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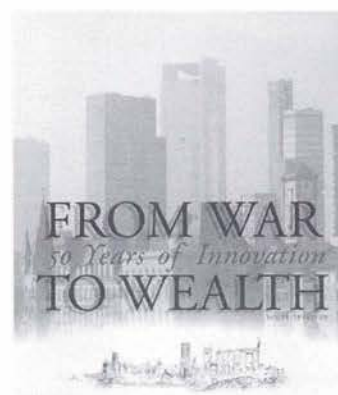
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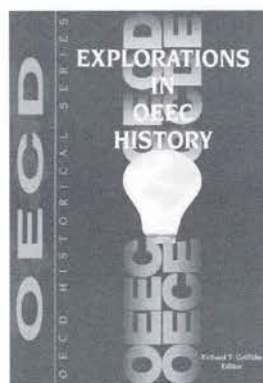
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(03 97 02 1 P) ISBN 92-64-14286-X, April 1997, 282pp.  
FF150 US\$30 £19 DM44 ¥3,150

Published every two months  
in English and French by the  
ORGANISATION FOR ECONOMIC  
CO-OPERATION AND DEVELOPMENT

**Editorial Address:**

OECD Publications  
Château de la Muette  
2 rue André-Pascal  
F 75775 PARIS CEDEX 16  
Tel. +33 (0) 1 45 24 82 00  
Fax +33 (0) 1 45 24 18 15  
E-mail: [obs.mag@oecd.org](mailto:obs.mag@oecd.org)  
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**Associate Editor**

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**Layout**

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**Photo Research**

Silvia Thompson

**Sales****Single copies:**

FF30 - US\$6 - DM9 - £4

**Annual Subscription Rates:**

FF145 - US\$30 - DM46 - £20

Tel. +33 (0) 1 49 10 42 69

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Trade, investment and information technologies are creating a truly global economy in which all countries can play an active role. That underlines the importance of international co-operation in creating rules of the game for the entire planet.

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*Editorial*

|                      |                                               |   |
|----------------------|-----------------------------------------------|---|
| <b>Globalisation</b> | <i>A New Global Age</i><br>Donald J. Johnston | 4 |
|----------------------|-----------------------------------------------|---|

*Analysis*

|                      |                                                                               |   |
|----------------------|-------------------------------------------------------------------------------|---|
| <b>Globalisation</b> | <i>On the Threshold of a Global Economy</i><br>Makoto Taniguchi and John West | 5 |
|                      | <i>The World Economy in 2020</i><br>Olivier Bouin and David O'Connor          | 9 |

|                   |                                                                       |    |
|-------------------|-----------------------------------------------------------------------|----|
| <b>Technology</b> | <i>A Consensus on Cryptography</i><br>Hiroko Kamata and Teresa Peters | 13 |
|                   | <i>Mapping Innovation</i><br>Candice Stevens                          | 16 |
|                   | <i>Diffusing Technology to Industry</i><br>Mario Cervantes            | 20 |

|                       |                                                                  |    |
|-----------------------|------------------------------------------------------------------|----|
| <b>Social Affairs</b> | <i>Economic Flexibility and Societal Cohesion</i><br>Riel Miller | 24 |
|-----------------------|------------------------------------------------------------------|----|

|                    |                                                                   |    |
|--------------------|-------------------------------------------------------------------|----|
| <b>Agriculture</b> | <i>Towards Efficiency in Brazilian Agriculture</i><br>Garry Smith | 28 |
|--------------------|-------------------------------------------------------------------|----|

|                |                                                                     |    |
|----------------|---------------------------------------------------------------------|----|
| <b>Economy</b> | <i>Confidence Indicators</i><br>Teresa Santero and Niels Westerlund | 31 |
|----------------|---------------------------------------------------------------------|----|

*Spotlight*

|                |                                                                                      |    |
|----------------|--------------------------------------------------------------------------------------|----|
| <b>Economy</b> | <i>Hungary – Progress in Structural Reform</i><br>Andrew Burns and Giancarlo Perasso | 35 |
|----------------|--------------------------------------------------------------------------------------|----|

*For the Record*

|                |                                              |    |
|----------------|----------------------------------------------|----|
| <b>Economy</b> | <i>The OECD Economic Outlook: Highlights</i> | 39 |
|----------------|----------------------------------------------|----|

*Observer Exclusive*

|                |                                           |    |
|----------------|-------------------------------------------|----|
| <b>Economy</b> | <i>Indicators</i>                         | 37 |
|                | <i>Results from the Readership Survey</i> | 43 |

*Bookstore*

|                       |                                          |    |
|-----------------------|------------------------------------------|----|
| <b>Just Published</b> | <i>New OECD Publications</i>             | 45 |
| <b>Addresses</b>      | <i>Where to Obtain OECD Publications</i> | 50 |

# A New Global Age

Donald J. Johnston, Secretary-General of the OECD

The economic environment is changing rapidly. Globalisation is being driven by international trade and investment which, in turn, are spurred on by the borderless world produced by swift advances in communications and transport technologies. The necessary companions are market liberalisation – without which the current expansion of trade and investment would slow dramatically – and new forms of governance to referee the changing rules of the game and ensure effective implementation of public policy.

At the heart of the OECD mission is charting how countries – OECD and non-OECD alike – can reap the economic benefits of these changes. We stand on the threshold of a new global age, where all countries have the potential of participating actively in the world economy. It is being increasingly shaped by dynamic and emerging non-OECD economies, especially from Asia and Latin America. The 'Big Five' – Brazil, China, India, Indonesia and Russia – are already playing important roles in many global issues, not only trade and investment, but agriculture, energy (including nuclear) and the environment.

Looking ahead to 2020, the world may see a massive shift in global economic weight, with the share of non-OECD countries rising from less than 40% of world output to over 60%. The 'Big Five' output would equal that of OECD countries and carry a similar importance in discussions of issues affecting the world economy.

As these patterns emerge, innovative responses will be required to reduce the risk that some groups within countries, or even whole societies, are left behind; and to ensure sustainability from the perspective of the environment. Keeping the balance among economic growth, social stability and good governance – the building blocks of social progress – will require care and attention.

Global interdependence means that the OECD must be more outward-looking. Indeed, in recent years, the OECD has increased its membership by five and has launched dialogue and co-operation with a wide range of non-OECD economies. This is a two-way learning process whereby countries share and evaluate their policy experiences, permitting all to benefit from success stories in the most dynamic or innovative.

For the poorest countries, especially in Africa, the challenge of integration into the world economy is profound. Only by developing the capacity within the population of each nation to take advantage of emerging opportunities will the challenge be met. The OECD is working with other international organisations to increase the effectiveness of efforts in this area.

The pace of forging linkages of all kinds between OECD and non-OECD economies is likely to accelerate in the coming decades. Furthermore, as non-OECD countries become increasingly important drivers in the global economy, OECD economic performance itself will depend more and more on their policies and results. In view of these trends, in 1995 OECD ministers asked the Organisation to examine specific aspects and impacts of linkages between OECD and non-OECD economies, and to explore their implications for policy options in member countries.

The OECD study, *Towards a New Global Age*, which emerged from that ministerial request presents two visions of the world economy in the year 2020. The first assumes no significant policy changes – a 'business-as-usual'

case – while the second is more optimistic and calls for governments and societies to seize the challenge of realising a new age of global prosperity. This second view promises worldwide increases in welfare and is accompanied by deeper integration of developing and transition countries into the global economy. In this projection, international security is expected to be enhanced as a result of substantially increased interdependence and reduction in world poverty.

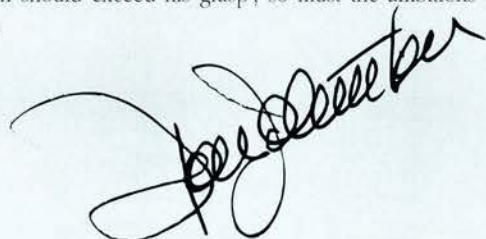
A major problem associated with any projection of growth, whether modest or optimistic, is that of achieving economic growth while ensuring environmental sustainability. New approaches are urgently required. For example, the link between economic growth, energy consumption and carbon emission must be broken. Agendas for technological innovation and international co-operation must be woven together and intensified in the decades ahead to reverse current trends and ensure sustainability.

A new global age will not materialise automatically. It will require bold action from governments to complete the borderless world through full liberalisation of trade and investment, to ensure stable and sustainable macro-economic policy, and to continue wide-ranging structural reforms. At their meeting in May this year, OECD ministers stated their determination to implement this ambitious agenda.

Creating popular support for reform is fundamental to enabling governments to pursue this policy agenda. With adjustment costs tending to fall heavily on specific sectors, regions or social groups, and benefits generally being spread thinly across the economy, governments have to be active in explaining the advantages to their societies of the globalisation process. Resisting change will lead only to countries being left behind – and missing out on the higher living standards that trade and technological progress can bring.

*Towards a New Global Age* suggests both what the world might look like if it moves slowly with a 'business-as-usual' approach and what it might look like with a higher performance approach. But it cannot tell us how far beyond that OECD members and non-members will be able to reach. It does, however, contain many elements which could serve as a foundation upon which a more ambitious view could be created.

Although economists do not usually look beyond the extrapolation of known factors, leaders and policy-makers are mandated to do just that. They must set their sights on a global vision for the year 2020 which puts building blocks in place to permit a quantum leap forward. That is how we put a man on the moon. And that is how we will solve a number of the seemingly intractable problems of the developing and developed world alike. The 'optimistic' view is not good enough. In the words of Robert Browning, 'a man's reach should exceed his grasp'; so must the ambitions of the world leadership.



# On the Threshold of a Global Economy

Makoto Taniguchi and John West

*The world's economies, both inside and outside the OECD area, now have the opportunity of developing closer linkages, which bring with them the prospect of a genuinely global economy. Expanding these linkages over the next two decades or so would boost prosperity, reinforce political security and promote environmental sustainability. But progress to this end would require the tackling of a wide range of obstacles in economic, social and environmental policy and the strengthening of international co-operation.<sup>1</sup>*

**T**he OECD economies have been growing together throughout the half-century since the Second World War. For many years Europe and Japan both experienced rapid growth as they gradually caught up with the United States. An important driving force was the progressive liberalisation of international trade and financial movements. That allowed OECD countries to specialise in the activities where they enjoyed comparative advantage and to strengthen their trade, investment and financial linkages, thus boosting growth and prosperity for all of them. Very few non-OECD economies joined into this wave of growth during the 1950s and '60s. But from the 1970s, Hong Kong, Singapore, South Korea and Chinese Taipei started following in the footsteps of Europe and Japan. Dynamic, export-oriented growth boosted living standards, virtually eliminating poverty in these economies.

Makoto Taniguchi is a former Deputy Secretary-General of the OECD; John West works in the Private Office of the Secretary-General.

E-mail: john.west@oecd.org

These developments have been beneficial also to the OECD economies. The fast-growing 'Asian Tigers' have become an increasingly important market for OECD exports and a destination for profitable investments. OECD consumers

gain substantially as the price of goods imported from these economies is generally much lower than goods produced locally or in other OECD countries. And resources in the OECD area are thereby freed for higher-value uses, especially in skill-intensive services and capital equipment – some of which, in a virtuous circle, is then exported to non-OECD economies, thus further stimulating their development.

There is now an historic convergence of interests among both OECD and non-OECD economies in strengthening their trade, investment and financial linkages. Over the past decade, democratic government and market-based economic development have been spreading widely – most notably in the former centrally planned economies but also in an increasing number of developing countries. World trade and

*1. Towards a New Global Age: Challenges and Opportunities – Policy Report, OECD Publications, Paris, 1997; Towards a New Global Age: Challenges and Opportunities – Analytical Report, OECD Publications, Paris, forthcoming 1997.*



Brazil, China, India, Indonesia and Russia are becoming more and more important players – this is the new stock exchange in Shenzhen.

J. Auroisson/Aspen-Cosmos



Thanks in part to imports from the emerging economies, resources in OECD countries can be directed to uses with higher value-added.

investment have been increasing dramatically. And the 'Big Five' countries, Brazil, China, India, Indonesia and Russia, are emerging as powers of global importance. A genuinely global economy is now taking shape, in which all countries can participate actively. The pace of integration of non-OECD economies into this global economy has nonetheless been uneven. A large number of developing countries, particularly in Africa, have seen their participation in international trade and investment fall.

## The Challenge of Change

Structural change is a fact of life in most economies. History has witnessed a dramatic decline in, for example, the size of agriculture in OECD economies, where it now accounts for less than 7% of employment; services, by contrast, once regarded as the 'soft' part of the economy, now employ over 60%. And skilled labour has been in much higher demand with the expansion of knowledge-intensive industries.<sup>2</sup> Rapidly emerging economies in Asia are now seeing similar trends: manufacturing sectors are declining as economic growth becomes more service-oriented.

Along with rapid technological progress, international trade, investment and financial flows have become important motors for structural change. In recent years, world trade has been increasing three times more rapidly than GDP; over the past decade, foreign direct investment has been growing six times faster.

Non-OECD economies have been a driving force in this acceleration of globalisation. Excluding Korea and Japan, both members of the OECD, Asia now accounts for close to 20% of world trade, more than three times its share of 25 years ago. Moreover, seven Asian non-OECD economies (China; Hong Kong, China; Chinese Taipei; Singapore; Malaysia; Thailand and Indo-

nesia) are now among the world's top 30 trading nations. The dynamic and emerging economies in East Asia and Latin America, and an increasing number of transition economies, are also demonstrating that integration into the global economy is a powerful strategy for accelerating growth and development. Development co-operation has played a catalytic role in this process.

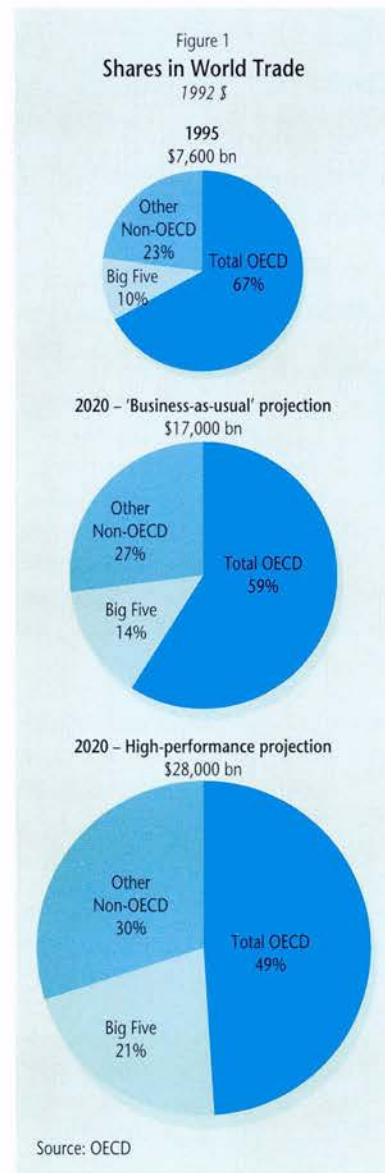
But developments in the global economy can lead to social unrest and protectionist pressures, especially when they coincide with the high and persistent unemployment seen in many OECD countries over the past two decades. Globalisation is often blamed for unemployment, inequality of income and de-industrialisation. Indeed, this accelerated rate of change brings with it higher adjustment costs, especially for low-skilled workers and industries, even though the benefits to society as a whole outweigh the costs.<sup>3</sup> Other high-skilled industries are stimulated, especially in the services sector (not least in information technology and finance industries), where exports have been growing twice as fast as merchandise exports. The response from OECD governments should be to improve the flexibility of labour and product markets, foster life-long learning<sup>4</sup> and reform social policies in order to improve the capacity of individuals and firms to adjust and innovate, and maximise the benefits of globalisation.<sup>5</sup>

## Projections of Prosperity

Investments in human capital and rapid technological progress will provide the potential for continued growth in prosperity, even with 'business as usual' policies. Information technology, biotechnology, advanced materials, alternative energy sources and improved transport will help create wealth – but they will also stimulate structural change. The full realisation of the potential

benefits of these developments depends in large part on ensuring that the design of government policies both fosters these market-driven trends and helps adaptation to the changes they bring.

One of the basic conditions is a completion of the move towards global free trade and capital movements<sup>6</sup> that has been underway since the end of World War II. A large number of both OECD and non-OECD governments have committed themselves, within various regional frameworks, to the goal of free trade by certain dates,



such as 2010 and 2020. Another is fiscal consolidation and macro-economic stability. Third, the OECD countries will have to make further advances in structural reform. And a large number of non-OECD economies must develop the necessary capacity for development, in terms of policy frameworks and governance systems, and social, human and physical capital.

Looking forward to the year 2020, the implementation of such a strategy would see a vastly different and much improved world, for both OECD and non-OECD countries, in particular:

- prosperity would increase substantially the world over, especially among non-OECD countries; OECD living standards in 2020 could be 80% higher than now, while average living standards in the non-OECD area could be 270% higher; substantial reductions in unemployment would also be achieved
- global economic weight would shift towards present non-OECD countries, whose weight in the global economy could increase to more than 60% (from around 40% in 1995), while their share in world trade could rise from one-third to one-half (Figure 1)
- the 'Big Five' could account for more than one-third of world GDP (about the same as the existing OECD membership in 2020), partly because of their very large populations (Figure 2); and China could be the world's largest economy, equivalent in GDP to half of the OECD in 2020<sup>7</sup>
- economic catching-up by non-OECD economies could see their standards of development rise to 30% of those found in the OECD area in 2020, compared with about 15% in 1995
- closer linkages among all economies, as trade might rise from 30% of GDP today, to some 50% in 2020.

This high-performance outcome is less a forecast than a vision of a realistic possibility for the world economy – if governments undertake the reforms that will let it happen. And it is by no means the maximum that could be achieved. Moreover, by boosting living standards, it would also enhance the capacity to deal effectively with a large number of problems, not least in the environment, urbanisation and social policy. Less encouraging projections could be envisaged, of course, particularly if governments do not pro-

ceed with reform or fail to resist protectionist pressures. A reversal of globalisation could lead to fragmentation, with damaging effects on prosperity and political stability.

## Reform on Three Fronts

The prospects for the 'global age' depend on the ability of individuals, governments and the international system to channel, and adapt to, pressures and opportunities for change. Several major steps will have to be undertaken.

The first is a strengthening of the free, open, multilateral trading system. Much progress has been made towards global free trade and capital movement, not least through the Uruguay Round commitments. The creation of the World Trade Organization has provided the legal basis for the new multilateral trading system. OECD countries are negotiating a multilateral agreement on investment (MAI), which will be open to accession by non-OECD countries – a number of which have indeed indicated their wish to accede.<sup>8</sup> And already more than half of world trade now takes place within free-trade agreements or among countries that have decided to achieve free trade by a certain date. Further, the OECD is developing global principles for international treaties, transfer pricing and for countering international tax evasion and avoidance. An increasing number of non-OECD countries are also associating themselves with these rules.

2. Candice Stevens, 'The Knowledge-driven Economy', *The OECD Observer*, No. 200, June/July 1996.

3. Jean-Claude Paye, 'Technology, Employment and Structural Change', and George Papaconstantinou, 'Technology and Jobs', *The OECD Observer*, No. 194, June/July 1995.

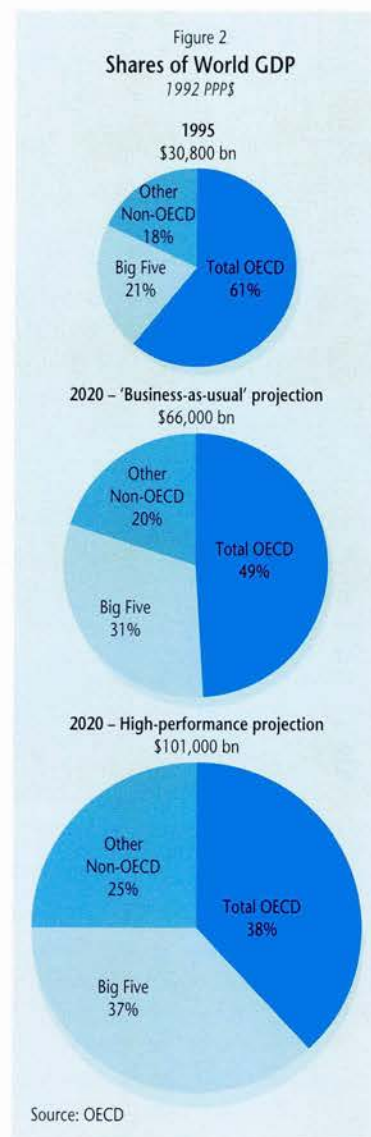
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5. Nicholas Vanston, 'How Regulatory Reform Affects the Economy', *The OECD Observer*, No. 206, June/July 1997.

6. Stephen L. Harris and Charles A. Pigott, 'A Changed Landscape for Financial Services', *The OECD Observer*, No. 206, June/July 1997.

7. Barrie Stevens, 'China Enters the 21st Century', *The OECD Observer*, No. 201, August/September 1996.

8. William H. Witherell, 'An Agreement on Investment', *The OECD Observer*, No. 202, October/November 1996.



But the multilateral system will continue to encounter difficulties. Protectionist pressures and trade frictions will be a virtually unavoidable part of the globalisation process, as the accommodation of a larger presence of non-OECD economies will require substantial adjustments and the service sector becomes increasingly exposed to international competition. Some obstinate border barriers remain in OECD countries, not least in agriculture. And despite the continuing trend towards liberalisation, barriers to trade and capital movements are generally still high in non-OECD countries. A large number of 'behind-the-border' barriers are now being tackled, especially in domestic regulations and competition policy. And new conundra are emerging for taxation policy, such as global tax competition and the implications of global communication technologies, particularly the Internet.

# On the Threshold of a Global Economy



Pantouche - Sebhan/Campagne, Campagne

Some countries, not least in Africa, which participate less in the globalising economy must improve their capacity to lead their own development.

The second step is progress with domestic policy reform. With the structural upheavals that can be foreseen, and with their aging populations,<sup>9</sup> OECD economies will have to become more flexible, adaptable and innovative. But although there have been considerable advances in the liberalisation of financial markets and international trade, there has been less progress in reforming labour and product markets.

Labour markets in the OECD area will have to cope with the related objectives of achieving smooth adjustment and maintaining social cohesion, in a world where many employees will change jobs, and possibly even careers, several times during their working life.<sup>10</sup> Although higher living standards for all seem within reach, there may also be a widening in income distributions, as labour-market pressures from trade and technology favour skilled manpower over the less specific forms of human capital. Social and educational policies should then attempt to enhance

the capacity of individuals to change, and focus on the training requirements of unskilled workers.

The third step calls for strengthening policies for sustainable development. Although globalisation can promote a more efficient and less environmentally damaging pattern of economic development, its gains may be overwhelmed by the pollution and resource-use associated with increased economic activity.<sup>11</sup> Environmental policies must ensure that the benefits of economic growth are not undercut by the impacts on health of pollution, and the increased degradation or loss of productive agricultural lands, fisheries and other natural resources.



The global economy holds enormous promise, though it is still fragile. The vision of a global age is already inspiring the working agenda for the international community. The OECD can help realise this goal through its analysis of issues involved in globalisation and by developing international rules of the game, using its multidisciplinary capacities. And it can strengthen the foundations for global govern-

ance, especially through its partnerships with non-OECD economies. These countries will increasingly shape developments in OECD countries and in the world economy as a whole. And with the globalisation of the world economy, and the internationalisation of many policy issues, the role of international co-operation and the multilateral system will become even more important. ■

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9. Lars Bovenberg and Anja van der Linden, 'Pension Policies and the Aging Society' *The OECD Observer*, No. 205, April/May 1997.

10. See pp. 24-27.

11. See pp. 9-12.



# The World Economy in 2020

Olivier Bouin and David O'Connor

*In recent years, an increasing number of non-OECD countries have become sizable exporters of manufactures, in which there is now a flourishing two-way trade with OECD countries; it accounts for a large portion of the growth in commerce. The same trend is observed in capital flows, with an ever-larger share of OECD private foreign investment destined for non-member countries. Brazil, China, India, Indonesia, Russia – the 'Big Five' (each with a population over 150 million and GDP larger than \$100 billion) – are already substantial importers, producers for world markets, hosts to foreign investment and, more and more, foreign investors themselves. If these and other countries are able to sustain outward-oriented reforms, the non-members of the OECD should play an increasingly prominent role in the globalised economy of the 21st century.*

There are a number of forces driving developments in the world economy, chief among them demographic change, technological innovation, international trade and financial liberalisation, and domestic reforms in both OECD and other economies. With the aim of providing a framework for long-term policy planning in OECD economies, the OECD's 'Linkages Project'<sup>1</sup> has designed two contrasting visions of the world economy – one based on the premise of high growth in all countries, the other much less optimistic – to capture how these forces might interact over the next 25 years. Using a computable 'general equilibrium' model (the 'Linkages'

model) designed by the OECD Development Centre, the effects on trade, production and employment patterns, on food and energy markets, and on the global environment have been explored.

Both projections hold that basic resource endowments (population and natural resources) and behavioural relationships will remain broadly similar. The high-growth one assumes substantial further progress with global trade and investment liberalisation and with domestic policy reforms, in OECD and non-member countries alike, with a pay-off principally in the form of improved productivity. It has features which offer the prospect of substantially improved living standards both in OECD and other countries. High growth in the OECD area, combining domestic structural reforms and ever-firmer links with non-member countries, could be expected

to offset a potentially strong depressing effect from population aging. This would allow the OECD economies to expand in the next 25 years at roughly the same rate as in the past 25 (somewhat around 3% a year). In the non-OECD economies, the underlying potential is considerably higher and sound policies there should provide an additional impulse for expansion (from an annual GDP growth rate of 4.5% in the past quarter century to a rate of 6.7%). Over the same period, the average growth rate of GDP in the non-OECD economies could be more than twice that of the OECD area.

But slower progress with policy reform in either group of countries – with less trade liberalisation and with less rapid advance on domestic policy reforms, not least in fiscal consolidation, removal of domestic subsidies and structural policies – could result in lower (perhaps much lower) growth rates.

## Trade Opportunities

The liberalisation of trade, falling transport and communication costs, and increased international mobility of capital could work together to bring about a further opening-up of economies. In the high-growth assumption of the Linkages Project, trade grows more rapidly than world output, expanding three-and-a-half times in value and rising from 30% of world GDP in 1995 to about 45% in 2020. Trade between OECD countries is expected to expand rather more slowly than that between non-members, partly because inter-OECD trade barriers were already low in 1995, and so the removal of tariffs would provide less of a stimulus (Figure 1).

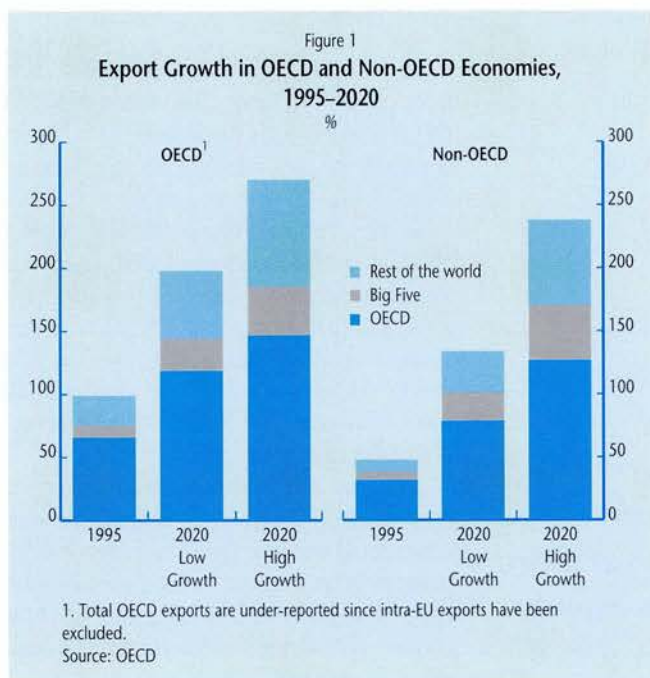
These trends are reflected in the changes in regional trade patterns. Under both optimistic and pessimistic assumptions, half of the increase in world trade would consist of trade between OECD countries and the rest of the world, with

1. A major, inter-departmental project which gave rise to the two-part publication **Towards a New Global Age: Challenges and Opportunities – Policy Report**, OECD Publications, Paris, 1997 and **Towards a New Global Age: Challenges and Opportunities – Analytical Report**, OECD Publications, Paris, forthcoming 1997.

Olivier Bouin and David O'Connor work at the OECD Development Centre.

E-mail: [cendev.contact@oecd.org](mailto:cendev.contact@oecd.org)

# The World Economy in 2020



the 'Big Five' accounting for around a quarter of total OECD trade.

Everybody could reap large benefits from closer trade integration. First, consumers stand to benefit from access to imports that are cheaper than similar goods produced at home, not least through the removal of initially high tariffs on food products and on consumer goods (chiefly textiles and clothes). The relative prices of these imports would fall substantially, particularly in comparison with prices of OECD exports of manufactures.

Second, as production is further globalised, gains to domestic producers from international sourcing of components and intermediate products will increase. At the same time, domestic production structures will tend to favour skill-intensive activities, creating relatively highly paid jobs in OECD economies. As observed during the past two decades in the dynamic Asian economies, imports of capital equipment and high-tech intermediate goods from OECD countries are crucial to building successful export industries. In the high-growth projection, OECD exports of capital goods to non-member economies would be multiplied almost five-fold. Japan seems likely to specialise the most heavily on producing and exporting such goods, reflect-

ing in part the strong expansion anticipated in Asian markets.

Third, the service sector of OECD countries – by far the most important sector in both output and employment – also stands to benefit from closer links with non-member economies. As their own service sectors are liberalised, attractive new opportunities should arise for competitive OECD suppliers (for example, media and information, software, education, financial, insurance, real estate, management consulting and so on). And although trade in services is likely to grow, the

main vehicle for OECD firms to exploit these opportunities will be foreign direct investment (as many services, such as tourism, remain non-tradable). Since many of these activities require high-skilled professionals, their mobility will enhance the globalisation of the service sector.

## International Capital Mobility

The benefits from the global mobility of capital accrue from a more efficient allocation of world savings to the most productive investment opportunities and the possibility of smoothing consumption by borrowing or diversifying abroad. These advantages apply particularly in the interaction between the capital-rich, moderately growing and aging OECD economies and the capital-poor, fast-growing and (still) young emerging ones. Multinational corporations or portfolio investors from OECD countries have the prospect of raising returns (higher profits, dividend payments and interest income) through increasing their exposure in high-growth emerging economies. Many types of asset-holders in OECD countries could benefit from these gains in international portfolio diversification (firms,

households and banks), but they may be of particular interest to institutional investors such as pension and investment funds and insurance companies.

Assuming that OECD governments take measures to facilitate the international diversification of investment by pension funds, the higher return that could be expected would make a contribution to solving the fiscal and financial problems looming on the horizon as OECD populations age. The OECD has calculated the increase in the average rate of return of pension assets in the OECD area, assuming different degrees of global portfolio diversification. If the emerging-market share of these assets rises progressively to roughly 10% by the year 2020 (compared to 2% at present), it would yield additional pension benefits of roughly 2.5%. Among OECD countries, the largest gains would thus accrue to countries that quickly build a sizable stock of assets in emerging economies. Nonetheless, even though investing in these markets would make pensioners in OECD countries better off, this gain would not be enough to finance the additional burden fully from rising old-age dependency ratios. Domestic reforms of pensions systems cannot be avoided.<sup>2</sup>

Net inflows to emerging markets are unlikely to increase substantially over the long run. Since investors from emerging markets could also gain from increased diversification into OECD markets, reverse flows may to some extent counterbalance gross outflows from the OECD area. Two additional factors may explain why the historical match between developing-country savings and investment will remain close in the future.

2. Lans Bovenberg and Anja van der Linden, 'Pension Policies and the Aging Society', *The OECD Observer*, No. 205, April/May 1997.

3. Barrie Stevens, 'A Looming World Capital Shortage?', *The OECD Observer*, No. 196, October/November 1995.

4. Ferdinand Kuba, 'Can China Achieve Self-sufficiency in Food?', *The OECD Observer*, No. 206, June/July 1997.

5. Barrie Stevens, 'China Enters the 21st Century', *The OECD Observer*, No. 201, August/September 1996.

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7. Fatih Birol and Tomohiko Inui, 'Long-term Trends in Asian Energy', *The OECD Observer*, No. 201, August/September 1996.

First, declining fertility rates and lower dependency ratios will stimulate household savings, domestic corporate savings will increase in response to higher returns on investment and higher trend growth in output will raise incomes and long-run savings. A modest rise of four percentage points of GDP in the non-OECD economies would be sufficient to meet their additional investment requirements (many East Asian countries experienced much larger increases – in the range of ten to fifteen percentage points of GDP – during their take-off).

Second, financial markets are sensitive to sovereign risk and watch carefully a country's external debt ratio and the size of current account deficits. Net international indebtedness cannot mount indefinitely as a percentage of GDP and concern arises about the capacity for financing the debt – particularly in developing countries – if insufficient foreign exchange is generated. Governments therefore tend to target the current account by adjusting fiscal or monetary policies to avoid large and protracted deficits. These factors serve to reconfirm that the non-member economies will not absorb foreign savings at a very high proportion of their GDP. Fears about future global capital shortages or massive net capital outflows from the OECD area are thus misplaced.<sup>3</sup>

## Natural Resources and the Environment

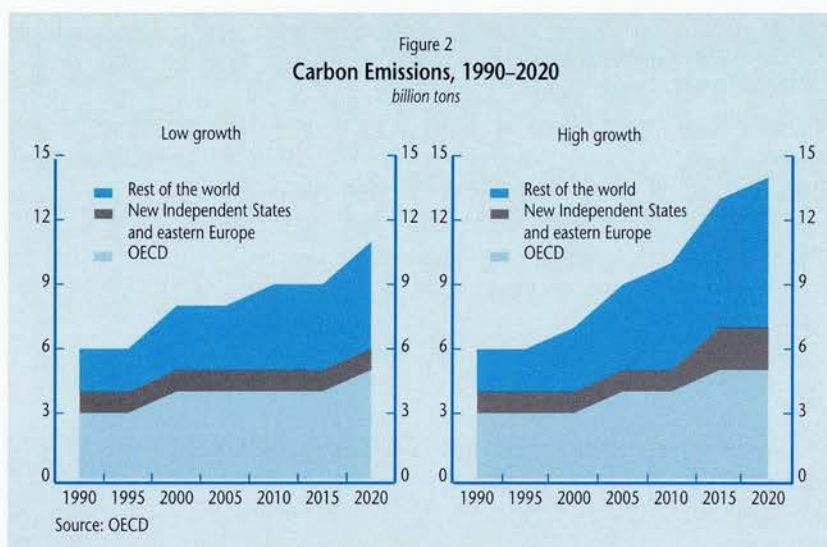
Under the assumption of high growth, world agricultural production would expand at roughly the same rate over the next 25 years as over the past two decades, with productivity improvements contributing most of it. The bulk of the incremental demand for food from non-OECD countries would continue to be supplied domes-

tically, also in large economies like China and India, though agricultural trade would also expand strongly.<sup>4</sup>

The 'doomsday scenario' – in which China's burgeoning demand for food and declining

put occurs in some of the more energy-intensive economies (not least China, Russia and to a lesser extent India).<sup>7</sup> In spite of the projected rise in demand (and barring major disruptions in the supply of oil or gas), world energy supplies should prove adequate with only moderate price increases in fossil fuels; oil prices would remain below their historic highs. Abundant reserves of low-cost coal in China and India would provide the primary fuel for their rapid expansion, assuming bottlenecks in transport can be removed. For their oil requirements, most countries will come to depend far more heavily than in the recent past on Middle East suppliers, as other low-cost reserves are depleted. Oil imports into the OECD countries are projected to rise from half to two-thirds of projected consumption between now and 2010. Growing reliance of the major economies on imports of oil (and gas) from a few major suppliers will make them all the more vulnerable to macro-economic shocks from disruptions in supply, which could raise renewed concerns over energy security in years to come – concerns likely to be shared by many non-OECD countries.

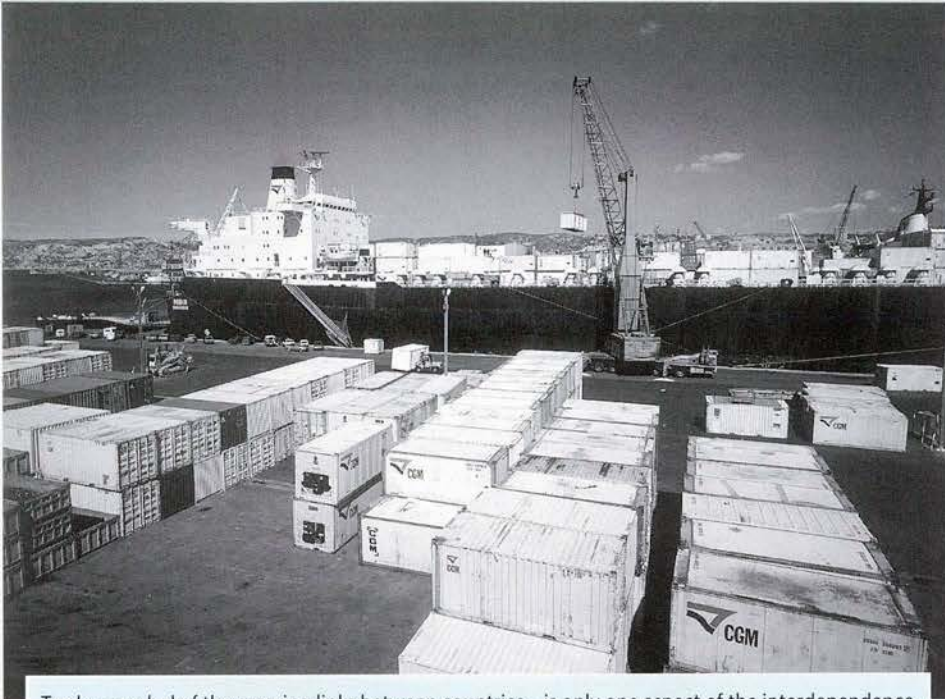
One of the major worries raised by the high-growth projection is its environmental implications. Even assuming improvements in energy efficiency of an annual 1% in the OECD area and 2% in non-OECD countries, world consumption of fossil fuels would more than double in the period to 2020 and carbon dioxide (CO<sub>2</sub>) emissions would rise proportionately (Figure 2). The risks of accelerated global warming and climate change may come to be perceived as unacceptably high, intensifying pressures for a more forceful global policy response. Few OECD countries are currently on track to meet the non-binding commitment (known as 'Annex 1') at the Rio Earth Summit to make best efforts to stabilise CO<sub>2</sub> emissions at 1990 volumes by the



self-sufficiency ratio would cause major increases in world food prices – is not borne out by the results of this modelling exercise. Still, achieving the high implied rates of productivity growth in China will require strengthening of crop research (not least in biotechnology), rural infrastructure, and of farmers' incentives (through pricing and land-tenure reforms, for example).<sup>5</sup>

A rise in agricultural imports into markets that were once heavily protected – chiefly those of the European Union, Japan and other prosperous East Asian countries – would be supplied largely by exports from North America, Australia and Latin America. Further structural adjustments in European, Japanese and other high-income East Asian agricultural sectors would thus be necessary. Even with increased trade in food, some regions and countries may still experience calorie deficits, but 25 years of broad-based, rapid growth in the world's poorest countries and regions would go some way to reducing the incidence of malnutrition.<sup>6</sup>

High growth will also mean strong energy demand, as the most vigorous expansion of out-



Trade – symbol of the growing links between countries – is only one aspect of the interdependence that is affecting capital markets and the environment equally strongly.

year 2000. Even under assumptions of low growth, CO<sub>2</sub> emissions would still rise by about 60% between now and 2020. Without a major shift towards zero- or low-carbon energy sources, OECD countries have to improve their energy efficiency quite substantially – by 3% a year or more – over the next decade to achieve that target.

In both high- and low-growth projections, virtually all the increase in emissions will occur in non-OECD countries. The 'Annex 1' countries – basically, the developed world – will have to do much better than merely stabilise emissions if there is to be scope for developing countries to expand theirs before they cause dangerous change in climate patterns.

Otherwise, high growth in non-OECD countries based on stronger links with the global economy could be expected to yield long-run environmental improvements: economic structures would shift more rapidly away from energy- and pollution-intensive sectors towards less polluting industries; cleaner technologies would diffuse more quickly; the population transition would be accelerated; and, perhaps most importantly, living standards would rise faster and with them demands for environmental quality. Environmental policies would evolve to reflect these changes, making the experience of the OECD countries valuable to others seeking to strengthen their environmental management systems.

## Avoiding Marginalisation

The domestic challenge for OECD countries is to put in place or reinforce growth-enhancing

policies while maintaining strong bonds of social cohesion.<sup>8</sup> Enhancing market competition is crucial to generating the innovative behaviour on which the continued prosperity of the OECD countries depends, but competition creates losers as well as winners. The concerns of the losers cannot be neglected, particularly when they are workers with few marketable skills. Sustaining the momentum of competition-enhancing reforms will therefore require that the OECD countries make progress with measures to promote more vigorous job-creation, ensure better-qualified entrants to the labour market, and retrain workers faced with pressures to adapt that arise from technical change or international competition.

Fast, broad-based expansion in low-income countries would do much to eliminate the most abject forms of poverty and would also mark the beginnings of true convergence in global incomes. This trend would help relieve the tensions and instabilities associated with pronounced poverty and inequality that are today a permanent backdrop to political discourse within and between nations. Yet even under the assumption of high growth, ensuring that the least developed countries are not left out of the globalisation process will remain a key issue. Although OECD governments are struggling to live within tighter budgets and development-assistance programmes have been among the hardest hit by budget cuts, such aid will continue to play a valuable role in creating the conditions for integrating other countries into the global economy. Assistance will be required to provide a basic infrastructure and institutional, legal and policy framework to attract flows of

<sup>8</sup> See pp. 24–27.

private capital and more mobile allocation of domestic resources. Donor support, furthermore, can help improve resource and environmental management.



The vision presented here is indeed an optimistic one, and if realised, could provide the means to tackle current and future challenges – not least poverty, environmental degradation and aging. Achieving global prosperity is a formidable task. It will require sustaining the momentum towards more openness, unleashing the power of competition-led innovation, and improving social cohesion in both OECD and non-OECD economies. ■

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# A Consensus on Cryptography

Hiroko Kamata and Teresa Peters

*The widespread use of cryptography to safeguard data in information and communication systems has implications for the protection of privacy and business and financial information, as well as for public safety and national security. The OECD has published a set of Guidelines intended to promote the use of cryptography to foster confidence in information infrastructures, to help ensure the safety of data and protection of privacy, to stimulate new applications for electronic commerce, and to promote co-operation among governments, businesses and research communities. The principles set forth in the Guidelines are designed to assist decision-makers in both public and private sectors in designing coherent national and international approaches.*

Cryptography uses an algorithm to render data unintelligible to anyone who does not possess the secret information (the cryptographic 'key') necessary to decrypt the data. Basically, it is used to protect the confidentiality of data, in storage and in transit, and can also be used to verify data integrity by revealing whether the information has been altered and by identifying the person or device that sent it. These

commercial applications for data security. In recent years – as cryptography has become more accessible and affordable, and as users have become more aware of the benefits of using it and the risks of not doing so – it has also come to be used as a matter of course by individuals and businesses for a wide variety of purposes. The increasing availability of cryptography to the general public has fuelled the current debate on these issues.

The expanding use of cryptography affects several government responsibilities: protecting the rights of citizens to privacy, facilitating information and communications systems security, encouraging economic well-being by, in part, promoting electronic commerce, maintaining public safety,



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techniques are critical to the use of national and global information and communications networks and the development of electronic commerce.

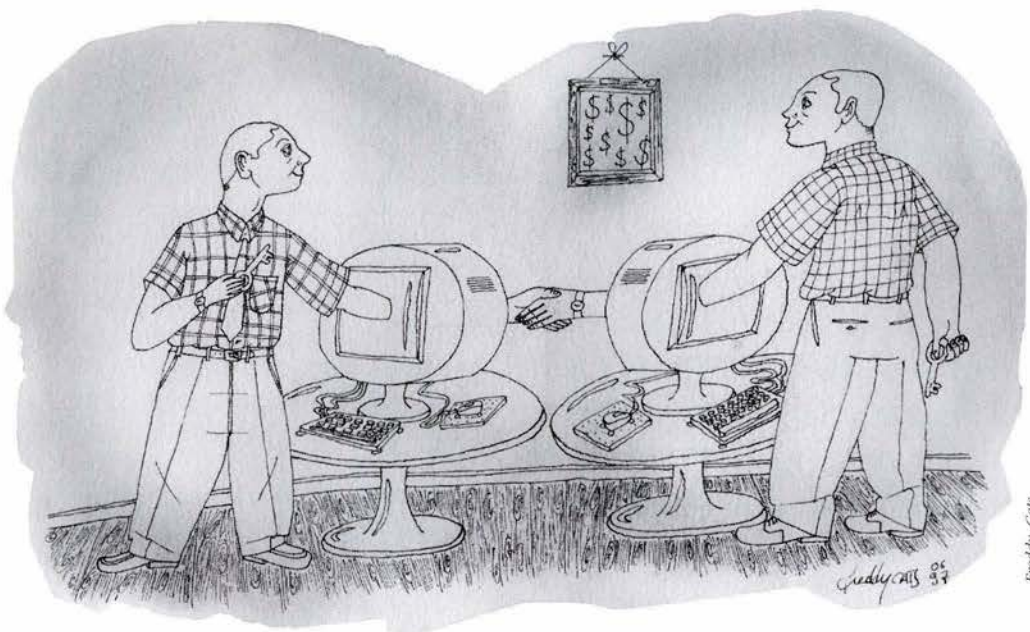
Historically, cryptography was used almost exclusively by governments for military and national-security purposes. In the mid-1970s, developments in 'public key cryptography' techniques made it easier to use cryptography in

raising revenues to finance their activities, and enabling the enforcement of law and the protection of national security. Although governments are interested in promoting the use of cryptography, they are aware that it can also be used to conceal illegal activities. Governments, together with industry and the general public, therefore have to develop balanced policies to address these issues.

Hiroko Kamata and Teresa Peters specialise in legal issues in information technology in the Information, Computer and Communications Policy Division of the OECD Directorate for Science, Technology and Industry.

E-mail: [dsti.contact@oecd.org](mailto:dsti.contact@oecd.org)

# A Consensus on Cryptography



but they are interdependent and governments are urged to implement them as a whole so as to balance the various interests at stake.

## Trust in Cryptographic Methods

Cryptography should be both trustworthy and trusted, because individuals and businesses will not use information and security systems to their full potential until their security can be relied upon. Consumer confidence can be built up by developing consensus about the use of information and communications systems and technologies. For instance, the evaluation of cryptographic methods against market-accepted criteria could generate user trust. Public education on these issues and technologies, including a full discussion of cryptography in the context of electronic commerce, could also help raise consumer confidence.

## User Choice

A variety of cryptographic methods may be required to suit different users. Users should be free to determine the type and degree of data security that is necessary, and they should have a right to choose any cryptographic methods to meet their requirements. Some governments have implemented regulations on the use of cryptography, and others may yet do so, including export controls, rules concerning the operation of key-management systems, or requirements for minimum degrees of protection for specific kinds of data, such as medical records.

Government controls on cryptographic methods should be no more than is essential to the discharge of government responsibilities and should respect user choice to the furthest extent possible. Broad options for choice, moreover, will encourage the development of a wide range of products.

## Market-driven Development

The development and provisions of cryptographic methods should be determined by the market in an open and competitive environment in response to the requirements and responsibilities of individuals, business and governments. Such an approach will best ensure that solutions keep pace with changing technology, the

The OECD has been helping to shape a consensus about specific policy and regulatory issues arising from information and communications networks and technologies, including cryptography issues. In recent years OECD countries have used the OECD itself as a forum to discuss cryptography policy, to put the subject on the international agenda, to educate one other and themselves, to engage in bilateral discussions on possible solutions, and to eliminate the disparities in national policies which may create obstacles to the evolution of national and global information and communications networks and hinder the development of international trade. As a result of the process of drafting the Guidelines, the national views and approaches on these issues have matured considerably during the last year, pointing to an internationally co-ordinated approach to facilitate the smooth development of an efficient and secure information infrastructure.

In December 1995, the OECD hosted a meeting on cryptography policy, which gave its member countries an opportunity to discuss and compare their national positions. The discussion emphasised the desirability of internationally harmonised and compatible national solutions that strike the appropriate balance between the various interests at stake, including privacy pro-

tection, data security, electronic commerce and public safety. As a result, the OECD created a special working group to draft policy 'Guidelines', involving officials from trade, industry and telecommunications ministries, data-protection authorities, law-enforcement and national-security agencies, advocacy groups addressing privacy, data- and consumer-protection issues, as well as representatives from the business community. The Guidelines were completed in December 1996 and were formally adopted in the form of a Recommendation by the Council of the OECD in March 1997.<sup>1</sup>

## Eight Principles for Policy

In order to meet the objectives outlined in the Recommendation, the Guidelines set out eight basic principles for cryptography policy which policy-makers should consider. Each of these principles highlights an important concern,

1. The 'Recommendation concerning Guidelines for Cryptography Policy' is a non-binding agreement that identifies the basic issues which countries should take into consideration in drafting national and international cryptography policies. The full text of the Recommendation is available on the World Wide Web at [http://www.oecd.org/dsti/iccp/crypto\\_e.html](http://www.oecd.org/dsti/iccp/crypto_e.html).

Freddy Cats

demands of users and evolving threats to information- and communications-systems security. Governments should encourage and co-operate with business and the research community in the development of cryptographic methods. The evolution of international technical standards for cryptographic methods should likewise be market-driven.

### Standards

Standardisation is an important ingredient of cryptographic methods because they must be interoperable and internationally compatible. Government and industry should work together to provide the necessary architecture and standards for cryptography nationally and internationally so that information and communications systems can reach their full potential. An effective standards-setting process should be industry-led, voluntary, consensus-based and international.

### Protection of Privacy and Personal Data

The fundamental rights of individuals to privacy, including secrecy of communications and protection of personal data, should be respected in national cryptography policies and in the implementation and use of cryptographic methods. But where electronic operations require proof of identity, the data generated by the transaction will leave detailed, perhaps irrefutable, trails of an individual's commercial and non-commercial activities. The privacy aspects arising from the collection of personal data and the creation of systems for personal identification should be considered and explained by policy-makers, and where appropriate, privacy safeguards should be established, such as restrictions on the collection and use of data about personal transactions.

### Lawful Access

A critical issue presented by cryptography – perhaps the most widely debated aspect and the one most likely to lead to disparate national policies – is the perceived conflict between confidentiality and public safety. Nonetheless, when considering policies that provide for lawful access to encrypted data, governments should carefully weigh the benefits, including those for public safety, law enforcement and national security,

as well as the risks of misuse, the additional expense of any supporting infrastructure, the prospects of technical failure, and other costs.

There is an important difference between cryptographic keys used for confidentiality and those used for authentication, data integrity and non-repudiation purposes only. The question of lawful access to cryptographic keys is relevant only when cryptography is used to conceal information and not when it is used to verify data. When a private key used only for authentication or ensuring integrity of data is compromised it makes 'electronic impersonation' possible. These kinds of private keys would not be subject to the same kinds of lawful access by third parties.

### Liability

Systemic failure or human error that results in the compromise of cryptographic keys can have far-reaching consequences. In such a case, users must assume that their encrypted data are no longer secure, and they run the risk that documents or transactions will be forged in their name. If key-management practices fail and keys are compromised, it is important to know which parties must take responsibility and the extent to which they can be held liable for any repercussions. The liability of individuals and entities that offer cryptographic services, or hold or access cryptographic keys, should be clearly stated. Setting out provisions for liability can be addressed by either contract or legislation. Moreover, it may be important to consider liability implications, in both national and international terms.

### International Co-operation

The increasingly global flow of data on information and communications networks points to the importance of an international approach. Enforcement of existing legal regimes is based on geographically defined borders, but in the emerging network environment, information and commercial transactions may move freely across national and jurisdictional boundaries. Governments should co-operate to co-ordinate cryptographic policies, both removing unjustified obstacles to trade and avoiding the creation of new ones in the name of cryptography policy.

These issues may most effectively be addressed by international consultation and co-operation, and here the OECD could play a continuing role.



The Guidelines constitute a new instrument complementing existing international instruments governing such issues as human rights, international trade, copyright, telecommunications and various information services, often with overlapping economic, legal and political considerations.

The policy recommendations in the Guidelines are primarily aimed at governments in OECD countries, but it is anticipated that they will be widely read and followed by both the public and private sectors. Efforts will also be made to bring the Guidelines to the attention of non-member countries and appropriate international organisations.

The principles set out in the Guidelines could therefore be further developed by the OECD in its work on information, computer and communications policies. Further efforts could focus on promoting awareness of the issues arising from cryptography and the desirability of compatible national approaches and on specific aspects of cryptography policy, such as legal recognition of digital signatures or certification by certificate authorities. ■



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# Mapping

Candice Stevens

**A**nalysis of technology performance and policies has traditionally focused on inputs (expenditures on research and development and number of research personnel, for example) and outputs (such as patents). These indicators are standardised across OECD countries.<sup>2</sup> But their limitations have become evident over time. Conventional indicators do not offer convincing explanations of trends in innovation, growth and productivity. Their ability to measure the general 'innovativeness' of an economy, or its capacity to produce new knowledge and technology, is limited. And they present a rather static snapshot of technology performance which neglects how the various individuals and institutions – private enterprises, universities, public research institutes and the people within them – interact in the generation of new products and processes as well as approaches to economic endeavours.

Technical progress is, indeed, largely the result of a complex set of relationships among these institutions and individuals, who produce, distribute and apply various kinds of knowledge, and thus translate the inputs into outputs with higher degrees of value-added. The links that tie them can take the form of joint research, personnel exchanges, cross-patenting, co-publication, purchase of equipment and a variety of other channels. The performance of a country in innovation depends on the effectiveness of these ties in uniting the diffuse elements of a collective system of knowledge creation and use. Pilot studies done for the OECD project on national innovation systems indicate that high degrees of technical collaboration, technology diffusion and personnel mobility can improve the innovative capacity of enterprises in terms of products, patents and productivity alike.

## Investments and Flows

Developing new indicators to 'map' innovation systems is difficult. It involves tracing flows of knowledge as a complement to measuring investments in knowledge such as research ex-

*The links that make up innovative systems of enterprises, institutions and individuals are being revealed by systemic examination of innovation and economic performance in OECD countries. Interactions among the firms, institutions and others involved in technology development are now seen to be as important as direct investment in R&D.<sup>1</sup>*

penditures. In the 'knowledge-based economies' of the OECD, some flows are easier to detect than others.<sup>3</sup> Knowledge 'codified' in publications, patents and other sources is both increasing in quantity and becoming easier to trace thanks to information technology. 'Tacit' knowledge reflected in individual ability is less easily identified but may be more important. Four types of knowledge flows have been at the centre of attempts to measure the links in innovation systems:

- R&D co-operation among businesses
- public/private sector interaction
- diffusion of technology
- movements of personnel.

Research co-operation and technical alliances among firms are growing rapidly in the OECD countries, particularly in new activities such as biotechnology and information technologies, where development costs are high. In this way firms can pool technical resources, achieve economies of scale and gain synergies from complementary human and technical assets. Assessments show that such co-operation can contribute much to innovative performance by firms. Studies in Norway, for example, indicate that the share of new products in overall sales is higher among firms involved in co-operative ventures (Figure 1). Co-operation in research also enhances the networking capacities of firms and

the general ability to identify and adapt useful technology.

Equally important are links between research in the public and private sectors. In the main, basic research is undertaken by government-supported research institutes and universities, and analysis of citations of patents and publications reveals how useful industry finds this work. Studies in the United States, for example, show that firms in activities such as biotechnology and engineering rely more heavily on university patents than other industries do. In addition, research in universities is being increasingly funded by business, which is co-operating with the public sector in joint projects to develop new products and manufacturing processes. Indeed, the number of co-patents and co-publications developed by industry in collaboration with universities and research institutes is growing in the OECD area. In the United Kingdom, for instance, recent analysis of publications by researchers in major science-based companies reveals that a quarter to a third of these papers are written in conjunction with a university or other publicly funded research institution.

The most traditional link in innovation systems is the dissemination of technology in new equipment and machinery. Governments in the OECD countries have adopted a variety of schemes to help diffuse technology to industry, from 'manufacturing extension centres' which transfer specific technologies through demonstration projects illustrating their practical application to technology brokers, who then match firms to the right techniques.<sup>4</sup> Business surveys, the principal means of tracking how industry uses

Candice Stevens is Head of the Science and Technology Policy Division in the OECD Directorate for Science, Technology and Industry.  
E-mail: dsti.contact@oecd.org



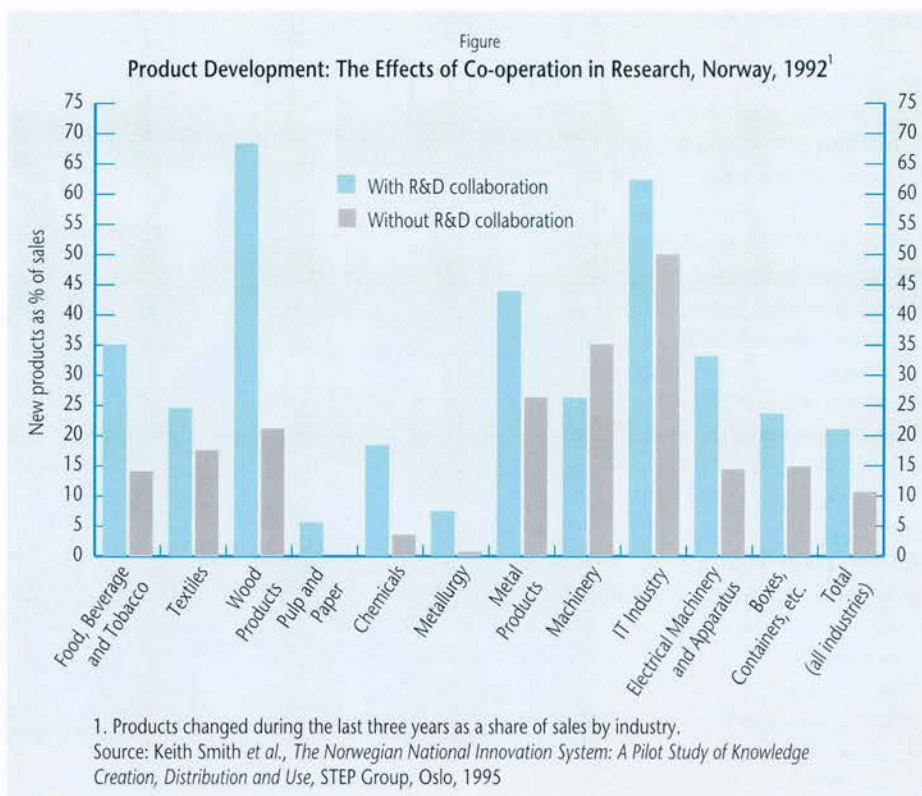
# Innovation

different types of technology, are now focusing on dissemination of information technology – including computers, communication equipment and semiconductors – across manufacturing and service sectors. But such surveys do not generally reveal the source of the equipment or technology, which limits their utility in mapping innovation-related flows between suppliers and customers. Technology diffusion is also tracked through the sale of goods from one sector to another. In this way, purchased inputs act as carriers of technology across firms and industrial sectors and illuminate the technical links in the economy.<sup>5</sup>

The movement of people and the knowledge they carry with them are vital to the dissemination of innovation – often, not through some specific form of knowledge but rather the general approach to innovation and competence in solving problems. The skills and networking capabilities of personnel are crucial in implementing and adapting new technology. The informal contacts they make play a hidden role in the innovative process. Personal mobility is generally measured through labour-market statistics on the movement of personnel among industrial sectors, universities and research institutes. Sweden, for example, has analysed the mobility of Ph.D. scientists and engineers in the Swedish economy. Studies show that a high degree of mobility contributes to the aggregate skills of the labour force as well as to the innovative performance of the economy as a whole.

## Surveying Firms

A more comprehensive approach to mapping innovation involves surveying enterprises to discover their sources of knowledge. European countries, co-ordinated by the EU, are advancing this technique through the Community Innovation Survey (CIS) and the Policies, Appropriability and Competitiveness for European Enterprises (PACE) Project. These surveys ask firms questions pertaining to how much they spend on innovation; outputs and sales of new or improved products; sources of information;



technology transfer and acquisition; technical co-operation; and perceptions of factors promoting or hampering innovation. The OECD and Eurostat are now working towards the standardisation of innovation surveys across countries through revisions to the 'Oslo Manual'.<sup>6</sup>

These surveys have found that the most important external source of knowledge for businesses is the interaction between the firm and its suppliers and customers and the technical

analysis of competitors' products. This discovery highlights the importance of networking among firms as well as the role of competition in advancing innovation. Joint ventures are valuable sources of knowledge in sectors (such as biotechnology and information technology) where R&D is expensive and complex. Yet, although businesses generally acknowledge the role of government-funded research, most have doubts about its relevance to their immediate commercial requirements. They nonetheless recognise the importance of tightening links with the public research infrastructure.

## Analysing Industrial Clusters

Another means of measurement, the 'cluster approach', is based on the close interaction between certain types of firms and industries, where interactions may evolve around key

1. *National Innovation Systems*, OECD Publications, Paris, forthcoming 1997.

2. *Science, Technology and Industry. Scoreboard of Indicators 1997*, OECD Publications, Paris, 1997.

3. Candice Stevens, 'The Knowledge-Driven Economy', *The OECD Observer*, No. 200, June/July 1996.

4. See pp. 20-23.

5. George Papaconstantinou, 'Technology and Industrial Performance', *The OECD Observer*, No. 204, February/March 1997.

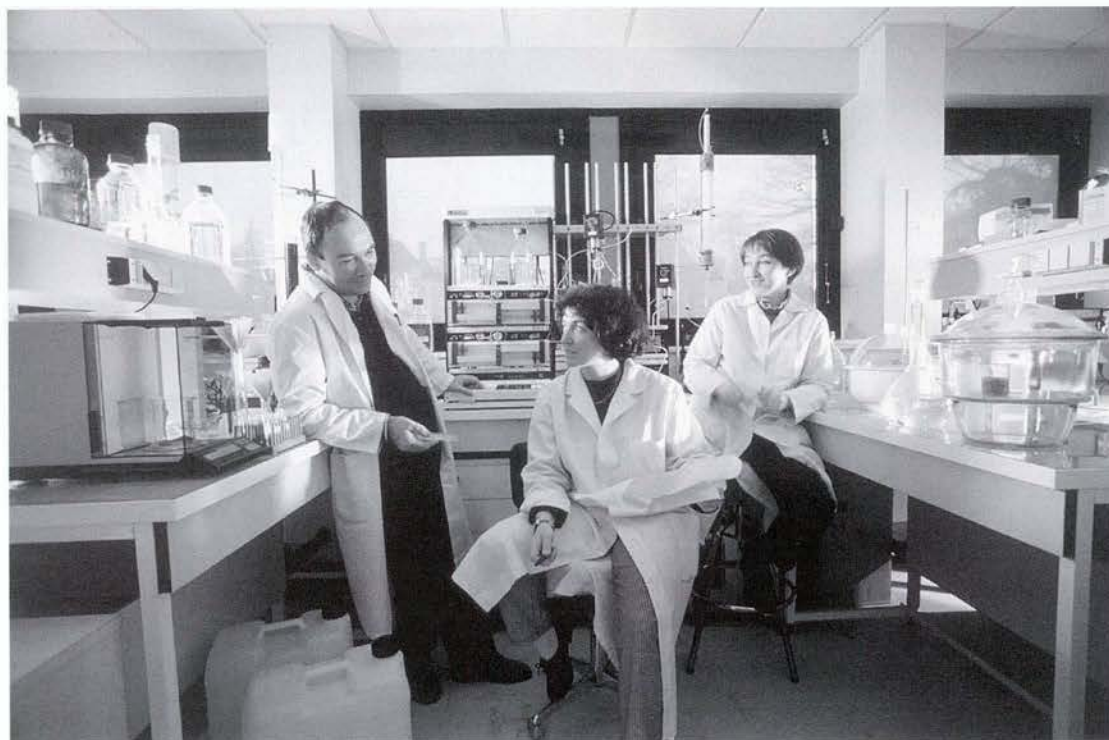
6. *Oslo Manual: Proposed Guidelines for Collecting and Interpreting Technological Innovation Data*, OECD Publications, Paris, 1st edition 1992; rev. edn. 1997.

# Mapping Innovation

technologies, shared knowledge or skills or producer-supplier relationships. Nations, whatever their general standard of innovative performance, do not usually succeed across the whole range of industries but in certain groups of them. Patterns of knowledge flows differ from cluster to cluster and also within countries specialised around different clusters.

For firms in science-based clusters (pharmaceuticals and aerospace, for example), access to basic research is essential to complement their own R&D activities. These sectors are highly R&D- and patent-intensive, producing and relying heavily on patented information, and collaborate relatively closely with the public research sector. Scale-intensive clusters where economies are derived from quantity in production (such as food-processing and car manufacturing) tend to establish links with technical institutes and universities without performing much research on their own. Their innovative performance depends on importing and building on science developed elsewhere, particularly for process improvements. Supplier-dominated clusters (forestry and services, say) tend to import technology mainly in the form of capital goods and intermediary products. Here innovation is more influenced by their ability to interact with their suppliers. Specialised-supplier clusters (not least computer hardware and software) are R&D-intensive and emphasise product innovations, generally working closely with one another and their customers.<sup>7</sup>

Such clusters can be identified by patterns in personnel movement, the purchase of equipment, joint-research ventures and patent citations. Finland, for example, has a strong forestry cluster – including wood and wood products, pulp and paper products, furniture, publishing and printing and related machinery. A densely knit network of knowledge distribution among firms in these sectors gives the cluster an advant-



Murcia/Jremer/Campagne

The mapping of innovation has to capture the interaction between the individuals and institutions who together generate the system within which knowledge is deployed.

age over its main trade competitors. Norway, similarly, is working to enhance linkages among its cluster of firms working in aquaculture.

## The International Dimension

To date these studies have generally had a national focus because of the prominence of country-specific exchange in creating a climate for innovation. But international technology flows and co-operation are taking on growing importance. The globalisation of industry and internationalisation of production and research mean that knowledge flows are expanding world-wide. Technology acquired from abroad through trade in goods and services, purchases of foreign

patents and licences, technical alliances among firms of different countries and internationally co-authored publications are among the indicators for mapping global flows.

For example, technology balance of payments figures – which cover the licensing or sale of patents and trade marks, technological expertise and intellectual services such as engineering studies and R&D services – show the increasing exchange of expertise among the major OECD countries without necessarily involving the purchase of machinery and equipment. Recent data on total transactions for some OECD countries show a three-fold increase in such commerce since the early 1980s. The United States is far and away the largest net exporter of expertise in the OECD area, followed by the United Kingdom, Sweden and the Netherlands. Similarly, studies of ‘embodied’ technology flows show that, in many OECD countries, the share of technology obtained through imports of equipment is increasingly important. Larger countries ob-

7. Keith Pavitt, ‘Sectoral Patterns of Technology Change: Towards a Taxonomy and a Theory’, *Research Policy*, Vol. 13, 1984.

tain less of their acquired technology from abroad than smaller ones, which depend on imports for more than half. In spite of these growing international linkages, innovative capacity still seems to be primarily determined nationally, with subnational or regional systems playing a contributing role.

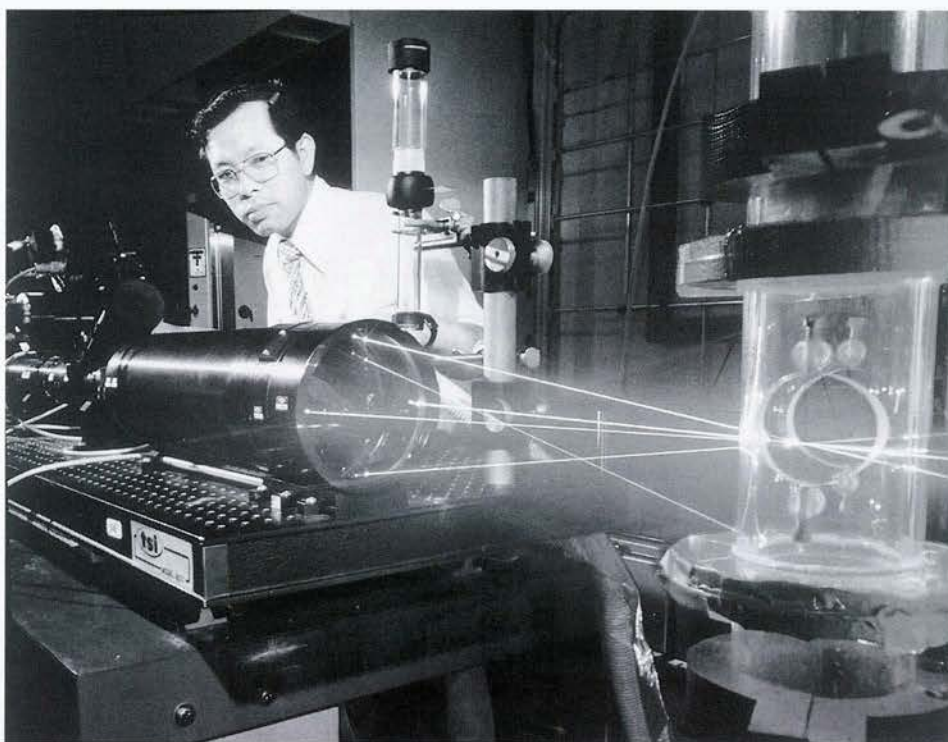
## The Implications for Policy Design

An understanding of national innovation systems can help identify 'leverage points' for enhancing industrial competitiveness as a whole. It directs the attention of policy-makers to possible systemic failures. And there are a number of potential reasons for sluggish innovation:

- lack of interaction between the institutions, companies and other actors in the system
- mismatches between basic research in the public sector and more applied research in industry
- malfunctioning of technology-transfer programmes such as extension services
- information deficiencies on the part of enterprises.

These systemic failures require a novel response from policy-makers. Networking schemes can increase the interplay of actors within national innovation systems by matching large firms with small and public research institutes with private ones. Technology policies which promote public/private partnerships can be fruitful. A high degree of co-patenting, co-publication and personnel mobility is likewise beneficial, though it depends partly on the appropriate rules on intellectual property, labour-market policies and exchange programmes. Information-technology policies and supportive infrastructures can facilitate informal contacts and access to technical networks. Competition-policy frameworks should allow the development of innovative clusters and interactive producer-user relations among firms.

Enhancing the capacity of firms to generate and use new technologies is another priority. Technology policies should not only encourage the diffusion of equipment and technologies to



Access to external research is particularly important for businesses active in science-based clusters.

firms but also upgrade their ability to find and adapt technology themselves, for example, through diagnostic, benchmarking and consultancy programmes. They should aim both at technology-based firms and at those with lesser technological capabilities, in traditional and mature industries, and in services sectors like construction and retailing. And these policies should focus not only on individual firms, but also on enhancing the networking and innovative performance of clusters of firms and sectors.



Understanding and measuring knowledge flows in national innovation systems is a key component of OECD technology-related analysis. These indicators are at an early stage of development and do not approach the 'robustness' of more conventional measures, such as spending on R&D. A main goal is to improve the comparability of innovation indicators across countries. Work currently underway at the OECD

focuses on flows of technical personnel, the links between institutions, the formation of industrial clusters and the sources of innovative behaviour by firms. ■



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# Diffusing Technology to Industry

Mario Cervantes

*Technology is a powerful factor in the profitability and growth of businesses. What should OECD governments do to encourage the diffusion of technology and know-how? And how can they improve the ability of firms, especially smaller ones, which create the most jobs, to harness the benefits from technology in improved performance and growth?*<sup>1</sup>

In a knowledge-based, globalised economy where national borders matter less and less, even for small, domestically oriented firms, the ability to gain access to and exploit technology and know-how is essential for enhancing the performance of firms. Evidence shows that companies and industries characterised by use of advanced technologies and innovative behaviour have above-average productivity and employment growth.<sup>2</sup>

Technology is diffused faster to some firms or sectors than to others. Information and communication technologies (ICT), for example, are pervasive in many manufacturing industries and especially in knowledge-intensive service sectors such as banking, finance and business services. During the 1980s, indeed, output and employment in the OECD area expanded fastest in technology-intensive sectors. But traditional sectors, whether low-technology manufacturing or services, which incorporate advanced technologies also show above-average growth. In aggregate, the extent to which technology and

knowledge are generated and diffused in an economy largely determines comparative advantage and hence, innovation and economic performance.<sup>3</sup>

Yet this diffusion is more than the one-way flow of technology embodied in equipment. It is the process whereby technology, including the 'tacit' knowledge of how it should be applied, spreads from the original innovator to other users. It involves a range of private and public institutions and individuals, including large firms, clusters of firms, suppliers, customers and public research institutions. The concept has broadened recently to cover all the actions firms take to exploit the benefits of technology. Among these, organisational change is widely seen as a prerequisite for firms and workers to be able to absorb and exploit technology.<sup>4</sup> The flexible pro-

duction systems and 'just-in-time' delivery systems in firms, for instance, which depend on information technologies to help reduce the necessity of maintaining large inventories and economies of scale, usually bring about intensive organisational change.

Together, these actions determine the absorptive capacity of firms or their abilities to exploit technology. And that in turn requires substantial investments in intangibles such as R&D, external sources of technology, training and managerial skills.

## Enhancing Absorptive Capacity

During the 1970s and '80s, to boost productivity and competitiveness, many OECD countries established technology databanks, licensing and transfer agencies and manufacturing extension services – regional centres that help small manufacturing firms upgrade production processes and product development through the use of appropriate technology. Yet experience revealed that many of the obstacles to diffusion arose from deficiencies in firms themselves, in labour skills and organisational and managerial practices. To help them overcome these deficiencies, several OECD countries, including Australia, Denmark and Germany, maintain 'technology broker' services, networking initiatives and business advisory services as well as technology-demonstration centres. Some countries, not least the Netherlands and the United Kingdom, also provide training support for workers in small companies to help them keep pace with technical and organisational change, thus enhancing the firm's absorptive capacity.

In spite of the difficulties inherent in categorising the broad range of these direct (and indirect) measures, three main aims can be identified (box, right). First, there are programmes intended to improve the adoption of specific technologies, including those emerging from public research institutions, such as the Fraunhofer Society in Germany, and aimed at specific industrial sectors (micro-electronics, for example). Others, including technical assistance and manufacturing

Mario Cervantes works in the Science and Technology Policy Division in the OECD Directorate for Science, Technology and Industry.

E-mail: dsti.contact@oecd.org

1. *Diffusing Technology to Industry: Government Policies and Programmes*, OECD Publications, Paris, 1997.

2. *Technology, Productivity and Job Creation*, OECD Publications, Paris, 1996.

3. George Papaconstantinou, 'Technology and Industrial Performance', *The OECD Observer*, No. 204, February/March 1997, and Kazuyuki Motobashi and Risaburo Nezu, 'Why Do Countries Perform Differently?', *The OECD Observer*, No. 206, June/July 1997.

4. Graham Vickery and Gregory Wurzburg, 'Flexible Firms, Skills and Employment', *The OECD Observer*, No. 202, October/November 1996.

extension services to upgrade production processes, are geared to improving the general capacity of the company to implement technology. A third type of programme is designed to develop the innovative capacity of firms, using diagnostics and benchmarking services – which are essentially auditing tools to evaluate the capacities of firms to harness technological and market opportunities and derive firm-specific recommendations, drawing on the best practices used elsewhere.

## Demand or Supply?

This typology reflects a gradual shift from supply-driven programmes – which focus on the transfer of technology embodied in technical equipment – to demand-driven measures that aim to help firms acquire the capacity for managing technology and innovation themselves. Supply-side programmes remain an important component of technology-diffusion policies, but they are becoming more customer-oriented and integrating many of the ‘softer’ technology supports. Demand-driven initiatives, such as advisory and consulting services, are being adapted to fill gaps in the market and the public S&T infrastructure, without distorting incentives for private services.

In Canada, for example, where the concentration of industrial R&D in a few large firms and sectors, chiefly metal products and machinery, electrical equipment, chemicals and aerospace, has been associated with lower rates of diffusion, government R&D programmes such as the Canadian Space Agency’s Space Station Program (CSPP) have made the commercialisation of public research results an explicit objective from the outset.

Supply-side programmes are not necessarily targeted to high-technology sectors. In Spain, efforts to transfer technology from applied-technology centres to specific sectors have shown some success. The Technological Footwear Institute (INESCOP), for

example, adapted water-jet cutting technology used for materials in other industrial sectors to the cutting of leather for shoe-making firms. Two vital factors were the adaptation of existing technologies to the specific requirements of firms and the use of demonstration and training courses for technical personnel in shoe-making enterprises.

Demand-driven programmes have a common objective: identifying and assessing the technological gaps, requirements and opportunities facing enterprises, especially small and medium-sized ones. These initiatives usually focus on technologies that are pragmatic, well-tested and available off-the-shelf, as with the Manufacturing Extension Partnership (MEP) in the United

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### Typology of Technology-diffusion Programmes

| Goal                                                         | Programme Types                                                                                                                                                                       | Objectives                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Improve the adoption and adaptation of specific technologies | <ul style="list-style-type: none"> <li>• Technology-specific</li> <li>• Institution-specific</li> <li>• Sector-specific</li> <li>• Demonstration</li> </ul>                           | <ul style="list-style-type: none"> <li>• To diffuse a specific technology to a wide number of firms and sectors</li> <li>• To promote technology transfer from specific institutions</li> <li>• To diffuse technology to a particular industrial sector</li> <li>• To demonstrate the practical implementation of technologies</li> </ul> |
| Improve the general ‘technology receptor capacity’ of firms  | <ul style="list-style-type: none"> <li>• Technical assistance</li> <li>• Information networks</li> <li>• Assistance for small-scale R&amp;D projects</li> </ul>                       | <ul style="list-style-type: none"> <li>• To assist firms in diagnosing technology shortcomings and in problem-solving</li> <li>• Access to information on technology sources, etc.</li> <li>• Build capacity for autonomous technology development</li> </ul>                                                                             |
| Build the innovation capacity of firms                       | <ul style="list-style-type: none"> <li>• Sector-wide technology road-maps</li> <li>• Diagnostic tools</li> <li>• Benchmarking</li> <li>• University-industry collaboration</li> </ul> | <ul style="list-style-type: none"> <li>• Systematic planning for future strategic technology investments</li> <li>• Assist firms to develop innovation-oriented management (includes organisational change)</li> <li>• Transmit best practices from elsewhere</li> <li>• Upgrade the knowledge base of the firm</li> </ul>                |

# Diffusing Technology to Industry

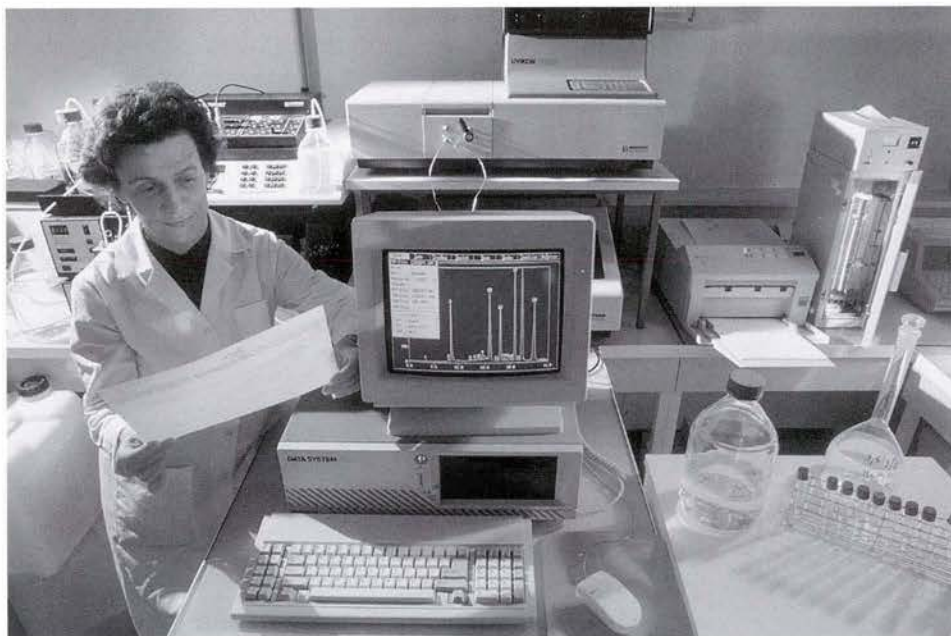
States, a national network of state-based manufacturing extension centres. The MEP fills a gap in the market by providing small firms with assistance in business systems and management, quality certification, market development and the use of appropriate technologies to improve production processes and product development. Survey evidence showed that 70% of participating firms held that the services provided by MEP and its intermediary consultants were complementary to existing market services or unavailable through private sources.

In Norway, a consulting-based programme called 'Business Development Using New Technologies' (BUNT) has helped participating firms improve competitiveness and generate a climate of innovative change. A critical element in this success was the commitment of the firms' management and a process of continuous programme evaluation. With EU support, the BUNT approach is being adapted in other European countries, including Austria. Results from this Austrian version, called 'Managing the Integration of New Technologies' (MINT) suggest that effective training of consultants is a vital ingredient of success.

But there are also limits to demand-side programmes. The Netherlands' regional network of Innovation Centres (ICN) whose consultants act as intermediaries between firms and private and public sources of technology and know-how, aims to stimulate awareness of technology among entrepreneurs and managers, without generating dependence on public support. In some instances, only businesses that were already planning to invest in a given area such as information technologies would do so because of the public incentives. That raises the question of how to identify the appropriate target group.

## Building Networks

Another approach to technology diffusion is illustrated by Germany's network-based strategy. Measures there developed in an *ad hoc* manner, often as part of federally supported collaborative R&D projects and technology-transfer pro-



In a knowledge-based economy even small enterprises oriented towards domestic markets have to have access to technological expertise and must know how to use it.

grammes. This approach has been successful in disseminating technologies in medium and low-technology sectors (machine tools, for instance). But concerns that gaps in the system are limiting the diffusion of, for example, information technology and biotechnology have led to a new strategy, the Bio-Regio Project which targets three regions, Munich, Heidelberg and Cologne. It promotes industry-led partnerships among regional actors such as universities, banks and technology transfer centres in developing and diffusing biotechnologies.

Some OECD governments promote a system-wide upgrading of the 'diffusion infrastructure' or the public and private institutions through which knowledge is generated and diffused. In Japan, efforts are underway to improve interaction between industry, universities and other public researchers, as well as increasing the mobility and flexibility of researchers and reducing regulatory barriers to joint research. Korea, which maintains a mix of supply-driven programmes to help firms adopt advanced manufacturing technologies, particularly automated

processes, is making efforts to strengthen its technological institutions and improve links between universities and industry, especially small firms, through a network of Regional Research Centres.<sup>5</sup>

## Improving Government Programmes

The OECD countries pursue their own distinctive combination of policies and programmes, sometimes referred to as their 'diffusion mix'. It reflects both specific national innovation systems and specific regional and broader economic dynamics. In general, these programmes involve a range of institutions and to be comprehensive must balance alliances and cross-sectoral networks as well as business incentives. Technology-diffusion services generally have to be

5. Jean-Éric Aubert, 'Science and Technology in Korea', *The OECD Observer*, No. 200, June/July 1996.

6. Jean Guinet, 'Financing Innovation', *The OECD Observer*, No. 194, June/July 1995.

delivered locally (since this is where the firms are). But conflicts may arise between local and national tiers of government over management practices and programme goals. There is also a risk that diffusion strategies developed in, or targeted to, particular regions might preclude involvement by firms and institutions from other regions within the same country. As public agencies pursue more market-oriented approaches to delivering diffusion services and place more reliance on private-service providers, there may also be clashes between management styles and objectives.

Effective diffusion takes time and money and can be difficult to measure and evaluate. It also requires flexibility in operation to meet diverse demands. These are elements that traditional government decision-making and budgeting systems do not easily accommodate. There are also questions as to the appropriate target and scope of the programmes. Firms which already have advanced capabilities may be targeted although they require support the least. That suggests weaknesses in evaluation systems as to what types of diffusion policies, projects or services are more (or less) effective, and for which clients.

In an effort to improve the effectiveness of these programmes, OECD countries have sought to compare experience and thus identify best practices. But that depends as much on the nature of the programmes and its underlying objectives as on the institutional and economic context in which it operates. The identification of best practice also requires some measure of reference or benchmark: 'best practice' compared to what? An assessment of the relative efficiency and effectiveness of such programmes can provide some sort of a benchmark, although an imperfect one. Drawing general conclusions based on evaluations of single programmes, by contrast, can be misleading: many evaluations are based on surveys that measure client satisfaction, with little assessment of alternative measures for achieving objectives or broader (indirect) economic impacts.

Some best practices can be nonetheless identified. The mix of programmes is important, including supply- and demand-side measures and networking initiatives. Because technology

is a local issue, a certain degree of complementarity between programmes and the local infrastructure is necessary. Policies should also take into account appropriate indirect measures such as tax incentives for promoting investment in R&D and research personnel.<sup>6</sup>

As far as the programmes themselves are concerned, maintaining the quality of the institutions expected to foster diffusion is important. Joint private/public funding, as in the US MEP programme, can provide an external review mechanism. Supply-side programmes should consider how to transfer and license dual-use technologies (that is, defence-related ones with potential civil applications) at the outset of a project. Geographical proximity is equally important to ensure close interaction with enterprises and a sufficient scale to achieve a wider impact.

Programmes should, moreover, build on existing resources. This was a central element of the German approach to regional networking but also of the MEP programme in the United States. Maintaining close links with industry groups and associations is another way of stretching existing resources a little further. Effective diffusion programmes do not have to exist indefinitely, but rather long enough to develop trust and long-term relationships between companies and technology diffusion service providers.

Experienced and trained staff is necessary for efficient delivery of these services. Delivery mechanisms that work from within the firm can help overcome corporate resistance by stimulating an appetite for change in a company, but they have to avoid creating dependency. Technology services such as technical assistance and demonstration programmes must therefore be accompanied by mechanisms for promoting organisational development and strategic change. Technologies can be diffused only as fast as the organisational changes of firms and the skills of workers can keep pace.



Programmes to diffuse technology diffusion are increasingly important policy tools for improving innovative and economic performance in firms. But other policies such as trade and

foreign investment help enhance international flows of knowledge and technology. Adequate intellectual property protection and standards are essential for facilitating diffusion without distorting incentives for innovation in the first place. Stable macro-economic policies and efficient capital markets are important for providing firms with the appropriate market signals to invest in technology embodied in equipment or in intangibles such as training and the management of innovative activities. Structural policies, not least regulatory reforms to legal, financial and tax regimes, also affect the ability of firms to acquire new equipment and technology. ■



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# Economic Flexibility and Societal Cohesion

Riel Miller

*Pressure on the social fabric of OECD countries is expected to grow over the next two decades as the rapid pace of economic, social and technological change continues. A recent conference organised by the OECD's Forum for the Future considered innovative ways – including, and going beyond, social-policy remedies – of maintaining the cohesion of society in tomorrow's highly flexible economy.<sup>1</sup>*

For over a decade OECD governments have been committed to a cluster of economic policies aimed at encouraging macro-economic stabilisation, structural adjustment and the globalisation of production and distribution. Although these policies have been generally successful in supporting economic growth, keeping inflation under control and reducing current-account imbalances, there is now pressure on many governments to take stock of the longer-term implications.

Beyond the already serious social stresses arising from more marked polarisation of income, persistently high volumes of unemployment and widespread social exclusion, there are the broader, societal challenges posed by profound technology- and competition-driven changes in the organisation of the workplace and everyday life. The result is a growing political disenchantment that threatens to undermine both the drive towards improved economic flexibility and the policies that encourage strong competition, open markets and technological evolution.

Riel Miller works at the OECD in the Advisory Unit to the Secretary General on Multi-disciplinary Issues.  
E-mail: riel.miller@oecd.org

A number of clearly discernible long-term trends will have a strong influence on societal cohesion, the prospects for economic growth and the responses of governments. Perhaps most marked will be organisational and technological changes, many of which are already underway. A far-reaching re-organisation of work, likely to be characterised by teams and non-hierarchical structures, by decentralisation and telecommuting entrepreneurs, will be one of the fundamental forces for growth, demanding new ways of managing risk, whether individual, corporate or social.

Technological developments, not least in computers and telecommunications, will encourage growth but also help stimulate turbulent and unanticipated changes in what, how and where people produce and consume. If, for example, a large proportion of the population works at home rather than in an office or factory, the result might be a sense of isolation or inadequate attention to health and safety in the new workplace.

Continued globalisation, with the increased interdependence and boost to technology diffusion, trade and growth in general that comes with it, will also require considerable economic, social, even cultural adaptation. When Japanese

car-manufacturers first established plants in the North of England, for example, workers and managers had to come to terms with each other's working practices (and, in the end, did so quite rapidly).

Simultaneously, demographic pressures induced by aging and more diverse population structures will combine with stringent fiscal realities to push many OECD countries to rethink the traditional public-sector bulwarks of societal cohesion such as pension schemes and labour-market programmes (will, for instance, unemployment insurance always be provided by the state?).<sup>2</sup> As governments reduce the constraints on market forces and focus increasingly on framework policies instead of direct intervention, economic growth and societal cohesion will both come to depend even more on the diverse, innovative and often unanticipated initiatives of the private sector.

## What Prospects for Long-term Growth?

Trends in underlying growth conditions could generate a fairly wide range of outcomes. The OECD economies might, for example, end up on a much faster growth trajectory twenty years from now if the diffusion of new technologies, market liberalisation and globalisation spur rapid increases in productivity. The opposite might occur if fiscal consolidation becomes even more difficult, or if international trade and investment come to be widely perceived as exacerbating disruption and dislocation, unleashing protectionist and anti-competitive sentiment. Or, perhaps most plausibly, OECD countries will continue to muddle through, with slow but positive productivity and economic growth (in the order of 1–2% per year), with virtually no in-



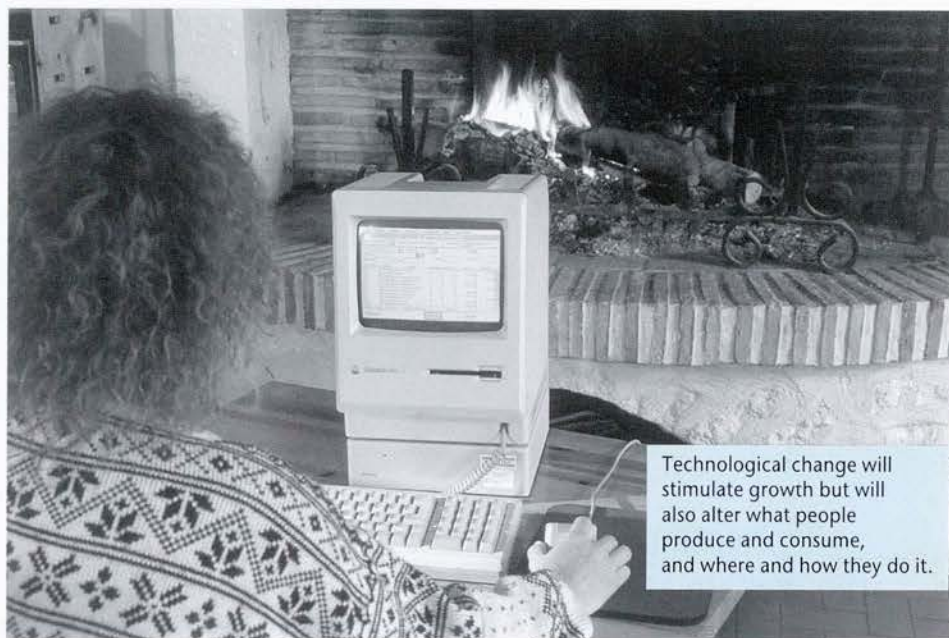
crease in the size of the labour force, and with incomes rising only slowly. This modest trendline is unlikely to provide a growth dividend capable of cushioning or overcoming the wide range of challenges to societal cohesion in OECD countries.

A trajectory of high growth would clearly be preferable. That raises the question of whether or not economic performance could be enhanced by abandoning the current mix of economic policies that generally target low inflation and sound fiscal balances; structural adjustment to improve the functioning of product, capital and labour markets; and the liberalisation of trade, investment and technology flows to enhance global economic efficiency. Proponents of a departure from the current mix generally fall into three broad categories.

In the first, there are those who believe that the 'inflation mentality' of the past has been conquered and that the monetary authorities can now afford to be less restrictive with the money supply. Increased activity, it is contended, would translate into real, non-inflationary growth because the highly competitive global economy would restrain the pricing power of companies, thus ensuring they would raise profitability by boosting efficiency. The result would be to lift OECD economies on to a higher plane of growth, potentially reducing unemployment, poverty and social exclusion. Critics of this school argue that in some economies, like the United States and the Netherlands, official unemployment is already low; inflationary pressures would be inevitable, not least because looser monetary policy would lead to a weaker currency in what is an increasingly open world economy.

A second camp would prefer to limit disruption in the domestic economy by slowing down adaptation to global competition and technological change. The risk in such an attitude is not only that protectionist sentiment would gain ground but also that structural adjustment would be merely postponed, thus prolonging painful re-adjustments.

A third group yet proposes a continuation of tight monetary and fiscal policies, coupled with even faster liberalisation, deregulation and privatisation. Yet here the problem comes full



Technological change will stimulate growth but will also alter what people produce and consume, and where and how they do it.

Dudlow Campaign, Campaigne

circle: the risk is of even higher transition costs and thus an even bigger threat of a backlash.

Overall, the balance of opinion seems to be that the current mix of economic policies is the most promising, even if it may not produce a growth rate capable of smoothing over all of the social and economic transition costs.

## A Renewed Role for Governance?

Many of the difficulties expected to undermine societal cohesion are not directly linked to growth as such; instead, they stem from the profound nature of the demographic, economic and social changes that can be foreseen. In the future it seems less likely that there will be a repetition of the familiar patterns of 'productivity catch-up' and growth-driven change, exhibited by Europe and Japan after the Second World War and the 'Asian Tigers' more recently, as higher income and investment altered economic and social landscapes. Instead, most OECD countries will probably enter a period of change-driven growth, where economic dynamism will depend on embracing the flexibility demanded by intensified competition and innovation.

Adapting to the intensive and unsettling transformations that are likely to both accompany and spur economic growth will probably put more emphasis on the renewal of decision-making and participatory processes. Improvements will be required in systems of governance, not only in the democratic fora of the political sphere, but also in enterprises and communities where many of the crucial decisions will be made on a daily basis. The private sector is already pointing the way with organisational restructuring that moves away from hierarchical methods of command and control.<sup>3</sup>

Improving the democratic infrastructure of OECD societies – by voter education, anti-corruption measures, decentralisation, referenda and so on – is expected to offer a three-fold dividend. First, better methods of governance are likely to both enable and sustain a respect for people's differences – whether in wealth, cultural endowment and any number of other

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3. Graham Vickery and Gregory Wurzburg, 'Flexible Firms, Skills and Employment', *The OECD Observer*, No. 202, October/November 1996.

# Economic Flexibility and Societal Cohesion

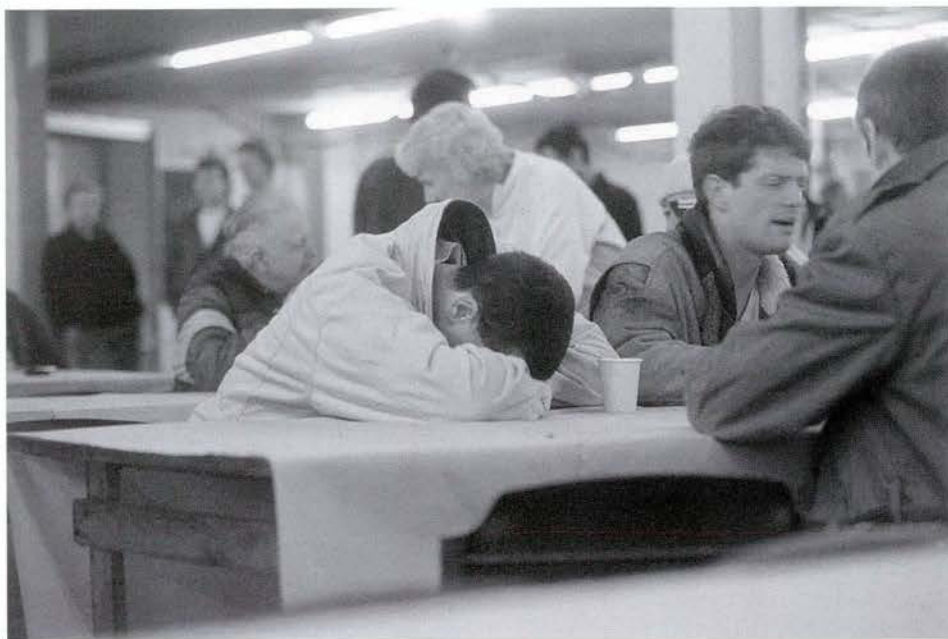
factors – in an economic environment characterised by freer markets. Second, there is likely to be an indispensable synergy between, on the one hand, forms of governance that encourage social responsibility by sharing authority and, on the other, the personal engagement (that is, a combination of trust and commitment) that is essential for the success of a decentralised, flexible and innovation-driven society. Finally, the evolution of governance systems towards more sharing of responsibility at work and in the community through participatory decision-making practices could help to achieve win/win outcomes from the turbulence of the flexible economy.

## Reorienting the Welfare State

Extensive renovations will likely prove necessary in the programmes and institutions of the welfare state, largely as a consequence of changes in the underlying requirements of client populations, in altered fiscal circumstances and in breakthroughs in production processes that promise increased efficiency in the delivery of social services. These developments are likely to be controversial.

Advocates of more dramatic change argue that today's social programmes tend to aggravate rather than attenuate the friction between societal cohesion and economic flexibility. Modest reforms, they say, will simply continue to incite dependency while fiscal retrenchment reduces the resources available to that end. A more promising approach calls instead for efficient social-insurance schemes that align individual costs and benefits.<sup>4</sup> Breaking with certain welfare-state traditions is viewed as probably the most effective way of introducing the supple and adaptable systems better suited to providing a sense of security in a turbulent, flexible economy.

Those with a more sanguine perspective on the capacity of the welfare state to cope with change hold that gradual reform and basic continuity of existing welfare, social-security, health and education systems will be sufficient. They consider that incremental administrative and pro-



The costs of the changes that flexibility requires are often seen as falling on the poorest and weakest.

gramme reform in the public sector will allow it to continue in its role as the primary direct provider of social services without imposing inflexibility or excessive uniformity. Continuity in these well-established approaches will, it is argued, help to provide a solid foundation for economic growth.

## Universal Rights and Free Choice?

In practical terms, the cultivation of societal cohesion will continue to occur outside the institutions and programmes provided by government. Families, workplaces, voluntary associations and the local community will maintain a central, probably growing, role in providing citizens with a sense of security, belonging and identity. Governments can encourage new approaches to managing economic and social risks, like investing in physical and human capital or becoming self-employed, by developing frameworks that extend universal rights (in areas such as health care, pensions, educational borrowing, access to investment capital, disability insurance, provision of a basic minimum income) while opening up the markets for these services in order to give individuals more discretion.

Policy will therefore have to foster both universal access and individual choice by encouraging a wide range of institutions that provide insurance schemes in the context of publicly

backed guarantees or regulatory supervision. Perhaps the main difficulty will be in designing policies that neither blunt the signals and incentives of the market nor undermine the solidarity required for effective social co-operation and a sharing of basic aspirations. The balances attained across OECD nations and regions will differ considerably in accordance with their divergent values and traditions. The pursuit of mutually reinforcing policies and the avoidance of conflict with international obligations through (for example) trade and investment rules will call for special efforts to promote mutual understanding and co-operation.

## Innovative Solutions

A wide range of innovative responses to the threats facing societal cohesion are now being explored, at the OECD and elsewhere. The proposals can be grouped roughly into four distinct areas.

First, changes will have to be made to the systems used for insuring citizens against such risks as unemployment, disease, disability and poverty. Some proposals envisage giving people the freedom to opt out of public schemes by turning to private suppliers, as is already the case for some pension and health-care systems. Others aim to enhance the functioning of investment in human capital or high-risk start-up businesses by developing new credit schemes perhaps

backed by government guarantees. Such reforms would provide clearer incentives to save, work and invest and would also help avoid poverty traps (where earning income reduces benefits so rapidly there is little incentive to work) or 'moral hazard' situations that encourage excessive risk-taking behaviour because loss has been insured against.

Properly designed, a more diversified and transparent approach to economic and social insurance could also spur the development of more effective risk-reduction strategies, even for the chronically poor. An example from Canada involves local community-development initiatives that provide joint funding and organisational catalysts for starting up small businesses and not-for-profit services. Widespread introduction of such risk-sharing programmes will be particularly important if, as many segments of society insist, future societal cohesion will be unattainable, politically and operationally, when the sacrifices and transition costs demanded by a flexible economy are seen as falling only on the poorest and weakest.

A second set of vital changes concerns learning systems in general and the reform of state-dominated education in particular. One of the most fruitful trends is towards the wider recognition of life-long learning and improvements in transparency of acquired human capital.<sup>5</sup> In practice, this development should lead to easier validation of different types of learning throughout life (home, school, work) and clearer incentives for investing (even on borrowed financing) in the accumulation of knowledge and skills. In much the same way, indeed, as firms are re-organising work and business strategies, the sources and uses of learning could become more diversified, decentralised and consumer-driven.

A third group of changes that might help secure cohesion centre on what might be called 'responsibility systems', particularly in corporate and local-community governance. Methods for

spurring commitment, involvement and long-term thinking are seen as being critical components of tomorrow's more decentralised yet interdependent world. For managers, workers and the surrounding localities, not to mention investors, the evolution of corporate and local governance systems would attempt to compensate for the decline in traditional methods of encouraging commitment like life-time employment contracts and detailed, direct regulatory constraints.

An enormous range of institutional responses to such concerns can be imagined. Some companies offer stock options. Other institutions, private or public, devolve responsibility for budgets to the 'front line' – whether the assembly line, sales counter or local playground-planning committee – which is helping provide the appropriate knowledge and incentives for improving quality, productivity and so on. Tradable permits are another example of changing management and incentive systems for pollution abatement and rethinking of product life-cycles.

Lastly, and more controversially, some commentators have argued for the introduction of a universal citizen's income to reflect the (non-market) value of the full range of human activities. Critics of this proposal express serious doubts about both the affordability and perverse incentive effects that might follow if the link between paid employment and income were broken. The proponents counter that, for many people, employment of any kind, let alone at wage rates that would lift them out of poverty, might be simply unattainable – particularly if long-run economic growth does turn out to be modest. A basic-income programme could then help to encourage both useful unpaid activity (like taking care of the young and the elderly or improving ecological conditions) and much more flexibility in pay rates and employment contracts for paid work since workers could afford to live even with below-poverty wage rates.



Barring catastrophes or a major policy reversal, the pace of change is unlikely to slacken: rapid technological progress and continuing liberalisation of trade and investment will continue to

push towards an increasingly knowledge-based economy characterised by the growing influence of market forces and global competition. Uncertainty and unpredictability seem destined to increase. Market mechanisms will, in all likelihood, play a major part in managing and insuring against the risks arising from such turbulence, just as evolving social policies will continue to underpin economic performance. The challenge for the political process will be to find the policies that strike an effective balance. ■



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# Towards Efficiency in Brazilian Agriculture

Garry Smith

*Brazil is aiming to make its agricultural sector more competitive by reducing government intervention and bringing domestic prices more closely in line with those prevailing on world markets. Resources will then be redirected from less efficient agricultural activities to those with a competitive edge. But the reforms have an important proviso: they have been drafted so as to cushion the worst impacts on small producers.<sup>1</sup>*

Brazil is an important participant in world agricultural markets. Its agricultural sector represents a large part of the total economy. In contrast with most OECD countries, the share of agriculture in Brazilian GDP (at 14%), trade (25% of exports) and the labour force (27% of employment) is still relatively high, although it has been declining for some time.

The most important annual crops – soybeans, maize, rice, beans, cotton, sugar and cassava – accounted for more than 80% of the total cultivated area in 1991, a share which has held relatively stable over the years. Coffee, cocoa and oranges are the most important tree crops and together occupy some 9% of the cultivated area.

Livestock production makes up nearly 40% of the contribution of agriculture to GDP, and employs slightly more than 25% of the agricultural labour force. Beef and dairy production account for about three-quarters of all livestock output; and the cattle herd, at over 153 million

head, is the world's largest maintained for commercial purposes. Livestock production, which has enjoyed remarkable growth, occupies around 200 million hectares of pasture land.

Crop production, on average, requires about ten times more workers per hectare than does livestock production. But the combination of a change in the crop mix (there was, for example, a 70% drop in the area given to wheat) and the under-utilisation of land on large holdings by absentee landlords, who were using the land as a hedge against inflation, have brought about a reduction in the cultivated area since 1988, and with it lower employment in agriculture.

The average size of farms in 1985 (the year of the last agricultural census) was 64 hectares, a figure which had held more or less constant over the previous decade. The total area devoted to crops, livestock and mixed operations (agriculture/livestock) increased by about 28% since 1970, reaching 330 million hectares in 1985; livestock activities are responsible for some two-thirds of this figure. In 1985, some 3 million farm units with less than 10 hectares made up about 53% of the total number of rural establishments in the country, but accounted for only 4% of total arable area. The 50,000 or so establishments with more than 1,000 hectares comprise 0.86%

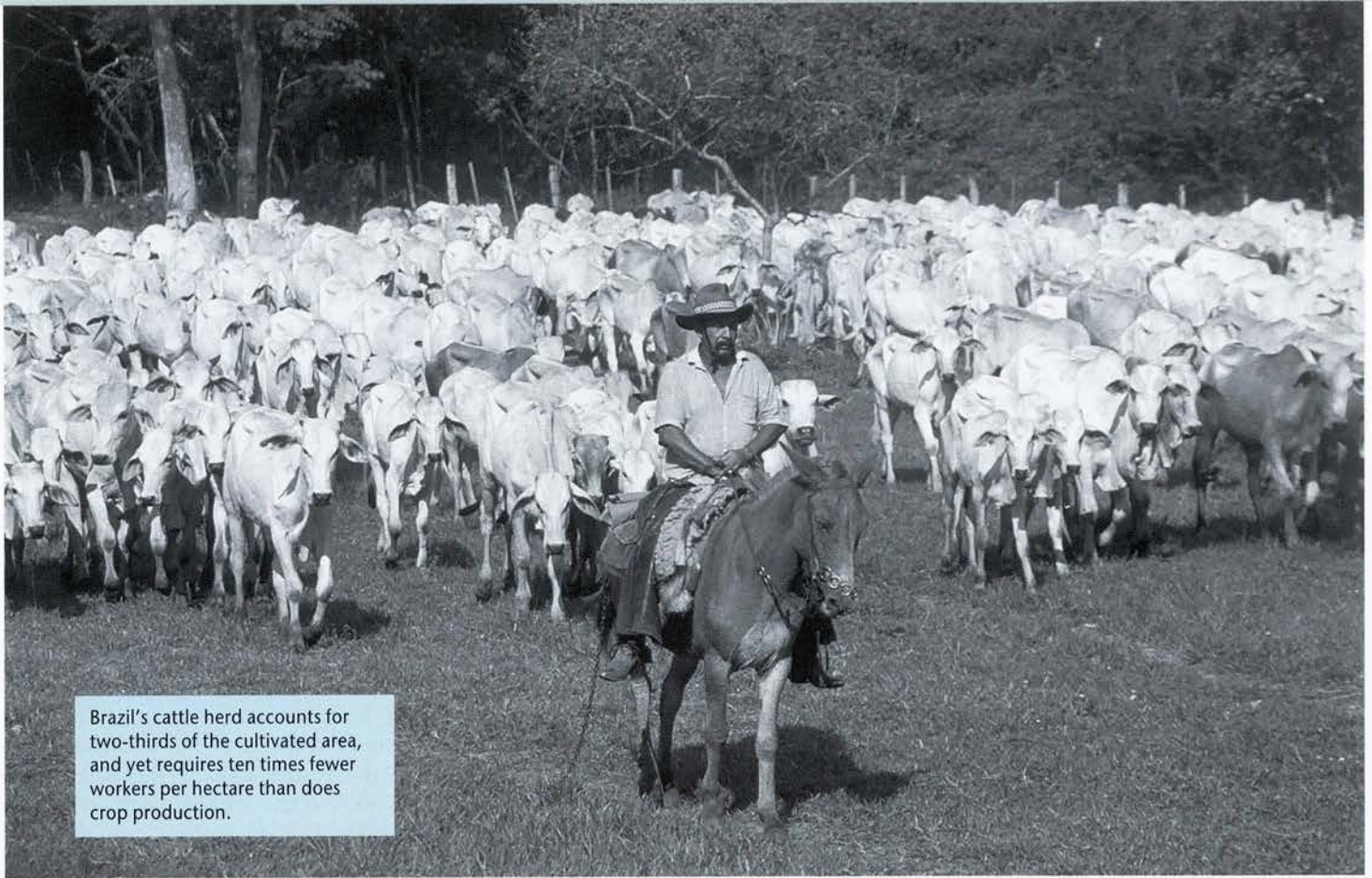
of the number of rural establishments and 44% of the total area.

But agricultural property in Brazil is not only concentrated; it is also to a large extent used inefficiently. Recent studies indicate that 70% of the area within properties larger than 1,000 hectares is not in production. This high concentration and low degree of land use are a continuous source of social tension. Unclear property rights reduce the incentives for investment, especially in improved pastures and other farm structures which cannot be removed. There are no threats to established and clearly productive farms but the growth of the landless movement, because of the rise in the number of displaced people in rural areas through the reduction in agricultural employment, and the support it receives from various urban groups (not least the Catholic church), may change matters.

The rate of migration from countryside to city has been high in Brazil. The population has more than doubled since 1960 – but the rural population, which in 1970 was an estimated 41 million, had declined to 36 million 21 years later, with the urban population increasing from an estimated 52 to 111 million in the same period. The agricultural sector was not affected as severely as the rest of the economy by the macro-economic instability experienced by Brazil in the 1980s and '90s: agricultural employment went from about 18 million in 1970 to 23 million in 1985, the year of the last census, but is estimated to have fallen since then. Also as a proportion of the workforce agricultural employment – 34% in 1971 – has declined by 1993 to an estimated 27%.

The move to the cities was influenced by the existence of cheap food policies, which discriminated against agriculture by depressing returns, and by the introduction of legislation that increased substantially the costs of labour,

Garry Smith is a member of staff of the Agricultural Trade and Markets Division of the OECD Directorate for Food, Agriculture and Fisheries.  
E-mail: agr.contact@oecd.org



Brazil's cattle herd accounts for two-thirds of the cultivated area, and yet requires ten times fewer workers per hectare than does crop production.

Carlos Humberto TDC/Contact Press Images

especially permanent workers. There are indications that migration to the urban centres has slowed down in more recent times.

## Towards Competitiveness

Economic reform, begun in the late 1980s, has accelerated with Brazil's membership of the Mercosur agreement, the South American common market implemented in 1995 (and comprising Argentina, Brazil, Paraguay and Uruguay). The transition to open markets in the agricultural sector in Brazil in particular has nonetheless been gradual in order to cushion any adverse impacts on small producers.

Until the mid-1980s, the Brazilian Minimum Price Programme (MPP), first implemented in 1943 with the creation of the Commission for Production Financing (CPF), was the cornerstone of Brazilian agricultural policy. At first, minimum prices were established for a specific group of commodities: rice, black beans, maize, peanuts,

soyabeans and sunflower seeds. Over the years, the programme widened its coverage to encompass about 40 other commodities and their by-products: ranging from farm products of national importance to regional items like guaraná and carnauba wax<sup>2</sup> (important crops for poverty-stricken areas) to ensure a minimum return to producers, and to poultry, pork and milk powder. (Sugar, coffee, wheat and cocoa, which together account for about a quarter of the value of total crop production, were outside the MPP and were administered separately by specialised agencies which operated as marketing boards.)

In the late 1980s and early '90s, several reforms were implemented in economic policy. Previously, the government had purchased a substantial amount of agricultural commodities within the operations of the MPP. But it gradually became evident that these practices were no longer affordable or desirable, with the result, in 1988, that agricultural policy began to be reformed.

The process began when the government created a stock-release price mechanism (PLE) establishing ceiling and floor prices for maize, rice, beans, wheat, beef and cotton. Public stocks were released when the market price was above the PLE. This system was created to reduce the risk premium required by the private sector to operate in a market where government interventions created an institutional risk, over and above the natural market risks. (The government had been in the habit of selling public stocks

without notice to traders, thus creating additional price risk. However, some analyses have suggested that the new procedure has created instability in prices received by farmers for some crops such as wheat and soyabeans.)

Other measures to deregulate agricultural markets were taken in the beginning of 1990, at the start of the administration of President Hernando Collor, the most important being the elimination of the marketing boards for sugar, coffee, cocoa and wheat. And although wheat remained in the minimum price programme, the subsidies directed at it were halted, along with the government monopoly on wheat imports.

After 1993, with the continuing budget difficulties, government resources to defend the price-band system were no longer available and the policy was discontinued. The government has announced another round of deregulation for the crop year 1996-97, including the phasing-out of minimum prices, which will henceforth be restricted to small farms, and the transfer of price-risk and price-management policies to options markets. For example, 'merchandise guaranteed certificates' are being established. These are issued by producers or co-operatives who will have a certain amount of a commodity available at harvest time. The certificate, which is traded in commodity exchanges, is supported by a bank which guarantees the quality and quantity of the merchandise to the purchaser, with the operation liquidated by actual delivery of the product.

1. Brazilian Agriculture: Recent Changes and Trade Prospects, OECD, Paris, forthcoming 1997, available free of charge from the Agricultural Trade and Markets Division of the OECD Directorate for Food, Agriculture and Fisheries.

2. Guaraná is a fruit of the Amazon region which is collected by the native Indians both for their own consumption and for sale as an additive in soft drinks produced in Brazil; carnauba wax is a regional product extracted from palm leaves for use in shoe polish and as a furniture wax.

# Towards Efficiency in Brazilian Agriculture

Recurrent public deficits have imposed severe restrictions on the allocation of funds to agriculture as well as to other sectors of the economy. During President Collor's administration, for example, from 1990 to 1993, agricultural expenditures were reduced by 50% in real terms, marketing loans among them.

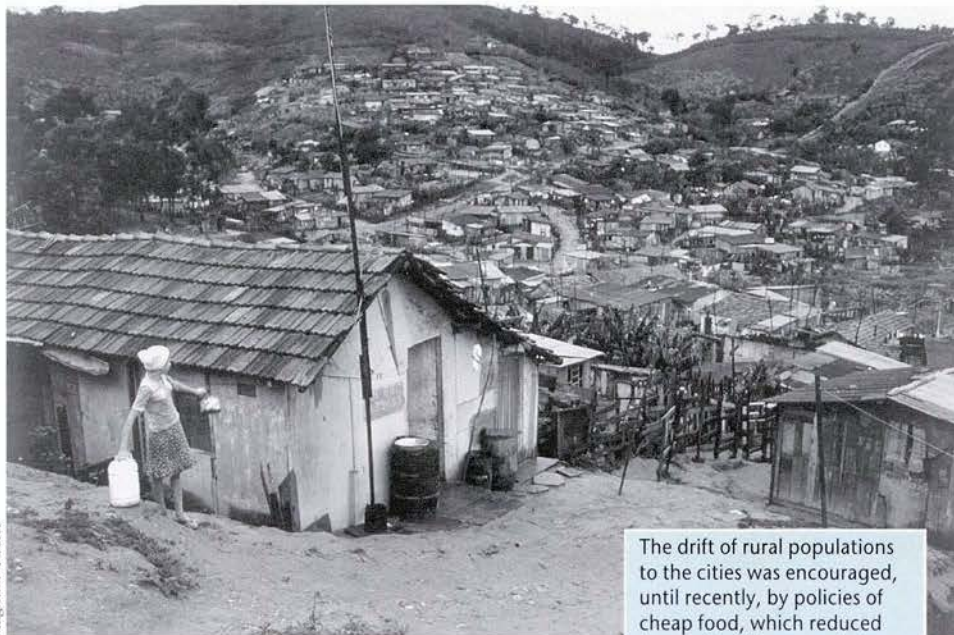
The Brazilian economy is now in the midst of an economic stabilisation programme, which began in 1994 and is known as the 'Real Plan' (named after the currency, the *real*). The aim is to implement fundamental macro-economic reforms (mostly reduction in public expenditures). Inflation has been reduced from a monthly 30–40% to 1–2%. But the tight supply of money has required high interest rates, which have hit farmers, many of whom are heavily indebted, particularly hard.

Uncertainty about the availability of funds has made the situation worse for many farmers. Farm credit from the federal government is declining: the Banco do Brasil (a state-owned commercial bank) can no longer provide cheap credit to the sector as it did in the past, thus limiting access to credit for the more than 60% of Brazilian farmers who require loans to be able to buy inputs. The system has effectively collapsed and demand for credit for agriculture is being met with *ad hoc*, annual measures.

The government's withdrawal from production, marketing and financing of agriculture is starting to attract the private sector to these activities. New private instruments to finance storage activities are being developed and a market in securities backed by commodities with certificates of deposit and warrants is being created. It is expected that the volume of production and marketing credit available in the future will be substantially influenced by these private initiatives.

## Trade Reforms

In addition to reforming domestic policy, Brazil has implemented trade reform, eliminating quantitative controls on agricultural exports in 1989 and virtually all non-tariff barriers,



Magnum Photos

The drift of rural populations to the cities was encouraged, until recently, by policies of cheap food, which reduced the profitability to agriculture.

throughout the economy, from the beginning of 1990, when a unilateral tariff change reduced the average tariff from 32% to 14% over three years. The average tariff in the reform was 20% and the rates ranged between 0 and 40%. Most manufactured goods, including capital goods, such as machinery, plant and equipment and the like, were included under the 20% import tariff. Import tariffs of 30% fell upon some chemical products, wheat, some food products and some durable consumer items such as televisions and video-recorders.

Following the change, agricultural commodities had tariffs ranging from 0% for cotton and edible beans, to a maximum of 10%, except for milk powder, where there was a tariff of 32%, imposed by Brazil after the loss of a GATT dispute panel on countervailing duties imposed against the European Union. In addition to crop products, Brazil implemented a tariff reduction on all livestock products in 1990. Tariffs on beef, poultry, pig and sheep meat were reduced from 15 to 10%, milk powder tariffs from 25 to 20%, and butter and cheese tariffs from 25 to 20%.

With the start of the Mercosur treaty in 1995, this process of tariff reduction moved even further. The final tariff schedule under the Common External Tariff of Mercosur ranged from 6 to 20%. These tariffs are low relative to the degree of protection that existed before and when compared to the other price distortions that existed for agricultural commodities.

One of the most significant developments for Brazilian farmers since the joining of Mercosur was the elimination of a state tax (referred to as ICMS, or Imposto sobre Circulação de Mercadorias e Serviços) on primary and semi-processed agricultural exports in 1996. The ICMS tax on exports varied from 5 to 13%, depending on the state and commodity. This tax was a major com-

ponent, along with an overvalued exchange rate, of what has come to be known as the 'Brazil Cost', the difficulty Brazilian agriculture faces in competing on world markets.

Indeed, the agricultural export sector in Brazil has been handicapped by being taxed, while value-added industries in general (textiles, shoes and car industries, for example) have been highly protected regardless of their international competitiveness. The elimination of the tax, equivalent to a 5% devaluation of the *real*, should provide immediate benefits to farmers producing commodities for export by lowering their costs and boosting demand from foreign buyers.

Less pervasive government intervention and the opening-up of the agricultural sector to trade is expected to direct resources from less competitive agricultural production activities (such as wheat production) to more efficient ones. For crops, this is likely to mean further expansion in production and exports of soyabeans – the major success of Brazilian agriculture which now accounts for about half of world soyameal trade and a third of the global soya-oil market. Brazil has long been one of the world's major producers of sugar, too, and in recent years has been the leading cane producer, with annual production of around 10 million tonnes. Export earnings from sugar have fallen over the last two decades as a result of an increasing allocation of sugar cane, amounting to about two-thirds of annual output, to the production of gasohol under the Proálcool programme, which was created to reduce Brazil's reliance and dependency on imported oil – but it is currently under review, since it involves large government subsidies.

Traditional export commodities such as coffee and cocoa have become less and less important

# Confidence Indicators

Teresa Santero and Niels Westerlund

as a source of export revenue in recent years, although coffee prices have increased recently. In contrast, the value of exports of soyabeans and orange juice have gone up substantially, with soyabeans more than doubling and orange juice growing by a factor of 15. These commodities, together with livestock products, mainly poultry, pork and frozen, cooked and corned beef, accounted for about 15% of export revenue in the period 1991–95 and are important items in the trade with OECD countries, principally the United States and the European Union.

Wheat is the single most important agricultural commodity imported by Brazil. Although trade has fluctuated in past years, imports of wheat are on the rise again, and currently average around 5.5 million tonnes. Imports of rice and maize have increased between 1991 and 1995. Brazil has also become a sizable market for milk and dairy products, with imports growing steadily over the same period, the major suppliers being the European Union and the Mercosur countries. Because of the traditional shortage during the off-season (from July to December), Brazil imports beef from neighbouring Mercosur countries and some European countries in this period to help stabilise domestic prices.

■ ■

With a more open economy in the 1990s, and with the creation of Mercosur, the Brazilian agricultural sector is becoming more closely aligned with world markets. This development, together with a move to less government intervention, is giving impetus to the modernisation of Brazilian agriculture. Provided the reform process continues on track and needed investment to improve infrastructure and productivity in some sectors takes place, Brazil can be expected to play an even larger role in world agricultural markets in the next century. ■

*Judgements on the cyclical position of the economy – and its likely evolution – are important inputs into economic policy-making. Acquiring the information to allow an evaluation of economic circumstances, both current and future, is thus an important challenge for economists. ‘Confidence indicators’, obtained from readily available surveys conducted among consumers and business managers in most countries, offer some help.<sup>1</sup>*

**H**ow the economy is likely to behave can be forecast only on the basis, obviously enough, of past and current data. But assessment even of the current economic situation is often made difficult by the delays in obtaining many crucial economic indicators, like the growth in domestic consumption or investment, the rate of unemployment or the evolution of public consumption or public investment.

By way of compensation, indicators of the confidence of consumers and businesses – in the form, for example, of consumers' expectations of (un)employment, of the intentions of business to revise production plans or change the number of employees, of expected new orders, and so on, all information which is readily obtained from simple and rapid surveys – are widely used as substitutes. These confidence indicators are useful in assessing the position of the economy in the economic cycle, that is, in telling at what stage is the economy in the periodical succession of expansions and con-

tractions of output growth experienced by all industrialised countries, and how close it is to a shift in that trend. They are useful also in forecasting aggregate output.

Confidence measures often play a prominent role in assessments of conjunctural developments because they summarise the opinions of the main agents involved in taking economic decisions – consumers and business managers – on their current and future economic conditions. But the subjective nature of confidence raises questions about the solidity of conclusions based on them. In theory, confidence does not play a major role in the analysis of economic behaviour; and in practice it cannot be observed or measured directly. Any evaluation of confidence must therefore rely on indicators which are often partial, qualitative and subject to various interpretations.

Surveys capturing judgements on past, current and expected economic developments give analysts of the business cycle information they can use as proxies for confidence. This involves a

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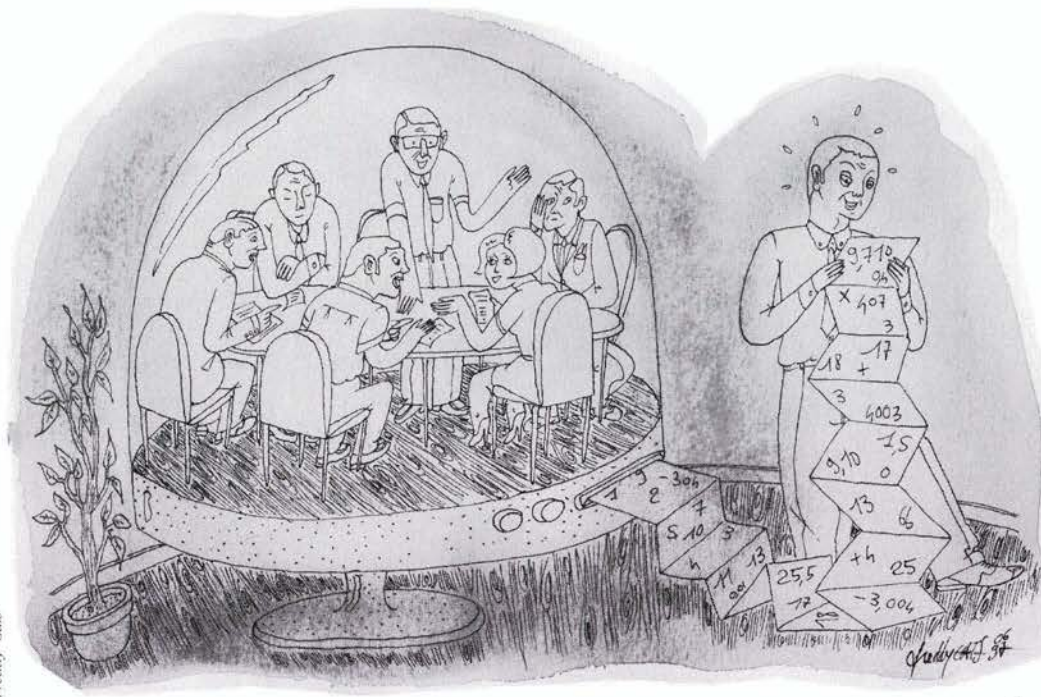
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Teresa Santero and Niels Westerlund are economists in the Policies Studies Branch of the OECD Economics Department.

E-mail: [eco.contact@oecd.org](mailto:eco.contact@oecd.org)



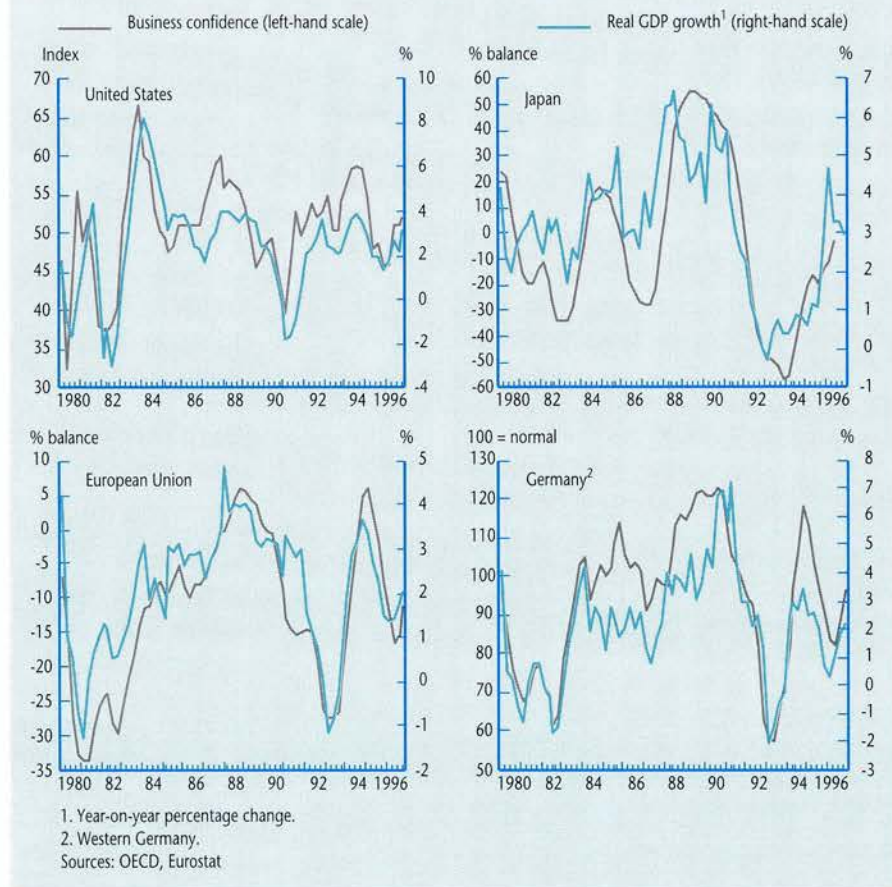
What, empirically, do the numbers reveal? There are four possibilities: confidence indicators may move ahead of changes in economic variables, may be fully coincident with their movements, may follow them with some delay, or may be completely unrelated. For example, the general opinion of consumers may be expressing deep concern about the condition of the economy some way ahead of the time when activity is starting to show signs of slowing down or deteriorating; they may express pessimism only when growth in output has already started to slow down and unemployment to increase; their confidence may wane only after the general economy has deteriorated consider-

presumption that before a specific business activity is undertaken, an opinion has been formed and can therefore, to some extent, be measured and labelled as 'sentiment', 'expectations' or 'confidence'. Surveys of business and consumer sentiment contain a small number of questions, generally of a qualitative nature, which can be answered quickly by managers and households. Questions are generally formulated as multiple choice, requesting answers of the type 'up', 'same' or 'down', 'improve', 'unchanged' or 'worsen', and so on. The replies convey judgement on recent trends, on the current situation and on expectations of near-term developments in a range of variables.

Survey results for each question involve a figure for each qualitative answer, reflecting the frequency distribution of answers expressed by respondents. The resulting data are normally compiled as 'balances' by subtracting the number answering 'no' (or 'worsen') from the number answering 'yes' (or 'improve'). This procedure allows the presentation of a single figure as a

summary of responses to each question and representation of changes in those responses over time by a single time-series.<sup>2</sup>

Figure 1  
Business Confidence and Aggregate Real Output, 1980-96

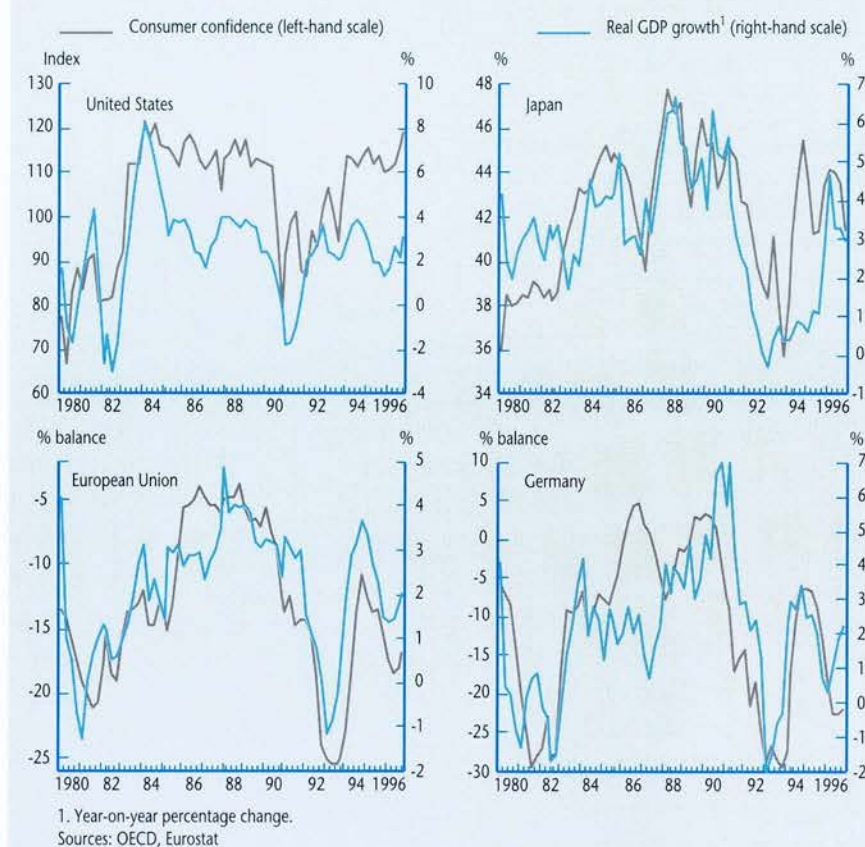


2. Polling institutes generally present balances over long periods, omitting the percentage of 'no change' replies, which implies a loss of information about the degree of uncertainty of economic agents.

3. The first release of GDP data occurs in the United States and the United Kingdom towards the end of the first month following the quarter. In Canada, France, Germany and Japan, the lag is around two months, while in most other countries publication delays vary between three and six months. Moreover, surveys often provide information on aspects of economic developments where genuine statistics do not exist: business inventories and major spending intentions of households, for example. They may therefore give a more highly detailed picture of how changes in the business cycle are transmitted through the economy.



Figure 2  
Consumer Confidence and Aggregate Real Output, 1980–96



ably and unemployment is already very high; or their general opinion may not reflect at all things going on in the economy.

Confidence indicators are obviously most useful for analysis and forecasting when they lead cyclical economic movements. But if they merely coincide with, or even follow, economic developments, they may still be helpful since they are generally available sooner than 'hard' economic data – confirmed measures of production, employment, consumption and so on. Indeed, by far the most important advantage of confidence measures is speed. In most countries it takes less than a month to process the information, whereas 'hard' data are often not only released with delays of two to three months or more but are also subject to subsequent revisions.<sup>3</sup>

## What Information Content?

A careful analysis of the relationship between confidence indicators and variables summarising

economic performance, like output growth, investment or consumption, sheds some light on the extent to which confidence figures can be trusted as instruments for assessment of current and future performance. Indicators of the business climate track quite well the general trend of real GDP; large and rapid changes in confidence, whether at the turning-points of the economic cycle or during periods of economic expansion or recession, are likewise consistently associated with similarly strong movements in output (Figure 1).

Yet simple statistical correlation analysis suggests that the time-sequence of these relationships varies widely across countries and across time within countries. General rules for all countries cannot therefore be formulated about the information contained in business confidence indicators or whether they can be used to forecast output. As a result, the relationship between confidence indicators and economic variables should be examined in each country, and analysts should be aware that it may not be stable through time. Small variations in confidence, by contrast, are not generally found to have an echo

in movements of aggregate output. The relationship to other economic variables closely reflecting decision-making by enterprises, like real business investment, shows similar characteristics. More sophisticated statistical analysis confirms that business-confidence indicators contain, in general, useful information for projections of real GDP and real business investment.

Consumer-confidence indicators likewise appear to provide a good picture of major cyclical swings in aggregate output and in real private consumption, which is the concrete expression of consumers' decision-making (Figure 2). When large changes in business confidence are observed, indicators of consumer sentiment may help detect substantial changes in output and growth of real consumption, although in general they fail to track small swings in those variables and to show a consistent sequential behaviour. The statistical relationship between consumer-sentiment indicators and economic variables nonetheless appears weaker and less reliable than that of business-confidence indicators to the same variables, which suggests that consumers are more sensitive than business managers to events unrelated to business-cycle fluctuations (as, for example, the weather, elections, political scandals, important sports events, new discoveries, epidemic diseases and so on). As a result, consumer-confidence indicators are less useful for short-term forecasting purposes.

## Turning-points in the Business Cycle

Cyclical turning-points are notoriously difficult to predict even with the help of sophisticated econometric models. Can, therefore, confidence indicators provide an 'early warning' of such changes in the economy? To answer that question, business-cycle phases (upturns and downturns) have first to be identified and dated. One way to this end is to track the fluctuations in economic activity around its long-term trend or 'potential' position, and to associate peaks and troughs of the cycle with maximum and minimum deviations from trend. This method of dating the business cycle has some advantages over

# Confidence Indicators

## FOCUS

### The Questions in Business and Consumer Surveys

Business and consumer surveys are conducted in different ways across countries and vary in detail, but there are common features.

Business surveys typically cover managers' judgements on the following points:

- production and employment (past and future)
- order inflows and stocks (foreign and domestic)
- inventories of finished goods and raw material
- expected developments in prices
- the general economic situation of the country (past and future)
- limits on production
- sufficiency of current production capacity
- export expectations
- current capacity in use.

In consumer surveys, households are normally asked about:

- their financial situation (past and future)
- the general economic situation of the country (past and future)
- cost of living trends (past and future)
- major purchase intentions (sometimes specifically on buying cars, acquisition of real estate, and renovation of their residence)
- unemployment prospects
- developments in prices
- savings intentions.

other approaches. It corresponds, at least conceptually, to business managers' perceptions of what constitutes normal business conditions (trend growth of output) and deviations from them (from trend output). Moreover, the use of the ratio or deviation from trend instead of that of simple variations in real GDP enables comparisons to be made across countries which have different trend rates of growth.

Both business- and consumer-confidence indicators indeed track turning-points of major cycles well. But the lead patterns vary considerably over time and across countries making it difficult to use sentiment indicators mechanically to predict the turn-around of the cycle. It also appears that upper turning-points (peaks) are more accurately determined by business and consumer surveys than lower ones (troughs). The turning-points of minor cycles, by contrast, do not seem to be well reflected in confidence data.



Empirical evidence confirms the usefulness of measures of business sentiment in providing information about the economic situation and for the purposes of prediction. In particular, large changes in confidence appear to signal a sizable concurrent or future change in output growth relative to trend. Indeed, a noteworthy change in growth is unlikely to be sustained if not rapidly accompanied by a large change in confidence. But business indicators, which in most countries contain relevant information for the prediction of output and real investment, tend to perform better than those of consumer confidence, which may be more easily affected by factors unrelated to near-term business-cycle fluctuations and are rarely found to contain any relevant information for the prediction of output or real consumption.

The empirical evidence further warns that indicators convey different information and have a different time-relationship with economic variables in each country. As a result, the information

contained in sentiment indicators and its relevance in the analysis of business cycles can hardly be generalised. The most appropriate use of these indicators for economic analysis thus has to be explored country by country. ■



Freddy Gats

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## Spotlight

# Hungary

## Progress in Structural Reform

Andrew Burns and Giancarlo Perasso

Recent policy initiatives in Hungary have gone a long way to establishing the necessary conditions for rapid growth and future economic prosperity.<sup>1</sup> A massive programme of privatisation has transferred an unprecedented share of economic activity from the state to the private sector, with the revenues being used to reduce the government's external debt. Substantial foreign investment has helped firms based in Hungary to penetrate western export markets, and the success of these firms has in turn served to attract more foreign investment. After years of being burdened by bad loans, the banking sector has been cleaned up. Increasingly, the economy responds to market rather than bureaucratic signals and competitive pressures are ensuring that efficiency gains are passed on to consumers in the form of lower prices and wider choice.

The accelerated privatisation programme was initiated as part of the stabilisation package put into effect in March 1995 and resulted in the sell-off of about \$4 billion (almost 9% of GDP) in state assets in 1995 alone (Table). Two-thirds of GDP is now estimated to originate in the private sector. The privatisation process itself was conducted by the Privatisation and State Holding Company (APV), which was created in May 1995 by merging the agency in charge of privatisation and the one charged with managing state assets in an effort to improve the speed, credibility and transparency of privatisation. Although

at times marred by controversy, the APV has gone ahead with its programme rapidly and relatively free of charges of arbitrariness. Unlike other countries in the region, Hungary did not pursue mass-privatisation schemes but rather sold assets to strategic investors, without discriminating between domestic and foreign investors. As a result it now benefits from a clearly defined ownership structure. Foreign participation has resulted in access to western markets for Hungarian-based firms. Domestic partners and the economy in general are benefiting from substantial transfers of technological and marketing expertise.

Privatisation was not restricted to manufacturing firms. The national telecom company was completely privatised, as were gas distribution companies and most banks. The extent of private ownership of utilities is now among the highest in the OECD. Minority stakes in the electrical distribution sector were also sold, and further privatisation is planned. The government nevertheless retains important minority stakes in a wide range of companies as well as golden shares or permanent positions in a number of 'strategic companies' – the strategic purpose of which is not always clear.

Now that the bulk of privatisation is completed, the role of the APV will have to change. Its role as a manager of state assets should be wound up and transformed into a 'treasury' function. But its record as a 'holding' company is mixed. It has frequently shown a laudable willingness to allow small, uneconomic firms in its portfolio be liquidated, but it has tended to treat larger enterprises on a case-by-case basis in an apparent effort to avoid large-scale redundancies. No matter how the government decides to

manage its remaining assets, business decisions should be made as free as possible of political considerations.

The most important long-term objective of any privatisation programme is to increase the efficiency of the economy. The competitive market and clear corporate-governance structure that are emerging from the Hungarian privatisation will help to ensure that market forces lower costs, which are then passed on to consumers as lower prices. The role of the state in this new private economy is to protect against anti-competitive behaviour and to regulate natural monopolies. Although an efficient regulatory framework is in place, it has not always been implemented consistently. In the case of telephone tariffs, for example, firms were allowed to increase prices by the full amount of inflation even though the legislation allowed for smaller increases because of efficiency provisions. In contrast, in the energy sector, the government reduced to 18% the original rate increase of 32% by excluding from the calculation a wide range of eligible costs that had been allowed by the regulatory authority. A coherent and consistently applied regulatory framework in these and other sectors is necessary to the long-term development of the economy.

### The Financial Sector

As the privatisation process draws to a close, the direct role of the state in the economy will diminish and the importance of market agents, like private debtors and creditors, stockholders and banks will increase. Recent efforts to strengthen the health of the banking sector were therefore a critical component of the programme of structural reforms. In the past, inefficient firms were protected from bankruptcy by soft loans from state-controlled banks (under the old regime, banks allocated funds according to central directives and played no active role). When a two-tier banking system was established in

1. *OECD Economic Surveys: Hungary*, OECD Publications, Paris, 1997.

1987, banks could not afford to write-off loans and were unwilling to deny additional credits to uneconomic firms for fear of forcing them into bankruptcy and possibly facing bankruptcy themselves. Firms were thereby able to avoid necessary restructuring and both their and the banks' underlying positions steadily worsened. These non-performing loans were so much a part of the economy that, despite several attempts to re-capitalise and sanitise the banks' accounts, in 1993 an independent audit determined that three of the five largest banks were technically insolvent.

In 1993, the government recapitalised the banking system by enlarging its equity position in some banks, and by providing subordinated loans to smaller ones. In 1994, the authorities implemented a final programme for coping with banks' bad debts, the so-called 'debt-reconciliation' (or 'debt consolidation') programme. The cleaning-up was impressive. Banks identified and separated bad loans from good, either selling the bad loans at a discount, reaching an agreement with other creditors, or simply writing them off. The programme had more or less been successfully completed by June 1995. Between 1994 and mid-1996, they had disposed of bad debts equivalent to 11% of their total assets, and by the end of 1996, about 90% of bank loans were classified as 'problem free' and all Hungarian banks had capital-asset ratios in excess of 8%.

This clean-up paved the way for privatisation, and about two-thirds of the share capital of the banking system is now privately held. Foreign investors are the majority shareholders in some of the largest banks in the country and they hold almost half of the capital. The Hungarian banking system is now probably the healthiest and the most completely privatised in the region.

In spite of this very substantial improvement, a number of concerns remain. Real bank lending has declined noticeably in the past two years (although there are some recent signs of a pick-up), collateral requirements are very high (as much as three times the value of the loan the

enterprise applies for) and the interest-rate spread (the difference between the rates banks charge on loans and pay on deposits) remains disturbingly wide, implying a lack of competition. To some extent, prudence in lending stems from banks' recent experience with bad loans and macro-economic uncertainty – especially about inflation. It may also reflect inexperience on the part of the bank staff in evaluating loan applications and unfamiliarity on the part of management with newly established enterprises. The excessive collateral requirements stem from an underdeveloped mortgage-market and poor maintenance of the property registry – transactions often take as much as three months before being registered and, as a result, multiple sales of the same property are not unknown. To some extent, these problems are likely to be temporary in nature.

Competition within the banking sector is intensifying. Consequently, the interest rate spread is narrowing and banks, which have hitherto restricted loans to 'blue chip' enterprises (mostly firms with foreign participation) and concentrated their funds in less risky investments such as government bonds, are increasingly looking to expanding their lending activities. As their experience with the new environment grows and their staffs acquire the skills necessary to evaluate risk efficiently, credit should become increasingly available to other firms. Lending to individuals will probably remain constrained by problems with the property registry and legal restrictions on banks exercising their collateral rights. Recent legislation on mortgages, which could increase individuals' access to seed capital, may allow this sector to expand as well.

Structural change has been both aided by and reflected in the expansion of foreign trade and

foreign direct investment (FDI) over the past several years. Even under Communism, Hungary was a relatively open economy but it opened up even further after transition started. Trade with other OECD countries has doubled since 1990 and now accounts for over 70% of both exports and imports. FDI, in the form both of privatisation and of 'greenfield' investment, made a substantial contribution to this process.

Apart from the temporary surcharge on imports that was abolished as of 1 July 1997, tariff rates have been falling and Hungarian firms are more and more exposed to international competition. There are nonetheless a number of non-tariff barriers still in place, the most important being the 'global quota' on selected consumer goods and restrictions on imports of new and used cars. Although the number of goods covered by the quota has been reduced in recent years, the selectivity of the products still covered suggests that it is being used as an instrument of industrial policy. The government will eventually be obliged to remove import quotas as part of Hungary's accession to the European Union, although more rapid action would be welcome.

The progress made in structural reform over the past two years has placed Hungary in a position where the country should be able to exploit the benefits of a competitive, enterprise-based economy. Provided the remaining 'grey areas' in structural reform (including tax evasion and the underground economy) are tackled effectively, and labour-market reforms (such as the reform of payroll taxes, employment-protection legislation, and labour-supply reduction programmes) are undertaken to prevent unemployment from becoming structural, the economy can look forward to a relatively rapid convergence towards western European standards of development. ■

Table  
Privatisation Revenues  
million dollars

|                                | 1993         | 1994         | 1995         | 1996         | Total        |
|--------------------------------|--------------|--------------|--------------|--------------|--------------|
| Cash:                          |              |              |              |              |              |
| Foreign currency               | 1,203        | 105          | 3,274        | 597          | 5,179        |
| Forints                        | 250          | 337          | 282          | 260          | 1,128        |
| Privatisation loans in forints | 236          | 279          | 32           | 15           | 562          |
| Privatisation loans in forex   | 0            | 160          | 0            | 0            | 160          |
| Compensation coupons           | 159          | 611          | 240          | 262          | 1,272        |
| <b>Total</b>                   | <b>1,847</b> | <b>1,491</b> | <b>3,827</b> | <b>1,135</b> | <b>8,301</b> |


Source: Privatisation and State Holding Company, Budapest

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# Indicators




**AUSTRALIA**

|                        | period  | % change from previous |                       |
|------------------------|---------|------------------------|-----------------------|
|                        |         | period                 | year                  |
| Gross Domestic Product | Q1 97   | 0.9                    | 3.0                   |
| Leading Indicator      | May 97  | 0.8                    | 4.2                   |
| Consumer Price Index   | Q1 97   | 0.2                    | 1.3                   |
|                        |         | current period         | same period last year |
| Current Balance        |         | ..                     | ..                    |
| Unemployment Rate      | Apr. 97 | 8.8                    | 8.8                   |
| Interest Rate          | May 97  | 5.63                   | 7.54                  |



**AUSTRIA**

|                        | period  | % change from previous |                       |
|------------------------|---------|------------------------|-----------------------|
|                        |         | period                 | year                  |
| Gross Domestic Product | Q4 95   | 0.0                    | -0.3                  |
| Leading Indicator      | Dec. 96 | 0.1                    | 5.5                   |
| Consumer Price Index   | May 97  | 0.3                    | 2.2                   |
|                        |         | current period         | same period last year |
| Current Balance        | Apr. 97 | -0.28                  | -1.20                 |
| Unemployment Rate      | Apr. 97 | 4.4                    | 4.4                   |
| Interest Rate          | May 97  | 3.43                   | 3.21                  |



**BELGIUM**


|                        | period  | % change from previous |                       |
|------------------------|---------|------------------------|-----------------------|
|                        |         | period                 | year                  |
| Gross Domestic Product | Q4 96   | 0.3                    | 1.7                   |
| Leading Indicator      | May 97  | 0.0                    | 8.0                   |
| Consumer Price Index   | Jun. 97 | 0.2                    | 1.7                   |
|                        |         | current period         | same period last year |
| Current Balance        | Q1 97   | 3.67                   | 3.90                  |
| Unemployment Rate      | Apr. 97 | 9.6                    | 9.9                   |
| Interest Rate          | May 97  | 3.20                   | 3.22                  |



**CANADA**


|                        | period  | % change from previous |                       |
|------------------------|---------|------------------------|-----------------------|
|                        |         | period                 | year                  |
| Gross Domestic Product | Q1 97   | 0.8                    | 2.8                   |
| Leading Indicator      | Apr. 97 | 0.2                    | 10.3                  |
| Consumer Price Index   | May 97  | 0.1                    | 1.5                   |
|                        |         | current period         | same period last year |
| Current Balance        | Q1 97   | -3.08                  | -2.20                 |
| Unemployment Rate      | May 97  | 9.5                    | 9.4                   |
| Interest Rate          | Jun. 97 | 3.22                   | 4.83                  |

**Definitions and Notes**  
**Gross Domestic Product:** Volume series, seasonally adjusted except for Czech Republic and Portugal  
**Leading Indicator:** A composite indicator, based on other indicators of economic activity (employment, sales, income, etc.), which signals cyclical movements in industrial production from six to nine months in advance  
**Consumer Price Index:** Measures changes in average retail prices of a fixed basket of goods and services  
**Current Balance:** \$ billion; not seasonally adjusted except for Australia, the United Kingdom and the United States  
**Unemployment Rate:** % of civilian labour force – standardised unemployment rate; national definitions for Czech Republic, Iceland, Korea, Mexico, Poland, Switzerland and Turkey; seasonally adjusted apart from Turkey  
**Interest Rate:** Three months, except for Greece (twelve months)  
 .. not available  
**Source:** Main Economic Indicators, OECD Publications, Paris, July 1997.




**CZECH REPUBLIC**

|                        | period  | % change from previous |                       |
|------------------------|---------|------------------------|-----------------------|
|                        |         | period                 | year                  |
| Gross Domestic Product | Q4 96   | -3.0                   | 4.7                   |
| Leading Indicator      |         | ..                     | ..                    |
| Consumer Price Index   | May 97  | 0.2                    | 6.3                   |
|                        |         | current period         | same period last year |
| Current Balance        | Q1 97   | -1.07                  | -0.54                 |
| Unemployment Rate      | May 97  | 4.1                    | 2.9                   |
| Interest Rate          | Jun. 97 | 25.67                  | 12.17                 |




**DENMARK**

|                        | period  | % change from previous |                       |
|------------------------|---------|------------------------|-----------------------|
|                        |         | period                 | year                  |
| Gross Domestic Product | Q4 96   | 0.4                    | 3.3                   |
| Leading Indicator      | Apr. 97 | 3.3                    | 10.2                  |
| Consumer Price Index   | May 97  | 0.7                    | 2.0                   |
|                        |         | current period         | same period last year |
| Current Balance        | Q1 97   | 0.93                   | 1.45                  |
| Unemployment Rate      | Apr. 97 | 6.3                    | 7.2                   |
| Interest Rate          | May 97  | 3.60                   | 3.90                  |



**FINLAND**

|                        | period  | % change from previous |                       |
|------------------------|---------|------------------------|-----------------------|
|                        |         | period                 | year                  |
| Gross Domestic Product | Q1 97   | 0.1                    | 4.0                   |
| Leading Indicator      | Jan. 97 | 1.0                    | 13.8                  |
| Consumer Price Index   | May 97  | 0.2                    | 1.0                   |
|                        |         | current period         | same period last year |
| Current Balance        | Apr. 97 | 0.25                   | -0.01                 |
| Unemployment Rate      | Apr. 97 | 15.9                   | 15.5                  |
| Interest Rate          | May 97  | 3.08                   | 3.76                  |



**FRANCE**

|                        | period  | % change from previous |                       |
|------------------------|---------|------------------------|-----------------------|
|                        |         | period                 | year                  |
| Gross Domestic Product | Q1 97   | 0.2                    | 1.0                   |
| Leading Indicator      | May 97  | -0.1                   | 2.0                   |
| Consumer Price Index   | May 97  | 0.2                    | 0.9                   |
|                        |         | current period         | same period last year |
| Current Balance        | Mar. 97 | 2.61                   | 1.17                  |
| Unemployment Rate      | Apr. 97 | 12.5                   | 12.3                  |
| Interest Rate          | May 97  | 3.48                   | 3.90                  |




**GERMANY**

|                        | period  | % change from previous |                       |
|------------------------|---------|------------------------|-----------------------|
|                        |         | period                 | year                  |
| Gross Domestic Product | Q1 97   | 0.4                    | 2.8                   |
| Leading Indicator      | May 97  | 0.0                    | 8.0                   |
| Consumer Price Index   | May 97  | 0.4                    | 1.6                   |
|                        |         | current period         | same period last year |
| Current Balance        | Mar. 97 | 1.37                   | 1.33                  |
| Unemployment Rate      | Apr. 97 | 9.6                    | 8.9                   |
| Interest Rate          | May 97  | 3.17                   | 3.29                  |



**GREECE**

|                        | period  | % change from previous |                       |
|------------------------|---------|------------------------|-----------------------|
|                        |         | period                 | year                  |
| Gross Domestic Product | 1995    | ..                     | 2.0                   |
| Leading Indicator      | May 97  | 0.5                    | 5.3                   |
| Consumer Price Index   | May 97  | 0.4                    | 5.4                   |
|                        |         | current period         | same period last year |
| Current Balance        | Feb. 97 | -0.85                  | -0.69                 |
| Unemployment Rate      |         | ..                     | ..                    |
| Interest Rate          | Jun. 97 | 9.60                   | 13.30                 |




**HUNGARY**

|                        | period  | % change from previous |                       |
|------------------------|---------|------------------------|-----------------------|
|                        |         | period                 | year                  |
| Gross Domestic Product |         | ..                     | ..                    |
| Leading Indicator      |         | ..                     | ..                    |
| Consumer Price Index   | May 97  | 1.3                    | 17.7                  |
|                        |         | current period         | same period last year |
| Current Balance        |         | ..                     | ..                    |
| Unemployment Rate      |         | ..                     | ..                    |
| Interest Rate          | Apr. 97 | 20.80                  | 24.10                 |



**ICELAND**

|                        | period  | % change from previous |                       |
|------------------------|---------|------------------------|-----------------------|
|                        |         | period                 | year                  |
| Gross Domestic Product | 1995    | ..                     | 1.2                   |
| Leading Indicator      |         | ..                     | ..                    |
| Consumer Price Index   | Jun. 97 | 0.2                    | 1.8                   |
|                        |         | current period         | same period last year |
| Current Balance        | Q1 97   | -0.02                  | 0.00                  |
| Unemployment Rate      | May 97  | 4.2                    | 4.5                   |
| Interest Rate          | Jun. 97 | 7.00                   | 6.50                  |




**IRELAND**

|                        | period  | % change from previous |                       |
|------------------------|---------|------------------------|-----------------------|
|                        |         | period                 | year                  |
| Gross Domestic Product | 1995    | ..                     | 10.7                  |
| Leading Indicator      | May 97  | 2.2                    | 17.4                  |
| Consumer Price Index   | May 97  | 0.2                    | 1.5                   |
|                        |         | current period         | same period last year |
| Current Balance        | Q4 96   | 0.75                   | 0.56                  |
| Unemployment Rate      | Apr. 97 | 10.9                   | 11.9                  |
| Interest Rate          | May 97  | 6.20                   | 5.13                  |




**ITALY**


|                        | period  | % change from previous |                       |
|------------------------|---------|------------------------|-----------------------|
|                        |         | period                 | year                  |
| Gross Domestic Product | Q4 96   | -0.2                   | 0.1                   |
| Leading Indicator      | Apr. 97 | -0.1                   | 4.1                   |
| Consumer Price Index   | May 97  | 0.3                    | 1.6                   |
|                        |         | current period         | same period last year |
| Current Balance        | Dec. 96 | 1.36                   | 1.77                  |
| Unemployment Rate      | Jan. 97 | 12.2                   | 11.9                  |
| Interest Rate          | May 97  | 6.83                   | 8.92                  |



| JAPAN                  |         |                        |                       |
|------------------------|---------|------------------------|-----------------------|
|                        | period  | % change from previous |                       |
|                        |         | period                 | year                  |
| Gross Domestic Product | Q1 97   | 1.6                    | 2.6                   |
| Leading Indicator      | May 97  | -0.4                   | 1.0                   |
| Consumer Price Index   | May 97  | 0.2                    | 1.9                   |
|                        |         | current period         | same period last year |
| Current Balance        | Apr. 97 | 8.70                   | 5.27                  |
| Unemployment Rate      | May 97  | 3.6                    | 3.5                   |
| Interest Rate          | May 97  | 0.58                   | 0.64                  |




| KOREA                  |         |                        |                       |
|------------------------|---------|------------------------|-----------------------|
|                        | period  | % change from previous |                       |
|                        |         | period                 | year                  |
| Gross Domestic Product | Q4 96   | 0.8                    | 7.3                   |
| Leading Indicator      |         | ..                     | ..                    |
| Consumer Price Index   | Apr. 97 | 0.4                    | 3.8                   |
|                        |         | current period         | same period last year |
| Current Balance        | Apr. 97 | -1.71                  | -2.36                 |
| Unemployment Rate      | Apr. 97 | 2.7                    | 1.9                   |
| Interest Rate          | May 97  | 12.80                  | 10.90                 |




| LUXEMBOURG             |         |                        |                       |
|------------------------|---------|------------------------|-----------------------|
|                        | period  | % change from previous |                       |
|                        |         | period                 | year                  |
| Gross Domestic Product | 1995    |                        | 3.8                   |
| Leading Indicator      | May 97  | 0.1                    | 13.1                  |
| Consumer Price Index   | May 97  | 0.1                    | 1.1                   |
|                        |         | current period         | same period last year |
| Current Balance        |         | ..                     | ..                    |
| Unemployment Rate      | Apr. 97 | 3.7                    | 3.2                   |
| Interest Rate          |         | ..                     | ..                    |




| MEXICO                 |        |                        |                       |
|------------------------|--------|------------------------|-----------------------|
|                        | period | % change from previous |                       |
|                        |        | period                 | year                  |
| Gross Domestic Product | Q1 97  | 0.8                    | 5.1                   |
| Leading Indicator      | May 97 | 1.4                    | 4.4                   |
| Consumer Price Index   | May 97 | 0.9                    | 21.2                  |
|                        |        | current period         | same period last year |
| Current Balance        | Q1 97  | -0.41                  | 0.05                  |
| Unemployment Rate      | May 97 | 3.9                    | 5.4                   |
| Interest Rate          | May 97 | 20.59                  | 31.07                 |




| NETHERLANDS            |         |                        |                       |
|------------------------|---------|------------------------|-----------------------|
|                        | period  | % change from previous |                       |
|                        |         | period                 | year                  |
| Gross Domestic Product | Q1 97   | -0.6                   | 2.1                   |
| Leading Indicator      | May 97  | 0.5                    | 4.1                   |
| Consumer Price Index   | May 97  | 0.3                    | 2.2                   |
|                        |         | current period         | same period last year |
| Current Balance        | Q4 96   | 7.08                   | 6.86                  |
| Unemployment Rate      | Mar. 97 | 5.5                    | 6.5                   |
| Interest Rate          | Jun. 97 | 3.23                   | 2.90                  |




| NEW ZEALAND            |        |                        |                       |
|------------------------|--------|------------------------|-----------------------|
|                        | period | % change from previous |                       |
|                        |        | period                 | year                  |
| Gross Domestic Product | Q1 97  | -0.9                   | 1.2                   |
| Leading Indicator      |        | ..                     | ..                    |
| Consumer Price Index   | Q1 97  | -0.3                   | 1.8                   |
|                        |        | current period         | same period last year |
| Current Balance        | Q4 96  | -0.91                  | -0.65                 |
| Unemployment Rate      | Q4 96  | 5.9                    | 6.1                   |
| Interest Rate          | May 97 | 7.02                   | 9.82                  |




| NORWAY                 |         |                        |                       |
|------------------------|---------|------------------------|-----------------------|
|                        | period  | % change from previous |                       |
|                        |         | period                 | year                  |
| Gross Domestic Product | Q1 97   | -0.7                   | 0.5                   |
| Leading Indicator      | Apr. 97 | -0.5                   | 4.9                   |
| Consumer Price Index   | May 97  | 0.3                    | 2.7                   |
|                        |         | current period         | same period last year |
| Current Balance        | Q1 97   | 3.37                   | 3.02                  |
| Unemployment Rate      | Q3 96   | 4.8                    | 4.7                   |
| Interest Rate          | May 97  | 3.46                   | 4.76                  |




| POLAND                 |         |                        |                       |
|------------------------|---------|------------------------|-----------------------|
|                        | period  | % change from previous |                       |
|                        |         | period                 | year                  |
| Gross Domestic Product |         | ..                     | ..                    |
| Leading Indicator      |         | ..                     | ..                    |
| Consumer Price Index   | May 97  | 0.6                    | 14.4                  |
|                        |         | current period         | same period last year |
| Current Balance        | Mar. 97 | -0.36                  | 0.96                  |
| Unemployment Rate      | May 97  | 12.1                   | 15.1                  |
| Interest Rate          | May 97  | 12.08                  | 15.08                 |




| PORTUGAL               |         |                        |                       |
|------------------------|---------|------------------------|-----------------------|
|                        | period  | % change from previous |                       |
|                        |         | period                 | year                  |
| Gross Domestic Product | Q2 96   | 3.2                    | 3.6                   |
| Leading Indicator      | Jan. 97 | 0.5                    | 2.9                   |
| Consumer Price Index   | May 97  | 0.7                    | 2.1                   |
|                        |         | current period         | same period last year |
| Current Balance        | Q4 96   | -0.55                  | -0.28                 |
| Unemployment Rate      | Apr. 97 | 6.9                    | 7.6                   |
| Interest Rate          | Jun. 97 | 5.85                   | 7.25                  |




| SPAIN                  |         |                        |                       |
|------------------------|---------|------------------------|-----------------------|
|                        | period  | % change from previous |                       |
|                        |         | period                 | year                  |
| Gross Domestic Product | Q1 97   | 0.9                    | 2.9                   |
| Leading Indicator      | Apr. 97 | 1.3                    | 5.1                   |
| Consumer Price Index   | May 97  | 0.1                    | 1.4                   |
|                        |         | current period         | same period last year |
| Current Balance        | Apr. 97 | 0.10                   | -0.43                 |
| Unemployment Rate      | Apr. 97 | 20.9                   | 22.4                  |
| Interest Rate          | May 97  | 5.27                   | 7.47                  |




| SWEDEN                 |         |                        |                       |
|------------------------|---------|------------------------|-----------------------|
|                        | period  | % change from previous |                       |
|                        |         | period                 | year                  |
| Gross Domestic Product | Q1 97   | -0.3                   | 1.7                   |
| Leading Indicator      | May 97  | 0.3                    | 10.7                  |
| Consumer Price Index   | May 97  | 0.0                    | -0.1                  |
|                        |         | current period         | same period last year |
| Current Balance        | Mar. 97 | 0.58                   | 0.63                  |
| Unemployment Rate      | Apr. 97 | 10.8                   | 10.1                  |
| Interest Rate          | May 97  | 4.09                   | 6.19                  |




| SWITZERLAND            |         |                        |                       |
|------------------------|---------|------------------------|-----------------------|
|                        | period  | % change from previous |                       |
|                        |         | period                 | year                  |
| Gross Domestic Product | Q4 96   | 0.0                    | -0.7                  |
| Leading Indicator      | May 97  | 1.1                    | 9.1                   |
| Consumer Price Index   | Jun. 97 | 0.1                    | 0.5                   |
|                        |         | current period         | same period last year |
| Current Balance        | Q4 96   | 5.57                   | 5.70                  |
| Unemployment Rate      | May 97  | 5.3                    | 4.5                   |
| Interest Rate          | May 97  | 1.53                   | 2.00                  |



| TURKEY                 |         |                        |                       |
|------------------------|---------|------------------------|-----------------------|
|                        | period  | % change from previous |                       |
|                        |         | period                 | year                  |
| Gross Domestic Product | Q2 96   | 0.0                    | 8.2                   |
| Leading Indicator      |         | ..                     | ..                    |
| Consumer Price Index   | May 97  | 4.7                    | 77.5                  |
|                        |         | current period         | same period last year |
| Current Balance        | Q1 97   | -1.32                  | -0.68                 |
| Unemployment Rate      | Q2 96   | 6.3                    | 7.2                   |
| Interest Rate          | Jul. 96 | 95.58                  | 66.98                 |



| UNITED KINGDOM         |         |                        |                       |
|------------------------|---------|------------------------|-----------------------|
|                        | period  | % change from previous |                       |
|                        |         | period                 | year                  |
| Gross Domestic Product | Q1 97   | 0.9                    | 3.0                   |
| Leading Indicator      | May 97  | -0.1                   | 1.3                   |
| Consumer Price Index   | May 97  | 0.4                    | 2.6                   |
|                        |         | current period         | same period last year |
| Current Balance        | Q1 97   | 2.38                   | -1.85                 |
| Unemployment Rate      | Apr. 97 | 7.0                    | 8.4                   |
| Interest Rate          | Jun. 97 | 6.66                   | 5.84                  |



| UNITED STATES          |        |                        |                       |
|------------------------|--------|------------------------|-----------------------|
|                        | period | % change from previous |                       |
|                        |        | period                 | year                  |
| Gross Domestic Product | Q1 97  | 1.4                    | 4.1                   |
| Leading Indicator      | May 97 | 0.4                    | 4.7                   |
| Consumer Price Index   | May 97 | -0.1                   | 2.2                   |
|                        |        | current period         | same period last year |
| Current Balance        | Q1 97  | -40.97                 | -32.88                |
| Unemployment Rate      | May 97 | 4.8                    | 5.5                   |
| Interest Rate          | May 97 | 5.70                   | 5.36                  |

# The OECD Economic Outlook

## Highlights

The broad outlook for OECD economies has improved in the past year, and output growth for the area as a whole is projected to rise to nearly 3% a year in 1997–98 (Table 1).<sup>1</sup> Continued low interest rates in Japan, significant declines in interest rates in continental Europe, a firming of financial conditions in the United States and some other countries, and the strengthening of the dollar and sterling should all contribute to the projected convergence of growth rates. But countries still vary in the stage of their business cycles. Some are well into mature expansions with high levels of capacity utilisation, whereas others are still experiencing significant slack in labour and product markets, although this is generally diminishing throughout the projection period. In the non-OECD area, growth in east Asia should remain robust, led by China, and growth in Latin America is also expected to be strong over the next two years. The Russian economy continues to have difficulty, but the contraction of output appears to be over and an expansion may have begun.

The risks to this central projection vary according to the circumstances of each country, but are broadly balanced. Growth in Japan and continental Europe could prove stronger than projected if the interest rate and exchange-rate changes in the past year improve business and consumer sentiment more than expected, stimulating a stronger rebound in domestic demand. In some countries judged to be operating at high capacity – including the United States and the United Kingdom – it is possible that utilisation rates are less than current OECD estimates, which would permit somewhat higher non-inflationary growth than assumed. However, it is also possible that inflationary pressures in these countries, while not yet evident, are stronger than now thought (Table 2). There is a downside risk associated with the difficulty facing a number of financial institutions in Japan, France and Italy, although these

problems do not so far appear to have constrained overall credit availability. A reversal of the favourable exchange-rate developments during the past year would weaken prospects in Japan and continental Europe and, in Europe, the possibility of tensions in financial markets, perhaps associated with uncertainties in the run-up to European Economic and Monetary Union (EMU), cannot

Table 1  
Growth of Real GDP in the OECD Area  
%

|                                    | Change from previous year |            |            |            |
|------------------------------------|---------------------------|------------|------------|------------|
|                                    | 1995                      | 1996       | 1997       | 1998       |
| United States                      | 2.0                       | 2.4        | 3.6        | 2.0        |
| Japan                              | 1.4                       | 3.6        | 2.3        | 2.9        |
| Germany                            | 1.9                       | 1.4        | 2.2        | 2.8        |
| France                             | 2.1                       | 1.5        | 2.5        | 2.8        |
| Italy                              | 2.9                       | 0.7        | 1.0        | 1.8        |
| United Kingdom                     | 2.5                       | 2.1        | 3.0        | 2.7        |
| Canada                             | 2.3                       | 1.5        | 3.5        | 3.3        |
| <b>Total of above 7 countries</b>  | <b>2.0</b>                | <b>2.3</b> | <b>2.9</b> | <b>2.4</b> |
| Australia                          | 3.7                       | 4.0        | 3.5        | 3.5        |
| Austria                            | 1.8                       | 1.1        | 1.5        | 2.4        |
| Belgium                            | 1.9                       | 1.4        | 2.2        | 2.6        |
| Czech Republic                     | 4.8                       | 4.4        | 2.6        | 2.0        |
| Denmark                            | 2.7                       | 2.5        | 2.5        | 2.9        |
| Finland                            | 4.5                       | 3.3        | 4.6        | 3.6        |
| Greece                             | 2.0                       | 2.6        | 3.0        | 3.1        |
| Hungary                            | 1.5                       | 0.8        | 2.4        | 3.5        |
| Iceland                            | 1.2                       | 5.7        | 4.5        | 3.3        |
| Ireland                            | 10.3                      | 7.3        | 6.7        | 7.0        |
| Korea                              | 8.9                       | 7.1        | 5.3        | 6.5        |
| Luxembourg                         | 3.2                       | 3.9        | 4.1        | 4.0        |
| Mexico                             | -6.2                      | 5.1        | 5.4        | 4.7        |
| Netherlands                        | 2.1                       | 2.7        | 3.0        | 3.2        |
| New-Zealand                        | 2.7                       | 2.1        | 2.8        | 3.2        |
| Norway                             | 3.3                       | 4.8        | 3.8        | 3.4        |
| Poland                             | 7.0                       | 6.0        | 5.0        | 4.9        |
| Portugal                           | 1.9                       | 3.0        | 3.3        | 3.4        |
| Spain                              | 2.8                       | 2.2        | 2.8        | 3.0        |
| Sweden                             | 3.6                       | 1.1        | 2.0        | 2.3        |
| Switzerland                        | 0.1                       | -0.7       | 0.8        | 1.8        |
| Turkey                             | 7.0                       | 7.2        | 5.2        | 4.7        |
| <b>Total of above 22 countries</b> | <b>2.8</b>                | <b>3.8</b> | <b>3.7</b> | <b>3.8</b> |
| <b>Total OECD</b>                  | <b>2.2</b>                | <b>2.6</b> | <b>3.0</b> | <b>2.7</b> |

Figures in italics are provisional.  
Source: OECD

1. *OECD Economic Outlook*, No. 61, OECD Publications, Paris, 1997.

Table 2  
Private Consumption Deflators  
in the OECD Area  
%

|                                                               | Change<br>from previous year |             |             |            |
|---------------------------------------------------------------|------------------------------|-------------|-------------|------------|
|                                                               | 1995                         | 1996        | 1997        | 1998       |
| United States                                                 | 2.4                          | 2.1         | 2.2         | 2.4        |
| Japan                                                         | -0.5                         | 0.2         | 1.5         | 1.0        |
| Germany                                                       | 1.9                          | 1.9         | 1.7         | 1.8        |
| France                                                        | 1.6                          | 1.8         | 1.6         | 1.4        |
| Italy                                                         | 5.6                          | 4.1         | 2.0         | 2.0        |
| United Kingdom                                                | 2.5                          | 2.8         | 2.4         | 2.3        |
| Canada                                                        | 1.6                          | 1.2         | 1.4         | 1.4        |
| <b>Average of above<br/>7 countries</b>                       | <b>2.0</b>                   | <b>1.9</b>  | <b>2.0</b>  | <b>1.9</b> |
| Australia                                                     | 2.5                          | 1.8         | 1.7         | 2.1        |
| Austria                                                       | 2.3                          | 1.9         | 2.0         | 1.9        |
| Belgium                                                       | 1.6                          | 2.1         | 1.6         | 1.7        |
| Czech Republic                                                | 9.1                          | 8.8         | 7.8         | 8.4        |
| Denmark                                                       | 2.1                          | 2.1         | 2.2         | 2.7        |
| Finland                                                       | 0.2                          | 1.2         | 1.5         | 2.0        |
| Greece                                                        | 9.3                          | 8.5         | 6.0         | 5.4        |
| Hungary                                                       | 26.8                         | 22.7        | 17.7        | 15.5       |
| Iceland                                                       | 1.9                          | 2.6         | 2.5         | 3.3        |
| Ireland                                                       | 2.0                          | 1.8         | 2.0         | 2.7        |
| Korea                                                         | 4.8                          | 6.0         | 5.3         | 4.9        |
| Luxembourg                                                    | 0.7                          | 1.5         | 1.5         | 1.6        |
| Mexico                                                        | 34.0                         | 34.0        | 21.0        | 13.0       |
| Netherlands                                                   | 0.9                          | 1.8         | 1.8         | 1.9        |
| New Zealand                                                   | 2.3                          | 2.5         | 1.6         | 2.0        |
| Norway                                                        | 2.5                          | 1.3         | 2.6         | 2.5        |
| Poland                                                        | 27.8                         | 19.9        | 15.3        | 11.5       |
| Portugal                                                      | 4.2                          | 3.2         | 2.4         | 2.3        |
| Spain                                                         | 4.7                          | 3.6         | 2.3         | 2.0        |
| Sweden                                                        | 2.4                          | 1.2         | 2.0         | 2.2        |
| Switzerland                                                   | 1.8                          | 1.2         | 1.2         | 1.4        |
| Turkey                                                        | 90.9                         | 74.1        | 75.0        | 65.0       |
| <b>Average of above<br/>22 countries</b>                      | <b>15.6</b>                  | <b>13.8</b> | <b>11.5</b> | <b>9.4</b> |
| <b>Average OECD</b>                                           | <b>4.9</b>                   | <b>4.5</b>  | <b>4.0</b>  | <b>3.6</b> |
| Average OECD<br>less high-inflation<br>countries <sup>1</sup> | 2.1                          | 2.0         | 2.0         | 2.0        |
| European Union                                                | 2.9                          | 2.6         | 2.0         | 2.0        |

Figures in *italics* are provisional.

1. Countries which have had 10% or more inflation in terms of GDP deflator on average during the 1990s on the basis of historical data. The Czech Republic, Greece, Hungary, Mexico, Poland and Turkey are thus excluded from the aggregate.

Source: OECD

be dismissed. Finally, the recent buoyancy of equity markets in North America and Europe may be read in two ways: it may reflect an underlying improvement in prospects for growth and profits which is not fully reflected in the projection, but there is also the danger of a correction that could depress demand.

The thrust of macro-economic policy in each OECD country during the projection

period should reflect its current and prospective cyclical position and associated risks and uncertainties. In all cases, however, short-term policy action should be consistent with the medium-term requirement for fiscal consolidation and maintenance of low inflation. In the United States, the United Kingdom and several other countries with high capacity utilisation, authorities have rightly been concerned about the possibility of overheating, although inflation is currently subdued. In other countries – Japan, Germany, France, Italy and some smaller European countries – inflation is being held in check by the significant degree of slack that remains in product and labour markets. Monetary policy can therefore continue to support the economic recovery until it is more mature. In continental Europe, there would be room to lower interest rates somewhat further to stimulate activity if necessary, without materially raising the risk of inflation.

Improving employment prospects and labour-market participation, and durably reducing chronically high unemployment, remain the most important economic challenges facing many OECD countries, particularly in continental Europe (Table 3). Although there is a significant component of cyclical unemployment in many countries, which can be expected to decline with economic recovery, the root of the problem is

high structural unemployment that has tended to rise over time. This situation is characterised by high rates of long-term, youth and low-skill unemployment, and therefore exacerbates inequalities and contributes to rising marginalisation and social tensions. In response to these problems, in 1994 the OECD formulated its Jobs Strategy to improve labour-market performance and to enhance OECD economies' ability to adjust and take advantage of new opportunities, such as those presented by technological change and globalisation.

Since then, each member country has been examined regarding its progress in implementing country-specific recommendations; the conclusions drawn from these examinations are summarised in the box (right) and are discussed fully in the recent OECD publication *Implementing the OECD Jobs Strategy: Lessons from Member Countries' Experience*. Labour markets have been functioning relatively well in a few countries – the United States, Japan and Norway – with low unemployment rates and generally successful records of adapting to structural change. The experience of other countries shows that broad-based policy action can durably reduce structural unemployment, though it takes time. Far-reaching reforms put in place in the 1980s in the United Kingdom, Ireland, the Netherlands and New Zealand have yielded significant improvements in labour-market performance in all these countries, with employment rising, unemployment rates falling, or both. Canada and Australia have introduced significant reforms more recently, though the results in terms of unemployment reductions are not yet apparent. But progress has been uneven across both countries and policy areas, and only

*continued on p. 42*



## Lessons from Implementing the OECD Jobs Strategy

The OECD Jobs Study, which was published in 1994, proposed a balanced and wide-ranging set of policy recommendations to reduce unemployment, raise employment and increase prosperity. Since the autumn of 1995, the OECD's Economic and Development Review Committee (EDRC) has examined labour-market developments and proposed specific recommendations for implementing the OECD Jobs Strategy on a country-by-country basis. These recommendations reflect labour-market conditions and existing policy stances which differ strongly across member countries. Recommendations for high-unemployment continental European countries tend to put more weight on measures to increase labour- and product-market flexibility so as to enhance the economy's ability to adjust and adapt. For countries where flexibility is seen to be higher but where rising income inequality, poverty and slow real income growth are important problems, recommendations emphasise the importance of upgrading skills and competences and increasing the effectiveness of active labour-market policies, as well as enhancing the innovative capacity of the economy. Drawing on this work, which has been published in OECD Economic Surveys, and other follow-up work to the Jobs Study,<sup>1</sup> the following set of main lessons has been distilled.

**High and persistent unemployment has been the result of both conjunctural and structural forces, and it can be durably reduced.**

A large part of unemployment is structural though in some countries there is also a significant cyclical component. In some countries, structural unemployment has risen since 1990 from levels that were already high. This group of countries includes three of the major candidates for participation in EMU: Germany, France and Italy. In other countries – the United Kingdom, Ireland, the Netherlands and New Zealand – falls in structural unemployment either began or continued.

**Many countries have made progress in implementing the Jobs Strategy, but progress has been uneven both among countries and across different areas of policy.**

Developments in structural unemployment over the 1990s seem to a large extent to reflect the progress made in implementing the Jobs Strategy. The countries which witnessed falling structural unemployment had undertaken comprehensive policy reforms beginning in the 1980s. Reforms take time to work, and in some other countries which undertook significant policy reform in the 1990s the effects have yet to materialise. In the countries adopting a comprehensive approach to structural reform, a characteristic feature of reforms is that they have affected broad groups on the labour market, including those which may be characterised as 'insiders'. In the countries adopting a more piecemeal approach to policy reforms – a strategy followed by the larger continental European economies – these have often affected mainly persons at the margin of the labour market. In some countries, including Germany, France, Italy and Belgium, political constraints prevented more breadth and/or depth of reform.

**The central issue dividing the more comprehensive reformers from the less comprehensive is differences in judgement about potential conflicts between better labour-market performance and concerns for equity and social cohesion.**

All countries are concerned with employment, social cohesion and equity outcomes. However, some see a trade-off between policy objectives of achieving an even distribution of incomes and of improving employment performance. Other countries reject the notion of a trade-off because they see low unemployment as an essential condition for speaking about equity and also argue that income distribution should be seen in a dynamic perspective: a wider distribution of wage rates might in the short run widen income distribution, but this will be partly or fully offset over the long run because of higher employment, increased scope for people to gain an initial foothold in the labour market, and stronger incentives for human-capital formation. A third group of countries also reject the notion of a trade-off between equity and employment performance because they see the former policy objective as more fundamental. Finally, some countries argue that education and active labour-market policies have the potential to bring about both higher employment and a more equal income distribution.

All countries agree that high and persistent unemployment risks undermining social cohesion. However, some countries are also con-

cerned that policy reforms to reduce unemployment could have negative effects on social cohesion and see this as a reason for adopting a measured and incremental approach to reform. Among the countries undertaking comprehensive reforms, some have introduced reform through consensual processes involving the social partners, while in others elected parliaments and governments are seen as having a popular mandate to carry out reforms. In both cases, reforms have met with considerable acceptance illustrating that there are different approaches to successfully implementing the Jobs Strategy, depending on national traditions and institutions. All countries see effective communication as a crucial ingredient in successful policy reform.

**There are significant synergies between structural reforms in different fields.**

Structural policy reforms in different areas interact with one another, implying that a broad-based policy approach is likely to be more effective in reducing unemployment than an approach which focuses on reform only in some particular areas. For example, increasing incentives for seeking and accepting jobs is likely to be more effective when, on the one hand, product market reforms have ensured that labour demand will react swiftly to changes in wages and, on the other hand, regulations governing industrial relations, minimum wages and employment protection are reformed in ways which ensure that such a wage response will be forthcoming. A broad-based strategy may also be important from a political perspective: it may be easier to gain acceptance for a comprehensive strategy from which most groups may be seen to win than for its individual components which groups of perceived losers may resist strongly.

**Macro-economic conditions and their interactions with structural forces are important for labour-market outcomes.**

Stable macro-economic conditions based on an appropriate medium- and long-term framework will reduce real interest rates and general uncertainty and thereby provide the best basis for job-creating and productivity-enhancing investment. Macro-economic fluctuations should be minimised as far as is realistically possible within the scope given by other policy targets and constraints. Countries with relatively large fluctuations in unemployment have usually also seen stronger rises in structural unemployment because increases in unemployment which were initially cyclical in origin have tended to become structural. The strength of this mechanism depends on structural policy settings. Appropriate structural reform, therefore, will not only reduce unemployment directly but also reduce the risk that unemployment persists following a cyclical downturn. In turn, stable macro-economic conditions also provide the best background for reaping the full benefits of structural reform as quickly as possible.

**Overall, the Jobs Strategy remains an effective response to labour-market problems in OECD member countries, and the EDRC has encouraged countries to press on with its implementation.**

Given the observed link between countries' labour-market performance and the extent to which they have implemented the Jobs Strategy, the EDRC recommended to individual member countries to go further in their implementation of the Strategy and gave detailed indications of high-priority reforms. As regards macro-economic policy, most countries were judged to be in need of further fiscal consolidation and many also of tax reductions. This should be pursued within a medium-term framework and be built on concrete, identified measures, so as to be both credible and sustainable. Many countries were judged to have achieved or to be close to price stability. Where this was combined with considerable slack, monetary policy should continue to support activity without undermining the primary goal of achieving and sustaining price stability, whereas in countries with little or no slack there was a need to prevent the re-emergence of inflation pressures.

1. A more extensive presentation of the main lessons has been published under the title **Implementing the OECD Jobs Strategy: Lessons from Member Countries' Experience**, OECD Publications, Paris, 1997. The analytical background will be published shortly in **Implementing the OECD Jobs Strategy: Member Countries' Experience**, OECD Publications, Paris, forthcoming 1997.

Table 3  
Unemployment in the OECD Area<sup>1</sup>

|                                    | Thousands     | % of labour force |            |            |            |
|------------------------------------|---------------|-------------------|------------|------------|------------|
|                                    | 1993          | 1995              | 1996       | 1997       | 1998       |
| United States <sup>2</sup>         | 8,927         | 5.6               | 5.4        | 5.0        | 5.1        |
| Japan                              | 1,666         | 3.1               | 3.3        | 3.2        | 3.1        |
| Germany                            | 3,419         | 9.4               | 10.3       | 11.1       | 10.9       |
| France                             | 2,946         | 11.5              | 12.4       | 12.6       | 12.2       |
| Italy                              | 2,335         | 12.0              | 12.1       | 12.1       | 11.9       |
| United Kingdom                     | 2,884         | 8.1               | 7.4        | 6.1        | 5.6        |
| Canada                             | 1,649         | 9.5               | 9.7        | 9.4        | 9.1        |
| <b>Total of above 7 countries</b>  | <b>23,826</b> | <b>6.8</b>        | <b>6.9</b> | <b>6.7</b> | <b>6.6</b> |
| Australia                          | 944           | 8.6               | 8.5        | 8.4        | 8.2        |
| Austria                            | 222           | 5.9               | 6.2        | 6.4        | 6.2        |
| Belgium                            | 511           | 13.1              | 12.9       | 12.7       | 12.3       |
| Czech Republic                     | 184           | 3.1               | 3.5        | 3.8        | 4.6        |
| Denmark                            | 349           | 10.3              | 8.8        | 8.1        | 7.4        |
| Finland                            | 444           | 17.2              | 16.3       | 14.7       | 13.7       |
| Greece                             | 398           | 10.0              | 10.4       | 10.4       | 10.5       |
| Hungary                            | 519           | 10.3              | 10.6       | 10.5       | 10.4       |
| Iceland                            | 6             | 5.0               | 4.3        | 3.8        | 3.5        |
| Ireland                            | 220           | 12.1              | 11.3       | 10.8       | 10.5       |
| Korea                              | 550           | 2.0               | 2.0        | 2.7        | 2.8        |
| Luxembourg                         | 4             | 3.0               | 3.3        | 3.3        | 3.2        |
| Mexico <sup>3</sup>                | 511           | 6.3               | 5.5        | 4.5        | 4.2        |
| Netherlands                        | 415           | 7.1               | 6.7        | 6.2        | 5.6        |
| New Zealand                        | 157           | 6.3               | 6.1        | 6.0        | 6.0        |
| Norway                             | 127           | 5.4               | 4.9        | 4.5        | 4.2        |
| Poland                             | 2,427         | 13.3              | 12.4       | 11.7       | 11.1       |
| Portugal                           | 248           | 7.2               | 7.3        | 7.1        | 7.0        |
| Spain <sup>4</sup>                 | 3 481         | 23.2              | 22.7       | 22.1       | 21.2       |
| Sweden                             | 356           | 7.7               | 8.0        | 8.1        | 7.5        |
| Switzerland                        | 163           | 4.2               | 4.7        | 5.4        | 5.0        |
| Turkey <sup>5</sup>                | 1,601         | 7.5               | 6.5        | 6.6        | 6.5        |
| <b>Total of above 22 countries</b> | <b>13,837</b> | <b>9.2</b>        | <b>8.7</b> | <b>8.5</b> | <b>8.2</b> |
| <b>OECD Total</b>                  | <b>37,662</b> | <b>7.6</b>        | <b>7.5</b> | <b>7.3</b> | <b>7.1</b> |
| European Union                     | 18,232        | 11.2              | 11.3       | 11.2       | 10.8       |

Figures in *italics* are provisional.

1. Commonly used definitions.

2. Break in series from January 1994.

3. Figures based on the national survey of urban employment.

4. Rebased.

5. Important revisions to data.

Source: OECD

limited reforms have been undertaken in several high-unemployment countries, notably Germany, France, Italy and Belgium. The political constraints which have prevented the introduction of broader reform programmes need to be overcome if progress is to be made on durably reducing unemployment and raising employment.

For countries that will participate in EMU, the stakes are particularly high. Their ability to cushion the effect of adverse economic

developments with macro-economic policies will be limited, as independent, country-specific monetary policy will no longer be available and fiscal policies will be seriously constrained. Under these circumstances, well-functioning labour and product markets will have an especially important role to play in these economies' adjustments to changing circumstances.

A key challenge for policy-makers in almost all OECD countries is to continue to reduce government budget deficits and roll back the high levels of public debt in relation to GDP. Considerable progress has already been made: looking through the effects of the recent business cycle, most countries have succeeded in significantly reducing their budget deficits, and a few (Korea, New Zealand and

Norway) even have surpluses. As a result, the rise in debt-to-GDP ratios that characterised almost all OECD economies in the past 25 years has largely been arrested and, in some cases, reversed. In most cases, however, more will have to be done to meet stated medium-term fiscal objectives, which for several countries explicitly involves a balanced budget or a surplus.

The scope for reducing deficits by raising taxes is limited in countries where the

tax burden is already very high, as in much of Europe, although there is somewhat more room where taxes are lower. But in all countries, raising taxes risks aggravating resource misallocations, thereby reducing output potential. Tax reforms could ease this problem somewhat. In most OECD countries, top marginal income tax rates have been lowered significantly and tax bases have been broadened. At the lower end of the income scale, remaining distortions should be reduced as much as possible, including those that discourage people from taking jobs or increasing work effort. And in a number of countries, improved tax administration could both raise revenue and reduce distortions that have arisen from evasion.

Given already high tax burdens and the consequent misallocation of resources, many countries will have to rely on expenditure restraint to redress public finances. The options here should be seen not just in terms of controlling the growth of current expenditures, which in many countries is already proving difficult, but also in the context of limiting future demands on public resources. These demands may include higher pension and health-care expenditures as populations age, additional programmes to enhance human capital formation (including in the context of lifelong learning) and infrastructure investments. Such considerations point to the need to continue review of government functions, and to focus public resources more sharply on meeting important social goals and providing needed services that cannot be provided by the private sector. In doing so, it will be crucial to ensure that public-sector programmes and investments have social value that clearly exceeds their costs.

29 May 1997

# The Readership Survey Results



In order to discover how useful and informative our readers find the information and analysis that we publish every other month in *The OECD Observer*, and to find out what you think of the lay-out of the magazine, we sent out a questionnaire with issue No. 202, October/November 1996, to 11,300 subscribers.

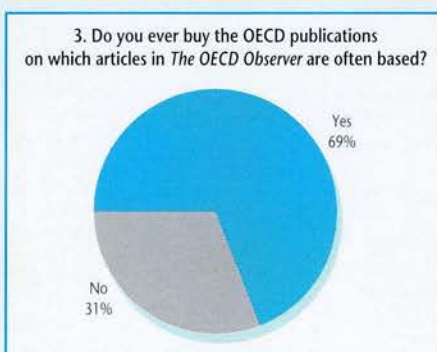
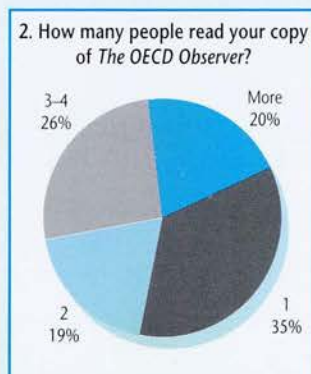
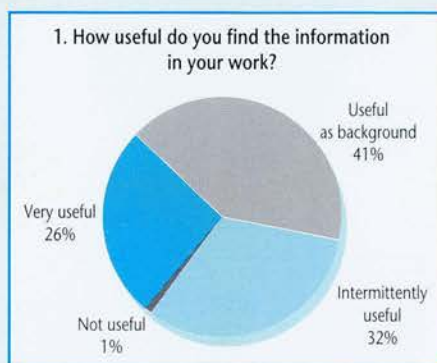
We received responses from 540 of you, or 4.8% (a rate of 1–2% is generally considered satisfactory for such surveys).

On the assumption that you are representative of the readership as a whole, analysis of the responses received yields a good deal of valuable information.

## Reader Profile

Readers of *The OECD Observer*

- are highly qualified (university professors and other educators, researchers, directors, journalists, engineers, consultants, documentalists, NGO representatives, civil servants...)
- span a wide variety of disciplines (economics, law, science, the humanities, etc.)
- work in education and research (288), economics and finance (176), the press (104), civil service (59), politics (49), industry (44) and social affairs (25) (multiple responses were possible).



## Reading Habits and Usefulness

- Almost three-quarters of the readers (72%) 'skim every article and read some of them', 12% read fewer than half, and 10% read 'about half'.
- 26% of readers find the information in the *Observer* 'very useful' in their work, 32% 'intermittently useful' and 41% 'useful as background' (Figure 1).
- The articles have a long shelf-life: over three-quarters (77%) of readers file the *Observer* for reference after reading it, and a little under a quarter (23%) pass it to a colleague or friend.
- Each issue of the *Observer* is read by 5.3 people (the usual multiplier for a magazine like the *Observer* being 4 – Figure 2).
- Over two-thirds (69%) of readers later buy the publications whose analysis they first read in articles in the *Observer* (Figure 3).

## Sales Channels and Frequency

- Only a small proportion of readers (17%) are interested in buying the magazine from newsagents, and even fewer (9%) in reading it exclusively on the Internet (since December 1996, the *Observer* has been put on the Internet two months after its release).
- Three-quarters (76%) of readers think the *Observer* should remain bimonthly;

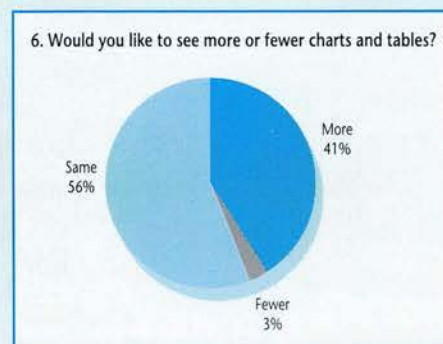
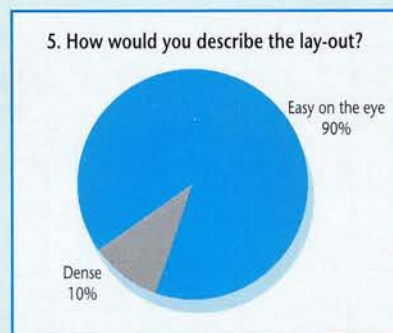
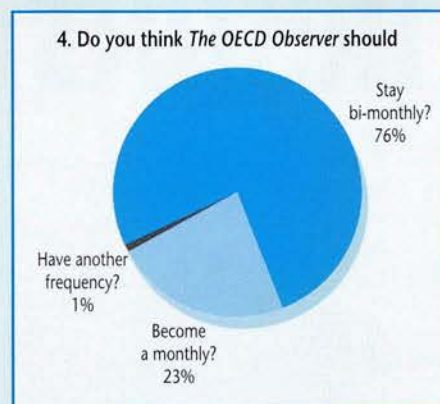
just under a quarter (23%) would like to see it become a monthly (Figure 4).

### Content and Style

- 412 out of 540 readers think that articles are about the right length, 151 that they are easy to read, 32 that they are 'too academic', 18 that they are 'too jargon-filled', and 12 that they are 'too complex' (several would like to see stronger positions taken).
- A large majority of readers find that the mix of subject matter is satisfactory, the preferred topics being: globalisation, the environment, economics, emerging economies and economies in transition, employment, social policy, development, technology, trade, business, education and science.
- Several readers wrote 'Don't touch the balance'; others specifically mentioned articles on demographics, migration, health care, tourism, the ethics of multinational firms, the impact of globalisation on the South, and methodology.

### Format and Design

- 93 and 95% of readers find, respectively, the format and number of pages satisfactory.
- 90% describe the layout as 'easy on the eye', 10% find it 'dense' (Figure 5). (In response to comments that boxes were difficult to read, we began using a different typeface for them in issue No. 204.)
- Our readers are avid consumers of charts and tables: over half (56%) consider that the (already large) number of them is satisfactory, while virtually all of the others (41%) want more (Figure 6).
- 53% of readers describe the photographs as 'about right', 28% as 'well-chosen' and 19% as 'irrelevant'.
- Only two readers out of 540 wanted to see a full-colour *Observer*.



### Conclusion

The main message to emerge clearly from the survey is that readers are pleased with the choice and variety of topics, as well as with the format of the *Observer*. The frequently recurring comment (expressed in a variety of ways) that the mix of subject matter should be left alone is significant.

Individual responses and comments suggesting changes do not, by definition, all point in the same direction, and it is not easy to analyse them.

Even so, the criticism/suggestions/praise outline a number of strong points and avenues for bringing the *Observer* even more closely in tune with its times, and with its present and future readership.

- A clearer expression of the OECD's opinions and those of the authors would allow the style to be more direct and more lively
- The selection of topics, while heeding the request that the balance of subjects be maintained, could oblige those readers who would like more articles on particular themes
- Maintaining the quality of the readership and the reference value of articles
- The publication of more charts and tables, without making the layout too dense.

■ ■

We should like to extend our most heartfelt thanks to the readers who responded to our survey – for us, the direct contact established in this manner is essential. That is why, in the future, we shall be inviting you again to let us have your views on *The OECD Observer*.

Ulla Ranhall-Reyners  
Editor

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### Agriculture

OECD Annual Reports

**Agricultural Policies in OECD Countries Volume 1: Monitoring and Evaluation 1997**

**Volume 2: Measurement of Support and Background Information 1997**

May 1997

Agricultural policy developments in OECD countries in 1996 unfolded against a background of high commodity prices, budgetary pressures, the BSE crisis in the beef sector, and the implementation of the Uruguay Round trade agreement on agriculture. Agricultural policies are becoming more complex and diverse. The environment and rural development are attracting increasing attention of policy-makers.

This tenth annual report evaluates progress made in reforming agricultural policies and agricultural trade measures. There is more reliance on budget-financed measures, with weaker links to agricultural commodities. Although overall support to the agricultural sector decreased in 1996, there are considerable differences in degrees of support across countries and commodities.

The report is in two parts. The Monitoring and Evaluation provides an evaluation of overall agricultural policy developments, together with a description and evaluation of developments in OECD countries. The detailed background tables, which include data from 1986-88 to 1996, and information on policy developments, are provided in the Measurement of Support and Background Information. This year's report also includes sections on the Czech Republic, Hungary, Korea, Mexico and Poland.

A complete database of support to agriculture, as measured by the Producer and Consumer Subsidy Equivalents is available on diskette.

(51 97 07 1 P) ISBN 92-64-15480-9, 245pp.  
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Development Centre Studies  
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Corruption, overcentralisation and internal conflicts are widespread in many parts of the world. This book presents an innovative approach to institutional economics, drawing on experience in developing countries, in order to comprehend these complex issues and the links between them. In a relatively rare type of analysis by a development economist, the author views these phenomena as systematic instances of insti-

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Jean-Jacques Laffont  
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Remaining problems are connected with the regulation of large public monopolies, the improvement of the fiscal system and the development of the banking system. These problems are complex and difficult to resolve. In particular, there is no database which can be used to analyse the distortions associated with them or to evaluate the first steps of the reforms.

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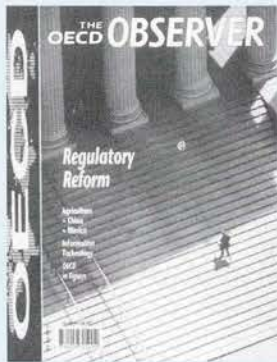
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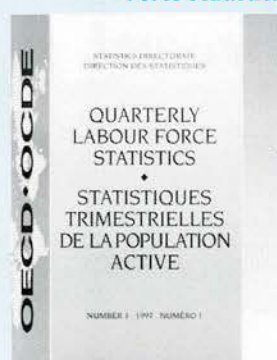
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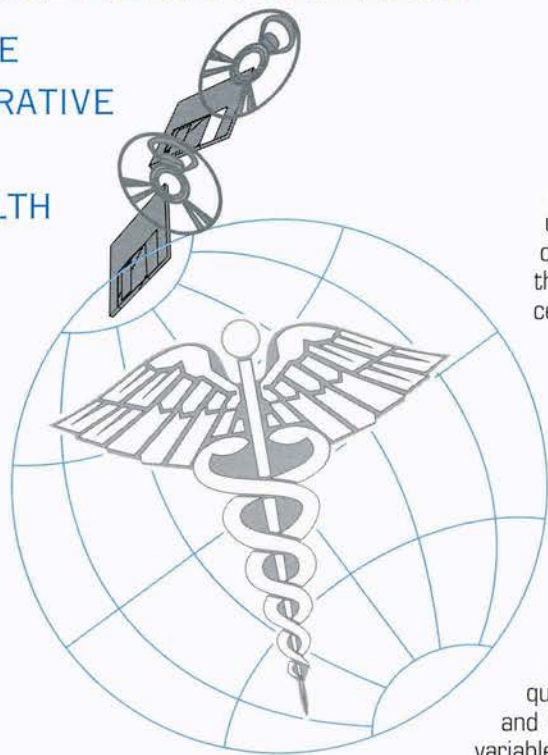
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### The importance of health indicators

The health-care world – physicians, policy-makers, administrators and academics – rely on biological, epidemiological and economic measurements in their work. Indicators on expenditures, inputs, utilisation and outcomes of health care have become critical for all of these people in making decisions. *OECD Health Data 97* addresses this demand by presenting essential health-care indicators in one central data-base. It aims to provide comprehensiveness, consistency and comparability among all the health systems of the OECD member countries.

### Statistics on 29 health systems

*OECD Health Data 97* is a tool which should allow for better policy decisions, better understanding of the factors of production and variation of medical practices from one country to the other. It will allow the measurement of the non-medical factors affecting the health status of a population, and the understanding of the mechanisms of medical consumption and financing.

### A user-friendly software

*OECD Health Data 97* under Windows is user-friendly and fast. It is quadrilingual (English, French, German, Spanish). Users can question and analyse the OECD health data files by selecting from an array of variables, countries and years. Tables, charts and maps can be designed to display the data as the user wishes. *OECD Health Data 97* also offers the possibility of exporting data to other software applications for further analysis.

The software is designed to offer a wide range of options and flexibility to analyse and present data, according to the requirements of the end-user.

### *OECD Health Data 97* characteristics

*OECD Health Data 97* comprises a User's Manual and a CD-ROM or 3½" high-density diskettes.

The software has been developed to operate on IBM PB, PC computers with Windows 95/NT 351 or Windows 3.11, or those equipped with a 486 or pentium processor, a hard-disk space of 30 MB, 8(16) MB RAM, and a VGA card.

### Fields covered by *OECD Health Data 97*

*OECD Health Data 97* offers a choice of more than 800 data series.

Most of the series cover the period 1960–95. Projections on the economic environment and demography are supplied for 1996. The OECD has also estimated some health expenditure for 1996.

*OECD Health Data 97* covers the following countries: the 15 member states of the European Union, Australia, Canada, the Czech Republic, Hungary, Iceland, Japan, Korea, Mexico, New Zealand, Norway, Poland, Switzerland, Turkey, the United States.

#### *Expenditure, financing and revenue*

Total public expenditure on health, spending on in-patient care, ambulatory care, medical goods; expenditure by age-group, revenues generated from the health and pharmaceutical industries, health-care financing

#### *Inputs and throughputs*

Health employment, medical education and training, high-technology medical facilities, medical research and development, pharmaceutical industry activity, trade in health goods and services

#### *Consumption, medical practices and fees*

Medical consumption (DDQ), pharmaceutical deliveries (ATC), average length of stay (CIM), average length of stay (case-mix), discharge rate (CIM), discharge rate (case-mix), surgical procedures, ambulatory surgery, other indicators on medical activity, fees for medical services

#### *Health status*

Life expectancy, potential years of life lost, premature mortality, morbidity, perceived health status

#### *Life style and environment*

Social protection, life style and environment, nutrition

#### *Demographic and macro-economic references*

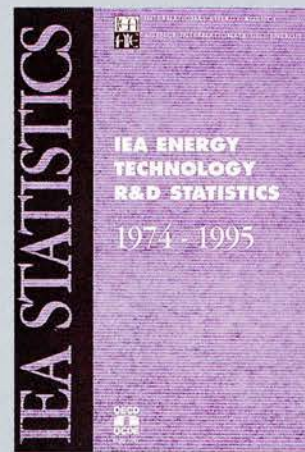
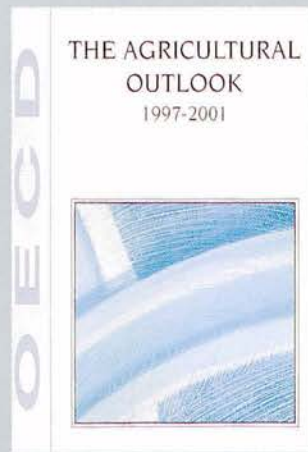
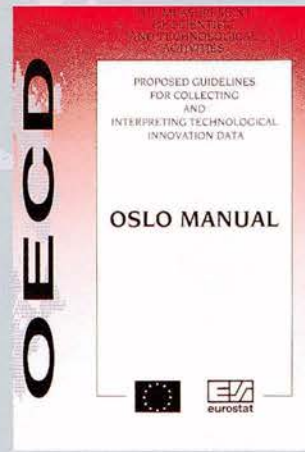
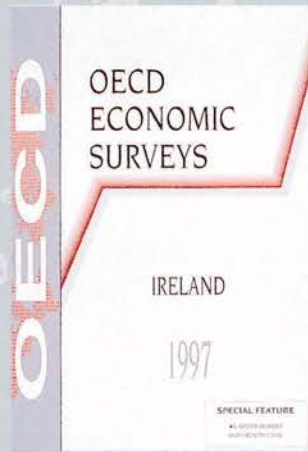
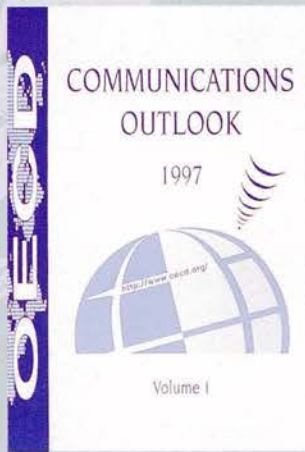
Demographic references, labour force, education, macro-economic references, monetary conversion rates

**CD-ROM** (Windows 95/NT or 3.11), quadrilingual/**diskettes** (Windows 3.11), bilingual English/French

**Monoposte version:**<sup>(1)</sup> FF1,200 US\$200 DM355 £127 ¥26,000/**Network version:** FF5,000 US\$860 DM1,480 £530 ¥108,800

<sup>(1)</sup> Renewed subscription: FF840 US\$150 DM250 £89 ¥18,000

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