

**For Official Use**

**DSTI/IND(2000)7**



Organisation de Coopération et de Développement Economiques  
Organisation for Economic Co-operation and Development

**OLIS : 08-Feb-2000**  
**Dist. : 10-Feb-2000**

PARIS

**DIRECTORATE FOR SCIENCE, TECHNOLOGY AND INDUSTRY  
INDUSTRY COMMITTEE**

**Or. Eng.**

**DSTI/IND(2000)7  
For Official Use**

**BUSINESS AND INDUSTRY POLICY FORUM ON STRUCTURAL FACTORS  
DRIVING INDUSTRIAL GROWTH: BACKGROUND REPORT**

**Paris, 29 February 2000**

*Delegates will find attached a background report on the factors driving industrial growth, for the Business and Industry Policy Forum on this topic to be held on 29 February 2000.  
Further papers and country submissions will be posted on the Internet at the following address:  
<http://www.oecd.org/dsti/sti/industry/indcomp/act/indgrowth/forum.htm>.  
The user name to access the site is "forum1"; the password is "forum2".*

Contact: Peter Avery, Tel (33) 1 45 24 93 63, Fax (33) 1 45 24 94 38  
E-mail: [peter.avery@oecd.org](mailto:peter.avery@oecd.org)

**87169**

Document complet disponible sur OLIS dans son format d'origine  
Complete document available on OLIS in its original format

**Or. Eng.**

## TABLE OF CONTENTS

|  |    |
|--|----|
| SUMMARY .....                                      | 3  |
| INTRODUCTION .....                                 | 4  |
| ECONOMIC PERFORMANCE IN OECD COUNTRIES .....       | 4  |
| Situation during the 1990s .....                   | 4  |
| Short-term outlook .....                           | 5  |
| Issues .....                                       | 5  |
| STRUCTURAL FACTORS DRIVING INDUSTRIAL GROWTH ..... | 7  |
| A. Information and communication technology .....  | 8  |
| B. Electronic commerce .....                       | 14 |
| C. Globalisation .....                             | 18 |
| D. Venture capital and entrepreneurship .....      | 19 |
| E. Corporate governance .....                      | 22 |
| CONCLUSIONS .....                                  | 24 |
| REFERENCES .....                                   | 26 |
| ANNEX .....  | 29 |

### Boxes

|  |    |
|--|----|
| Box 1. Effects of ICT diffusion on business .....                  | 10 |
| Box 2. ICT advances are transforming services .....                | 12 |
| Box 3. Factors driving outsourcing .....                           | 13 |
| Box 4. Dell, e-commerce and inventories .....                      | 17 |
| Box 5. Recent trends in venture capital in the United States ..... | 20 |
| Box 6. Karate to <i>keiretsu</i> ? .....                           | 22 |

## SUMMARY

1. Some OECD countries may be entering a new era of non-inflationary, relatively high economic growth. Globalisation of business and the revolution in information and communications technology (ICT) are leading to dramatic increases in efficiency in traditional manufacturing sectors, while creating new knowledge-based industries that are increasingly important sources for jobs and economic expansion. While there is evidence of the positive effects of technology, particularly information technology, on business and economic growth, there is little systematic evidence on the nature and scope of these effects. In countries where productivity advances have accelerated, there are questions about the basis for the improvement. It may, for example, simply reflect changes in measurement methodology and the beneficial effects of booming economies, rather than any long-term structural shift. Favourable developments in the form of weak commodity and energy prices, and other transitory events, could be behind most of the current non-inflationary environment. Some argue that the scope of technological change is vastly exaggerated, and that the factors driving growth have not really changed all that much during the 1990s.

2. This Business and Industry Policy Forum will provide policymakers, experts and representatives from business and labour with an opportunity to examine the situation more closely, with a view towards increasing understanding of the longer-term implications for business and for public policy. Issues to be addressed will include:

- *What are the principal structural changes occurring at the firm and sector level and what are the main factors driving these changes? How is ICT innovation, together with rapid development of electronic commerce, affecting the efficiency of labour and other forms of capital within firms and in dealings between firms? In which areas have the indirect effects of ICT been significant and why? Has the nature and intensity of indirect effects and externalities changed in recent years?*
- *How are the structural changes that are occurring in industry affecting overall industrial and economic performance? How, for example, are changes in sourcing, manufacturing and marketing, and the character of goods and services being produced affecting industrial organisation? Is there a tendency towards more specialisation as firms focus on core competencies? What are the implications for overall economic performance and growth in countries?*
- *For policymakers, what factors are important in understanding why industry performance has differed significantly among OECD countries? What is the role of rates of uptake and diffusion of knowledge-based goods and services? What are the reasons for differences across countries (e.g. information availability, technical barriers, government policies that favour or slow adoption, availability of technical expertise, etc.)? What industry-related policies can governments pursue to strengthen the framework for growth?*

## INTRODUCTION

3. At their May 1999 Ministerial, OECD Ministers noted that growth performance varied considerably across and within OECD countries. They asked the Organisation to explore the reasons for disparities, paying particular attention to a series of structural factors, and to identify policies that could strengthen long-term performance. The OECD's Industry Committee is contributing to this work partly through a Business and Industry Policy Forum that will bring stakeholders from government, the private sector and academe together to explore a number of key industry-related issues related to industry growth. This background paper has been prepared with a view towards providing a point of departure for the Forum discussion. The paper is divided into three parts. The first part provides basic information on economic performance in the OECD area during the 1990s, as well as commentary on the short-term outlook. The second part describes some of the principal structural changes that are occurring in industry and a number of the key factors driving the change, while the third part provides conclusions. Further information and analysis, with more detailed cross-country comparisons, is currently being prepared and will be issued shortly, as document DSTI/IND/STP/ICCP(2000)1.

## ECONOMIC PERFORMANCE IN OECD COUNTRIES

### Situation during the 1990s

4. Economic growth varied considerably during the 1990s within the OECD area. Real GDP rose from an average rate of about 1% in a number of countries, to a high of 6.8% in the case of Ireland (see Annex Tables 1-5). With the exception of Japan, the situation generally improved during 1995-99, as countries in North America and Europe recovered from the sluggish expansion, or economic contraction, that took place during the first part of the decade. In some countries, a strengthening was evident even after filtering out cyclical factors [OECD, 1999a].

5. Notable performance was achieved in the United States, where there continues to be little sign of inflationary pressure, despite the country's long expansion and relatively low unemployment (Table 1). There, as in a number of other countries, asset values have experienced remarkable growth, with stock markets reaching record levels during 1998 and 1999. At the same time, private capital formation has increased sharply in the United States (as elsewhere), with rising expenditures on information processing equipment and software accounting for more than half of 1997 and 1998 increase, and an even higher share during the first three quarters of 1999. Within the European Union, performance has varied considerably (Table 2), with convergence in some areas but with growth and employment disparities tending to increase. As this has occurred at a time when European countries are strengthening their economic integration through monetary and fiscal policy realignment, it illustrates that macroeconomic policy co-ordination may

not be sufficient to ensure balanced economic performance among countries unless it is accompanied by similar efforts on the structural side of their economies.

### Short-term outlook

6. The economic outlook for the OECD area has brightened in recent months [OECD, 1999b]. The slowdown which occurred in late 1998 has ended and growth is expected to average nearly 3% in 2000, before slowing to 2.6% in 2001. The more optimistic projections mainly reflect:

- *Unexpected near term momentum of the US economy;*
- *A stronger and more rapid resumption of growth in Japan and Korea;*
- *A slightly better outlook for the European Union.*

7. Area-wide inflation is expected to rise somewhat, but should remain below 2% over the next two years, despite the doubling of oil prices since January 1999.<sup>1</sup> Overall OECD unemployment is projected to decline, with substantial job creation in the European Union resulting in a drop in unemployment of about 2.4 million persons between 1998 and 2001. Unusually strong employment growth -- partly related to earlier real wage moderation, labour market reforms and government job-creation measures -- and the small size of increases in the size of the labour force have contributed to the improvement. In trade, current account imbalances are likely to persist, with the US deficit rising above 4% of GDP.

8. The continued momentum of the US economy, joined by improving economic performance in a growing number of European countries, has raised expectations that structural reforms and technological advances are increasing efficiency while stimulating growth in a number of key sectors. The sustainability and character of the ongoing expansion, however, are still being questioned. Some believe this may be the initial stages of a long boom, while others argue it is a cyclical stage which will not be prolonged.

### Issues

9. The length and character of expansion in the US economy, together with the impressive performance of a number of other countries in different parts of the world (including Australia, Denmark, Finland, Ireland, the Netherlands and Norway), raises a number of important questions. Is vigorous growth in certain OECD economies being driven by cyclical factors or are structural changes playing a larger role? How does the character of the recent economic expansion compare to previous expansions with regard to effects on business and industry? Does the role of structural factors and their effects differ across OECD countries?

---

<sup>1</sup> Excluding five countries (Greece, Hungary, Mexico, Poland and Turkey) where annual inflation has exceeded 10% during the 1990s.

**Table 1. GDP, private capital formation, employment and inflation, by specified period, 1990-2001**

|  | 1990-94                           | 1995-99 | 1998  | 1999 1/ | 2000 1/ | 2001 1/ |
|--|-----------------------------------|---------|-------|---------|---------|---------|
|  | <i>Percent (annual change)</i>    |         |       |         |         |         |
| <b>Real GDP growth</b>                       |                                   |         |       |         |         |         |
| United States                                | 2.2                               | 3.8     | 4.3   | 3.8     | 3.1     | 2.3     |
| Japan  | 2.2                               | 1.3     | -2.8  | 1.4     | 1.4     | 1.2     |
| European Union                               | 1.7                               | 2.3     | 2.7   | 2.1     | 2.8     | 2.8     |
| Total OECD                                   | 2.2                               | 2.9     | 2.4   | 2.8     | 2.9     | 2.6     |
| <b>Private capital formation (a)</b>         |                                   |         |       |         |         |         |
| United States                                | 3.2                               | 10.5    | 12.7  | 9.1     | 6.4     | 5.5     |
| Japan  | -0.8                              | 1.3     | -11.3 | -5.6    | -0.6    | 4.0     |
| European Union                               | -0.4                              | 5.7     | 7.5   | 6.1     | 4.6     | 4.8     |
| Total OECD                                   | 1.6                               | 7.0     | 5.8   | 5.6     | 4.8     | 5.4     |
| <b>Employment growth</b>                     |                                   |         |       |         |         |         |
| United States                                | 1.0                               | 1.6     | 1.5   | 1.5     | 0.8     | 0.4     |
| Japan  | 1.0                               | 0.0     | -0.6  | -0.9    | 0.2     | 0.3     |
| European Union                               | -0.4                              | 0.9     | 1.4   | 1.3     | 1.1     | 1.1     |
| Total OECD                                   | 0.6                               | 1.2     | 1.0   | 1.1     | 1.1     | 1.0     |
|  | <i>Percentage of labour force</i> |         |       |         |         |         |
| <b>Unemployment rate</b>                     |                                   |         |       |         |         |         |
| United States                                | 6.6                               | 4.9     | 4.5   | 4.2     | 4.2     | 4.6     |
| Japan  | 2.3                               | 3.7     | 4.1   | 4.7     | 4.7     | 4.7     |
| European Union                               | 9.5                               | 10.4    | 10.1  | 9.4     | 8.8     | 8.4     |
| Total OECD                                   | 7.0                               | 7.1     | 6.9   | 6.7     | 6.4     | 6.3     |
|  | <i>Percent (annual change)</i>    |         |       |         |         |         |
| <b>Inflation (b)</b>                         |                                   |         |       |         |         |         |
| United States                                | 2.8                               | 1.6     | 1.2   | 1.4     | 1.9     | 2.3     |
| Japan  | 1.5                               | -0.5    | 0.4   | -0.6    | -0.5    | -0.3    |
| European Union                               | 4.3                               | 2.2     | 1.9   | 1.5     | 1.7     | 1.8     |
| Total OECD, less high<br>inflation countries | 3.3                               | 1.6     | 1.4   | 1.1     | 1.5     | 1.8     |
| Total OECD                                   | 5.0                               | 3.7     | 3.2   | 2.6     | 2.7     | 2.4     |

1) Projections.

a) Real gross private non-residential fixed capital formation.

b) Percentage change in the GDP deflator.

Source: OECD, 1999b.

**Table 2. Real GDP growth in the European Union, by specified period, 1990-2001**

|                | 1990-94                        | 1995-99 | 1998 | 1999 1/ | 2000 1/ | 2001 1/ |
|----------------|--------------------------------|---------|------|---------|---------|---------|
|                | <i>Percent (annual change)</i> |         |      |         |         |         |
| Austria        | 2.4                            | 2.3     | 3.3  | 2.2     | 2.9     | 2.5     |
| Belgium        | 1.6                            | 2.3     | 2.9  | 1.8     | 2.8     | 2.7     |
| Denmark        | 2.1                            | 2.7     | 2.7  | 1.3     | 1.5     | 1.9     |
| Finland        | -1.3                           | 4.6     | 5.6  | 3.7     | 4.2     | 4.4     |
| France         | 1.2                            | 2.1     | 3.4  | 2.4     | 3.0     | 2.9     |
| Germany        | 2.9                            | 1.5     | 2.2  | 1.3     | 2.3     | 2.5     |
| Greece         | 0.8                            | 3.0     | 3.7  | 3.3     | 3.7     | 4.1     |
| Ireland        | 4.4                            | 9.1     | 8.9  | 8.6     | 7.5     | 5.7     |
| Italy          | 1.1                            | 1.5     | 1.3  | 1.0     | 2.4     | 2.7     |
| Luxembourg     | 5.1                            | 4.8     | 5.0  | 5.1     | 4.3     | 4.1     |
| Netherlands    | 2.5                            | 3.1     | 3.7  | 3.0     | 2.7     | 2.6     |
| Portugal       | 2.1                            | 3.3     | 3.9  | 3.1     | 3.4     | 3.2     |
| Spain          | 1.6                            | 3.3     | 4.0  | 3.7     | 3.7     | 3.5     |
| Sweden         | 0.1                            | 2.7     | 2.6  | 3.9     | 3.0     | 2.7     |
| United Kingdom | 1.2                            | 2.6     | 2.2  | 1.7     | 2.7     | 2.3     |

1) Projections

Source: OECD, 1999b

## STRUCTURAL FACTORS DRIVING INDUSTRIAL GROWTH

10. The 1990s were a decade in which business and industry underwent considerable change. Globalisation and expansion of trade created new opportunities for firms to expand markets, while forcing the firms to develop new strategies to maintain and enhance their positions in light of growing international competition. Towards the end of the decade, the global slowdown heightened merger and acquisition activity in many industry sectors, speeding the consolidation that growing market liberalisation had set in motion. Within economies, manufacturing continued to cede territory to services, which now account for 60 to 70% of economic activity and jobs in most OECD countries. Indeed, services in effect have become the platform for economic growth in most countries, with manufacturing playing an important, increasingly interrelated role (OECD, 2000c). At the same time, OECD economies experienced a decided shift towards knowledge-based activities which are transforming manufacturing and service industries alike into enterprises that must pay increasing attention to the cultivation and exploitation of human capital in order to be competitive.

11. The changes in business and industry have not affected individual OECD countries in the same ways, nor to the same extent. Different economic, political and social environments can explain much of the difference between countries. Identifying the principal differences and understanding how they affect performance is important, as it can suggest how policies could be modified to improve growth and employment prospects. In the analysis that follows, attention is paid to some of the key structural factors that appear to have been driving industrial performance in recent years, and some of the areas where varying framework conditions appear to be responsible for important differences in industry performance. Six areas are addressed:

- *Information and communication technology*, which is pressuring firms to restructure around core competencies, while providing a boost to growth in business services;
- *Electronic commerce*, which is enhancing business productivity and efficiency;
- *Globalisation*, which is increasing global competition while fostering increased cross-border alliances;
- *Venture capital and entrepreneurship*, which is providing financial and technical resources to support growth and investment in promising endeavours;
- *Corporate governance*, which is influencing how firms are responding to evolving developments in their markets; and
- *Other (regulation and government support)*, which can have pronounced effects on competition and innovation.

12. During the Forum, it would be beneficial to discuss how these, and related, factors are influencing industry performance in general, and why the effects appear to have varied among countries in particular. Other factors which could play an important role in understanding how industry performance

varies among countries include: 1) *the regulatory environment*, which can vary from relatively benign to highly restrictive and bureaucratic; and 2) *government support*, which can give a boost to promising industries, but, by the same token, can distort economic decision-making in unfavourable ways. Reforms in the regulatory environment have been pursued in most OECD countries during the 1990s, with favourable effects on competition and growth in many key sectors. Within the OECD area, however, significant differences in the overall regulatory environment still exist (see Annex Figures 1 and 2). Much progress has been made generally in the following areas [OECD, 1999b; OECD, 1999j; OECD, 1999k]:

- *Liberalising financial markets;*
- *Liberalising and strengthening trade in goods and services, through the GATT and GATS;*
- *Liberalising telecommunications markets;*
- *Improving labour market performance; and*
- *Improving the effectiveness of innovation and technology policy.*

13. Less progress has been made in:

- *Reducing state aids to industry and agriculture;*
- *Reducing the distortions that tax regimes can have on economic decision-making;*
- *Enhancing public sector performance/efficiency; and*
- *Strengthening the legal framework governing competition on product markets.*

14. Government support has played a key role in fostering development of some promising technologies that the private sector was uninterested in pursuing. Conventional economic theory suggests that governments should particularly subsidise basic research, where market failures are the most pronounced. However, the experience of the past three decades shows that major ICT innovations (e.g. timesharing, networking, routers, workstations, optic fibres, graphical interfaces, e-mail, semiconductors, parallel computing) tended to involve significant applied or developmental work and were the subject of government-funded research. Some important ICT innovations, such as relational databases and RISC chips, were developed by government funding after industry abandoned the research. As the ICT example shows, governments will need to work closely with business to find the appropriate balance between public and private interests in research and technology development.

#### **A. Information and communication technology**

*Issues: How pronounced are the effects of ICT on firms? How can the direct and indirect effects be observed and measured? Has the nature and intensity of indirect effects and externalities changed in recent years? What ICT-driven changes lie in store for industry? In what ways have the effects differed among industry sectors? Why do the effects appear to be more pronounced in some OECD countries than others?*

15. Technology provides the means through which ideas and inputs are transformed into goods and services. The state of technology, pace of innovation, and economic environment in which it operates influences the contributions it can make to economic output and growth. This section focuses on the effects

that advances in one area -- information and communication technology (ICT) -- are having on economies. While not the only area where significant advances are being made, it appears to be one which deserves special attention in light of the key role it is playing in driving structural change and growth in business and industry. Separate attention is later paid to electronic commerce, which is having important effects on business organisation. The section evaluates the overall impact that ICT advances appear to be having on economies, describes how ICT is pressuring firms to focus on core competencies and increase outsourcing, and how it has enabled some knowledge-based service industries to exploit economies of scale in ways that have stimulated growth and innovation. During the Forum, it would be useful to discuss how these overall changes are affecting different sectors in different OECD countries, and to explore the implications for the work force. It is not clear, for example, what the economic effects of industry "re-engineering" will be and what policy issues it will raise, nor is it clear what the principal challenges facing the work force will be.

### *Economy-wide impact of ICT advances*

16. Innovation in ICT is leading to notable increases in efficiency in manufacturing, while creating new knowledge-based service industries that are becoming increasingly important sources for jobs and economic expansion. At the very least, the new and evolving technologies are contributing to a re-engineering of traditional industries, more globally oriented strategies (via strategic alliances with foreign firms, mergers and acquisitions, etc.), and a forging of new relationships with suppliers and customers (via electronic commerce). The Internet, which provides a non-proprietary platform that is universally available to virtually anyone with access to a telephone and a computer, is at the heart of, and driving, developments. The ICT-Internet revolution has energised and attracted a growing number of entrepreneurs, which is feeding and accelerating innovation and the development of new products and services.

17. The impact and significance of ICT advances, particularly as regards the Internet, have been likened by some to the discovery and development of the steam engine and electricity, while being downplayed by others who see its implications in a more limited light. Indeed, the statistical evidence supporting the notion that ICT is underwriting a broad-based structural increase in productivity is scant. One recent analysis, for example, argues that the recent rebound in US productivity growth can be attributed to three factors [Gordon, 1999]:

- *Improved methods for measuring price deflators;*
- *The normal pro-cyclical response of productivity in periods like 1997-99, when output grows faster than trend, and;*
- *The explosion of output and productivity growth in durable goods, entirely due to the production of computers.*

18. The analysis concludes that there has been no productivity growth acceleration in the 99% of the economy located outside the sector which manufactures computer hardware.<sup>2</sup> Far from exhibiting an acceleration in productivity, the slowdown in productivity growth in durable manufacturing (apart from computers) is seen as having worsened, with no acceleration at all occurring in nondurable manufacturing. Indeed, related OECD work indicates that while ICT has contributed importantly to overall economic growth, there has been no statistical evidence so far that suggests that its contributions have been of a

---

<sup>2</sup> Beyond that which could be explained by price remeasurement and by a normal (and modest) pro-cyclical response.

fundamentally different nature than other factors of production (in terms of its effects on multi-factor productivity) [OECD, 1999c].

19. The absence of broad, economy-wide effects is in marked contrast to the observable developments of ICT on business activity. It seems clear, for example, that computer-integrated manufacturing, firm-level ICT networks, ICT-based integration of producer-supplier and wholesale-retailer networks and advanced telecommunications technologies have improved the efficiency and competitiveness of firms across virtually all sectors, in a variety of ways [Box 1]. Why this has not shown up in aggregate statistics poses a paradox, which could be explained in a number of ways [National Science Board, 1998]:

- *There is no paradox -- ICT has positive effects on business and economic performance, but we are unable to measure these effects easily;*
- *The paradox is real but temporary -- our social and organisational ability to adapt to new technology lags the pace at which technology is introduced; or*
- *The paradox is real and not temporary -- the implication of which is that ICT has no beneficial consequence for the economy, and hence reflects substantial opportunity costs.*

20. A review of ICT and the banking sector suggests that the second explanation may have been valid during early stages of ICT adoption, but that by the 1990s, measurement issues (the first explanation) made it difficult to calculate the efficiency and welfare gains that had been achieved by the industry [National Science Board, 1998]. The observations could well be valid for other sectors. The heaviest users of ICT have traditionally been service industries, a segment of the economy where measurement problems are pronounced.

#### **Box 1. Effects of ICT diffusion on business**

*Computer-integrated manufacturing*, enables automated model changes on the production line as well as fully integrated design and manufacture. Resulting shortened cycle times and the declining significance of economies of scale have led to a competitive environment that focuses on quality, customization, and timeliness of delivery. *Firm-level ICT networks* (“intranets”) integrate finance, manufacturing, R&D, operations, and marketing, and have fostered the rise of strategic management in industry. The *ICT-based integration of producer-supplier and wholesaler-retailer networks* enables responsiveness to daily changes in customer demand and a fundamental revolution in inventory management. *Advanced telecommunications technologies* have integrated international capital markets and literally created a global financial industry. In short, ICT has moved economic markets and business behavior far closer to “real-time” mode than has ever existed in the past. Yet in almost all instances, the precise economic impacts of these effects cannot be quantified, and there is often contradictory evidence about the role of IT.

Source: National Science Board, 1998.

21. As to the scope of the effects of ICT on economies, it is clear that the rapid development of the Internet is affecting key aspects of economies and societies. In effect, it is revolutionising the way individuals and organisations collect, evaluate and transmit knowledge and information, both in home and work environments. In doing so, it has greatly enhanced the power of individuals and small business, by providing an accessible, low-cost platform to promote ideas, information and commerce.

22. The impact of these changes, which are evolving and show no signs of abating, are akin to other key technological advances, with several key differences relating to the speed with which innovation can

be diffused and adopted, and the size of the market that is affected. The discovery and development of electricity and the steam engine, for example, were breakthroughs which initially had limited effects on small parts of selected economies. The development and diffusion of applications took considerable time, but, once made, the cumulative effects were enormous. In the case of ICT and the Internet, the development and diffusion of new products to a global audience can in some instances occur instantaneously, with immediate impact. As with electricity and the steam engine, the significance of the cumulative effect on societies will probably not be known for some time; the potential, however, is great [OECD, 1999d]:

As much as the automobile, a tangible industrial product, came to symbolise the synergies of the mass-production and mass-consumption era, the future is likely to give the Internet with its intangible digital services the status of icon of the knowledge economy. The Internet is the facilitator of a much vaster system that spans all digital information, from biotech to nanotech, and all sectors of the economy, from agriculture to art. Like the automobile before it, the spread of this “network of networks” could be a primary force behind a long boom. The potential is there for a leap on a par with the dramatic changes that distinguish the living and working conditions of the average person of the 19th versus 20th centuries.

23. Whether the potential is fulfilled, the assessment goes on to say, depends to a large extent on the way that governments shape their policies.

#### *Effects of ICT on industry structure*

24. As indicated above, advances in ICT are pressuring firms to re-engineer themselves in order to maintain or enhance their competitiveness. Now that firms are able to move information into and out of companies as fast as they can within, traditional, closed, hierarchical structures have effectively been punctured. As a result, firms are being pressured to become flatter and more focused on those aspects of their business in which they hold true competitive advantage. In effect, the boundaries on their activities are shrinking to correspond to their world-class skills, with related activities being outsourced. ICT is facilitating the process by allowing a “suite” of companies operating in different but related spheres to co-ordinate in ways that enable them to operate efficiently and effectively as one.

25. The re-engineering of firms along these lines is most advanced in countries which have an open market for corporate control, where management is sensitive and responsive to outside input (from stockholders, Boards of Directors, etc.), and which have well-developed securities markets that allow companies to be bought and sold easily. The process is further behind and will take longer in areas where corporate ownership is family-based, characterised by extensive cross-holding of shares, and where banks play a central role in equity markets. These latter conditions appear to be most prevalent in Korea and Japan, where *chaebol* and *keiretsu* relationships have bound associated firms together in ways that may no longer be effective in today's globalised, highly competitive environment.

26. The re-engineering has commonly been associated with the term "outsourcing", but, as suggested above, the implications go far beyond a simple refocusing of activities on core competencies to enhance efficiency; rather, they entail major changes in the ways that corporations view and conduct themselves. As the Chairman of Sun Microsystems says [McNealy, 1999], "Saving money is not the only reason to look into outsourcing. It's not even the main reason. The best thing about outsourcing is that it frees you to concentrate on your business. ... At Sun we are leading the charge to outsource everything that's not a core competency."

*Effects of ICT on service industries*

27. Advances in ICT have had additional, significant effects on the structure of service industries. Simply defined, services are a diverse group of economic activities not directly associated with the manufacture of goods, mining or agriculture. They typically involve the provision of human value in the form of labour, advice, managerial skill, entertainment, training, intermediation and the like. They differ from other types of economic activities in a number of ways. Many, for example, cannot be inventoried and must be consumed at the point of production through personal interaction between a service provider and a client. This is in marked contrast with manufactured products, whose tangible character allows them to be stored, distributed widely and consumed without direct interaction with the entity that produced the good.

28. Advances in ICT, however, are narrowing the differences between many types of services and other economic activities. Persons are now able, for example, to participate in a growing number of service-related transactions in real, or deferred, time, without having to be physically present. Copies of movies and most other performances can be recorded and mass-produced for future consumption, like manufactured products. Software is developed and boxed like any other manufactured product, and is considered, for all intents and purposes, a good – albeit with a high service-related content. In these instances services have, in a sense, taken on the characteristics of commodities – one provider is mass-producing a common product for many people (**Box 2**).

**Box 2. ICT advances are transforming services**

In the 1920s, Ford Motor Company built the River Rouge assembly plant in Michigan. Coal and iron ore were brought in one end and finished automobiles came out the other. Today this would seem aberrant, some sort of bizarre theme park, but in fact, at that point in time, the technology of scale made it entirely rational to do that. There is a great similarity between banks today and the automobile industry that built that plant close to 80 years ago. And that is, today's banks, like Henry Ford in the 1920s, are learning the techniques of mass production for the first time.

There was a time when a bank would lend to a business or provide a mortgage, would take the asset and put it on their books much the way a museum would place a piece of art on the wall or under glass – to be admired and valued for their security and constant return. Times have changed. Banks now take those assets, structure them into pools, and sell securities based on those pools to institutional investors and portfolio managers. In effect, they use their balance sheets not as museums, but as parking lots – temporary holding spaces to bundle up assets and sell them to those investors who have a far greater interest in holding those assets for the long term. The bank has thus gone from being a museum where it acquired only the finest assets and held and exhibited them in perpetuity into a manufacturing plant which provides a product for the secondary market. Just as Henry Ford did 80 years ago, banks today are focusing on producing a standardised product at a predictable rate, under standard norms of quality, and is teaching its workforce to produce that product as quickly and as efficiently as possible.

Technology has been key to this process. The reason that we see a services economy today, and gather to talk about it and recognise its importance is because technology has allowed service industries to gain the operational leverage that manufacturing achieved 100 years ago. In addition to banks, health systems, telephone and telecommunications networks, and distribution and retailing firms are further examples of sectors that have been able to benefit from economies of scale. As a result, we are now living in a world where global scale service companies exist for the first time, whereas we have seen global manufacturing companies for 50 years or more.

*Source:* Adapted from Ehrlich, 1999.

29. The relationship between service providers and consumers is also changing in other ways that may have significant implications for economies. ICT now allows a growing number of providers to produce a single product, which is not mass-produced, but which is capable of being mass-consumed, both on a standardised or customised basis. Such is the case with online Internet access to dictionaries, encyclopaedias, newspapers, museum collections, etc. It will also apparently be the case with key, basic operating software in the near future, as both Microsoft and Sun Microsystems have announced their intentions to supplement distribution of “boxed” software, with on-line versions (Taylor, 1999).

30. ICT is also affecting the relationship between service providers and consumers in areas previously unthinkable, such as medicine, where the need for personal contact to diagnose and treat ailments is becoming less essential. “Internet” banking, real estate, retail and financial services provide other examples where personal, or onsite, contact with service providers is no longer essential for the services to be performed; in many instances such services can, in fact, be provided far more efficiently via the Internet, or through other remote communication.

31. The re-engineering of firms referred to above has also had implications for service industries, providing new opportunities for growth. As noted, in addition to increasing purchases of a growing variety of new services, companies are increasingly outsourcing service-related functions that used to be provided “in-house”. Firms are doing so in response to pressures to focus on core competencies, reduce costs and exploit external, specialised expertise more effectively (**Box 3**). The outsourcing, combined with the purchase of “new” services, has resulted in sharp growth in demand for strategic business services -- which include computer software and information processing services, research and development and technical services, marketing services, business organisation services and human resource development services. The growth has been averaging 10% per year in the OECD area in recent years, with turnover reaching an estimated USD 1.5 trillion in 1999 [OECD, 1999e]. Employment is likely to have exceeded 11 million persons in 1995, or about 2.4% of total employment for the total of the 21 countries for which employment data are available. This is more than twice the number of persons employed in the entire OECD motor vehicle industry, which is one of the largest manufacturing sectors.

### **Box 3. Factors driving outsourcing**

- ◇ *Cost and efficiency.* Outsourcing firms that provide support services to other firms are often able to do so at lower cost while offering a wider choice of innovative products. This reflects the positive effects of competition – in-house firms are likely to be shielded from competition, a condition which lowers the pressures to be efficient and the incentives and need to innovate.
- ◇ *Competence.* The increasing sophistication of information, financial, computer, research and training needs by business and the rapid evolution of new techniques and products in these fields have made it difficult for firms to maintain competitive competence in these areas. Doing so would require the accumulation and maintenance of a knowledge base in diverse disciplines that in most instances firms would be hard-pressed to justify.
- ◇ *Specialisation.* The trend in industry in recent years has been towards consolidation and concentration on core competencies, a development which has provided new opportunities for independent suppliers of both goods and services.

Source: OECD.

## B. Electronic commerce<sup>3</sup>

**Issues:** *Why is there such a rush to e-commerce by business and industry? What gains have been achieved, and what further ones are likely? Beyond cost savings, how is e-commerce affecting the structure and activities of firms? How long before we realise most of the gains from e-commerce? Are future gains likely to be incremental, or are there revolutionary innovations yet in store? Which OECD countries and industries stand to gain the most from further development of e-commerce? Who are the potential losers? What needs to be done at the national and multilateral levels to maximise the benefits and beneficiaries of e-commerce?*

32. One of the key innovations related to ICT advances has been in the field of electronic commerce (e-commerce), which is providing new ways to conduct business that will have significant effects on economic growth, productivity and efficiency, jobs and consumer choice. It has already affected the communications, finance and retail trade sectors (comprising together about 30% of GDP), but it also holds promise in areas such as education, health, and government (about 20% of GDP). Although the capability was available by the late 1960s, e-commerce development began in earnest in the early 1990s with the arrival of the world-wide web, the liberalisation of the telecommunications sector, and innovations that greatly expanded the volume and capacity of communications systems.

33. In the field of business and industry, e-commerce is having a growing impact on firms. As described below, the effects can be seen on:

- *The cost of executing and supporting sales (ordering, customer support, staffing),*
- *Procurement,*
- *Inventory management,*
- *Distribution, and*
- *Forecasting consumer demand..*

34. The move to e-commerce has been massive, but it is not clear to many what the practical significance will be to society at large. In many respects, for example, e-commerce appears to be an innovation that may not affect key aspects of buying merchandise (such as delivery times or modes of delivery). On the other hand, the analysis which follows identifies that effects could be significant. The Forum will provide an opportunity to develop a keener understanding of the wider implications of e-commerce on industry, how it could affect efficiency, innovation and growth, and what some of the industry-related issues are affecting global e-commerce.

### ***The cost of executing and supporting sales***

#### *Order placement/execution*

35. By placing the necessary information on line in an accessible format, electronic commerce merchants can increase the efficiency of their sales force by providing customers with a means to narrow their needs for sales assistance. Micron Computers reports a productivity gain of a factor of ten; their Web

---

3. This section is based principally on OECD, 1999f.

sales people spend on average two minutes on the phone with a customer who has looked at their Web site, but 20 minutes with traditional customers [Kehoe, 1998]. Auto dealers report similar gains -- they spend about \$25 to deal with an e-commerce-generated bid but several hundred dollars for a face-to-face transaction [Economist, 1998].

36. In addition, e-commerce is effective at reducing the costs of attracting new customers. While far from “friction-free”, advertising is typically cheaper than for other media and more targeted. For example, while Carpoint (an e-commerce auto referral site) typically charges dealers about \$200 in advertising and fees per car sold, car dealers typically spend \$450 per car sold through traditional media [Kehoe, 1998]. In addition, many merchants can send e-mail to prospective customers, and the WWW, with its hyper-links, makes it relatively easy to sell a variety of products (“cross-sell”) to existing customers.

37. Finally, the electronic interface allows e-commerce merchants to check that an order is internally consistent and that the order, receipt, and invoice match. While this simple process may seem trivial, both General Electric (GE) and Cisco report that one quarter of their orders (1.25 million in the case of GE) had to be reworked because of errors. At Cisco, the use of electronic commerce for ordering instead of phone, fax or e-mail has automated the consistency check and has reduced the error rate to 2%. To address the problem, GE has developed its Trading Post Network (TPN), which allows requisitions to be posted electronically for outside bid by any supplier and has significantly reduced the error rate in orders. It has also generated other benefits, such as a 5 to 20% drop in materials costs due to increased supplier competition and a 50% reduction in the procurement cycle [Margherio *et al.*, 1998].

#### *Customer support/after-sales services.*

38. In what are increasingly knowledge-based economies dominated by sophisticated products, customer service and after-sales service are a major cost for many firms. Traditionally, this meant placing service personnel in the field to visit clients, staffing call centres, publishing extensive documentation, or issuing software. For many firms, these costs are substantial, accounting for more than 10% of operating costs. Through electronic commerce, firms are able to move much of this support on line so that customers can access databases or “smart” manuals directly; this significantly cuts costs while generally improving the quality of service.

39. An example is the Federal Express Internet site which allows customers to order package pick-up, generates a bar-coded label for the package, permits customers to pay for the service and allows them to track the delivery. With over 1 million “tracks” a month, half of which would have meant phone calls to FedEx’s call centre, the system has saved FedEx millions in labour costs [Margherio *et al.*, 1998]. Cisco, the largest supplier of routers for Internet traffic, provides insight into how aggressive use of e-commerce to provide customer support can significantly reduce costs. As of 1997, Cisco had moved 70% of its customer support on line, including everything from manuals to software to employee recruitment [Meeker, 1997]. This has eliminated an estimated quarter-million phone calls a month, saving over \$500 million, which represents about 9% of total revenue or 17% of total operating costs [Margherio *et al.*, 1998].

#### *Staffing*

40. By and large, e-commerce shops require far fewer, but more highly-skilled, employees. Federal Express reports that their online customer service system has represented a savings of 20 000 new hires (about 14% of their total labour force). Cisco reports that, thanks to its e-commerce Web site, they did not have to hire 1 000 new staff for their sales/support group (out of a total of 4 500 sales and marketing employees and 11 000 total staff) [Meeker, 1997 and US Securities and Exchange, 1998]. GE reports that

their TPN has resulted in the transfer of 60% of their staff involved with requisition and that labour costs associated with procurement have declined by 30% [Margherio *et al.*, 1998]. These cases suggest that personnel savings are significant and represent a major cost savings associated with electronic commerce.

### *Procurement*

41. Just as electronic commerce can significantly reduce selling costs, it can also lower the costs associated with buying. While the actual transaction takes place outside the firm, the costs associated with procurement constitute significant internal costs. Even for low-value requisitions for office supplies or travel, the typical purchase order costs between \$80 and \$125 to process, a sum that in many cases exceeds the value of the material being bought [Margherio *et al.*, 1998], owing to the error-prone and time-consuming process generally required to control purchasing costs and the fact that a typical purchase must go through several departments. Attempts to circumvent these processes usually result in even higher costs because negotiated discounts are not obtained or incompatible material is ordered. Internet-based e-commerce procedures now make it possible to apply EDI-type systems to relatively small purchases, thereby drastically reducing errors, while ensuring compliance with organisational norms, and speeding the process.

42. Estimates of the savings gained range from 10 to 50% [Girishankar, 1997], although in many cases the largest savings are not monetary; MCI reports that using e-commerce to buy PCs reduces its computer purchase cycle from four to six weeks to 24 hours [Margherio *et al.*, 1998], Bell South has cut the time needed to approve an expense report from three weeks to two days [Davis, 1998], and by replacing its EDI system with an Internet-based system, the US General Services Administration (GSA) has more than halved the time needed to complete a purchase (Girishankar, 1997).

### *Inventory management*

43. Directly related to savings in time associated with procurement are savings in inventory carrying costs; the faster an input can be ordered and delivered, the smaller an inventory has to be to support business. Approximately 37% of all inventories are “carried” by manufacturers, while 25 and 27% of total non-farm inventories are held by wholesale and retail trade, respectively. Each stage of the value-added chain therefore holds considerable inventories. It is estimated that for retailers, the cost of carrying an inventory for a year is equivalent to at least 25% of what they receive in payment for the product [Taylor, 1997]. Therefore, a two-week reduction in inventory represents a cost savings of 1% of sales. As most retailers operate on margins of 3 to 4%, this is significant.

44. The impact on costs associated with decreased inventories is most pronounced in industries where the product has a limited shelf life (*e.g.*, bananas), is subject to fast technological obsolescence or price declines (*e.g.*, computers), or where there is a rapid flow of new products (*e.g.*, books, music). With computers as one of the main products sold via electronic commerce both to consumers and businesses, and the fact that computer components lose about 1% of their value each week, this industry has been an innovator in reducing inventory costs. While the experience of one firm is not generally applicable, it does give insight into some of the potential inventory savings that electronic commerce could provide (**Box 4**).

#### **Box 4. Dell, e-commerce and inventories**

Typically, a computer (PC) is made by a manufacturer, sits in a warehouse, and is shipped to a retailer, where it sits on a shelf until it is bought, a process that on average takes two months from production to sale. Since 80% of the cost of a PC represents components and since their average price drops by 30% a year, every day that can be shaved off inventory means that the manufacturer can use cheaper (and in most cases more powerful) components, and can maintain the same profit margin while selling a better product at a lower price. Dell has done this very successfully through electronic commerce and claims that parts only sit in inventory for eight days before being shipped out directly to the customer. In this way, Dell reportedly enjoys a 100% advantage in inventory turnover compared to traditional competitors, resulting in a 10 to 15% price advantage.

Sources: Court, 1998 and Margherio *et al.*, 1998.

45. The general tightening of supply chains as business-to-business e-commerce becomes more pervasive is likely to have a significant effect on inventories and their associated costs. Recent tests by the US Automotive Industry Action Group (AIAG) Manufacturing Assembly Pilot (MAP) programme, which piloted an EDI system across the Internet to a wide spectrum of suppliers and original equipment manufacturers (OEM), suggest that these benefits could be widespread. The pilot generated a 58% reduction in lead times, a 24% improvement in inventory levels, and a 75% reduction in error rates. When deployed more widely in 2000, it is expected to save the US automotive industry an estimated \$1 billion a year (Automotive Industry Action Group, 1999).

#### ***Distribution***

46. Distribution costs can be significantly reduced (by 50 to 90%) for digital products such as financial services, software, and travel, which are important e-commerce segments. For these products, the cost reduction associated with electronic commerce could have large economic impacts and further fuel the migration of these sectors to electronic commerce. In the case of airlines, electronic tickets now account for a major share of all tickets for some major carriers; this has resulted in substantial savings and is forcing competitors to follow suit. For sectors such as music, where songs can be downloaded directly from the producer, or news, where the journalist e-mails the reader directly, huge savings are reaped over traditional forms of distribution. This reduction in distribution costs is especially important for international trade, as the ability to “download” some products without incurring shipping costs is thought to be a strong stimulus to trade, particularly for small and medium-sized enterprises. Even for tangible goods, e-commerce methods can reduce the administrative costs associated with trade and customs clearance by over 25% (WTO, 1998).

#### ***Forecasting consumer demand***

47. Electronic commerce merchants who allow consumers to customise their order or select from a wide variety of choices obtain valuable information on consumer preferences. This should improve their ability to forecast demand. In a traditional store, a consumer might buy a computer with unwanted features or lacking certain features because that model was available. In such a situation, the merchant is ignorant of the consumer’s true preferences. The electronic commerce merchant who offers a “built-to-order” computer, instead, knows what consumers prefer and can adjust product lines accordingly. In addition, the links that electronic commerce provides along the supply-chain make it possible to pass this information on to partners, thereby lowering their costs and probably the overall price.

*Other*

48. In addition to these effects, e-commerce is also changing the role that intermediaries play, increasing the importance of some, decreasing the importance of others, and eliminating some others altogether. Prices for goods and services are also likely to be affected, as e-commerce empowers suppliers and producers to market globally, while similarly providing consumers with more choice. The net effect is greater competition and choice, which are important elements for spurring innovation and long-term growth.

**C. Globalisation**<sup>4</sup>

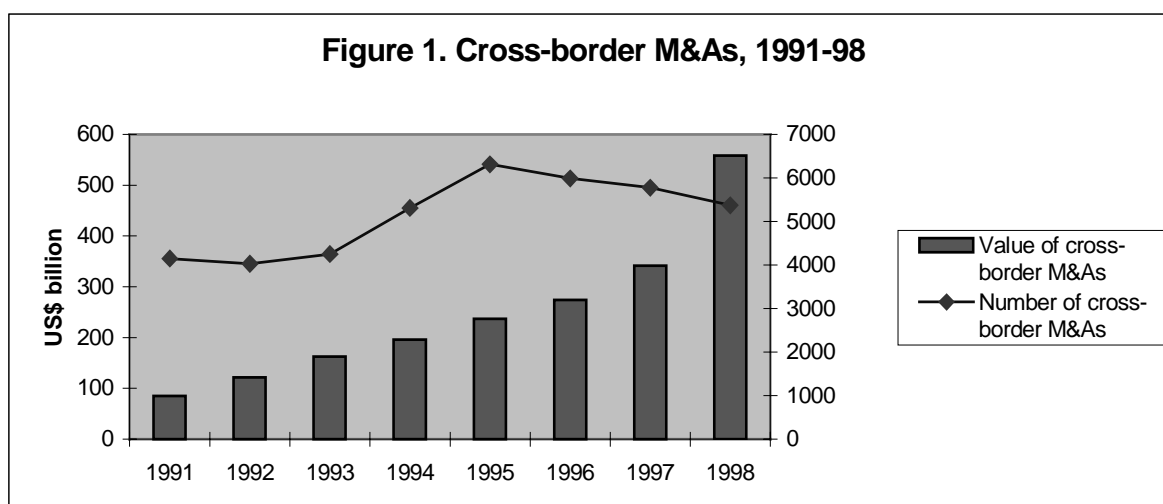
*Issues: Several analyses indicate a correlation between openness and growth performance -- what evidence is there of such a linkage? Which OECD countries have benefited most from globalisation/openness and how does this vary by country, e.g. size and income level? How can countries modify policies to benefit more from it? How has globalisation affected efficiency and growth in industry? Which industry sectors have been most affected? What are the prospects? International M&A activity has risen sharply in recent years -- has a peak been reached or is the upward trend to continue? What are the implications of the M&As for growth and competition?*

49. Because exposure to international competition forces restructuring and technological modernisation, globalisation is generally believed to be good for growth. Openness provokes adjustments between industries, as less efficient firms and industries give way to those which are more efficient. Positive effects are realised through economies of scale and scope, greater outsourcing, improved management and organisation, and transfer of technology and know-how. OECD data show that labour productivity in plants producing for export is higher than in those producing for home markets. Employment growth in exporting firms is higher than in non-exporting firms, particularly in high-technology sectors. Labour productivity in foreign affiliates is generally higher than that in nationally-based firms. And foreign investment tends to increase associated trade flows to have a cumulative impact: studies of manufacturing sectors find that each dollar of outward FDI is associated with some two dollars of additional exports.

50. Globalisation increased in scope during the 1990s, as companies sought to enhance their development, production, sourcing, marketing and financial activities. During 1985-96, the ratio of trade to world GDP rose three times faster than in the previous decade. Services trade has been the fastest-growing component. World merchandise trade has grown by a factor of 16 in real terms since 1950, while world real output grew by a factor of only 5.5. Foreign direct investment flows have increased 25 times since 1970 with international production now more important than exports in supplying foreign markets. And FDI flows are currently mostly cross-border mergers and acquisitions rather than greenfield investment. The value of cross-border M&A grew more than six-fold in the period 1991-98, while the number of international strategic alliances increased seven-fold in this period (**Figure 1**). The most globalised sectors are technology-based: computers, scientific instruments, pharmaceuticals, electronics and automobiles.

---

<sup>4</sup> See OECD, 1998; OECD, 1999g; and OECD, 2000b.



Source: KPMG Corporate Finance, 1999.

51. The scope and features of globalisation differ across countries. Industry in small OECD countries is often more globalised than that of larger countries, particularly in the Netherlands, Switzerland and Sweden. Among the G7 countries, the United Kingdom is most globalised both in domestic and foreign markets. Although American multinationals are both larger and more numerous, their weight in American industry as a whole is lower than for many small economies. Similarly, total productivity growth is affected more by exposure to trade in small open economies than in larger ones. For smaller open European economies, including the Netherlands, Sweden, Denmark, Finland and Norway, trade played an important positive role in productivity growth from 1983-95. But foreign investment seems to have stronger complementarity effects with trade for larger countries, such as the United States. However, in the current environment, support for further openness, or globalisation, seems to be at risk. The implications for industry need to be addressed -- particularly in light of the enormous potential gains to be made in liberalising trade in services.

#### D. Venture capital and entrepreneurship

*Issues: How rapidly is venture capital globalising? What are the impediments to further cross-border growth? How effectively are the needs of promising start-ups being met by venture capitalists in different countries? Why do some OECD countries seem to be doing so well in expanding venture capital activities, while others seem to be languishing? In which OECD countries have investors developed the keenest appreciation for the value of intangible assets? What can other countries do in this regard? To what extent and in what ways do policies discourage venture capitalists in OECD countries (through, for example, taxes, investment restrictions, etc.)? In addition to financial resources, venture capitalists often provide managerial and technical support to new firms -- where is such support the most advanced, and in which countries is more attention needed?*

52. The availability of venture capital financing is being pinpointed as a key factor in growth. Venture capital is high-risk funding generally invested in new firms that are not quoted on stock markets. Venture capital is a prime factor in the emergence and expansion of innovative firms which have problems obtaining conventional debt financing. Their inherent riskiness renders them less attractive to the banking sector, and their heavy reliance on intangible assets limits their ability to raise collateral-based lending from traditional financial institutions. Preliminary evidence shows that venture-backed firms show superior

performance relative to other companies, in areas such as research and patenting [OECD, 2000a]. Venture financing, which recognises the value of know-how and other intellectual capital, is well-suited to funding fast-growth activities, particularly those with a large ICT component. In addition to financial resources, it also must be noted that venture capitalists often provide valuable technical and managerial assistance and advice to start-ups to strengthen their business plans and operations (albeit to varying degrees).

53. Venture capital is most in abundance in those countries experiencing rapid growth in the 1990s (**Box 5**). The United States (US\$ 10 billion per year) and Canada (US\$ 1 billion) have the largest venture capital markets in the OECD, followed by the United Kingdom [OECD, 2000a]. While venture capital in other European countries has been expanding rapidly in the last few years, it is still rare in countries such as Japan. But it is more important to look at the life-cycle stage to which financing is directed. US and Canadian venture capital is mostly directed to early-stage investment, namely seed and start-up funding, where it is most needed by new firms. In Europe, Japan and other OECD countries, venture capital is later-stage and mostly finances the expansion of firms already present in the market.

#### **Box 5. Recent trends in venture capital in the United States**

Propelled by the surging technology sector, venture capital investment in the United States rose by 24%, to \$14.27 billion in 1998. Internet-related ventures posted the largest single increase, rising by 66%, to \$3.5 billion. As a whole, technology-based companies accounted for \$10.8 billion or 76% of all investment. The technology sector includes companies in the biotechnology, communications, computers and peripherals, electronics, environmental, medical devices, semiconductors and software and information categories. The 1998 outcome reflects a near doubling in technology investments over two years, and a tripling of Internet-related investments.

Far more impressive growth occurred in 1999. Through the first three-quarters of 1999, venture capital funding soared to \$21 billion, which was already close to 50% higher than for the whole of 1998. Some \$18 billion of the 1999 total was invested in technology-based companies, with \$10 billion directed towards Internet-related investment. In the third quarter, the driving force of the Internet was evident in increases in business-to-business and business-to-consumer electronic commerce, infrastructure, content and software.

*Sources:* PricewaterhouseCoopers, 1999a; PricewaterhouseCoopers, 1999b.

54. In addition, an estimated 80% of US venture capital disbursements goes to technology-based firms, compared with 50% in Europe and 25% in Japan. ICT-related businesses are the leading recipients of venture capital in the United States, compared to more traditional sectors in Europe such as industrial machinery and leisure products. These differences in the level and nature of venture capital supply arise from differences in economic environments (more open systems being more conducive to venture capital) as well as supply-side considerations. The US market receives about 40% of its funds from institutional investors such as pension funds, while in Europe and Japan, banks supply the bulk of capital (about 60%) and pension funds only 8%.

55. While venture capital supply is important, it is only one side of the equation. In the absence of a healthy community of small firms and an entrepreneurial climate, there may be insufficient demand for venture funds. A study which rated countries based on their level of entrepreneurial activity, as measured by the average business start-up rate, showed the following divergence: *high* (Canada, Israel, the United States), *medium* (Italy, the United Kingdom) and *low* (Denmark, Finland, France, Germany and Japan) [OECD, 2000a]. Countries with high ratings seem to share the following characteristics:

- *Citizens value entrepreneurship and the independence associated with starting and managing a business;*
- *The population is highly capable of recognising entrepreneurial opportunities;*
- *Risk-taking is a value reinforced by the educational system; and*
- *The regulatory system makes venture capital investing relatively easy.*

56. Framework conditions and related policies are also important in fostering a supportive framework for entrepreneurs and their financiers. Streamlined processes for starting a business, straightforward regulations and simplified compliance procedures, and advantageous capital gains tax rates are key in this regard. Moreover fostering the development of secondary stock markets, the use of stock options and the formation of business angel networks are conducive to start-ups.

57. Recognising these needs, a number of countries have introduced, or are planning to introduce, reforms aimed at reducing "red tape" for start-ups, which vary considerably within the OECD area (**Table 3**). The countries undertaking these reforms include Germany, France, Italy, United Kingdom, Australia, Austria, Finland, Mexico, the Netherlands, Portugal and Spain [OECD, 1999k]. Germany has also extended exemptions for very small companies from employment protection requirements. Measures to ease financing constraints for small and medium-sized companies have been taken in many countries, including Japan, Germany, France, Italy, the United Kingdom, Canada, Australia, Austria, Denmark, Finland, the Netherlands, New Zealand, Norway, Spain, Sweden and Switzerland.<sup>5</sup> In Germany, France and Austria, steps have been taken to strengthen links between small and medium-sized enterprises and research centres. In addition, several countries have also undertaken initiatives to enhance the access of firms to finance and risk capital, through broad reforms to financial markets (Germany, Austria), and through measures to ease access to venture capital (Japan, Germany, Austria, Belgium, Sweden) [OECD, 1999k].

**Table 3. Formalities for establishing a business**

| COUNTRY     | # of Procedures | Time (weeks) | Est. costs (ECU) |
|-------------|-----------------|--------------|------------------|
| France      | 10              | 4 - 8        | 1 900-4 600      |
| Germany     | 6               | 8 - 24       | 750-2 000        |
| Italy       | 18              | 22           | 7 700            |
| Japan       | 6               | 2 - 4        | 2 100 - 6 000    |
| Netherlands | 2               | 12           | 900              |
| Spain       | 7               | 19 - 28      | 330+             |
| Sweden      | 3               | 2 - 4        | 1 130            |
| UK          | 1               | 1            | 900              |
| US          | 0               | 1 - 2        | 200 - 800+       |

Source: Logotech S.A., 1998.

58. In addition to differences in the size and scope of venture capital markets, entrepreneurial climates in countries differ from one another relative to the conditions under which initial public offerings are made, and relative to the possibilities performance-based compensation (through stock options and the like). These differences could be an important factor in understanding the success that some countries have

<sup>5</sup> See section on "venture capital" for further information.

had in rapid development of emerging ICT-related industries. This is an important theme which could be elaborated on during the Forum.

## E. Corporate governance

*Issues: In today's economic environment, "outsider-dominated" systems seem to have the upper hand in capitalising on new business opportunities, whereas it was not long ago that "insider-dominated" systems were prized. How has the situation changed? Are the two compatible and competitive with each other, or will one, or both, have to adapt?*

59. The way that corporations are organised and controlled has significant implications for firm performance. The framework that governments establish to govern behaviour are, in turn, of great importance as they establish the boundaries within which business operates. In addition to influencing the composition of stakeholders (investors, workers and managers), such frameworks can affect the investment behaviour of the financial community, the ways in which management takes into account the views of other stakeholders, and the degree to which corporations react to signals from product markets.

60. An examination of governance practices across OECD countries reveals a range of outcomes [OECD, 1999h]. In a simplistic comparison, *outsider systems* -- seen in the United States and the United Kingdom -- have wide, dispersed ownership. They tend to be open, transparent and responsive to markets, but may have short-term perspectives and weak monitoring of management. *Insider systems* -- seen in countries such as France, Germany, Korea and Japan -- have more concentrated ownership. They have fewer shareholders and close relations with other firms, suppliers and banks. They tend to have strong managerial oversight and longer-term perspectives, but may be less responsive to competition and markets. There are, of course, variations both within and between countries. In the current economic environment, the insider system appears to be under pressure, as corporate restructuring and hostile take-overs become more common (**Box 6**).

### **Box 6. Karate to keiretsu?**

Faced with deteriorating financial performance, the car manufacturer Nissan merged with the French firm Renault, in March 1999. Renault deployed its Brazilian cost-cutting expert Carlos Ghosn as Chief Operating Officer to oversee the restructuring. Most of the actions that have since been proposed represent a marked departure from the way business has been conducted in Japan. In an effort to free up capital and drive down parts-purchasing costs, for example, the new management team plans to slash the number of Nissan's suppliers from 1,145 to 600, while reducing the number of associated companies in which it holds shares from 1,394 to 4. Selling the shares in the affiliates strikes at the heart of the keiretsu system, which for decades has linked large manufacturers to suppliers through shareholdings, exchanges of key managers and long-term supplier relationships.

The cross-holding of shares that form the basis of the keiretsu was devised during the rapid period of economic growth in the 1950s and 1960s. Typically 30 to 40% of stocks were cross-held by companies in the same keiretsu as a means to prevent take-overs by outside investors. In a sector like automobiles, keiretsu relations among buyers and sellers or parts and components underpinned business relationships and resulted in long-term commercial commitments. The keiretsu participants worked together on research and development, ensured stable supplies of parts, and supported each other where needed. In the case of the Nissan group, seasoned executives were regularly assigned senior positions in associated keiretsu companies. This tied the affiliates even more closely to the carmaker, making it difficult for it to seek alternative suppliers, even when an affiliate was not competitive.

Sources: OECD, Shirouzu, 1999 and Nissan, 1999.

61. Patterns of corporate financing tend to differ in these systems. In recent years, outsider systems have excelled at supplying venture capital along with managerial advice to innovative start-ups. High levels of disclosure and transparency raise investor confidence and provide a good environment for venture investments. Insider systems, which are associated more strongly with bank-based financing, were previously well-suited to industrial investment needs and fostering long-term growth. However, they appear less effective in an era in which innovation is spurring growth in new areas; new, possibly risky ventures tend to fall through funding gaps. Here, governance practices may be preventing the evolution of financing to match market demand.

62. Governance systems also affect the responsiveness and flexibility of firms. In outsider systems, firms can more easily restructure, adopt new approaches to organisation and management. However, a lack of adequate management oversight can lead to unwise investments or compensation levels. In insider systems, ownership concentration and corporate cross-holdings can reduce competition in product markets and the ability to respond to changing circumstances. It can also affect the ability of firms to engage in mergers and strategic alliances; the firms may thus have difficulties in downsizing to smaller units or in upsizing to acquire complementary assets and skills.

63. In general, economic growth is now higher in systems marked by dispersed ownership, openness and oversight, which apparently promote innovative activity and good management. Empirical studies of the United States and the United Kingdom show that firm performance is enhanced as concentration and monitoring increase, but declines if concentration reaches too high a level (*e.g.* more than 25% of stock held by a single shareholder). Accordingly, the rights of shareholders and the role of stakeholders, and the need for disclosure and transparency, management monitoring and board accountability are the points stressed by the *OECD Principles of Corporate Governance* [OECD, 1999*i*].

64. How "open" and "closed" systems interact, and their longer-term effects on industry performance, are, however, areas requiring further examination. On the one hand, the speed and ease with which assets can change hands in "open" outsider systems can help companies capitalise quickly and efficiently on evolving synergies, thereby spurring growth and innovation. On the other hand, the emphasis which outsider systems tend to put on short-term performance may have unfavourable effects in industries where returns and benefits are only realised through longer-term strategies. "Closed" insider systems, while conducive to longer-term strategies, seem, on the other hand, to be more defensive, and less inclined to take "radical" measures to improve their competitive position.

## CONCLUSIONS

65. A high degree of economic dynamism has been observed in a number of OECD countries during the past decade. The dynamism appears to be rooted in strong framework conditions that have facilitated sharp growth in emerging sectors, while allowing substantial restructuring, consolidation and contraction to occur in others. Beyond framework conditions, advances in information and communication technology are forcing firms to abandon hierarchical vertical structures and focus on core competencies in order to enhance their competitiveness. The resulting increased outsourcing of functions that used to be performed in-house has, in turn, fostered the growth of innovative service industries whose activities are enhancing economy-wide increases in productivity and growth. The structural changes that are occurring in industry have important implications for the work force. The evolving needs in emerging sectors is requiring a work force that is able to acquire and adapt new skills to meet changing needs. This has reinforced the value of and need for effective lifelong learning opportunities.

66. Within the ICT area, the development of the Internet has further revolutionised the way people and organisations collect, evaluate and transmit knowledge and information. Still in its early stages, the medium has already affected many aspects of societies, and, given the current high level of entrepreneurial activity, is likely to continue to do so, albeit in unpredictable and maybe unforeseeable ways. Individuals and small business have been empowered by the Internet, which has provided them with an easily accessible, low-cost platform to promote ideas, information and products. The role of governments in developing the norms, standards and rules to assure that the needs of society are best met -- both at the national and international levels -- is an area requiring ongoing attention in light of the high stakes.

67. Internationally, ICT advances, deregulation and liberalised trade and investment have accelerated the globalisation process, as reflected in the recent increase in cross-border strategic alliances, mega-mergers and acquisitions in the automotive, pharmaceutical, aeronautic, steel, music, energy, petroleum, banking and finance and telecommunications sectors, to name but a few. The globalisation has tended to increase the relative power of firms *vis-à-vis* governments, raising increased societal concerns about its costs and benefits. Clearly, more attention will have to be paid to issues and concerns in this area.

68. Responding to the challenges and opportunities mentioned above will require increased understanding of the forces that are driving change in different industry sectors and in different countries. the purpose of the Forum will be to focus on these areas. Questions/issues to be addressed will include:

- *What are the principal structural changes occurring at the firm and sector level and what are the main factors driving these changes?* The need to maintain or enhance competitiveness is spurring firms to avail themselves of knowledge-based goods and services, particularly ICT which can have significant effects on productivity. However, the indirect (or spillover/externality) effects of ICT are not clearly understood. ICT innovation, together with the rapid development of electronic commerce, can improve the effectiveness and efficiency of labour and other forms of capital both within firms and in dealings between firms. But such effects have been difficult to observe at the macroeconomic level. How are the direct and indirect effects of ICT manifesting themselves in firms and sectors? In which areas have the indirect effects been significant and why? Has the nature and intensity of indirect effects and externalities changed in recent years?

- *How are the structural changes that are occurring in industry affecting overall industrial and economic performance? How, for example, are changes in sourcing, manufacturing and marketing, and the character of goods and services being produced affecting industrial organisation? Is there a tendency towards more specialisation as firms focus on core competencies? further globalisation? increased outsourcing? increased industry consolidation? broadening of technical and commercial alliances among firms? What are the implications for overall economic performance and growth in countries? What are the implications for the labour force (e.g. as regards work qualifications and wages)?*
  
- *For policymakers, what factors are important in understanding why industry performance has differed significantly among OECD countries? Part of the reason may lie in variations in the uptake and diffusion of knowledge-based goods and services. What are the reasons for such differences (e.g. information availability, technical barriers, government policies that favour or slow adoption, availability of technical expertise, etc.)? What industry-related policies can governments pursue to strengthen the framework for growth?*

## REFERENCES

- AUTOMOTIVE INDUSTRY ACTION GROUP (1999), at Internet <http://www.aiag.org/about/accomplish.html>), as cited in OECD, 1999f.
- COURT, R (1998), "*Dell's Magic Formula*", at Internet <http://www.wired.com>, 28 May, as cited in OECD, 1999f.
- DAVIS, B. (1998), *In Certificates We Trust*", at Internet <http://techweb.com>, 25 March, as cited in OECD, 1999f.
- ECONOMIST (1998), "*Who will Deal in Dealerships*", 14 February, as cited in OECD, 1999f
- EHRlich, E. (1999), Presentation at the OECD Business and Industry Policy Forum on *Realising the Potential of the Service Economy*, 28 September, Paris, as cited in OECD, 2000c.
- GORDON, R. (1999), *Has the 'New Economy' Rendered the Productivity Slowdown Obsolete?*, Northwestern University and NBER, 14 June, at Internet <http://faculty-web.at.nwu.edu/economics/gordon/researchhome.html>.
- GIRISHANKAR, S (1997), "*Fed Gets Down to Business With Latest E-Commerce Push*", at Internet <http://www.techweb.com>, 3 November, as cited in OECD, 1999f.
- KEHOE, L. (1998), "*High Street in Hyperspace*", Financial Times, 7 May, as cited in OECD, 1999f.
- KMPG CORPORATE FINANCE (1999), *Worldwide Statistics on Cross-border M&A from 1988 to 1998*, as cited in OECD, 2000b.
- MARGHERIO, L., D. Henry, S. Cook and S. Montes (1998), *The Emerging Digital Economy*, US Department of Commerce, Washington, DC, April, at Internet <http://www.ecommerce.gov>., as cited in OECD, 1999f.
- MCNEALY, S. (1999), "*Why We Don't Want You to Buy our Software*", The Wall Street Journal-- Europe, 3 September.
- MEEKER M. (1997), "*Internet Retailing Report*", Morgan Stanley, at Internet <http://www.ms.com>, 28 May, as cited in OECD, 1999f.
- NATIONAL SCIENCE BOARD (1998), *Science and Engineering Indicators -- 1998*, Arlington, VA: National Science Foundation.
- NICOLETTI, G., S. SCARPETTA AND O. BOYLAUD (1999), "*Summary indicators of product market regulation with an extension to employment protection legislation*", OECD Economic Department Working Paper, No. 226, as cited in OECD, 1999b.

- NISSAN (1999), *Nissan Revival Plan*, 18 October, at Internet [www.nissan.co.jp](http://www.nissan.co.jp).
- OECD (1997), *The OECD Report on Regulatory Reform*, Paris: OECD.
- OECD (1998), *Globalisation and Industry Performance*, DSTI/IND(98)11, Paris: OECD.
- OECD (1999a), *Economic Growth in the OECD Area: Are the Disparities Growing?*, DSTI/EAS/IND/SWP(99)3, November, Paris: OECD.
- OECD (1999b), *OECD Economic Outlook*, No. 66, Paris: OECD.
- OECD (1999c), *The Contribution of Information and Communication Technology to Output Growth*, Paris: OECD.
- OECD (1999d), *The Future of the Global Economy: Towards a Long Boom?*, Paris: OECD.
- OECD (1999e), *Strategic Business Services*, Paris: OECD.
- OECD (1999f), *The Economic and Social Impact of Electronic Commerce: Preliminary Findings and Research Agenda*, Paris: OECD
- OECD (1999g), *Foreign Direct Investment and International Trade: Complements or Substitutes*, DSTI/DOC(1999)3, Paris: OECD.
- OECD (1999h), *Corporate Governance: Effects on Firm Performance and Economic Growth* [DSTI/IND(93)13], Paris: OECD.
- OECD (1999i), *OECD Principles of Corporate Governance*, Paris: OECD.
- OECD (1999j), *Implementing the OECD Jobs Strategy -- Assessing Performance and Policy*, Paris: OECD.
- OECD (1999k), *OECD Economic Outlook*, No. 65, Paris: OECD.
- OECD (2000a), *Venture Capital: Supply vs. Demand Issues*, DSTI/IND(2000)1, Paris: OECD.
- OECD (2000b), *Cross-Border Mergers and Acquisitions: Their Role in Industrial Globalisation*, DSTI/DOC(2000)1, Paris: OECD.
- OECD (2000c), *Realising the Potential of the Service Economy*, Forthcoming, Paris: OECD
- PRICEWATERHOUSECOOPERS (1999a), *"Venture Capital Investments Rise 24% and Set Record at \$14.27, PricewaterhouseCoopers Finds"*, 16 February, at Internet [www.pwcglobal.com](http://www.pwcglobal.com).
- PRICEWATERHOUSECOOPERS (1999b), *"Venture Capital Investments Double to \$9.0 Billion in Q3 1999 as technology Investments Reach All-Time High"*, at Internet [www.pwcglobal.com](http://www.pwcglobal.com).
- SHIROUZU, N. (1999), *"Nissan Shakes Japan's Economic Structure"*, The Wall Street Journal Interactive Edition, 19 October, at Internet <http://interactive.wsj.com>.
- TAYLOR, P. (1997), *"Electronic Revolution in the Retailing World"*, the Financial Times, 3 September.

DSTI/IND(2000)7

US SECURITIES AND EXCHANGE (1998), at Internet <http://www.sec.gov>, 22 April, as cited in OECD, 1999f.

WORLD TRADE ORGANISATION (1998), *"Electronic Commerce and the Rules of the WTO"*, March, Geneva: WTO, as cited in 1999f.

**ANNEX**

Annex Table 1. Real GDP, 1990-98 and estimated for 1999-2001 - Percentage change from previous period

|                            | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | Estimates and projections |      |      | 1990-94 | 1995-99 |
|----------------------------|------|------|------|------|------|------|------|------|------|---------------------------|------|------|---------|---------|
|                            |      |      |      |      |      |      |      |      |      | 1999                      | 2000 | 2001 |         |         |
| United States              | 1.7  | -0.2 | 3.3  | 2.4  | 4.0  | 2.7  | 3.7  | 4.5  | 4.3  | 3.8                       | 3.1  | 2.3  | 2.2     | 3.8     |
| Japan                      | 5.1  | 3.8  | 1.0  | 0.3  | 0.6  | 1.5  | 5.1  | 1.4  | -2.8 | 1.4                       | 1.4  | 1.2  | 2.2     | 1.3     |
| Germany                    | 5.7  | 5.0  | 2.2  | -1.1 | 2.3  | 1.7  | 0.8  | 1.5  | 2.2  | 1.3                       | 2.3  | 2.5  | 2.9     | 1.5     |
| France                     | 2.6  | 1.1  | 1.4  | -1.0 | 1.8  | 1.8  | 1.2  | 2.0  | 3.4  | 2.4                       | 3.0  | 2.9  | 1.2     | 2.1     |
| Italy                      | 2.0  | 1.4  | 0.8  | -0.9 | 2.2  | 2.9  | 0.9  | 1.5  | 1.3  | 1.0                       | 2.4  | 2.7  | 1.1     | 1.5     |
| United Kingdom             | 0.6  | -1.5 | 0.1  | 2.3  | 4.4  | 2.8  | 2.6  | 3.5  | 2.2  | 1.7                       | 2.7  | 2.3  | 1.2     | 2.6     |
| Canada                     | 0.3  | -1.9 | 0.9  | 2.3  | 4.7  | 2.8  | 1.7  | 4.0  | 3.1  | 3.7                       | 3.0  | 2.7  | 1.3     | 3.0     |
| Total of major countries   | 2.7  | 1.1  | 2.2  | 1.1  | 3.0  | 2.3  | 3.1  | 3.1  | 2.3  | 2.7                       | 2.6  | 2.2  | 2.0     | 2.7     |
| Australia                  | 1.5  | -1.0 | 2.6  | 3.8  | 5.0  | 4.4  | 4.0  | 3.9  | 5.1  | 3.9                       | 3.0  | 4.0  | 2.4     | 4.2     |
| Austria                    | 4.6  | 3.4  | 1.3  | 0.5  | 2.4  | 1.7  | 2.0  | 2.5  | 3.3  | 2.2                       | 2.9  | 2.5  | 2.4     | 2.3     |
| Belgium                    | 2.7  | 2.0  | 1.6  | -1.5 | 3.0  | 2.6  | 0.9  | 3.2  | 2.9  | 1.8                       | 2.8  | 2.7  | 1.6     | 2.3     |
| Czech Republic             | ..   | ..   | ..   | ..   | 2.6  | 5.9  | 3.8  | 0.3  | -2.3 | -0.5                      | 1.4  | 2.3  | ..      | 1.5     |
| Denmark                    | 1.2  | 1.4  | 1.3  | 0.8  | 5.8  | 3.7  | 2.8  | 3.1  | 2.7  | 1.3                       | 1.5  | 1.9  | 2.1     | 2.7     |
| Finland                    | -0.5 | -5.9 | -3.2 | -0.6 | 3.7  | 3.9  | 4.1  | 5.6  | 5.6  | 3.7                       | 4.2  | 4.4  | -1.3    | 4.6     |
| Greece                     | 0.0  | 3.1  | 0.7  | -1.6 | 2.0  | 2.1  | 2.4  | 3.4  | 3.7  | 3.3                       | 3.7  | 4.1  | 0.8     | 3.0     |
| Hungary                    | ..   | ..   | ..   | ..   | 2.9  | 1.5  | 1.3  | 4.6  | 5.1  | 3.8                       | 3.5  | 3.7  | ..      | 3.2     |
| Iceland                    | 1.2  | 1.1  | -3.3 | 1.0  | 3.7  | 1.0  | 5.6  | 5.3  | 5.1  | 6.0                       | 2.9  | 2.6  | 0.7     | 4.6     |
| Ireland                    | 8.5  | 1.9  | 3.3  | 2.6  | 5.8  | 9.5  | 7.7  | 10.7 | 8.9  | 8.6                       | 7.5  | 5.7  | 4.4     | 9.1     |
| Korea                      | 7.8  | 9.2  | 5.4  | 5.5  | 8.3  | 8.9  | 6.7  | 5.0  | -5.8 | 9.0                       | 6.5  | 5.7  | 7.2     | 4.8     |
| Luxembourg                 | 2.2  | 6.1  | 4.5  | 8.7  | 4.2  | 3.8  | 2.9  | 7.3  | 5.0  | 5.1                       | 4.3  | 4.1  | 5.1     | 4.8     |
| Mexico                     | 4.5  | 3.6  | 2.8  | 0.7  | 4.5  | -6.2 | 5.1  | 6.8  | 4.8  | 3.4                       | 3.3  | 4.0  | 3.2     | 2.8     |
| Netherlands                | 4.1  | 2.3  | 2.0  | 0.8  | 3.2  | 2.3  | 3.0  | 3.8  | 3.7  | 3.0                       | 2.7  | 2.6  | 2.5     | 3.1     |
| New Zealand                | 0.3  | -2.3 | 0.6  | 4.9  | 6.1  | 3.5  | 2.3  | 3.0  | -0.7 | 2.7                       | 3.5  | 3.3  | 1.9     | 2.2     |
| Norway                     | 2.0  | 3.1  | 3.3  | 2.7  | 5.5  | 3.8  | 4.9  | 4.3  | 2.1  | 0.6                       | 3.3  | 1.8  | 3.3     | 3.1     |
| Poland                     | ..   | ..   | ..   | ..   | 5.2  | 7.0  | 6.0  | 6.8  | 4.8  | 3.5                       | 5.2  | 5.8  | ..      | 5.6     |
| Portugal                   | 4.4  | 2.3  | 2.5  | -1.1 | 2.2  | 2.9  | 3.2  | 3.7  | 3.9  | 3.1                       | 3.4  | 3.2  | 2.1     | 3.3     |
| Spain                      | 3.7  | 2.3  | 0.7  | -1.2 | 2.3  | 2.7  | 2.3  | 3.8  | 4.0  | 3.7                       | 3.7  | 3.5  | 1.6     | 3.3     |
| Sweden                     | 1.6  | -1.1 | -1.6 | -2.4 | 4.0  | 3.7  | 1.3  | 1.8  | 2.6  | 3.9                       | 3.0  | 2.7  | 0.1     | 2.7     |
| Switzerland                | 3.7  | -0.8 | -0.1 | -0.5 | 0.5  | 0.5  | 0.3  | 1.7  | 2.1  | 1.4                       | 1.8  | 2.2  | 0.6     | 1.2     |
| Turkey                     | 9.3  | 0.9  | 6.0  | 8.0  | -5.5 | 7.2  | 7.0  | 7.5  | 2.8  | -2.3                      | 4.6  | 3.9  | 3.8     | 4.5     |
| Total of smaller countries | 4.3  | 2.6  | 2.4  | 1.7  | 3.5  | 3.1  | 4.0  | 4.6  | 2.5  | 3.4                       | 3.8  | 3.8  | 2.9     | 3.5     |
| Total OECD                 | 3.0  | 1.4  | 2.2  | 1.3  | 3.1  | 2.5  | 3.3  | 3.5  | 2.4  | 2.8                       | 2.9  | 2.6  | 2.2     | 2.9     |
| <i>Memorandum items</i>    |      |      |      |      |      |      |      |      |      |                           |      |      |         |         |
| European Union             | 3.0  | 1.8  | 1.2  | -0.4 | 2.7  | 2.4  | 1.6  | 2.5  | 2.7  | 2.1                       | 2.8  | 2.8  | 1.7     | 2.3     |
| Euro area                  | 3.6  | 2.4  | 1.4  | -0.8 | 2.3  | 2.2  | 1.3  | 2.2  | 2.8  | 2.1                       | 2.8  | 2.8  | 1.8     | 2.1     |

Source: OECD, 1999b.

Annex Table 2. Real gross private non-residential fixed capital formation - Percentage change from previous period

|                            | 1990  | 1991  | 1992  | 1993  | 1994 | 1995  | 1996 | 1997 | 1998  | Estimates and projections |       |      | 1990-94 | 1995-99 |
|----------------------------|-------|-------|-------|-------|------|-------|------|------|-------|---------------------------|-------|------|---------|---------|
|                            |       |       |       |       |      |       |      |      |       | 1999                      | 2000  | 2001 |         |         |
| United States              | 0.7   | -4.9  | 3.4   | 8.4   | 8.9  | 9.8   | 10.0 | 10.7 | 12.7  | 9.1                       | 6.4   | 5.5  | 3.3     | 10.5    |
| Japan                      | 10.9  | 6.3   | -5.6  | -10.2 | -5.3 | 5.2   | 11.3 | 7.1  | -11.3 | -5.6                      | -0.6  | 4.0  | -0.8    | 1.3     |
| Germany                    | 10.1  | 7.5   | 1.4   | -8.3  | 1.2  | -0.6  | -0.6 | 2.7  | 5.0   | 6.4                       | 4.0   | 5.0  | 2.4     | 2.6     |
| France                     | 5.6   | -1.3  | -2.4  | -8.0  | 0.8  | 3.1   | -0.1 | 2.1  | 7.6   | 6.5                       | 6.0   | 5.5  | -1.1    | 3.8     |
| Italy                      | 5.6   | 0.2   | -1.2  | -14.7 | 4.0  | 11.5  | 3.3  | 0.3  | 3.4   | 3.3                       | 3.6   | 3.8  | -1.2    | 4.4     |
| United Kingdom             | 1.0   | -7.9  | -2.9  | -2.9  | 3.7  | 7.7   | 8.8  | 11.8 | 12.5  | 7.5                       | 2.3   | 2.2  | -1.8    | 9.7     |
| Canada                     | -1.6  | 0.5   | -5.9  | -2.4  | 9.2  | 5.7   | 7.4  | 18.8 | 5.7   | 9.9                       | 6.9   | 4.8  | 0.0     | 9.5     |
| Total of major countries   | 4.1   | -1.0  | 0.0   | -0.8  | 4.3  | 7.2   | 7.7  | 8.2  | 6.3   | 5.5                       | 4.4   | 4.8  | 1.3     | 7.0     |
| Australia                  | -7.5  | -11.4 | 0.1   | 1.9   | 13.3 | 7.0   | 8.8  | 11.4 | 4.9   | 3.5                       | 1.5   | 4.7  | -0.7    | 7.1     |
| Austria                    | 11.4  | 7.3   | -3.4  | -4.2  | 10.0 | -1.9  | 3.9  | 9.2  | 6.4   | 4.0                       | 4.6   | 4.2  | 4.2     | 4.3     |
| Belgium                    | 10.7  | -3.7  | 0.2   | -6.7  | -2.4 | 7.6   | 4.1  | 6.7  | 4.7   | 3.1                       | 3.8   | 3.1  | -0.4    | 5.3     |
| Czech Republic             | ..    | ..    | ..    | ..    | ..   | ..    | ..   | ..   | ..    | ..                        | ..    | ..   | ..      | ..      |
| Denmark                    | 3.6   | -0.4  | -2.1  | -5.9  | 7.2  | 17.1  | 3.6  | 12.3 | 8.5   | 2.7                       | 3.4   | 3.8  | 0.5     | 8.8     |
| Finland                    | -5.4  | -23.2 | -19.9 | -17.7 | -2.3 | 21.6  | 9.8  | 7.8  | 11.9  | 7.8                       | 6.8   | 6.9  | -13.7   | 11.8    |
| Greece                     | 7.5   | 5.2   | 3.8   | 1.8   | 0.5  | 3.0   | 15.0 | 15.0 | 8.6   | 7.5                       | 9.0   | 9.7  | 3.8     | 9.8     |
| Hungary                    | ..    | ..    | ..    | ..    | ..   | ..    | ..   | ..   | ..    | ..                        | ..    | ..   | ..      | ..      |
| Iceland                    | 6.4   | 3.7   | -17.0 | -24.3 | 0.2  | 6.8   | 53.1 | 17.9 | 33.0  | -3.0                      | 3.6   | 0.5  | -6.2    | 21.5    |
| Ireland                    | 19.6  | -10.8 | -5.6  | -2.8  | 7.8  | 14.8  | 17.5 | 20.6 | 19.8  | 13.2                      | 9.2   | 6.6  | 1.6     | 17.2    |
| Korea                      | 19.5  | 13.1  | 0.5   | 5.8   | 15.3 | 14.0  | 7.0  | -2.9 | -30.0 | 3.8                       | 11.9  | 13.0 | 10.8    | -1.6    |
| Luxembourg                 | ..    | ..    | ..    | ..    | ..   | ..    | ..   | ..   | ..    | ..                        | ..    | ..   | ..      | ..      |
| Mexico                     | 19.4  | 16.4  | 23.2  | -3.3  | -0.4 | -38.9 | 45.8 | 34.0 | 18.3  | 8.5                       | 7.8   | 11.0 | 11.1    | 13.6    |
| Netherlands                | 2.6   | 2.2   | -3.0  | -4.2  | 0.2  | 7.5   | 6.5  | 8.4  | 8.5   | 2.0                       | 1.7   | 2.7  | -0.4    | 6.6     |
| New Zealand                | -6.6  | -17.9 | 8.5   | 23.8  | 18.3 | 18.4  | 3.6  | -1.8 | 6.2   | 12.4                      | 7.7   | 5.3  | 5.2     | 7.8     |
| Norway                     | -10.4 | 1.8   | -3.7  | 9.8   | 2.6  | 2.3   | 13.3 | 15.6 | 10.5  | -10.6                     | -15.0 | 0.1  | 0.0     | 6.2     |
| Poland                     | ..    | ..    | ..    | ..    | ..   | ..    | ..   | ..   | ..    | ..                        | ..    | ..   | ..      | ..      |
| Portugal                   | ..    | ..    | ..    | ..    | ..   | ..    | ..   | ..   | ..    | ..                        | ..    | ..   | ..      | ..      |
| Spain                      | 4.5   | 2.9   | -1.9  | -15.0 | 4.3  | 12.6  | 4.2  | 6.8  | 10.7  | 9.4                       | 9.6   | 9.7  | -1.0    | 8.8     |
| Sweden                     | -0.6  | -14.6 | -15.0 | -15.7 | 18.3 | 19.7  | 8.1  | 3.7  | 10.9  | 7.9                       | 5.7   | 5.0  | -5.5    | 10.1    |
| Switzerland                | 6.3   | -2.6  | -10.6 | -5.9  | 2.0  | 4.9   | 2.3  | 4.3  | 6.6   | 6.5                       | 4.9   | 6.0  | -2.2    | 4.9     |
| Turkey                     | ..    | ..    | ..    | ..    | ..   | ..    | ..   | ..   | ..    | ..                        | ..    | ..   | ..      | ..      |
| Total of smaller countries | 8.0   | 2.7   | 1.4   | -3.7  | 6.2  | 2.5   | 13.1 | 10.9 | 4.0   | 5.6                       | 6.3   | 7.7  | 2.9     | 7.2     |
| Total OECD                 | 4.9   | -0.3  | 0.3   | -1.3  | 4.6  | 6.3   | 8.7  | 8.7  | 5.8   | 5.6                       | 4.8   | 5.4  | 1.6     | 7.0     |
| <i>Memorandum items</i>    |       |       |       |       |      |       |      |      |       |                           |       |      |         |         |
| European Union             | 5.8   | 0.0   | -1.7  | -8.7  | 2.8  | 6.3   | 3.4  | 5.1  | 7.5   | 6.1                       | 4.6   | 4.8  | -0.4    | 5.7     |
| Euro area                  | 6.7   | 1.8   | -1.0  | -9.8  | 2.0  | 4.5   | 1.8  | 3.9  | 6.6   | 5.9                       | 5.1   | 5.3  | -0.1    | 4.5     |

Source : OECD, 1999b.

Annex Table 3. GDP deflators - Percentage change from previous period

|   | 1990 | 1991 | 1992 | 1993 | 1994  | 1995 | 1996 | 1997 | 1998 | Estimates and projections |      |      | 1990-94 | 1995-99 |
|---|------|------|------|------|-------|------|------|------|------|---------------------------|------|------|---------|---------|
|   |      |      |      |      |       |      |      |      |      | 1999                      | 2000 | 2001 |         |         |
| United States                                   | 3.9  | 3.4  | 2.2  | 2.7  | 2.1   | 2.1  | 1.8  | 1.7  | 1.2  | 1.4                       | 1.9  | 2.3  | 2.8     | 1.6     |
| Japan   | 2.3  | 2.7  | 1.7  | 0.6  | 0.2   | -0.6 | -1.4 | 0.1  | 0.4  | -0.6                      | -0.5 | -0.3 | 1.5     | -0.5    |
| Germany   | 3.2  | 3.9  | 5.0  | 3.7  | 2.5   | 2.0  | 1.0  | 0.8  | 1.0  | 1.2                       | 1.3  | 1.3  | 3.7     | 1.2     |
| France  | 2.9  | 3.0  | 2.0  | 2.4  | 1.8   | 1.7  | 1.4  | 1.4  | 0.9  | 0.6                       | 1.1  | 1.3  | 2.4     | 1.2     |
| Italy   | 8.2  | 7.6  | 4.5  | 3.9  | 3.5   | 5.0  | 5.2  | 2.6  | 2.8  | 1.6                       | 1.6  | 1.5  | 5.6     | 3.4     |
| United Kingdom                                  | 7.6  | 6.7  | 4.0  | 2.8  | 1.5   | 2.5  | 3.3  | 2.9  | 2.7  | 2.0                       | 2.6  | 2.6  | 4.5     | 2.7     |
| Canada  | 3.1  | 2.7  | 1.3  | 1.5  | 1.1   | 2.3  | 1.6  | 0.8  | -0.6 | 1.5                       | 2.0  | 2.1  | 1.9     | 1.1     |
| Total of major countries                        | 4.0  | 3.8  | 2.6  | 2.4  | 1.8   | 1.8  | 1.5  | 1.4  | 1.1  | 1.0                       | 1.4  | 1.6  | 2.9     | 1.4     |
| Australia                                       | 4.9  | 2.6  | 1.4  | 1.4  | 0.9   | 1.5  | 2.0  | 1.4  | 0.3  | 1.3                       | 2.6  | 2.5  | 2.2     | 1.3     |
| Austria   | 3.4  | 3.7  | 4.3  | 2.8  | 2.9   | 2.3  | 1.7  | 1.6  | 1.0  | 1.0                       | 1.4  | 1.3  | 3.4     | 1.5     |
| Belgium   | 3.0  | 2.8  | 3.6  | 3.7  | 1.8   | 1.8  | 1.6  | 1.5  | 0.9  | 1.1                       | 0.9  | 1.4  | 3.0     | 1.4     |
| Czech Republic                                  | ..   | ..   | ..   | ..   | 11.0  | 10.2 | 9.7  | 6.5  | 11.0 | 2.7                       | 3.9  | 4.4  | ..      | 8.0     |
| Denmark   | 3.4  | 2.5  | 2.2  | 0.5  | 1.4   | 0.8  | 2.2  | 1.8  | 2.1  | 2.3                       | 2.6  | 3.0  | 2.0     | 1.8     |
| Finland   | 5.8  | 1.6  | 1.0  | 1.8  | 2.0   | 3.6  | 0.6  | 2.0  | 2.7  | 0.9                       | 1.6  | 2.4  | 2.4     | 1.9     |
| Greece  | 20.6 | 19.8 | 14.9 | 14.4 | 11.2  | 9.8  | 7.4  | 6.7  | 4.9  | 2.7                       | 2.3  | 2.6  | 16.2    | 6.3     |
| Hungary   | ..   | ..   | ..   | ..   | 19.5  | 25.6 | 21.2 | 18.5 | 14.2 | 9.9                       | 8.0  | 6.0  | ..      | 17.9    |
| Iceland   | 16.9 | 7.8  | 3.6  | 2.5  | 2.0   | 2.7  | 1.9  | 3.4  | 5.3  | 4.1                       | 5.2  | 5.7  | 6.5     | 3.5     |
| Ireland   | -0.7 | 1.8  | 2.8  | 5.2  | 1.7   | 2.7  | 2.3  | 3.5  | 5.7  | 3.5                       | 4.2  | 4.5  | 2.2     | 3.5     |
| Korea   | 11.1 | 10.9 | 7.7  | 7.0  | 7.6   | 7.1  | 3.9  | 3.1  | 5.3  | -0.5                      | 2.3  | 2.7  | 8.9     | 3.8     |
| Luxembourg                                      | 5.2  | 2.3  | 2.6  | 0.6  | 4.8   | 0.3  | 1.7  | 3.3  | 1.5  | 1.3                       | 1.2  | 1.6  | 3.1     | 1.6     |
| Mexico  | 29.6 | 21.9 | 14.8 | 10.0 | 8.5   | 38.0 | 30.6 | 17.7 | 13.8 | 16.0                      | 11.0 | 8.5  | 16.9    | 23.2    |
| Netherlands                                     | 2.3  | 2.7  | 2.3  | 1.9  | 2.3   | 1.8  | 1.2  | 2.0  | 1.9  | 2.1                       | 2.4  | 2.5  | 2.3     | 1.8     |
| New Zealand                                     | 3.8  | 1.0  | 1.7  | 2.7  | 1.5   | 2.7  | 1.9  | 0.1  | 1.6  | 1.4                       | 2.3  | 1.7  | 2.1     | 1.5     |
| Norway  | 3.8  | 2.5  | -0.4 | 2.2  | -0.2  | 3.1  | 4.3  | 2.7  | -0.4 | 6.0                       | 5.0  | 1.7  | 1.6     | 3.1     |
| Poland  | ..   | ..   | ..   | ..   | 36.7  | 27.9 | 18.7 | 14.0 | 11.7 | 6.2                       | 6.6  | 5.0  | ..      | 15.7    |
| Portugal  | 12.8 | 12.2 | 10.0 | 6.7  | 6.3   | 5.1  | 2.8  | 2.0  | 4.3  | 2.6                       | 2.7  | 2.8  | 9.6     | 3.4     |
| Spain   | 7.3  | 7.1  | 6.9  | 4.3  | 4.0   | 4.8  | 3.4  | 2.1  | 2.3  | 2.3                       | 2.2  | 2.5  | 5.9     | 3.0     |
| Sweden  | 8.6  | 7.6  | 1.3  | 2.7  | 2.3   | 3.6  | 1.4  | 1.2  | 1.1  | 0.6                       | 1.7  | 2.2  | 4.5     | 1.6     |
| Switzerland                                     | 4.3  | 6.0  | 2.7  | 2.7  | 1.6   | 1.1  | 0.4  | -0.1 | 0.2  | 0.4                       | 0.6  | 1.1  | 3.5     | 0.4     |
| Turkey  | 58.9 | 58.6 | 63.9 | 67.7 | 106.8 | 86.9 | 77.8 | 81.5 | 74.8 | 61.4                      | 51.2 | 25.0 | 71.2    | 76.5    |
| Total of smaller countries                      | 14.3 | 12.7 | 10.9 | 10.0 | 14.0  | 16.1 | 13.0 | 10.9 | 10.0 | 8.1                       | 7.2  | 5.0  | 12.4    | 11.6    |
| Total OECD                                      | 6.2  | 5.7  | 4.4  | 4.1  | 4.6   | 5.1  | 4.1  | 3.6  | 3.2  | 2.6                       | 2.7  | 2.4  | 5.0     | 3.7     |
| <i>Memorandum items</i>                         |      |      |      |      |       |      |      |      |      |                           |      |      |         |         |
| OECD less high inflation countries <sup>a</sup> | 4.4  | 4.2  | 3.0  | 2.8  | 2.1   | 2.2  | 1.7  | 1.5  | 1.4  | 1.1                       | 1.5  | 1.8  | 3.3     | 1.6     |
| European Union                                  | 5.6  | 5.4  | 4.3  | 3.5  | 2.7   | 3.0  | 2.5  | 1.9  | 1.9  | 1.5                       | 1.7  | 1.8  | 4.3     | 2.2     |
| Euro area                                       | 4.6  | 4.7  | 4.2  | 3.4  | 2.7   | 2.8  | 2.1  | 1.6  | 1.6  | 1.3                       | 1.5  | 1.6  | 3.9     | 1.9     |

a) High inflation countries are defined as countries which have had 10 per cent or more inflation in terms of GDP deflator on average during the 1990s on the basis of historical data. Consequently, Greece, Hungary, Mexico,

Poland and Turkey are excluded from the aggregate.

Source : OECD, 1999b.

Annex Table 4. **Employment<sup>a</sup> - Percentage change from previous period**

|   | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | Estimates and projections |      |      | 1990-94 | 1995-99 |
|---|------|------|------|------|------|------|------|------|------|---------------------------|------|------|---------|---------|
|   |      |      |      |      |      |      |      |      |      | 1999                      | 2000 | 2001 |         |         |
| United States <sup>b</sup>              | 1.3  | -0.9 | 0.7  | 1.5  | 2.3  | 1.5  | 1.4  | 2.2  | 1.5  | 1.5                       | 0.8  | 0.4  | 1.0     | 1.6     |
| Japan                                   | 2.0  | 1.9  | 1.1  | 0.2  | 0.1  | 0.1  | 0.4  | 1.1  | -0.6 | -0.9                      | 0.2  | 0.3  | 1.0     | 0.0     |
| Germany                                 | 3.0  | 2.5  | -1.6 | -1.5 | -0.3 | -0.1 | -0.7 | -0.8 | 0.4  | 0.2                       | 0.3  | 0.5  | 0.4     | -0.2    |
| France                                  | 0.8  | 0.0  | -0.6 | -1.2 | 0.1  | 0.8  | 0.1  | 0.4  | 1.4  | 1.5                       | 1.6  | 1.4  | -0.2    | 0.9     |
| Italy                                   | 1.2  | 0.7  | -1.0 | -3.1 | -1.6 | -0.6 | 0.5  | 0.4  | 1.1  | 1.1                       | 1.2  | 1.1  | -0.8    | 0.5     |
| United Kingdom                          | 0.3  | -3.0 | -2.1 | -0.4 | 1.0  | 1.2  | 1.1  | 1.6  | 1.2  | 0.7                       | 0.7  | 0.6  | -0.8    | 1.2     |
| Canada                                  | 0.6  | -1.9 | -0.6 | 1.4  | 2.1  | 1.6  | 1.2  | 1.9  | 2.8  | 2.7                       | 1.7  | 1.6  | 0.3     | 2.1     |
| Total of major countries                | 1.4  | 0.0  | 0.0  | 0.2  | 1.0  | 0.8  | 0.8  | 1.3  | 0.9  | 0.8                       | 0.8  | 0.6  | 0.5     | 0.9     |
| Australia                               | 1.5  | -2.1 | -0.7 | 0.4  | 3.1  | 4.2  | 1.3  | 0.8  | 1.8  | 1.9                       | 1.7  | 1.9  | 0.4     | 2.0     |
| Austria                                 | 1.9  | 1.9  | 1.5  | -0.3 | 0.2  | -0.4 | -0.7 | 0.3  | 0.6  | 0.7                       | 0.8  | 0.6  | 1.0     | 0.1     |
| Belgium                                 | 1.4  | 0.1  | -0.4 | -1.1 | -1.0 | 0.5  | 0.4  | 1.2  | 1.4  | 1.2                       | 0.8  | 1.3  | -0.2    | 1.0     |
| Czech Republic                          | ..   | ..   | ..   | ..   | 1.1  | 0.9  | 0.1  | -0.6 | -1.4 | -2.2                      | -1.2 | -0.8 | ..      | -0.6    |
| Denmark                                 | -0.8 | -0.6 | -0.9 | -1.5 | -0.4 | 0.7  | 1.4  | 2.1  | 2.1  | 0.5                       | 0.3  | 0.4  | -0.8    | 1.4     |
| Finland                                 | -0.1 | -5.2 | -7.1 | -6.1 | -0.8 | 2.2  | 1.4  | 2.0  | 2.4  | 2.3                       | 2.1  | 1.6  | -3.9    | 2.1     |
| Greece                                  | 1.3  | -2.3 | 1.5  | 0.9  | 1.9  | 0.9  | 1.3  | -0.4 | 1.5  | 0.7                       | 1.3  | 1.6  | 0.7     | 0.8     |
| Hungary                                 | ..   | ..   | ..   | ..   | -3.4 | -1.9 | -0.5 | 0.3  | 1.5  | 2.1                       | 1.3  | 1.4  | ..      | 0.3     |
| Iceland                                 | -0.9 | -0.1 | -1.4 | -0.8 | 0.5  | 1.5  | 2.4  | 2.9  | 2.0  | 2.3                       | 0.9  | 0.5  | -0.5    | 2.2     |
| Ireland                                 | 4.4  | -0.3 | 0.6  | 1.4  | 3.0  | 4.8  | 3.4  | 4.8  | 10.2 | 4.5                       | 3.6  | 2.7  | 1.8     | 5.5     |
| Korea                                   | 3.0  | 2.9  | 1.9  | 1.5  | 3.0  | 2.7  | 1.9  | 1.4  | -5.3 | 0.4                       | 2.5  | 2.5  | 2.5     | 0.2     |
| Luxembourg                              | 4.2  | 2.7  | 2.5  | 1.8  | 2.5  | 2.5  | 2.9  | 3.2  | 4.3  | 5.0                       | 3.1  | 2.8  | 2.8     | 3.6     |
| Mexico <sup>c</sup>                     | 1.9  | 5.5  | 4.7  | 4.1  | 0.9  | 1.9  | 5.0  | 13.3 | 4.9  | 2.9                       | 2.5  | 2.7  | 3.4     | 5.6     |
| Netherlands                             | 3.0  | 2.6  | 1.6  | 0.7  | -0.1 | 2.4  | 2.0  | 3.4  | 3.0  | 2.5                       | 1.4  | 1.3  | 1.6     | 2.7     |
| New Zealand                             | 0.9  | -1.3 | 0.8  | 2.6  | 4.7  | 5.2  | 3.7  | 0.4  | -0.6 | 1.2                       | 1.8  | 2.0  | 1.6     | 2.0     |
| Norway                                  | -0.9 | -1.0 | -0.3 | 0.0  | 1.5  | 2.2  | 2.5  | 2.9  | 2.4  | 0.1                       | -0.5 | 0.1  | -0.1    | 2.0     |
| Poland                                  | ..   | ..   | ..   | ..   | -1.6 | 0.9  | 1.2  | 1.4  | 1.2  | ..                        | 1.5  | 1.3  | ..      | ..      |
| Portugal <sup>d</sup>                   | 2.2  | 3.0  | -6.4 | -2.0 | -0.1 | -0.6 | 0.5  | 1.9  | 2.4  | 1.7                       | 1.2  | 1.0  | -0.7    | 1.2     |
| Spain <sup>e</sup>                      | 2.6  | 0.2  | -1.9 | -4.3 | -0.9 | 1.8  | 1.5  | 2.9  | 3.4  | 4.5                       | 2.8  | 2.2  | -0.9    | 2.8     |
| Sweden                                  | 1.0  | -2.0 | -4.3 | -5.8 | -0.9 | 1.6  | -0.6 | -1.1 | 1.5  | 2.6                       | 1.8  | 1.3  | -2.4    | 0.8     |
| Switzerland                             | 3.2  | 1.9  | -1.6 | -0.8 | -0.3 | 0.3  | 0.3  | -0.3 | 1.2  | 0.5                       | 0.7  | 1.0  | 0.5     | 0.4     |
| Turkey <sup>f</sup>                     | 1.7  | 1.7  | 0.8  | 0.9  | 2.5  | 3.7  | 5.6  | -2.5 | 2.8  | 1.7                       | 2.5  | 2.0  | 1.5     | 2.3     |
| Total of smaller countries <sup>g</sup> | 2.0  | 1.3  | 0.2  | 0.1  | 0.8  | 2.0  | 2.3  | 2.1  | 1.3  | 1.6                       | 1.9  | 1.8  | 0.9     | 1.8     |
| <sup>g</sup>                            | 1.6  | 0.3  | 0.0  | 0.1  | 0.9  | 1.2  | 1.2  | 1.6  | 1.0  | 1.1                       | 1.0  | 1.0  | 0.6     | 1.2     |
| <i>Memorandum items</i>                 |      |      |      |      |      |      |      |      |      |                           |      |      |         |         |
| European Union                          | 1.5  | 0.1  | -1.5 | -1.7 | -0.2 | 0.6  | 0.4  | 0.8  | 1.4  | 1.3                       | 1.1  | 1.1  | -0.4    | 0.9     |
| Euro area                               | 1.9  | 1.0  | -1.3 | -2.0 | -0.5 | 0.4  | 0.2  | 0.6  | 1.5  | 1.5                       | 1.2  | 1.1  | -0.2    | 0.8     |

a) For sources and definitions see "Sources and Methods".

b) Break in series as of January 1994.

c) Data based on the National Survey of Urban Employment; see "Sources and Methods".

d) Break in series in 1992.

e) Rebased; see "Sources and Methods".

f) The figures incorporate important revisions to Turkish data; see "Sources and Methods".

g) Totals exclude Mexico prior to 1988.

Source : OECD, 1999b.

Annex Table 5. Unemployment rates: commonly used definitions<sup>a</sup>

|   | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | Estimates and projections |      |      | 1990-94 | 1995-99 |
|---|------|------|------|------|------|------|------|------|------|---------------------------|------|------|---------|---------|
|   |      |      |      |      |      |      |      |      |      | 1999                      | 2000 | 2001 |         |         |
| United States <sup>b</sup>              | 5.6  | 6.8  | 7.5  | 6.9  | 6.1  | 5.6  | 5.4  | 4.9  | 4.5  | 4.2                       | 4.2  | 4.6  | 6.6     | 4.9     |
| Japan                                   | 2.1  | 2.1  | 2.2  | 2.5  | 2.9  | 3.1  | 3.4  | 3.4  | 4.1  | 4.7                       | 4.7  | 4.7  | 2.3     | 3.7     |
| Germany                                 | 6.2  | 5.5  | 6.6  | 7.8  | 8.3  | 8.1  | 8.8  | 9.8  | 9.3  | 9.0                       | 8.7  | 8.3  | 6.9     | 9.0     |
| France                                  | 8.9  | 9.4  | 10.4 | 11.7 | 12.2 | 11.6 | 12.3 | 12.5 | 11.8 | 11.1                      | 10.3 | 9.6  | 10.5    | 11.9    |
| Italy                                   | 9.1  | 8.6  | 8.8  | 10.2 | 11.2 | 11.7 | 11.7 | 11.8 | 11.9 | 11.6                      | 11.2 | 10.7 | 9.6     | 11.8    |
| United Kingdom                          | 5.9  | 8.2  | 10.2 | 10.3 | 9.4  | 8.6  | 8.0  | 6.9  | 6.2  | 6.1                       | 6.0  | 5.9  | 8.8     | 7.2     |
| Canada                                  | 8.2  | 10.4 | 11.3 | 11.2 | 10.4 | 9.5  | 9.7  | 9.2  | 8.3  | 7.8                       | 7.7  | 7.7  | 10.3    | 8.9     |
| Total of major countries                | 5.6  | 6.3  | 7.0  | 7.2  | 7.0  | 6.7  | 6.8  | 6.6  | 6.4  | 6.2                       | 6.1  | 6.1  | 6.6     | 6.5     |
| Australia                               | 7.0  | 9.5  | 10.7 | 10.9 | 9.7  | 8.5  | 8.4  | 8.5  | 8.0  | 7.3                       | 6.9  | 6.5  | 9.6     | 8.1     |
| Austria                                 | 4.7  | 5.2  | 5.3  | 6.1  | 5.9  | 5.9  | 6.3  | 6.4  | 6.5  | 6.3                       | 5.8  | 5.4  | 5.4     | 6.3     |
| Belgium                                 | 8.7  | 9.3  | 10.3 | 12.0 | 12.9 | 12.9 | 12.7 | 12.4 | 11.6 | 10.8                      | 10.6 | 9.8  | 10.6    | 12.1    |
| Czech Republic                          | ..   | ..   | ..   | 4.3  | 4.4  | 4.1  | 3.9  | 4.8  | 6.5  | 8.9                       | 10.1 | 11.0 | 1.7     | 5.6     |
| Denmark                                 | 9.4  | 10.3 | 11.0 | 12.1 | 12.0 | 10.2 | 8.7  | 7.7  | 6.4  | 5.7                       | 5.8  | 6.0  | 11.0    | 7.7     |
| Finland                                 | 3.2  | 6.6  | 11.7 | 16.3 | 16.6 | 15.4 | 14.6 | 12.7 | 11.4 | 10.1                      | 9.1  | 8.6  | 10.9    | 12.8    |
| Greece                                  | 7.0  | 7.7  | 8.7  | 9.7  | 9.6  | 10.0 | 10.3 | 10.2 | 11.2 | 11.3                      | 10.9 | 10.2 | 8.5     | 10.6    |
| Hungary                                 | ..   | ..   | ..   | 12.1 | 11.0 | 10.4 | 10.1 | 8.9  | 8.0  | 7.0                       | 6.9  | 6.8  | 4.6     | 8.9     |
| Iceland                                 | 1.8  | 1.5  | 3.0  | 4.4  | 4.8  | 5.0  | 4.3  | 3.7  | 3.0  | 2.0                       | 2.1  | 2.4  | 3.1     | 3.6     |
| Ireland                                 | 12.9 | 14.7 | 15.1 | 15.7 | 14.8 | 12.2 | 11.9 | 10.3 | 7.6  | 5.8                       | 5.0  | 5.0  | 14.6    | 9.6     |
| Korea                                   | 2.4  | 2.3  | 2.4  | 2.8  | 2.4  | 2.0  | 2.0  | 2.6  | 6.8  | 6.4                       | 6.0  | 5.5  | 2.5     | 4.0     |
| Luxembourg                              | 1.3  | 1.4  | 1.6  | 2.1  | 2.7  | 3.0  | 3.3  | 3.3  | 3.1  | 2.9                       | 2.8  | 2.8  | 1.8     | 3.1     |
| Mexico <sup>c</sup>                     | 2.7  | 2.6  | 2.8  | 3.4  | 3.7  | 6.3  | 5.5  | 3.7  | 3.2  | 2.8                       | 2.8  | 2.7  | 3.1     | 4.3     |
| Netherlands                             | 6.0  | 5.4  | 5.4  | 6.6  | 7.6  | 7.1  | 6.6  | 5.5  | 4.2  | 3.2                       | 3.2  | 3.4  | 6.2     | 5.3     |
| New Zealand                             | 7.8  | 10.3 | 10.3 | 9.5  | 8.1  | 6.3  | 6.1  | 6.7  | 7.5  | 7.1                       | 6.6  | 6.1  | 9.2     | 6.7     |
| Norway                                  | 5.2  | 5.5  | 5.9  | 6.0  | 5.4  | 4.9  | 4.8  | 4.1  | 3.2  | 3.2                       | 3.8  | 3.9  | 5.6     | 4.0     |
| Poland                                  | ..   | ..   | ..   | 14.0 | 14.4 | 13.3 | 12.3 | 11.2 | 10.6 | 11.4                      | 10.8 | 10.3 | 5.7     | 11.8    |
| Portugal                                | 4.7  | 4.1  | 4.2  | 5.6  | 6.9  | 7.2  | 7.3  | 6.8  | 5.0  | 4.5                       | 4.4  | 4.4  | 5.1     | 6.2     |
| Spain                                   | 15.7 | 15.8 | 17.9 | 22.2 | 23.7 | 22.7 | 22.2 | 20.8 | 18.8 | 15.8                      | 14.0 | 12.7 | 19.0    | 20.1    |
| Sweden                                  | 1.7  | 3.0  | 5.3  | 8.2  | 8.0  | 7.7  | 8.0  | 8.0  | 6.5  | 5.5                       | 4.5  | 4.0  | 5.2     | 7.2     |
| Switzerland                             | 0.5  | 1.1  | 2.5  | 4.5  | 4.7  | 4.2  | 4.7  | 5.2  | 3.9  | 2.8                       | 2.6  | 2.3  | 2.7     | 4.2     |
| Turkey <sup>e</sup>                     | 8.0  | 7.9  | 8.0  | 7.7  | 8.1  | 6.9  | 6.0  | 6.4  | 6.3  | 6.6                       | 6.1  | 6.3  | 7.9     | 6.4     |
| Total of smaller countries <sup>f</sup> | 6.6  | 6.9  | 7.6  | 9.3  | 9.5  | 9.0  | 8.6  | 8.1  | 8.0  | 7.6                       | 7.1  | 6.8  | 8.0     | 8.3     |
| Total OECD <sup>f</sup>                 | 5.9  | 6.5  | 7.2  | 7.9  | 7.8  | 7.4  | 7.3  | 7.1  | 6.9  | 6.7                       | 6.4  | 6.3  | 7.0     | 7.1     |
| <i>Memorandum items</i>                 |      |      |      |      |      |      |      |      |      |                           |      |      |         |         |
| European Union                          | 7.9  | 8.1  | 9.3  | 10.8 | 11.2 | 10.8 | 10.9 | 10.8 | 10.1 | 9.4                       | 8.8  | 8.4  | 9.5     | 10.4    |
| Euro area                               | 8.6  | 8.3  | 9.3  | 11.0 | 11.7 | 11.5 | 11.8 | 11.8 | 11.1 | 10.2                      | 9.6  | 9.1  | 9.8     | 11.3    |

a) For sources and definitions see "Sources and Methods".

b) Break in series as of January 1994.

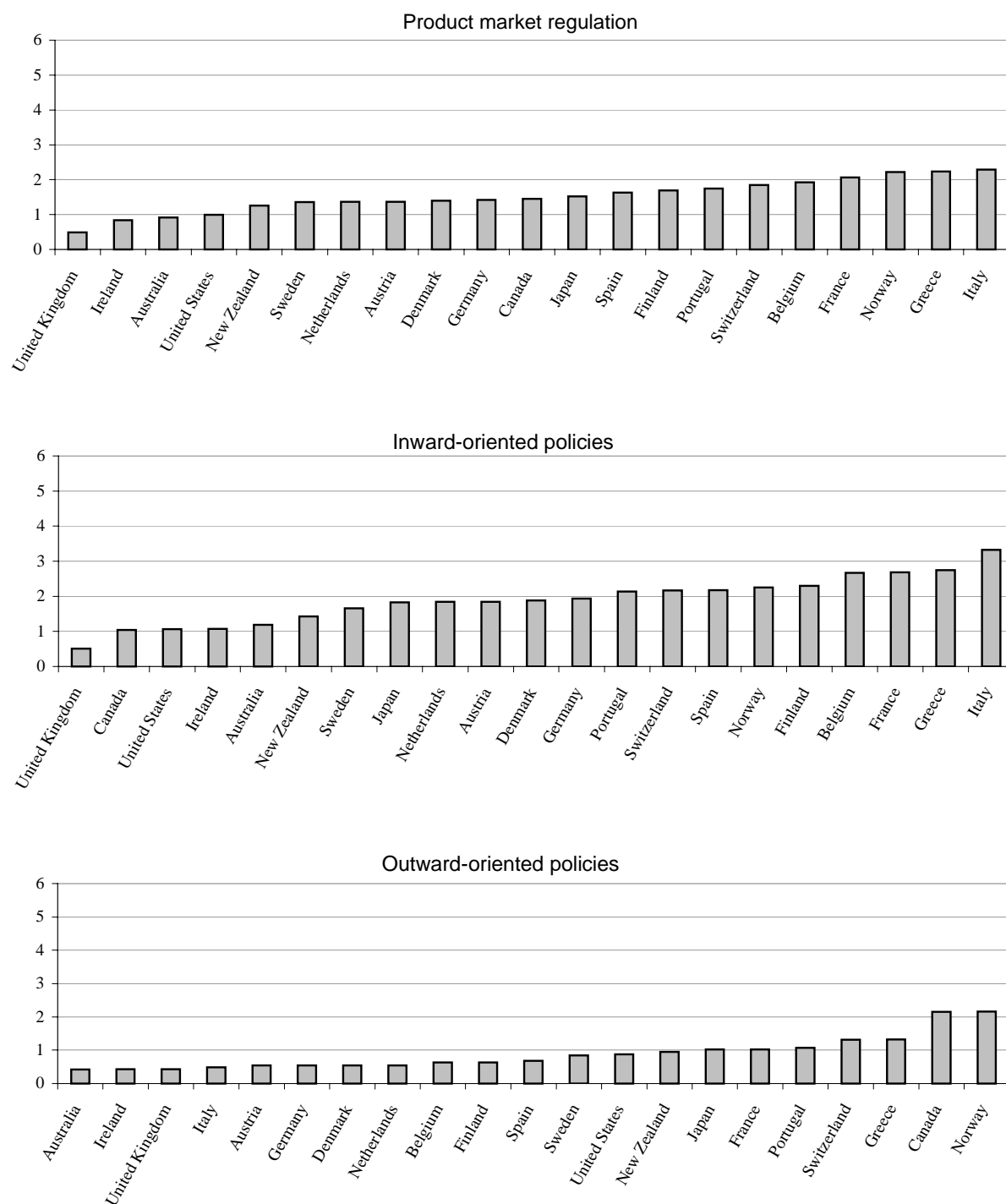
c) Data based on the National Survey of Urban Employment; see "Sources and Methods".

d) Rebased; see "Sources and Methods".

e) The figures incorporate important revisions to Turkish data; see "Sources and Methods".

f) Totals exclude Mexico prior to 1987.

Source : OECD, 1999b.

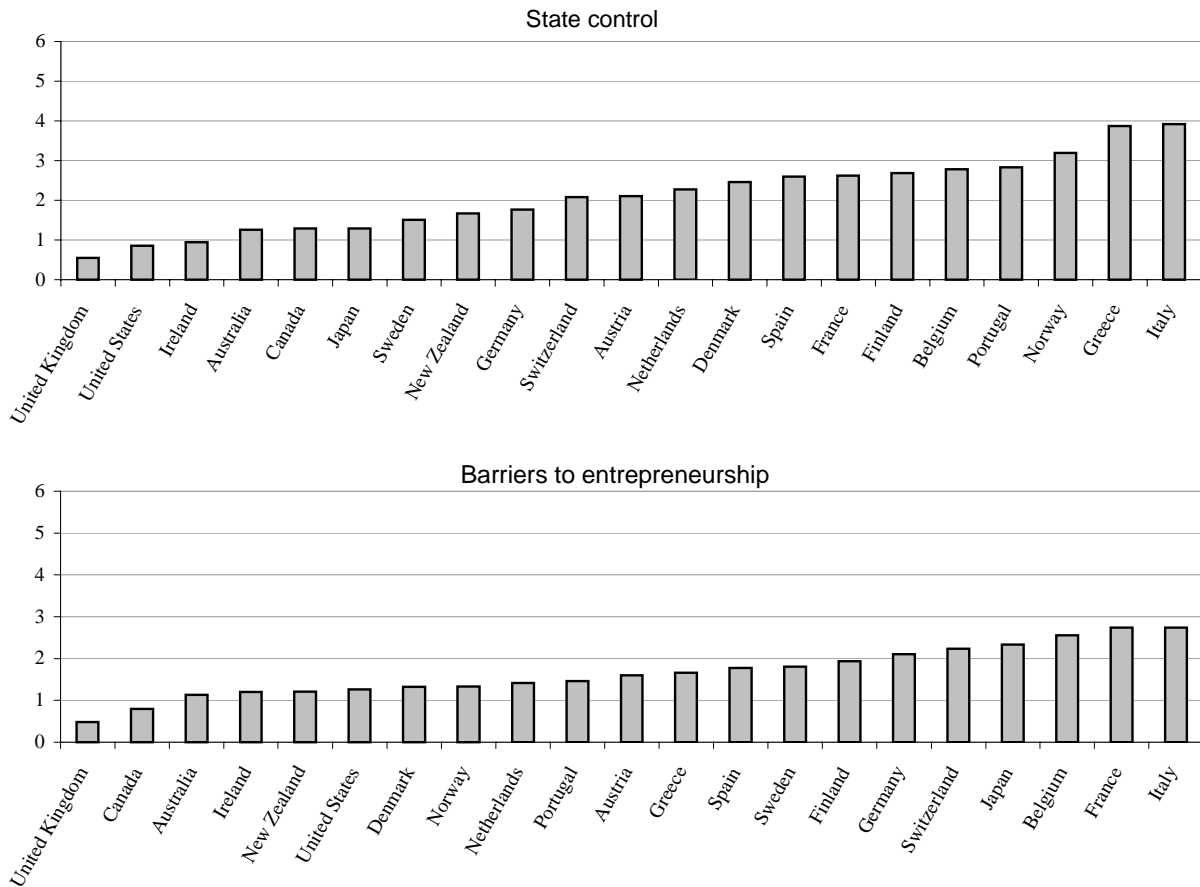
Figure 1. Overall regulatory approaches<sup>1</sup>

1. The scale of indicators is 0-6 from least to most restrictive.

Source: Nicoletti *et al.*, 1999.

Figure 2. Inward-oriented regulations<sup>1</sup>

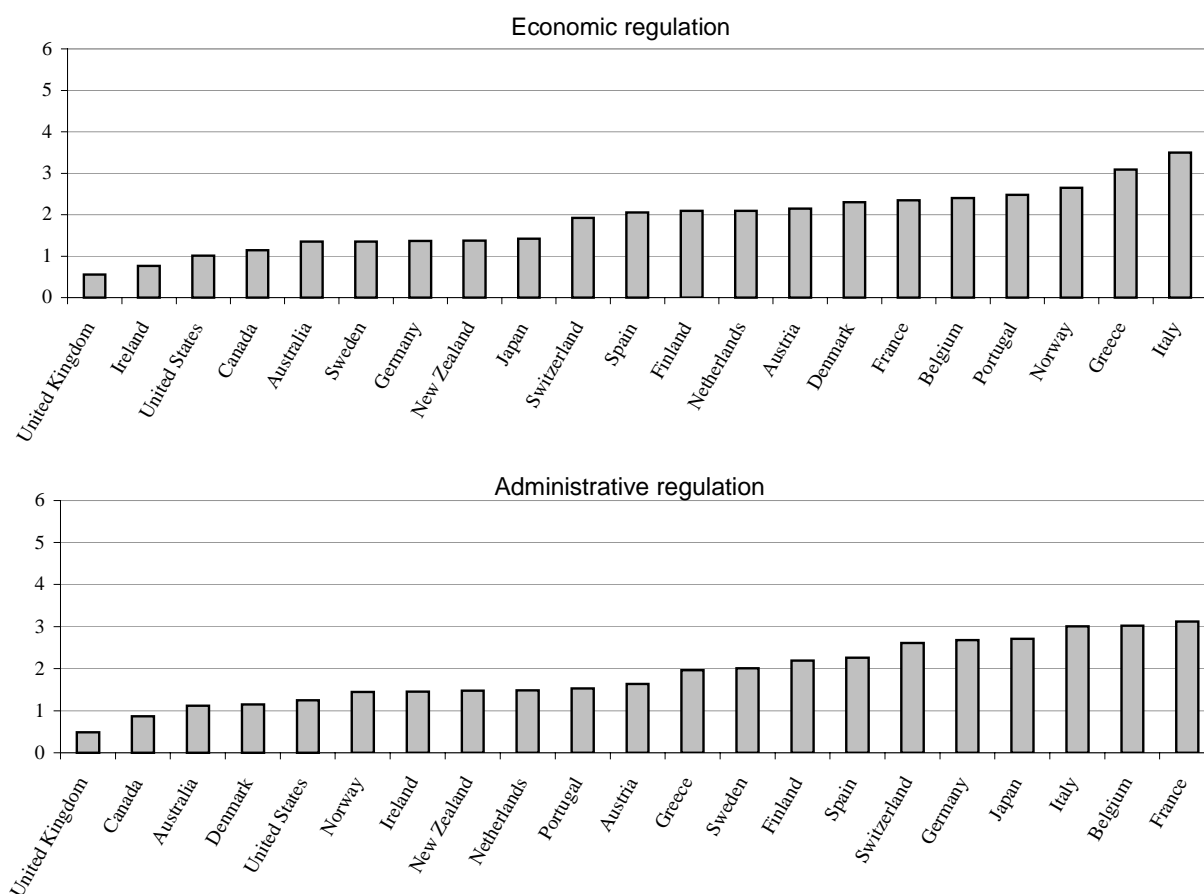
A. Thematic



1. The scale of indicators is 0-6 from least to most restrictive.

Figure 2. Inward-oriented regulations<sup>1</sup>  
(continuation)

**B. Functional**



1. The scale of indicators is 0-6 from least to most restrictive.

Source: Nicoletti *et al.*, 1999.