countries, the

Pope repudiated the two ideologies of liberal capitalism and socialism. Starting from the premise that 'capital cannot do without labour, nor labour without capital', he argued for a return to a Christian environment recognising both private property and the rights of labour, which had to be realized by the social policy of the state in collaboration with trade unions. In *Quadragesimo Anno* (1931) Pius XI went further in suggesting the establishment of a new socio-economic system in which the causes of conflict between labour and capital would be strongly mitigated by the use of a corporative system. The development of Catholic social doctrine continued, thanks in particular to close collaboration, on the one hand, with Catholic social movements, and on the other with experts in the social sciences.

In 1991 the encyclical *Centesimus Annus* displayed the overall benefit to be drawn from the recent emergence of a higher degree of consensus in the academic community of economists when, concluding Chapter IV (the longest of all), the Pope wrote:

Is [capitalism] the model which ought to be proposed to the countries of the Third World which are searching for the path to true economic and civil progress? The answer is obviously complex. If by "capitalism" is meant an economic system which recognizes the fundamental and positive role of business, the market, private property and the resulting responsibility for the means of production, as well as free human creativity in the economic sector, then the answer is certainly in the affirmative, ...But if by "capitalism" is meant a system in which freedom in the economic sector is not circumscribed within a strong juridical framework which places it at the service of human freedom in its totality, and which sees it as a particular aspect of that freedom, the core of which is ethical and religious, then the reply is certainly negative (n. 42).

This is not the place to make even an abridged summary of this rich encyclical, still less, of course, to seek to speak about the whole present social teaching of the Church on economic systems.

4. *A message from scientists about the public management of economies*

Published in 1997 by Clarendon Press, Oxford, for and on behalf of the United Nations, *Development Strategy and Management of the Market Economy* presents and explains the conclusions of a few academic econo-

mists about recommendations to be made for the countries of the Third World.³ Here are two extracts from the short 'foreword':

Public policy discussions should begin with the recognition of the essential role that the markets play in the efficient allocation of resources. International openness, as well as free domestic movement of goods and factors of production, are crucial. Many of the mistakes in earlier development policies arose from an inadequate appreciation of the role of markets. However, in some cases, markets either do not exist or fail to operate effectively – because of imperfect information, structural rigidities, insufficient infrastructure, or far-reaching externalities. Moreover, demands of distributive equity may end up being neglected in market allocations with unequal resource endowments. Deficiencies of these kinds can be particularly pervasive in developing and transitional economies.

Instances of market failure do not imply that the use of markets should be abandoned, or that liberalization and deregulation policies are unnecessary in those economies which have tended to cramp the effective operation of markets. On the contrary they highlight the need for public policies to be informed by rigorous analysis, particularly of the nature and causes of likely market failures. Nor should we assume that governments can always eradicate market failures through intervention. Development experiences point to a wide range of government failures as well, especially when the measures aim at supplanting market signals rather than modifying them appropriately.

After having insisted on the fact that 'development is a long-term endeavour' and that the sustainability of any development process can be endangered by macroeconomic instability, the 'foreword' concludes:

These general ideas served as the point of departure for our examination of the appropriate combination of the government and the market in the construction of development policies. There is much complementarity between these two fundamental components, and it is sensible to think of a partnership between the government and the market in the formulation and implementation of successful development strategies.

³ E. Malinvaud, J.-C. Milleron, M. Nabli, A. Sen, A. Dasgupta, N. Stern, J. Stiglitz, K. Suzumura.

II. CONDITIONS SURROUNDING POSSIBLE IMPROVEMENTS IN SCIENTIFIC ANSWERS

In order to present explanations for the present state of the issue and to suggest how fuller scientific answers might be reached, we shall state here a few propositions about the conditions under which advances in knowledge of the question have to take place.

1. *More than economics is involved*, because, first, the relevant concept of 'the economic system' is broad and concerns legal, political and social institutions besides purely economic ones; because, second, what is meant by 'serving human societies' covers not only economic aims but also achievements with respect to such values as individual liberties and capabilities; and because, third, the range of feasible achievements will depend on such non-economic factors as population, the availability of natural resources, technological progress, political feasibility, the competence and devotion of governments, social cohesion, peace, and so on. Economists are of course aware of these various aspects, but they do not have full competence in dealing with them.

Such being the case, natural scientists might believe that the rational response to what turns out to be a multidisciplinary challenge ought to come from a multidisciplinary research programme. But in actual fact the implementation of such a response is highly problematic because colleagues specialising in other disciplines are seldom keen to enter a programme of that sort. They are not really interested in the purpose of the research; their knowledge is not geared to being useful for the purpose. Take for instance the question of knowing how the diffusion of the new information technologies will interact with the functioning of various economic systems: broad views about the issue are present in the press and known by economists. Would a scientist, an expert in the development of those technologies, bring relevant additional knowledge? Or take the question of knowing what could be the contribution of sociologists to the research programme, which has to come up with positive proposals rather than with radical critiques of whatever happens to exist, a programme, moreover, which stands at an intermediate level between the study of micro social structures and broad universal visions.

The opposite approach, namely for economists to appropriate the study of non-economic aspects and thereby to incorporate non-economic features into their analyses, is followed more frequently: this applies at the present time particularly to the study of political aspects, but it is not lim-

ited to the extension of this domain claimed by some economists. Such an extension is exposed to two dangers. The introduction of non-economic factors may be quite naive. If it is not, economists may rely too much on assumptions and modes of analysis which are more justified at the core of their domain than outside it. For instance, they may overestimate the real scope of cases in which self-interest is the dominant motive behind action.

Whatever the case, a tension will remain between the judgment of economists and what could come from the competence brought by other scientists, a tension which will eventually be fruitful only if it actually manages to stimulate interchange.

2. Social scientists do not strive only for objective knowledge, but also for the formation of ideologies and social norms. This is not surprising because most of those who have undertaken research and analysis into social phenomena have been motivated by concerns about some kind of social malfunctioning. They originally intended to investigate the problem and hoped to find ways of coping with it. But before seeking to engineer a remedy they have to persuade others about the existence of the problem, about the value of their proposals, about the need to join movements which will act with them. Natural scientists are also inclined to become the advocates of particular policies, but precisely because their disciplines are more 'exact', the distinction is more easily made than in social sciences where there is often an ambiguity between the two roles of scientific research and social action.

It is clear that economics increasingly tends to avoid the confusion: our discipline seems to be definitely more prone than other social sciences to the pure search for objective assessments. However, when they approach discussions about the economic system, many economists still have difficulty in separating the positive issues of scientific knowledge from normative issues. The difficulty is particularly apparent with those who have strong social motivations, or who, working in cooperation with people belonging to other social disciplines, are naturally led to adopt practices which are common to those disciplines.

3. Most academic economists shy away from approaching research closely connected with the choice of economic systems. This is a respectable position because this choice is such a complex question that the objectivity required may appear paralysing, particularly for scientists working on radically different topics within economics. The fear that they will be dragged into the realm of ideological conflict also plays a role in bringing about this approach.

But this respectable position creates a perverse self-selection of the group of academic economists who take part in debates about the economic system. Usually this group has less exacting standards of rigour. This perverse selection is not only a factor of direct disturbance but is also indirectly damaging with regard to the visibility of the 'new political economy' school, which is otherwise an entity much to be welcomed.

The school is made up of economists working at the frontier of political science on issues which involve both economic knowledge and a good understanding of how the polity functions. Most of its contributions deal with current economic policy rather than with the choice of economic systems. Unfortunately, benefiting from the scientific recognition of the school, more and more people claim in unwarranted fashion to speak under its banner, even on broad issues. This creates a new source of confusion.

4. *Economics is better at detecting dilemmas than at finding the right solutions to them.* Economists are often criticised in such terms by those who address them. Confronted with a question, especially a burning question, the typical economist patterns his or her answer according to the 'on the one hand...on the other hand' opposition. Subsequently, he or she is usually unable to offer a clear conclusion. This attitude on the whole reflects the real difficulty of the question and the limitations of economic knowledge.

Take for instance any of the major issues about the welfare-state institutions of OCDE countries (old age pensions, health care schemes, unemployment insurance...). You will find that, on the one hand, the concerns of the early promoters have been well justified: these institutions do indeed bring social benefits to the population. But, on the other hand, in their achievement of their well justified objectives, present institutions are less efficient than was expected: they are not selective enough and they are excessively exploited by people who learn how to turn the system to their own personal advantage, far beyond the original purpose of the system (basically, this follows from the fact that individuals benefit from 'asymmetries of information': some of their characteristics and some of their actions are hidden from welfare institutions). There is thus a trade-off between the extent and form of social protection and its cost in terms of the economic performance of the country. In order to decide what to do, you need accurate quantitative assessments of the true benefits and costs under alternative set-ups. But such assessments are very difficult to establish – what can be provided leaves wide margins of uncertainty, as we shall see when dis-

cussing below the question of how to select an appropriate level for the minimum wage.

At this point, in order to have a good grasp of the subject of this paper, we cannot but engage in a detour and discuss the methodology of economics.

5. Knowledge in economics comes from original combinations of induction and deduction. This has important consequences for what the discipline can achieve. The originality of the approach, in comparison with the natural sciences, is due to major differences in empirical sources.

Whereas economic phenomena are complex and more exposed to changes than is the case with natural phenomena, the scope for experimentation in economics is rather limited. But economics draws knowledge from two sources of evidence: it not only involves external observations of phenomena appearing at the individual or aggregate level (statistical observations), but it also draws advantage from direct, or equivalently 'internal', knowledge of a large part of the domain to be investigated. This direct knowledge involves (i) the constraints and motives ruling individual economic activities, (ii) the interactions between economic agents when they contract or act within the confines of pre-existing contracts, and (iii) the system of legal or informal institutions within which activities and interactions take place.

Separately seen, each one of these two sources of evidence is too poor to be sufficiently revealing for most of our scientific purposes. But considered jointly they bring richer information. Indeed, internal knowledge is mainly qualitative; what can be deduced from it alone is too vague. External observation bears on the results of complex phenomena, involving too many causalities to clearly exhibit the force of each cause, except within specific models which incorporate what can be derived from internal knowledge.

The professional skill of economists in relation to each subject tackled by their discipline specifically involves how best to articulate this combination between the deductive study of accepted models and the appeal to new external or perhaps internal evidence, which will make these models more informative – i.e. more specific (accepted models incorporate not only what comes from internal knowledge, but also what was already learned from the previous processing of external evidence).

In order to move ahead and suggest more concretely how economists try to tackle, and address themselves to, the main questions raised at present by the choosing of economic systems, we shall turn our attention, by way of a brief introduction, to the consideration of three cases which are taken to be illustrative: the proper concept of the market economy; the

extent and challenges of globalisation; and the minimum wage as a simple example of questions which are more generally raised by the welfare state.

III. THREE SUBSTANTIAL TOPICS

1. *The concept of the market economy*

Actual market economies are very complex objects and differ from one another in a number of respects. Research on them involves a large number of aspects: their market structures, with for instance the degree and form of concentration of enterprises or trade unions; the legal, regulatory and customary rules under which they function; how they develop or adapt to changes in their environment, and so forth. Research approaches and methodologies also vary from the most tightly formalised forms, with their axioms and mathematical models, to the most heuristic forms by which to comprehend new real phenomena or challenges, such as the transition to market economies of the central and eastern European countries. In order to illustrate this variety we must be selective here and focus on only two research lines: the highly formalised, which has already been introduced in Part I, and the highly heuristic, which deals with an important recent new form of contrast between two large market economies – Japan and the USA.

1. As we have seen, the discussion about socialist planning during the first half of the twentieth century referred to an ideal vision of the alternative offered by the market economy – the vision conveyed by the formalised theory of the general competitive equilibrium. The exact scope of this theory is now much more fully understood because of two strands of research. The first seeks to make the theory as rigorous and as general as possible. The second strives to study how robust the theory is by analysing deviations from its basic hypotheses in order to show why the theory is incomplete as a representation of actual market economies, a premise to providing alternative models. In both cases the deductive approach dominates.

For our present purpose we may select two broad conclusions produced by the second strand of research. Firstly, the dynamic stability of actual economies appears questionable because rigorous attempts at formalisation of their dynamic behaviour have revealed many potential sources of instability. Since the middle of the twentieth century most research developments on the theory of the general competitive equilibrium have been concerned with time and uncertainty: the market equilibrium is meant to involve not only immediate actions – exchanges and prices – but also the

plans of agents in relation to the future, the prices applying to such intertemporal exchanges as loans, expectations about future actions, and exchanges and prices in an evolving economy hit by random shocks. We understand that the research programme is wide. We are not surprised to learn that unstable evolutions are often found which may rationalise what is observed in the real world. We may hope that theory will help us to achieve a greater control of actual economic disturbances.

Secondly, market participants do not all act on the basis of the same information, and the consequences of the actual asymmetries of information are pervasive. In particular, they explain why contracts cannot deal in advance with all contingencies – contracts involving the future are incomplete. This applies to the relationship between a supplier and a client, between an employer and an employee, and so on.

These two broad conclusions are interrelated, in particular in explaining the reasons for, and the consequences of, price and wage rigidities. The second strand of research, at a more general level, brings to the fore the importance of the legal and judiciary system which governs the implementation of contracts. It also provides arguments in favour of the existence of some market regulations, some public provision of collective services, and some deliberate public economic policies.

2. Our present knowledge of the market economy is not based only on the reflections conveyed by the discussion of formalised theory expressed in mathematical models. It also derives – and probably to a great extent – from lessons empirically learned from experience. We have already pointed to the determinant role of this second source of knowledge (at the end of section I.2). Following along the same line with an illustrative example, we shall now dwell upon some of the reasons which lay behind a phenomenon which led to a complete reversal of opinions, in less than a decade, regarding the relative performances of the Japanese and the US economies.⁴

Ten years ago, surveying the US economy, which was at that time dogged by slow productivity growth, corporate downsizing and record budget deficits, many American observers looked with envy to Japanese growth levels and were inclined to think that they were related to the centralised co-ordination of productive activity (complementing market incentives) in a context where large corporations were run by command and control, with

⁴ We draw from a speech of Professor L. Summers, now Secretary of the US department of the Treasury, at the American Academy of Arts and Sciences, 14 April 1999. See the Academy *Bulletin*, November-December 1999, vol LIII, N° 2.

relationship-driven debt finance rather than recourse to equity issues on the capital market, and an informal rather than formal enforcement of contracts. After the high US growth rates of the last decade and the stagnation of the Japanese economy, which is now embroiled in a deepening financial crisis, the same observers have reached the conclusion that the US model was better equipped to take advantage of the overall change induced by new technologies and globalisation than its Japanese counterpart.

Three reasons are put forward in order to explain why the US economy was better prepared. Firstly, when creativity and innovation are the greatest potential sources of wealth, economies need systems in which access to finance and support depends less on where you are from and more on where you are heading: the openness of the American financial system in such a case is a definite advantage. Secondly, when economic values often change quickly, in particular because technology is in a constant state of flux, the economic system ought to be flexible enough to permit companies to go quickly through painful re-engineering and restructuring, developments which have to reflect competitive realities. Thirdly, in a globalised world family links have limited reach, whereas formal contracts and the American preference for rules over understandings and for law over custom permit large-scale opportunities to be seized very quickly.

Ex post rationalisation, which can be perceived in these arguments, is no guarantee for accuracy in the prediction of future developments. However, the few characterisations which have been made refer to different features in most modern market economies, features which may well be strategic in explanations of what these economies can achieve.

Having now in mind both formal theory and the heuristic type of approach to which has just been referred to, we may still ask ourselves whether economists give sufficient attention to an important dimension of the neo-liberalist discourse. This last preaches democracy as well as free markets. It sees the two aspects as being complementary and it is obviously successful in inspiring some of the modern choices about the socio-economic system. Intuition suggests that whether and how such a complementarity between markets and democracy ought to hold is an important issue, particularly for the social teaching of the Church.

2. The extent and the challenges of globalisation

The importance of the international exchange of goods and ideas is by no means new. However, after the contraction imposed by the Great Depression

and the Second World War, this importance has increased so much during recent decades that people often entertain the vision of a single world, within which economic activities would freely develop under a single and uniform set of rules with no distinction according to location. Reality is, of course, still rather different, particularly with regard to the employment of labour. But reference to a global economy which corresponds to this vision is relevant in discussions about the future economic system.

The principle of the unity of mankind makes the vision attractive. But when we realise that, for a long time to come, political globalisation will not be achieved, the matter becomes less clear. Interacting connections between the global economic system and a diversity of national political systems ought then to be defined. Even if we limit attention to the case of a global market economic system, the interacting connections with political systems constitute a complex issue because of the importance, in the market economy, of the legal and judicial system, of market regulations, and of economic policies, and this for the reasons suggested in the foregoing section. Given the difficulty of the general issue posed in this way, it is not surprising to learn that research about globalisation in economics deals with much narrower issues, among which the following, which we will now consider in turn.

1. Do national economies benefit from insertion into the world economy? Insertion into the world economy imposes constraints, against which public opinion often rebels, both in less developed and in advanced countries. But insertion also opens up opportunities for countries which have comparative advantages to extend their activities. The conclusions now reached by most economists who have studied the issue is based largely on observation of what has happened throughout the world over the last five decades.

Overall, the benefits offered by new opportunities have been found to far outweigh the costs imposed by market constraints: countries which have opted for an import-substitution strategy, favouring the stimulation and protection of national productions, have performed systematically less well than those which have opted for free trade and export promotion. However, the explanation for the tremendous disparities between national performances and national developments in terms of standards of living require greater scrutiny. It has been found that the main responsibilities for such disparities are of a national character: most differences in growth records reflect differences in the quality of government and in the soundness of the strategic policy choices which have been made, including those concerning international trade. But trends in the global demand and sup-

ply of commodities have also played a part, in interaction with trade policies. Moreover, we cannot expect the benefits and costs of globalisation to be evenly distributed between countries and within countries. In other words, a simple answer to the question raised can hardly suffice.

2. Has the globalisation of financial markets now gone too far? We do not find in economics at present a clear answer to this question, which some economists even tend to see as being purely academic (was it possible to resist the trends towards an increasing international mobility of capital and towards the establishment of a less distorted balance of powers between managers and shareholders in large companies?) Two concerns seem to be widely shared at present. In the first place, increases in the geographical distance between labour and capital within large international corporations are socially unhealthy. In the second, the notorious instability of financial markets might become more dangerous with globalisation. In both cases these concerns call for serious examination, and possibly the discussion of remedies. Convincing scientific responses to the challenge posed by the first concern would have to draw upon all parts of the methodology of economics and to look extensively beyond the confines of economics.

There is an obvious connection between a research programme on the instability of globalised financial markets and the programme to which we referred earlier – namely on the more general stability of equilibria in market economies. However, financial markets are special because they involve only minimal transaction costs, which have, moreover, sharply decreased during the last two decades. This implies, in particular, an increased participation of agents – called ‘arbitrators’ or ‘speculators’ – who, in trying to take advantage of small price disequilibria, help to make the markets more efficient, although they may also make these markets less stable. It thus appears that a special research programme is required in order to improve upon the overly heuristic answers now given to questions raised by the second concern mentioned above.

3. *The minimum wage*

1. Fifty years ago Western European countries chose a mixed economic system in which on the one hand freedom of contracts prevailed, with markets ruling exchanges and the formation of prices. But on the other hand, a public welfare state was established which aimed at the regulation of the macro-economy and at a redistribution of incomes to the benefit of those who are temporarily or permanently in need. The experience of recent

decades has showed that such a mixed system has worked less well than was expected. It has proved to be more costly than envisaged because in particular it has involved greater expenditure than was justified by the objectives of social policies. It has been less effective in redistributing incomes. Hints were given about the reasons for such deficiencies in section II.4.

Thus the future of welfare-state institutions poses challenging problems. Such being the case, it is natural to invite specialists to provide objective assessments of the costs and benefits of alternative welfare-state arrangements. The assessments in question would give measures of the trade-offs between costs and benefits, or between degrees of satisfaction of various objectives. Unfortunately, what is objectively known is uncomfortably vague because of large inaccuracies in the establishment of relevant economic and social parameters. The econometric difficulties which explain why this is so appear in the particular case of the minimum wage, here taken as a significant example.

2. Clearly, the existence of minimum wages in many countries derives from the perception of a need to prevent cases in which the weakest employees are exploited by their employers. Once this is accepted, the question of the appropriate level of the minimum wage immediately follows. A excessively high level will prevent the employment of the less productive workers, those who are judged by potential employers to have a lower productivity than the cost to be borne of their labour (the wage plus whatever taxes the employer has to pay because of this employment). We must also take account of the fact that the unemployed suffer not only from a lack of labour income but also from a feeling of exclusion and personal failure. A minimum wage level which is so high that it has a significant impact on employment is thus likely to have a more important social cost than the social benefit produced by the prevention of exploitation.

In order to help in the determination of the appropriate level, economists ought, therefore, to estimate the trade-off between increases in the minimum wage and increases in unemployment, which become more and more important as the minimum level is raised. A brief explanation of the main difficulties of the assessment may be the best way by which to convey a sense of the real importance of the problem.

Firstly, econometric measurement encounters difficulty most often in its attempts to allocate observed results to the various causes that play a part and combine their effects. This is an unfortunate fact which arises from the scientific conditions in which econometrics has to operate (see section II.5). Although different kinds of data sets can be, and have been,

used, in all cases the identification of effects to attribute to the level of the minimum wage turns out to be problematic.

Secondly, some economists attribute to minimum wages an important indirect role in generating overall unemployment: the protection of workers is said to contribute to making all workers less willing to accept 'the verdict of the market'. Where minimum wages are generous, it is affirmed, workers more generally obtain excessively high wages, which, so the argument goes, generate unemployment. But the force of such an indirect effect is not invariant. It very much depends on: (i) the way in which the whole wage scale is determined; and (ii) whether an overall increase in wages reduces or does not reduce employment. An accurate characterisation of this indirect effect has to distinguish between quite a few different cases.

Thirdly, the trade-off between the level of the minimum wage and employment of the unskilled has an important time dimension which may be neglected and ought not to be. If the minimum wage is lowered, the impact on the income of the workers concerned will be instantaneous, whereas the increase in the chances for unemployed unskilled people to find jobs will be slow – it will appear progressively over a period covering a decade or more. But where levels of the minimum wages are high, changes in these levels should eventually have quite significant effects on the employment of the category of persons affected by these changes.

Notwithstanding these various causes of inaccuracy, knowledge progressively improves and accumulates. In particular, we know that the appropriate level of the minimum wage for a group of workers varies with the productivity of those workers. This is a particularly important consideration when one comes to the geographical dimension of regulations. In some countries or other large areas labour productivity varies a great deal from one region to another. The application of the same uniform minimum wage in all regions is likely to foster persistent unemployment in the less productive regions. We have recurrent evidence, coming from external observation, which points to this conclusion.