COMMUNICATION FROM THE COMMISSION

Structural indicators
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ABSTRACT

The objective of this Communication is to provide a first set of indicators for the synthesis report. This Communication proposes a set of indicators to be used in the synthesis report for the Spring 2001 European Council. It meets the request of the Feira European Council that the Commission should present a report by the end of September “on the proposed approach for the indicators and benchmarks, both in specific policies and to be used in the synthesis report to the Spring European Council, to ensure the necessary coherence and standard presentation.”

The indicators selected should allow us to measure progress towards the implementation of the Lisbon strategy…

The choice of the indicators depends on the purpose of the synthesis report, which is to assess progress towards the implementation of the Lisbon strategy aimed at transforming the European Union into “the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion.” The Lisbon conclusions call for a report and indicators in four policy domains: employment, innovation, economic reform and social cohesion, and they also underline the importance of an appropriate policy-mix in achieving this strategic aim.

The main purpose of the indicators selected for use in the synthesis report is to measure progress in these four policy domains. In addition, some background indicators are included to present an overall economic context in which structural reforms are taking place. Although the indicators have been categorised into four domains there are close linkages between these policy domains and with overall economic performance.

… but should remain limited in number.

The Communication puts forward 27 key indicators which is a small enough number to focus the policy debate and to be manageable but, at the same time, sufficiently large to offer a balanced picture of how the economy is performing across the four policy domains. This list has been compiled from the many more detailed indicators available in the different processes and action plans which treat their respective subject matters in greater detail.

In making the selection the main aim has been for the indicators to meet the Lisbon request that they effectively measure progress in the four domains. Several other factors have been taken into account, most notably the availability
The development of indicators is an ongoing process.

This is the first year in which a set of indicators is to be agreed and in which a synthesis report will be written. The use of indicators and benchmarking has been proceeding at different speeds in different areas and there is further ongoing work in all of the policy domains. As a result, the Communication emphasises the need for flexibility in the list of indicators to allow for improvements in the indicators available. The Communication also includes a list of indicators to be developed as a reflection of the need to improve the data in the future.

The indicators form different elements of the same picture...

The maintenance of an appropriate policy-mix, the implementation of structural reforms to improve the functioning of markets and to reinforce the capacity of the economy to innovate and the development of policies in support of employment creation and social cohesion are complementary and reinforcing elements in the achievement of a competitive and dynamic knowledge-based economy. Therefore, the indicators selected should not be seen in isolation but rather as different elements of the same picture.

... to be developed in the synthesis report

The synthesis report, by measuring Member States' progress in meeting key economic and social policy objectives, will help us to identify their strong and weak points in terms of performance, thus paving the way for policy action. However, structural indicators are no substitute for in-depth qualitative assessments.

The rationale behind the choice of the indicators is ...

A short description of the interpretation and policy relevance of each selected indicator is provided in the text.

... to present the overall economic environment, in which structural reforms are taking place and...

The general economic background indicators provide the overall economic context in which the structural reforms of labour, product and capital markets take place. The indicators relate to sustainable growth and economic dynamism because this is the ultimate goal of structural reforms but also to macroeconomic stability because an appropriate policy-mix should reinforce the positive effects of these reforms.

... to assess employment creation;

Employment creation is the key to greater economic welfare and social cohesion. Therefore, the Lisbon European Council emphasised the need to strengthen employment in the Union by developing an active employment policy. Specific targets have been defined in terms of the employment rate and the female employment rate and these two rates, as well as the employment rate of older workers, are included in the employment indicators.
The unemployment rate and long-term unemployment rate highlight structural problems in the labour market. Life-long learning is included as a key element of an active employment policy, while the tax rate on low-wage workers is included as one measure of the incentives/disincentives to employment, especially for less skilled workers.

... the capacity of the Union to innovate;

Improving the capacity of the Union to innovate is another essential element of the Lisbon strategy. The investments in education, research and development and information and communication technologies are included as indicators of the effort made in these areas. The effectiveness of this effort is measured by the development of internet access, patents in high-tech areas and exports of high-tech products. Venture capital is also considered because efficient risk capital markets play a major role in innovative high-growth SMEs.

... reforms in product and capital markets; and

To reap the full benefits of structural reform, a comprehensive approach, that takes into account the linkages between the different markets, is necessary. Therefore, labour market and innovation policies have to be accompanied by reforms of product and capital markets. The economic reform indicators measure progress in achieving more efficient and better functioning product and capital markets. Indicators on trade integration and relative price levels are included to gauge the progress made in improving market integration and efficiency. Prices in network industries gauge the progress made in liberalising these sectors, and indicators on public procurement and state aid measure distortions in the functioning of product markets arising from public intervention. For capital markets, indicators on cross-border banking and capital raised on stock markets measure financial market integration and efficiency.

... social cohesion.

The development of the knowledge-based society and the introduction of economic reforms has to go hand in hand with strong social cohesion. The social cohesion indicators include indicators on the degree of poverty and income dispersion and the associated risk of social exclusion. Regional disparities are measured by an indicator for regional cohesion. The indicator on educational outcomes reflects the importance of poor educational attainment as one contributing factor to social exclusion. However, in the social field in particular the work on indicators is still at an early stage and more suitable indicators are to emerge in light of work done by the High Level Group on Social Protection.
I. BACKGROUND

1. Article 2 of the Treaty lays down the Union objectives of promoting economic and social progress and a high level of employment. At the Lisbon Special European Council held in March 2000, the Union set itself the “strategic goal for the next decade: to become the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion” (Paragraph 5 of the Council Conclusions). The Council acknowledged the need to regularly discuss and assess progress made in achieving this goal on the basis of commonly agreed structural indicators. To this end, it invited (Paragraph 36): "... the Commission to draw up an annual synthesis report on progress on the basis of structural indicators to be agreed relating to employment, innovation, economic reform and social cohesion."

2. The Feira European Council of June 2000 requested that the Commission start preparing this work by “presenting a report by the end of September on the proposed approach for indicators and benchmarks, both in specific policies and to be used in the synthesis report to the Spring European Council, to ensure the necessary coherence and standard presentation” (Paragraph 38, third indent).

3. This Communication is the Commission’s response to the request from the Lisbon and Feira European Councils. The Communication sets out a set of key indicators to be used in the Spring 2001 synthesis report. Section II gives the motivation for using structural indicators and it presents the main advantages but also the shortcomings of this approach. Section III presents an analytical framework bringing together the key elements of the Lisbon strategy and illustrating the multiple linkages between them. Section IV introduces the main principles that have guided the process of selecting the indicators. Section V presents the key indicators themselves. A short description of each indicator’s interpretation and policy relevance is provided. Finally, as the work on indicators is an on-going process and since some particularly useful indicators are not currently available due to methodological and statistical problems, Section VI identifies the main areas where indicators should be developed in the future.

II. PURPOSE OF USING INDICATORS

4. The motivation behind using structural indicators and regularly examining structural performance on the basis of commonly agreed quantitative indicators is essentially twofold:

(i) monitoring progress both in achieving the identified targets and in implementing policies; and

(ii) assessing the effectiveness of policies.
5. Whilst it appears that objective (i) can be achieved relatively easily (though it may require considerable statistical work), objective (ii) is much more challenging as it requires an understanding of the relationship between policy actions and measured results. For example, progress in the opening up of public utilities to competition can be monitored by examining the change in market structure due to new entrants coming into the market. However, the effectiveness of this liberalisation process is more difficult to assess. Such an assessment can in any case be made only after the fact, when the necessary data (on prices for these public utility services, for example) have become available. Nevertheless, an evaluation of the effectiveness of past policies may carry important lessons for the future.

6. Experience with the surveillance of economic policies in recent years, especially of economic reforms, has shown the need for the quantification of economic performance and policy effort. Increasing use is made of benchmarking and peer pressure for policy monitoring and co-ordination. Both instruments help to identify shortcomings and strengths in structural performance at both the Community and Member State level. However, to fully exploit these instruments, reliable indicators that are comparable across countries and over time are needed for all Member States, for the European Union as a whole, as well as for the countries used as benchmarks.

7. The strategic goal of the Union “to become the most competitive and dynamic knowledge-based economy in the world...” implies that the benchmark countries should in principle be the best performers in the world. However, one needs to be pragmatic about the choice of benchmarks. In practice, data availability will very often limit the actual choice of benchmarks to the best EU Member States or the US. Indicators at the EU level will be needed as well, for example, in order to compare GDP per capita both between EU countries and between the EU and the US.

8. Simple and objective quantitative policy and performance indicators can play an important role in highlighting problems, measuring progress in achieving the targets identified, guiding policy makers in their policy efforts, and focussing public attention on what is at stake. However, many indicators do not warrant a strong (normative) interpretation, i.e. to suggest that high or low values of the indicator are good or bad, and must be interpreted in conjunction with other information or in combination with other indicators. For example, labour productivity functions well as an indicator of good economic performance, although high levels of labour productivity observed in some countries may be indicative of labour shedding or insufficient job creation.

9. Finally, because of data limitations and differences in institutional and structural features, it is often difficult to achieve full comparability across countries. Moreover, the various indicators are to different degrees affected by cyclical variations. Clearly, indicators are no substitute for in-depth qualitative assessments. For all these reasons, the structural performance indicators presented here can only be interpreted in the context of the analytical framework that the synthesis report will provide.
III. ANALYTICAL FRAMEWORK

10. The indicators selected here will be the basis of the Commission’s annual synthesis report. Naturally, the choice of indicators depends on the purpose of this report. As defined in Lisbon, the synthesis report will focus on progress in four policy domains (employment, innovation and research, economic reform and social cohesion), in the perspective of the strategic goal outlined in Lisbon to make the EU the most competitive economy in the world. This will also help ensure the overall coherence of the structural policies in the four policy domains and effectively monitor progress made in these four domains. Where appropriate, this will lead to policy orientations.

11. The key indicators selected for use in the synthesis report should thus allow the measurement of progress in the four policy domains. In addition, some background indicators are included to present an overall economic context in which structural reforms are taking place. Experience shows that a stable and sound macroeconomic framework is a pre-condition for growth and employment. Overall economic performance indicators are also helpful to measure the progress achieved towards the strategic goal mentioned above.

12. The indicators should not be seen in isolation but rather as different elements of the same picture. The ultimate goal of structural reforms (see box) is to improve the dynamism and efficiency of the EU economy because this drives growth and employment creation, which, in turn, aids the fight against social exclusion. A healthy economic outlook and favourable growth prospects sustained by an appropriate policy mix should greatly facilitate the introduction of the structural reforms and maximise their results. The development of policies in support of social cohesion, the implementation of structural reforms aimed at better functioning markets, and the maintenance of an appropriate mix of macroeconomic policies are thus complementary and reinforcing elements in the creation of a competitive, dynamic and knowledge-based economy.

Box: The tools of structural reform

Structural policies focus on the supply side of the economy. They aim to increase the level of potential output by raising the supply of factors of production (labour or capital). Alternatively, they aim to improve the functioning of labour, capital or product markets thus increasing the efficiency with which factors are combined and the flexibility with which an economy responds to shocks. Either way, they should result in a rise in the sustainable economic growth rate of an economy.

A distinction is normally made between raising the quantity and the quality of labour supplied (leading to more and better jobs). The quantity of labour supplied depends on many factors (including the population growth rate, the employment rate, working hours) that may to a different degree be influenced by policy. Similarly, labour quality (or ‘human capital’) may be raised through education, training, life-long learning or measures more specifically targeted at raising the social cohesion of society.

Investments in infrastructure and equipment, but also in innovation and research, will raise an economy’s capital stock. Policy measures aimed at stimulating such investment may work either by reducing the cost of the financial capital required (through better functioning capital markets, e.g.) or by raising the expected return on the investment.

Better functioning and more efficient markets contribute to lowering the costs of labour and capital (stimulating the use of these factors of production) as well as reduced price levels (contributing to macroeconomic stability). Also, more flexible markets allow an easier adjustment to economic shocks, permitting the economy to reach its maximum potential through a more efficient allocation of resources.
Reforms in the four policy domains are mutually reinforcing as there are multiple linkages between them and with overall economic performance. The shift to a knowledge-based economy can be a powerful engine for growth, competitiveness and jobs. However, this engine will only run smoothly if not perturbed by macroeconomic disturbances or hampered by structural bottlenecks. This implies on the one hand, the continuation of a stability-oriented monetary policy supported by sound fiscal policies in a context of wage moderation and on the other, an acceleration of structural reforms in the EU’s labour, capital and product markets. In particular, the speed of technological change may require new and more flexible regulatory approaches. Also, unless all citizens are equipped with the skills needed to live and work in this new information society, the engine risks running out of fuel.

People are Europe’s main asset and should be the focal point of the Union’s policies. Employment creation, investing in people and developing an active and dynamic welfare state will be crucial both to Europe’s place in the knowledge economy and for ensuring that the emergence of this new economy does not compound the existing social problems of unemployment, social exclusion and poverty. At the same time, an effort must be made to ensure that Europe offers attractive prospects to its best brains. Innovation and ideas must be adequately rewarded and the regulatory climate must be made more conducive to investment, innovation and entrepreneurship.

To reap the full benefits of structural reforms a comprehensive and coherent approach, that takes into account the linkages between different markets, is necessary. For example, capital market reforms leading to an increased availability of risk capital are an important element of efforts to stimulate research and innovation, which should contribute to raising the competitiveness of the European economy. However, they have to be accompanied by more reform efforts in labour and product markets to produce jobs and increased welfare. Without better functioning labour markets, making it easier to create and to take up jobs across firms and sectors, employment and growth opportunities created by capital market reform and innovation will not be seized. Similarly, a failure to liberalise product markets and to complete the internal market will leave prices at continued high levels, resulting in losses of competitiveness and jobs. A comprehensive reform effort may also serve to increase macroeconomic stability. By removing supply-side bottlenecks, economic reforms will allow the EU to have higher growth rates while maintaining low inflation, which should help to reduce the high levels of structural unemployment and raise social cohesion.

Economic reform and social cohesion are mutually reinforcing. On the one hand, better-functioning markets create jobs, improve productivity and increase social and economic cohesion. For example, economic reforms in the telecommunications market have led to increased competition and productivity, resulting in lower prices and greater access to the Internet and other communication services. On the other hand, it is easier to introduce the reforms necessary to improve market functioning in a society that exhibits a strong social cohesion. Well-designed social policy can also contribute directly to better economic performance. The broad range of efforts undertaken to strengthen the cohesion of the European Union are therefore key to maintaining the momentum in transforming the EU into the most competitive and dynamic knowledge-based economy in the world.
IV. SELECTION PROCESS

17. The number of the key indicators to be used in the synthesis report should be small enough to focus the policy debate and to be manageable, and at the same time sufficiently large to offer a balanced picture of how the economy is performing across the four different policy domains. In this Communication, a list of 27 indicators for the four policy domains is presented, which is relatively limited considering the broad range of structural policies covered and the many possible structural indicators existing in these different areas. The advantage of focusing on a limited number of indicators is that it allows policy makers to send simple and clear messages. It would be difficult to reduce this number further without putting at risk the effective monitoring of progress towards the new strategic goal defined in Lisbon.

18. A large number of the indicators selected have recently been used in drawing up the Broad Economic Policy Guidelines, which are increasingly focusing on the medium- and long-term implications of structural policies and on reforms aimed at promoting economic growth, employment and social cohesion, as well as on the transition towards a knowledge-based economy. The various indicators used in the Luxembourg and Cardiff processes as well as in the different action plans, which treat their respective subject matters in greater detail, have been taken into account. As a result, the list of indicators proposed for use in the synthesis report is a good reflection of the main performance and policy indicators used in these different exercises. Nevertheless, the analysis in the synthesis report might lead to identification of new needs and therefore new indicators, thus requiring a reassessment of the list.

19. Within these various exercises, work on new indicators or to improve currently used indicators is on-going. This work must continue, taking into account the choice of indicators to be developed for future use in the synthesis report. At the same time, the list of indicators prepared for the synthesis report should be sufficiently flexible to take into account the progress made in the various domains in developing new or improved indicators (such as the work on social cohesion currently being carried out by the High Level Group on Social Protection). This also implies that this work on indicators is an on-going exercise and that the list could be adapted to include new indicators recently developed, such as those proposed in section VI. Similarly, a coherence between the indicators used in the different policy areas should be assured.

20. In some areas, an agreement on indicators has been reached and the production of statistics is well established, while in others the effort to develop a set of relevant indicators and to collect the necessary data has started only recently. Nevertheless, as far as possible, in selecting and developing the indicators to be used in the synthesis report, the same basic principles have been observed across the board.

21. The set of indicators should be relatively stable over time to ensure continuity; the indicators should be: (i) easy to read and understand; (ii) policy relevant; (iii) mutually consistent; (iv) available in a timely fashion; and (v) comparable across Member States and, as far as possible, with the US (vi) selected from reliable sources; finally, (vii) the data requirements should not impose too large a burden on Member States and enterprises. This explains why the selected indicators are based as much as possible on information provided by the European Statistical System. A number of additional indicators which are deemed essential for the assessment of progress made
in the different policy domains but for which quality data are currently unavailable, are presented in a separate list. Finally, it should be borne in mind that where feasible and relevant the indicators should be disaggregated by gender.

22. A majority of the indicators selected are performance indicators which measure Member States' progress in meeting key economic and social policy objectives and help to identify their strong and weak points in terms of overall and structural performance. As an illustration, the evolution of the European social model may be gauged by income distribution statistics and poverty rates. However, policy indicators which are directly related to the policy priorities set out in the Lisbon conclusions are also used to highlight Member States’ efforts in specific fields. For example, this is the case with variables such as spending on R&D and education. It should be noted, though, that in several areas the distinction between policy and performance indicators is not clear. Therefore, this distinction has not been retained in the proposed set of indicators. It may also be useful to point out the difficulty of measuring policy effectiveness using such a limited set of indicators. Often, there is a significant time lag between the moment that new policies are implemented and the moment that the first results become visible. Therefore, the indicators selected should be considered primarily as measures of progress and not so much of policy effectiveness.

V. KEY INDICATORS SELECTED

23. The key indicators selected for use in the synthesis report are classified under the four Lisbon policy domains: employment, innovation and research, economic reform and social cohesion. Due to the close linkages between these different policy domains the classification of an indicator under one or the other heading is not always clear. An indicator such as the long-term unemployment rate, for example, may reflect structural problems on the labour market as well as the risk of social exclusion. Similarly, public expenditure on education may be considered as an investment raising the innovative capacity of society but also as a factor of skill development and quality of work.

24. In addition, some background indicators are suggested to illustrate the overall economic context in which the structural reforms are taking place. These indicators are related to sustainable growth, economic dynamism and a sound, stability oriented macroeconomic environment. **GDP per capita (in PPS) and the real GDP growth rate** are the most common measures of the standard of living and economic growth, which are directly related to the growth ambitions expressed in Lisbon. However, this growth can only be sustained in the long run if the **energy intensity of the economy** remains within limits. **Labour productivity (per person employed and per hour worked)** is an indicator of the overall efficiency and dynamism of the economic system. The **inflation rate** permits to assess whether growth takes place in a sound, stability-oriented macro environment. Finally, the **cyclically adjusted budget balance** is particularly important in order to assess underlying budgetary developments.

25. Annexes 1 and 2 of this Communication present the complete list of indicators, as well as their definitions, sources and availability. Annex 3 provides
illustrations of the selected indicators. In principle, these illustrations show annual data for each of the 15 Member States, the European Union as a whole and the United States. Clearly, such illustrations are insufficient for conducting an in-depth analysis of progress made towards the Lisbon goals and this analysis will be made in the synthesis report.

V.1 Employment indicators

26. One of the key aims of the strategic goal set at the Lisbon summit is to strengthen employment in the Union as part of the knowledge-based society, with the ultimate objective of full employment. In accordance with the priority given to employment, a strategic target for employment was set: the EU should achieve an average employment rate as close as possible to 70% by 2010. The European Council also stressed the importance of equal opportunities for women and men and increased participation in the labour market by women, and set a similar target for female employment – the aim is to reach an average female employment rate of more than 60% by 2010.

27. As well as creating the economic conditions for strong growth and sustained employment creation, the European Council highlighted the importance of an “Active Employment Policy”. The key elements of this policy include: improving employability; addressing the problem of skills gaps; focussing on lifelong learning; ensuring equal opportunities; and increasing employment in services, where there are major shortages.

28. The list of indicators on employment is firstly intended to cover the two employment targets set by the European Council. The employment rate of older workers is also included, as the encouragement of such workers back into the labour market is a key component of the strategy to increase labour market participation. In view of the ageing population, the employment rate of older workers is becoming increasingly important. Contrary to the case of youth unemployment, the general improvement in economic conditions has had little effect on the employment of older workers. Unemployment rates, and in particular the long-term unemployment rate, are also in the list to highlight structural problems in the labour market. The average tax rate on low paid workers is included as one measure of the incentives/disincentives to employment in national tax and benefit systems. Finally, an indicator for lifelong learning is included as one of the key elements of an active employment policy.

Indicator 1: Employment rate

Indicator 2: Female employment rate

These first two indicators are a direct reflection of the strategic targets set by the European Council for employment. The inclusion of the female employment rate also reflects the importance attached to equal opportunities by the European Council, as well as the key role that increased female participation in the labour market and increased female employment will play in meeting the overall employment target.

Indicator 3: Employment rate of older workers

Low employment rates for older workers in Europe are an indication of low participation of such workers in the labour market due to structural problems.
Moreover, non-employed older workers are at risk of being permanently excluded from the jobs market, and accordingly of being socially excluded.

**Indicator 4 : Unemployment rate**

As well as being an indicator of overall macroeconomic performance, persistent trends in unemployment rates can reflect a number of structural factors impeding job-seekers from finding employment, such as low skill levels, inadequate assistance to job-seekers, overly generous benefit provision, and high tax rates on labour.

**Indicator 5 : Long term unemployment rate**

The long-term unemployment rate has been included here because it is a good reflection of structural problems on the labour market. Moreover, the long-term unemployed are susceptible to the erosion of their job skills, thus reducing their employability, and are likely to face a high risk of social exclusion.

**Indicator 6 : Tax rate on low-wage earners**

The Lisbon European Council called on the Commission and the Council to assess whether adequate measures have been taken to alleviate the tax pressure on labour - especially on the relatively unskilled and the low-paid - and to improve the employment and training incentives of tax and benefit systems. The average tax rate is one measure of the incentives/disincentives to employment included in tax and benefit systems. This indicator measures the average tax rate on low wage earners, that is those workers with a wage at or below a specified share of the wage of the average production worker.

**Indicator 7 : Lifelong learning (adult participation in education and training)**

The conclusions of the Lisbon Council stress the importance of an Active Employment Policy, of which lifelong learning is a key element. Continuous education and training is essential to enhance the skills of the workforce, ensuring their adaptation to the new knowledge-based society and their employability. The indicator “adult participation in education and training” needs to be further improved in view of comparability problems between some Member States.

**V.2 Innovation and research indicators**

29. Technological progress and improvements in the quality of labour and capital inputs into the production process account for between 25 and 50% of economic growth and are the principal driving force for competitiveness and employment. This observation explains why improving the capacity to innovate is an essential element of the European Union’s strategy set out in Lisbon to increase growth and employment. The Lisbon conclusions also note that the transition to a knowledge-based economy should be facilitated by better policies for R&D, education and the information society.

30. The Lisbon Council encouraged the Union to work towards the objectives set out in the Commission Communication “Towards a European Research Area.” This would imply more investment in the education and training of the labour force and an increase in expenditure on research and development. Ultimately, this should result in a rise in the number of patents registered and an increased specialisation in high-tech
and high value-added industries. The Commission Communication “Innovation in a knowledge driven economy” proposed the benchmarking of innovation performance and policies as a means of identifying and disseminating good practice in this area.

31. The transition to the information society will facilitate the emergence of a thriving market place for innovative products. However, such a market can grow only if the basic infrastructure is in place to make the market easily accessible to all. Further investment in information and communication technologies are therefore needed. In more general terms, the Lisbon conclusions stress that realising Europe’s full e-potential depends on creating the conditions for electronic commerce and the Internet to flourish.

32. The list of indicators should therefore include those that measure investments in education, R&D and information and communication technologies (ICT) as well as their effects on the capacity of the European economy to innovate and to increase its international competitiveness in high-technology products. An indicator measuring the development of venture capital investment is also listed, because efficient risk capital markets play a major role in innovative high-growth SMEs.

**Indicator 1 : Public expenditure on education**

The Lisbon Council recommended that public expenditures be redirected towards human capital accumulation. In a rapidly developing knowledge economy the educational attainments of the population are an increasingly important determinant of economic growth and employment creation. The increased flexibility required in the work and market places implies that learning should last a lifetime. As indicated in the Lisbon conclusions this requires major investments in the national education and training systems from public authorities, enterprises and individuals. Public expenditure on education is so far the most comprehensive available measure of such investment (an indicator on public and private expenditure on human resources is included as an indicator to be developed).

**Indicator 2 : R&D expenditure**

Investment in human capital alone is not sufficient for the creation of a stream of innovative products. R&D expenditure gives an overall assessment of the research effort made by industry and government. Access to scientific and technological knowledge emanating from this research effort and the ability to exploit such knowledge is key to the economic performance of countries and regions in the increasingly competitive global economy. This is the reason why the Lisbon Council conclusions stress the need for Europe to take greater advantage of the combined resources devoted to R&D in the Member States.

**Indicator 3 : ICT expenditure**

One of the conditions for the development of the information society is the existence of infrastructure through which businesses and homes can have fast connections to the Internet. The creation of such an infrastructure network requires considerable investment in information and communication technologies. Expenditures by businesses and households on ICT equipment, software and services are a necessary complement to the investments made in ICT networks. In combining these two
elements, total ICT expenditure is a comprehensive measure of the effort made in this domain.

Indicator 4: Level of Internet access

The effectiveness of this effort is measured by the percentage of all businesses and homes connected to the Internet. This is in line with the Lisbon conclusions, which stressed the need for the Union to catch up with its competitors by linking many more businesses and homes to the Internet via fast connections. Tracking the connection of schools to the Internet is also being developed in light of the call of the Lisbon Council for full access by the end of 2001.

Indicator 5: Patents in high-tech areas

The Council conclusions also mention that innovation and ideas must be adequately rewarded, particularly through patent protection. As around 65% of R&D expenditure is concentrated in five or six medium- or high-technology industries in almost all the large industrialised countries, the number of patents in high-tech areas gives a first indication of the potential for economic return on the R&D investment.

Indicator 6: Exports of high-technology products

Clearly, the registration of a patent is not the final step in exploiting research efforts. Innovations need to be reflected in new production processes or even completely new products to be brought on to the market. For a country as a whole, high-tech exports are a good reflection of the degree of comparative advantage in innovative industries and, in more general terms of its international competitiveness.

Indicator 7: Venture capital

Access to venture capital is key to the development of innovative companies. Financial institutions may be reluctant to finance such companies because of the risk involved and the lack of collateral. Venture capital, combining financing, management, and nurturing of risky projects is better adapted to this purpose. As stressed by the Commission in its April 1998 Risk Capital Communication, and endorsed by the European Council on several occasions, the creation of substantial pan-European venture capital markets is essential to promote innovation and to support economic growth.

V.3 Indicators of economic reform

33. With the completion of the Single Market Programme and the introduction of the euro, important steps have been taken towards creating an integrated and competitive European market place. The Strategy for the Internal Market and the Financial Services Action Plan are a continuation of efforts to foster and further integration. Technological progress and globalisation have given an additional impulse to these integration processes affecting both product and capital markets. In order to fully benefit from the rapid technological and economic developments brought on by the knowledge-based economy and the forces of globalisation, the capacity of the European economy to adjust must rise. This will require more efficient and better functioning labour, capital and product markets.
34. In this section on product and capital market reform, a distinction is made between indicators of market integration and of market efficiency. For the product markets, the indicator list includes an indicator of trade integration, and an indicator of relative price levels to reflect both market integration and efficiency. In addition, the evolution of prices in network industries is considered as an indicator of progress in the liberalisation of these sectors. Finally, two indicators measuring possible distortions in the functioning of product markets caused by public intervention are proposed. For capital markets, the list consists of two indicators on financial market integration and efficiency.

**Indicator 1: Trade integration**

This indicator measures trade integration in goods only. The aim of the Single Market Programme and the new Internal Market Strategy is to create a truly integrated European market place where national borders would no longer affect trade flows. The assessment of whether and to what degree this aim has been reached can be based on the analysis of developments in such trade flows. To allow for the fact that smaller economies tend to be more integrated, Member States will be grouped into large and small economies, and the comparisons will be made between Member States within each group.

**Indicator 2: Relative price levels and price convergence.**

If price levels in a Member State are well above those observed in others, this may be an indication of insufficient competition or other forms of market inefficiency, even taking into account the other factors which can cause high relative price levels such as income and tax levels. Furthermore, large differences in price levels between the EU Member States can be an indication that markets are not yet fully integrated. Progress in EU market integration may be assessed by looking at price convergence. However, even in integrated markets such as the US, sizeable price differences continue to exist.

**Indicator 3: Prices in network industries**

The efficiency of the economic reform process can best be measured by tracking price levels in network industries such as telecommunications, energy and transport, because these sectors are currently being liberalised. This indicator will include data on telecommunications, gas and electricity prices. If suitable data is available, prices in the transport sector will also be included. Particular attention will be paid to price levels in telecommunications because in this sector the liberalisation process is already quite advanced and sufficient data are therefore available. The telecommunications sector also plays a particularly important role in the economy because its services are increasingly important inputs into the production processes of other sectors, especially in the knowledge economy.

**Indicator 4: Public procurement**

This is an indicator of transparency in public procurement which is a necessary condition to encourage entry, competition and avoid discrimination and fragmentation on national grounds in public procurement markets. The focus is on such markets, because the public sector's purchases of supplies, services and works are important to the EU economy (estimated at around 14% of GNP). In addition, this is one area where the Single Market has been particularly slow to develop. This is the reason why
the Lisbon Council asked for a speedy update of Community public procurement rules aimed at making public procurement more accessible to SMEs.

**Indicator 5 : Sectoral and ad-hoc State aids**

The Lisbon Council conclusions underline the further efforts needed to promote competition and reduce the general level of State aids, shifting the emphasis from supporting individual companies or sectors towards tackling horizontal objectives of Community interest. Sectoral and ad-hoc State aids introduce distortions into the market place, leading to inefficiencies, and as a consequence a reduction in European competitiveness and growth. State aid is of particular interest because it is under the direct control of government.

**Indicator 6 : Cross-border banking penetration**

At Lisbon, Heads of State and Government recognised the central role of efficient capital markets for long-term European competitiveness. As stressed in the Financial Services Action Plan, market integration is key to their efficiency. As banks play a major role in the financing of the economy, an indicator of their cross-border activity will be a good indicator of financial market integration.

**Indicator 7 : Capital raised on stock markets**

As already mentioned, access to finance is a major determinant of sustainable economic growth. European stock markets are underdeveloped, compared to the US, due to a set of barriers. These barriers are analysed and addressed in the Financial Services Action Plan and the Risk Capital Action Plan. Their development and the effectiveness of the measures undertaken under the above mentioned plans should be monitored through an analysis of the amount of capital raised on stock markets. When interpreting this indicator account will need to be taken of the effect of the business cycle as well as structural factors, together with the fact that the figures can be easily distorted in small capital markets.

**V.4 Indicators of social cohesion**

35. Along with the development of a new knowledge-based society, the Lisbon European Council accorded a high priority to social cohesion. This priority acknowledges the fact that the development of the knowledge-based economy carries with it the potential to enhance social cohesion through the participation of the largest number of people. On the other hand, it also reflects the concern that this potential might only be realised if the existing problems of unemployment, exclusion and poverty are tackled. Efforts in the fields of employment and education, as called for by Lisbon, are also expected to strengthen social cohesion - it is recognised that the best safeguard against exclusion is a job.

36. One of the three pillars of the strategy outlined by the Lisbon European Council calls for the modernisation of the European social model, for investment in people, and for the fight against social exclusion. Social protection systems should be modernised to ensure their long-term financial sustainability in the face of changing demographic patterns, and to promote social inclusion and tackle poverty. Investing in people is also seen to be key to efforts in this pillar. Particular stress was laid by the European Council on the adaptation of education and training systems to the needs of the knowledge-based society. As part of the efforts to promote and monitor
improvements in social cohesion, attention is being devoted to the evaluation of inequalities in terms of standard of living and quality of life within society across age, gender and population groups. Instruments are being developed to reduce these inequalities, and to support the social participation and increased contribution of the individual.

37. The key indicators included here are intended firstly to provide measures of the degree of poverty and income dispersion and the associated risk of social exclusion. Also included is an indicator for regional cohesion, as regional disparities are one contributing factor to poor social cohesion. Finally, the inclusion of an indicator on educational outcomes, highlights the importance paid to investment in people by the Lisbon Council, and reflects the importance of poor educational attainment as one contributing factor to social exclusion. It should be noted however, that work on indicators in the social field is still at an early stage, and more suitable indicators are likely to emerge in the coming months and years. In particular, the Lisbon European Council asked the High Level Group on Social Protection to work on the development of indicators, and this work is not yet complete. Moreover, data for the social indicators included below do not yet cover all Member States.

**Indicator 1 : Distribution of income (income quintile ratio)**

The income quintile ratio is one measure of the degree of income inequality in a country. It compares the share of a country’s income received by the highest-earning 20% of a country’s population with that share earned by the lowest-earning 20% (S80/S20). Wide disparities in income share between these groups, can reflect poor levels of social cohesion, and the heightened risk of social exclusion for those at the lower end of the income distribution.

**Indicator 2 : Poverty rate before and after social transfers**

The poverty rate measures the share of the population below a defined poverty line, thus measuring the extent of poverty, the risks of social exclusion, and the impact of social transfers (excluding pensions).

**Indicator 3 : Persistence of poverty**

The indicator for the persistence of poverty measures the share of the population consistently living below the poverty line over the longer term. It gives an indication of the depth of the poverty problem and of its dynamics; the longer people remain in poverty the greater the likelihood of their permanent social exclusion.

**Indicator 4 : Jobless households**

This indicator measures the extent to which whole households might be at risk of poverty and social exclusion due to the lack of employment. Jobless households are working age households, that have no person in employment. Here, working age households are defined as households in which at least one person is aged 25-55. In the interpretation of such an indicator, its sensitivity to the business cycle should be taken into account.

**Indicator 5 : Regional cohesion (variation in GDP per capita in PPS across regions)**
Reducing disparities between regions has since long been an aim of the Community’s policies. Moreover, wide regional disparities in economic activity can be one of the factors contributing to the exclusion of certain parts of society within a country.

**Indicator 6 : Early school-leavers not in further education or training**

This indicator, which measures the share of people aged 18-24 with only lower secondary education and not in education or training, reflects the importance attached to investment in people in the strategy proposed by the Lisbon European Council. It highlights the need for a good level of basic education to enhance the employability of school-leavers, and to ensure their social inclusion. The European Council has also set a target of halving, by 2010, the number of 18-24 year olds with only lower secondary education that are not in further education or training.

**VI. INDICATORS TO BE DEVELOPED**

38. Some of the indicators necessary for monitoring progress in the policy domains considered may not be available for different reasons. The indicators may not be defined precisely or may not be harmonised across Member States, or the data necessary for their quantification may not be complete or may be out-of-date.

39. In order to cope with this problem, a number of indicators have been selected for which an additional statistical effort is most urgently needed. They are listed below. The list aims to identify the most important shortcomings and to avoid placing too much of a burden on the Member States. Each of these proposed indicators will have to be assessed in the context of possible future inclusion in the European Statistical System. In this context, consideration could also be given to the development (and continuous updating) of a database on performance and policy measures since this information constitutes the vital starting point for any analysis. The database would be intended as a way of drawing together the information to be used in the Synthesis Report and to help ensure consistency in the on-going process. The database would not be intended to duplicate existing work or to introduce inflexibility in the further improvement of the indicators.

**VI.1 General economic background indicators**

**Indicator a : Potential output**

Potential output is a composite performance indicator, which provides a summary indication of the overall health of the supply side of an economy. It can be measured in a number of different ways. One method would be to use simple detrending methods to calculate a trend GDP series. Another would be to use a production function approach to calculate potential output (assuming that at the aggregate level a technical relationship exists linking output to various factor inputs – multiplied by their respective degree of utilisation – and the level of total factor productivity).

**Indicator b : Total factor productivity**

Total factor productivity (TFP) is a comprehensive indicator of market efficiency, reflecting developments in labour, capital and product markets. Both levels and growth rates of total factor productivity are worth calculating. Relative TFP levels measure residual labour productivity levels taking into account the impact of cross
country differences in fixed capital. TFP growth rates are indicative of changes in the quality of labour and capital inputs and technical change arising from process or product innovations or organisational change. The main problem with the indicator is that it is difficult to arrive at a commonly agreed methodology for calculating TFP; only slight differences in methodology may lead to significantly different results.

VI.2 Employment indicators

**Indicator 1: Long-term unemployment flows**
Flows into and out of long-term unemployment would provide a useful means of assessing the nature of the problem facing the long-term unemployed, as well as progress in implementing more active and preventative policies for the unemployed. Such data are currently available for a majority of Member States but some problems of comparability remain.

**Indicator 2: Quality of work**
The conclusions of the Lisbon European Council mention the need for “more and better” jobs. As such, it might be useful to include an indicator on the quality of work in the set of key indicators. However, quality of work has not yet been clearly defined, and as a result there is not yet any consensus on useful indicators. Moreover, existing indicators in this area suffer from patchy data.

**Indicator 3: Vacancies**
New and unfilled vacancies would be useful to measure labour market tightness and to identify skill shortages. At present these data are only available through a number of different national sources - coverage differs and so comparability is difficult to assess.

**Indicator 4: Marginal effective tax rate**
An indication of marginal effective tax rates (which take into account both taxation and withdrawal of means-tested benefits as gross income rises) would be useful in order to assess the combined incentive effects of tax and benefit systems, and in particular the extent of poverty traps.

VI.3 Innovation and research indicators

**Indicator 5: Public and private expenditure on human resources**
Public and private expenditure on human resources as a share of GDP would be useful to measure total (as opposed to public) resources devoted to education and training in Member States. This indicator is in line with the priority given to investment in people in the conclusions of the Lisbon European Council. The problem is that at present the data on private expenditure on education and training is missing for some Member States and is not strictly comparable for the remaining Member States.

**Indicator 6: Business demography**
High rates of company creation and destruction are indicative of the dynamism of an economy, allowing a shift from slow- to rapid-growth sectors. Low rates of creation, on the other hand, may reflect obstacles to entry or a deficient business environment. The creation rates should be examined in combination with the survival rates and
enterprise growth to get a more complete picture of the effects of enterprise creation. Eurostat has initiated a project aimed at producing data on enterprise creation, their survival and growth for the year 2002. Other demographic data on business will be added later on. The introduction of such indicators in the list of key indicators may be considered from then on.

**Indicator 7 : E-commerce**

The development of the Internet has led to the creation of a whole new market place where products are traded from business to consumer (B2C) or from business to business (B2B). The development of this new market, which affects the whole supply chain including subcontracting, procurement, product development, marketing, logistics and distribution, is essential to assure the continued competitiveness and growth of European industry. An increased involvement in electronic commerce creates the potential for a more dynamic and productive European economy. Reliable and comparable statistical data in this area are thus urgently needed.

**VI.4 Indicators of economic reform**

**Indicator 8 : Company registration**

Governmental regulation may at times hinder the operation of business enterprises. In recent years, governments have made an effort to eliminate regulations that serve no useful purpose and to simplify procedures. The Lisbon conclusions argue that further efforts are required to lower the costs of doing business and remove unnecessary red tape. The total number of procedures required for registering a new company, and the average period of time needed for going through this process may be good indicators of progress made in regulatory reform. A study was conducted to calculate such indicators for 1996. An update of this study would be most welcome.

**Indicator 9 : Regulatory environment**

The Lisbon Council asked for further coordinated action to simplify the regulatory environment, including the performance of public administration, at both national and Community level. There is no easy way of measuring the quality of the regulatory environment. The OECD has made a significant effort to collect and analyse comparative data on regulatory environments in the product market in 1998, focusing on economic and administrative regulations. The outcome of this analysis was presented in the form of summary statistics, which gave rise to much discussion. Nevertheless, it may be useful to further develop the OECD work in this area.

**Indicator 10 : Number of operators in network industries**

Another way of measuring progress in liberalising the network industries, in addition to prices, is to look at the number of operators in each network industry. This indicator could be broken down by the number of operators serving either domestic or industrial users. We would expect the data to cover at least the telecommunications, electricity and gas sectors and if possible the transport sector. In this area, further work is needed on the coverage and comparability of these data.

**Indicator 11 : Cost of capital**

An indicator of the cost of capital for EU companies, with a comparison between Member States, as well as between large enterprises and SMEs would be very useful
in the framework of enterprise policy, permitting an assessment of financing conditions and of the investment capacity of enterprises. However, at present no such indicator is available due to the lack of an agreed definition of such an indicator as well as a lack of data (especially at SMEs level).

VI.5 Indicators of social cohesion

Social exclusion is a multidimensional phenomenon and indicators must be developed accordingly. In addition to issues of low income, unemployment and access to the labour market, it refers to particular difficulties regarding access to resources, rights, goods and services in a number of areas including education, training, employment, housing, health, etc. Eurostat has started work on non-monetary indicators of deprivation and social exclusion relating to individual means, perception and satisfaction. Measuring the effectiveness of social protection is another important aspect to be developed under social cohesion. There is a need to strengthen cooperation at Community level to make progress in these respects. These are issues, where the important contribution of the Committee for Social Protection (currently the High Level Group on Social Protection) is expected. For this reason, we do not provide any detailed list of indicators to be developed in this area.
### ANNEX 1 – SELECTED INDICATORS

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<tr>
<th>General economic background indicators</th>
<th>General economic background indicators to be developed</th>
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<td>a. GDP per capita (in PPS) and real GDP growth rate</td>
<td>a. Potential output</td>
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<tr>
<td>b. Energy intensity of the economy</td>
<td>b. Total factor productivity</td>
</tr>
<tr>
<td>c. Labour productivity (per person employed and per hour worked)</td>
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</tr>
<tr>
<td>d. Inflation rate</td>
<td></td>
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<tr>
<td>e. Cyclically adjusted budget balance</td>
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<table>
<thead>
<tr>
<th>List of 27 indicators</th>
<th>List of 11 indicators to be developed</th>
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</thead>
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<td>I. Employment</td>
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<tr>
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<td>1. Long-term unemployment flow</td>
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<tr>
<td>2. Female employment rate</td>
<td>2. Quality of work</td>
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<td>3. Employment rate of older workers</td>
<td>3. Vacancies</td>
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<tr>
<td>4. Unemployment rate</td>
<td>4. Marginal effective tax rate</td>
</tr>
<tr>
<td>5. Long-term unemployment rate</td>
<td></td>
</tr>
<tr>
<td>6. Tax rate on low-wage earners</td>
<td></td>
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<tr>
<td>7. Life-long learning (adult participation in education and training)</td>
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<table>
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<tr>
<th>II. Innovation and research</th>
<th>II. Innovation and research</th>
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</thead>
<tbody>
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<td>5. Public and private expenditure on human resources</td>
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<td>3. ICT expenditure</td>
<td>7. E-commerce</td>
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<tr>
<td>4. Level of Internet access</td>
<td></td>
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<tr>
<td>5. Patents in high-tech areas</td>
<td></td>
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<tr>
<td>6. Exports of high-technology products</td>
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<tr>
<td>7. Venture capital</td>
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</table>

<table>
<thead>
<tr>
<th>III. Economic Reform</th>
<th>III. Economic Reform</th>
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</thead>
<tbody>
<tr>
<td>1. Trade integration</td>
<td>8. Company registration</td>
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<td>2. Relative price levels and price convergence</td>
<td>9. Regulatory environment</td>
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<tr>
<td>3. Prices in network industries</td>
<td>10. Number of operators in network industries</td>
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<tr>
<td>4. Public procurement</td>
<td>11. Cost of capital</td>
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<tr>
<td>5. Sectoral and ad hoc State aids</td>
<td></td>
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<tr>
<td>6. Cross-border banking penetration</td>
<td></td>
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<tr>
<td>7. Capital raised on stock markets</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>IV. Social Cohesion</th>
<th>IV. Social Cohesion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Distribution of income (income quintile ratio)</td>
<td>Indicators will be developed by the High Level Group on Social Protection</td>
</tr>
<tr>
<td>2. Poverty rate before and after social transfers</td>
<td></td>
</tr>
<tr>
<td>3. Persistence of poverty</td>
<td></td>
</tr>
<tr>
<td>4. Jobless households</td>
<td></td>
</tr>
<tr>
<td>5. Regional cohesion (variation in GDP per capita in PPS across regions)</td>
<td></td>
</tr>
<tr>
<td>6. Early school-leavers not in further education or training</td>
<td></td>
</tr>
</tbody>
</table>
### ANNEX 2 – Definition, Source, Availability and Policy Objective behind the Selected Indicators

#### General Economic Background Indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Definition</th>
<th>Source</th>
<th>Availability</th>
<th>Overall policy objective</th>
</tr>
</thead>
</table>
## (I) Employment

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Definition</th>
<th>Source</th>
<th>Availability</th>
<th>Overall policy objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Tax rate on low-wage earners</td>
<td>Income tax plus employee and employer contributions for low-wage earners (i.e. with a wage of 67 % of the average production wage, or 100% for married couples with two children) as a share of labour costs.</td>
<td>OECD, Taxing Wages (Table 5, 2000 edition)</td>
<td>All MS, comparable data for US and Japan. Time series : 1995-98, estimates for 1999.</td>
<td>To measure the tax pressure on labour, especially the low-paid and the relatively unskilled.</td>
</tr>
</tbody>
</table>
## (II) Innovation and Research

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Definition</th>
<th>Source</th>
<th>Availability</th>
<th>Overall policy objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. ICT expenditure</td>
<td>ICT expenditure as a percentage of GDP.</td>
<td>European Information Technology Observatory (EITO)</td>
<td>Coverage: All MS, EU aggregates, US and Japan.&lt;br&gt;Time series: 1994-1999</td>
<td>Information society</td>
</tr>
<tr>
<td>4. Level of internet access</td>
<td>Internet on-line active accounts (both residential and business users) per 100 inhabitants.</td>
<td>European Information Technology Observatory (EITO)</td>
<td>Coverage: All MS, US and Japan.&lt;br&gt;Time Series: 1998</td>
<td>Information society</td>
</tr>
<tr>
<td>6. Exports of high-technology products</td>
<td>Share of exports of high-tech products in total exports.</td>
<td>Eurostat (Comext), UN (Comtrade)</td>
<td>Coverage: all MS (BLEU for B and L), EU aggregates, US and Japan.&lt;br&gt;Time series: 1990-99</td>
<td>Impact of R&amp;D and innovation policy.</td>
</tr>
<tr>
<td>Indicator</td>
<td>Definition</td>
<td>Source</td>
<td>Availability</td>
<td>Overall policy objective</td>
</tr>
<tr>
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<td>-------------------------</td>
</tr>
<tr>
<td>5. Sectoral and ad hoc State aids</td>
<td>State aids (sectoral and ad hoc) as a percentage of GDP</td>
<td>DG COMP</td>
<td>Coverage: all MS. No US or Japan data. Time series: 1990-1998</td>
<td>Distortions in the Single Market</td>
</tr>
<tr>
<td>6. Cross-border banking penetration</td>
<td>Share of deposits from, and loans to, non-resident non-bank private sector (including households) in total of deposits and loans overseen by credit institutions to non-bank private sector (including households).</td>
<td>Eurostat, structural Business Statistics, ECB, Money and Banking Statistics</td>
<td>Coverage: Each MS from euro area, plus probably other MS. Time series: 1997-99</td>
<td>Financial market integration</td>
</tr>
<tr>
<td>Indicator</td>
<td>Definition</td>
<td>Source</td>
<td>Availability</td>
<td>Overall policy objective</td>
</tr>
<tr>
<td>-----------</td>
<td>------------</td>
<td>--------</td>
<td>--------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>1. Distribution of income (income quintile ratio)</td>
<td>The ratio of the share of the total equalised income received by the highest earning 20% of the country's population and the lowest earning 20% (S80/S20 ratio).</td>
<td>Eurostat, ECHP.</td>
<td>All MS except Sweden and Finland, EU aggregates. No data on US and Japan. Time series: 1993, 1994, 1995, (1996 available by end 2000 including Sweden)</td>
<td>Combating poverty and social exclusion</td>
</tr>
<tr>
<td>4. Jobless households</td>
<td>Share of households in which no member is in employment among all households in which at least one person is aged 25-55.</td>
<td>Eurostat (Labour Force Survey).</td>
<td>All MS except Denmark, Finland and Sweden, EU aggregates. Comparable data not available for the US Time series: 1985 – 1999</td>
<td>Combating poverty and social exclusion.</td>
</tr>
</tbody>
</table>
(V) INDICATORS TO BE DEVELOPED

General Economic Background

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Definition</th>
<th>Current Source</th>
<th>Problem with indicator</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Potential Output</td>
<td>Measure of the potential output of the economy.</td>
<td>OECD, IMF and Commission services</td>
<td>There is no agreed methodology for calculating potential output and measures vary between the OECD, IMF and the Commission.</td>
<td>To assess changes in the output potential of economies.</td>
</tr>
<tr>
<td>b. Total factor productivity</td>
<td>Total productivity of all factors.</td>
<td>AMECO database.</td>
<td>Data is available in AMECO but there is difficulty in arriving at a commonly agreed methodology.</td>
<td>To assess overall efficiency of the economy.</td>
</tr>
</tbody>
</table>

Employment

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Definition</th>
<th>Current Source</th>
<th>Problem with indicator</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Long-term unemployment flows</td>
<td>Flows into and out of long-term unemployment.</td>
<td>National sources only.</td>
<td>Data is currently only available for certain Member States. Moreover, it is not presented in a comparable fashion.</td>
<td>To assess the nature of the problem facing the long-term unemployed.</td>
</tr>
<tr>
<td>2. Quality of work</td>
<td>To be defined.</td>
<td>-</td>
<td>There is little consensus on useful indicators in this area, and data coverage is patchy at the moment</td>
<td>The need for “more and better” jobs.</td>
</tr>
<tr>
<td>3. Vacancies</td>
<td>New and unfilled vacancies.</td>
<td>National sources only</td>
<td>Data is only provided by a number of different national sources; coverage differs and so comparability is difficult to assess.</td>
<td>To measure labour market tightness and to identify skill shortages.</td>
</tr>
<tr>
<td>4. Marginal effective tax rate</td>
<td>Share of any increase in gross wages not (effectively) received by the worker because of higher tax payments and withdrawal of means-tested benefits, by wage level and family type.</td>
<td>OECD “Taxing wages”</td>
<td>OECD “Taxing wages” gives marginal tax rates, taking into account cash benefits such as child allowances. However, other benefits, such as housing allowances, in-work income supplements and so on, would need to be included.</td>
<td>Assessment of the incentive effects of tax and benefit systems, and in particular the extent of the poverty trap.</td>
</tr>
</tbody>
</table>
## (V) INDICATORS TO BE DEVELOPED (CONTINUED)

### Innovation

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Definition</th>
<th>Current Source</th>
<th>Problem with indicator</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Public and private expenditure on human resources</td>
<td>Public and private expenditure on human resources (education expenditure) as a share of GDP</td>
<td>-</td>
<td>Data on private expenditure on education is missing for some Member States, and is not strictly comparable for the remaining Member States.</td>
<td>To measure total (as opposed to public) resources devoted to education in Member States.</td>
</tr>
<tr>
<td>6. Business demography</td>
<td>Creations, survival rate and destructions of enterprises.</td>
<td>Eurostat (demography of enterprises project).</td>
<td>Data on a harmonised basis available from 2002 onwards. Only non-harmonised data is currently available.</td>
<td>To measure entrepreneurship</td>
</tr>
<tr>
<td>7. E-commerce</td>
<td>E-commerce revenue.</td>
<td>Studies. Eurostat (pilot studies with Member States in 2001).</td>
<td>Only partial data from studies are available at the moment.</td>
<td>Information society</td>
</tr>
</tbody>
</table>
(V) **INDICATORS TO BE DEVELOPED (CONTINUED)**

**Economic reform**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Definition</th>
<th>Current Source</th>
<th>Problem with indicator</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Company registration</td>
<td>Total number of procedures and weeks lapsed between the application for and completed registration of a new company.</td>
<td>Logotech study 1996.</td>
<td>Last data was for 1996.</td>
<td>To measure barriers to entrepreneurship</td>
</tr>
<tr>
<td>9. Regulatory environment</td>
<td>-</td>
<td>OECD analysis in 1998</td>
<td>No easy way of measuring the quality of the regulatory environment. The OECD has presented summary statistics, which although they can be questioned might be worth developing further.</td>
<td>Simplifying the regulatory burden.</td>
</tr>
<tr>
<td>10. Number of operators in network industries</td>
<td>Number of companies offering services available to a certain class of users (e.g. domestic or industrial) in a network industry.</td>
<td>See next column.</td>
<td>Full data only available for telecoms at the moment from 4th and 5th Report on the Implementation of the Telecommunications Regulatory Package.</td>
<td>Market efficiency, market access.</td>
</tr>
<tr>
<td>11. Cost of capital</td>
<td>Cost of capital for EU companies (both large enterprises and SMEs).</td>
<td>-</td>
<td>At present no agreed definition and a lack of data.</td>
<td>To assess EU’s firm’s access to capital.</td>
</tr>
</tbody>
</table>
ANNEX 3:

General Economic Background

Indicator a1: GDP per capita

Source: Eurostat
General Economic Background

Indicator a2: Real GDP growth rates

Real GDP growth, percentage change on preceding year

Source: Eurostat
General Economic Background

Indicator b: Energy Intensity of the Economy

Gross inland consumption of energy / GDP
(tonnes of oil equivalent / 1995 million euro)

Source: Eurostat
General Economic Background

Indicator c1: Labour productivity (per employee)

Source: Eurostat and OECD
General Economic Background

Indicator c2: Labour productivity (per hour worked)

Source: OECD
General Economic Background

Indicator d: Inflation rate

Annual percentage change in Consumer Price Index
(HICP for EU, CPI for US)

Note: US data are not strictly comparable with EU harmonised indices.

Source: Eurostat
General Economic Background

Indicator e: Cyclically-adjusted budget balances

Source: Commission services

*Cyclically-adjusted net lending (+) or net borrowing (-)
general government (as a percentage of GDP).
Employment Indicator I.1: Employment rate

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<thead>
<tr>
<th>Country</th>
<th>1995</th>
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<td>US</td>
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</table>

Comparable data not available for the US

Source: Eurostat
Indicator I.2: Female employment rate

Source: Eurostat
Indicator I.3: Employment rate of older workers

Percentage of pop. 55-64

Source: Eurostat
Employment

Indicator I.4 Unemployment rate

unemployed as a % of active pop.

* 1999 data not yet available for Greece

Source: Eurostat
Employment

Indicator I.5 Long-term unemployment rate

as a percentage of active population

Source: Eurostat

Comparable data not available for the US
Indicator I.6 Tax rate on low-wage earners# 

Income tax plus employer and employee contributions, as a % of labour costs

# Family type is married couple with one earner on 100% APW, with two children.

Source: OECD
Employment

Indicator I.7.: Life-long learning

Index of participation of the 25-64 population in education and training.
Adult participation in training over the 4 weeks prior to the survey.

$ Data for F, NL, P is not comparable due to methodological differences.
* 1999 data not available for IRL and A.  # The earlier figure for UK is 1994.

Source: Eurostat
Innovation and research

Indicator II.1: Public expenditure on education

Total public expenditure on education as a percentage of GDP

*Data covers the Flemish Community only

Source: Eurostat and OECD
Innovation

Indicator II.2: R&D expenditure

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<td>Japan</td>
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</table>

R&D expenditure as a percentage of GDP

Source: Eurostat, OECD

* No breakdown of GERD for Austria
Innovation and research

Indicator II.3: ICT expenditure

Expenditure on Information and Communication Technology (ICT) as a percentage of GDP

Source: EITO 2000
Innovation and research

Indicator II.4: Level of internet access

Number of internet users per 100 inhabitants (both residential and business users)

Source: EITO 2000
Innovation and research


- **EPC states**: 36%
- **Other**: 6%
- **Japan**: 22%
- **USA**: 36%

Source: EPO

EPC states = EU15 plus Switzerland, Cyprus, Liechtenstein and Monaco
Innovation and research


Source: USPTO

EPC states = EU15 plus Switzerland, Cyprus, Liechtenstein and Monaco
Innovation and research

Indicator II.5c: Patents in high-tech areas

Number of high-tech patent applications per million inhabitants

Source: EPO, JPO and USPTO
Innovation and research

Indicator II.6: Exports of high-technology products

As a percentage of total exports

Source: Eurostat, UN

*1998 for the US
Innovation

Indicator II.7: Venture Capital

Venture capital investment (by investment stage) as a percentage of GDP

* exp & rep = expansion and replacement

Source: EVCA (for EU), PricewaterhouseCoopers (for US)
Economic reform

Indicator III.1a: Trade integration (Intra-EU trade)

Intra-EU trade GDP ratio (%)

Source: Eurostat
Note: The data include intra-EU trade for each Member State but only extra-EU trade for the EU-15.

Source: Eurostat

Note: The data include intra-EU trade for each Member State but only extra-EU trade for the EU-15.
Economic reform

Indicator III.2a: Relative price levels
(incl. indirect taxes, EU-15=100)

Source: Eurostat

*US data is for 1993 and 1996
Economic Reform

Indicator III.2b: Price level dispersion in the EU-15

Coefficient of variation of price levels for private final consumption

Source: Eurostat

Data is for EU-12 up to 1992, then EU-15
Economic reform

Indicator III.3a: Prices in telecommunications, 1999

Source: Commission services, DG INFSO
Indicator III.3a: Prices in telecommunication, 1997

Source: Commission services, DG INFSO
Economic Reform

Indicator III.3b: Electricity prices (Industry users)

Electricity prices in euro per kWh (excl. taxes)

Source: Eurostat

Data is for medium consumers: annual consumption of 2000 MWh.
Economic Reform

Indicator III.3b: Electricity prices (households)

Electricity prices in euro per 100 kWh (excl. taxes)

Source: Eurostat

Data is for medium consumers: annual consumption of 3500 kWh
Economic Reform

Indicator III.3c: Gas prices (households)

Gas prices (excl. taxes) in euro per Gigajoule

Source: Eurostat

*FIN and UK data for Jan 98 and Jan 99
Data is for medium consumers annual consumption 83.7 G.
Economic Reform

Indicator III.3c: Gas prices (industry users)

Source: Eurostat

Data is for medium consumers: annual consumption 41,600 GJ; load factor: 200 days - 1,600 hours.
Economic reform

Indicator III.4: Public Procurement

Tenders published in the Official Journal as a percentage of total public procurement

Source: Commission services, DG MARKT
Economic reform

Indicator III.5: State Aid

State aid (by category) as a percentage of GDP

Source: Commission Services, DG COMP
Economic Reform

Indicator III.6: Cross-border banking penetration

No data available until autumn 2000

Source: BIS
Economic Reform

Indicator III.7 Capital raised on stock markets

Amount of new capital raised by domestic companies as a percentage of GDP

Source: FIBV
Social cohesion

Indicator IV.1: Distribution of income

S80/S20 ratio (ratio of highest-earning 20% to lowest-earning 20%)

* Data for FIN and S not available.

Source: Eurostat
Source: Eurostat

Social cohesion

Indicator IV.2: Poverty rate before and after social transfers, 1995

Share of population below the poverty line. Poverty line defined as 60% of the median equivalised income.

* Data not available for FIN and S.

Source: Eurostat
Social cohesion


Share of population consistently below the poverty line for 3 years. Poverty line defined as 60% of median-equivalised income.

* Data not available for Austria, Finland and Sweden.

Source: Eurostat
Social cohesion

Indicator IV.4: Jobless households

DATA AVAILABLE BY THE END OF THE YEAR

Source: Eurostat
Social cohesion

Indicator IV.5: Regional Cohesion

Coefficient of variation of GDP/capita in PPS (NUTS 3 level)

UK (1) relates to all of UK, UK (2) excludes the Inner London region.

Source: Eurostat
Social cohesion

Indicator IV.6: Early school leavers not in further education or training

% of 18-24 y-olds with lower secondary education and not in education or training

* 1998 data not available for IRL, L, NL, UK and EU.
1999 data not available for D, IRL, A, UK and EU.

Source: Eurostat