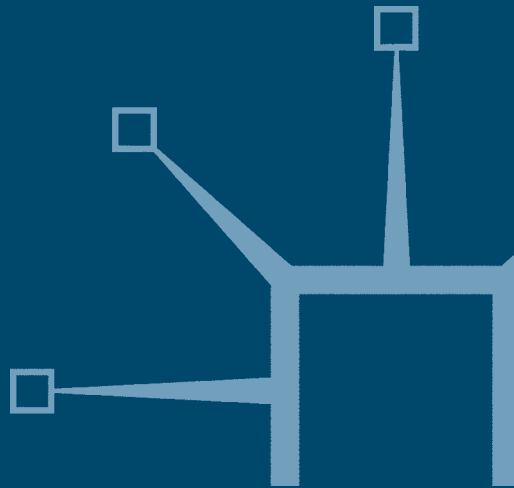


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Structural Reform and Economic Policy

Edited by
Robert M. Solow



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Edited by

Robert M. Solow

*Massachusetts Institute of Technology
Cambridge, MA, USA*

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in association with the
INTERNATIONAL ECONOMIC
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The International Economic Association

A non-profit organization with purely scientific aims, the International Economic Association (IEA) was founded in 1950. It is a federation of some sixty national economic associations in all parts of the world. Its basic purpose is the development of economics as an intellectual discipline, recognizing a diversity of problems, systems and values in the world and taking note of methodological diversities.

The IEA has, since its creation, sought to fulfil that purpose by promoting mutual understanding among economists through the organization of scientific meetings and common research programmes, and by means of publications on problems of fundamental as well as of current importance. Deriving from its long concern to assure professional contacts between East and West and North and South, the IEA pays special attention to issues of economies in systemic transition and in the course of development. During more than fifty years of existence, it has organized more than a hundred round-table conferences for specialists on topics ranging from fundamental theories to methods and tools of analysis and major problems of the present-day world. Participation in round tables is at the invitation of a specialist programme committee, but thirteen triennial World Congresses have regularly attracted the participation of individual economists from all over the world.

The Association is governed by a Council, composed of representatives of all member associations, and by a fifteen-member Executive Committee which is elected by the Council. The Executive Committee (2002–05) at the time of the Lisbon Congress was:

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Sir Austin Robinson was an active Adviser on the publication of IEA Conference proceedings from 1954 until his final short illness in 1993.

The Association has also been fortunate in having secured many outstanding economists to serve as President: Gottfried Haberler (1950–53), Howard S. Ellis (1953–56), Erik Lindahl (1956–59), E.A.G. Robinson (1959–62), Ugo Papi (1962–65), Paul A. Samuelson (1965–68), Erik Lundberg (1968–71), Fritz Machlup (1971–74), Edmund Malinvaud (1974–77), Shigeto Tsuru (1977–80), Victor L. Urquidi (1980–83), Kenneth J. Arrow (1983–86), Amartya Sen (1986–89), Anthony B. Atkinson (1989–92), Michael Bruno (1992–95), Jacques Drèze (1995–99) and Robert M. Solow (1999–2002).

The activities of the Association are mainly funded from the subscriptions of members and grants from a number of organizations. Support from UNESCO since the Association was founded, and from its International Social Science Council, is gratefully acknowledged, particularly for specific help for the Lisbon Congress.

Acknowledgements

The Congress was held on 9 to 13 September 2002 in the Centro Cultural de Belém, Lisbon, at the invitation of the Ordem dos Economistas de Portugal, and was attended by 1,100 registered participants.

The Opening Session was addressed by the President of the Republic of Portugal, HE Senhor Jorge Sampaio, and by the newly-appointed Minister of Finance, HE Senhor Manuela Ferreira Leite; the IEA President, Professor Robert M. Solow, delivered a paper, 'Is Fiscal Policy Possible? Is it Desirable?' (Chapter 3 in this volume). The programme comprised twenty invited lectures and three invited panels – on 'Growth in Developing and Transition Economies' (arranged by the Global Development Network), on 'Poverty Dynamics and Insurance' (organized by the European Development Research Network) and on 'The Turkish Financial Crisis' (prepared by the Turkish Economic Association). There were 198 contributed papers, a selection of which have been included with Invited Lectures in the four volumes of the Congress proceedings:

Bina Agarwal and Alessandro Vercilli (eds), *Psychology, Rationality and Economic Behaviour: Challenging Standard Assumptions*.

Alan V. Deardorff (ed.), *The Past, Present and Future of the European Union*.

Edward Graham (ed.), *The Role of Foreign Direct Investment and Multilateral Corporations in Economic Development*.

Robert M. Solow (ed.), *Structural Reform and Economic Policy*.

Studies generated by the Global Development Network are published in Gary McMahon and Lyn Squire (eds), *Explaining Growth: A Global Research Project* (IEA Conference Volume no. 137).

The scientific responsibility for the selection papers was in the hands of an International Programme Committee chaired by Robert M. Solow, with the following members:

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A National Scientific and Organizing Committee was convened by the Ordem dos Economistas de Portugal, under the chairmanship of its President, António Simões Lopes who, with Amílcar Theias, Carlos Queiroz and Luisa Ahrens Teixeira (Executive Director of Mundiconvenius) formed an Executive Committee:

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Francisco Soares.

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must particularly be made (in alphabetical order) of the Banca d'Italia, the Bank for International Settlements, the European Central Bank, UNESCO and the World Bank. Cultural events were supported by the Fundação Calouste Gulbenkian for a concert at its Headquarters, by the Casino do Estoril for a Gala Dinner at the Casino, by the SECIL Corporation for a dinner for speakers at the Convento da Trindade. A Welcome Cocktail was offered on the opening evening at the Maritime Museum, Belém, and the publishers of the IEA conference volumes, Palgrave-Macmillan, gave a reception on the second evening to commemorate the Fiftieth Anniversary of the series, hosted by Amanda Watkins and Pooja Talwar. The Instituto Vinho do Porto provided a lecture and tasting of port wines. Day tours within the region of Lisbon were arranged in the three days after the Congress for participants and accompanying persons. The logistics of the Congress were efficiently handled by the staff of Multiconvenius, coordinated by Luisa Ahrens Teixeira, its Executive Director. The staff of the Ordem dos Economistas do Portugal furnished additional assistance under the management of Carlos Quiroz.

The President of the IEA, Robert M. Solow, was Congress Editor. The IEA editorial team comprised Maureen Hadfield and Michael Kaser; the latter was responsible for the present volume.

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List of Abbreviations and Acronyms

ABS	asset-backed securities
AMP	accommodation of monetary policy
BEPG	Broad Economic Policy Guidelines (EU)
BoJ	Bank of Japan
CEPR	Centre for Economic Policy Research
CGE	computable general equilibrium
CPI	consumer price index
CREST	Centre de Recherche en Economie et Statistique
CWB	centralization of wage bargaining
ECB	European Central Bank
EMS	European Monetary System
EMU	Economic and Monetary Union
EU	European Union
FSI	financial services institutions
GDP	gross domestic product
GEB	general equilibrium bargaining
IMF	International Monetary Fund
IT	information technology
JGB	Japanese government bond
LSE	London School of Economics and Political Science
MB	myopic bargaining
MGI	McKinsey Global Institute
NBFI	non-bank financial institution
NAIRU	non-accelerating-inflation rate of unemployment
NAWRU	non-accelerating-wage rate of unemployment
NBER	National Bureau of Economic Research
OECD	Organisation for Economic Co-operation and Development
OMO	open market operation
PEB	partial equilibrium bargaining
PPP	purchasing power parity
R&D	research and development
RBE	real balance effect
REIT	real estate investment trust

RMI	<i>revenue minimum d'insertion</i> (in France, a minimum income granted to those with no other source of income)
SGP	Stability and Growth Pact
SME	small- and medium-size enterprise
TFP	total factor productivity
TOT	terms of trade

1

Introduction

Robert M. Solow

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The relation between structural reform and macroeconomic policy was one of the organizing themes of the International Economic Association's World Congress in Lisbon. Each of the following chapters speaks to that topic directly or indirectly. In this context, 'structural reform' is usually shorthand for 'deregulation'. The issues underlying the basic theme are both up-to-date and timeless, and that is what makes them interesting.

The relation between structural reform and macroeconomic policy is part of today's news. There is a widespread perception that the large European economies have underperformed in the 1990s in comparison with both their own standards and with the contemporaneous performance of the United States. Within European financial and governmental institutions and among European economists, the commonest response is a call for structural reforms, with the implicit presumption that essentially nothing else is needed.

More often than not, this tends to mean primarily reform – deregulation – of the labour market, to make it more like a spot market for a perishable commodity. The usual suggestions include narrowing the eligibility for unemployment insurance, reducing the maximum duration and scaling back the size of benefits, weakening or eliminating restrictions on hiring and firing, and diminishing the bargaining power of trade unions. All such proposals have the important and highly visible consequence that the distributional implications of reform are very strong and therefore polarizing.

The omission of product-market reform from the menu is unfortunate because there is good reason to think that deregulation

and other measures to intensify competition among firms would also be desirable. An important instrumentality is to expose domestic firms to competition with best practice, whether it originates at home or abroad. Apart from the missed economic opportunity, the neglect of product markets is important for the political economy of current policy proposals.

Even leaving that issue aside, one can easily believe that structural reform in both markets is necessary in Europe, without acceding to the thought that structural reforms by themselves would be sufficient to restore prosperity and high employment. A balanced programme combining simultaneous structural reform and expansionary fiscal and monetary policy would have a better chance of economic success and a better chance of political viability.

This pragmatic line of thought connects current events with the fundamental principles of macroeconomics and macroeconomic policy. From the very beginnings of the subject – attributed by Pigou to Keynes – there has been both a Panglossian strain and a non-Panglossian strain in macroeconomic thinking. Dr Pangloss was, of course, a figure of fun to Voltaire. I do not intend any such connotation here; the mantra about all being for the best in this best of all possible worlds exaggerates the real tendency it points to in economics. But I could not think of any other similarly brief locution. Besides, there is a certain aptness because the great Lisbon earthquake played such a large role in *Candide*.

The Panglossian branch takes it for granted that the macroeconomy has an equilibrium, usually a unique equilibrium, with favourable welfare properties (at least relative to the underlying institutions), *and* that the actual economy is usually close to that equilibrium, and returns to it quickly if disturbed. These days the Panglossian view is almost always embodied in a particular sort of model embodying a single representative agent engaged in long-horizon intertemporal optimization; but the central belief is older and more general.

The tacit belief that labour-market reform is all that is required to guarantee a substantial increase in European employment is clearly Panglossian in character. Whether it is correct or not – I have my doubts – there is no reason for centre-left parties and labour organizations to go along. They are being asked to take clear and tangible reductions in real income in exchange for an unspecified number of new jobs that may or may not materialize at an unspecified time in

the future. Both the economics and the political economy would be much more favourable for a proposal that (a) included product-market reforms in an even-handed package, and (b) promised a simultaneous, or even slightly earlier, stimulus in the form of expansionary fiscal and/or monetary policy. I suppose it is unlikely that trade unions would cooperate even then; but the overall political prospects would certainly improve.

The non-Panglossian view comes in several different flavours. Keynes thought that he had demonstrated the possibility of an equilibrium with 'involuntary' unemployment; but this is a claim that most modern economists, including many who think of themselves as Keynesians, would not accept. A more general and more acceptable approach relies on the family of fixed-price, quantity-constrained equilibria worked out by Bénassy, Drèze, Malinvaud and others (including, I have to admit, an early article in this vein by Joseph Stiglitz and myself, and also a book by Robert Barro and Herschel Grossman, who seem now never to mention it, like dignified bankers ignoring a raffish past).

Then there are models that do not depend on price rigidity, but rely instead on market externalities – the fact that activity in one sector makes activity in other sectors more profitable, and reciprocally – to generate multiple equilibria, some better than others. (Two equilibria will do, one with high output and high employment and one with low; the first is better for everyone than the second.) Such models provide a natural role for macroeconomic policy: to push the economy from a bad equilibrium to the neighbourhood of a good equilibrium.

The least demanding non-Panglossian style starts from the view that disequilibrium dynamics can persist for a long time, even if there is only one equilibrium, with good welfare properties, and even if it is ultimately stable. A slow return to full employment can be almost as painful as equilibrium underemployment. There remains in that situation an important role for macro policy: to speed up an otherwise intolerably slow approach to equilibrium during which further shocks may occur, some of them adverse, and during which in any case welfare losses may accumulate.

The chapters in this book are, in various ways, in the non-Panglossian tradition. They look, again in various ways, at the interaction of the microeconomic properties of the modern industrial economy and the possible role of stabilization policy, discretionary

or automatic. It is understood, as always, that any non-Panglossian characteristics of macroeconomic behaviour have their origins in the microeconomic structure of the underlying economy. The art of short-to-medium-run macroeconomic theory is to focus on an important structural 'imperfection' and map it into the macroeconomic behaviour patterns that follow from it. In the Panglossian literature, by contrast, the natural desire for 'microeconomic foundations' is often nullified by the choice of just those microfoundations that empty macroeconomics of its interest and significance.

When it comes to policy in an imperfect world, another sort of choice presents itself. Suppose that macroeconomic underperformance can be traced to some specific 'imperfection(s)' in labour, product and/or financial markets. Should policy aim at eliminating or neutralizing the imperfection at the source, or should it simply look for ways to offset the macroeconomic underperformance by compensatory devices? To take a concrete example: if regulations that restrict the employment practices of firms in the interest of job security can be shown to reduce employment, is it better to eliminate the regulations or to take other measures to increase employment?

It seems to me that there is unlikely to be a uniform general answer to this question. Much depends on the purpose actually served by the particular imperfection, and the extent to which it is served in practice. Regulations are often *sub rosa* ways of favouring some special interest, and would be rejected by the political process if their true purposes were clear to everyone. But that is not always the case: for instance, job security is probably widely, although not unanimously, accepted as a quality-of-life social goal. This has to be taken into account in evaluating right-to-fire regulations. It is a reasonable guess that other sorts of regulation also provide a mixture of social pluses and minuses. A cynic might argue that most controversies about economic policy are fundamentally distributional: those who would gain are in favour, those who would lose are against, and the rest is window-dressing. It would be hard to show that the cynic is wrong. But if there is to be rational discussion of policy options, then the choice between corrective micro policy and compensatory macro policy is a matter of balancing social goods and bads, and the role of economic analysis is just the traditional one of clarifying (and perhaps quantifying) chains of cause and effect. In the abstract, it is no doubt better to make thoroughgoing structural reforms than to permit continued

distortions while offsetting their macroeconomic consequences. In practice, however, the choice may not be at all straightforward. There are obvious political difficulties that have already been mentioned. Every rigidity has its beneficiaries. Serious structural reform will have serious distributional consequences. Some long-standing rigidities may have been created explicitly or implicitly precisely for their distributional effects. To eliminate them is seen as *primarily* a transfer of entitlement to real income away from the original beneficiaries. If these losses are not made good, reform will be met by entrenched opposition. In the abstract, any losses can be offset harmlessly by the traditional lump-sum taxes and transfers. But again, in practice, any new set of taxes and transfers will likely introduce a new set of distortions. The proper implication, I suspect, is that structural reform has to be accomplished piecemeal, and with step-by-step attention to possible mechanisms of compensation (including, in the case of the labour market, deliberate job creation).

There is, however, the likelihood that any given social goal can be furthered in more or less efficient ways. Some regulations entail more negative side-effects – on employment, for instance – than others. Another reason for focusing on the relation between structural reform and macroeconomic policy is this possibility of improving the design of social policy so that the macroeconomic implications are more favourable, statically and dynamically, short run and long run.

It is certainly a political fact, as noted earlier, that the labour market is the commonest candidate for structural reform in the interest of macroeconomic consequences. Product markets are rarely mentioned, although restrictions on land-use, on business hours, on start-up enterprises, and most especially limitations on competition from imports, foreign transplants and domestic rivals may be just as damaging, or more so. One difference between the two cases may be that labour-market imperfections more often affect total employment directly, while the cost of product-market imperfections shows itself primarily in lower productivity.

From the non-Panglossian point of view, it is essential to remember that structural reform can influence macroeconomic performance in two entirely separate ways, depending on whether the economy is operating at or below its potential.

A more flexible labour market and more competitive product market can lead to quite classical long-run efficiency gains, and thus to

a higher level of 'potential output'. As the higher potential is realized, if that actually happens, there will be a *temporary* acceleration of the growth path. (The temptation to speak simply of 'faster growth' is to be resisted as misleading. It is barely possible that structural reform may speed up the sustainable growth rate, but that is far from a sure thing. About all we are entitled to expect is a one-time rise in the level of the economy's growth path.)

The literature, especially the polemical literature, is sometimes unclear or confused on this point, seeming to take it for granted that any of the standard labour-market reforms will increase employment non-trivially. The argument has to be more complex. Take as an example a lowering of the statutory or customary minimum wage. Pretty clearly this would open up some unskilled jobs that are now closed off because they fall below the margin of profitability at current wage levels. Some of those newly-employed unskilled workers will presumably displace previously-employed workers with slightly more productive skills. At this stage there will probably be some net increase in employment, not necessarily very large. There will also probably be downward pressure on wages all along the bottom part of the wage distribution, with some net increase in employment. Will output increase? That depends at least as much on aggregate demand as on aggregate supply. There the popular discussion tends to peter out.

The relevant possibility that needs to be considered in the context of current policy discussion is whether structural reform is likely to have a short-run expansionary effect by itself, and move an under-employed and underutilized economy nearer to its already available potential. In this short-run context, a different sort of analysis would apply. In a more flexible labour market, presumably the nominal wage will be lower at each level of output. In a more competitive product market, the mark-up of price over marginal cost (or unit labour cost) would be smaller. For both reasons, the short-run aggregate supply curve (or price-setting curve) is shifted to the right. If the economy is operating below its current potential, one might expect an increase in real output, as the aggregate supply curve slides along the falling aggregate demand curve. But then the hoped-for increase in output depends on the factors that give the aggregate demand curve its negative slope. The textbook mechanism works through lower prices, higher real money stock (assuming the nominal stock unchanged),

lower interest rates, and thus an increase in interest-sensitive private spending. This is a reasonable chain of effects, but it is not likely to be very powerful. In this story, as I suggest above, there is every reason in principle to help the process along with a little demand-side push from expansionary monetary and/or fiscal policy.

Current policy discussion in Europe seems, at least to an outsider, to focus mainly on labour-market reform. The possible utility of product-market reform is not denied, certainly not by economists, but it seems to be an afterthought. I have already said why I think a coordinated and simultaneous approach on all three fronts – labour and product markets and the demand side – would be more effective on both economic and political grounds.

In this book, Chapters 6 and 7, by Edmond Malinvaud and Gilles Saint-Paul, discuss labour-market reforms in the macroeconomic context. Chapters 2 and 5, by Hans Gersbach and Karl Pichelmann and Werner Roeger, cover both labour and product markets. Takatoshi Ito, with the important and remarkable Japanese situation in mind, focuses in Chapter 8 on another important locus of structural reform: financial markets. Chapters 4 and 3, by Markus Knell and myself, are somewhat different. Knell tackles an important matter for Europe: the likelihood that institutional reforms in one member country may have implications that depend on the institutional structure in other member countries. My own chapter is slightly idiosyncratic, since it was a presidential address to the International Economic Association. Perhaps I could characterize it as suggesting a structural reform in the making of fiscal policy.

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2

Structural Reforms and the Macroeconomy: The Role of General Equilibrium Effects

*Hans Gersbach**

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1 Introduction

Structural reforms in factor and product markets have been at the top of the policy agenda since the 1970s. Prominent examples are product-market reforms in a variety of service industries in industrial countries, labour-market reforms in Europe, and worldwide regulation of banking in the form of Basel I and II.

Structural reforms are attempts to eliminate market rigidities or to correct market failures. This chapter is concerned with the macroeconomic consequences involved when such reforms concern a subset of industries in an economy. The key issues of this line of inquiry are:

- Do changes in a subset of industries (caused by regulation or other factors) have substantial macroeconomic consequences that may differ from industry effects?
- How should regulation take account of such macroeconomic effects?
- Could the unawareness of general equilibrium effects explain
 - why certain structural reforms take place, and
 - why certain structural reforms are not tackled?

* I thank Martin N. Daily, Heino Fassbender, Hans Haller, Verena Liessem, Christoph M. Schmidt, George Sheldon, Robert M. Solow, Jan Wenzelburger, conference participants at the annual meeting of the German Economic Association in Mainz 1999 and at the annual meeting of the European Economic Association in Lausanne 2001, and seminar participants in Heidelberg and Bonn for helpful comments and suggestions on this line of inquiry.

- Can and should monetary policy complement structural reforms?

We focus on the first three questions and consider two important cases.

The first example is concerned with industry wage bargaining. We show that insufficient recognition of general equilibrium effects causes industry unions and employers to settle for high-wage agreements associated with high unemployment. Unawareness of general equilibrium effects can thus considerably reinforce the impact of particular labour-market institutions, such as industry wage bargaining, on unemployment.

In the second example, we consider product-market reforms associated with large productivity gains. We show that, while sectoral employment may decline, aggregate employment increases under standard production specifications. Therefore, the concern that employment will decline when technical progress in an industry takes place as a consequence of deregulation is not justified if general equilibrium effects are properly taken into account. Aggregate employment may decline, however, in various other circumstances.

Both examples illustrate the following points:

- Macroeconomic effects of structural reforms in a subset of markets may be quite different from sectoral effects.
- Awareness of general equilibrium effects may be important for the evaluation of industry-specific regulations.¹
- In particular, regulators' unawareness of general equilibrium effects may provide explanations of why regulations are introduced or why structural reforms are (not) undertaken.

The theme of this chapter is developed by drawing upon asymmetric multi-sector general equilibrium models with specific institutions and regulations in an industry, as outlined, for example, in Gersbach and Schniewind (2001, 2002). The chapter is organized as follows.

In Section 2, we discuss the case of industry wage bargaining. In Section 3, we examine product-market reforms and unemployment. In Section 4, we place our findings in a broader context and draw conclusions.

2 Example 1: industry wage bargaining

2.1 The problem

In the first case, we consider industry wage bargaining and its impact on unemployment. There is a vast literature on labour-market institutions and unemployment, in particular in the European context, and we do not try to summarize it here. We add a further line of reasoning on the question of why particular labour-market institutions may lead to high unemployment.

We examine how the ability of bargaining parties to identify general equilibrium effects influences wages and unemployment at the aggregate level.² We suggest that the obstinacy of European unemployment problem may be traced back partially to insufficient recognition of general equilibrium effects.

2.2 The model

We present the underlying two-sector general equilibrium model in Figure 2.1.³

There are two industries producing good 1 and good 2, respectively, using immobile labour. We consider wage bargaining in industry 1, assuming in the simplest case an exogenously given real wage in industry 2. The general thrust of our argument also holds if the wages

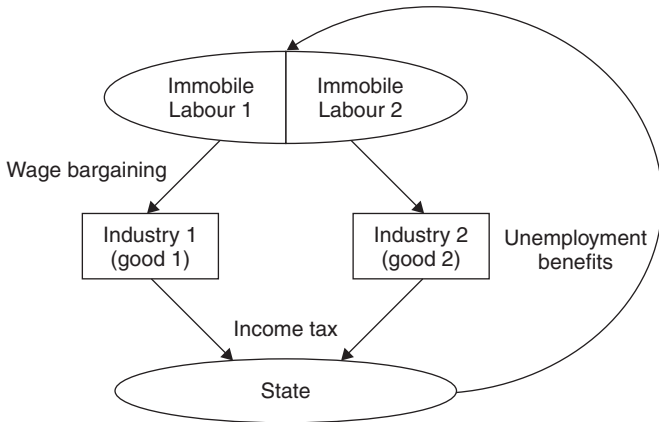


Figure 2.1 The model

in industry 2 are flexible or are themselves determined by wage bargaining. If there is unemployment in the economy, it is financed by a flat tax on income and governments are forced to balance the budget.

2.3 Bargaining processes

We consider collective bargaining between a union and an employers' association in industry 1. The general objective function, denoted by Γ , resulting from the Nash-bargaining product, is given as follows:

$$\Gamma = \frac{w_1 - ub}{p(p_1, p_2)} L_1 \frac{\pi_1}{p(p_1, p_2)} = \underbrace{\frac{w_1 - ub}{p(p_1, p_2)} L_1}_{\substack{\text{real value of} \\ \text{additional} \\ \text{income for union} \\ \text{members}}} \cdot \underbrace{\frac{p_1 q_1 - w_1 L_1}{p(p_1, p_2)}}_{\text{real profits}}$$

The variables p_1 and p_2 denote the good prices, L_1 is employment and q_1 is output in industry 1. p is an appropriate consumer price index (CPI). The nominal wage w_1 in industry 1 is the choice variable of the bargaining parties. Finally, ub denotes nominal unemployment benefits and we assume that real unemployment benefits are fixed by the government. As a result, the objective function of cooperative bargaining of unions and employers is the product of real profits in the industry and the real value of income of union members over real unemployment benefits, assuming that all employed workers in industry 1 are unionized.⁴

For nominal wage-setting to have real effects, we assume $p_2 = 1$ and thus bargaining parties determine the wage in terms of good 2. The key question is which variable changes are taken into account by bargaining agents. There are at least three conceivable bargaining processes, summarized in Table 2.1.

Under myopic bargaining (MB), the union and the industry association take into account only the change of employment in industry 1 associated with a change in wage w_1 while assuming all other variables to stay constant. Under partial equilibrium bargaining (PEB), bargaining agents consider employment and price effects in industry 1 but assume that nominal unemployment benefits and all the other variables in the economy will remain unchanged when they vary w_1 . In particular, all prices and quantities in industry 2 are assumed to stay constant. Finally, when agents determine w_1 under general

Table 2.1 Bargaining processes

Bargaining process	Variable changes considered	Variable changes not considered
Myopic bargaining (MB)	$L_1(w_1)$	p_1, p, ub , industry 2
Partial equilibrium bargaining (PEB)	$L_1(w_1), p_1(w_1), p(w_1)$	ub , industry 2
General equilibrium bargaining (GEB)	All variables	–

equilibrium bargaining (GEB), they take into account all resulting changes in industry 1, industry 2 and in ub .⁵

2.4 Results and interpretation

2.4.1 Main result

By considering equilibrium wages w_1 and the resulting unemployment denoted by U as a mapping from the set of bargaining processes to the real numbers, we can state the main result as follows:

- (i) $w_1^{PEB} > w_1^{GEB}$ and $U(PEB) > U(GEB)$
- (ii) $w_1^{PEB} > w_1^{MB}$ and $U(PEB) > U(MB)$

The result is summarized in Figure 2.2, which relates the degree of farsightedness to wages and unemployment.

The main result is orthogonal to a well-known observation in labour economics. In an economy with highly decentralized wage negotiations, wages and unemployment are quite low, whereas in an economy with more centralized wage-bargaining, wages and unemployment are high; in economies with totally centralized wage-settings, wages and unemployment are again quite low (Calmfors and Driffill, 1988). Taking demand as exogenously given, Calmfors and Driffill do not need to take account of feedback effects from the demand side. They vary the number and size of industries and with them the degree of bargaining centralization; by contrast, we vary the degree of farsightedness, also obtaining a hump-shaped curve for wages and unemployment, respectively.

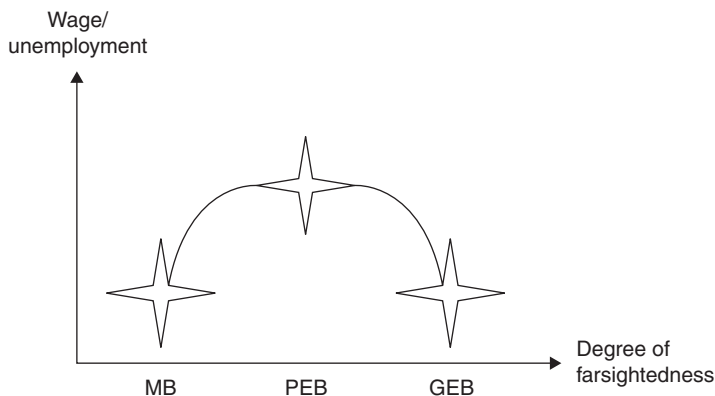


Figure 2.2 Degrees of farsightedness and unemployment

2.4.2 *PEB versus GEB*

We provide the intuition why w_1^{PEB} is higher than w_1^{GEB} . Under the PEB view, agents recognize that a higher wage implies less employment. The agents are aware that a lower level of employment implies less output and thus a rise in the price p_1 and accordingly in p . Everything else is assumed to stay constant.

What unions and employers in the first industry do not perceive within PEB are the feedbacks from industry 2. In industry 2, where nominal wages w_2 are kept such that real wages w_2/p stay constant, the rise in the price index must lead to a rise in the nominal wage. In turn, higher nominal wages in industry 2 lead to a decline of labour demand in industry 2, so that employment and output in industry 2 decrease as well.

This causes a rise in p_2 relative to p_1 , i.e. a fall of p_1 . A decline in p_1 , of course, leads to lower profits in industry 1 (which interferes with the employers' objectives) and lower employment (counter to the union's objectives). Less employment in the first industry then leads to less output and a higher price p_1 , leading in turn to a higher price index, which causes higher wages in industry 2, again leading to less labour demand in industry 2, and so on.

All these interactions with the other industry exacerbate the consequences of high wages in industry 1 but are not taken into account by agents restricted to the PEB view. Furthermore, a higher price index

Table 2.2 Estimations and impacts under PEB/GEB

Variable	Estimation under PEB relative to GEB	Impact on employment and output under PEB relative to GEB
p_1, p	overestimated	negative
L_1	overestimated	negative
ub	underestimated	negative

implied by a higher wage does not only lead to a rise in w_2 , but also to a rise in ub . Although this also depreciates the value of the union's objective function, it is not perceived from a PEB perspective.

To summarize, in PEB, as opposed to GEB, the underestimation of these negative employment and benefits effects, plus the overestimation of the positive price effect that follows from high wages, leads to a shift to the right in the maximum of the objective functions and thereby to a higher wage agreement, which in turn involves higher unemployment. Table 2.2 summarizes both the estimations of variables under PEB relative to GEB and the consequences for employment and output.

2.4.3 PEB versus MB

The situation is different when we compare MB and PEB. Ignoring general equilibrium effects leads to bad outcomes under PEB, but ignoring them and further partial equilibrium effects leads to cautious wage-setting. While under PEB both employment and price reactions are considered, agents with a MB view consider only employment reactions. This adversely affects the union's and the employers' objectives because a reduction of labour means a reduction of both the wage bill *and* the profits from lower output. The rise in price (due to less employment and therefore less output) is not considered by agents under MB. A high price p_1 increases both profits and employment, thus boosting both the union's and the employers' objectives. Since this positive impact is not taken into account, unions and employers are very cautious and negotiate lower wages under MB than under PEB. Hence, wages and unemployment are lower under MB than under PEB.

2.5 Discussion

A brief discussion of the significance of the main result is called for. First, the equilibrium under MB and PEB may also be interpreted as the

steady state of an adaptive learning process in the following way. If the agents started at *any* equilibrium $E(w_1)$ and then negotiated wages, the PEB and MB bargaining processes would lead to a sequence of wages where the equilibrium in the last period is the initial condition for the next bargaining process. Approaching the PEB or MB equilibrium can then be interpreted as the convergence of a learning process.⁶

Secondly the thrust of our results is robust when wage negotiations occur in both industries or when wages are flexible in the second industry. Flexible wages in industry 2 alleviate the detrimental consequences from a PEB view, but wages and unemployment remain higher under PEB than under GEB or MB. Therefore, high unemployment under PEB appears to be a robust phenomenon.

The intermediate view PEB might be the most plausible for those countries where wages are negotiated at the industry level. Considering all general equilibrium effects may be too demanding in industry wage negotiation. In this case, our results suggest that firm-level wage bargaining which is plausibly associated with MB would be preferable to industry-level bargaining.

3 Example 2: product-market reforms, uneven technological progress and unemployment

3.1 The problem

Product-market reforms are concerned with promoting competition in industries by deregulation or appropriate regulation. Often such reforms yield large total factor productivity (TFP) gains. The productivity and employment effects of such product-market reforms are the theme of a number of studies from the McKinsey Global Institute (MGI).⁷ Two recent examples of these studies in which product-market reforms have led to large productivity gains can serve as illustrations:

- Relaxing entry barriers and privatization in fixed telephone services in Europe.
- Elimination of trade protection for the French automotive industry.

The relationship between market power and productivity has been investigated in a variety of papers. In particular, Green and Mayes (1991), Hay and Liu (1997) and Nickell (1996, 1999) provide evidence

that on average productivity levels or growth rates are negatively correlated with market power.

Although TFP improvements are the most important source of economic growth, rising sectoral productivity is often associated with job destruction in the industry under consideration and may therefore lead to opposition from workers. Such opposition may prove to be so strong that product-market reforms are not undertaken. Therefore, the key questions are:

- Do product-market reforms yielding uneven technological progress raise aggregate employment – contrary to the ‘conventional wisdom’?
- Might unawareness of general equilibrium effects explain the lack of product-market reforms?

The issues are related to work⁸ by Blanchard (1998) and Cohen and Saint-Paul (1994), who have pointed out that uneven technical progress may lead to higher unemployment when technical progress widens the productivity differential between different sectors. We focus on short-term effects and general equilibrium repercussions. Gersbach (2000) provides a survey on whether product-market reforms might help to reduce unemployment in Europe.⁹

3.2 Model and analysis

The model for studying the questions at hand is an extended variant of the two-sector economy introduced in Section 2, with labour and capital allowing for different types of labour with respect to skill levels and mobility. Labour-market frictions such as real wage rigidities¹⁰ in each industry cause unemployment. We examine how technical progress in industry 1 impacts on employment. Four combinations can occur:

- Sector employment ↓, aggregate employment ↓
- Sector employment ↓, aggregate employment ↑
- Sector employment ↑, aggregate employment ↓
- Sector employment ↑, aggregate employment ↑.

Within an asymmetric general equilibrium we can identify the conditions under which a particular case occurs.

3.3 Results

We provide two benchmark results.

- (i) If all production functions are of the same Cobb–Douglas type and if workers are mobile, a rise of productivity in industry 1 always raises aggregate employment.
- (ii) If all production functions are of the same Cobb–Douglas type and if workers are immobile and the elasticity of substitution between the goods is not too high, a rise of productivity in industry 1 raises aggregate employment until full employment is achieved in the other industry. If there is full employment in the other sector, aggregate employment may decline.

The intuition which we provide for the first case is important in order to gain an understanding of how general equilibrium forces are at work. As the productivity of industry 1 rises, production of good 1 (and good 2) rises as well, in line with an increase in aggregate real income. The same Cobb–Douglas functions in both industries imply that the factor income distribution must remain as before. When real wages are fixed, more real income on labour means that more people must be employed in the economy.

The benchmark results illustrate that, independently of the elasticity of substitution on the demand side, aggregate employment can increase. The elasticity of substitution determines how the employment effects are distributed across industries. This line of reasoning illustrates the importance of incorporating general equilibrium effects when product-market reforms are considered. In the benchmark cases, employment in a deregulated industry may decline, but aggregate employment increases and the concerns of workers at the total economy level are unjustified.

The result can be extended to a variety of circumstances. But caution is necessary in drawing more general conclusions. There are a variety of circumstances where product-market reforms inducing uneven technological progress do lower employment. Notably, when the elasticity of substitution among factors of production and among commodities in demand is small, any type of uneven technological progress (TFP, labour saving or capital saving) can cause employment to decline, as discussed in detail in Gersbach and Schniewind (2002). Therefore, the overall positive assessment of the impact of

product-market reforms on employment, as discussed in Gersbach (2000), rests on the assumption that substitution elasticities in the economy are not too low.

4 Conclusion

The main conclusion we can draw from our examples is that general equilibrium effects are an important ingredient of industry-specific deregulation or regulation. Beyond the questions of robustness, a number of important issues remain which we address in the following.

First, as suggested by Gersbach and Sheldon (1996), there may be important complementarities between product-market and labour-market reforms, operating again through general equilibrium effects. This could be important for the feasibility of the political implementation of reforms discussed below. Moreover, there are a variety of further interactions between product- and labour-market reforms. Amable and Gatti (2001) show that an increase in product-market competition boosts the hiring and the separating rate in an efficiency wage model. Blanchard and Giavazzi (2003) show how deregulation in product and labour markets reduces and redistributes rents. Such knowledge is central to the understanding of the economic path taken by countries that have or have not embarked on broad reforms.

Secondly, should monetary policy complement structural reforms over and above reactions induced by standard policy rules (e.g. inflation targeting and interest rate rules)? This thorny issue was taken up early by Hellwig and Neumann (1987) and is a central theme of the contribution of Malinvaud's Chapter 6 in this volume (see also Bean, 1998). While there may be a case for coordination of labour-market reforms and monetary policy, the usual staggered structure of product-market reforms and hence the absence of large-scale reforms at a particular point in time renders special monetary policy reactions to particular reforms irrelevant.

Thirdly, the political feasibility of implementing reforms and the associated reform design problem remain legitimately at the top of the research agenda. For instance, Saint-Paul (1995, 2000) has argued that the redistributive goals motivating labour-market institutions in Europe can be achieved at a much lower cost by using more traditional tax and transfer instruments. However, the current level of regulation can be explained by a political equilibrium, since there is a bias

towards maintaining the status quo. As argued in Coe and Snower (1997) for the labour-market and in Gersbach and Sheldon (1996) for the combination of product- and labour-market reforms, broad reform packages can internalize complementarities across reform steps. However, such programmes remain unstable against the formation of coalitions lobbying for specific exemptions. Nevertheless, product-market reforms may lower the bias towards the status quo in democracies (see Gersbach, 1993) with respect to labour-market reforms.

Finally, the new design proposal to combine incentive contracts and democratic elections (e.g. Gersbach, 2002) may be able to enlarge the set of implementable reforms and promises a higher probability that the unemployment problem in Europe will be solved.

Whether market reforms actually deliver the advantages predicted for them depends on the general equilibrium effects they induce. For further investigations into the allocative and distributional consequences of implemented, planned or discussed reforms to be made it may help that general equilibrium considerations play a more central role in actual policy-making.

Notes

1. Clearly, the absolute magnitude of partial and general equilibrium effects in macroeconomic terms depends on the size of the industry under consideration. However, the relative contribution of partial and general equilibrium effects to the macroeconomic change caused by industry-specific regulation is not primarily a matter of size.
2. Our procedure in this chapter is closely related to the learning and bounded rationality perspective in economics. Although our focus on the level of recognition of general equilibrium effects appears to be the first modelling attempt, our equilibrium concept uses the notion of self-confirming equilibria widely used in different variants in the learning literature, surveyed, for example, in Evans and Honkapohja (1999), Fudenberg and Levine (1997) and Sargent (1993).
3. A formal presentation of the model and the results can be found in Gersbach and Schniewind (2001).
4. Other plausible outside options in the Nash-bargaining framework would lead to similar effects.
5. The only variable assumed (incorrectly) to remain constant is the tax rate and thus this private sector GEB assumes a constant state sector. If tax effects were taken into account, bargaining agents would even be more cautious in wage-setting under this complete form of GEB.

6. Simulations of such learning processes are available upon request.
7. See, for example, MGI (2002) and also Baily (1993), Baily and Gersbach (1995) and Baily and Solow (2001).
8. The question of how productivity improvements in one industry affect employment in the economy is by no means new. The modern answers date back at least to Baumol (1967). But Baumol did not focus on labour-market rigidities. New growth theory has provided a variety of new insights into long-term relationships between market power, growth and unemployment (see Aghion and Howitt, 1994, 1998; Peretto, 2000).
9. The interaction between product-market and labour-market frictions plays a considerable role in the New Keynesian Economics (see Mankiw and Romer, 1991; Dixon and Rankin, 1995), which focuses on various types of market rigidities as well as deviations from perfect competition as causes or amplifiers of economic fluctuations and indicates the potential role of macroeconomic policies.
10. Qualitatively, our arguments hold when labour-market regulations are aggregate welfare-improving on grounds not incorporated in the model, such as unemployment insurance.

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3

Is Fiscal Policy Possible? Is It Desirable?

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Forty years ago, at about the time of the International Economic Association's first World Congress, no one would have bothered to ask the questions that make up the title of this chapter. Jan Tinbergen had made us aware that a society needs as many independent policy instruments as it has independent policy goals it would like to achieve. In the macroeconomic policy field, there were obviously multiple goals, and therefore a need for several instruments. The separate and joint roles of fiscal and monetary policy were a common topic of discussion.

Today the intellectual map is quite different. Serious discussion of fiscal policy has almost disappeared. A reading of the literature on macroeconomic theory and policy would lead you to believe that there is only one policy goal – the control of inflation – and that that task is assigned to monetary policy. Fiscal policy is either impossible or undesirable or both. I have the impression – it is only an impression – that the theory leading to this conclusion is taken more seriously in North America than in Europe, but the proposition about policy itself is pursued more seriously in Europe than in North America. Even in Europe, however, much debate seems to rest on the apparent presumption that low and stable inflation is not only necessary but actually sufficient for stable prosperity. My question is: what should a reasonable person think about all this?

Obviously that depends on *why* the intellectual landscape has changed so drastically. Is it because the nature of the economy has evolved, so that what used to be true is no longer so? Or is the economy pretty much the same, at least in these respects, but our

theoretical understanding has evolved, so that what we were thinking forty years ago was false even then?

We better be clear about one basic point. Nobody doubts that a government can affect the allocation of resources in its economy whenever it makes decisions about taxing and spending. It would be surprising indeed if the more than 10 per cent increase in federal military spending in the United States did not lead to increased production of military goods, plus general equilibrium effects, of course. Similarly, no one doubts that taxes on tobacco products or on gasoline have effects on resource allocation; and the same would be true in principle for differential income taxation, again with general equilibrium effects appended. So if fiscal policy is macroeconomically impossible or useless, it must be for some specifically macroeconomic reasons that need to be explained.

Those reasons could be of two kinds. One possibility is that there is simply no need for fiscal policy. If aggregate demand and aggregate supply are always in balance as a result of the normal operation of the market economy, then there is no role for fiscal policy to play on the macroeconomic stage. (One could easily make allowance for temporary, small, inconsequential disturbances without giving up the basic idea.) An old-fashioned way to say this is that, on some models of the economy, Richard Musgrave's 'stabilization branch' of the government has no function to perform that assigns a useful role to tax and expenditure policy. Fiscal policy could still have (indeed, must have) significant functions in the 'allocation branch' and the 'distribution branch', but that is a different story.

There are macroeconomic theories of that kind. They are very popular in the United States; they may in fact be the commonest framework for macroeconomic thinking in the elite universities, and in the colleges and universities that employ the PhDs graduated from the elite universities. I would guess that the lie of the land is roughly the same in Europe, but I cannot speak with confidence, and even less about other parts of the world. Of course I am referring to what began under the banner 'real business cycle theory' but now probably needs some other descriptive label. Certainly the main originators, along with Robert King, Charles Plosser and Sergio Rebelo (1988), were Finn Kydland and Edward Prescott (1982) and Robert Lucas (1977), although by now there are hundreds of contributors to a growing literature.

From the narrow viewpoint that matters here, the main hallmark of this kind of theory is that it begins by describing the economy as responding to the demands of a single, immortal representative consumer, who maximizes a well-behaved time-additive utility function subject to whatever constraints he or she perceives. In the earliest versions, the constraints were such as to allow a unique perfectly competitive, full-information, perfect foresight (or rational expectations) equilibrium. In this economy, obviously, there would be nothing for fiscal policy to do. As you would expect, the theory has been refined to allow for certain informational and market imperfections, and this certainly helps to heighten the air of unrealism that surrounds the strong assumptions. It does not, however, set out a 'welcome' mat for fiscal policy. Such models generally lead on their own to outcomes that are in some appropriate sense efficient with respect to the institutional imperfections that characterize them. There is a possibly important role for government to eliminate or neutralize or at least diminish the imperfections themselves. But that seems much more like work for the allocation or distribution branch, and not much like the aggregate demand-matching task that motivated the study of fiscal policy forty or fifty years ago.

I cannot take this kind of macro-theory seriously as a guide to fiscal policy (or a guide against fiscal policy). There are things to learn from it: how could it be otherwise in view of the lavish expenditure of talent? Nevertheless, faced with what appears to be an excess of aggregate demand over aggregate supply, or an excess of aggregate supply over aggregate demand, the technical attractiveness of real business cycle theory is not nearly enough to stop me from thinking about fiscal policy as a tool for demand management.

I have been criticizing real business cycle theory because its assumptions are incredible. But are we not taught that a theory is responsible only for its 'predictions', and not its assumptions? I think that dogma is one of Milton Friedman's less fortunate contributions to economics, for several reasons. My business today is not methodology; but I do have to say something about the 'empirical' defence of real business cycle theory, and in the course of doing so I will make a more general point.

I think that the Lucas-Prescott models have had no significant empirical success as applied to US data. One reason for this is that the standard empirical 'tests' of the model are intrinsically weak. Usually

the key parameters are 'calibrated' and it is then shown that the model can reproduce reasonably well some relative variances and covariances exhibited in real time series. That strikes me as a very low hurdle for a powerful model to jump. In particular, one has to wonder if there are not scores of alternative models that could pass a similar test with a similar degree of success, in which case the evidentiary value of the test is negligible. To revert to an earlier language again, this kind of testing (like much empirical work in economics, I fear) seems to pay no attention to the power of the test against reasonable alternatives, although that would seem to be very important in just these circumstances. In choosing among theories with roughly the same explanatory power, it would not seem altogether odd to pay some attention to the realism of their assumptions, and thus the plausibility of the implied behaviour mechanisms. In short, I do not think anyone could claim that we are forced to accept such models because they work so well.

I have been looking at one line of reasoning that has led to the disappearance of fiscal policy from the intellectual map. It does not seem to be adequate, though obviously there is much more that could be said. While I am at this abstract theoretical plane, I should mention a related argument to the effect that, even if there were a need for fiscal policy, any attempt to use it would be macroeconomically ineffective. I am thinking of the so-called 'Ricardian equivalence' proposition whose main protagonist has been Robert Barro (1974). If the world actually worked as Ricardian equivalence requires, the world might not need fiscal policy anyway; but the two claims are in principle distinct.

The Barro claim is that there is no significant macroeconomic difference between tax finance and debt finance of public spending. To put it more directly, the argument is that the volume of national saving is not affected by a switch between the two. This is not worth a long exposition, but a simple example may give the flavour. Suppose that the economy begins in whatever passes for an equilibrium state; and for simplicity imagine that the government budget is balanced, and expected to remain balanced. Now suppose that the government borrows 1 billion from households and uses the proceeds to lower taxes by 1 billion for this year only. The debt could take any form; the simplest might be a zero-coupon bond that would repay 1 billion plus accrued interest in, say, ten years. Old-fashioned reasoning

would have thought this act of fiscal policy to be expansionary, a reduction in national saving, a rightward shift of the IS curve. Ricardian equivalence says it is not expansionary but neutral. Why?

In the initial equilibrium, each household is assumed to have made and launched an optimal intertemporal consumption-saving plan, extending even beyond the current generation. That plan will be disturbed by the bond-financed tax reduction, not only because current disposable income is higher but because taxes are expected to be higher in the year of debt repayment. (If households are thoroughly forward-looking, it will not matter if the debt is refinanced one or more times before being repaid.) Households will react by getting back to an optimal intertemporal allocation. It is easy to see that one way to do that is simply to use this year's tax reduction to purchase the government bond, which will automatically provide, when it matures, just what is needed to cover the additional taxes that will then be levied to repay the debt. In other words, it will be optimal for households to save the tax reduction; this increase in private saving just offsets the government's dissaving, leaving national saving unchanged. With no change in the saving–investment balance, the event is macroeconomically neutral.

What might interfere with this neat result? Any number of things: if some households had been unable to consume as much as their optimal plan required because they lacked liquid assets and could not borrow freely, then the added liquidity provided by the tax reduction would enable them to consume more now. If the Treasury were a more efficient, less risky, borrower than many households, then the appearance of some new public debt would also affect real behaviour. And, of course, if consumers do not look ahead very far or very carefully, if they give little weight to the interests of descendants, or if they tend to ignore or underestimate the future implications of current budgetary actions, then Ricardian equivalence will fail, and tax reduction financed by borrowing will indeed be expansionary.

All those 'if' clauses strike me as very likely to be real and quantitatively important, and that suggests that Ricardian equivalence is not a practically significant limitation on fiscal policy. Nor does there appear to be any strong gross tendency for changes in public and private saving to offset one another in fact. This cannot account for the decay of fiscal policy in macroeconomic thinking.

All this has been at the level of high-flown theory. I will finish this review by considering what a good modern macroeconomics text might have to say, with the thought that a little common sense might find its way into the exposition.

The sophisticated textbook – unless perhaps it is for advanced graduate students, who will believe anything – dispenses with the representative consumer fable, and starts with a ‘natural’ or ‘equilibrium’ or – as I prefer to say – ‘neutral’ level of aggregate output. This may be derived from a natural or equilibrium or neutral unemployment rate, but not necessarily. The nature of product markets can matter, too.

The essential characteristic of the neutral level of output is that the productive sector is induced to produce more than the neutral level of output only when the (nominal) price of goods exceeds the ‘expected’ price of goods. The same proposition works on the downside: output falls short of the neutral level when the price of goods is less than the expected price of goods. Output can remain at the neutral level if and only if price expectations are correct. One advantage of this formulation over the representative consumer–intertemporal optimization story is that the neutral level of output has no claim to normative significance. There is nothing you would describe as optimal – or ‘natural’ – about it. Its significance comes from the property to be described next.

Supposing that we know what we mean by ‘the expected price of goods’, it is reasonable to presume that it will be revised upward if the current price persistently exceeds the expected price, and revised downward in the opposite case. This has a further implication. Suppose that it takes a current price level X per cent higher than the expected price in order to sustain a level of output 1 per cent higher than the neutral level of output. And suppose that is actually what happens this year. Then, as I just explained, next year the expected price will be higher than it was. If output were to be maintained 1 per cent above the neutral level, next year’s price of goods would have to be higher than this year’s, rising by just as much as the expected price.

The last step in the textbook argument is traditional. So far I have been describing the price-setting side of the economy, what we rather misleadingly call the ‘aggregate supply curve’. If there is also a standard aggregate demand curve, a negatively-sloped relation between aggregate output and the current price level, then the story I have been

telling will not go quite like that. The required rise in the price level will depress the aggregate demand for goods. What I described as an upward-shifting aggregate supply curve will slide along an unshifted aggregate demand curve, and output will tend to fall. I will try to clarify this argument with a fiscal policy related example.

Start in equilibrium, with the aggregate supply and aggregate demand curves intersecting exactly at the neutral level of output, and therefore at a price level equal to the expected price level. Now imagine an expansionary fiscal policy act, like the bond-financed tax reduction mentioned earlier. This amounts to a one-time rightward shift in the IS curve and therefore in the aggregate demand curve. Nothing has yet happened to the price-setting relation or aggregate supply curve. The new intersection of the two will register an increase in output and a higher price level, higher than the expected price level. So the 'expansionary' fiscal policy action is indeed initially expansionary; output has risen above the neutral level.

But of course the new price level exceeds the expected price level. The expected price will – sooner or later – rise; in other words, the aggregate supply curve shifts up. The outcome will be a further rise in price and a decrease in real output. Without going through the whole textbook enterprise, I can remind you that the only possible end-point is when output has fallen back to the neutral level, and the actual price level coincides with the expected price level again. The 'expansionary' fiscal policy has been only temporarily expansionary; when output returns, inevitably, to its neutral level, price and expected price will be permanently higher. Without monetary accommodation, the interest rate will be higher, with whatever that entails.

So the sophisticated textbook story goes only part of the way toward real business cycle theory. It allows for a short-term response to fiscal policy, in the conventional direction. But it shares the strong equilibrium orientation, with a slightly more reasonable account of the nature of equilibrium. I do not think one can dismiss this account as simply implausible; but I think there are grounds for being quite sceptical about this model as a guide to macroeconomic policy. I mention three reasons.

First of all, for this model to be useful, the neutral level of output – or its image, the 'natural' rate of unemployment – has to be a fairly stable, reliable, knowable number. Maybe there are times when it is; there are also times when it is not, as the second half of the 1990s in the United

States made dramatically clear. Too much confidence in the reliability of the neutral level of output can be costly. Secondly, the adjustment process I have just been describing, the one that drives output back to its neutral level eventually, can be very slow for all we know. In that case, to dismiss the effectiveness of fiscal policy as 'temporary' is to miss the boat entirely. A few years of excess demand or inadequate demand are worth offsetting, even if they would eventually go away anyway. Finally, the process of adjustment may be fairly erratic: the 'expected price' – which is embarrassingly unmeasurable anyway – may be affected by all sorts of rumours, ideological trends, political tricks, or even just foolish ideas; discretionary fiscal policy might be worse, of course, but it might also be better.

Even this kinder, gentler textbook argument does not seem to me to settle the fiscal policy issue decisively. I want to turn now to an altogether different possibility, an argument on the plane of political economy rather than economic theory. Maybe prolonged imbalances between aggregate supply and demand do occur in market economies, and maybe appropriately tuned fiscal policy could help to relieve them. But maybe also democratic politics is simply incapable of making the appropriate fiscal policy adjustments in time to do much good. Fiscal policy that is too late or too early or even too erratic could easily turn out to be perverse. Monetary policy is often said to have the advantage that central banks can act quickly and expertly, while legislatures wrangle ineffectively or worse.

I have already hinted at why this might be systematically so. It is very hard, maybe impossible, to devise a 'pure', or distributionally and allocationally neutral fiscal policy strictly for demand management purposes. Whenever discretionary fiscal policy rises to the top of the political agenda, special interests come out of the woodwork. Every tax change, every increase or decrease in public spending is fought over by the potential winners and losers, their lobbyists and elected representatives. The final outcome may often be distributionally and allocationally, and even macroeconomically, perverse. In any case it is bound to be delayed, and possibly dangerous on that account. By the way, even if a 'neutral' stabilizing fiscal policy package could be defined, there is no reason why special interests should be willing to accept it. I come back to this question later.

According to this line of argument, the trouble with discretionary fiscal policy is not that it has no role, or that it is by its nature

ineffective. The trouble is that capitalist democracies are politically unable to make intelligent use of it. Both substance and timing are vulnerable to the distortions induced by special-interest politics. Note that this is not some kind of minor flaw in the system; *it is the system*. Any observer of the US economy is bound to see a lot of truth in this picture of the policy process. I think it does explain why so many economists are inclined to believe that the Federal Reserve is the only practical instrumentality for macroeconomic policy on the business cycle time scale.

For only the most recent example, it is enough to recall the attempts of the (second) Bush administration to include reductions in capital gains taxation and even eventual elimination of the estate tax as parts of a 'stimulus package' intended to counter the mild recession of early 2001 and the threat of further weakness after the terrorist attacks of 11 September. No stretch of the imagination could impute short-run stabilization effects to either of these proposals. They were obviously an attempt to disguise redistributive politics as urgent stabilization policy. Such wastes of legislative time and energy can make it impossible to produce prompt fiscal policy response to short-term fluctuations.

This pessimistic evaluation of the political economy of fiscal policy might be valid even if the economics of fiscal policy were generally simple and straightforward. Once you add in the uncertainties connected with the neutral (or target) level of output, the formation and modification of the private sector's expectations, and the 'game' elements among various private and public institutions, the scope for delay, error, double-talk and perversity becomes even broader. Recognition of this problem has led to an interminable debate about the broad issue of 'rules vs discretion'. The rules in question can relate to fiscal policy – in the form of balanced budget rules or more sophisticated cyclically-adjusted budget rules – or to monetary policy – usually in the form of money-growth formulas – though rarely to their interaction. I want to avoid that morass altogether, and confine myself to one possible direction for the conduct of fiscal policy that may avoid some of the pitfalls already spelled out.

My suggestion is that we go back to an older tradition, and reconsider the value of what used to be called 'automatic stabilizers' or 'built-in flexibility' as an important instrument of fiscal policy. Obviously, then, I start from the belief that non-trivial imbalances of

aggregate supply and demand do occur in modern industrial capitalist economies, and last long enough that public policy should not ignore them. To that extent, the real business cycle model is not an adequate representation of actual macroeconomic behaviour. When such imbalances occur, fiscal policy is a useful tool. The single instrument of monetary policy cannot do justice to the multiplicity of policy objectives; and the Ricardian equivalence claim is in practice not nearly enough to convince a realist of the ineffectiveness of fiscal policy. The real obstacles to the rational conduct of fiscal policy are the uncertainties about the proper target for real output and employment, and the tendency for stabilization goals to become inextricably tangled in and distracted by distributional and allocational controversy. That is the terrain on which we have to manoeuvre.

The concept of automatic stabilization is, I suppose, self-explanatory. The adjective 'automatic' is a reminder that some fiscal-policy-relevant responses are supposed to occur endogenously, without discussion, without discretion, without new legislation. They are embedded in the already agreed institutional structure and are therefore part of the underlying macro model, not superimposed on it.

Thus the mere existence of an unemployment-compensation system means that a contractionary shock to demand that leads in the normal way to decreased employment will *automatically* trigger transfer payments to newly-unemployed workers. These payments contribute partially to maintain disposable income and consumption. The result is that the fall in employment and output is smaller than it would have been in the absence of unemployment compensation payments. (There may be other consequences as well, and they can be important in the design and evaluation of unemployment compensation mechanisms.)

This elementary example also illustrates and emphasizes the meaning of 'stabilization'. An unemployment compensation system, no matter how efficient, cannot *eliminate* increments to unemployment arising from contractionary shocks; if it could, the unemployment compensation payments would not be triggered in the first place. Automatic stabilizers reduce variation around some central configuration; they do not change averages. In general an automatic stabilizer is thus an already established public-policy mechanism that tends to offset autonomous (and perhaps other) changes in aggregate demand in either direction. (One could discuss the merits of automatic stabilizers

operating through aggregate supply, but that is not part of my agenda here.)

The main points I want to make have their origin in the US experience. I apologize for being so provincial in this respect, but it is in a sense unavoidable. One of those points is that the extent of automatic stabilization in a national or regional economy emerges more or less inadvertently from decisions made in the allocation and distribution branches of the public-policy apparatus. They have a naturally local character, although the underlying principles are quite general. If I succeed in reviving interest in the topic of automatic stabilization, a natural next step would be a comparative study of the evolution of automatic stabilizers in the OECD countries and elsewhere.

I have already mentioned one familiar automatic stabilizer that plays a role in every advanced industrial economy: the operation of an unemployment compensation system. Notice that the declared purpose of unemployment compensation has not been that it tends to maintain aggregate consumption in the face of falling employment, and is therefore macroeconomically stabilizing. Nations legislate unemployment compensation in order to prevent undeserved hardship among the families of unemployed workers, and perhaps also to allow the unemployed to search longer for an appropriate job instead of accepting the first available job offer, even at a lower-than-expected wage. The parameters of the system – size and duration of benefits, requirements for job search and so on – will be set and adjusted accordingly, not with a view toward the demand-stabilization effects of the system.

What is true of the unemployment compensation mechanism will also be approximately true of other components of the social safety net. Public assistance is generally the business of the distribution branch, and its structure reflects the nation's perception of the costs and benefits of relieving poverty and tempering inequality. Almost always, however, there is a cyclical element in the case-load of the public assistance system; the income floor thus provided will then certainly contribute an automatic stabilization effect, though probably not to the same extent as the flow of unemployment compensation benefits.

The most pervasive automatic stabilizer in capitalist economies is, of course, the tendency of tax revenues to rise and fall with the level of economic activity. The underlying assumption here is that

government expenditures, apart from the sorts of transfers already discussed, are relatively invariant to the current level of economic activity. Then the budget deficit, the negative of the government's contribution to national saving, will be inversely related to the level of economic activity. If that assumption breaks down, so does automatic stabilization.

Every elementary textbook shows the student that, when aggregate output is limited by demand, the multiplier associated with autonomous expenditure is smaller if the marginal tax rate is larger. That is the simplest of all automatic stabilization effects; under the maintained assumption of given public spending, a high marginal tax rate translates into a high national marginal propensity to save. The stabilizing effect is measured by the fact that the variability of aggregate income will be smaller for any degree of variability of autonomous spending.

The same sort of elementary calculation, carried a little further, shows that the stabilizing effect is greater for a more progressive tax system, as measured by the elasticity of the marginal tax rate with respect to aggregate income. This elasticity is not usually just a matter of a tax-rate formula, but depends on other characteristics of the tax system and the economy. It used to be the case in the United States that a large part of the automatic stabilization effect arose in the following way. At the national scale, the marginal tax rate on corporation profits was relatively high. Moreover, the share of corporation profits in national income was strongly pro-cyclical, rising sharply in upswings and falling sharply in downswings. These two facts combined to convert the revenue flow from the tax on corporate profits into a strong and immediate automatic stabilizer.

It is worth restating the obvious: the principle of automatic stabilization works in both directions. It resists the fall in aggregate income consequent upon a fall in autonomous expenditure; and it resists the rise in aggregate income consequent upon a revival of autonomous expenditure. It reduces variability.

The advantage of automatic stabilization is precisely that it is automatic. It is not vulnerable to the perversities that arise when a discretionary 'stimulus package' (or 'cooling-off package') is up for grabs in a democratic government. Needless to say, the distributional and allocational controversies have not been permanently avoided. They cannot be avoided. But they have been settled already, on their own

time scale, and are not reopened in connection with macroeconomic stabilization.

Some economists will take it for granted, with or without automatic stabilizers, that an industrial capitalist economy can experience excess supply or excess demand sufficiently long-lasting to justify a readjustment of fiscal and monetary policy to help settle the economy around a satisfactory level of economic activity. Other economists will take it for granted that an industrial capitalist economy self-corrects rapidly enough so that any attempt to shift the average level of economic activity is more likely to do harm than good. I have already revealed where I stand in this debate; but clearly the issue is not going to be settled any time soon.

I come back to it now only to emphasize that there are limits to what automatic stabilizers can achieve. *If* an enduring net expansionary or net contractionary change in the mix of fiscal and monetary policies is called for, it can be achieved only by a discretionary recalibration of policy instruments. Among the necessary decisions is a choice of the target level of aggregate output and employment, high enough to avoid economic waste, and low enough to avoid chronic inflation. It is a lesson of recent economic history that this magic number is not so easy to pin down; it changes from time to time, and apparently unpredictably. The inference I draw is that macroeconomic policy – which in this short-run context I take to mean primarily monetary policy – may have to be frankly exploratory in character, trying to locate the target by successive approximations, and willingly reversing itself if that appears appropriate. Not everyone is ready to go that far, and there is no need for me to argue the case here. The key point is the division of labour between automatic stabilization around an average and the choice of an average that has to be aimed at deliberately, unless you believe that it need not be aimed at at all.

This may be the place for a reminder that marginal tax rates have supply-side effects, too. High marginal tax rates may be stabilizing on the demand side, but they may also introduce distortions and disincentives. This complicates the analysis of automatic stabilization, but I do not think it can reverse one's general conclusions about counter-cyclical fiscal policy. (The model described in Buti *et al.* (2003) seems somewhat overdrawn. The relevant comment is James Tobin's remark that it takes a heap of Harberger triangles to fill an Okun Gap.)

Why should these rather elementary considerations be interesting right now? My answer is: for concrete historical reasons. Automatic stabilization is nearly always an unintended by-product of policy actions taken for some other reason. In the old vocabulary I have been using, the stabilization branch inherits the consequences of policy decisions that were debated and determined in the allocation and distribution branches for reasons pertinent to their kind of business. So the strength of the automatic stabilizers in a national economy rises and falls with developments in the politics of allocation and distribution. My contention is that there has been for a couple of decades a strong tide weakening the force of automatic stabilizers, at least in the United States, probably in the United Kingdom, and quite possibly elsewhere as well. If that is correct, it then becomes an interesting question whether anything can or should be done to repair the damage to automatic stabilization.

The general observation behind this statement will be familiar to everyone. At least from the advent of the Reagan Administration in the United States and the successive Thatcher governments in the United Kingdom, the tide has turned against the welfare state and its typical institutions. Eligibility for various forms of public assistance has been tightened, benefits have been decreased and strong efforts have been made to reduce the case-load for most forms of assistance. Some of this history has been repeated in Europe. In parallel there has been a general push to lower tax rates and, especially in the United States, to diminish the degree of progressivity in the tax-transfer system as a whole. It is no part of my argument whether this historical development has been a good thing or a bad thing. All that matters is that it has occurred, for its own reasons. One casual result has probably been a change for the worse in the dynamic response of the aggregate economy to autonomous shocks to aggregate supply and aggregate demand.

I have not tried to study seriously the recent evolution of automatic stabilizers in the United States or in the OECD generally, but this would be a worthwhile exercise. What is needed are estimates of marginal contributions to aggregate demand, to be estimated econometrically. The few fragmentary estimates that I have seen seem to converge on the notion that the overall strength of automatic stabilization, after increasing in the 1960s and 1970s, peaked near 1980 and has diminished since then, back to the 1960 level. This picture

applies both to Europe and the United States. This confirms my own casual impression. What I can do easily is to quote a few figures that at least suggest some weakening of key automatic stabilizers during recent decades. This sort of selective sampling of average ratios cannot substitute for careful analysis, but may lend some plausibility to the hypothesis I have stated. Here are a couple of examples.

The more striking one has to do with the special role of the tax on corporate profits. My recollection is clear that in the 1960s the procyclical fluctuations in profits and the relatively high marginal tax rate on them created a rather high (cyclical) marginal propensity to tax. In 1950 corporation income taxes provided 26.4 per cent of all federal revenues. That proportion fell to 23.2 per cent in 1960, 17.0 per cent in 1970, 12.5 per cent in 1980, 9.1 per cent in 1990 and 10.2 per cent in the highly prosperous year 2000 (and down to 8.0 per cent in the weak year 2002). Of course it would be better to compare years at equivalent stages of the business cycle; but even this crude calculation is enough to show that the degree of automatic stabilization provided by this mechanism must have diminished drastically in the past fifty years. This shift in the tax burden may have been a good idea or a bad idea for other reasons. The effect on automatic stabilization is merely a casual by-product.

Here is a second observation. Efforts to lessen the impact of unemployment compensation on labour-supply decisions have been far more prominent in Europe than in the United States. But something similar has been happening in the United States without much in the way of discussion. I notice that total unemployment insurance benefits paid out have tended to fall as a fraction of total wages and salaries since 1970, from about 1 per cent in 1970 and 1980 to about 0.6 per cent in 1990 and 2001. (I chose 2001 because the fraction was unusually low in a peak year like 2000 with an exceptionally small unemployment rate.) Part of the reason for this decline was the apparent unwillingness of the Administration and Congress to extend the duration of unemployment insurance benefits during the recession. Even ten years' earlier, this sort of extension was all but a matter of course. Another, more mysterious, factor is the fall in the number of eligible workers who actually claim unemployment insurance benefits. In the 1970s about half of those entitled to benefits actually received them; in the 1990–91 recession, only about a third did so.

There can be no doubt that the contraction and restructuring of the US public welfare system after the Act of 1996 has also weakened another automatic stabilizer, though it would be hard to establish any numerical measure of this effect. It is an interesting fact that a substantial number of women displaced from the welfare rolls have failed to claim other public assistance benefits to which they remain entitled; the result can only magnify the effect.

A detailed calculation by Auerbach (2002) suggests that the amplitude of automatic stabilization is now approximately where it was in 1960, having increased until about 1980 and then fallen back. I am not entirely convinced by his estimates, especially with respect to the role of corporation tax. Nor do I think that this empirical question should be approached via models of intertemporal equilibrium. But it is a complicated issue. Maybe some simulations with a reasonable medium-to-large econometric model would help.

Suppose my guess is right, and automatic stabilization has become less effective. It would not matter much, if we could count on discretionary fiscal policy to supplement monetary policy in the pursuit of such social goals as high employment, low inflation and an appropriate balance among private and public consumption and private and public investment. If, however, discretionary fiscal policy is delayed or even paralysed because of its inevitable entanglement with distributional and allocational controversy, the weakening of automatic stabilizers is a real loss.

Could the loss be repaired by a deliberate effort to restore the strength of automatic stabilizers? The policy decisions on taxation and the welfare state that led to the weakening are not going to be reversed for stabilization reasons. (Of course those who opposed those decisions in the first place can work for reversal, but surely not on stabilization grounds.) What might be possible is an attempt to rebuild automatic stabilization in ways that have minimal effects on the underlying political economy issues. The idea would be to attach trigger mechanisms to a number of public spending and tax instruments in such a way as to leave their average settings unchanged while redistributing over time their contributions to aggregate demand in a stabilizing way; they should become more expansionary when the economy weakens and more contractionary when the economy strengthens.

The most obvious opportunity is with taxation; legislated rates could be keyed to some measure of economic conditions, automatically rising a notch when there are signs of overheating, and falling a notch if the macroeconomy deteriorates. This sort of 'formula flexibility' would be especially effective in an economy with a national sales tax or value-added tax. The temporary nature of an automatic increase (or decrease) in the rate would provide an incentive to postpone (or accelerate) purchases, which is just the desired effect.

Automatic increases and decreases in public spending can be more problematic. Some expenditure streams, as with construction projects, have their own logic; fiddling with them may induce inefficiency. But flows of transfer payments, and some other expenditures, could also be triggered by stabilization needs with little or no loss.

Any such attempt would naturally run into allocational and distributional issues of the sort that interfere with discretionary fiscal policy now. But they would need to be negotiated only once, or perhaps once in a decade, not twice in the course of every business cycle. All this complication arises because societies have more than one economic goal and therefore need more than one policy instrument. If the goals are worthwhile, so is the complication. If, as many of us suspect, fiscal policy is a useful adjunct to monetary policy, strengthening the automatic stabilizers may be a way to overcome the political economy obstacles that tend to create delay and ineffectiveness in democratic societies.

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4

Institutional Interactions in Open Economies: Implications for EMU

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1 Introduction

In this chapter we analyse how the interactions between three groups of institutional actors – firms, unions and central banks – in two open economies determine output and employment in these countries. The role and importance of institutions for economic development has been stressed in recent years, in particular in the European context. First, it was discussed how the institutional innovations that are associated with the formation of the Economic and Monetary Union (EMU) and the introduction of a common currency could impact on the functioning of European labour markets, by either changing the strategic interactions between the various institutional actors (cf. Cukierman and Lippi, 2001; Soskice and Iversen, 1998) or by further encouraging the ongoing processes of European integration, product-market deregulation and the intensification of competition (cf. Nicoletti *et al.*, 2001; Burda, 1999).

In addition, the academic and public discussion was focused on the question of how these modifications in the monetary regime and the expected changes in the degree of integration and in market structure could themselves induce legislative and regulatory reforms or provoke spontaneous reorganizations that could fundamentally alter

* The views expressed in this chapter do not necessarily reflect those of the Oesterreichische Nationalbank.

the institutional environment in Europe. These prospective developments are even more relevant since many European countries have to deal with high rates of structural unemployment that are frequently attributed – amongst other factors – to an inappropriate set of labour-market institutions (cf. Layard and Nickell, 1999; Modigliani *et al.*, 1998).

In this chapter we develop a two-country model that allows us to discuss some of these issues. In Section 2 we present the basic model that is characterized by the interaction of unions, firms and central banks.¹ Unions are assumed to be non-atomistic, i.e. they are large enough to take the impact of wage demands on the firms' pricing and labour-market decisions and on central banks' monetary policy reactions into consideration. We show that the role played by the degree of centralization of wage-bargaining is ambiguous in this model since it has both an increasing effect on the elasticity of labour demand (via relative prices) and a decreasing effect (via real demand). The equilibrium of the open economy model has the property that the rates of structural unemployment in each country depend on the institutional characteristics of *both* countries which is due to international spillovers in demand and to unions' farsseeing behaviour.

In Section 3 we discuss how the formation of a monetary union alters the results of the model. In particular, we show that under specific assumptions monetary unification has no impact on equilibrium unemployment. The assumptions are that the two countries were part of a fixed-exchange rate regime before adopting the common currency and that the common central bank of the monetary union follows the same monetary policy strategy as the anchor bank of the previous regime. We argue that these assumptions are not completely implausible and that therefore the often-heard statement that EMU could cause an upheaval of the traditional strategic environment, thus inducing more aggressive wage-setting behaviour and higher unemployment, should be treated with some caution. This does not mean, however, that monetary union will not have any impact on European labour markets. On the contrary, as argued in Section 4, the advent of EMU is likely to accelerate existing processes of change in the economic and institutional environment. Given the complex structure of the institutional configuration and the widespread and multi-layered interdependencies and complementarities this could cause a fundamental restructuring of European labour markets with uncertain consequences for unemployment. Section 5 concludes.

2 A two-country model

We consider two countries that are linked by foreign trade and that have a total population that is normalized to 1. Firms and households over the $[0, \gamma]$ interval are located in the home country H while firms and households over the $[\gamma, 1]$ interval are located in the foreign country F . The relative size of countries H and F are thus γ and $(1 - \gamma)$, respectively. The macroeconomic development of the two economies is determined by the interactions of three groups of institutional actors that are present in each country: unions, firms and central banks. In order to structure the various interactions and mutual influences between these actors we assume the following sequence of events. Unions are assumed to be in a position to set the nominal wages of their members first.² Given these wages, firms choose optimal prices and the corresponding levels of production and employment (taking the respective demand functions into consideration). These price-setting decisions by the firms also determine the national rates of inflation which then have an impact – at the third stage – on the monetary policy reactions of the central banks. Finally the exchange rate will equilibrate goods and money markets. All institutional actors are assumed to take the behaviour of the other actors into consideration when they are making their own decisions – at least in as far as they are foreseeable and relevant for their own goals. The equilibrium of the economy is solved by backward induction.

2.1 The demand side

Each firm i is assumed to be the monopolistically competitive supplier of one differentiated good. Furthermore it is assumed that the individuals living in H and in F have preferences that give rise to the following demand functions:³

$$y_i^h = -\theta(p_i^h - p_H) - (p_H - p) + \gamma(m - p) + (1 - \gamma)(m^* - p^*) \quad (1)$$

$$y_i^f = -\theta(p_i^{*f} - p_F^*) - (p_F^* - p^*) + \gamma(m - p) + (1 - \gamma)(m^* - p^*) \quad (2)$$

where all lower-case letters are log-variables, y_i^h (y_i^f) is the demand for the good produced by home (foreign) firm i , p_i^h (p_i^{*f}) is the price charged by this firm, p_H (p_F^*) is the price index for goods produced in H (F), p (p^*) is the total price index in H (F), m (m^*) is the level

of home (foreign) money supply and variables with an asterisk are expressed in the foreign currency. $\theta > 1$ measures the elasticity of substitution across goods produced within a country. The price indices are defined by:

$$p_H = \frac{1}{\gamma} \int_0^{\gamma} p^h(i) di \quad (3)$$

$$p_F^* = \frac{1}{(1-\gamma)} \int_{\gamma}^1 p^{*f}(i) di \quad (4)$$

$$p = \gamma p_H + (1-\gamma) p_F \quad (5)$$

$$p^* = \gamma p_H^* + (1-\gamma) p_F^* \quad (6)$$

Furthermore we assume that the law of one price holds, i.e. that $p_i^{*h} + e = p_i^h$ and $p_i^{*f} + e = p_i^f$, where e is the (logarithm of the) nominal exchange rate. From the definition of the price indices (3)–(6) it follows that the purchasing power parity (PPP) also holds for the price indices:

$$p_H^* + e = p_H, p_F^* + e = p_F \text{ and } p^* + e = p \quad (7)$$

For later reference we also state the following aggregate relation (following from (1) and (2)):

$$y_H - y_F = p_F - p_H \quad (8)$$

where

$$y_H \equiv \frac{1}{\gamma} \int_0^{\gamma} y^h(i) di, \quad y_F = \frac{1}{(1-\gamma)} \int_{\gamma}^1 y^f(i) di$$

2.2 The structure of industrial relations

As mentioned above, firms are monopolistic competitors and both economies are inhabited by N_H (N_F) unions that are distributed evenly across the firms. In particular we assume (without loss of generality) that the latter are indexed in such a way that all firms in country H to which union j is attached are located in the subinterval $\left[\gamma \frac{j-1}{N_H}, \gamma \frac{j}{N_H} \right]$ of the interval $[0, \gamma]$, where $j = 1, 2, \dots, N_H$. A parallel indexation also holds in country F . All workers are assumed to be unionized and

each union represents an equal share $\tilde{L}_j^h = \frac{\tilde{L}_H}{\tilde{N}_H}$ ($\tilde{L}_j^f = \frac{\tilde{L}_F}{\tilde{N}_F}$) of the total labour force \tilde{L}_H (\tilde{L}_F). As in Bratsiotis and Martin (1999), we let the parameters $\sigma_H \equiv \frac{1}{\tilde{N}_H}$, $\sigma_F \equiv \frac{1}{\tilde{N}_F}$ denote the degree of centralization of wage-bargaining (CWB), ranging from 0 (complete decentralization) to 1 (complete centralization).

The production function of firm i is assumed to be linear in employment l_i^h (l_i^f), i.e. $y_i^h = l_i^h$ ($y_i^f = l_i^f$).⁴ Firms in H maximize their real profit given by:

$$\pi_i^h = \frac{P_i^h Y_i^h - W_i^h L_i^h}{P} \quad (9)$$

Unions, on the other hand, care about the real (consumption) wage of their members and about their employment situation. In particular we assume that each union j minimizes a loss function of the form:

$$\Omega_j = \frac{1}{2} (w_j^h - p - \omega)^2 + \frac{1}{2} (l_j^h - \tilde{l}_j^h)^2 \quad (10)$$

where ω is the target level of real wages.⁵

2.3 The structure of monetary policy

Both central banks are assumed to pre-commit to a monetary policy rule which states how money supply is adjusted in response to changes in the price level. In particular:

$$m = \tilde{m} + \alpha_H p \quad (11)$$

$$m^* = \tilde{m}^* + \alpha_F p^* \quad (12)$$

Here \tilde{m} (\tilde{m}^*) is the exogenously given (or discretionary) part of the monetary rule and α_H (α_F) measures how accommodating monetary policy reacts to changes in domestic prices p' (p^*). For this degree of accommodation of monetary policy (AMP) it is assumed that $\alpha_c \in [-\infty, 1]$, where $c \in \{H, F\}$. A central bank that sets $\alpha_c = 0$ follows a money supply rule where the nominal money supply is held fixed. Every price increase will in this case lower aggregate real demand and will thus have negative consequences for production and labour demand. $\alpha_c = 1$, on the other hand, means that the central bank fixes real demand and fully accommodates any price increases. If α_c is negative the central bank follows a particularly restrictive monetary policy where it reacts to price increases by decreasing money supply.

Once the central banks have made their monetary policy decisions, the exchange rate will adjust in such a way that the current account is in equilibrium. In the model at hand this means that the equilibrium condition $m - p = m^* - p^*$ has to be fulfilled (Knell, 2002a). This gives rise to the following equilibrium exchange rate:

$$e^{flex} = \frac{\alpha_H - \alpha_F}{1 - \alpha_F} p + \frac{1}{1 - \alpha_F} (\tilde{m} - \tilde{m}^*) \quad (13)$$

In cases in which a country wants to fix its exchange rate it forgoes the possibility of independent monetary policy. If, for example, country H wishes to target an exchange rate, it must set $\alpha_H = \alpha_F$ and copy the monetary policy rule of country F .

In a monetary union monetary policy is set by a common central bank that follows the monetary policy rule given by:

$$m_{MU} = \tilde{m}_{MU} + \alpha \bar{p} \quad (14)$$

where m_{MU} is the *per capita* money supply of the whole monetary union, \tilde{m}_{MU} is the exogenous factor of the monetary policy rule, α is the degree of accommodation of the common central bank and $\bar{p} = \gamma p + (1 - \gamma)p^*$ is the union-wide target price level of the bank. In this case, exchange rates cease to exist (or are permanently fixed at $e = 0$).

2.4 Solution

In solving the model we can directly start with the second stage since the fourth stage (the determination of the exchange rate) and the third stage (the setting of monetary policies) are given by equilibrium conditions and monetary rules which are assumed to be known by all economic actors.

Maximization of (9) leads to the simple price mark-up rule for all firms:

$$p_i^h = \mu + w_i^h \quad (15)$$

where $\mu \equiv \ln\left(\frac{\theta}{\theta-1}\right)$. Integrating over all firms leads to the following aggregate price-setting equation:

$$p_H = \mu + w_H \quad (16)$$

where $w_H \equiv \frac{1}{\gamma} \int_0^\gamma w^h(i) di$. In a similar fashion an aggregate price-setting equation is also derived for country F :

$$p_F = \mu + w_F \quad (17)$$

The unions take these price-setting equations, the monetary policy rules and the equilibrium exchange rate as given when choosing their optimal nominal wage levels. Minimization of (10) leads to:

$$w_j^h = \omega + p + \frac{\lambda_H}{\eta_H} (l_j^h - \tilde{l}_j^h) = \omega + p - \frac{\lambda_H}{\eta_H} u_j^h \quad (18)$$

where $\eta_H \equiv 1 - \frac{dp}{dw_j^h}$ is the elasticity of real wages with respect to nominal wages, $\lambda_H \equiv -\frac{dl_j^h}{dw_j^h}$ is the wage elasticity of labour demand and

where the unemployment rate is defined as $u_j^h \equiv \frac{(\tilde{l}_j^h - l_j^h)}{l_j^h} \approx (\tilde{l}_j^h - l_j^h)$. In a symmetric equilibrium we will have $u_j^h = u_H$ and $w_j^h = w_H$ and we can thus derive an aggregate wage-setting equation: $w_H = \omega + p - \frac{\lambda_H}{\eta_H} u_H$. This can be written in terms of the product wage as:

$$w_H - p_H = \omega + (1 - \gamma)(p_F - p_H) - \frac{\lambda_H}{\eta_H} u_H \quad (19)$$

In a first step we can now use the price-setting equation (16) in (19) to calculate the equilibrium level of unemployment in H (for the terms of trade $p_F - p_H$ held fixed):

$$u_H = \frac{\eta_H}{\lambda_H} [\mu + \omega + (1 - \gamma)(p_F - p_H)] \quad (20)$$

As one would expect, unemployment increases in the mark-up μ (a measure for the uncompetitiveness of product markets), in the alternative wage ω and in η_H . The latter follows from the fact that a union foreseeing that nominal wage increases are to a large part neutralized by price increases will moderate its wage demands in the first place, thereby leading to higher employment. An increase in the (perceived) elasticity of labour demand λ_H will also lower unemployment since the same increase in nominal wages is now expected to have larger costs in terms of unemployment. Finally an increase in import prices p_F will also have a negative impact on unemployment by increasing wage pressure (cf. Layard, Nickell and Jackman, 1991, pp. 107f.). Note, however, that the terms of trade are endogenous in general equilibrium and so all of the effects have to be interpreted as partial equilibrium effects. Before we turn to the general equilibrium

we want to have a closer look at the determinants of the elasticities λ_H and η_H .

The elasticity of labour demand is given by the following expression (from (1) and from $y_i^h = l_i^h$):

$$\lambda_H \equiv -\frac{dl_j^h}{dw_j^h} = \theta \frac{d(p_j^h - p_H)}{dw_j^h} + (1 - \gamma) \frac{d(p_H - p_F)}{dw_j^h} - \gamma \frac{d(m - p)}{dw_j^h} - (1 - \gamma) \frac{d(m^* - p^*)}{dw_j^h} \quad (21)$$

This expression contains the ‘conventional wisdom’ about the consequences of different monetary policy rules on the perceived elasticity of labour demand. The larger the degree of accommodation of domestic and of foreign monetary policy (i.e. the larger $\frac{dm}{dw_j^h}$ and $\frac{dm^*}{dw_j^h}$) the lower will be the elasticity of labour demand λ_H and thus the higher – *ceteris paribus* – the rate of unemployment (cf. (20)). At the same time λ_H is also lower if unions expect depreciations as a consequence of nominal wage hikes (i.e. if $\frac{de}{dw_j^h} > 0$). In equilibrium, however, where we calculate all the effects present in (21) we arrive at a much simpler expression, where many of the demand channels cancel: $\lambda_H = \theta(1 - \sigma_H) + \sigma_H(1 - \gamma\alpha_H)$. Here we are left with a relative price effect and a real balance effect.

The relative price effect $\theta(1 - \sigma_H)$ captures the fact that nominal wage increases will induce the firms involved to increase prices, which tends to reduce their sales and thus also their labour demands. This effect is higher in competitive markets (high θ) and lower where fewer unions control the total labour force (high σ_H).

But there exist three additional effects that are present only for non-atomistic unions ($\sigma_H \neq 0$) and that work in the opposite direction. The sum of these effects is captured by the term $\sigma_H(1 - \gamma\alpha_H)$ and we refer to this expression as the (total) real balance effect (RBE).⁶ The mechanisms underlying this total real balance effect are, however, more complicated than one would expect by just looking at this simple algebraic expression.

First there is a terms of trade effect (or ‘international competitiveness effect’), given by the second term in (21), that has a straightforward meaning. A higher price of domestic goods leads to

a substitution effect where consumers in both countries switch from the more expensive home products to the now cheaper foreign products. The effect comes out as $(1 - \gamma)\sigma_H$ and is thus larger for more centralized unions and for smaller countries (where a larger part of the product demand stems from abroad).

Second there is a domestic real balance effect. An increase in domestic prices translates into a γ per cent increase in the domestic price index thereby lowering (for a fixed money supply) real balances and real demand by another γ per cent. This can be accommodated or further strengthened (depending on $\alpha_H \geq 0$) by the monetary policy reaction (given by (11)). The effect can be calculated as: $\gamma^2\sigma_H(1 - \alpha_H)$ and is thus increasing in the CWB, decreasing in the AMP and increasing in the country size. In small countries most demand comes from abroad and thus the effects on both domestic demand and the domestic monetary policy reaction are rather unimportant.

Finally there is also a foreign real balance effect (given by the last term in (21)) which is the most complicated mechanism in this framework, since it itself involves separate subeffects on foreign demand, foreign monetary policy and on the exchange rate. To start with, the increase in the price index p_H of home-produced goods also increases (for a fixed exchange rate) the foreign price level p^* , which will reduce foreign real demand for the home products, where the reaction of foreign monetary policy can again mitigate or strengthen these consequences (depending on the sign of α_F). This effect is given by: $\gamma(1 - \gamma)\sigma_H(1 - \alpha_F)$. But in addition the (possibly different) monetary policy reactions in the two countries have an impact on the equilibrium exchange rate which can alter the influence on foreign demand. The total impact of the exchange rate on foreign demand is given by: $\gamma(1 - \gamma)\sigma_H(\alpha_H - \alpha_F)$. If the central bank in H is more accommodating (i.e. $\alpha_H > \alpha_F$) then this will lead to an increase in e , that is to a depreciation of H 's currency. The total foreign real balance effect can then be calculated as: $\gamma(1 - \gamma)\sigma_H(1 - \alpha_H)$. As apparent from this expression, the exchange rate effect counteracts some of the other effects such that, for example, the foreign AMP plays no role any more.

The total real balance effect, given by $\sigma_H(1 - \gamma\alpha_H)$, thus increases in the CWB and decreases in the AMP. As far as the country size is concerned one has to distinguish between the cases $\alpha_H > 0$ and $\alpha_H < 0$. If the monetary policy is accommodating (in the sense that $\alpha_H > 0$) it is 'better' to be small, since then the loose policy cannot have a large

damaging impact on the perceived elasticity of labour demand. On the other hand it is advantageous to be a large country when the monetary policy is non-accommodating (i.e. $\alpha_H < 0$) since then the restrictive policy has a more ‘threatening’ impact on unions’ behaviour.

Summarizing the discussion so far, an increase in the CWB has two effects on the elasticity of labour demand that work into opposite directions: it will reduce the elasticity through the relative price effect and increase it through the real balance effect. But these are not the only channels through which the CWB influences wages and unemployment. In deciding about the optimal nominal wage claims the unions do not only look at the reaction of labour demand, but also at the real wage ($w_j^h - p$). Thereby it is important how the unions perceive that a one-unit increase in nominal wages is transformed into an increase in the real (consumption) wage. This elasticity of the union’s real wage with respect to the nominal wage is given by: $\eta_H = 1 - \gamma\sigma_H$. The smaller η_H the more moderate the union’s wage claims will be, since it understands that excessive nominal wages will be reflected only in identical price increases, leaving the real wage almost unchanged. Thus more centralized (high σ_H) wage-setting institutions will lead to more wage moderation. Wage claims will also be lower in large countries (high γ), since there the impact of a ‘wage–price spiral’ is fully felt and perceived.

The corresponding aggregate wage-setting equation for foreign country F can be calculated using the same steps as for country H :

$$w_F^* - p_F^* = \omega + \gamma(p_H^* - p_F^*) - \frac{\lambda_F}{\eta_F} u_F \quad (22)$$

where now $\lambda_F = \theta(1 - \sigma_F) + \sigma_F(1 - (1 - \gamma)\alpha_F)$ and $\eta_F = 1 - (1 - \gamma)\sigma_F$.

To close the model note that using (8) we can derive an additional equilibrium (terms of trade) condition: $TOT \equiv p_F - p_H = u_F - u_H$ (see Knell, 2002a). Using this together with (16), (17), (19) and (22) we can calculate the equilibrium rates of unemployment for the two countries:

$$u_H^* = \frac{(\mu + \tilde{\omega})\eta_H(\lambda_F + \eta_F)}{\gamma\lambda_H\eta_F + (1 - \gamma)\lambda_F\eta_H + \lambda_H\lambda_F} \quad (23)$$

$$u_F^* = \frac{(\mu + \tilde{\omega})\eta_F(\lambda_H + \eta_H)}{\gamma\lambda_H\eta_F + (1 - \gamma)\lambda_F\eta_H + \lambda_H\lambda_F} \quad (24)$$

$$TOT^* = \frac{(\mu + \tilde{\omega})(\lambda_H\eta_F - \lambda_F\eta_H)}{\gamma\lambda_H\eta_F + (1 - \gamma)\lambda_F\eta_H + \lambda_H\lambda_F} \quad (25)$$

For later comparisons we also restate the crucial elasticities for λ_c and η_c in the case of a flexible exchange rate regime (denoted by the superscript ‘flex’):

$$\lambda_H^{flex} = \theta(1 - \sigma_H) + \sigma_H(1 - \gamma\alpha_H) > 0 \quad (26)$$

$$\lambda_F^{flex} = \theta(1 - \sigma_F) + \sigma_F(1 - (1 - \gamma)\alpha_F) > 0$$

$$\eta_H^{flex} = 1 - \gamma\sigma_H > 0$$

$$\eta_F^{flex} = 1 - (1 - \gamma)\sigma_F > 0$$

As the expressions in (23) and (24) show, unemployment in each country depends on the institutional characteristics of *both* countries (via λ_c and η_c). In this respect, there are transnational spillovers that are due to the fact that unions are large enough to internalize demand externalities. If $\sigma_H = \sigma_F = 0$ then $u_H^* = u_F^* = \frac{\mu + \bar{\omega}}{\theta}$ and these spillover effects vanish. For non-atomistic unions, however, institutional changes in one country will also have effects on the other country.

3 Impact of changes in the monetary regime

We can use the results derived so far to discuss the impact of changes in the monetary regime in this model and relate it to possible effects that might arise from the establishment of EMU. First and foremost it was argued in this context that the formation of a monetary union and the associated changes in the monetary regime will lead to an increase in unemployment since the wage-moderating effects of a less than fully accommodating monetary policy might partly lose its bite due to the fact that a single central bank is now the counterpart of various national unions. This was, for example, argued by Cukierman and Lippi, who write that ‘with the formation of the monetary union all unions become smaller relative to the monetary area (i.e. the monetary union reduces the wage share of each single union). This decreases their perception of the inflationary repercussions of their individual wages, inducing them to more aggressive wage demands’ (Cukierman and Lippi, 2001, p. 541). The formalization of this argument is, however, mostly based on closed economy models.⁷ Not only does it seem somewhat awkward to assume that closed economies decide to form a monetary union in the first place, it also seems to neglect the fact

that unions – especially in small open economies – typically care a lot about the macroeconomic situation across their borders and about the impact of their decisions on international competitiveness.

We can use our model to study the validity of this argument in the context of an open economy model. Monetary policy is now set according to (14), where $\bar{p} = \gamma p + (1 - \gamma)p^*$ and the demand functions are now given by:

$$y_i^h = -\theta(p_i^h - p_H) - (1 - \gamma)(p_H - p_F) + (m_{MU} - \bar{p}) \quad (27)$$

$$y_i^f = -\theta(p_i^f - p_F) - \gamma(p_F - p_H) + (m_{MU} - \bar{p}) \quad (28)$$

Due to the preference structure the price level in both countries is the same ($p = p^*$). The equilibrium rates of unemployment are still given by (23) and (24) where the crucial elasticities (calculated using the same steps as above) come out as:

$$\lambda_H^{MU} = \theta(1 - \sigma_H) + \sigma_H(1 - \gamma\alpha) > 0 \quad (29)$$

$$\lambda_F^{MU} = \theta(1 - \sigma_F) + \sigma_F(1 - (1 - \gamma)\alpha) > 0$$

$$\eta_H^{MU} = 1 - \gamma\sigma_H > 0$$

$$\eta_F^{MU} = 1 - (1 - \gamma)\sigma_F > 0$$

Comparing these expressions to the values for λ_c and η_c in the flexible exchange rate regime (16) we want to note first that the formation of a monetary union will not necessarily cause more aggressive wage-setting behaviour putting thus upward pressure on unemployment. In fact if we assume that $\alpha_H = \alpha_F = \alpha$ then the elasticities in (29) are the same as in (26) and the formation of the monetary union has no effect on equilibrium unemployment. As far as the European situation is concerned, this case of $\alpha_H = \alpha_F = \alpha$ is in fact not completely hypothetical since it corresponds to a situation where the two countries have followed a fixed-exchange rate regime before introducing a common currency and where the common central bank of the monetary union follows the same strategy as the anchor bank of the fixed-exchange rate regime. This ties in well with the example of EMU, as all participating countries were part of a fixed-exchange rate system (the EMS) prior to joining EMU and *de facto* oriented their national monetary policy decisions and strategies on those of the Deutsche Bundesbank.⁸ Moreover, it has often been emphasized

that the institutional set-up and monetary policy orientation of the European Central Bank (ECB) are modelled on those of the Deutsche Bundesbank, so that the assumption that $\alpha_F = \alpha$ appears to be quite justified.

The intuition behind this result may be explained first of all by the fact that the basket of goods, and hence the price indices in both countries, are identical due to the demand structure of the model in this study. In the pre-monetary union period, unions in H (F) heed the effects on p (p^*), and both central banks pursue p (p^*) as their target. This picture is no different in a monetary union, as the new target of the (common) central bank is still given by $\bar{p} = \gamma p + (1 - \gamma)p^* = p$ and as neither the monetary policy rule nor the behaviour of the unions changes (provided that $\alpha_H = \alpha_F = \alpha$). In the closed economy models, on the other hand, a wedge is driven between the targets of the national central banks and the target of the common central bank. The former target their domestic price levels (p_H and p_F) while the latter targets some weighted average of those price levels, and in general these will not coincide.

As this explanation indicates the 'neutrality result' (i.e. the result that the introduction of a common currency has no effect on unemployment) is derived in a particular framework that rests on specific assumptions, each of which might be scrutinized and criticized. First we want to note that the formation of the monetary union certainly has effects on real variables if the common central bank follows a different monetary policy strategy than the anchor bank (of a fixed-exchange rate regime) or than the individual national central banks (in the case that a monetary union replaces a flexible-exchange rate regime). If it is more restrictive (lower α) than its predecessors then area-wide unemployment will tend to be lower, as can be seen by noting that (using (23), (24) and the corresponding elasticities): $\frac{\partial u_H^*}{\partial \alpha c} > 0$, $\frac{\partial u_F^*}{\partial \alpha c} > 0$ (see the Appendix). In the context of the present model it is 'optimal' (in the sense of being associated with the lowest level of unemployment) to have a highly non-accommodating monetary policy.⁹ An alternative way to see this is to look at (21) and note that $\frac{dp^*}{dw_j^H} = \frac{dp}{dw_j^H} - \frac{de}{dw_j^H}$. In a fixed-exchange rate regime and in a monetary union we have $\frac{de}{dw_j^H} = 0$ and so one could be inclined to think that the move from a flexible exchange rate regime to a monetary

union would lower λ_H and thus tend to increase unemployment. Before the monetary union, central banks always had the option to react to wage increases by devaluations ($\frac{de}{dw_j^H} > 0$) in order to restore international competitiveness and to stabilize demand. As (21) shows, this argument is not necessarily true. It is valid only for the more accommodating countries that did in fact react to price increases by extending money supply and tolerating depreciations. But this is only the case if $\alpha_H > \alpha_F$, as can be seen from (13) where $e > 0$ exactly for $\alpha_H > \alpha_F$. If, however, the country was part of a fixed-exchange rate regime before joining the monetary union it had to set $\alpha_H = \alpha_F$ right from the beginning and thus domestic monetary policy was no longer endogenous. These aspects are studied more extensively in Knell (2002b).

The neutrality result also rests on the specific assumptions concerning the objective function of the central bank, i.e. that they follow monetary policy rules that involve only a nominal target. Alternatively, one could look at a situation where central banks also pursue a real (unemployment rate) target and where the monetary policy rules are no longer given by (11), (12) and (14) but rather by: $m = \tilde{m} + \alpha_H^p p + \alpha_H^u u_H$, $m^* = \tilde{m}^* + \alpha_F^p p^* + \alpha_F^u u_F$ and $m_{MU} = \tilde{m}_{MU} + \alpha^p \bar{p} + \alpha^u \bar{u}$. Interestingly, for the *ceteris paribus* assumption (i.e. $\alpha_H^p = \alpha_F^p = \alpha^p$ and $\alpha_H^u = \alpha_F^u = \alpha^u$) we can derive that in contrast to the conventional argumentation structural unemployment in the monetary union will *decrease*. The intuition for this result is that the common central bank pays less attention not only to the development of national price levels, but also to the development of national unemployment rates. In the case where before the formation of a monetary union national central banks have been rather accommodating (depending on the size of α_c^u) in order to counteract rises in national unemployment, the common central bank will react less to national developments. Rational unions will anticipate this circumstance, however, and will pursue a more employment-friendly policy from the outset. A similar result could arise in a framework where central bank behaviour is derived from the maximization of some objective function instead of being specified by some pre-determined monetary policy rule (cf. Coricelli, Cukierman and Dalmazzo, 2000, 2001; Cukierman and Lippi, 1999, 2001). We want to note, however, that it is controversial whether the former or the latter conceptualization is a better representation of

real-world behaviour (cf. Bean, 1998). Finally the neutrality result depends also on the assumption that all goods in the model are (potentially) tradable and the introduction of a non-traded goods sector could alter the results.

Altogether, however, the stylized open economy model shows that the conventional argumentation that EMU will fundamentally change the strategic interaction between important institutional actors and will cause more aggressive wage-setting behaviour and thus higher unemployment is inconclusive and respective statements should be handled with some care. This does not mean, however, that EMU could not have an impact on European labour markets and in Section 4 we want to discuss the possible (and likely) consequences that might arise from economic and institutional changes.

4 Impact of changes in economic, regulatory and institutional structures

Many economists claim that the formation of the monetary union and the completion of European integration will lead to far-reaching and fundamental changes in the economic and institutional structure of the member countries. In this section we discuss some topics of this literature and show how they are related to our model. Special emphasis is laid on the interactions and complementarities of various institutional changes and reforms, since this might have important consequences for future developments (cf. Blanchard and Giavazzi, 2001; Hall and Soskice, 2001).

4.1 Product-market regulation

It is often maintained that product markets are a key element to economic change and reform in Euro area. Deregulation and privatization are seen as top-priority tasks that will have a 'double dividend' in leading to lower prices for consumers and a 'dynamization' of the labour markets and thereby to decreasing unemployment. 'Monetary unification will increase product market integration, and therefore also competition ... As a consequence, product demand should become more price-elastic. This will affect labour markets in two ways ... First, a more price-elastic product demand means that labour demand becomes more wage-elastic, which puts downward pressure on real

wages. Second, a more price-elastic product demand means that firms will lower their price mark-ups on marginal costs, which raises output and employment at given real wages' (Calmfors, 2001, p. 331; cf. also Burda, 1999).

In fact our model shows the respective result that $\frac{\partial u_H^*}{\partial \theta} < 0$, $\frac{\partial u_F^*}{\partial \theta} < 0$ (see the Appendix), i.e. unemployment decreases with an increase in competition (proxied by θ , the elasticity of product demand to changes in the relative price; cf. (1) and (2)). This clear-cut result should, however, be treated with some caution. First the model used in this chapter focuses primarily on labour-market issues and less on structures and changes on the product market and their interaction with wage-setting institutions. The latter is the topic of papers by, for example, Blanchard and Giavazzi (2001) and Spector (2002),¹⁰ who come to more balanced and ambiguous conclusions: 'While workers eventually gain from labor market deregulation, this comes with a strong intertemporal trade off: Labor market deregulation leads to lower unemployment in the long run. But in the short run, it is likely to come with both lower real wages and higher unemployment' (Blanchard and Giavazzi, 2001, p. 4).

Second – as already alluded to above – one should not confuse the results involving increases or decreases in unemployment with identical movements in welfare. Real wages and unemployment in our (and in similar) models are always positively correlated and total welfare of the workers is likely to depend on both their employment status and on the level of real wages.

4.2 Labour-market reforms

The poor performance of European labour markets has been at the centre of political discussion and a core field of academic research, both theoretically and empirically. Various institutional factors were singled out as the chief culprits for current difficulties ranging from strict rules on hiring and firing and the particularities of the unemployment benefit system to the role of unions in the process of wage-formation. In a recent paper it was, for example, estimated that 55 per cent of the increase in the unemployment rate in European OECD countries from the 1960s to 1995 can be explained by changes in various institutional variables. 'Change in the benefit system is the most relevant, contributing 39 per cent. Increases in the tax wedge generate 26 per cent, shifts in union variables are

responsible for 19 per cent and changes in employment protection regulations contribute 16 per cent' (Nunziata, 2002, pp. 27f.). Other authors have stressed the importance of the interaction between shocks and institutions, maintaining that certain labour-market institutions might turn out to be disadvantageous only when the economy is hit by a negative shock (cf. Blanchard and Wolfers, 2000). Furthermore, however, it is often emphasized that one and the same labour market institution can have different effects in different (institutional) environments, thus pointing to complementarities and non-linear relationships (cf. Belot and van Ours, 2000; Coe and Snower, 1997). Unfortunately our model is not rich enough to study all possible complementarities and sophistications in detail.

We can, however, look at the impact of one type of institutional change that is often foreseen for the near future: a decrease in the degree of wage-bargaining coordination (or centralization). 'My overall conclusion is that monetary unification will probably promote national coordination of wage bargaining ... But in a long-term perspective, other forces working in the direction of decentralized bargaining and deunionization can be expected to dominate and lead to the breakdown of national bargaining coordination' (Calmfors, 2001, p. 346). In our model the (*ceteris paribus*) decrease in the CWB σ_c can be calculated from (23), (24) and (26). We get the result that $\frac{\partial u_H^*}{\partial \sigma_H} > 0$ for $Q_1 \equiv \frac{1-\alpha_H\gamma}{\theta(1-\gamma)} < 1$, $\frac{\partial u_F^*}{\partial \sigma_F} > 0$ for $Q_2 \equiv \frac{1-\alpha_F(1-\gamma)}{\theta\gamma} < 1$ (see the Appendix). This follows from the fact that an increase in the CWB lowers the relative price effect and increases the relative demand effect in λ_c (cf. (26)), where the total effect on the elasticity of labour demand is unclear. At the same time an increase in the CWB unambiguously reduces η_c . Since we know that $\frac{\partial u_c^*}{\partial \lambda_c} < 0$ and $\frac{\partial u_c^*}{\partial \eta_c} > 0$ the total effect of an increase in the CWB on unemployment remains unclear and depends on the parameters of monetary policy (α_c), product market competitiveness (θ) and country size (γ).

Two interesting conclusions can be drawn immediately from this result. First, an identical labour-market reform (say, a decrease in σ_c , i.e. a reduction in the degree of wage-bargaining coordination) can have different consequences in different countries. In particular, it might lead to increasing unemployment in a large country while reducing unemployment in an otherwise identical but smaller

country. The reason for this dissimilar behaviour stems from the fact that the (potential) advantages of having a system of coordinated wage-bargaining are bigger in large countries, since unions there have 'more external demand effects to internalize'. In a small country, on the other hand, the real demand effect is less important and thus the competition-enhancing effects of a decrease in the CWB are more likely to dominate. This leads to an increase in the elasticity of labour demand λ_c and to a corresponding decline in unemployment. The model thus confirms to a certain degree the view that 'one size does not fit all' when it comes to labour-market reforms and their applicability to different countries.

Approached from a somewhat different angle, the above result also implies that the consequences of a certain labour-market reform depend on the general structure of an economy, on the organization of its product markets and of its monetary policy. A decrease in the CWB is thus likely to lead to lower unemployment if product markets are already highly competitive (θ is large), if monetary policy is rather accommodating (α_c is large) and if the country is rather small. The latter condition can be interpreted as meaning that a large proportion of the goods consumed in a country come from abroad which again can be attributed to a high degree of economic integration. The enduring processes of 'deregulation' and 'globalization' should thus also increase the incentives to move towards a more decentralized system of wage-formation, which is broadly consistent with recent developments. A movement in this direction could in fact be observed in various European countries over the 1990s (cf. Calmfors, 2001; Nicoletti *et al.*, 2001; Wallerstein and Golden, 2000) and decentralization is furthermore often recommended as one solution to the European unemployment problem: 'Assuming, as we do, that growth will rely even more in the future than in the past on rapidly changing, science-based, skilled-labour-intensive technologies, countries with centralized labour-market institutions will have to move still further in the direction of decentralization' (Eichengreen and Iversen, 1999, p. 137).

4.3 Interactions and complementarities

As already emphasized above, an important aspect arises in our (and in related) models if one looks at the impact of economic and institutional changes and reforms: the presence of various interactions

and complementarities. The change of one part of the institutional environment affects the feasibility, availability and attractiveness of reforms in other sectors of the economic fabric. This was defined by Coe and Snower (1997) in the following way: 'A group of policies is complementary when the unemployment effect of each policy is greater when it is implemented in conjunction with other policies than in isolation. More generally and formally, a set of policy instruments x_i , $i = 1, \dots, n$, has complementary effects on a policy objective y when $(\partial^2 y / \partial x_i \partial x_j > 0 \text{ for } i \neq j)$ ' (Coe and Snower, 1997, p. 1). This is the case in our model where it is straightforward to show that $\frac{\partial^2 u_H^*}{\partial \sigma_H \partial \theta} \neq 0$, $\frac{\partial^2 u_H^*}{\partial \sigma_H \partial \alpha_H} \neq 0$. The exact nature of the complementarities (or possible substitutabilities) can be calculated by taking the respective derivatives. We do not want to discuss these detailed results here but rather add some more words on the prevalence of interactions in this context.

We have already remarked above that changes on the product market could alter the incentives to centralize or decentralize the system of wage-bargaining. But this is only one possible aspect of the relation between product-market and labour-market reform and one could think of many more interactions. 'Market structure and competition are likely to interact with regulations in the labour market. When firms face more competition, they are under pressure to respond more rapidly to fluctuations in the markets in which they operate. Furthermore, they have fewer monopoly rents to distribute to their employees in the form of higher wages or lower effort. This may have consequences for a number of labour-market institutions, notably unions, employment protection, and unemployment benefits' (Nicoletti *et al.*, 2001, p. 175).

Besides this likely connection between product- and labour-market reforms various authors have emphasized the importance and prevalence of complementarities between labour market institutions themselves. Theoretical models that show this property are developed by Belot and van Ours (2000), Coe and Snower (1997) and Orszag and Snower (1998), where each model includes a broad range of institutional variables (tax rates, degree of centralization of wage-bargaining, bargaining power, replacement rate, firing costs, etc.) that are typically found to be complementary.¹¹ There exist also a number of

empirical papers that study the presence and effect of such complementarities. Belot and van Ours (2000), for example, allow for a wide array of institutional interactions and come to the conclusion that 'the model including all complementarity variables performs much better on average than the one excluding them' (Belot and van Ours, 2000, p. 19). To give only one example, they show that a reduction in labour taxation has a more pronounced (negative) effect on unemployment if the replacement rate, union coverage and coordination in bargaining are high and if employment protection is rather low. Nunziata (2003), on the other hand, points out that a high level of coordination in wage-bargaining moderates the (positive) impact of union density and of taxation on unemployment. Furthermore he shows that the (positive) effect of replacement rates and benefit duration on unemployment is further reinforced by their interaction. In addition to these findings of significant interactions between *existing* institutions one would assume that the formation and development of those institutions are also interdependent. Taking such a 'dynamic' approach Checchi and Lucifora (2002) have shown, for example, that specific institutions such as job security legislation and wage indexation lead to low union density while centralized wage-bargaining and a high level of workplace representation tend to increase unionization. Further research in this and in related directions can be expected in the coming years, in particular since the availability and quality of empirical data on institutional variables seem to increase steadily.

One conclusion that is regularly drawn from the evidence of complementarities is that labour-market reforms should be comprehensive (both 'broad and deep') rather than incremental and partial in order to be successful (cf. Coe and Snower, 1997, p. 32). A similar observation is also often made when the interaction (and possible complementarity) between monetary and fiscal policy or between demand-side and supply-side policies is analysed. In the 'Economists' Manifesto on Unemployment in the European Union' it was, for example, strongly argued that both kinds of policies are necessary to deal with the European unemployment problem: 'We regard the policies as complementary to one another, with the demand side policies creating a need for the new jobs that the supply side policies make available' (Modigliani *et al.*, 1998, p. 13).

5 Conclusion

In this chapter we have presented an open economy model where equilibrium unemployment is determined by the interaction between firms, unions and central banks. Non-atomistic unions are taking the demand externalities into account when they make their decisions about the level of nominal wages. This has the consequence that developments in the other country and the monetary policy reactions influence their behaviour. It is shown that equilibrium unemployment in this model depends on the institutional characteristics (concerning the organization of product and labour markets and the monetary policy reaction functions) in both countries. Monetary unification does not necessarily have the detrimental direct effects in our framework that are often anticipated in similar models where they are attributed to changes in the strategic environment. We have shown that the consequences of a monetary union on the labour markets depend on how the monetary policy of the common central bank compares to the monetary policies of the preceding national banks. Furthermore we have discussed various (possible) changes in the economic and institutional environment and how they might impact on equilibrium unemployment.

6 Appendix

In this Appendix we derive some partial derivatives that are used in the text. From (23), (24) and (26) we can calculate:

$$\frac{\partial u_H^*}{\partial \alpha_H} = - \frac{(\mu + \tilde{\omega})(\lambda_F + \eta_F)(\lambda_F + \gamma \eta_F) \eta_H \frac{\partial \lambda_H}{\partial \alpha_H}}{D^2}$$

$$\frac{\partial u_F^*}{\partial \alpha_F} = - \frac{(\mu + \tilde{\omega}) \eta_F (\lambda_H + \eta_H) (\lambda_H + (1 - \gamma) \eta_H) \frac{\partial \lambda_F}{\partial \alpha_F}}{D^2}$$

where $D \equiv \gamma \lambda_H \eta_F + (1 - \gamma) \lambda_F \eta_H + \lambda_H \lambda_F > 0$. Since all the λ s and η s are positive (cf. (26)) and $\frac{\partial \lambda_H}{\partial \alpha_H} = -\gamma \sigma_H < 0$ and $\frac{\partial \lambda_F}{\partial \alpha_F} = -(1 - \gamma) \sigma_F < 0$ it follows that $\frac{\partial u_H^*}{\partial \alpha_H} > 0$, $\frac{\partial u_F^*}{\partial \alpha_F} > 0$.

As far as the impact of a change in the CWB is concerned we can derive:

$$\frac{\partial u_H^*}{\partial \sigma_H} = \frac{(\mu + \tilde{\omega})(\lambda_F + \eta_F)(\lambda_F + \gamma \eta_F)(\lambda_H \frac{\partial \eta_H}{\partial \sigma_H} - \eta_H \frac{\partial \lambda_H}{\partial \sigma_H})}{D^2}$$

Now $\frac{\partial \eta_H}{\partial \sigma_H} = -\gamma < 0$ and $\frac{\partial \lambda_H}{\partial \sigma_H} = -\theta + 1 - \gamma \alpha_H > 0$ for $1 - \gamma \alpha_H > \theta$. So the total effect on unemployment is ambiguous. It can be calculated that $\frac{\partial u_H^*}{\partial \sigma_H} > 0$ for $Q_1 \equiv \frac{1 - \alpha_H \gamma}{\theta(1 - \gamma)} < 1$, as stated in the text, where $\frac{\partial Q_1}{\partial \gamma} > 0$, $\frac{\partial Q_1}{\partial \theta} < 0$, $\frac{\partial Q_1}{\partial \alpha_H} < 0$. Parallel reasoning can be used to study the impact of foreign CWB on foreign unemployment, where: $\frac{\partial u_F^*}{\partial \sigma_F} = \frac{(\mu + \tilde{\omega})(\lambda_H + \eta_H)(\lambda_H + (1 - \gamma)\eta_H)(\lambda_F \frac{\partial \eta_F}{\partial \sigma_F} - \eta_F \frac{\partial \lambda_F}{\partial \sigma_F})}{D^2}$. Note that the size of country F increases in $(1 - \gamma)$.

Finally we can derive the consequences of changes in θ :

$$\begin{aligned} \frac{\partial u_H^*}{\partial \theta} &= \frac{\eta_H(\lambda_F + \eta_F)D \frac{\partial \mu}{\partial \theta}}{D^2} - \frac{(\mu + \tilde{\omega})\eta_H \eta_F (1 - \gamma)(\lambda_H + \eta_H) \frac{\partial \lambda_F}{\partial \theta}}{D^2} \\ &\quad - \frac{(\mu + \tilde{\omega})\eta_H(\lambda_F + \eta_F)(\lambda_F + \gamma \eta_F) \frac{\partial \lambda_H}{\partial \theta}}{D^2} \end{aligned}$$

The sign $\frac{\partial u_H^*}{\partial \theta} < 0$ follows from the fact that: $\frac{\partial \mu}{\partial \theta} = -\frac{1}{\theta(\theta - 1)} < 0$, $\frac{\partial \lambda_F}{\partial \theta} = (1 - \sigma_F) > 0$ and $\frac{\partial \lambda_H}{\partial \theta} = (1 - \sigma_H) > 0$. (The analogous result holds for country F .)

Notes

1. Papers that are related to our approach include Bratsiotis and Martin (1999); Coricelli *et al.* (2000, 2001); Cukierman and Lippi (1999, 2001); Grüner and Hefeker (1999); Holden (1999) and Soskice and Iversen (1998, 2000).
2. We could also assume that wages are determined by a bargaining process which does not make much difference for the main results.
3. In Knell (2002a) we derive these demand function from an explicit micro-founded model that is basically a static version of a variant found in the context of 'New Open Economic Macroeconomics' (cf. Corsetti and Pesenti, 2001; Obstfeld and Rogoff, 1998).
4. From now on we focus on the situation in country H and we will give only a summary presentation of the (parallel) results for country F below.
5. In equilibrium, both the real wage and employment will be below their respective targets. In the neighbourhood of these values the loss function is thus in fact decreasing in $(w_j^h - p)$ and in l_j^h .

6. We borrow the expressions for the 'relative price effect' and the 'real balance effect' from Coricelli *et al.* (2000). Cukierman and Lippi (1999, 2001) have called these effects in a somewhat different model the 'adverse competition' and the 'strategic' effects, respectively.
7. There are some open economy models in the literature (Danthine and Hunt, 1994; Holden, 1999; Rama, 1994) that do not, however, deal with the issue of monetary unions.
8. As said above, a country that wants to peg its exchange rate *vis-à-vis* another country must adopt the latter's monetary policy strategy, i.e. $\alpha_H = \alpha_F$.
9. Note, however, that we are working with a deterministic model where this is the expected result since central banks do not have any stabilizing duties or powers.
10. Their models, however, abstract from the role of non-atomistic actors (unions or firms) and how they might influence the outcome.
11. In fact almost any theoretical labour market model that is formulated in the 'LSE' framework gives rise to non-linear relationships and thus also to complementary effects between labour market institutions (cf. Layard, Nickell and Jackman, 1991).

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Structural Reforms in Labour and Product Markets and Macroeconomic Performance in the European Union

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1 Introduction

Europe's key challenges of restoring full employment, creating a knowledge-based economy, preparing for population ageing and safeguarding social cohesion are closely interlinked and, as stressed in the EU Broad Economic Policy Guidelines (BEPG), need to be addressed by a coherent and comprehensive economic policy strategy for the medium to long term. The overarching objective of this strategy is to enhance the capacity of the EU economy to generate high rates of non-inflationary growth over a prolonged period. Basically, this requires the EU to press ahead with deep, comprehensive reforms of product, capital and labour markets, backed up by a sound macroeconomic policy mix aiming at sustained rates of growth close to potential within an environment of price stability.

Against this background, this chapter looks at the transmission of the structural reform efforts in EU product and labour markets since 2000 into macroeconomic outcomes in terms of (un-)employment, real wages and growth. It attempts to highlight the interlinkages between reform areas, and to assess their impact on macroeconomic

performance in a scenario analysis of different macroeconomic policy settings.

The chapter is organized as follows: Section 2 presents the theoretical framework of the study, describing the main transmission channels from structural improvements into macroeconomic performance. It also briefly discusses the interdependence between structural reforms in product and labour markets, and elaborates on the relation between structural reforms and the design of macroeconomic policy strategies.

Section 3 illustrates the impact of structural reforms on macroeconomic performance using macromodel simulation analysis for different scenarios of macroeconomic policy settings. Basically, shocks to wage-setting (and, thus, the non-accelerating inflation rate of unemployment, or NAIRU), price mark-ups and total factor productivity (TFP) are fed into the Commission's macroeconometric QUEST II model to assess effects on macroeconomic performance, in particular in terms of potential output growth. The intention of this section is to evaluate the impact of structural reforms on the speed limits to overall growth in the economy, to describe the adjustment towards a new equilibrium, and to illustrate how monetary and fiscal policy affect the adjustment process. The section ends with a brief discussion putting our simulation results into perspectives.

Section 4 provides some brief concluding remarks.

2 Setting the stage: theoretical background considerations

2.1 Basic arguments recapitulated

Microeconomic structural policies can make a significant contribution to achieving faster sustainable growth with high levels of employment. By extending and improving the functioning of markets, structural reforms can remove impediments to full and efficient use of resources and allow for higher dynamic efficiency, making it easier to achieve widely accepted economic and social goals.

Clearly, a full-blown exploration of the potential of microeconomic policy changes for improving overall economic performance is well beyond the scope of this chapter. The approach adopted here restricts the subject matter by choosing to focus on labour and product market reforms. Before providing a more detailed formal exposition of

the main transmission channels from structural reforms to aggregate economic performance, we consider it useful to begin with a brief non-technical discussion of the basic relationships between labour- and product-market institutions and macroeconomic outcomes as identified in the economic literature.

Starting with labour-market institutions, two different – though interconnected – perspectives on the macroeconomic impact of labour-market reforms may be distinguished: (a) a productivity-enhancing channel, whereby better working labour markets allow for an efficient (re-)allocation of labour and increase human or physical capital accumulation, thus raising growth and real incomes; and (b) an employment-enhancing channel, whereby more employment-friendly institutional arrangements provide stronger incentives to participate in the labour market, crack down on insider–outsider barriers and reduce structural unemployment, basically by lowering the mark-up of wages over the reservation wage.

Productivity growth and equilibrium unemployment are jointly determined endogenous variables in the economy, and there are several theoretically plausible ways in which the fundamental determinants of equilibrium unemployment may affect productivity growth, and vice versa.¹ However, these relationships can go either way and there is little evidence that they are either important or robust, in particular over the medium to longer term; thus ‘we should not expect to see any strong relationship between productivity growth and unemployment trends’ (Krugman, 1994). As a consequence, this allows consideration of the impact of structural labour-market reform policies on equilibrium unemployment and on long-run growth, treated separately.

Product-markets reform, broadly speaking, tries to increase competition and reduce monopoly rents in previously sheltered sectors, often in the form of removing entry barriers. A higher elasticity of product demand facing firms shifts the aggregate labour demand curve in a favourable way and implies, *ceteris paribus*, lower equilibrium unemployment; basically this mechanism works by driving away excess rents accruing to producers, labour, or both, which had the implication of lower output and employment than under competitive conditions.

Moreover, the strengthening of competitive forces will reinforce economies’ capacity to respond to adverse shocks. As prices and

wages become more sensitive to market conditions, they should adjust faster than in the past, reducing cumulative losses in output and employment over the medium term which may be associated with the adjustment process.²

Product market liberalization/deregulation may also have straightforward implications for efficiency. For example, new entrants may use more advanced technologies compared to incumbent producers. Similarly, previously sheltered sectors may be forced to reduce labour hoarding and excess capacity given higher competitive pressure. Moreover, more competition may well drive up the rate of technological and organizational innovation.³ Indeed, there is increasing evidence against the view that firms enjoying significant market power plough back excess profits into higher rates of research and development (R&D) and innovation. Rather it appears that lack of competition tends to provide little incentive for firms to pursue technological innovations, slows down its diffusion and impedes a higher variety and quality of goods and services delivered to consumers.⁴

In synthesising empirical findings, the basic mechanisms sketched above suggest distinguishing three separate, though interconnected channels to analyse the effects of structural reforms in labour and product markets on macroeconomic performance: (i) employment-friendly shifts in wage-setting and increased participation; (ii) more price-elastic product demand; and (iii) increased productivity growth. Thus, the macroeconometric simulation analysis will be performed with individual labour and product market reforms grouped accordingly.

2.2 Structural reforms and macroeconomic performance: a formal exposition

This section sets up a small conventional growth model with imperfect competition in the labour and goods market. The model presents – though in a simplified manner – basic characteristics of the Commission's macroeconometric QUEST II model which are relevant for analysing effects of structural reforms – namely, in particular, a reduction in the mark-up of prices over marginal cost and the mark-up of wages over the reservation wage.

QUEST II belongs to the class of 'modern' neoclassical–Keynesian synthesis models. This implies that the model exhibits Keynesian features in the short run due to nominal wage and price rigidities, while

the long-run properties are largely determined by the neoclassical growth model. Because of imperfections in goods and labour markets, the steady state generated by the model in terms of GDP and employment is below the long-term equilibrium values under perfect competition.

In the following, the main mechanisms by which structural reforms affect overall economic performance as modelled in QUEST II are described. A distinction is made between the short run, here defined as the time period over which the capital stock remains fixed, and the long run, defined as when the capital stock has fully adjusted to its new equilibrium level. Given this distinction, the discussion on short-run effects can mainly focus on labour demand, aggregate demand and wage responses, while the long-run analysis requires a consideration of the savings–investment balance in order to understand how the real interest rate responds to structural reforms in the model.

2.2.1 *The model*

The household sector maximises an intertemporal utility function over private consumption subject to a budget constraint. The optimality conditions imply the following decision rule for consumption:⁵

$$\frac{\dot{C}}{C} = \frac{(r - \theta)}{\sigma} \quad (1)$$

This consumption (savings) rule implies that next-period consumption (C) (or current-period savings) will be higher when the real interest rate (r) is above the rate of time preference (θ), and vice versa. This savings rule will be important for the subsequent analysis since it ties down the real interest rate to the rate of time preference in the long run. In other words, there is a unit elasticity of savings with respect to financial and human wealth. This property is basically due to the fact that consumption evolves proportional to (permanent) income and financial wealth in the long run.

The behavioural relations of the firm are derived from profit maximisation, subject to a constant returns to scale (Cobb–Douglas) technology

$$Y = AK^{1-a}L^a \quad (2)$$

It is further assumed that firms behave monopolistically competitive with a perceived price elasticity of demand given by ε . The first-order

conditions yield an investment rule⁶

$$(1 - 1/\varepsilon)(1 - a)A(L/K)^a = r + \delta \quad (3)$$

and a labour demand condition

$$(1 - 1/\varepsilon)aA(K/L)^{(1-a)} = w \quad (4)$$

Under imperfect competition, firms require that (real) factor costs are equated to the marginal product of the corresponding factor adjusted for the price elasticity of demand. This adjustment is optimal for an imperfectly competitive firm, since it takes into account that an increase in output can be sold only at a lower price. It should be noted that ε is not a behavioural constant, but depends, in general, on the market structure, the number of competitors within a market, but also on macroeconomic conditions. To illustrate the macroeconomic link, assume that there is a wage reduction. If firms expect a demand expansion associated with this shock, then the firm will have to reduce prices by less (or not at all) when expanding supply (and consequently ε will be small). However, if firms expect no expansion of aggregate demand or even a contraction, then increased supply can only be sold at a lower price and ε will be larger.

With imperfect competition in the labour market, a bargaining solution between trade unions and firms results in the following wage-setting rule:

$$w = (1 - \beta) \frac{wres}{(1 - t_l)} + \beta \left((1 - 1/\varepsilon)aA(K/L)^{(1-a)} + \frac{vc}{(LF/L - 1)} + PDV(1/\varepsilon Y) \right) \quad (5)$$

According to this rule, wage costs are a weighted average of the reservation wage (*wres*) on the one hand, and a combination of the adjusted marginal product for labour, labour market tightness (expressed as the inverse of the unemployment rate $(LF/L - 1)$) and the present discounted value of monopoly rents ($PDV(.)$) earned by the corporate sector on the other hand. The weight attached to the last three factors depends positively on the bargaining strength of workers/trade unions (β). As can be seen from (5), with a reduction of β to zero, the (net) wage converges to the reservation wage.

Under the assumption that the reservation wage is not taxed, labour taxes exert a positive effect on wages according to this wage rule. This implies that a labour tax reduction will partly be shifted onto firms via a reduction of gross wages. Though this is the standard case, one can nevertheless envisage a social security system where the reservation wage is strictly indexed to net wages. This would occur if unemployment benefits were adjusted one for one to changes in net wages, and there is no other non-taxed income of unemployed workers, i.e. a reservation wage given by:

$$wres = b_0^* w^* (1 - t_l) \quad (6)$$

where b_0 is the net benefit replacement rate. Under (6) any labour tax reduction would not affect the wedge between the net market wage and the reservation wage. Labour tax reductions would not be shifted onto wages and no increase in employment from labour tax reductions could be expected. This relatively strong assumption is imposed in the simulations in order to focus primarily on the redistributive effects of tax policy in relation to structural reforms.

Within the framework outlined above, it is possible to trace the channels in which structural reforms affect key macroeconomic variables. In the following, both labour- and product-market reforms are analysed; concerning the latter a distinction is made between a competition channel and an efficiency channel. We discuss both short- and long-term effects. The short-term effects are those effects which emerge with a constant capital stock, while the long-term effects are those where the capital stock is allowed to fully adjust to its long-run equilibrium level.

2.2.2 *Employment-friendly shifts in wage-setting*

Structural improvements in the functioning of labour markets may well be characterized as a reduction of β in the wage equation, since this reduces the wedge between market wages and the reservation wage. Thus, all institutional changes in labour markets which lead workers to accept a permanently lower wedge between market and reservation wage, fall in this category.

Short-run adjustment. With the capital stock given, an employment-friendly shift of the wage-setting curve increases labour demand (see (4)). The extent to which this occurs depends on two factors. First,

on the short run-labour demand elasticity which can be substantially lower than the long-run elasticity due to labour adjustment costs and adjustment lags for capital; and secondly, on the price elasticity of demand.

The latter factor also explains why monetary policy may matter. Suppose monetary policy does not accommodate labour-market reform, then firms could sell additional output only at a lower price, i.e. the short-run perceived price elasticity would increase, and consequently there would be a smaller employment expansion in such a case, as compared to a scenario where firms expect a (possibly) monetary policy induced expansion in aggregate demand.

Long-run adjustment. The long-run effect of labour-market reform can probably best be understood by starting from the optimality condition for investment (3), together with the savings rule (1). Since savings behaviour implies that in the long run real interest rates are not affected by a permanent increase of GDP, the optimality condition for investment implies that labour-market reform will not affect the capital labour ratio in the long run.⁷ In consequence, labour productivity will return to baseline levels in the long run as well.

Note, however, that the increase in labour demand will also raise investment and the economy will end up at a higher level of output and employment. The size of the GDP and employment effect depends crucially on the elasticity of wages with respect to employment. With a constant reservation wage and a return to baseline productivity levels, the wage rule implies approximately

$$\frac{dw}{w} = \lambda_L \frac{dL}{L} - wshock \quad (5')$$

Since the optimality condition for employment restricts real wage changes to zero, the long-run employment response to a wage shock depends positively on the inverse of the wage elasticity of employment (λ_L) in the wage-setting equation.⁸

2.2.3 *Strengthening competitive conditions*

In the QUEST II model, it is assumed that firms act monopolistically competitive. Increased competition can thus be modelled as a downward shift in the aggregate price mark-up. Again, the shock is assumed to be permanent. The perceived price elasticity of demand of

individual firms depends on factors such as market structures and the number of firms in the market. Therefore this shock could be interpreted as a partial removal of entry barriers, for example related to the EU's Internal Market Strategy.

Short-run adjustment. In contrast to the stylised labour-market reform scenario, the immediate impulse of an increase in competition originates from the factor demand equations. Increasing competition lowers the perceived price elasticity of demand and leads to factor demand expansion. Of course, like in the case of labour-market reform, in the short run the effect on ε is also influenced by the expectation of firms concerning the aggregate demand effects. The effect can especially be mitigated by restrictive monetary policies which would force the output expansion to be accompanied by falling prices.

Long-run adjustment. For analysing the long-run effects of increased competition, it may again be useful to start from the investment and savings schedules (3) and (1). In contrast to the labour market reform scenario, ε will be permanently lower. Therefore, provided the real interest rate returns approximately to baseline levels, a fall in the price mark-up unambiguously increases the capital intensity of production and therefore labour productivity.⁹ Note that the investment and labour demand conditions (3) and (4) do not by themselves determine the level of capital and employment in long-run equilibrium. However, since investment and labour demand is shifted upwards for given wages and real interest rates, the wage response is again crucial for the magnitude of the long-run employment expansion associated with increased competition. If wages respond strongly to increased demand, then the (long-run) employment and GDP expansion will be small.

For the wage rule used in the QUEST model, there are essentially three channels in which wages respond to an increase in labour demand. First, wages increase with labour-market tightness; secondly, they can increase because an output expansion increases the reservation wage. This channel is ignored in the macroeconomic simulations in Section 3; the reservation wage is fixed to the baseline. However, a third mechanism, namely the presence of rent sharing will exert downward pressure on wages with an increase in goods

market competition. Therefore in the case of rent sharing effects the employment and GDP multiplier should be largest.

2.2.4 Increasing labour productivity

Efficiency improvements arising from product-market reform are captured by a positive and permanent increase in the level of TFP (2.2.1). An increase in the level instead of an increase in the growth rate was chosen for the macroeconometric simulations. The justification for this is the fact that previously protected and/or state owned firms may have produced with excess capacity, and increased competition forces firms to use available resources more efficiently.

However, it may also be argued that removal of entry barriers will allow for a more rapid inflow of competitors with more advanced technologies. Consequently, the growth rate of technical progress will increase. On the other hand, the loss of a secure market position could also have negative effects on R&D investments. Thus, while the level effect seems quite plausible, we are inclined to suggest that more empirical evidence needs to be gathered before effects on the growth rate of technical progress can be stipulated.

Short-run adjustment. The way firms respond to an increase in efficiency depends crucially on the demand and wage response. If they foresee no or only a small increase in aggregate demand and wages follow productivity, then the short-run employment effect of an increase in efficiency is likely to be negative.

Long-run adjustment. Under the conditions for savings and investment, an efficiency improvement will increase the capital intensity in the long run. Therefore, similar to the case of increased competition, it will depend on the wage rule whether and by how much employment is going to expand. Note, however, that the employment effect of an efficiency improvement is likely to be smaller for two reasons: first, wages tend to be more strongly indexed to efficiency improvements, and second, the negative rent sharing effect on wages is absent in the efficiency scenario.

2.3 Policy interactions

Structural reform policies need to be implemented in a coherent and coordinated manner, given that its elements are closely inter-linked and mutually support each other. With a view to a smooth

interaction of structural reforms in product and labour markets and a macroeconomic policy mix conducive to sustainable growth, three interconnected issues have to be borne in mind:

- **The need for a comprehensive reform design:** Interactions and complementarities between different structural reform policies make a strong case for a broad-based reform strategy, thus exploiting synergies arising from a comprehensive approach to improve the functioning of product, capital and labour markets. This argument is relevant both at the individual country level and for the European Union as a whole.
- **Reform incentives and the need for coordinated action:** Interactions resulting from spillover effects across countries call for the implementation of structural reform policies in a coordinated manner. Moreover, since a single country cannot expect a rewarding monetary response to structural improvements, the momentum for reform may be reduced in individual countries.
- **The two-way interaction between structural reforms and macroeconomic policies:** Sound macroeconomic policies provide the best framework for reaping, as quickly as possible, the full benefits of structural reform policies. Stability-oriented fiscal and monetary policies can have a direct bearing on lowering structural unemployment, predominantly via the real interest rate channel. Simultaneously, successful structural reform policies affect potential output and raise the speed limits for growth, so that to allow aggregate demand expansion policy to operate without generating inflationary pressures. We consider each of these in turn.

2.3.1 The need for a comprehensive reform design

Obviously, the broad variety of institutional settings across countries requires a tailor-made structural reform design for improving the functioning of labour, product and capital markets, but both theoretical considerations and empirical evidence suggest the need for a comprehensive strategy given the various interactions and synergies between reforms in different areas.

The vigorous pursuit of economic reforms to improve product-market competition can be expected to have a positive impact on labour-market performance, essentially by shifting the labour demand curve resulting in higher employment over the medium term. The

structure of product markets also has a bearing upon the composition of employment, in particular the level of self-employment. Lack of competition in product markets, on the other hand, is likely to curb the positive impacts of labour-market reforms due to the rent-seeking behaviour of workers and firms. Thus, more intense product-market competition may by itself create additional pressures for more flexible labour-market regulations and practices.

Thus, it should also be emphasised that product-market reform, especially a reduction in price–cost margins, has implications for wage-setting. This is implied by standard trade union bargaining models of the labour market featuring rent-sharing behaviour between firms and workers. In such a framework, a reduction of the price–cost margins in the goods market inevitably also leads to a reduction of the mark-up of wages over the reservation wage. A similar type of argument has been put forward by Blanchard and Giavazzi (2001).¹⁰ Broadly speaking, it is based on the notion that, if product-market deregulation decreases total rents, the incentives for workers to appropriate a proportion of these rents may be decreased, making unions weaker, reducing insider power and leading to labour market deregulation.

Product-market reforms alone, when not accompanied by efforts to improve the functioning of labour markets, run the risk of driving up short-term adjustment cost which, in turn, may reduce the willingness to implement structural reforms. Thus, obviously, the full benefits of increased product-market competition will materialise only when the labour-market structures in place allow for a smooth reallocation of labour.

Again, a number of interactions and complementarities between different structural labour-market policies makes a strong case for a broad-based reform strategy. To give just three, albeit prominent examples of such an interaction, the degree of forward-shifting of labour taxes into real product wages is clearly related to the extent of insider wage-bargaining behaviour, which in turn may also be affected by product-market competition. Thus, the impact of lowering the tax burden on labour critically hinges on institutional features of these areas. Similarly, in the design of employment-conditional transfers and in-work benefits both relative wage dispersion and marginal tax rate patterns have to be taken into account to avoid either high budgetary cost or undesired disincentive effects of such schemes. The last

example concerns the effectiveness of active labour-market policies which may be seriously undermined when programme participation to a significant extent results only in renewed eligibility to claim unemployment benefits.

2.3.2 *Reform incentives and the need for coordinated action*

It appears generally accepted now that to press ahead with structural reforms is an indispensable, and probably the most important, requirement to realize and release the European Union's full potential. From a general point of view, labour-market and other structural reform policies are probably easier to implement under conditions of high and sustained activity. With positive overall effects usually materializing only gradually, structural reforms are almost always, in one way or the other, associated with the reduction or elimination of economic rents. This process is likely to meet less resistance when economic activity is buoyant. However, it has also been argued that the incentives for reform may be weaker under such conditions.

Some concerns have also been raised that in EMU the momentum for reform may be reduced in individual countries. Basically, the argument put forward is that a single country, even if it is 'big', cannot expect a rewarding monetary response to structural improvements; thus, the demand expansion, which is necessary at the end of the day to generate additional jobs, could reasonably be expected only by way of improved competitiveness via lower unit labour costs, but this is difficult to achieve in conditions of low inflation and downward rigidity of nominal wages. As a result, countries might adopt a 'wait and see strategy' to let the others go first.

While there is certainly an element of truth in this line of argument, it probably underestimates the pressures for and the gains to be reaped from comprehensive structural reforms, even when carried out at an individual country level and without the helpful effects of supporting expansionary demand policies. In any case, peer pressures and open methods of coordination of structural reforms across countries may help in perseverance with economic reforms on a broad front.

It should be noted in this context that coordination of structural reform efforts across countries resulting in less dispersed structural rates of unemployment may also have a pay-off in reducing the overall NAIRU. Basically, the theoretical arguments rest on the non-linearity of the short-run Phillips curve. In such a situation, a wider

cross-country dispersion of structural unemployment rates will tend to raise the aggregate NAIRU relative to the average of country-specific rates, simply because the inflationary and deflationary impact of a negative and a positive unemployment gap of identical size, but occurring at different levels of structural unemployment, will not cancel out each other; as a result, the short-run output–inflation trade-off for the area as a whole unambiguously deteriorates.

2.3.3 *The two-way interaction between structural reforms and macroeconomic policies*

Sound macroeconomic policies have to play an important role in any integrated and comprehensive strategy to reduce high and persistent unemployment in Europe, not only to cope adequately with the external forces slowing down economic activity at the present time. When unemployment, which is initially cyclical, over time tends to be partially translated into structural – for example, because of human capital deterioration when left idle – the avoidance of excessive cyclical fluctuations could, *ceteris paribus*, also contribute to contain trend increases in unemployment. The empirical evidence does indeed suggest that countries with a higher volatility in unemployment rates have also experienced a larger increase in trend unemployment; but clearly the degree to which initially cyclical unemployment tends to persist is closely related to the specific institutional settings in the markets for products, capital and labour.

A medium-term stability-oriented macroeconomic framework also better allows the exploitation of synergies with structural policies to improve labour market performance with the main channel, probably, operating via the impact on real interest rates. Thus, medium-term fiscal consolidation, for example, does not only restore the room for budgetary manoeuvre in case of country-specific demand weaknesses, it may well also have a positive impact on trend unemployment.

From a reverse angle, structural reform policies obviously shape the appropriate design of macroeconomic policies, since more efficiently operating markets raise potential growth, thereby extending the boundaries within which macroeconomic policies can operate without generating inflationary pressures. Moreover, successful structural reforms will tend to be supported in due course by their impact on investment, providing further stimulus to productive capacities and growth of TFP.

3 Illustrative macroeconomic simulation scenarios

3.1 Simulation designs

The purpose of this section is to analyse the potential macroeconomic impacts of structural reforms in both the goods and the labour market on the EU economy in quantitative terms, using the EU Commission's macroeconometric model QUEST II. Based on an empirical assessment and review of labour- and product-market reforms in the European Union,¹¹ the econometric model is subjected to 'stylised reform shocks' designed to broadly represent the accomplishments achieved since the mid-1990s. It should be stressed at this point, however, that this section discusses only a limited number of interactions between structural reforms and macroeconomic policy responses; moreover, the structural reforms in product and labour markets have typically been modelled as being implemented in a 'big bang' approach, thus abstracting from timing and sequencing issues of gradually phased-in reforms.¹² Three 'stylised reform shocks' will be analysed.

3.1.1 Scenario I: an 'employment-friendly' shift of the wage-setting curve

EU member states have undertaken an array of reforms of labour market institutions since 2000. Reform efforts aimed at stimulating employment have addressed, *inter alia*, tax and benefit systems (for example, in the form of cuts in payroll taxes for targeted groups or in-work financial support for low-wage earners), more active and preventive labour-market policies, and a modernisation of work organisation, including the facilitation of part-time work and more flexible work contract arrangements.

While it is certainly difficult to establish precisely the contribution of the various reform efforts, there can be little doubt that they have produced significant results in terms of a higher employment content of growth, a trend increase in labour force participation and employment rates, and a reduction in levels of structural unemployment, as indicated by a fall in the NAIRU. However, it must also be acknowledged that progress in reform has been fairly uneven across countries and generally rather piecemeal. Moreover, all the major economies of the Euro area are still plagued by relatively high structural unemployment. Overall, this suggests that the various labour-market policy initiatives implemented over the past several years may offer only a partial explanation for the apparent area-wide improvement in the

short-run unemployment-inflation trade-off. In fact, it is difficult to account for the fall in the NAIRU without invoking the role of widespread wage moderation, *inter alia* based upon informal incomes policies in a number of countries, which do not constitute reforms *per se*.

Against this background, the first set of simulations looks at structural reforms resulting in higher labour force participation and an employment-friendly shift of the wage-setting curve associated with lower equilibrium unemployment. An important feature of such a scenario is that the reform groupings as defined here will lead to a reduction in the NAIRU and raise output and employment levels, but they will not be associated with a permanent increase of potential growth rates. However, the QUEST II model does not allow direct examination of a shock to the NAIRU itself. The NAIRU is an endogenous variable in the model, determined by the wage-setting behaviour and the labour demand schedule. Thus, to keep the simulation design as simple as possible, the labour-market reform scenario has been implemented in the form of a gradual increase in the overall participation rate by a cumulated 1.5 percentage points combined with an *ex ante* downward shift of the wage-setting rule by 1 per cent uniformly in all countries; moreover, reflecting the structure of net job creation (part-time-jobs, temporary work, etc.), it has been assumed that the average productivity of additional employment amounts to only 80 per cent of the baseline level.

3.1.2 *Scenario II: an improvement in competitive conditions*

The numerous efforts undertaken in the second half of the 1990s to increase the level of competition on European product markets are probably best illustrated by the significant progress made in completing the Internal Market for goods and by the move towards liberalization and deregulation of the network industries. The Internal Market has contributed to an increase in intra-EU trade and investment flows. The effects of market entry by foreign firms were also reflected in a high level of turbulence in market leadership, even if industry concentration remained more or less constant. The liberalization and deregulation in the network industries, notably in telecommunications and, to a somewhat lesser degree, in electricity, has paid off in terms of lower (relative) prices.

In addition, market integration and competition appear to have contributed to a permanent decline in price differences between EU member states, but the pressure put on mark-ups by the completion of the Single Market Programme may well tend to recede somewhat over time.

There is some evidence, however, that structural reforms in the network industries have led to a more permanent decline in mark-ups. For example, simply summing up the estimated reduction in price mark-ups in the electricity and the telecommunication sector, weighted by their relative share in business sector output, results in a decline of the economy-wide mark-up of almost 50 basis points. Overall, roughly translated into aggregate figures to be used in the simulation assessment exercise, it is estimated that the developments sketched corresponded to a reduction in the average price mark-up of about 0.5 of a percentage point.

Recall from the theoretical discussion in Section 2 that product-market reform, especially a reduction in price–cost margins, will most likely have repercussions on wage-setting. As to the potential magnitude of such an effect, the trade union bargaining model presented in Layard, Nickell and Jackman (1991), for example, suggests for a plausible configuration of parameters that a reduction of the price–cost mark-up by 0.5 of a percentage point would reduce wages by about 2 per cent. The corresponding wage rule in QUEST II is somewhat less responsive, predicting a fall of wages in a magnitude of about 1 per cent in such a case.

3.1.3 Scenario III: increased productivity growth

As outlined in Section 2, structural reforms in labour and product markets can also be expected to have a positive impact on both productive and dynamic efficiency in the economy. Typically, while firms produce at lowest cost under conditions of competition, they tend to operate inefficiently (through overstaffing, higher wages, lack of response to new opportunities and poor management) when competitive pressures are low. Thus, the process of restoring productive efficiency induced by structural reforms will be associated with a level increase of TFP.

Arguably, there are also several channels through which structural reforms may have fostered dynamic efficiency, thus stimulating the growth rate of TFP in a more permanent way. However, the empirical

evidence is not at all supportive of a significant acceleration of TFP growth in the EU since 2000. Against this background, we will therefore restrict ourselves in the simulation exercise to analysing a level shock to labour productivity; translated into QUEST model terms, this is implemented as once-and-for-all level increase of TFP by 1 per cent. It should be kept in mind, however, that this scenario is intended to illustrate only the dynamic response of GDP and employment to an increase in productive efficiency, and should not be interpreted as reflecting the stylised facts with respect to productivity developments in very recent years.

3.2 Macroeconomic policy responses

In the scenarios considered here it is assumed that both fiscal and monetary policy-makers are strictly committed to simple rules, following either a restrictive or a neutral stance relative to potential output growth.

As regards monetary policy, a regime of fixed money supply (relative to the baseline scenario) is compared to an inflation targeting regime. Fixed money supply is interpreted here as a restrictive monetary policy rule, since it is assumed that the central bank continues to strictly target a pre-reform potential output path. Such a scenario may also be thought of as reflecting the situation of a single country acting alone, thus not being able to affect the ECB monetary policy.¹³ In contrast, an 'inflation targeting regime' is defined as an accommodating rule in which the central bank increases money supply as output expands in order to meet a baseline inflation target closely. Obviously, such a case may better reflect prevailing circumstances when countries act simultaneously to improve structural conditions, thereby revealing some of the benefits of coordinated structural reform.

In order to address both the stabilization aspects and the distributional aspects of fiscal policy, two alternative fiscal responses are considered. The first fiscal rule stipulates that fiscal policy keeps expenditure (as a share of GDP) and tax rates constant, using all extra revenue (e.g. from lower expenditure on unemployment benefits) to reduce the deficit. This rule implies a form of automatic stabilization whereby the (potential) output expansion is accompanied by a negative fiscal impulse. In the second fiscal policy setting analysed here, fiscal policy remains neutral by keeping the deficit:GDP ratio constant. Of course, this rule can be implemented in several ways;

here it is assumed that deficit stabilization is achieved via reducing labour taxes, allowing us to address some of the distributional aspects as well.

Obviously, there are several other, more medium-term fiscal policy considerations to be addressed. Economic expansion creates room for reducing the tax burden which, in turn, could further enhance growth. In the simulations presented in this chapter, however, this aspect is not further examined. A more rigorous discussion would also require an analysis of capital tax reductions and a more elaborated analysis of the interaction between tax and social benefit reforms. The benefit rule entertained in the model, namely indexation of benefits to net wages, has been deliberately chosen in order to render labour taxes non-distortionary. Therefore, no additional employment effects can be expected from lowering labour taxes in this case, and the role of tax policy in the scenarios presented below is largely restricted to intertemporal labour income shifting.

3.3 Simulation results (see Figure 5.1)

3.3.1 Scenario I: an 'employment-friendly' shift of the wage-setting curve (Figure 5.1)

The simulation results suggest that there is a clear role for labour market reforms encouraging participation and reducing wage mark-ups in stimulating growth and employment. Three aspects deserve particular

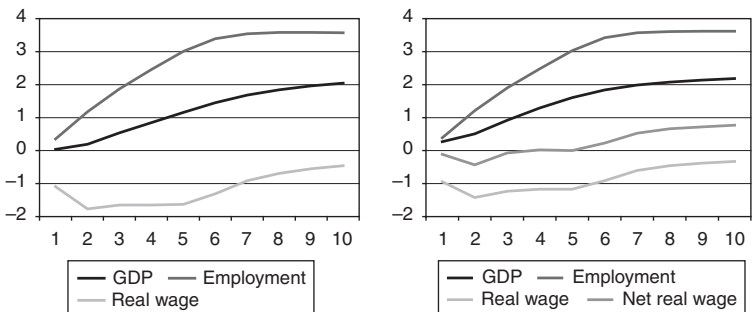


Figure 5.1 Scenario I (a) 'Unchanged' macroeconomic policies (b) With monetary and fiscal policy response

mention:

- First, while real wages immediately fall below baseline, a shift in the wage-setting curve and wage moderation will initially trigger only a modest employment response because of adjustment lags in capital formation; thus, it will take some time until a shift in the wage-setting curve results in an increase of employment, and real wages will eventually approach the baseline level.¹⁴ Nevertheless, workers will suffer real income losses over the entire adjustment period.
- Secondly, monetary policy as defined here can cushion the negative impact in the short-term adjustment process, but to only a fairly limited extent; and it will not be able to influence the growth process in the longer run. Without monetary policy accommodation, lower inflation is the key factor in crowding-in extra activity, via its effects on domestic demand as well as on foreign demand through improved competitiveness; with accommodation, the crowding-in effect relies more on domestic demand.
- Thirdly, the simulation results suggest an interesting fiscal policy option. Using the net revenue from output expansion and lower unemployment to reduce labour taxes could compensate workers for the initial income loss.¹⁵

3.3.2 *Scenario II: an improvement in competitive conditions* (Figure 5.2)

Recall that in scenario I the output and employment expansion is driven by a downward shift of the wage-setting curve; in the case of scenario II, the growth and employment effects relative to the baseline emerge because of outward shifts in the labour demand and investment schedules. In scenario II, product-market reform is associated with wage moderation due to reduced possibilities for rent-sharing.

With a fall in the price mark-up, firms are expanding employment because they find it profitable to employ labour at a lower marginal product. Therefore, *ceteris paribus*, labour productivity initially declines; due to higher rates of investment, this process is reversed after some time. Moreover, with reduced possibilities for rent-sharing between workers and firms, product-market deregulation implies that real wages fall below baseline in the short run. However, the positive effects of product-market reform, by expanding labour

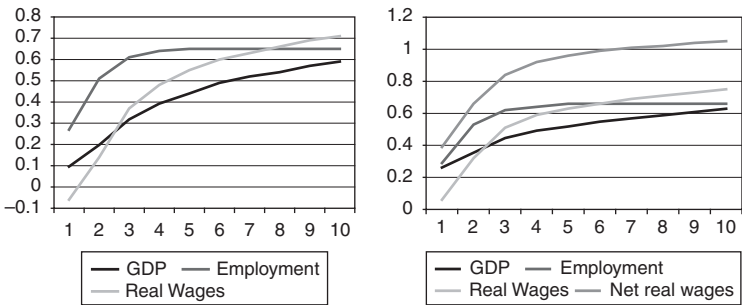


Figure 5.2 Scenario II (a) 'Unchanged' macroeconomic policies (b) With fiscal and monetary policy response

demand and investment, eventually dominate and allow real wages to grow more strongly than labour productivity in the medium term.

Again, the case without monetary policy accommodation is indicative of the potential effects of EMU countries pursuing structural reforms in isolation; with unchanged monetary policy, structural reforms in labour and product markets could well be associated with a protracted period of prices falling well below baseline levels. As in the case of labour-market reforms, monetary policy can cushion the negative impact on real wages in the transition period, albeit to a fairly limited extent. Fiscal policy could in principle support this process as well, by lowering labour taxes. However, in this case, alternative fiscal options could also be considered. There would also be room for corporate tax reductions without violating distribution targets.

3.3.3 Scenario III: increased productivity growth (Figure 5.3)

The third set of simulations investigates the effects of a positive shock to productivity. Clearly, both an increase in productive efficiency – for example, induced by restructuring and rationalization of production and management processes – and/or in dynamic efficiency through product and process innovation will stimulate output and real wages. However, the simulation results also indicate that the interim adjustment period is likely to be associated with a significant fall of employment below baseline levels. Indeed, it may take up to four or five years before job losses abate and employment returns to its original level.

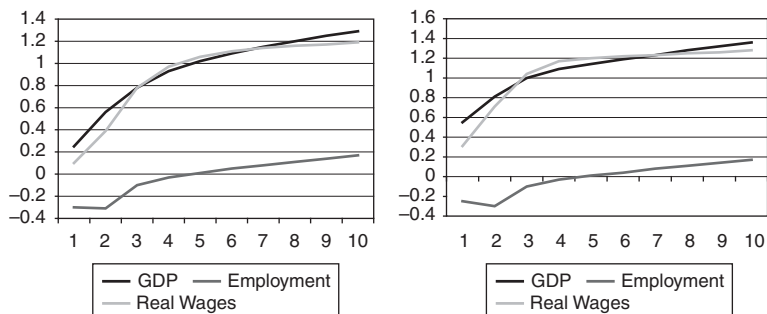


Figure 5.3 Scenario III (a) 'Unchanged' macroeconomic policies (b) With fiscal and monetary policy response

Fiscal and monetary policy can apparently do little to alleviate the short-run adjustment burden in that case. The lesson to be drawn is rather that coherence and comprehensiveness of reforms are essential. As becomes immediately evident when one considers the combined effects of the three scenarios described above, for maximum effectiveness, labour- and product-market reforms need to be introduced jointly. This would minimize the potentially negative short-run impacts on employment and real wages; moreover, monetary and fiscal policies could support the adjustment process and limit the distributional implications in terms of consumption wages.

Nonetheless, the pay-off to structural reforms does not come instantaneously, requiring a firm and continued commitment to reform. However, as the above analysis suggests, the full benefits can indeed be quite substantial. Taking the combined effects of the three scenarios together, the simulation results suggest a medium-term increase of GDP of about 4 per cent relative to its no-reform baseline level.

3.4 Discussion of simulation results

First, to put these results into perspectives, we review in a nutshell available empirical evidence on the impact of structural reforms on macroeconomic outcomes. As already argued, it is inherently difficult to provide a quantitative macroeconomic assessment of the impact of structural reforms. Clearly, the design of market institutions is

multi-faceted and often of a highly qualitative nature, which is not easily captured in aggregated quantitative indicators. Moreover, significant gaps in comparative data across countries and over time pose serious obstacles to econometric analysis.

Basically, these difficulties can be tackled by either taking a simulation approach or relating simple indicators of the regulatory environment to macroeconomic outcomes. Typical examples of the simulation approach are the OECD (1997) study on regulatory reform and the European Commission studies on the macroeconomic impact of the Single Market Programme (1996, 2002a, 2002b). In the OECD study, using industry-specific estimates of efficiency gains in a plausible, medium-term programme of regulatory reform, combined with input–output aggregation and a dynamic simulation with the OECD's Interlink macroeconometric model, labour productivity and GDP gains were found to be positive for all eight countries examined. The long-run potential output gains (over a period of fifteen to twenty years) varied from 5–6 per cent for Japan and Spain, almost 5 per cent for Germany and France, to less than 1 per cent for the United States, reflecting the different state of existing regulations in different countries.

The Directorate General for Economic and Financial Affairs of the European Commission (European Commission, 1996) has employed both a dynamic computable general equilibrium (CGE) model and its multi-country dynamic macromodel for an *ex post* assessment of the Single Market Programme. Based on a scenario analysis focusing on the gains from the increase in competition/efficiency and the rise in TFP, the study finds that the Single Market Programme had produced, by 1994, a gain in GDP in the range of 1.1–1.5 per cent. It should be noted that these numbers stand in some contrast with the *ex ante* estimate provided in the so-called 'Cecchini report' (Cecchini, Catinat and Jaquemin, 1988). Using modified versions of the EC Hermes and OECD Interlink models, the Cecchini report estimated that the completion of the Internal Market had the potential, over the medium term, of raising the level of GDP by somewhere between 3.2 to 5.7 per cent above the level that would prevail in the absence of the Single Market Programme.

While these differences in estimates should not come as a big surprise given the somewhat different methodological approaches, the different time horizons and implementation deficiencies, they are

also indicative that an unfavourable macroeconomic environment – as was present in the early 1990s – may, at least in the short run, have a restraining impact on the potential positive effects of structural reform efforts.

The overall finding in simulation studies of sizeable and positive long-run effects of structural reforms on output, employment and productivity is corroborated by a variety of studies relating simple indicators of the regulatory environment and the institutional design in product, labour and capital markets to macroeconomic outcomes. For example, Salgado (2002) finds in an IMF Working Paper using a panel analysis of twenty OECD countries that structural reforms implemented in the period 1985–95 increased TFP growth in the long run by 0.2–0.3 percentage points on average.

The latter approach is also typically employed to analyse the finance–growth nexus, linking financial development indicators to GDP *per capita* in cross-country growth regressions. An OECD study (Bassani and Scarpetta, 2001), for instance, suggests that a permanent increase of 1 per cent in the ratio of private bank loans to GDP would raise *per capita* GDP by 0.1 per cent and a corresponding increase in stock market capitalization relative to GDP would raise *per capita* GDP by 0.3 per cent. In a sample of fourteen OECD countries Carlin and Mayer (1999) found that, in particular, the growth of industries relying on R&D is strongly affected by financial variables, while the estimates are less robust in respect of fixed-capital formation. Accordingly, they conclude that financial development stimulates growth in industrial countries more by promoting investment in R&D than by facilitating physical capital accumulation.

Turning now to our own results, the simulation exercise presented in this chapter has tried to illustrate the macroeconomic impact of structural reform efforts which are assumed to be broadly equivalent in scale to a reduction of the NAIRU of about 1 percentage point in the case of the labour-market reform scenario, and 1.5 percentage points in case of the combined goods- and labour-market reform scenario. Note that such a magnitude would be roughly in line with OECD and IMF assessments of developments in the Euro area NAIRU in recent years.¹⁶

The price-level response of the pure labour- and goods-market reform scenarios is in the order of magnitude the OECD has calculated from a simulation with the Interlink model, which evaluates the macroeconomic consequences of the fall of telecom and electricity

prices as observed in 2000–01. Taking into account all macroeconomic repercussions, in particular the wage response, the OECD arrives at a price level effect of -0.85 per cent after ten years.

The growth and employment effects depend on the nature of the reform, though there are relatively strong links and similarities between them. Broadly speaking, goods-market reforms, in particular when associated with efficiency improvements, will have stronger growth effects, while pure labour-market reforms will have more pronounced employment effects. The scenarios without monetary policy accommodation are informative of the benefits of coordinated action across countries; they show that with unchanged monetary policy, structural reforms to reduce the NAIRU significantly may be associated with a more protracted period of adjustment.

The scenario analysis employed allows explicitly for significant interactions between structural reforms in product and in labour markets, taking into account two main mechanisms through which product-market reforms can affect labour markets. First, stepping up competition on the product market increases output and the demand for labour, and makes the latter more sensitive to wages. Second, competitive pressures in the product market dissipate economic rents, putting downward pressure on the associated wage premia.

Allowing for such interaction effects, a stylized scenario combining labour- and product-market reforms equivalent in scale to a hypothetical reduction in the NAIRU by 1.5 percentage points, a reduction in the price mark-up by 0.5 percentage point and a level increase of TFP by 1 percentage point has been analysed. The simulation results suggest a medium-term increase in GDP of about 4 per cent; in terms of growth rates, this translates into an acceleration of output growth by about 0.5 percentage points annually over a period of seven–eight years. By implication, such a finding would be consistent with an acceleration in potential growth from around 2 per cent in the first half of the 1990s to around 2.5 per cent in 2000–01. However, bearing in mind that the TFP effect is not well supported in the data for the second half of the 1990s, a more cautious assessment would shave off 1 percentage point of the overall GDP effect, and one-tenth of a percentage point of the temporary acceleration of potential growth.

Typically, in simulation exercises of this type structural reforms stimulate growth only temporarily; they lead to a reduction in the NAIRU and raise output and employment levels, but they are not

associated with a permanent increase of potential growth rates. Basically, the latter would require a permanently higher rate of growth of TFP, with the main channels to raising equilibrium growth rates, as identified in the endogenous growth literature, being associated with institutions which raise savings, raise human or physical capital accumulation, increase technological and managerial innovation and raise the start-up rate of new companies.

Obviously, the quantitative impact of structural reform policies on the rate of potential output growth and the NAIRU is hard to pin down precisely. Consequently, policy-makers are likely to be faced with considerable uncertainty as to the prevailing rate of equilibrium unemployment, and therefore also to the appropriate rate of expansion of economic activity consistent with price stability. However, in the medium term, provided there is a successful implementation of the structural reform programmes, policy-makers need not be overly alarmed by growth rates that look high by past experience and should avoid cutting off economic expansion prematurely, as the pay-off from structural reforms starts to materialize in form of lower unemployment and higher rates of sustainable growth.

The simulation exercises also offer some insights into the adjustment dynamics to structural reforms in product and labour markets. Obviously, the impacts on employment and wages can be quite different in the short and the long run; for example, productivity improvements induced by increased competitive pressures may go hand in hand with labour shedding in the short run, while output expansion and entry of new firms will only gradually materialize to offset the short-run employment losses over the medium to long term. While the exact nature of such unpleasant trade-offs facing policy-makers has not yet been fully explored, the simulation results suggest that short-run costs in terms of real wages and employment are minimized in comprehensive reform scenarios that take the interactions between the institutional design in labour and product markets into account.

4 Concluding remarks

This chapter has explored the potential interactions between institutional reforms in labour and product markets and macroeconomic performance in terms of output growth, (un-)employment and real wages in the European Union. Reviewing the broad patterns of

structural reforms and improvements in the functioning of labour and product markets since 2000, we find in a backward-looking illustrative macroeconomic simulation exercise a medium-term increase in GDP relative to its baseline level of about 3–4 per cent. In terms of growth rates, this translates into an acceleration of output growth by almost 0.5 of a percentage point annually over a period of seven–eight years. Our assessment suggests that without the progress in structural reforms in product and labour markets and, not forgetting the observed wage discipline, there would be 5–6 million fewer jobs in the European Union today, about 2 million more unemployed people, and the average growth rate would have been 2.2 per cent instead of the 2.6 per cent realized in the period 1996–2001. Thus, structural reform efforts have indeed borne fruit and delivered significant benefits in terms of output and employment levels.

However, it has to be kept in mind that typical estimates of the Euro area's potential output growth rate have been in the 2.25–2.5 per cent range; moreover, as our results indicate, the growth stimulus from past structural reforms tends to fade away over time. Indeed, if reform fatigue were to win the day, Europe would appear destined to suffer a setback to a medium-term growth path barely exceeding 2 per cent; in fact, in the absence of policy change, population ageing will push Europe's potential growth below even this level. Thus, to achieve an annual rate of growth of around 3 per cent for the European Union as a whole over a prolonged period of time, as formulated at the Lisbon summit, the momentum and the breadth of structural reforms will certainly have to be maintained and increased. Consequently, the current weakness in economic activity, with output growth clearly below potential in 2001 and 2002, must not be taken as an excuse for further delays in implementing the comprehensive structural reform agenda as agreed in Lisbon and reinforced in Stockholm. This is to be combined with growth supportive macroeconomic policy-making which – while maintaining price stability and a sound medium-term orientation of fiscal positions close to balance or in surplus – should aim at stabilizing growth close to potential.

Notes

1. Imperfect matching between unemployment and vacancies in combination with an innovation externality, for example, may be associated

with a too low productivity growth rate and drive up equilibrium unemployment. For an overview discussion of the relationship between labour-market institutions and economic performance in terms of unemployment and growth, see Nickell and Layard (1999).

2. An analysis of structural impediments to quick and efficient adjustment to macroeconomic shocks, however, is outside the scope of this chapter.
3. These arguments have been developed extensively in the endogenous growth literature; for a survey, see, for example, Barro and Sala-i-Martin (1995).
4. For an overview on the relationship between competition and innovation see, for example, Ahn (2002), OECD (1997).
5. In fact the savings equation in QUEST is more complicated since finitely lived and partly liquidity-constrained households are assumed.
6. Because of adjustment and vacancy costs, the decision rules in QUEST are more complicated.
7. For this condition to hold, ε must also return to the baseline. This is guaranteed by long-run price flexibility in the model.
8. As can be seen from (5), this elasticity depends on various factors such as for example β , but it also varies with labour-market tightness.
9. If one additionally considers financial services in the context of a comprehensive reform package, then a fall in real capital costs for firms is to be expected.
10. Very similar arguments have already been developed, *inter alia*, by Nickell (1999).
11. See European Commission (2002a, 2002b).
12. The exception to be mentioned here is the increase in labour force participation, which has been phased in over a period of five years.
13. A different, perhaps somewhat less benign interpretation of such a scenario would be failure of the ECB to correctly identify an increase in potential growth resulting from structural reform.
14. Note that this result holds in a strict sense only for hourly wages, while wages per worker will remain below baseline level; essentially, this reflects the assumption of below-average productivity of additional employment.
15. Clearly, exercising such an option must not compromise overarching objectives to restore the room for manoeuvre for fiscal policies.
16. See for example IMF (2001).

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6

Structural Reforms Addressed to the Labour Market and Macroeconomic Policies

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This chapter reflects the point of view of a Western European who was active in the public sector of French social market economies, then often concerned with policy advising, someone who is also a macroeconomist with an interest in labour economics and applied econometrics. Whereas colleagues working on developing economies or on economies in transition are now sometimes confronted with the IMF and its reading of the so-called 'Washington Consensus', I was rather faced in the 1990s with OECD and its 'jobs strategy'.

Before tackling the main subject announced by the title of this chapter I find it relevant to explain why a rather broad concept of macroeconomic policies is appropriate (Section 1), to briefly recall a few general lessons about our understanding of effects of structural reforms and macroeconomic policies (Section 2) and to pose the question of what ought to be the structures of the labour market for efficiency of the social market economy (Section 3). We shall then be ready for dealing with the menus of various programmes of labour-market structural reforms (Section 4), for honestly assessing the accuracy with which econometricians can measure the impacts of structural policies addressed to the labour market (Section 5) and for examining complementarities among structural policies (Section 6). Finally I shall argue that the interplay between macroeconomic policies and institutional reforms is naturally quite different in Western Europe (Section 7) from what it should be in countries involved in wide-ranging changes in their socio-economic system (Section 8).

1 Definitions

What do we mean by, respectively, macroeconomic policies and structural reforms? It is clear for everybody that deliberate aggregate demand management by the monetary or fiscal authorities is macroeconomic and that institutional reforms, when they affect the economy, do it through changes in structures. But these two cases do not cover the full range of the public actions we have to consider. Since it is convenient, at least in this chapter, to have a distinction between only two broad categories, we should have principles from which we could decide in each particular case. But the language of economists is hesitant. For many writers all policies which are not mainly targeted at aggregate demand are structural. I do not think that such a convention provides a satisfactory criterion.

The phrase 'structural reforms' conveys the notion of actions that, without being necessarily irreversible, are adopted for a substantial time-span and bear on the legal, conventional or material structures of the economy and society. They change the framework ruling economic activities and the infrastructures available to economic agents. They open or close opportunities for private enterprises or responsibilities for the public sector. They affect fundamental determinants of economic or social returns. In contrast, macroeconomic policies aim at quick, or fairly quick, responses of consumption, investment, output, international trade and inflation. Authorities responsible for these macroeconomic policies stand ready to shift the values of instruments at their disposal as soon as the economy shows signs that prospects two or five years ahead have to be revised.

Some thirty years ago the phrase 'supply policies' entered the scene with a meaning that I find confusing. The intention was to shift the focus of attention away from aggregate demand management, which indeed appeared disappointing in times of stagflation. But many policy decisions put since then under the label of 'supply policies' did not directly target more at supply than at demand. If anything, their intended impact on markets in such cases concerned rather the process of adjustment between supply and demand. For instance, policies aiming at changing the level of centralization in wage bargaining are literally not supply policies and in many cases carry out structural reforms. On the other hand, a policy of wage restraint aimed at restoring business profitability and using pre-existing instruments is a macroeconomic supply policy, not a structural policy.

Another example in the same area suggests where the borderline of macroeconomic policies should be: instituting a legal minimum wage is a structural reform; changing the level of the minimum wage is a macroeconomic decision. Still another example: fiscal policies are macroeconomic when they concern a deliberate stimulation of the public demand for goods and services, or alternatively an across-the-board cut in public expenditures; but they are structural when they mean an overall reshaping of tax codes, the institution of a negative income tax or of an earned-income tax credit.

These various examples should suffice to show what is meant by 'macroeconomic policies' in this chapter, and *a contrario* by 'structural policies' – or, a bit more demanding, by 'structural reforms'. Clearly, borderlines are not absolutely marked, but what is said here should clarify any misunderstandings.

2 A few general lessons to keep in mind

Before we begin our examination of the labour market it may be good to recall a few things that were learned from experience during past decades. Theoretical reflection and econometric investigations were involved, but still more observation of actual successes or failures in the management of economies. These five lessons are stated here bluntly, without the justifications and caveats which would have to be provided if they were the main subject. But they will be important to keep in mind in the background as we proceed in the following sections. They bear on the distinction between *short-run effects*, which often are the focus in discussions about macroeconomic policies, and *long-run effects*, which are the objective of structural reforms:

- (i) *We know a good deal about the short-run effects of macroeconomic policies*, whether anticipated or not. For instance, we know how aggregate demand management acts first on output and employment and second on the price level.
- (ii) *Structural reforms may have large short-run effects*. Privatization of public firms may mean a large immediate decrease in employment, liberalization of prices may mean a burst of inflation. Similarly structural reforms may change the short-run reactions of the economy to shocks: liberalization of international capital flows will typically increase macroeconomic instability.

- (iii) *Macroeconomic policies can assist or hinder structural reforms.* It makes sense to adapt the macroeconomic environment at times of structural reforms so as to counterbalance their short-run effects.
- (iv) *Efficient implementation of structural reforms takes a long time and requires proper sequencing.* It is not enough to change formal property rights and formal rules. As North (1997) explains, two other conditions have to be met: these rights and rules must be effectively enforced; informal constraints which will contribute to support enforcement have to adapt. This second condition holds only as a result of simultaneous adaptations in the subjective frameworks that individuals employ to explain the world around them. Detailed evidence about the difficulty of even the first stages of this long process is now provided by the experience of post-socialist countries. We may read in this respect Kornai (2001b) on hardening the budget constraints faced by firms.¹ The conclusion in particular points to all that has to be done for enforcing the norms of a market economy. Moreover, as Stiglitz (2000) argues, hasty and badly sequenced structural reforms often turned out to create inefficiencies and inequities.
- (v) *Strategies for going from one structural regime to another have to be lucid and pragmatic.* They must be lucid because changing the pre-existing regime requires time and will have to be pursued with perseverance as an objective. They have to be pragmatic because there is not one simple and universal recipe for success (Rodrik, 1996).

3 Structures of a well-functioning labour markets

The models of general equilibrium theory are often found appropriate for discussing interdependence between relative prices and wage rates, or for studying how these variables react to technological, demographic and other changes in the environment. But they are not appropriate for the study of structural reforms: they do not provide a realistic objective for the structures of actual market economies; they ignore much of what matters for prospective evaluations of the effects of reforms. But what else might provide the objective to achieve?

Writing on the objectives of 'a well-functioning economy', Stern and Stiglitz (1997) assert that they may all 'be summarized within the rubric of raising living standards' broadly understood so as to

cover such aspects as 'enhancing and protecting opportunities for all citizens to participate in, and benefit from, the economy and society'. They hasten to add that the definition of objectives must go hand in hand with the definition of instruments. They also stress the difficulty of the political decision process, which has to build a form of consensus and has a quite imperfect knowledge of the consequences of its choices. Policy-makers ought then to look for robustness of strategies and institutions (thus for institutions likely to function well in a range of circumstances). Such considerations well fit with the conclusion, stated above, that there is not a universal solution to the political problem posed by structural reforms.

Given that they wrote in a book addressed to developing countries, Stern and Stiglitz found it necessary to illustrate the above general ideas by their application to a number of areas, such as building infrastructures for macroeconomic stability or for education, and as choosing appropriate technologies. But they remained silent about the structures of the labour market. I assume that they thought about them, but concluded the subject was too complex to be disposed of in the confines of their chapter. On his part Lindbeck (2000) much reduces the subject when he writes: 'A well-performing labour market presupposes that it is allowed to function exactly as a *market* ... What I mean is that the labour market should be allowed to function as an interdependent system of decentralized demand, supply and wage setting relations, with an important part played by the relative prices of different types of labour.' No mention is made of the facts that most employment relations are long-run ones, nor that work contracts are regulated and subject to heavy implicit clauses. Later in his article Lindbeck speaks of a 'market-oriented system of wage formation', so stressing flexibility, a notion which we discuss below.

Solow (1990) is more explicit. We can read him as claiming that not only is the labour market actually a social institution, but that it also has to be, in order to perform well. He writes: 'Common sense ... seems to take it for granted that there is something special about labour as a commodity, and therefore about the labour market too' (p. 3); and later: 'Wage rates and jobs are not exactly like other prices and quantities. They are much more deeply involved in the way people see themselves, think about their social status and evaluate whether they are getting a fair shake out of society ... It does not follow ... that the ordinary forces of supply and demand are irrelevant to the labour market,

or that we can do without the textbook apparatus. It only follows that [this apparatus is] incomplete and need completing' (p. 22).

In the confines of this chapter I have to be brief on the objective of defining appropriate structures for the labour market. Given this constraint I take two points of view for judging the structures of a labour market, knowing that the ultimate aim is efficiency and equity of the economy: first, the viewpoint of workers; secondly, that of economists.

In order to work well, the employee in a job has to well understand what is expected and required from him or her. He or she has to feel fairly treated in the conduct of the job and in its remuneration. Finally he or she appreciates a peaceful environment which will support his or her motivation to contribute well to the quality of the products or services provided by the business. In most cases such an environment assumes a long-term attachment to the job.

The economist must in the first place recognize the force of the above considerations, while also understanding that the duty of management is to be reasonably demanding as regards the efforts of employees in their jobs. In the second place the economist must draw attention to the facts that neither efficiency nor equity are well served by monopoly positions and that insiders in a business have a natural tendency to build protected positions, which may become unfair.

The economist must also recall that efficiency requires adaptations to changing circumstances. These may concern a particular firm, the products of which are no longer demanded on the markets, or a public service which is no longer needed. Efficient market structures have therefore to be such that closing of a business or reducing its size costs as little as possible, in terms of financial and human costs. This requires proper regulations on bankruptcies, labour contracts and dismissals. These regulations themselves may have to be revised because of overall economic or social changes.

Economic growth, business cycles and short-run fluctuations often call for long- or short-term adaptations. The question then naturally arises: which of such adaptation-facilitating reforms of the labour market are compatible with the delicate human fabric that an enterprise or a public service has to build and maintain within it in order to perform well? Thinking about structural reforms in the labour market thus leads us far away from the considerations applying to the markets for goods and services, or the financial markets. Analogies with these

other markets have a good chance of being misleading. Indeed, as Anderson (2000) argues, worker-protection policies will long exist, even in the United States.

These few considerations do not suffice to precisely define appropriate structures for labour-market institutions. More will be said in the following sections. But already at this stage, the existence of trade-offs in the choice of structures must be noted. Economic efficiency and social well-being do not perfectly match. Different societies can choose different regimes. It is now commonplace to oppose in this respect a European model to a US model and to claim that both may conceivably perform well, each one being judged with reference to its own objectives.

4 Programmes of labour-market structural reforms

To examine the content of programmes intended to reform labour markets a good reference for a Western European is offered by *The OECD Jobs Study* (OECD, 1994). This was the result of a major investigation requested in May 1992 by OECD member states, most of which wanted to know which structural policies would better improve employment. As a result and after signalling the importance of macroeconomic policies, the Organisation made eight main recommendations, each of which concerned a structural target and a number of policy measures aiming at this target. Five recommendations concerned the labour market (unemployment benefits and related issues, employment security provision, working-time flexibility, wage- and labour-cost flexibility, active labour-market policies), a recommendation bore on education and training, another on technological know-how and its development and finally there was a recommendation aimed at promoting entrepreneurship.

As a particularly relevant example here, we may look more precisely at the application of the recommendation on wage flexibility, which was worded as follows: 'Make wage and labour costs more flexible by removing restrictions that prevent wages from reflecting local conditions and individual skill levels, in particular of younger workers.' After examination of the case of each country, policy measures of the following types could be, and were often, recommended:² 'decentralize wage determination'; 'widen wage distribution or abandon

indexing'; 'link wages more to skill levels, experience and productivity'; 'abandon or relax administrative extension' [of wage agreements between employers and workers to firms which were not party to the agreements]; 'make more use of "opt out" clauses' [i.e. allow opt out of collective agreements]; 'modify minimum wages' [as regards their level or scope of application]; 'reduce payroll taxes'.

Of course, such detailed recommendations addressed to countries by the OECD staff were only partially applied, if at all. We do not examine this aspect here. The main point of the example is to exhibit the diversity of structural reforms which were listed. A similar diversity concerned the details of the other four main recommendations regarding the labour market.

Other programmes adopted in some countries or proposed by economists since the 1980s more or less differed. The OECD itself somewhat revised its initial scheme, as appears in a close comparison between the two documents OECD (1994, 1999). The following changes are significant. Aware of equity considerations that had often been raised in the context of implementing its recommendations, OECD examined in 1999 not only aggregate employment and unemployment but also the distribution of job opportunities, job security, as well as earnings and incomes, among different groups of the working-age population. A brief reference to product-market competition within the earlier wording of the recommendation on labour-costs flexibility was transformed into a full new main recommendation. The increasing attention now given to a frequent conflict between work incentives and some features of the welfare systems was taken into account, to the point that improving the 'rewards to work' was not only recommended in a section of the new volume, but was even signalled in the title of one of the two parts of the main text.

The distance from the policy selection made in the *OECD Jobs Study* is naturally greater and more manifest in proposals made by others, even when attention focuses on Western Europe. For instance a French study, Pisani-Ferry (2000), examines a programme of structural reforms directly addressed to the labour market. Even with this limited scope, the author does not mention a number of the OECD detailed recommendations, such as those concerning employment protection for permanent workers, or industrial relations in wage bargaining. On the other hand, he stresses the need of reforming the French transfer system so as to remove the 'unemployment traps' and

make work pay. Similarly, according to him, fundamental reforms in pension and early retirement schemes should receive high priority.

The diversity in the content of structural reform programmes may be in part due to different evaluations of what is politically feasible, or to different readings of the evidence about the effects to expect respectively from alternative programmes. It may also be due to different choices, given the trade-offs. Indeed an explanation focusing on the third possibility is implicit when it is argued that, faced with the same exogenous trends in technologies and globalization since the 1970s, the United States and Europe made different choices: the United States accepted an increase in wage inequality whereas most European countries did not, so accepting an increase in unemployment, by maintaining high minimum wages and/or protecting the 'insiders'.

5 Measuring the employment effects of structural policies

It is a natural question to ask how authors of such detailed recommendations as the ones made by OECD know that adopting them would be beneficial. Frankly we may wonder whether the assurance with which the recommendations are issued does not often come simply from the belief that problems would disappear if the market for labour were functioning like the market for goods. Perhaps, but since such will never be the case, as we saw in Section 3, the belief is out of place.

Once the belief is dismissed as irrelevant, we must admit that our knowledge about the effects to be expected from the structural recommendations is imprecise. In this respect we are in a definitely less comfortable situation than for anticipating the impacts of macroeconomic policies during the next two or three years (there is now again close to a consensus on that among macroeconomists). The imprecision in question has two consequences: we must multiply the investigations and the sources of knowledge from which they draw; we must explicitly place our policy recommendations within a strategy facing uncertainty. These considerations, which could be further elaborated, are now sketched.

When discussions of structural reforms gathered momentum in the 1980s, econometricians looked for empirical estimates of the effects

on unemployment that would result from changes in such institutional variables as the degree of income compensation granted by unemployment insurance benefits, or the duration of these benefits, or the level of a legal minimum wage, or an index of the strength of the employment protection legislation, or the degree of centralization in wage negotiations, and so on. In some cases estimates already existed in the literature, although often concerning only the United States. But they were found hardly sufficient as a basis for more or less irreversible structural reforms.

Some econometricians then thought that the most appropriate source of evidence was given by cross-country comparisons: it could be used fairly systematically; it was also directly demonstrative of what each country could gain from imitating others thanks to specific institutional changes. Econometric analysis of cross-country data was, for instance, the main source of evidence about the effects of structural factors in Layard, Nickell and Jackman (1991).

Unfortunately we had to realize that the first evidence coming from cross-country data was not precise, much less precise than would have been required for definite assessments of alternative programmes of structural reforms: estimates of effects were subject to large standard errors, various econometric studies, using different data bases or different specifications of the model used for estimation, sometimes led to conflicting results. OECD (1999) contains an interesting Box 2.3 (p. 55) on the available evidence so obtained. The tone of the text well shows that this evidence left much to be desired. This was such that different economists, and different institutions such as the OECD and ILO (1996), drew different conclusions from it.

There are, of course, other sources for empirical investigations than cross-sections of country data: aggregate time series, panel data, microdata from surveys of households or firms, direct evaluation of the impact of individual labour-market programmes, etc. But the econometric results reached from these various sources are also imprecise.³ We may, however, hope that the multiplicity of sources will progressively lead to significant assessments. For instance, there is now a large body of available results about the employment effect of the level of a legal minimum wage. From it, we can draw the conclusion that, as long as this level remains far from approaching the median wage, changes in the level do not seem to have a substantial effect on aggregate employment.

Interesting empirical evidence may result from investigations that might not be commonly considered as econometric. These may concern, for instance, the measure of perverse incentives generated by the welfare systems of our Western European countries, notably because taking a job may not pay for a substantial number of people. In France, no rise in income was reported in a survey by a third among those who, benefiting from the *revenue minimum d'insertion* (RMI, a minimum income for people out of work), took a job. A study by Laroque and Salanié (1999) showed that, for 4 million people in France, the net marginal increase in income resulting from taking a job would have been lower than 10 per cent of the wage to be earned. Of course, we may argue that such evidence concerns only the immediate effect on income and that further increase in earnings may accrue to employed workers later on. We may also argue that the pecuniary incentive is not the single determinant against non-working because having a job gives non-pecuniary rewards in self-esteem, social relations and the like. It is, however, hard to believe that institutions responsible for a large mismatch between pecuniary rewards and the common notion of the just reward to work will not be detrimental in the long run. Indeed, the evidence collected was found troubling enough for the French government to introduce a kind of 'earned-income tax credit', which increased the reward to work.

Where do we stand now after so many competent investigations devoted to the employment effects of changes in labour-market institutions? A natural idea for finding the answer is to read the well-documented fifty-six pages written by Nickell and Layard (1999) in the *Handbook of Labor Economics*. Unfortunately the authors wanted too much to persuade readers of the value of their policy precepts when writing such categorical statements as their concluding sentences:

The key labour market institutions on which policy should be focussed are unions and social security systems. Encouraging product market competition is a key policy to eliminate the negative effects of unions. For social security the key policies are benefit reform linked to active labour market policies to move people from welfare to work. By comparison, time spent worrying about strict labour market regulations, employment protection and minimum wages is probably time largely wasted.

In order to point to somewhat different conclusions, I may recommend Blanchard and Wolfers (2000). While relying on cross-country regressions, the paper had three quite pertinent objectives: introducing a long-range time dimension; accounting for macroeconomic shocks together with institutions; and focusing on interactions between shocks and institutions, which is indeed the direction explored in much of the recent research on unemployment. The panel of data covered twenty OECD countries since 1960. Averages over subsequent five-year periods eliminate much of the business cycle fluctuations, so that the focus is rightly placed on medium-term effects. The data-base takes advantage of the work earlier devoted by OECD and others to measuring indicators of institutional features. For the purpose of this chapter, which cannot enter into details, the most relevant results come from the estimate of the following specification of the interactions between macroeconomic shocks and institutional features:

$$u_{it} = c_i + \left[\sum_k Y_{kit} a_k \right] \left[1 + \sum_j X_{ij} b_j \right] + \varepsilon_{it}$$

where u_{it} is the unemployment rate in country i and period t , Y_{kit} is the measure of shock of type k for country i in period t and X_{ij} is the measure of institutional indicator j in country i . The parameters a_k , b_j and c_i are estimated.

Three types of macroeconomic shocks are identified, concerning total factor productivity (TFP) growth, real interest rate and a measure of labour demand intensity. The eight institutional variables concern: the replacement rate of benefits granted to the unemployed, the number of years over which benefits are paid, a measure of active labour market policies, a measure of employment protection, the payroll tax wedge, labour union density, the coverage of wage negotiations with the unions, coordination between wage negotiations. Estimations of the eleven a_k and b_j have the expected signs. All but two b_j are statistically significant at the 5 per cent level. The results permit us to gauge the relative importance of effects of various institutions. For instance the estimates of $X_{ij}b_j$ vary across countries in the range $[-0.48 \quad 0.45]$ for benefit length and in the range $[-0.90 \quad 0.90]$ for employment protection.⁴ According to these results and in interaction with macroeconomic shocks, employment protection would

have been more damaging in the medium run for employment than was the duration of unemployment benefits. This does not fit so well with the conclusions stated by Nickell and Layard (1999).

Overall, we may say today that our knowledge of the employment effects of alternative institutions is a little less imprecise than it was ten years ago. But it remains imprecise, and the fact is too often overlooked by those who speak on the subject. Let us face it here.

Lack of precision in conclusions drawn from empirical results does not mean that these results ought to be ignored when they bear on an important issue. For instance, concerning again the minimum wage, available econometric estimates support the following conclusion: 'high levels of minimum wages, relative to medium wages, will probably substantially depress after a time the demand for unskilled labour if they are not somehow compensated in labour costs.' Placing the adverb 'probably' in the conclusions drawn from econometric evidence permits us to be less rigid about levels of statistical significance: we need hardly more than establishing that substantial negative effects are more likely than the reverse. Such a probabilistic empirical conclusion is worth knowing, particularly when it agrees with common sense and/or with a persuasive argument borrowed from economic theory. The economist has, all the more so, a duty to report what he or she finds.

6 Complementarities

It is now common to read that strong complementarities exist among different features that impinge on the labour market, hence also strong complementarities among different policy instruments (see for instance Coe and Snower, 1997; Lindbeck, 2000, p. 169; and OECD, 1999, Box 2.1, p. 46). Sceptics may wonder whether the point is not overdone. But it certainly deserves attention.

Let us note, to start with, that complementarities among policies may exist even without complementarity, as usually defined, among features. There are at least three reasons for this. First, our uncertainty surrounding the effects of each policy action makes it interesting to diversify actions in the same way as uncertainty surrounding the returns of each asset makes it interesting to diversify the composition of a portfolio. This is a direct consequence of what we saw in Section 5.

Secondly, most types of reform have decreasing marginal effects. For instance, concerning a minimum wage legally indexed on the average wage, a reform may be to replace it by indexation on the price level; another, stronger reform, would be to remove indexation altogether. The previously increasing course followed by the real minimum wage would be stopped in the first case, and it would probably be reversed in the second. Decreasing marginal effect on employment means that, in comparison with the gain to be expected from the first move, the gain from the second would be smaller than if strict proportionality to the minimum real wage applied. Then, if a given effect on employment is aimed at, and would require the stronger move in case only reforming the legislation of the minimum wage were used, the first milder move may be preferred but with the addition of another structural reform of a different kind. In general, this consideration will usually lead to giving preference to more comprehensive reform programmes rather than to strong action focused on a single instrument.

Thirdly, policies may appear complementary because they will benefit different people. Those may be unemployed workers with different skill levels or unemployed workers of different cohorts. In this spirit Lindbeck (2000) notes that it is artificial and misleading to single out education and training against employment subsidies in order to promote employment of the unskilled: 'education is likely to have its main effect in a rather long time perspective, while employment subsidies may have rather speedy effects' (p. 172).

In the literature, complementarity among features has most often involved the process of wage formation, in particular the way in which wage bargaining operates: at the level of the firm, the industry or the nation and subject or not to coordination. We have good reasons to believe that the power of 'insiders' is all the higher as unemployment benefits are higher, can be kept for longer periods and are administered more laxly; this power will also be all the higher as job-security legislation is stricter, or hiring and firing costs higher. Reforming the unemployment benefit system or the job-security legislation and practice will then have not only a direct effect on behaviours of workers and employers, but also an indirect effect because of changes in wage rigidity.

For their part, studying the French case, Laroque and Salanié (2000) have shown that fairly high maintenance incomes provided by the welfare state are not only an important factor of non-employment but

also indirectly a factor of unemployment. Because they realized the need for sustaining incentives to working, governments accepted the need to grant substantial increases in the minimum wage, which led to classical unemployment of those workers who looked least attractive to employers.

Calmfors (1993) has extended the study of complementarity to effects of the relationship between features of the product market and features of the labour market: greater foreign competition is likely to make it more difficult for firms to accommodate wage claims by raising prices; increased resistance on their part will result in lower wages hence, so the argument goes, in higher employment; and this will occur most strongly if there is little coordination in wage bargaining.⁵

In a dense article, Elmeskov, Martin and Scarpetta (1998) have put such ideas about complementarity among labour market features to an econometric test on OECD country data for the years 1983–95. A regression explaining the unemployment rate finds, for instance, that the increase in an indicator of unemployment benefits has a particularly strong effect when and where active labour-market programmes are little used. Complementarities involving centralization in wage bargaining and either employment legislation protection or the tax wedge in labour costs seem to show that one or the other of this second feature is particularly important when wage bargaining is neither fully centralized nor fully decentralized (neither labour market competition nor coordination strongly rules the determination of wage rates).

7 The macroeconomic environment and reforms of the labour market in Western Europe

After the foregoing survey on what we know about the effects of labour-market structural reforms, the time has now come to turn our attention to the role of macroeconomic policies. Here, my experience leads me to first single out the case of continental Western Europe, which is of course relevant in a general treatment of my topic, but not significant for transition economies or developing countries. Indeed, the policy options are much less drastic and radical in my part of the world than they have been elsewhere. Whatever structural reforms we considered and implemented had only very moderate, if not negligible, short-term impact. A quite different set of problems is examined in the next and final section of this chapter.

Lindbeck (2000) asks: 'If the economies of the European continent need so much structural and institutional reforms ..., how do we then explain that unemployment rates were so low in this part of the world for about 25 years after World War II?', and he goes on: 'One answer is that the recent increase in the heterogeneity of the demand and supply of labour requires a more flexible labour market than earlier, including more flexible relative wages ... My second, and I believe more important, answer is ... to regard the employment and unemployment problems on the European continent as a result of the interaction between macroeconomic shocks and various mechanisms of unemployment persistence created by the institutional set-up in these countries' (p. 175).

I am ready to accept this formulation of the Euroclerosis thesis.⁶ But I believe it is a bit misleading because it underrates the responsibility of macroeconomic policies (broadly understood). In two crucial periods macroeconomic authorities failed properly to act: first, during the late 1970s, when they all should have seriously faced 'the wage gap' and adopted a deliberate policy of wage restraint; secondly, at least from the summer of 1992, when a sharp debt deflation was manifest and they should have prevented the burst of high short-term interest rates which then materialized, lasting up to 1996.⁷

On the other hand, it is irresponsible to claim now that the Western European unemployment problem would be cured only by a deliberately supporting macroeconomic policy. The remarkable performance of the United States during the last years of the twentieth century certainly shows that a good macroeconomic environment permits us to reduce unemployment rates to definitely lower levels than we earlier thought possible, and this without necessarily fuelling inflation. But precisely the structures of the American economy provide more flexibility than those of the European economy. So, the attention brought now by many to structural reforms is well justified.

We as scientists would feel more comfortable in our assessments if we could measure the level of the so-called *structural unemployment rate*, i.e. the level below which no further decrease, achieved by macroeconomic stimulation, would be long sustainable given present structures. For the purpose a fairly persuasive reference would be an overall measure of the tension between supply and demand on the labour market, a measure which would show how unemployment relates not only to short-run movements in business activity but also

to underlying medium-run trends. Shifts in the Beveridge curve would in principle provide an appropriate basis for having a rough idea about the level of structural unemployment. But in many countries such as France this curve and its shifts are much too poorly determined.⁸

Two alternative approaches were used. OECD (1999) gives a large role to the structural unemployment rate, of which it provides a measure. From the text of that document I conclude that this measure, obviously discussed within the organization, is nothing more than the actual unemployment rate, smoothed for removing its short-run fluctuations. Its lack of significance for our purpose is indeed recognized in a long box (p. 18):

Structural unemployment is proxied by the OECD Secretariat time-series estimates of the non-accelerating-wage rate of unemployment (NAWRU) ... [This] is a short-term concept. It indicates the rate of unemployment that, in a given year and based on the actual history of unemployment, would be associated with constant wage inflation ... While the long-run equilibrium rate of unemployment is largely determined by structural factors ... the NAWRU may deviate from it when labour markets are affected by macroeconomic shocks. [To this there is a footnote:] In the context of the structural policy recommendations of the *OECD Jobs Strategy* estimates of the long-run equilibrium rate of unemployment might, in principle, be more appropriate compared with the NAWRU. However, these estimates are difficult to obtain.

A second approach is often claimed to provide a measure of structural unemployment. It would be to evaluate the so-called 'equilibrium unemployment'. The concept makes sense with respect to a model of the economy.⁹ If we had a perfect model of labour markets, we could indeed fit it to each actual economy of interest and numerically determine by the fitted model the equilibrium in each case. Unfortunately we have no such model, in particular with a faithful representation of all relevant institutions. Indeed, thus far estimates I have seen which applied this approach relied on models which were very special and unsuitable to serve our purpose.

The problem is easy to understand after our discussion in Section 5, in which we saw how difficult it was precisely to estimate the effect on employment of any simple change in labour-market structures. How

could we then hope to find a reliable measure which would work out for us a synthesis of effects coming from all the relevant structural characteristics and gives this synthesis in the form we need: a level of unemployment below which no further decrease, achieved by macroeconomic stimulation, would be long sustainable given present structures?

Let us then be brave enough to face our doubts. In this spirit I declare that I do not know whether now the French structural unemployment rate is 9 or 8, or perhaps 5 per cent. Given this uncertainty and given the time required for implementing reforms, the wise and prudent behaviour should be to examine policies of structural reforms and select those which have a good chance of being beneficial in the long run.

In the last ten pages of their article, Elmeskov, Martin and Scarpetta (1998) are much less circumspect than I am here. They take it for granted that the OECD recommendations (1994) provide the appropriate medicine for curing the European unemployment disease. They then observe that in a number of countries electorates did not accept the need to 'swallow all the medicine'. These authors thus wonder how to overcome the resistance to labour market reform, discussing in particular a challenging hypothesis, namely that a macroeconomic depression would be required to overcome the resistance. They note that indeed the depression of the early 1980s and the resulting high unemployment rates led governments in Denmark, Ireland and the Netherlands to opt for important packages of structural policy reforms and that by the end of the 1990s these countries had experienced strong decreases in unemployment.

However, after looking more closely at the whole sample of OECD countries they admit that the evidence is not very conclusive. They write: 'It might tentatively be argued that crises tend to create a groundswell of support for reforms, though the ability to harness such support and translate it into actions depends on political factors, such as shifts in government.'

8 A friendly macroeconomic environment for major institutional reforms

As I said earlier, the experience of Western Europe has little relevance for countries involved in major institutional change of their socio-economic system. Unfortunately I do not directly know the problems

of these countries. So, I must admit that my judgements about the interplay between their macroeconomic policies and their structural reforms may be erroneous. However, I could not have lived the last few decades without often reading and thinking about the issues (Kornai, 2001a, is a good example of the sources available for the purpose). Moreover, I was helped in my reflections on the subject of this chapter by the article of Boeri and Terrell (2002). This being said, I shall be brief.

Removing the notorious inefficiencies in the operation of the public sector, by privatization or otherwise, is a frequent objective of structural reforms in the developing countries and countries in transition countries. At least temporarily this means a sizeable decrease in employment. In order to counteract such an impact a natural proposal is to implement a carefully-measured stimulative macroeconomic policy while keeping control of inflation. But Boeri and Terrell show that the pattern of structural reforms of the labour market is also important. They draw attention to the fact that transition economies have had a wide range of experiences in the reallocation of labour and that much can be learned by comparing these experiences. They note in particular that the speed of reallocation was more a function of the attraction of job creation than of the importance of lay-offs from state-owned firms. They also praise the early introduction in some countries of non-employment benefits, which affected the distribution of incomes during the transition and amounted to putting a floor under wages. So, large quits occurred in such countries from low-paid jobs in the public sector. Also, income was available for the growth of self-employment or the start-up of new small business activities. In contrast, in other countries such as Russia, excessive wage flexibility contributed to the socio-economic mess.

The Asian and Latin American experiences have revealed how difficult was the connection of macroeconomic management with the liberalization of international trade and financial relations. Crises may be manageable in countries that either have a long practice of international openness or have accumulated large surpluses in their foreign balances and public budgets. But we saw so many cases in which no macroeconomic recipe could cope with the problems faced because of induced reactions in exchange rates and domestic activities! When followed, the recommendation to raise interest rates in crisis-stricken countries, so as to restore monetary balance, led to such high levels of the rates that a destructive depression was generated. On the other

hand, failure to act in this way was likely to have led to such weaker exchange rates that a similarly depressing deflation of all domestic debts denominated in foreign currencies would have occurred.

The moral of this sad story could be that, in the same way as prudence now recommends that some Western European countries further reform their labour markets, prudence might also have better inspired some of the reformers who opted for a fast and full liberalization of foreign economic relations without first seriously considering what the context would be.

Notes

1. See also Svejnar (2002): 'Virtually no transition country succeeded in rapidly developing a legal system and institutions that would be highly conducive to the preservation of private property and to the functioning of a market economy' (p. 7).
2. The abridged wording is taken from OECD (1999, p. 178).
3. Although dealing with a narrow subject Ryan (2001) well illustrates the limitations of the results obtained thus far from samples of microdata, which however are in various respects more informative than other sources.
4. Estimates of the two relevant b_j appear in the first column of table 5, p. C28, in Blanchard and Wolfers (2000). According to pages C19–20, the authors found the values of the X_{ij} from the institutional indicators given by Nickell (1997, p. 61), by simply computing for each j the deviations with respect to the average across countries. I could thus derive the values in the two ranges given here.
5. The possible interactions between product-market and labour-market institutions in the determination of economic performance do not belong to the subject of this chapter. This is, however, the third case I allude to after my reference to the appearance of product markets in the targets of some structural reform programmes and after my quotation of the concluding recommendations given by Nickell and Layard (1999). Clearly, extending the subject so as to fully deal also with structural reforms addressed to the market for goods and services would be a challenging task. The fact that competition on that market may curb the wage claims of trade unions is then unlikely to be the dominant consideration.
6. The thesis is also supported by Balakrishnan and Michelacci (2001), who made a systematic study of quarterly series on labour-market flows for the period 1972:3 to 1989:4 in the United States and four large Western European countries: although the aggregate shocks were similar, the responses of inflows in, and outflows from, unemployment appear to have been definitely slower in Europe than in the United States.
7. These two sentences are, of course, too brief. The full argument may be found in Malinvaud (2000, pp. 1445–52).

8. This was recognized by Solow (1998), when he argued in favour of a reference to the Beveridge curve for measuring the impact of labour-market rigidities on unemployment.
9. Some macroeconomists use the phrase 'equilibrium unemployment rate' as equivalent to 'natural unemployment rate'. I wonder why we are changing our habits and overlooking the past discussions about the exact meaning, significance and measure of the natural rate (on this, see Malinvaud, 2000, pp. 170–1).

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7

Macroeconomic Fluctuations and the Timing of Labour-Market Reform

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It is commonly heard that expansionary times are more favourable than recessions for implementing structural reforms in the labour market. Behind this belief is the intuition that structural reforms are 'painful' and that such pain is likely to be lighter in a boom. In this chapter, I try to discuss these issues from a more precise and analytical perspective and conclude that this simplistic view should be severely qualified.

First of all, what do we mean by 'structural reforms'? In the European context, this means changing one of the many regulations which hamper the functioning of the labour market and have led to an abnormally high level of unemployment and its duration. But when and how to undertake a reform of one of these institutions will differ across institutions. For example, one may plausibly argue that a reduction in the minimum wage is best implemented in a slump, because that is when wage moderation and job creation are most needed. On the other hand, it is better to engineer a reduction in unemployment benefits during a boom, because one may consider that the need for insurance against job loss is less felt during a boom.

Secondly, what do we mean by 'should', 'painful', 'best', or 'better'? Are we talking about the optimal timing of a reform which one has decided to undertake in any case? Or are we saying that a structural reform may be desirable if the economy is in one macroeconomic situation, but not if it is in another? And, better for whom? Are we talking about what is optimal with respect to some concept of aggregate social

welfare, or about what is politically viable, i.e. what is most likely to be accepted by powerful social groups?

For these reasons, we ask three questions:

1. Given that a reform should take place, what is the *welfare-maximizing timing* for its implementation, in light of macroeconomic evolution?
2. What is the phase in the business cycle when the *political support* for a given reform is the strongest?
3. Given that a given reform takes place at a given date, what is the most appropriate *macroeconomic policy* in order to accompany that reform?

1 The case of employment protection

As has been already said, the conclusions that we draw strongly depend on which reform we are considering. I therefore focus my discussion by restricting it to a reduction in employment protection, which is one of the most controversial regulations. While some of my arguments also apply to other institutions, and while I incidentally discuss some other reforms, the general conclusions that one may draw regarding the optimal timing of reductions in firing costs need not apply to other structural reforms.

According to modern economic theory, the impact of a reduction in the strictness of employment protection legislation on the economy is threefold.¹ First, there is a lump of destruction of non-productive jobs which existed only because it was less costly for firms to go on losing money on these positions than close them and pay the dismissal costs. Workers who are affected by such prospects are likely to oppose the reform, unless they are compensated. Secondly, by reducing total labour costs, which reflect expected future dismissal costs as well as expected forgone profits due to the likelihood of keeping workers in unprofitable positions, a reduction in employment protection increases job creation and labour-market tightness. Note that the net effect of such a reduction on the level of unemployment is unclear, since we have both an increase in job creation and an increase in job destruction. However, the effect on unemployment duration is unambiguous: it falls. Thirdly, wages increase at least after a while, reflecting a tighter labour market due to an increase in job creation.

This increase in wages is also the counterpart of the fact that people are more productive, since unproductive jobs which used to be maintained because of the firing costs are now suppressed.

With these mechanisms in mind, we can try and address the three questions asked above. Let us start with the first one, i.e. that of the appropriate timing. A natural argument could be that, since the impact effect of reductions in employment protection is a lump of job destruction, their social cost is likely to be lower in booms. This argument, unfortunately, ignores many other effects, and it is not even clear that the one it insulates goes in the right direction.

2 Social welfare and the timing of reform

First, it focuses on the effect of the reform on those who *lose their jobs*, ignoring its effects on the unemployed and on those who keep their jobs. The former, who benefit from the reform because of a greater job-creation rate, may gain more if it is implemented in a slump. It all depends on the cross-effect of business cycles and deregulation on job creation. As for the employed who keep their jobs, they are affected through wages, which themselves react to labour-market tightness, and the same ambiguities apply.

Secondly, there always exists a *discount* effect, which makes it costly to postpone a valuable reform. If a reform increases social welfare, and if the social welfare function involves discounting, postponing it means that there is a lower total social gain. Note, however, that if the social welfare function is a present discounted value of a *flow* of net social gains, and if the flows are negative in a slump but positive in a boom, then it makes perfect sense to wait for a boom. But if the flows are lower in a boom than in a slump, yet positive in both cases, one should go ahead with the reform as soon as possible.

Thirdly, it is not clear at all whether the *social cost* of the job destructions implied by the reform is lower in booms. Consider the total number of jobs destroyed. One may well argue that it would be lower if the reform is implemented in a slump – for example, if these jobs were to be destroyed even absent any reform. One can construct an example where there are two types of jobs, low-productivity jobs and high-productivity jobs, and where under regulation the former are worth keeping in expansion but not in recession, when it is more profitable to pay dismissal costs. In such a world, deregulation will

destroy jobs if implemented in an expansion, but not in a recession. In addition to the *quantity* of jobs being destroyed, one may consider the social cost of a job being destroyed. This cost may be negative, since these jobs are not profitable, but it may also be positive, since wages may exceed the worker's opportunity cost of labour, for reasons associated with incentive problems and bilateral monopoly,² and since that opportunity cost fails to reflect the true social value of search activities.³ This does not mean that the reform is harmful, since it has other gains in the form of job creation, but that one should take into account the value of the jobs being destroyed, which may vary with macroeconomic conditions. Again, the direction of this variation is unclear. On the one hand, it is harder to find another job in a slump, which suggests that the social loss from job destruction is larger in slumps. On the other hand, these effects are already reflected in the bargaining process, which typically implies that wages are lower in slumps. One may construct models where the difference between the social and private opportunity costs of labour is constant across the business cycles, implying that the excess social loss from destroying one job because of deregulation is acyclical.

3 Macroeconomic conditions and the political support for reform

We now turn to the next question, namely: when is the political support for the reform strongest? To answer that question, we first assume that incumbent employees are much more decisive politically than the unemployed.⁴ It is then useful to sort out several effects of labour-market reform on their welfare.

3.1 The exposure effects

With the possible exceptions of reductions in the generosity of unemployment benefits, labour-market reforms tend to favour the unemployed more than the employed, which they may harm. They consist in boosting job creation at the expense of the employed's bargaining power or their job security. This is why it is difficult to get political support for such reforms, since the employed are more numerous and better organized than the unemployed. However, there is one channel through which the welfare of the unemployed

is taken into account by the employed, which is that they themselves are exposed to unemployment, and will benefit from reforms that boost job creation if they become unemployed in the future. This ‘exposure effect’ has far-reaching implications. For example, it implies that reform may be impossible in an economy where the employed are overprotected by too tough regulations, since then they internalize very little of the unemployed’s welfare.⁵ It also has implications for the timing of structural reforms. If it prevails, then the political support for reform is largest at times when the employed are most exposed, i.e. have the greatest probability of losing their job. Intuitively, this should be at the beginning of a recession, although we know that this probability has an important idiosyncratic component which is sizeable regardless of the business cycle.⁶

3.2 The identifiability effect

While on paper we can write a model where agents know exactly what will happen to them following a reform – for example, they know their productivity and can perform the computations that their boss will make to find out whether to get rid of them or not – in practice the gains and losses from reform are not perfectly known, and the political support for reform will depend on the perceived distribution of such gains and losses. At one extreme, one could consider what would happen under a pure ‘veil of ignorance’ where people consider that they could be in any position following the reform. In such a case everybody will maximize some representative expected-utility level, and the reform will be politically viable if it increases social welfare, at least as defined by that utility. At the other extreme, one could consider a case where everybody knows for sure their situation after the reform. If a majority of voters lose a little, while the rest gain a lot, then the reform might be blocked, unless one can commit on a monetary transfer scheme to compensate the losers. By ‘identifiability’, we then refer to the precision with which one knows one’s net gain from the reform. A change in identifiability changes the political support for a reform, although it may either increase or decrease, depending on whether uncertainty redistributes gains in favour or not of the ‘decisive’ voter. Identifiability is also related to the business cycle, which helps to sort winners from losers. Let us go back to the example of

unproductive jobs being destroyed in recessions even under regulation. Assume that people do not know for sure whether their job is productive or not, perhaps because their employer has a vested interest in not revealing it. Then if a reduction in employment protection is implemented in an expansion, all workers consider that they may lose their job with a positive probability after the reform; this will be the case if it turns out that their job is unproductive. This low identifiability may lead to all workers opposing the reform. On the other hand, if in a recession all unproductive jobs are destroyed, then at the end of the recession workers know for sure that they are in a productive job, and will not oppose the reform since it does not threaten their job. This example illustrates how recessions increase identifiability because they carry information about which jobs are productive and which jobs are not. In the case considered here identifiability is good for reform because it reduces decisive voters' perceived probability that they are in a unproductive job, i.e. it redistributes gains in favour of the decisive voter.⁷ It suggests that the political support for reform is highest right *after* a recession, contrary to the exposure effect which is strongest right *before* a recession.

3.3 The constituency effect

By 'constituency effect' I refer to the fact that labour market institutions may create their own constituency, which generates 'status quo' bias. That is, a number of people may be in a situation which makes it worth supporting an institution, and that situation exists only because of this institution. The existence of unproductive jobs under employment protection legislation is again a case in point: workers in unproductive jobs may support employment protection legislation for fear of losing their job if it were removed, but they would never hold such jobs if employment protection had not existed in the first place. Thus the economy may find itself in situations where employment protection is a political equilibrium, but where its absence would also be a political equilibrium – any of these two situations is sustainable if it is the status quo, hence there is 'status quo bias'.

In such a situation, reform is easier, the lower the 'self-built' constituency, and its size typically varies with time and macroeconomic conditions. This variation does not imply that recessions or expansions are systematically better for reform; rather, that the whole past history of macroeconomic fluctuations will affect the political viability of the reform. The reason is that it is this past history which

determines the current distribution of jobs across productivity levels, and thus the total number of unproductive jobs which would be destroyed after the reform. Consider, for example, a 'vintage model'⁸ where new jobs are created at the highest possible productivity level, reflecting state-of-the-art technology. Assume a given job's productivity does not grow after the job has been created, while the technological frontier moves with time, due to technical change. In such a world, the least productive jobs are the oldest. A job's productivity relative to the frontier negatively depends on its age. The political constituency of job losers against labour-market reform will be larger, the larger the fraction of jobs older than a critical threshold. This fraction is likely to be larger if for example there is a boom followed by a long enough period of stagnation. Conversely, if there is a long enough recession followed by a boom, then at the end of the boom, there will be a relatively small proportion of 'old jobs', since many of them were destroyed during the recession and most jobs have been created during the recent boom. Consequently, there is a 'window of opportunity' for implementing a reduction in employment protection against fairly little opposition. However, the mass of 'young' jobs will gradually age, and the workers who hold them will eventually change their mind and oppose the reform, because they end up lagging behind in productivity, which threatens their jobs. Hence the window of opportunity offered by the boom will eventually be closed.

4 Some evidence

We hope to have convinced the reader that the view that good times are better for reform is too simplistic and that there is a variety of effects which go in different directions. This suggests that more could be learned by looking at the data. This is what I have done in Saint-Paul (1996), where I have looked at the timing of a number of structural reforms which all changed the level of employment protection. The key lessons from this empirical study are as follows. First, most of the reforms which seem to be correlated with macro-economic conditions are designed to be 'marginal', in that they affect only the 'flexible' tier of the labour market. Thus, we seldom observe across-the-board reductions in employment protection, but we often see liberalizations in the use of, say, temporary contracts. This reduces firing costs for the 'marginal worker', who often does not have a regular contract, but leaves the bulk of the workforce with its existing

degree of protection. These reforms are a way to buy the political support of 'insiders',⁹ and to spare them the threat of job loss. Secondly, there does seem to be an exposure effect, as suggested by the fact that virtually all these 'marginal' reductions in firing costs took place at times when unemployment was rising, i.e. when the exposure of the employed to unemployment was high. At this stage one should point out that there is a difference between the *level* of unemployment, which may be quite high while the employed are quite protected, and its *rate of change*, which – unless there is strong growth in labour force participation – can go up only if the employed are at a risk of losing their job. While a high unemployment level increases the support for structural reforms because there are more unemployed people to support them, the effect is likely to be quite mild because the unemployed command little political power; on the other hand a high rate of change, i.e. a high exposure, as argued above, translates into a greater support from the employed, and is more likely to lead to reform. This is indeed what I found: while the level of unemployment has no explanatory power regarding the likelihood of reform, its rate of change makes reform more likely. Thirdly, there are some instances of across-the-board reductions or increases in firing costs. This happens much less often than marginal changes, and does not seem correlated with the business cycle; rather, it is correlated with the government's ideology, with right-wing governments more likely to reduce firing costs and left-wing governments more likely to increase them. In contrast, ideology had little impact on marginal reforms.

5 How should macroeconomic policy deal with reform?

I now turn to the last question, namely the issue of the best macroeconomic policy in order to accompany a structural reform. In my view, the message is clear regarding this issue. From a macroeconomic perspective, a structural reform amounts to a reduction in the natural rate of unemployment, i.e. to the rate to which the economy converges in the absence of shocks. It is also known that the actual rate of unemployment does not adjust instantaneously to a change in the natural rate. A situation where the actual rate is above the natural rate is similar to a recession: resources are underutilized and prices tend to fall. Therefore, even though employment goes up following a structural

reform, output nevertheless is below potential output, which makes it desirable to exert stimulus through monetary and fiscal policies.¹⁰ The deflationary impact of a structural reform may be greater in the case of a reduction in employment protection, since it is aggravated by the lump of unproductive jobs being destroyed after the reform.

These considerations imply that in the context of arrangements such as the European Monetary Union (EMU), labour-market reforms may be problematic.¹¹ An individual country considering a structural reform can no longer use a monetary stimulus to accompany this reform. It could try to convince the European Central Bank (ECB) to lower interest rates, but other countries would object to that if they have different macroeconomic conditions. It may use fiscal policy, but this option is restricted by the Stability and Growth Pact (SGP) and by the fiscal stability programme to which individual countries are committed. This impossibility of using macroeconomic policies in order to deal with structural reform increases the cost of these reforms, and some of them may be abandoned. In order to solve that problem, a natural solution would be a coordination of structural reforms among European states (or, rather, states of the Euro zone). In such a case, the ECB could respond with a cut in interest rates, which would stimulate all the economies engaging in reforms. Therefore, belonging to EMU calls for more coordination of labour-market policies across states. However, I am dubious about the likelihood of such coordination. The reason is that while being typically 'rigid', labour-market institutions differ quite substantially among member countries. Furthermore, they do not necessarily share the same analysis about the causes and cures of unemployment. For example, the idea that an increase in minimum wages should reduce unemployment, because it stimulated aggregate demand via workers' purchasing power, or that 'work sharing' is a good policy to create jobs, would find a large number of supporters in some countries but not others. Before the stage of coordinated labour-market reforms is reached, an important work of dissemination and popularization of economic analysis is needed.

Notes

1. For the relevant literature, the reader may refer to Bentolila and Bertola (1990), Bertola (1994), Hopenhayn and Rogerson (1993) and Saint-Paul (1995, 1997, 2002).

2. See Bulow and Summers (1986), Lindbeck and Snower (1988), Shapiro and Stiglitz (1984) and Solow (1979).
3. See Caballero and Hammour (1996) and Hosíos (1990).
4. The implications of this basic principle for the structure of regulation in political equilibrium and for the scope for reform are studied in Saint-Paul (2000). In particular, the constituency effect and the identifiability effects are discussed at length.
5. An example is analysed in Saint-Paul (1993).
6. See Davis, Haltiwanger and Schuh (1996).
7. One can create examples where it goes the other way round; see Fernandez and Rodrik (1991).
8. Such a model is studied in Saint-Paul (2002).
9. See Saint-Paul (1993).
10. This is also the conclusion reached by Bean (1998).
11. See Saint-Paul and Bentolila (2001) for a more thorough discussion.

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8

Debt, Deflation and Declining Growth: New Challenges to the Japanese Economy

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1 Introduction

The Japanese economy was an envy of the world at the end of 1980s for its strong output activity, rising equity prices, stable consumer prices and apparent financial might. However, after the 'lost decade' of the 1990s, Japan has become an economy upon which many countries are averse to model themselves. Stock and land prices have been declining since 1990, and real estate prices have fallen to about one-quarter of their peak level. Non-performing loans are mounting and, after several years of capital injection and blanket deposit guarantees, the banking crisis is not completely over. Most Japanese banks are under severe pressure to raise more capital, after losing much in writing off losses from non-performing loans. The economic growth rate was quite low during the 1990s. Prices and wages have been generally declining since the late 1990s and deflation seems to have set in.

A nominal interest rate that has been virtually zero since 1999 has failed to stimulate investment and consumption. Several fiscal stimulus packages – discretionary public expenditures and tax cuts – have been applied, but they too failed to stimulate private sector investment and consumption. Due to deficit spending and declining

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tax revenues, the government debt:GDP ratio rose from 60 per cent at the beginning of the 1990s to 140 per cent in 2002. According to Moody's, Japanese government bonds are now rated below their Botswana counterpart. With the apparent ineffectiveness of monetary and fiscal policy, the Japanese economy is drifting downward. Nominal GDP shrank by 5 per cent between 1997 and 2003.

Such difficulties in the Japanese economy are quite unprecedented among industrialized countries in the post-war period. They pose a challenge in both economic theory and in policy practice. The core of the symptoms is a combination of deflation, accumulation of debts, banking fragility, and loss of growth, creating a challenge in four major policy areas: monetary policy, bank supervision, fiscal policy and exchange rate policy. They are briefly described here and analysed in greater detail in later sections.

The Japanese economy is suffering from an unusual set of circumstances, some of which have not been seen for a long time in the world economy. A combination of deflation (negative rate of changes in the general price levels, such as the CPI and the GDP deflator) and a sustained zero interest rate is a rare situation. The Japanese case may be the first example of the 'liquidity trap' since the Great Depression of the 1930s. The Bank of Japan (BoJ) has maintained the nominal interest rate at zero per cent since 1999 (with a brief period of raising the interest rate to 0.25 per cent from August 2000 to March 2001). But prices have not responded to that policy. Deflation and the zero nominal interest rate means that the real interest rate has been positive. Many economists have called for monetary easing, in terms of expanding the monetary base, even with the interest rate at zero, since price movements are fundamentally a monetary phenomenon. Economists at the BoJ have argued that the effects of quantitative easing are uncertain. The purchase of long-term government bonds was seen as one option, and indeed the amount of monthly purchase was raised in several steps from 1999 to 2002. More aggressive options for the BoJ – that is, to purchase real assets, such as real estate and equities – were proposed by economists but were not implemented by the Bank. The Bank contended that such unconventional monetary policy has at best uncertain effects and is potentially very risky – it could result in damaging the Bank's balance sheet, and due to excess liquidity lead to hyperinflation. Many economists suggested that the aggressive options were at least worth trying and would have few

side-effects, dismissing concern for hyper-inflation as a remote possibility on the ground that the well-known weapons could be effectively deployed before hyperinflation became reality. But, with a zero interest rate and continuing purchase of long-term bonds, what else could the Bank do, when *prices continued to decline even at the zero interest rate* (i.e. the real interest rate remained high)?

Deflation (or unexpected disinflation in general) creates a particular hardship for borrowers with nominal debt contracts. Asset price deflation hits hard those individuals and corporations who invested in real estate and stocks with borrowed funds. They could be dismissed as imprudent investors who had made bad decisions, and hence of scant policy concern: however, when too many borrowers defaulted on their loans, the lenders – banks and other financial institutions – became affected, and banks are of special concern to public policy, in the sense that their intermediary and settlement functions offer public goods. A failure of a bank may cause a ‘domino failure’ of other banks and corporations, as well as panic among depositors. As did other countries, Japan strengthened near-insolvent banks with public capital injections in 1998 and 1999. It was seen that banks regained health (or, at least, a breathing space) after the 1999 capital injection. However, three years after the 1999 capital injection, the banking system again seems to be particularly weak. What is an effective way to strengthen the banking system once and for all, *given that the rest of the economy is also weak*?

The elementary textbook would state that in a liquidity trap situation (when people prefer cash to bonds at very low interest rates) monetary policy becomes ineffective, but fiscal policy remains potent. As the Japanese growth rate stagnated, and the stock prices declined, the government sought to stimulate the economy by deficit financing. Between 1992 and 2000, there were ten ‘stimulus packages’ totalling 136 trillion yen, the equivalent of injecting 2.7 per cent of annual GDP every year for ten years. In the 2002 budget, the budget deficit ran at 4 per cent of GDP, ensuring a rise in the debt:GDP ratio until such deficits were contained. However, as the private sector fails to show recovery, politicians and many economists are calling for more fiscal stimulus. Is (Keynesian) fiscal policy effective in the current Japanese situation? What could (and should) fiscal policy do when the *debt:GDP ratio is at 140 per cent and climbing, but when withdrawing fiscal support may bring the economy to collapse*?

One possible adjustment mechanism for a weak, stagnant open economy is through currency depreciation. Investors may want to escape from an economy without growth potential and with a banking crisis to other stronger economies. Such capital outflow tends to cause the currency of the weak economy to depreciate. As part of an automatic adjustment mechanism, depreciation helps an ailing economy by stimulating exports. A quick and large depreciation, such as one in an emerging-market currency crisis, results in high inflation, but this does not apply to a deflationary economy such as Japan at the beginning of the 2000s. Theoretically, depreciation should help to cure deflation in Japan. However, depreciation is not taking place in Japan. The yen repeatedly appreciated to a level that choked off exports (or at least squeezed profits in the export sector). Should the monetary authority actively seek *yen depreciation*, given that private-sector adjustment is not there and other traditional policy either fails or become ineffective?

The rest of this chapter is organized as follows. In Section 2, the wholly unexpected fall in the strength of the Japanese economy in the 1990s is reviewed. Debt deflation is identified as a major problem in the stagnation of the Japanese economy. Although deflation is fundamentally a monetary phenomenon, policy challenges are complex. Pros and cons in adopting unconventional monetary policy, including the exchange rate policy, are described and analysed in Section 3. Associated problems in bank supervision, and problems in adopting discretionary fiscal policy will be discussed in Section 4. Section 5 considers *yen depreciation* as a possible solution, and Section 6 concludes the chapter.

2 The rise and fall of the Japanese economy

2.1 The 'lost decade'

The rise and fall of the Japanese economy may be summarized in a few key indicators. The growth rates from 1981 to 2002 in Figure 8.1 show an average growth rate of Japanese real GDP from 1981 to 1992 at 4.4 per cent, and from 1993 to 2002 at 1.1 per cent. With a drop in the growth rate by 3 percentage points from the 1980s to the 1990s the magic of the Japanese economy and the fame of Japanese management completely faded away. The 1990s is now known as a 'lost decade' in Japan, as these figures illustrate.

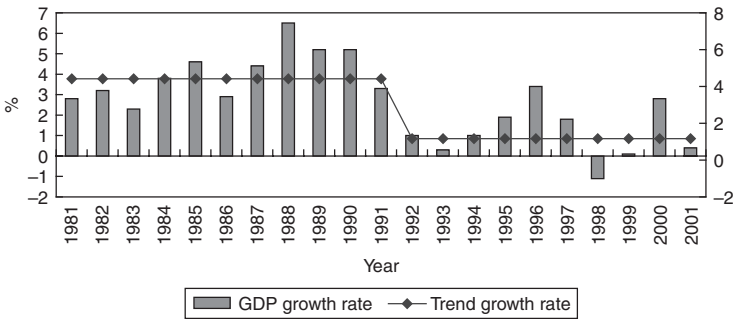


Figure 8.1 Japanese growth rate, 1981–2001

A debate over the causes of this significant change in growth trend has emerged. One camp, which could be labelled a ‘real business cycle camp’, emphasizes a slowdown in technological progress (lower total factor productivity (TFP) growth) and preference of workers for more leisure. In fact, labour input has declined as much as output, such that output per unit of labour did not decline, but even increased slightly over the decade. Unemployment increased steadily. Hayashi and Prescott (2002) cited the change in TFP growth and increased national holidays as a possible explanation for the slowdown of Japanese economic growth. Others cite a loss of competitiveness of Japanese exports and erosion of the Japanese industrial base. Japanese corporations are investing increasingly in China and other Asian countries. Many Japanese multinationals, such as Sony and Toyota, are truly global in the sense that production and earnings are evenly divided among Japan, North America and the European Union. Consumers are also to blame for the stagnant economy. They are trying to increase saving to offset prospective pension cuts.

The supply-side, real business cycle explanation of the Japanese ‘lost decade’ has the same difficulty as with a real business cycle explanation of the Great Depression. The decline in output is basically explained by a sudden mass preference for leisure, and the fact that unemployment is increasing is ignored. Another problem with the supply-side explanation is disinflation and deflation. If aggregate supply has declined without affecting aggregate demand, prices should rise due to excess demand. Aggregate demand must have decreased

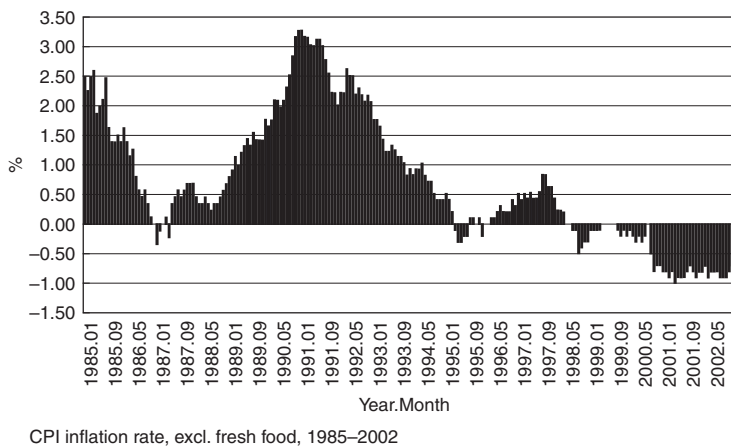


Figure 8.2 Inflation rate of Japan, 1985–2002

faster than aggregate supply, because the inflation rate has become lower and lower, and eventually became negative.

Figure 8.2 shows the inflation rate, measured by the CPI, excluding fresh food and adjusted for the introduction of the consumption tax in 1989 and its increase in 1997. The CPI inflation rate shows a cyclical movement, reflecting fluctuation in the real economy. The sustained strong economic growth toward the end of the 1980s was accompanied by 3 per cent inflation in 1990, while a temporary recovery in 1996 produced a positive inflation rate in 1997. However, there is a clear downward trend in the inflation rate from 1990 to 2002; it has been negative since 1998, but became significantly so (–1 per cent) since the third quarter of 2000. The longer the economy is in a deflationary environment, the harder it becomes to reverse the trend.

There is also a debate regarding the causes of disinflation and deflation. Just like the debate over the cause of output stagnation, there is a camp which contends that deflation reflects real factors. Technological progress in information-technology (IT) goods reduced prices; competitive imports from China drove down prices of domestically produced goods; and structural reforms, such as breaking up monopolies, exerted competitive pressure on prices. Many who embrace this interpretation regard deflation favourably, because the forces at work represent more efficiency in production.

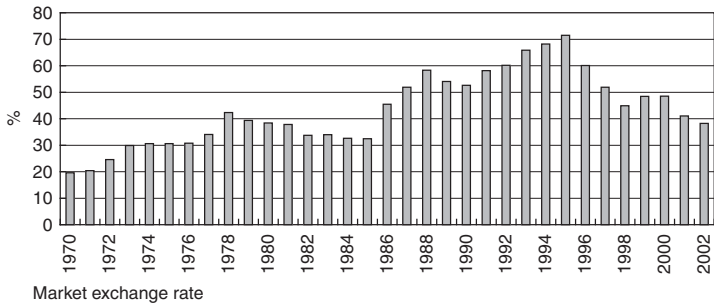


Figure 8.3 Relative size of Japanese GDP to US GDP, 1970–2002

Notes: Japanese GDP is converted to US dollars using the average market exchange rate of the year and the ratio to the US GDP is calculated.

Source: IMF, *International Financial Statistics*, September 2003.

Those who regard deflation as a monetary phenomenon have a different view. Lower prices of IT goods, imports of inexpensive Chinese goods, or efficient allocation of resources and more competition all point to changes in *relative* prices. Those goods with higher productivity are most likely to experience the fall in prices relative to other goods. However, overall price levels fluctuate with the money supply and in the long run inflation or deflation is a consequence of monetary policy, a debate which is reviewed in the later sections of this chapter.

With a combination of very slow growth of the real economy and deflation, the Japanese nominal GDP has been actually shrinking since 1997 – nominal GDP in 2002 was about 5 per cent smaller than at its peak in 1997. Figure 8.3 shows a dramatic rise and fall of Japanese nominal GDP (converted to US dollars at market rate) in relation to US nominal GDP. Although the magnitude of the Japanese economy in terms of the US dollar is greatly influenced by the changes in the yen/dollar rate, it also, via the exchange rate, reflects long-run productivity and macroeconomic growth. The nominal size of the Japanese economy went from just above 30 per cent of that of the United States in 1985 to more than 70 per cent of the United States in 1995, most of the change reflecting the appreciating yen (from 260 to 80 yen dollar). Subsequently the ratio came down to below 40 per cent of the United States in 2002, the decline in the ratio in the second half of the 1990s reflecting a combination of slower growth in Japan and deflation.

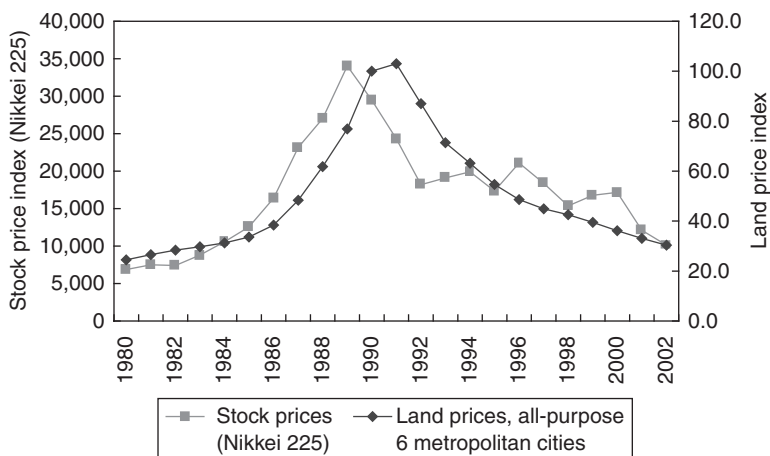


Figure 8.4 The asset price bubble, 1980–2002

The rise and fall of the Japanese economy can be most visibly demonstrated by the rise and fall of asset prices. Figure 8.4 shows the stock price index (yearly average of the Nikkei 225 stock price index) and the land price index (of prices, base March 1990, in the six metropolitan cities, measured by the Real Estate Institute) from 1980 to 2002. The prices of stocks and of land quadrupled in the 1980s, with the former peaking at the end of 1989, and the latter peaking in 1991. Asset prices lost all the gains of the preceding ten years by 2002, dropping to one-quarter of their peak value in eleven–twelve years. With benefit of hindsight, the asset price inflation in the 1980s is considered to have been a bubble, and the deflation in the 1990s a result of its bursting. The magnitude of the bubble and its bursting is certainly one of the largest among the history of bubbles in the world. (See Kindleberger, 1996, for a history of bubbles.) Land prices have been declining steadily, and the speed of decline has not slowed.

The magnitude of the increase and decrease in asset prices put real estate investors in a difficult position. Most severely affected were the developers, real estate companies and construction companies: they had large inventories of land bought with borrowed money when the value of land started to fall. Either developing commercial properties or selling land outright would have made them

instantly insolvent. Instead, they defaulted on interest payment to banks. Banks, regarding going-concern value of corporations much higher than liquidation values, kept lending to such non-performing entities, hoping that one day land prices would turn upward and development resume. That hope failed to materialize: many corporations went into bankruptcy, or banks were forced to write down or write off these non-performing loans.

Non-performing loans severely affected bank governance. Many market observers believed that the capital adequacy ratios of many of major banks would have declined below the critical 8 per cent if a strict classification of non-performing loans and sufficient provisioning for each category of such loans had been implemented and enforced. Some banks raised capital by issuing subordinated debts and preferred shares to affiliated insurance companies. A capital-raising strategy, by subordinated debts as well as restricting loans, was popular at the beginning of the 1990s. (See Ito and Sasaki, 2002, for some econometric evidence.)

Fragility in bank balance sheets made bank management extremely cautious in new lending, while they continued to bear the existing doubtful loans. The intermediary role of the banking system was severely restricted, especially immediately after the banking crisis of November 1997. The corporate sector, fearing the withdrawal of bank lending, began to augment their cash reserves. Smaller banks, fearing that the interbank market might not have enough liquidity, also started to enlarge their cash positions. Corporate investment was depressed. As Figure 8.5 shows, during the bubble period bank lending increased sharply relative to nominal GDP, but declined after 1998.

Figure 8.6 shows the shares of bank lending by sector. From 1980, when it was about one-third of bank lending, the share of manufacturing sector dropped precipitously, while in the second half of the 1980s the share of services, real estate and individuals rose. Lending to the real estate sector rose from 6 per cent in 1984 to 12 per cent at the beginning of the 1990s. A slight increase of the shares of real estate and of construction between 1990 and 1998 was believed to be of lending into non-performing loans (sometimes called 'evergreening'). Towards the end of the 1990s and the beginning of the 2000s, lending to individuals soared, while all other categories lost shares. Banks belatedly discovered the high spreads and lower-risk loans of personal loans, including home mortgages.

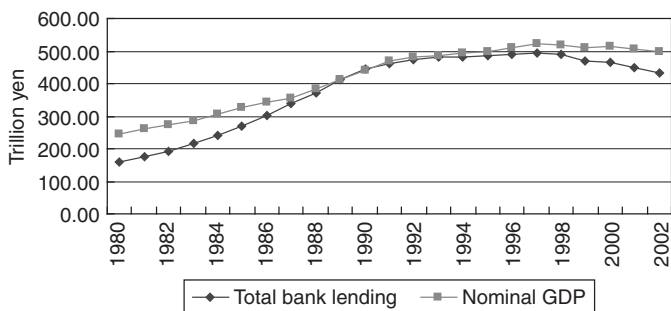


Figure 8.5 Bank lending and nominal GDP in Japan, 1980–2002

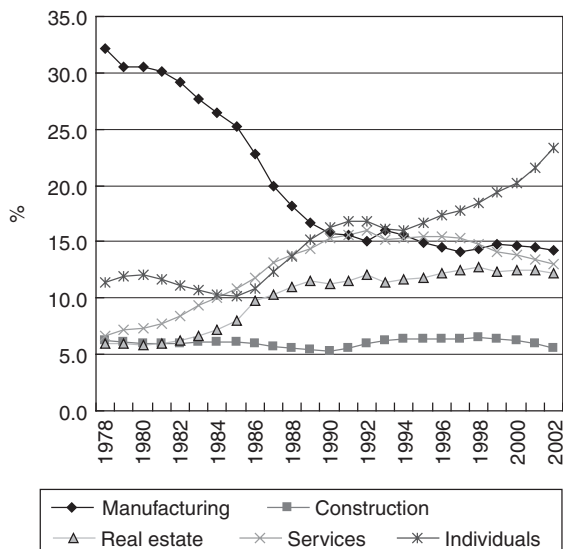


Figure 8.6 Japanese bank lending share, by sector, 1978–2002

Those who hold debts, almost all as nominally fixed amounts, suffer from general price declines and asset price declines, as the real burden of debts increases. Those who borrowed to build owner-occupied housing at around the peak of the bubble suffer from a negative

wealth effect (more savings being needed to offset losses) and negative equity (additional payments needed to leave current housing, imposing a severe constraint on moves to new housing). Consumption was depressed.

Thus, there were many channels whereby asset price deflation adversely affected output – including non-performing loans, capital shortage among banks, negative wealth effects and negative equity of mortgaged home owners. In sum, asset price deflation caused negative demand shocks; and in a deflationary spiral negative demand shocks depressed consumer prices and asset prices.

Combining all these observations, one may conclude that Japan in the 1990s suffered from *debt deflation*, a mechanism that is sometimes used to explain the mechanism underlying the Great Depression of the 1930s (see Fisher, 1933, for a seminal work; and King, 1997, for a more recent interpretation). The experience of Japan in the 1990s may not be as acute as the Great Depression, possibly because Japan in the 1990s had a more comprehensive safety net than the United States, but the cumulative damage of the prolonged recession in Japan may rival the damage done by the Great Depression.

The next two subsections furnish a chronological explanation of the bubble and its bursting: the description of what went wrong facilitates a discussion of policy options and of economic theories applicable to the current difficulties considered in subsequent sections. At such critical points in history, there is no consensus even among economists, demonstrating the magnitude and complexity of debt deflation in Japan.

2.2 A 'bubble economy'

At the end of the 1980s, the Japanese economy had a reputation of being 'number one', and looked healthy and invincible (see Ito, 1992, for a fuller description of the Japanese economy up to the peak of the bubble). The economy had grown at an average of 4 per cent during the preceding fifteen years, and seemed to be accelerating to above 5 per cent, as it did in 1988 and 1989. The *per capita* income of Japan, converted to dollars at the market rate, had surpassed that of the United States. The index of stock and land prices rose threefold to fourfold from the mid-1980s to the end-1980s. The stock prices index (Nikkei 225) rose from 10,000 yen at the end of 1983 to near 40,000 at the end of 1989. Typical land prices rose in tandem with

stock prices. Despite the need for a caution about the high ratio of stock and land prices to future discounted cash-flow earnings, many analysts dismissed such concerns in the expectation of ever-rising prices.

The CPI inflation rate had been decelerating gradually from the mid-1970s to the late 1980s. Such healthy disinflation brought the rate from 7 per cent in 1979–80 (the second oil crisis) to below 3 per cent in 1982, with the rate remaining in the range of 0–3 per cent for the rest of the 1980s. Despite strong economic growth, the inflation rate remained low; asset price inflation prompted some concerns among BoJ economists, but the low CPI inflation rates kept them from taking aggressive tightening until there was a clear sign of a rise in 1989.

Current account surpluses remained high, at about 2–3 per cent of GDP. A sharp increase in exports of electronics goods and automobiles alarmed American manufacturing sectors, prompting trade conflicts. The dollar strengthened *vis-à-vis* major trading partners from 1983 to the beginning of 1985, due to high interest rates in the United States. The US trade deficits were rising quickly. In 1985, the yen/dollar rate hit 250 yen/dollar, and 3.3 DM/dollar, both record lows against the dollar since the mid-1970s. The ministers of finance and central bank governors of the five major countries (the United States, Japan, Germany, France, and the United Kingdom) convened to discuss the exchange rate in September 1985, resulting in the Plaza Accord, aiming at lowering the value of the dollar. The Group of Five monetary authorities intervened in the foreign exchange market to send strong signals and adjusted their monetary policy. The yen appreciated from 240 yen to 200 yen/dollar in three months, to 170 yen in six months and to 150 in nine months. Although the Japanese monetary authorities intervened to strengthen the yen in the first three months, they reversed the direction of intervention in six months. Due to that appreciation the Japanese economy fell into a temporary recession in 1986, but growth resumed in 1987, despite the previous record appreciation.

In the 1980s fiscal consolidation followed the large fiscal deficits of the second half of the 1970s, and towards the end of the decade substantial fiscal surpluses were being generated by increased tax revenues, partly due to the strong growth of economic activity and partly to the introduction in 1989 of a value-added tax (termed 'consumption tax').

The government's debt: GDP ratio was brought down to 65 per cent in 1991, about the same with the United States at the time, and much better than the near 100 per cent of Italy and Canada.

A new Basle rule on internationally active banks was introduced in 1988: it disadvantaged Japanese banks because they were generally undercapitalized by size of loan assets. However, a special provision was introduced for Japanese banks, so that they could count unrealized capital gains on long-term equity holdings towards part of capital (tier two capital) and thereby achieve the then minimum requirement for the capital ratio.

2.3 From bubble burst to financial crisis

Monetary policy was tightened in 1989, raising the official discount rate from 2.5 to 3.25 per cent in May, to 3.75 per cent in October and to 4.25 per cent in December. By that time, there were signs of rising inflation, for the CPI rose more than 3 per cent in 1990 and 1991. The Bank of Japan, belatedly, took action against overheating by raising the official discount rate – 6.00 per cent in August 1990 (a 350-basis point increase in fifteen months).

There were also calls for taking measures to halt land price increases for reasons of social policy, as ordinary workers were being priced out of owner-occupied housing. The measures, introduced in the spring of 1990, included a limit on the increase in bank lending to real estate-related projects and companies, and an increase in the capital gains taxes on land investment. Eventually stock prices turned downward on the first trading day of 1990: they declined by one-third between the end-1989 peak and end-1990. They continued to decline – to 60 per cent of the peak level by the summer of 1992. Land prices also began to fall in 1991.

The public at first welcomed the turnaround of asset prices, since they perceived housing as having become too expensive for ordinary citizens. Although it was obvious that the key assumption of an ever-accelerating increase in asset prices was not warranted, responses in consumption, investment and output were slow. Robust consumption and investment in construction persisted until 1991, and GDP growth rate remained above 3 per cent until 1991.

Signs of weakness emerged in 1992: the quarter-to-quarter GDP growth rate became negative in the spring–summer of 1992; bank lending to the real estate sector halted its rise after 1991, although

some lending through non-bank financial institutions (NBFIs) (such as leasing companies) continued to expand during the first half of the 1990s. Those companies that had purchased land and buildings at the height of the bubble (irrational price asset inflation) could neither sell their properties nor turn them into a profitable development project, and suffered from high interest payments. Non-performing loans, due to default on interest payments by real estate companies, became a topic of business conversation, but had not yet shown up in any banking statistics.

The discount rate was lowered to 5.5 per cent in July 1991, to 5 per cent in November and to 4.5 per cent in December, and continued to be cut in 1992 and 1993. A fiscal stimulus package, typically Keynesian in terms of government spending, was introduced in 1992 in response to the weakening economy, but no one predicted that a decade-long slump was beginning. The stagnation of the economy between 1992 and 1995 was commonly diagnosed as a balance sheet recession. As noted above, lack of liquidity from declining stock and land prices led to default on interest due to banks which, however, continued lending to many insolvent companies (the 'evergreening'), in the hope of an asset price upswing. When those hopes proved false, both banks and non-banks that had heavily lent to construction and real estate companies began themselves to fail in 1994.

By 1995 the vulnerability of the financial sector became obvious. Seven housing loan companies (*jusen*), which had been established by a capital subscription of major and regional banks and gearing from a range of institutions (including financial arms of agricultural cooperatives), had become insolvent and the massive insolvency among *jusen* became a political problem. The agricultural lobby won, and banks absorbed massive losses over and above those of share values. The fiscal authorities went so far as to propose that public funds be injected where the losses were not being filled by any stakeholder, but were inhibited by its widespread unpopularity (see Cargill, Hutchison and Ito, 1997, chapter 6).

The *jusen* episode exposed the troubling aspect of Japanese bank supervision and legislation: there was no legal framework to close financial institutions before it became too late. Originally, very weak financial institutions were dealt with in 'back room dealing' between the supervisor, the Ministry of Finance, and financial institutions, but this became impossible when so many institutions, and relatively

large institutions at that, approached insolvency. Forbearance exacerbated the problem until it became too large for the then supervisory structure.

It was not only *jusen*, but also some regional financial institutions which failed in the summer of 1995. 'White knights' were induced by grants from deposit insurance funds to take over or merge with the virtually insolvent institutions, albeit limited to the sum deposit insurance would have to pay if the financial institution concerned had been liquidated (up to a maximum of 10 million yen per financial institution). Where the losses from liquidation or merger were expected to exceed that amount, there was no clear way to resolve the situation.

Many economists and international organizations called for prompt corrective action with respect to weak institutions and fiscal injection by a dissolution of those that were insolvent, but no action was taken. Instead, the Ministry of Finance stated that the problem was confined to smaller institutions, and that it would not let any major bank fail.

The exchange rate broke a psychological barrier of 100 yen/dollar and rose to 80 yen/dollar in April 1995, thereby damping expectations of an early recovery. The economy grew by less than 2 per cent in 1995, but showed signs of recovery the following year, with a growth rate exceeding 3 per cent; the yen depreciated to a level that made exporting sectors more comfortable.

In April 1997, as scheduled, the consumption tax rate was raised: in anticipation of the increase substantial purchases were made of expensive items, such as consumer durables, and the annualized growth rate of quarter-to-quarter GDP growth reached 6 per cent in the fourth quarter of 1996 and 9 per cent in the first quarter of 1997. A reaction of course ensued: the second quarter of 1997 showed a contraction of 14 per cent (annualized, quarter-to-quarter), but the economy went back to positive growth in the second half of 1997, despite the effect of two events. The first was the Asian currency crisis: it started from Thailand in July 1997, but was not considered to be serious until September (when the crisis spread to Indonesia) and November–December (when South Korea experienced severe pressure on its foreign reserves and currency). The second was the failure in November a major bank, Hokkaido Takushoku Bank, one of the big four securities houses, Yamaichi Securities, and two smaller financial institutions, which sent a shock wave throughout Japan and

global financial markets, because the Japanese government was seen as failing to keep its promise concerning no major bank failure. That month also the Japanese financial market suffered from a squeeze on liquidity because there was an unprecedented default in the inter-bank, overnight market (call market), so that every player in that market became suspicious of a counter-party's soundness. Japanese banks were asked to pay a risk premium on borrowings from foreign banks, and curtailed lending to commercial borrowers as they themselves were squeezed on liquidity. Late 1997 to early 1998 saw a 'credit crunch'.

Faced with turmoil in the financial market, the government created special funds to guarantee deposits and liabilities and to strengthen the capital position of major banks. A proposal to set up a 30 trillion yen fund was enlarged under political pressure to 70 trillion yen for the deposit insurance system. Using that fund, fifteen major banks received the first capital injection in March 1998, but in a uniform manner, without imposing responsibility on the recipient or proper enquiry into the banks' reported financial statements. The problem lay with these unrealistic financial statements, made painfully obvious when a capital-injected bank with a reported capital ratio exceeding 10 per cent at the end of March 1998 was found to be insolvent a few months later.

The Japanese economy experienced a negative rate of growth in 1998, the worst since 1974, and two major banks, Long-Term Credit Bank and Nippon Credit Bank, failed. Calls strengthened for changes in economic policy. The Financial Supervision Agency was reformed into an independent agency, the Financial Services Agency, with full authority to plan a supervisory framework and to draft legislation; a blanket guarantee for all deposits and bank debentures was given to prevent a bank run; and a further capital injection, with differentiated amounts and interest rates, was made in March 1999.

The fiscal consolidation plan introduced in April 1997 was abandoned later that year, government expenditure, including traditional public works, was substantially enlarged and credit guarantees extended to small- and medium-size enterprises (SMEs). As a consequence, fiscal deficits soared in the budget of 1998, justified on the grounds that it was more important to prevent the economy collapsing and that 'pump priming' would evoke private sector spending.

The Bank of Japan lowered the policy interest rate (call rate) to virtually zero in the spring of 1999, thereby initiating a zero interest rate policy. There was no commitment to how long the policy would continue. The economy showed signs of recovery in 1999–2000, partly due to the IT boom and ‘tech’ stock price gains. Stock prices rose from the low of 13,000 yen (Nikkei 225 index) at the beginning of 1999 to 20,000 yen in the spring of 2000. This fuelled optimism that the hard times were past. With GDP growth rate that year running above 3 per cent, the mood was so upbeat that the BoJ, citing increasing corporate activity, raised its policy interest rate in August from 0.01 to 0.25 per cent.

There are two policy issues that have important relevance to this period: whether the downturn of 1997–98 was due to consumer outlay anticipating the consumption tax rate rise (with *de facto* increases in income tax and social security premia) or to the Asian currency crisis combined with a Japanese banking crisis. If the former is correct, future tax increases are constrained, but if the latter, the tax increases may be tolerable.

The decision to raise the interest rate by the BoJ in August 2000 has been severely criticized by many economists as premature: although there were signs of increasing output and consumption, there was no sure signal that investment was rising. In fact, it turned out that the business cycle had hit a peak in October 2000. The mood turned more sombre in 2001: when the IT bubble burst, the economy suffered another downturn, registering from the second quarter of 2001 three consecutive quarters of negative growth.

Deflation, measured either by the CPI or in GDP deflator, worsened in 2000–01, the former at around –1 per cent, and the latter close to –2 per cent. As deflation accelerated, the expectation of future deflation emerged. The BoJ reinstated the zero interest policy in March 2001, changing its policy instrument from the interest rate to a quantitative target of excess reserves at the BoJ. The ‘Japan premium’, charged by Western banks on the offshore interbank market, had all but disappeared.

Non-performing loans, intended to have been covered by the 1999 capital injection, and bank fragility returned to centre stage in autumn 2001. Due to a continued emergence of non-performing loans and an accelerated write off of other non-performing loans, actual bank capital was dwindling fast: most was in the form of deferred tax credits

and the previous government funding. In 2002, Heizo Takenaka, a former professor of economics and already a minister in charge of economic and fiscal policy, was also appointed as minister in charge of financial supervision. He was considered to be a hardliner on banking issues, enforcing strict capital requirements and classification of non-performing loans and provision against them.

In spring 2003 Resona Bank, a core bank of the fifth largest financial group, was found to have insufficient capital, after accountants denied the setting of certain deferred tax credits as tier one capital. The government rescued it by injecting 2 trillion yen of public money into the group, such *de facto* nationalization being greeted rather positively by the public.

There were signs of a turnaround in 2003, with growth exceeding 2 per cent, and the degree of deflation diminishing – with the stock price index rising above the 10,000 mark – but with uncertainty whether recovery in 2003 has set in or was a blip, as in 1997 and 2000. Of many policy and theoretical questions on what went wrong and what should be done, the first concerns monetary policy.

3 A deflationary spiral and the ineffectiveness of monetary policy

3.1 The zero bound nominal interest rate and quantitative easing

When the nominal policy interest rate was brought down to zero, it is difficult to imagine a channel through which conventional monetary policy could continue to work. The nominal interest rate cannot be negative, and providing more monetary base by buying more Treasury bills (open market operations, OMOs) does not seem to provide a channel effective in stimulating either consumption or investment. What else could the central bank do other than keep the short-term interest rate at zero? When prices continue to decline even at the zero interest rate, the real interest rate will rise and there seems to be nothing conventional monetary policy can do to stop it. The zero bound interest rate has generated a sudden burst of interest in the literature—see Svensson (2001) and Eggertsson, Ganti and Woodford (2003) and Jung, Teranishi and Watanabe (2004) to name only a few.

Beyond the zero interest rate policy, the central bank can expand the monetary base by purchasing long bonds and other kinds of assets as well as short-term (Treasury) bills. One perspective is that it is important to expand the monetary base, regardless of what assets the BoJ buys, because an increased monetary base has to find its way into other kinds of assets. However, as many have pointed out, and is observed in Japan, an expanded monetary base through increased OMOs does not necessarily result in a boom in other kinds of assets or bank lending. Since cash and short-term bills become perfect substitutes, there will be excess reserves at the central bank; what matters is the form of assets which the BoJ purchases against its monetary injection—that is, whether the effectiveness of monetary expansion depends on the form of different assets that the central bank purchases.

Another issue for examination is whether the BoJ can credibly promise easy money not just at the time but in the future. By providing enough liquidity, the central bank may create expectations that the interest rate may be kept low in the future. Expectations of an early end to deflation may be generated by extraordinary liquidity. However, if this is the channel to be used, the central bank should also announce its inflation target for the future to make the commitment more explicit and credible, an issue discussed in subsection 3.4.

Those who believe in the power of monetary policy even at a zero interest rate have pointed to the beneficial effects of quantitative easing through several different channels. First, the increment in the monetary base must be invested in stocks, foreign bonds and domestic bonds, if not lent to corporations. Portfolios will shift to riskier assets. Where the money is directed to the stock market, stock prices will rise and be good for banks who hold equities on their balance sheets as well as for the overall economy. If money finds its way into foreign bonds, the yen will depreciate and exporting sectors earn more profits. If liquidity flows into long bonds, the long bond interest rate will be lowered, which is good for investment. Although it is not clear beforehand which channel will work, there is nothing to lose by trying it.

Secondly, another possible channel of quantitative easing to stimulate the economy is its effect on inflationary expectations. By providing enough quantity, consumers and investors may be convinced

of a coming certainty in ending deflation. This expectation channel is important for lowering the real interest rate.

Therefore, the points to be examined for the central bank at the zero interest rate are whether it matters which assets are bought with the expanded monetary base and how to signal a commitment to the future policy. Section 3.3 discusses various options beyond short-term bills and Section 3.4 considers inflation targeting.

However, before examining these issues, it is important to review the effects of deflation (Section 3.2), since several commentators (and even economists) in Japan have expressed a view that there is nothing wrong with deflation, and some even think that it is beneficial.

3.2 Adverse effects of deflation

Although the costs of inflation have long been a concern of central banks and economists, those associated with deflation were little appreciated until they became apparent in Japan. Most industrial countries by the late 1990s had reduced their inflation rate to single digits, but now it may be contended that deflation can be more damaging than inflation. The problem is not deflation *per se*, but of unexpected disinflation. A lowering of the inflation rate induces unintended income transfers. Suppose that a five-year loan contract was made in 1997 in Japan; a borrower and a lender would not have expected that the price level of 2002 would be lower than that of 1997. The five-year interest rate (bank debenture) in 1997 was at around 1.6 per cent. The inflation rate at the time was close to 0.5 per cent (adjusted for the effect of consumption tax increase). Therefore with a static expectations, the real interest rate was about 1.1 per cent, and the real value of the loan for the borrower five years' later would have been about 2 per cent lower. By contrast with this expectation, the inflation rate in those five years was negative, making the real burden about 2 per cent higher. Thus, on a contract of 100 million yen, there was an *ex post* transfer of 4 million yen from borrower to lender. Although unexpected disinflation produces a windfall gain to lenders, even lenders may suffer if borrowers go bankrupt due to their increased burden of liability.

Under deflation when the interest rate is already zero, even expected deflation has an adverse effect. Deflation with the nominal interest rate being zero renders monetary policy ineffective, a situation which can be viewed as the well-known 'liquidity trap.' Costs of deflation when the interest rate is zero can be understood in the following

four categories:

- First, the zero bound interest rate means that the central bank loses a grip on the real interest rate (nominal interest rate minus the inflation rate), because the real interest rate becomes the absolute value and, as deflation accelerates, the real interest rate rises, thereby dampening consumption and investment. Consumption will be depressed because the reward for waiting to purchase consumer durables becomes greater, and investment will be depressed as the cost of capital becomes higher.
- Secondly, deflation of the general price levels is likely to cause, or worsen, asset price deflation. The discounted sum of the future returns to fixed investment, land, or equities will fall as the real interest rate rises, bringing lower land and stock prices. This in turn induces financial fragility, because many companies and banks hold equities and use land as collateral.
- Thirdly, the difficulty of not having a monetary policy instrument under deflation with the zero interest rate policy will be exacerbated if wages are sticky downward. Even around 2 per cent inflation, the downward rigidity of wages hinders labour reallocation (Akerlof, Dickens and Perry, 1996). In Japan, bonus payments to almost all regular full-time workers are a large share of annual earnings and are much more flexible than the monthly wage, as econometric evidence shows (Ito, 1992, for earlier periods, and Kuroda and Yamamoto, 2003a, 2003b, for a more recent study on adjustment of the wage other than bonuses). When Kuroda and Yamamoto (2003c) test the impact of nominal rigidity on unemployment rate in a simulation model, the bonus adjustment is shown as substantially lowering the unemployment rate.
- Fourthly, a deflationary spiral makes it more difficult to emerge from deflation. Deflation shown by the CPI weakens economic activity generally and transmits the weakness to asset prices, the declines in which further depress activity; in turn, recession further depresses the general price level. As this spiral is perceived, households and enterprises develop deflationary expectations, pushing up the forward real interest rate. It becomes difficult to make corrections on a higher forward real interest rate, once it is set in the mind of consumers and corporations. A credible central bank commitment on future monetary policy is the only way to have some influence on deflationary expectations.

3.3 Unconventional monetary policy

3.3.1 *Actions by the Bank of Japan*

In March 2001 the BoJ changed its policy instrument from the short-term interest rate (uncollateralized call rate) to the reserves (current account) that commercial banks hold at the Bank. From March 2001 to the time of writing (summer 2003), three instruments were used to indicate the stance of monetary policy, i.e. the degree of quantitative easing: excess reserves (the balance of current account at BoJ), the amount of monthly purchases of long bonds from the market by the BoJ and the change in the official discount rate. In addition, a Lombard-type lending facility was introduced. The BoJ increased the degree of quantitative easing in steps, as shown in Table 8.1.

The amount of monthly purchase of long bonds expanded from 400 billion yen at the time of financial crisis to 600 billion in August 2001, to 800 billion in December, 1 trillion yen at end February and 1.2 trillion yen at end-October. The BoJ also introduced the purchase of equities held by financial institutions, but this was less monetary policy than part of a policy to stabilize the financial system. The Bank held a Policy Board meeting separate from the Monetary Policy Board to decide this action in September 2002. Equities held by commercial banks had become a source of financial volatility, as the mark-to-market evaluation became negative and was deducted from tier one capital. The Bank purchased at market price equities from commercial banks in order to determine the loss (or profit), to moderate the risk of further losses. The purchase was set at 2 trillion yen, and later increased to 3 trillion yen.

In April 2003, the Bank announced that it would study ways to expand instruments of purchases of asset-backed securities (ABS) and in June stated how it would select the types of ABS to purchase without distorting market pricing. In a sense, this was an unusual step for the central bank, for the credit risk is high and the market may be small. The purpose seems to be to encourage banks to lend to SMEs and then securitize the loan. The lowest grade that the Bank purchases would be BB (double B) for ABS and A-1 (single A one) for commercial paper. Purchase of ABS would be made upon request from banks.

These actions – an increase in long-term bond purchase and purchase of ABS, purchase of equities from commercial banks – are

Table 8.1 Monetary policy actions in Japan, 1999–2003

	Call interest rate	Official discount rate	Current account balance at BoJ	JGB purchases per month (yen)	Others
Prior to zero interest rate	(1998 9 September) 0.25%	(1995 8 September) 0.5%		400 billion yen	
1999 12 February	0.15% immediately and later as low as possible				Start of the zero interest rate policy
2000 11 August	0.25%				Interest rate increase
2001 9 February	–	0.35%			
28 February 19 March	0.15% Expected to be driven down to 0%	0.25%	5 trillion yen	‘Will increase’ but ceiling on the balance of bank notes	Reinstating zero interest rate policy New policy instrument (current account at BoJ) Excess reserves of 1 trillion yen (required reserve at 4 trillion yen) New measures to be maintained until the CPI inflation rate stable above zero

Table 8.1 Continued

	Call interest rate	Official discount rate	Current account balance at BoJ	JGB purchases per month (yen)	Others
14 August			6 trillion yen	600 billion yen	
18 September		0.10%	8 trillion yen		
19 December			10–15 trillion yen	800 billion yen	
2002				1 trillion yen	
28 February					
18 September					Decided to purchase equities from commercial banks (not a part of monetary policy, but for financial system stability)
30 October			15–20 trillion yen	1.2 trillion yen	
2003			17–22 trillion yen		
25 March					
8 April					Decided to consider purchasing ABS
30 April			22–27 trillion yen		
20 May			27–30 trillion yen		

considered to be unconventional policy, occasioned by a deflation economy.

3.3.2 *Advocates*

Those who consider the costs of deflation substantial, as elaborated in subsection 3.3.1, advocated various unconventional monetary policies in order to bring the economy quickly out of deflation, and judge the steps taken by the Bank too little and too late. Proposals within an unconventional monetary policy include the Bank's purchase of assets such as equities, real estate and asset-backed securities as well as long bonds and foreign bonds. Purchasing individual stocks may pose a political and market difficulty concerning which particular stocks to pick, but purchasing a market-based index fund avoids that difficulty, for listed holdings of market-based funds may be more appropriate for transparency and liquidity. In the case of real estate, it would be difficult for the Bank to purchase individual plots of real estate, but Real Estate Investment Trusts (REITs), again listed on the stock exchange, would be suitable good investment instruments (Bernanke, 2002; Ito, 1999; Meltzer, 2001 and Svensson 2001 and others).

Purchasing long bonds is closest in unconventional monetary policy to the conventional monetary policy instruments, as already practised by the BoJ. Prior to March 2001, the Bank had been purchasing long Japanese government bonds (JGBs) at the monthly rate of 400 billion yen as long-term provision of a monetary base; the purchase was raised by steps from 600 billion yen in August 2001 to 1.2 trillion yen in October 2002. Even so, the advocates of stronger measures wanted bigger increases. A direct benefit of purchasing long bonds is to lower the long-term interest rate, flattening the yield curve and stimulating investment. A second, but diametrically opposite, channel is lowering the long-term rate, which implies a longer duration for the zero interest rate policy. Since the long-term interest rate is a compound of the expected future interest rate, any lowering of the long-term interest rate, whether by purchasing long bonds or otherwise, must be based on changing expectations of the future path of short-term interest rates.

The possible reconciliation of these channels is based on the scenario that the Bank succeeds in creating expectations that the short-term interest rate will be maintained at zero, even when the current inflation rate becomes positive, and that a negative real interest rate

will be tolerated. If this commitment is credibly transmitted to the market, inflationary expectations will not be translated into higher long rates; nominal long rates remain low, while inflationary expectations become positive. Adopting an inflation target is one way to transmit this kind of commitment.

The advocates of quantitative easing cite that the economy has become more stimulated since the Bank more aggressively raised the target for excess reserves and the amount of long bond purchases. The yen depreciated from a high of 100 yen/dollar in early 2000 to 130 yen/dollar at the end of 2001, and the long-term interest rate fell below 1 per cent towards the end of 2002. All these are at least partially results of quantitative easing.

Buying foreign bonds outright by the central bank amounts to unsterilized intervention in the foreign exchange market. Can unsterilized intervention under the zero interest rate be effective in depreciating currency or in stimulating the economy in general? This is a question not previously considered in the literature. According to the traditional monetarist model where unsterilized, but not sterilized, intervention works, the effectiveness comes from changing the interest rate differential. Then, even unsterilized intervention would become ineffective because the interest rate would not change.

There, however, is a different view – that the relative quantity of the monetary base would explain the exchange rate changes. According to this, an increase in the monetary base should be allocated to different assets (not necessarily bonds where the interest rate matters) including to foreign assets, such that unsterilized intervention even at a zero interest rate would operate towards depreciating the currency.

Monetary policy activists consider that not only were the Bank's actions too little and too late, but that many more actions would be warranted in a persistent deflationary and stagnant environment. Outright purchases of listed stock index funds as monetary policy is one candidate. Those who sell stocks to the Bank are risk-taking investors, unlike investors who sell long bonds to the Bank. Risk money would circulate to other stocks, foreign bonds, or real estate. If funds stayed in the stock market, that would be good for the stock market, but driving up the stock price is not the direct purpose of stock purchases. Foreign bonds may become favoured by the investors who receive new cash for selling stocks. That channel would depreciate the yen, and thereby stimulate the export sector. If risk money moves

towards real estate, then real estate deflation may stop. The desired portfolio shift among private sector investors will be achieved more by the central bank purchase of risky assets, justified when the interest rate is zero.

As mentioned above, the Bank did purchase stocks, but this was regarded as a policy to maintain stability of the financial system, by removing a source of volatility on the commercial banks' balance sheets. There is little reason for the Bank to refrain from purchasing a market-based portfolio of stocks from the market, while purchasing individual stocks from commercial banks outside the market. The former is more transparent, and good for the economy in general rather than individual banks.

Another possible asset category that the Bank can purchase is foreign bonds. In fact, that amounts to unsterilized intervention, assuming that there is no counter-transaction in domestic securities by the Bank, and whether this is effective or not depends on how one views the channel of effectiveness from intervention to the exchange rate.

Real estate is a problematic type of asset for the central bank to purchase, because appropriate pricing of individual real estate properties is difficult. However, listed REITs constitute a class of assets that can be transacted with fair pricing. The Bank can purchase such assets to provide risk money to the market. The channel of forcing portfolio shifts among risk-money investors is the same as in the case of purchasing equities in the market.

These additional steps would have been beneficial to the Japanese economy when it was trapped in deflation with a zero interest rate. In addition to all the benefits described in the case of long bonds purchase, real asset and foreign asset purchases by the central bank have the probable benefits of forcing portfolio shifts on those investors who are used to taking risks in the stock and foreign exchange markets.

3.3.3 *Sceptics*

Despite the obvious merits of quantitative easing, there are theoretical sceptics and empirical sceptics. Theoretical sceptics argue that when cash and short-term bonds become perfect substitutes (i.e. a zero interest rate with excess reserves), providing more cash to the public does not change household or enterprise behaviour. Empirical sceptics cite the decline in velocity of money, such that an increase in

the monetary base does not result in a comparable increase in money supply (M2). One of the reasons for this disjuncture was that banks which held non-performing loans on their balance sheets tended to hoard cash by keeping liquidity at the BoJ as excess reserves or by piling up government securities instead of using the liquidity to lend. While banking is as fragile as it is in Japan, pushing up the monetary base does not result in increased bank lending.

Those who oppose the use of unconventional monetary policy tend to use two arguments. First, deflation in Japan is either a good thing or a not-so-bad thing. Falling prices due to supply-side factors – in innovation in high-tech sectors and cheaper imports – are good for consumers and the economy at large: real income will increase because income does not decrease and prices drop. Secondly, unconventional monetary policy does not work in stimulating the economy in any event and may even bring adverse side-effects. Side-effects, they argue, include putting the BoJ balance sheet at the risk of a capital loss and increasing the risk of hyper-inflation. Critics argue that capital losses by the central bank would make the market lose confidence in the currency and the yen would depreciate. The provision of so much liquidity is like piling up dry timber, where the strike of a match would create hyper-inflation without time to control it.

Advocates of an active monetary policy rebut the argument as follows. As mentioned above, deflation definitely has bad effects, regardless of its causes. It may well be that prices decline due to technological progress or other supply-side factors, but that is in terms of relative prices. Computer prices will decline relative to other more traditional goods and services, but the overall CPI does not necessarily decline, for consumer prices are determined more by monetary policy than by prices of particular goods and services.

Some sceptics argue that deflation is good for consumers, as real income will increase if income does not decrease. This may have been true in the first year or two of deflation in Japan, as the inflation-slide (cost-of-living-adjustment) of pensions was suspended by Parliament. But, when pensions started to decrease, the pain was felt even by pensioners.

It is true that the balance sheet of the central bank, if it starts to purchase equities and foreign bonds, will be exposed to the volatility of equity prices and the exchange rate. But monetary policy activists would argue that purchases of those assets by the central bank do help

the economy to overcome deflation, and that the risk is worth taking. Moreover, capital losses by the central bank, if they were to happen, might be partially offset by seigniorage that the central bank earns from printing money and, if that is not enough, the hole in the balance sheet (insolvency) may be easily filled by capital injection by the fiscal authority. In the consolidated balance sheet of the public sector, the central bank balance sheet can be integrated into the government, and concern for the BoJ is unfounded. If the political problem of allocating blame for the loss is the real reason for concern, the Ministry of Finance could promise capital injection to offset capital losses due to falling asset prices, thereby achieving the inflationary purpose without asking Bank executives to take responsibility. This action would lessen the burden on the Bank in taking bolder action.

3.3.4 *The case of the United States*

Clouse *et al.* (2000) considered various policy options that the Federal Reserve could adopt in order to stimulate the economy, if and when the nominal interest rate became zero. The first option (to keep buying Treasury bills) may work if expectations of future paths of inflation are changed by the central bank action of continued purchase of Treasury bills. However, if that is the only action that the central bank carries out, the public may not be convinced of the power of the bank to get out of deflation. The *bank credit channel* may not work if banks do not find it profitable to increase lending when the interest rate of short-term securities is already zero. Additional liquidity ends up as excess reserves at the central bank.

The second option (to buy long bonds) may work by lowering the expectations of the future interest rate—since, according to expectations theory, the long rate is the weighted sum of future short-term rates. Another possible channel is the *portfolio balance effect*, whereby the risk premium will be lowered, and the long bond rate also fall. Those who hold long bonds will shift their portfolio and may demand corporate bonds.

The third possibility is that the central bank writes *options on Treasury securities* so that the central bank will lose money if the interest rate rises above a certain level, thereby issuing a strong signal that the Bank is committed to the low interest rate for a significant period of time.

The fourth possibility is through *intervention*, the effectiveness of which is contentious. Possible channels of effectiveness come from the signalling channel (signalling future monetary policy change) and the portfolio shift channel (shifting from domestic to foreign bonds). Under normal (positive interest rate) circumstances, unsterilized intervention has a stronger effect, but at zero interest rate, sterilized and unsterilized intervention will not differ, unless increasing the monetary base itself stimulates the economy. The authors are rather sceptical on this option on the grounds that it will take a large-scale intervention to influence the exchange rate, and the duration of its effectiveness may be fairly short.

The fifth option is to *purchase debt of US financial services institutions (FSIs)* dealing in federally insured mortgage backed securities. The authors first clarified what securities the Federal Reserve could legally purchase as a part of open market operations. There are interest rate spreads between Treasury securities and such FSI securities, and if any purchase of these securities by the Federal Reserve changes the risk premium, then the purchase will have stimulating effects. The option of purchasing private debt is limited by law to banker's acceptance and for rediscount; according to the law, corporate debts and equities are not eligible for purchase.

Lending to depository institutions is the sixth option. This can be done with various types of collateral, even corporate bonds or equities could be used if the Federal Reserve finds them satisfactory. The credit risk of collaterals stays with depository institutions. Moreover, making loans to individuals, partnerships and corporations, for which credit is not available from other banking institutions, can be possible in 'unusual and exigent circumstances', and in a severe credit crunch situation, this option may be activated. Although legally this may be possible, the authors point out several drawbacks, such as adverse selection and political problems.

The seventh channel is 'money rain' (or 'helicopter money') which transfers wealth to the public from the money-printing Federal Reserve. Aside from questions on legal mandate, there are significant difficulties in implementing such wealth transfers. Although the *money-printing tax cut* is easy to implement, it is more fiscal than monetary policy.

While Clouse *et al.* (2000) do not recommend any particular instrument to deploy when the interest rate is zero, they seek to show

the options and consider them in terms of legality and economic effectiveness. One option conspicuously absent in their study is *inflation targeting*. Although the authors recognize the importance of a signalling channel, they do not even mention inflation targeting.

3.4 Inflation targeting

One specific proposal to enhance credibility of the BoJ to carry out its unconventional monetary policy is to adopt inflation targeting, as Bernanke (2000), Ito (1999) and Svensson (2000, 2001) have observed. In one version, adopting inflation targeting means that the central bank announces the point (or a range) of inflation rate that the central bank will target with a specified date (or a period) in the future to achieve it. Performance of the central bank will be assessed on the basis of how well the target was achieved. If the central bank cannot achieve the target and it was not due to unavoidable circumstances that are beyond the bank's control, the bank is held responsible.

Inflation targeting has four kinds of benefits. First, by credibly announcing that the BoJ is adopting inflation targeting, the public expectation of future inflation rates may be influenced. As argued above, a deflationary expectation (i.e. that deflation will continue) has been taking hold, and unless expectations change it is difficult and takes time to escape from a deflationary spiral. In order to get out of deflation more speedily, the Bank can *signal its resolution* by a suitable announcement. Secondly, inflation targeting is a good *monetary policy framework* within which to conduct policy and communicate policy intentions to the public. The Bank will be held responsible for achieving the target, and has to justify changes in policy in relation to achieving it. Thirdly, inflation targeting is an appropriate framework of *accountability* for an independent central bank. Many central banks, in both industrial countries and emerging-market countries, have gained legal independence since the mid-1980s. It has been argued that such independence in recent years has proved effective in lowering inflation rates (Alesina and Summers, 1993). An independent central bank can decide the official discount rate without interference by the government (Ministry of Finance), and its governor has tenure independent of the government. In return, the central bank must be accountable for its actions. Many independent central banks have a monetary policy board (committee) to make important decisions; its minutes of discussions and voting results are disclosed.

But, in order to be accountable, a central bank has to announce what it is attempting to achieve, and one of the best ways to be accountable is to adopt inflation targeting. This model of an independent central bank with a monetary policy committee and inflation targeting is implemented in the United Kingdom, Canada, Australia and Thailand, to name only a few. Some observers might consider that accountability means a penalty: if the central bank fails to achieve the target, the central bank (or Governor) has to take responsibility. However, to adopt inflation targeting is also protection for the central bank, as argued below.

Fourthly, a central bank that adopts inflation targeting also gains *independence on policy instruments*. Although the central bank becomes independent, it cannot ignore what is happening to the economy. Often the level of the inflation target is set by the government, as in the United Kingdom, or in consultation with the government. However, by agreeing to inflation targeting with accountability, the central bank gains instrument independence. The government, politicians, or any other institutions will not be able to pressure the central bank for any particular policy action. The central bank takes sole responsibility for guiding prices to the target. Inflation targeting sets the perimeter of independence.

The general case for inflation targeting has been made, for example, by Bernanke and Mishkin (1997), Bernanke *et al.* (1999) and Svensson (2000). Proposals that mention targeting the price level or the inflation rate in Japan include Krugman (1998) (who suggested 4 per cent for fifteen years), Ito (1999) (who proposed a 1–3 per cent range to be achieved in two years) and Svensson (2001) (who proposed a price level target, with currency depreciation as the instrument).

Critics of inflation targeting have argued on both technical and on more substantive grounds, and are mostly associated with the BoJ, for example Fujiki, Okina and Shiratsuka (2001).

On the technical score, the critics argue that it is difficult to define an appropriate price index (BoJ, 2000) or even range, given uncertainty about the degree of bias in that index. Against this, it can be contended that the CPI is a standard measure for inflation. It may be better to use a core CPI, which excludes fresh foodstuffs and first-round shocks of energy prices, but there is no such measure in Japan, although the available CPI excluding fresh foodstuffs would be suitable for use. If the energy price volatility complicates CPI use as a target, the Bank can explain the difficulty and discount the

resultant CPI value, as sort of escape clause in its accountability. The upward bias in the CPI, constructed as a Laspayres index, is well known (see Advisory Commission to Study the Consumer Price Index, 1996, for the US case, and Shiratsuka, 1999, for the Japanese case). It is commonly estimated that the bias is somewhere between 1 and 2.5 per cent – that is, a CPI inflation of 1 per cent denotes absolute price stability. The technical problem is, therefore, readily surmountable. In fact, when the Bank monetary policy committee changed the policy instrument in March 2001, they adopted the CPI excluding fresh foodstuffs, and hence appear to have agreed that the CPI excluding fresh foodstuffs is a good enough measure.

On the substantive issue, critics, such as Fujiki, Okina and Shiratsuka (2001) have three arguments. First, no credible policy instruments are available to stimulate the economy when the interest rate is already zero. Secondly, there are side-effects which could damage the balance sheet of the BoJ. Thirdly, by increasing liquidity so much, there is a danger of causing hyper-inflation in the future. They consider that unconventional monetary policy is uncertain in its effectiveness and that there are definite side-effects.

For policy instruments, as argued above, advocates of unconventional policy identify equities (listed stock price index funds), REITs and foreign bonds, when purchasing long bonds is ineffective, and portfolio shift as the transmission channel.

Is the Bank trying to pursue inflation targeting? One may conclude that Toshihiko Fukui, after assuming the Governorship in March 2003, is sending this kind of message, but without commitment to an inflation target framework. Governor Fukui (2003) emphasized the importance of tolerating inflation with a zero interest rate even after deflation has ended.

3.5 The mistake of raising the interest rate prematurely

The BoJ raised the interest rate (uncollateralized overnight call rate) from 0 to 0.25 per cent on 11 August 2000, although inflation was still negative. They cited ‘clear signs of recovery’ and judged that ‘this gradual upturn, led mainly by business fixed investment, is likely to continue. Under such circumstances, the downward pressure on prices stemming from weak demand has markedly receded ... Considering these developments, the Bank of Japan feels confident that Japan’s economy has reached the stage where deflationary concern has been dispelled, the condition for lifting the zero interest rate policy.’

It turned out that the judgement was wrong. The economic upturn ended just two months later, and deflation (negative inflation rate) worsened. It may be that it was not the judgement that was mistaken but the whole concept that had been set at the time of adopting the zero interest rate – that the policy should have continued until a normal inflation rate (say, 2 per cent) was firmly observed. The management of the Bank may be presumed to consider the zero interest rate policy as an extraordinary measure which should be terminated as soon as possible. The present writer's interpretation is that they were looking at the second moment of the price level, or the change in the inflation rate. When the downward change ('deflationary concern') was not expected in the future ('dispelled'), the extraordinary measure was terminated. In short, the judgement of August 2000 was wrong both as to conditions and the chosen standard, thereby questioning the wisdom of raising the interest rate under deflation.

Former Bank Governor Masaru Hayami, at the press conference on his retirement in March 2003, denied that the Bank had been wrong in raising the interest rate in August 2000. As noted above, the interest rate was lowered to zero in March 2001, with a clear indication about the exit. The statement in 2003 said that the zero interest rate would be maintained until the CPI inflation rate was 'stable above zero'. When deflation is still a threat, this is a better formulation of the Bank's commitment to the zero interest rate.

3.6 Lessons from the Japanese experience

Several lessons have been learned from the Japanese experience with deflation. First, it is important not to fall into deflation: avoiding deflation is easier than getting out of it. Secondly, once the economy falls into deflation, it is best to get out of it as soon as possible. Thirdly, options that would not be employed in a normal environment should be considered.

The difficulties into which Japan fell have raised concerns about disinflation in the United States. The Federal Reserve Board has issued two studies exploring options for a central bank when the nominal short-term interest rate becomes zero. The first (Clouse *et al.*, 2000) studied policy instruments at a zero interest rate from the historical experiences of the United States in the 1930s and of Japan in the 1990s. They identified seven options appropriate to the Federal Reserve from the economic and legal standpoints: (1) To keep

purchasing Treasury bills at the zero interest rate and increase liquidity; (2) to purchase Treasury bonds; (3) to write options on Treasury securities; (4) to purchase foreign bonds (intervention); (5) to purchase debt of US FSIs, such as federally insured mortgage-backed securities and the private sector; (6) To lend to depository institutions and the private sector; and (7) to create 'money rain' (see details in subsection 3.3.4, Clouse *et al.*). The paper was written when the Bank had just adopted the zero interest rate policy and the US inflation rate was coming down. It can be regarded as a precautionary preparatory work and was written on the assumption that if there were enough policy instruments at the zero interest rate, then the monetary authorities need not be worried about a zero interest rate with no precautionary positive interest rate beforehand. The results of the investigation remained largely uncertain: several options might be promising, but the magnitude of their effects could not be assessed.

The second study was Ahearne *et al.* (2002), which concluded from Japanese experience that deflation has definite adverse effects and requires early, pre-emptive action which should 'go beyond the levels conventionally implied by baseline forecasts of future inflation and economic activity'. It stated that the power of monetary and fiscal policy was not weakened during the early 1990s when disinflation was accompanied by a positive interest rate, citing both a Bank internal study and Bernanke and Gertler (1999) to the effect that early action, such as lowering the interest rate by 200 basis points any time between 1991 and early 1995, could have avoided deflation. However, it avoided any direct criticism of previous policy for not responding early enough, since deflation in Japan was not expected by Japanese politicians or by the market.

Bernanke (2002, 2003) emphasized that the United States should make sure that it does not fall into deflation in the first place, recommending unconventional monetary policy as a preventive.

4 Other policy issues

4.1 Asset price deflation and banking crisis

A weak banking system is both part of the causes and part of the consequences of debt deflation. The banking difficulties in Japan in the mid-1990s were mainly caused by the burst of the bubble and the non-performing loans associated with it. The end of the asset price

bubble at the beginning of the 1990s had damaged the balance sheets of Japanese banks, some of the large losses being undisclosed. Asset prices fell and the banking system was weakened by banks' high loan: value ratios, some of which were a result of imprudent lending. That banking fragility hindered the recovery from debt deflation in the latter part of the 1990s. The zero interest rate policy and liquidity injection by the BoJ had only limited effects on investment because banks had become overcautious in extending loans. The bank channel become extremely thin, as banks struggled to raise their capital adequacy ratio and, in this sense, the banking crisis prolonged economic stagnation and exacerbated deflation.

The experience of the 1990s contrasted with the optimism of banks up to the beginning of the 1990s, when in terms of assets nine out of the world's ten largest banks were Japanese. The Ministry of Finance, the regulatory authority for banks, continued a policy of forbearance even when some banks developed difficulties in asset quality, and sought solutions by the merger of weak financial institutions with stronger ones. For example, in the case of resolving a conflict between banks and agricultural cooperatives over the housing loan companies (NBFIs), the regulators first procrastinated in 1992; and then compelled the healthy banks to shoulder most of the losses in 1995. Weaker, smaller banks started to fail in 1995 and the regulators then arranged mergers of those failing institutions with healthier ones.

Banks have been struggling with non-performing loans. The rate of new non-performing loans seems to be higher than that at which banks can deal with old non-performing loans, while stock market decline erodes that part of capital held in equities. The problem was to find an effective way to strengthen the banking system once and for all, but at a time when the rest of the economy was also weak.

In sum, the banking crisis was first caused by the bursting of the bubble, but the problem became worse because it was not dealt with appropriately and promptly. The policy errors in the second half of the 1990s were part of the problem rather than a consequence of it.

4.2 The debt burden and the ineffectiveness of fiscal policy

When the economy fell into a slump after 1992, stimulus fiscal packages were deployed, but did not seem to work. The fiscal deficit soared to 4–6 per cent of GDP towards the end of 1990s, and the debt:GDP ratio to 140 per cent (Figure 8.7). The incremental fiscal packages in

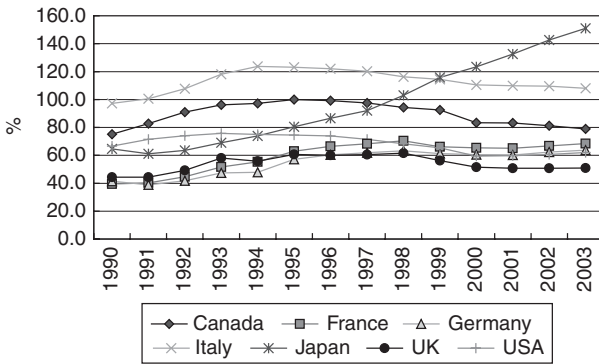


Figure 8.7 Debt as percentage of GDP in G-7 countries, 1990–2003

Source: OECD.

those ten years amounted on average to about 2–3 per cent of GDP annually, against which GDP grew at an average of only 1 per cent.

If fiscal policy had been effective in the 1990s (as Ahearne *et al.* 2002, and Posen, 1998, consider), economic performance would have been worse had fiscal stimulus not been applied, and even larger packages should have been employed. Others suggest that the public works multiplier declined in Japan in the 1990s, perhaps due to the allocation of works to remoter regions, rather than in or near cities. Tax cuts may also have been less effective, since some of them were deemed temporary.

With a debt:GDP ratio of 140 per cent and fiscal deficits still 6 per cent of GDP, additional large fiscal packages are difficult to create. The Ricardian equivalence, that a fiscal stimulus may be offset by reduction in consumption for fear of future tax increases, may have become reality in Japan, since the current stance of fiscal policy is not sustainable. Under such circumstances reliance on fiscal policy to emerge from deflation may be counter-productive.

5 Is yen depreciation an answer to the problem?

In Japan, current account surpluses continue to mount, and the currency if anything to appreciate. Japanese investors have an unusually strong home bias – preference for domestic yen-denominated securities with a very low interest rate. If they had preferred foreign

assets with positive interest rates, the exchange rate would have depreciated, and hence would have stimulated certain sectors of the economy. Some economists propose active policy to cause yen depreciation: Svensson (2001) proposes that unlimited intervention could be applied to push the yen to a pre-specified level, say 160 yen/dollar. Depreciation is of course beneficial, by both stimulating exports and by importing inflation. It is, nevertheless, unclear how much intervention would be required to depreciate the yen: too large an amount could affect global financial markets, due to the volume of US Treasury bills and European government paper that would have to be purchased.

6 Concluding thoughts

This chapter has reviewed the experience of a Japanese economy under deflation, which has not been reversed even at a zero interest rate; indeed, zero per cent is the lower bound for the nominal interest rate. The process seems to have been one of debt deflation, adversely affecting consumption and investment in a deflationary spiral: as borrowers suffer from an increased real cost of debt, asset prices are also affected and the power of monetary policy is limited.

There are several lessons to be learned from the saga of the Japanese economy. Deflation is dangerous, and it is better to avoid it before the economy falls into it. Policy should be unusually loosening when disinflation continues and could persist into deflation. Once deflation begins, it is important to apply all possible policies, including the unconventional, as early as possible, for deflationary expectations exacerbate deflation since there is no conventional monetary policy which could lower the real interest rate. The power of inflation targeting should be reappraised because a credible inflation target helps halt a deflationary spiral, as well as inhibiting deflation in the first place.

In addition to monetary policy, options of fiscal and intervention policy were reviewed. It seems that each policy instrument alone may prove insufficient to pull the economy out of deflation, but that a combination of policies with inflation targeting may have a better chance. The Japanese experience of deflation in the late 1990s and the beginning of the 2000s provides a useful case study for future macroeconomic management and monetary policy.

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