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CONTENTS

ABSTRACT

This paper reviews the governance framework of the Lisbon Strategy and discusses the specific option of increasing the role of benchmarking as a means of improving the implementation record of structural reforms in the European Union. Against this background, the paper puts forward a possible avenue for developing a strong form of quantitative benchmarking, namely ranking. The ranking methodology relies on the construction of a synthetic indicator using the "benefit of the doubt" approach, which acknowledges differences in emphasis among Member States with regard to structural reform priorities. The methodology is applied by using the structural indicators that have been commonly agreed by the governments of the Member States, but could also be used for ranking exercises on the basis of other indicators.

JEL codes: D02, P11, P16, C43, C61

Key words: Lisbon Strategy, economic governance, benchmarking, benefit of the doubt weighting

NON-TECHNICAL SUMMARY

There is a broad consensus that structural reforms are essential in order for the euro area, and the European Union more generally, to face up to the triple challenge of globalisation, rapid technological change and an ageing population. The most concrete policy manifestation of this consensus has been the adoption of the Lisbon Strategy in 2000. This paper discusses the theoretical underpinnings and development of the governance framework of the Lisbon Strategy and puts forward a methodology for strengthening this framework through quantitative benchmarking. Specifically, the paper reviews the literature on the political economy of structural reform in a single-country context and complements it with the insights of the literature on supply-side coordination among the Member States of the EU and the euro area. The paper then looks at the practical development of the framework that governs supply-side coordination in the EU, that is, the governance framework of the Lisbon Strategy. In the context of the structural reform implementation gap that emerged in the first half of the 2000s, the analysis focuses on the 2005 mid-term review of the Strategy. During the preparatory phase of this mid-term review, two main governance reforms were put forward. One was aimed at strengthening the commitment of Member States to implement reforms by increasing the ownership of the reform agenda by national governments and stakeholders. The other was the suggestion to benchmark Member States' performance in order to monitor effectively progress made with reforms. In the end, while an increase in national ownership was partly achieved, the mid-term review shied away from the development and application of a rigorous method for benchmarking Member States' performance.

Against this background, the paper puts forward a possible avenue for developing the benchmarking element of the Lisbon governance framework. It develops a strong form of quantitative benchmarking, namely ranking. The ranking methodology provided relies on the construction of a synthetic indicator using a "benefit of the doubt" approach. The approach has the advantage of acknowledging differences in the emphasis that the EU Member States put on structural reform priorities. With regard to empirical results, as with other benchmarking methods, the outcome of applying the benefit of the doubt methodology depends also on the choice of indicators. The methodology is therefore applied by using the structural indicators that have been commonly agreed by the governments of the EU Member States, and therefore enjoy legitimacy in a policy-making context. Nevertheless, the methodology could also be used for benchmarking exercises on the basis of other indicators.

[...] the process of setting up the euro area according to the Maastricht Treaty, which was signed and ratified by our democracies, was based on a concept of benchmarking.
J.-C. Trichet, ECB President, April 2007[1]

I INTRODUCTION

There is a broad consensus among European policy-makers and academics that structural reforms are key to increase growth potential and face up to the challenges posed to the European Union (EU) by globalisation, rapid technological change and an ageing population. One of the most concrete manifestations of this consensus was the adoption in March 2000 by the Lisbon European Council of the wide-ranging programme of reforms that has come to be known as the Lisbon Strategy. Nevertheless, despite their solemn commitments made in Lisbon, the EU Member States have often been accused of backtracking on the implementation of the necessary structural reforms. This implementation gap raises questions about the political economy of structural reform in the EU in general, and the governance framework that is responsible for implementing the Lisbon Strategy in particular.

This paper analyses the governance framework of the Lisbon Strategy and discusses possible options for improving the implementation record of structural reforms in the EU. The focus of the analysis is on the use of benchmarking as a means of improving the monitoring and implementation record of structural reforms. Against this background, the paper offers a methodology for using the structural indicators that have been commonly agreed by the governments of the EU Member States in order to rank their economic performance.

The paper is structured as follows. Section 2 discusses the difficulties arising from the political economy of structural reform in general (Section 2.1). It then looks more closely at the challenges of pursuing structural reform in the context of a process of economic integration (Section 2.2). Both economic theory and empirical evidence speak in favour of striking an appropriate balance between fully coordinated policy-making at the EU level, on the one hand, and completely decentralised action at the Member State level, on the other. Nevertheless, the clearly inadequate level of implementation of structural reforms in Europe has led some observers to suggest that this balance may not yet be fully optimal in the framework of economic policy coordination in the EU. One of the options put forward is a greater recourse to benchmarking (Section 2.3), a policy tool which has produced valuable results also in other policy areas (Section 2.4). Following an overview of the use of benchmarking in the Lisbon Strategy at present (Section 2.5), Section 2.6 concludes with a discussion of a strong form of quantitative benchmarking, namely ranking.

Against this background, the paper puts forward in Section 3 a methodology for ranking EU Member States' performance based on a benefit of the doubt approach (Section 3.1). Following a discussion of data availability and quality issues (Section 3.2), it explains the methodology for developing a composite indicator for comparing the performance of Member States (Section 3.3), using the benefit of the doubt approach (Section 3.4). The paper then constructs the composite indicators for each Member State on the basis of the economic structural indicators agreed by the EU Council of Ministers, taking into account both the starting level and the progress made over time (Section 3.5). The sensitivity analysis and robustness checks are provided thereafter (Section 3.6). Section 4 summarises the main results and provides guidance on the use of the proposed ranking methodology and suggests further avenues for research.

1 Q&A session of the ECB press conference on 12 April 2007.

2 THE LISBON STRATEGY AND ITS GOVERNANCE FRAMEWORK

The EU Heads of State or Government set up the Lisbon Strategy in March 2000 with the extremely ambitious aim of turning 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" (Lisbon European Council conclusions, March 2000). In order to achieve this broad goal, the Strategy was endowed originally with two policy pillars: an economic pillar focused on reforms to promote productivity, innovation and competitiveness, and a social pillar with reforms aimed at modernising the European social model, boosting employment and combating social exclusion. The Göteborg European Council of 2001 added an environmental pillar to the Strategy, which tackled aspects of sustainable development. Subsequent European Council meetings added further objectives to the Strategy. In a number of cases, these objectives were accompanied by quantitative targets (e.g. raising the overall EU employment rate to 70% and R&D spending to 3% of GDP by 2010). The Lisbon Strategy subsequently became the shared blueprint of structural reform in the EU. It foresees a large list of policy objectives and actions that are to be pursued at European and national level.

With regard to governance structures, in order to implement the Lisbon Strategy the European Council of March 2000 called for the most efficient use to be made of the existing EU governance framework (mainly the Treaty-based Broad Economic Policy Guidelines and Employment Guidelines), as developed in the period since the adoption of the Maastricht Treaty in 1992. The Lisbon Strategy was thereby embedded in the basic economic policy coordination mechanisms of the EU. Nevertheless, two institutional innovations were also introduced in 2000. First, the Heads of State or Government decided to hold an annual spring meeting to review progress and provide political impetus and direction to the Lisbon Strategy. Second, they introduced the open method of coordination (see Box 1) as a means of helping Member States to progressively develop and improve their policies in areas not covered by the existing governance processes.

Both the objectives of the Strategy as well as the governance framework for implementing these objectives have been developed and adjusted over the years. In particular, a consensus emerged in the early 2000s that EU Member States were failing to deliver the structural reforms envisaged by the Strategy. As the Spring European Council of 2005 put it, the results of the Lisbon Strategy were mixed five years after its launch, "with shortcomings and obvious delays". The overarching goal of making the EU the most competitive and dynamic economy in the world was also seen as over-ambitious and was not repeated in the European Council conclusions, especially given that the deadline for achieving the Lisbon goals had been set for 2010.

Against this background, the Lisbon Strategy underwent a mid-term review in 2005 (see Box 2) that refocused its goals and streamlined its governance framework, and continued to promise significant benefits for the EU. For example, Gelauff and Lejour (2006) estimated in 2006 that the Strategy could increase EU GDP by 12% to 23% and employment by about 11%, if five of the most important Lisbon goals were met by 2010. However, achieving these results has remained uncertain, as many countries do not meet some or all of these goals. The Spring 2007 European Council emphasised the progress made after the relaunch of the Lisbon Strategy, "although the performance varies by Member State and policy areas covered". Others were more critical. Pisani-Ferry and Sapir (2006) have argued that "in spite of some noticeable progress, the new Lisbon process is far from what would be needed to effectively support the goals of the Lisbon agenda".

The details of the governance issues that are behind this mixed picture of hope and pessimism about the ability of the Lisbon Strategy to deliver the necessary structural reforms are at the core

of this paper. Before turning to them, however, it is necessary to put the Lisbon Strategy in the broader context of the political economy of structural reform.

2.1 THE POLITICAL ECONOMY OF REFORM: EXPLAINING THE INERTIA

Cross-country studies show that the implementation of structural reform varies widely between countries, as well as between sectors within countries, reflecting national preferences as well as political circumstances (Høj et al., 2006). The growing consensus in recent years about the desirability of structural reforms, not only in the EU but also in a number of other regions of the world, has not been matched by an equally strong implementation record in all countries and/or sectors (OECD, 2007). As mentioned above, the Lisbon Strategy has also been hampered by an uneven implementation of the necessary reforms.

An understanding of the causes behind the resistance to structural reforms is therefore important in dealing with this "implementation gap". Given the complexity of the issue, a single well-established model of the political economy of structural reform is not available (Høj et al., 2006). Nevertheless, various explanations for the resistance to (structural) reforms have been identified in the literature (see Rodrik (1996), Drazen (2000), IMF (2004) and Heinemann (2004) for an overview).

A first set of explanations is concerned with rational individual behaviour that can explain why societies fail to introduce reforms, even when the reforms will have a net welfare benefit for the society as a whole. Fernandez and Rodrik (1991) have shown that a rational electorate could reject a reform that is known to benefit a majority of voters, if there is uncertainty about the identity of the winners and losers of the reform. This leads to "status quo bias" as some reforms that would be beneficial are not implemented for lack of popular support. Other explanations for the delay of reforms with short-term costs and long-term gains are the short time horizons of politicians and/or voters. Politicians who fear that the electorate will experience only the cost of reform during their term in office will be hesitant to implement the reform. Similarly, voters who prefer benefits today over larger benefits in the future (in other words, with a short time horizon and a high discount rate) are likely to oppose reforms, something which could be especially relevant in the context of ageing populations.

A second set of explanations of the resistance to reform focuses on collective action problems, interest groups and/or imperfect information. Some regulations create rents for a relatively small group of beneficiaries, which constitutes a (well-organised) constituency resistant to reform, while the costs are spread over a much larger and less well-organised electorate (Olson, 1965).[2] Related to this explanation is the notion of "rational ignorance" (Downs, 1957), which postulates that individual information optimisation can lead to socially inefficient outcomes. In other words, as the information costs are prohibitively high for the individual voter, the electorate as a whole will be badly informed about the gains and costs of reform. Asymmetric information can also lead to non-adoption of reforms when (better-informed) policy-makers cannot convince the electorate of the benefits of a proposed policy. Cukierman and Tommasi (1998) showed that policy change that is optimal may not be adopted when the electorate cannot be certain if the proposed policy is motivated by concern for social welfare or by the partisan preferences of the policy-maker.

A third set of explanations is based on assumptions of limited rationality, leading to elementary economic misconceptions among voters. Heinemann (2004) argues that since voters who make irrational choices face no market punishment on an individual basis,

2 This "logic of collective action" is also often used to explain why it may be difficult to introduce welfare-enhancing trade liberalisation measures. In the case of trade, a relatively small but well-organised group may benefit from particular trade barriers and thus lobby fiercely for them, while the costs of these barriers are spread out widely.

human instincts and psychologically rooted irrationalities should have a deeper impact on economic policies than in private markets. Contrary to private economic decisions such as choosing an education with little employment opportunities, choosing a political programme that is doomed to economic failure is individually (almost) costless. Several empirically proven psychological circumstances could explain resistance to reform, such as the "endowment effect", which is a smaller willingness to pay for acquiring a certain good than accepting compensation for giving up the same good.

These explanations for the resistance to (structural) reforms are not mutually exclusive, and can be considered as complementary or even mutually reinforcing. For example, voters' behaviour based on limited rationality considerations will raise the information hurdle that reformers need to overcome, and thereby strengthen the position of interest groups opposing reforms.

2.2 THE EU GOVERNANCE FRAMEWORK OF STRUCTURAL REFORM

The aforementioned explanations regarding the difficulties in pursuing structural reforms indicate the multiplicity of problems faced by policy-makers within the political and economic context of individual countries. In the case of the EU Member States, however, the political economy of structural reform has acquired an additional dimension as structural reforms are formulated and implemented in a context of deepening integration. In the resulting "multilevel governance" framework, certain policy responsibilities have been transferred to the European level (e.g. market regulation, competition policy). Moreover, certain economic policies which remain in the hands of the Member States (e.g. fiscal policies) have been made subject to more or less constraining forms of coordination and surveillance at the EU level. As a result, EU Member States no longer have complete and independent control of some of the economic policy tools that were at their disposal prior to the start of the European integration process.

At the same time, the more limited economic policy leeway at national level should strengthen the incentives to undertake structural reforms, especially in the case of those Member States that participate in Monetary Union, as the lack of reforms weakens the resilience to, and increases the adversity of, (asymmetric) shocks. From a governance point of view, the supranational level can also act as a useful lever for implementing reforms at the national level, as governments have to act on the basis of commitments made at the EU level. Concerning economic policies in particular, based on the commitment to treat them "as a matter of common concern" (EC Treaty, Article 99), the EU Member States have developed EU-wide mechanisms for the monitoring and implementation of structural reforms given their shared interests in the performance of the Single Market and, where relevant, the single currency. In addition, Article 128 of the Treaty provides for the coordination of the employment policies of the Member States. At the core of these processes lies the general notion that EU Member States share certain common goods and therefore need to coordinate their policies. Nevertheless, the extent of coordination of the Member States' economic policies in particular has been a matter of debate both in policy as well as academic circles.

2.2.1 SOFT VERSUS HARD COORDINATION: THE THEORY

Two main economic arguments are generally used to explain the need in general for coordinated policy action at the European level (Tabellini and Wyplosz, 2004; Begg, 2003; Begg et al., 2003; Collignon, 2003): (i) the existence of externalities (i.e. the fact that one country's actions affects other countries); (ii) the necessity to prevent or reduce the likelihood of free-rider behaviour by Member States, which may impose considerable costs on their partners.[3] In cases where externalities are sizeable and the potential costs of uncoordinated behaviour are high, common policy action helps to internalise the externalities and minimise

the costs of uncoordinated policies, thereby increasing overall efficiency.

However, the gains that can be expected from policy coordination have to be weighed against the associated costs. In particular, the feasibility of coordination hinges on the ability to: (i) agree on a common understanding between all actors of how different policy instruments impact on economic variables; (ii) process the information supplied by the participants; and (iii) provide adequate incentives to ensure that individual policy-makers live up to their commitments.

The extent to which these conditions can be fulfilled, as well as the choice of instruments used to implement them, largely determine the degree (or "hardness" or "softness") of coordination. Also within the EU, this range between "hard" and "soft" methods of coordination is manifested not only in terms of the legal status of the coordination procedures,[4] but also in such terms as the extent of information sharing; the frequency, number and depth of policy goal setting; and the possibility of sanctions and/or pecuniary incentives.

The gains of policy coordination as well as the associated costs vary according to the policy domain at hand. In the case of structural reforms pertaining specifically to national labour and product markets, Tabellini and Wyplosz (2004) have argued that the externalities arising from these supply-side policies tend to be pecuniary and are normally dealt with by the market. For example, if a member country manages to improve its productivity performance and therefore boosts its own economic growth, then its neighbours will likely benefit from increased demand and relative price cuts, but this effect will essentially result from the move to a new price equilibrium and will not reduce incentives to improve productivity. Hence, decentralisation or, at most, "soft" coordination will be most beneficial in the case of these supply-side policies, involving incentives for Member States to engage in healthy policy competition and experimentation.

By contrast, others (e.g. Pisani-Ferry and Sapir, 2006) have suggested that the complementarities between product market reforms (the responsibility for which resides partly at the EU level) and labour market reforms (which pertain to the remit of Member States) may nonetheless provide a justification for coordination at the EU level. The spillover effect occurs in this case not across countries, but across sectors. In addition, given the increased economic interdependence brought about by the internal market, the benefits of structural reforms will also accrue more quickly if all the EU Member States act in concert: a rising economic tide would lift every European boat.

The need for structural reforms is even more pronounced for euro area members, while in certain cases this need also calls for a more enhanced coordination of supply-side policies. First, as the interest rate and exchange rate policy tools are – by definition – no longer available as policy instruments at national level, economic adjustment, especially to shocks, can only come from changes in the real economy. Accordingly, Monetary Union places an even bigger premium on structural reforms, as they are even more necessary in order to improve competitiveness, as well as the flexibility of national economies to respond to shocks. Second, a reduction of structural rigidities in euro area economies can support the conduct of the single monetary policy, since greater flexibility helps to lower price pressures at a given level of growth, which, in turn, may lead to an increase in the potential level of output and employment growth that is compatible with price stability. Third, progress with structural reforms throughout the euro area can have pronounced positive spillover effects between countries, given the increased economic interdependence brought about by

3 The arguments that follow are usually referred to as being in favour of or against policy "coordination", but they can be extended to cover the whole range of options between soft coordination among the Member States and the outright conferral of competences to the EU level (Pisani-Ferry, 2004).

4 For example, primary (Treaty) law, secondary law, European Council Resolutions or Presidency conclusions, and EU Council conclusions.

sharing a single currency. Taken together, these structural reforms can increase the euro area's growth potential and employment prospects. This, in turn, may significantly enhance the outside perception of the euro area as a vibrant and dynamic economy.

At the same time, the single currency provides a shield from extra- and intra-euro area shocks, which would otherwise put immediate pressure on countries to pursue structural reforms. Still, this protection reduces but does not eliminate the need for reform. Postponing the necessary reforms only increases their economic cost as, in most cases, this will eventually lead to abrupt economic changes through market forces.

There is a wide and ongoing debate concerning the relative size of these positive and negative effects of a single market and a monetary union on the incentives for a single member state to reform. However, they can all be interpreted as arguments in favour of some form of coordination of reforms, especially in the case of euro area members. Concerted action has helped to deepen the Single Market and increase its efficiency. In the case of euro area members, concerted action can also diminish the possibility for individual countries to free ride on the efforts of their partners or on the shelter that Monetary Union provides against extra-euro area shocks. Potentially, concerted action may also help to ensure that possible negative demand effects of structural reform are reflected in downward pressure on euro area inflation.

Apart from the economic rationale underlying the coordination of certain policies at the EU level, there may also be political considerations. The promotion of economic and social progress is the ultimate goal of the EU. Yet many levers for promoting growth and jobs still lie at the national level. Accordingly, multilateral surveillance of these policies may be warranted in order to avoid that a lacklustre growth performance undermines public confidence in the EU and threatens its flagship projects, such as the single currency and the internal market. In addition, the supranational level of governance can be used as a "commitment device", allowing governments to shore up domestic commitment to reform by pointing to the obligations entered into at the supranational level.

2.2.2 BENCHMARKING AND "NATIONAL OWNERSHIP": THE PRACTICE

On the basis of these types of theoretical considerations, policy-makers in the EU have developed over the years a wide-ranging governance framework for the surveillance and coordination of structural reforms that combines the benefits of partial centralisation – i.e. agreements on common guidelines, timetables, benchmarks and indicators – with the degree of decentralisation which is required by the differing economic structures and preferences of the Member States.

With regard to supply-side coordination in particular, the implementation of the Lisbon Strategy is pursued at European level through the Treaty-based processes of EU economic policy coordination, as spelled out in Article 99 of the EC Treaty (Broad Economic Policy Guidelines – BEPGs) and Article 128 of the Treaty (Employment Guidelines – EGs). In addition, the "open method of coordination", which was introduced at Lisbon, has also assisted in implementing the Strategy in a number of specific policy areas such as pension systems (see Box 1).

The current EU governance framework of the Lisbon Strategy is structured on the basis of a three-year programming period, in order to ensure policy coherence given the longer-term nature of structural policy. The three-year cycle starts with the adoption by the Commission of a strategic report, which assesses the progress achieved and puts forward the strategic priorities for the coming cycle. The Spring European Council then establishes the new political orientations for the Lisbon Strategy, which the Council translates into a set of Integrated Guidelines consisting of the BEPGs and the

Box 1

THE OPEN METHOD OF COORDINATION

The open method of coordination (OMC) was introduced at the Lisbon European Council meeting in 2000 as an additional means of EU policy coordination, *beyond* the Treaty-based instruments of economic policy coordination (BEPGs and EGs). Although this was the explicit remit of the European Council, the academic literature refers loosely to all mechanisms of coordination that entail all or some of the following elements: (i) fixed guidelines set for the EU, with short, medium and long-term goals; (ii) quantitative and qualitative indicators and benchmarks; (iii) European guidelines translated into national and regional policies and targets; and (iv) periodic monitoring, evaluation and peer review (see e.g. Eberlein, 2004). Consequently, the literature does not differentiate between the OMC as adopted by the Lisbon European Council, on the one hand, and other mechanisms of policy coordination such as the BEPGs and EGs, on the other. In some cases, even the Stability and Growth Pact (SGP) is put under the general heading of the open method of coordination. This, however, is not in line with the practical modalities of EU policy coordination (for a discussion, see Ioannou and Niemann, 2003).

From a theoretical perspective, the OMC approach to policy coordination has found support among scholars as a "fresh mode of dealing with old political issues in the European Union" (Borrás, 2004). As a way of networking decentralised decision-making units by a common system of benchmarking, the OMC does not compromise the autonomy of the local units (Eberlein, 2004). The method complies with the principle of subsidiarity and allows for more decentralised participation by stakeholders. The OMC aims to foster lesson-drawing and policy transfer by means of reporting, evaluating and publicising national policies. As such, it aspires to reach common goals by policy experimentation instead of producing a binding legal document. By relying largely on national policies for the achievement of broad goals set at the European level, the OMC minimizes the risks of poor economic coordination, following from uncertainty about the required policy measures and the codified targets for agreed policies (Hodson, 2004). Finally, it is also relevant for policy areas that are strongly embedded in national institutions, such as welfare policies.

Against these supporting views, commentators have also found weaknesses in the OMC. Some have suggested that the OMC is a round-about way for the Commission to prepare the ground for formal legislation (Eberlein, 2004). Others considered the voluntary nature of the OMC, which lacks the (legal) possibility of sanctions, to be too weak to ensure the implementation of broadly defined common goals. The open nature of the OMC has been questioned, considering that participation in practice could be restrictive and the content of best practices could therefore be shaped by particular interests. Also, the accessibility and understandable quality of Lisbon documentation is considered by some to be inadequate, due to its overabundance.

EGs for a three-year period. On the basis of these guidelines, the Member States draw up their National Reform Programmes (NRPs) in consultation with national stakeholders. Progress made with the NRPs is assessed on an annual basis through the multilateral surveillance framework prescribed in Articles 99 and 124 of the Treaty. At the end of the three-year period, the state of the implementation of the Integrated Guidelines and the National Reform Programmes is fully reviewed, taking as the starting-point a strategic report by the Commission.

The EU surveillance framework concerning structural reform that is undertaken at national level does not foresee strict legal obligations for national governments. Thus, binding legal rules, such as the antitrust laws of the Single Market, or the threat of financial sanctions, as in the case of the SGP, are not foreseen under the Lisbon Strategy.[5]

Instead, the governance framework functions on the basis of a "soft" coordination of the policies of the Member States. The latter continue to be individually responsible for implementing the guidelines agreed at European level. Yet the absence of hard coordination cannot be interpreted as a complete freedom of action for the Member States. The soft coordination framework of the Lisbon Strategy thus relies on a difficult, and sometimes moving, balance between national responsibility and European coordination and surveillance.

The tools of this soft supply-side coordination at European level are: (i) the exchange of information among policy-makers; (ii) learning from each other's experience, practices and intentions; (iii) national ownership; and (iv) the exertion of peer pressure to galvanise governments into taking appropriate policy action.

During the annual policy cycle, there is ample opportunity for policy-makers to exchange information and views between themselves and the Commission, share good policy practices, and discuss successful and unsuccessful attempts at tackling specific issues. By sharing both good and bad experiences, the cost of designing appropriate policies can be reduced and policy errors avoided. The policy cycle also provides an opportunity to signal to fellow Member States one's policy intentions, which may be relevant for others as well.

In addition to exchanging information and policy learning at EU level, there has been a gradual consensus over the years that the governments of the Member States should exercise "national ownership" of their policy programmes, that is, they should draft their programmes according to their national priorities and circumstances in close liaison with national stakeholders, and ensure an appropriate execution of these programmes.

The final policy tools are peer pressure and peer support. The Commission assesses in its annual reports the achievements and shortcomings of each Member State on a bilateral basis, while a multilateral peer review exercise also takes place within the Council which provides the opportunity for the Member States to assess, support and/or criticise each other.

The basic architecture of the current governance framework of the Lisbon Strategy appears to be adequate for the task at hand given the aforementioned theoretical considerations as well as practical circumstances. Radical alternatives that would entail either a full nationalisation of the reform agendas or introducing hard methods of coordination would not be suitable, also because of the need to allocate policy responsibilities to the appropriate level of (shared) governance on the basis of the principle of subsidiarity (downwards as well as upwards).

Despite the advanced degree of integration among the (euro area) Member States, a full "communitarisation" of the structural reform agenda would be inappropriate, because domestic economic structures and preferences

5 It should be noted that since the adoption of the Lisbon Strategy in 2000, a large part of the legislation for completing and reforming the Internal Market has been subsumed under the general heading of the Lisbon Strategy since this legislative programme pertains to structural reform that is relevant to the EU as a whole. This became especially evident with the adoption of the first Community Lisbon Programme in 2005, the implementation of which is the prime responsibility of the Commission. In this way, the EU has its own "national programme" just as each of the 27 EU Member States has a National Reform Programme. This can be seen as the purely European leg of the Lisbon Strategy and concerns policy areas where the EU does have recourse to binding legal acts. Moreover, certain reforms foreseen in the Lisbon Strategy, both at EU and national level, are linked to the use of funds from the EU budget. Against this background, this paper focuses on "soft coordination" and the implementation of structural reforms at national level where the role of benchmarking is especially relevant for the success of the Lisbon Strategy. It does not consider the governance framework at the European level which largely relies on the so-called "Community Method" of adopting and implementing EU law.

have still not fully converged. These variations in economic structures and preferences call for policy-making structures which provide sufficient flexibility to accommodate such differences and offer a substantial margin of manoeuvre to national policy-makers to adjust to country-specific developments. Even if it could be shown to be desirable in theory, resorting to a hard method of coordination would also be difficult to implement due to the present incomplete level of political integration in the EU. Moreover, in the present circumstances, the decentralised character of the economic policy framework in Economic and Monetary Union (EMU) also offers scope for healthy policy competition among the Member States.

A complete nationalisation of economic policies, on the other hand, would not be consistent with the economic rationale of the Internal Market and EMU, given the possibilities for spillover effects of structural reforms, and would be contrary to the requirement of the Treaty to treat national policies as a matter of common concern.

Given the unfeasibility and/or undesirability of these "corner solutions", the soft coordination characteristic of the Lisbon Strategy has been left largely untouched ever since its establishment in 2000. The 2005 mid-term review (MTR) of the Lisbon Strategy (see Box 2) streamlined the governance process, whilst leaving intact the basic architecture of soft coordination. The review placed much emphasis on increasing the national ownership of the Strategy. This was seen as key to the implementation of the Strategy because Member States need to be fully committed to the policies they endorse at the EU level and must involve the stakeholders, such as national parliaments and social partners, in drawing up and implementing these policies at the national level. This is done through overview economic policy documents drawn up by the Member States, which are known as the National Reform Programmes (NRPs). The possibility is left open to Member States to include in the NRPs timetables and roadmaps for implementing the concrete measures that they announce. Member States also had to appoint "Lisbon national coordinators" to enhance the internal coordination of Lisbon Strategy actions. The coordinators regularly meet and exchange views with the Commission. It was hoped that having a more tailor-made "bottom-up" approach, including a stronger involvement of all the relevant national actors, would improve the implementation record.

However, the mid-term review did not take on board some of the other recommendations of the Kok High Level Group. Most importantly from the viewpoint of this paper, the Commission and the Council shied away from taking up the Kok recommendation of creating league tables and thereby exerting pressure by "naming, praising and shaming". Thus, an opportunity was lost during the MTR to introduce a strengthened form of benchmarking or possibly ranking, thereby neglecting somewhat the potential

Box 2

THE MID-TERM REVIEW OF THE LISBON STRATEGY

By 2005, a number of governance shortcomings were identified to explain the lack of progress in the implementation of the Lisbon Strategy in its first five years of operation. They included: (i) the proliferation of objectives and targets and the inconsistency of some of them; (ii) the blurring of competences and responsibilities of the various national and European actors; (iii) the non-streamlined coexistence of coordination processes at the EU level; (iv) a heavy reporting burden at the national level which included separate, policy-specific reporting documents

for product and capital markets, labour markets, social security systems, etc.; (vii) multiple assessment reports complicating the monitoring of progress; (viii) lack of public communication and awareness; (ix) low effectiveness of the soft coordination procedures and, to a certain extent, lack of political will of the Member States to live up to their commitments; (x) lack of incentives to enforce and maintain this political will, also due to a lack of national ownership of the Strategy, with stakeholders, such as national parliaments and social partners, hardly involved, reducing the pressure on governments to implement reforms; (xi) national government inconsistency in the programming of and reporting on implementation efforts; (xii) a tendency to shift coordination problems to the EU level instead of dealing with them locally.

In response, the European Council initiated a mid-term review (MTR) of the Lisbon Strategy in 2005. A High Level Group headed by Wim Kok carried out an independent assessment, which identified the weaknesses of the Strategy and its governance framework.[1] On the basis of this assessment and the proposals by the Commission, the European Council of March 2005 relaunched the Strategy by refocusing its priorities on economic growth and employment, while acknowledging the continuing relevance of the social and environmental pillars. The Strategy was thus refocused on promoting knowledge and innovation, making the EU an attractive area to invest and work in, fostering growth and employment based on social cohesion, and promoting sustainable development.

In terms of governance, a number of changes were also introduced, aimed at increasing the consistency of national programming, reporting and assessment. The BEPGs and EGs were brought together into a single Integrated Guidelines package and were adopted for a period of three years, with updates in in-between years. In line with the priorities of the Integrated Guidelines, Member States began submitting each autumn single strategic documents, the National Reform Programmes (NRPs), covering all relevant policy areas. As a counterpart, the Commission also presented a Community Lisbon Programme covering actions to be undertaken at the Community level.

In terms of assessment at the EU level, this also started being carried out in a more integrated manner, under the multilateral surveillance procedures of the BEPGs and the EGs. The Commission assesses the NRPs and reports to the European Council by way of a single Annual Progress Report. On the basis of this report, and input by the Council of Ministers, the Spring European Council decides on any necessary adjustments to the Integrated Guidelines for the following year.

1 Kok, W. et al. (2004).

role played by peer pressure in increasing the relatively slow pace of reform. As Pisani-Ferry and Sapir (2006) have put it: "Of the three key changes advocated in the Kok report, only National Reform Programmes (NRPs) drawn up by the member states made it off the drawing board. The proposals to provide appropriate EU funding to support the Lisbon goals, and 'name and shame' poor performing member states were rejected. The driving force of Lisbon 2 is thus national 'ownership' of the reforms."

Put in political economy terms, rather than strengthening both the national and European "governance legs" of the Lisbon Strategy, the EU leaders emphasised in the mid-term review only the responsibility of Member States towards their own national electorates (i.e. the national leg), but neglected to draw attention to the responsibility of each Member State towards its EU partners (i.e. the European leg).

Whilst national ownership is definitely necessary, it is not a panacea. In fact, some observers have argued that increasing the involvement of national parliaments may not solve the Strategy's implementation problems, since parliaments have long experienced difficulties in exercising control over complex policy fields. Research by Pisani-Ferry and Sapir (2006) and Radlo and Bates (2006) indeed shows that the involvement of national parliaments has thus far been rather limited. Moreover, the increased politicisation brought about by enhancing national ownership may in some cases also complicate decision-making at the national level rather than facilitate it.

Accordingly, the national leg of the governance framework should not be seen as substituting for the European leg. Rather, both legs should be seen as complementary. Benchmarking at the European level can shore up national ownership because it can be used as a tool to inform the national stakeholders and wider public about the relative performance of the country in question and thereby focus the efforts of national policy-makers and enhance popular support.

2.3 BENCHMARKING AS A BUTTRESS OF SOFT COORDINATION

The fact that some coordination of structural reforms is desirable, and that soft coordination seems more suitable than alternative methods of governance, does not provide a guarantee for the success of the Lisbon Strategy given the difficult political economy of structural reforms faced by EU national governments. Borrás and Greve have thus noted that the Lisbon Strategy "might be permanently on the fringes of failure" as its success depends on political commitment and national implementation (Borrás, 2004). Indeed, by relying exclusively on learning, ownership and peer pressure, soft coordination lacks the disciplining or enforcement instruments that might be needed to guarantee that the policy measures considered necessary or desirable are actually implemented.

Accordingly, the question remains as to how the incentive structure of the EU governance framework for implementing the Lisbon Strategy can be improved in order to increase political commitment, whilst keeping within the boundaries of soft coordination and respecting the sovereignty of national governments.

Indeed, a prime weakness of soft coordination of Member States' policies in the policy areas covered by the BEPGs and EGs is that one of the few tools available at European level for a better implementation of reforms, namely precise assessment and peer pressure, can remain permanently insufficient to enforce policy change. In the end, little progress can be made at European level in assessing policy and exerting pressure on governments if it is not backed by concrete, quantitative evidence.[6]

It is in this context that benchmarking has been put forward as a tool to bolster soft coordination of economic policies. Benchmarking originated as a management tool, where it involves the analysis of internal practices and processes in systematic comparison with those of others in order to identify and implement "best practices" (Arrowsmith et al., 2004). Benchmarking can be both a tool for learning from the successful policies of others and for providing incentives for reform. A comparison with other countries provides information about the current situation at home, facilitates the exchange of best practices and encourages peer pressure, both at the European level (e.g. among the Ministers in charge of reform) and at the national level (e.g. by mobilising actors interested in reform). Benchmarking enhances transparency and reduces information costs, thereby reinforcing the stimulus to implement structural reforms. Reference to the experience of other countries may help overcome domestic resistance to reforms, as this can take away uncertainty about the outcome of alternative policies, doubts about their merits or the motivation of their proponents. Therefore, as a policy instrument,

6 In this regard, the monitoring of national fiscal policies at the EU level is made relatively easier through the regular recourse to (relatively) well-defined datasets and quantitative analysis.

benchmarking is well suited to the EU context of supply-side coordination.

Nevertheless, benchmarking countries' economic policy performance also has some limitations. In contrast with benchmarking at the company level, benchmarking within the EU is essentially a consensual exercise and lacks some ultimate form of coercive power. Intergovernmental benchmarking is dependent on peer review and "naming and shaming" for its effectiveness (Arrowsmith et al., 2004). A general criticism of benchmarking is that there can be a tension between learning from others and the implementation of successful policies. It is important to avoid delivering inflexible policy messages which do not take account of national policy priorities and country specificities, while an excessively mechanical approach can also lead to incorrect conclusions (EPC, 2006).

Other arguments voiced against the use of benchmarking in general and ranking in particular in the EU policy framework are the diversity of the economies of the EU Member States, statistical/policy deficiencies of the indicators, the possible loss of information due to the benchmarking method used, too much focus on quantitative indicators over qualitative ones, the risk of opportunistic behaviour by Member States that want to portray their policies as the most successful, the accreditation of simplified policy blueprints, difficulty in weighting the various policy areas of the Lisbon Strategy, and a lack of an adequate methodological framework for conducting such an exercise.

These arguments can partly be countered by the modalities of the benchmarking method used. A good method of benchmarking needs to take into account the starting level of a country in a particular policy area, distinguish among the main policy areas being benchmarked, and ensure a high degree of legitimacy by placing an independent arbiter like the Commission in charge of the whole process.

Successful benchmarking also requires careful consideration of the indicators used and the context in which these are assessed. Therefore, in the EU any quantitative benchmarking should always be accompanied by much qualitative evidence and assessment. In addition, the quantitative results themselves of a benchmarking or ranking exercise need to be interpreted in some way because even "league tables" need qualification.

Finally, in order to account for national policy priorities and peculiarities, it has been suggested to let each Member State decide on the indicators on which it wants to be benchmarked. Member States could thus choose their priorities (and possibly specific indicators) ex ante, and then be subjected to independent assessment ex post. This could be a way to reconcile national ownership and EU benchmarking, thus ensuring national ownership of the benchmarking exercise itself. There are, however, clearly limits as to how far such a practice can go without weakening too much the purpose of benchmarking. In particular, transparency and comparability would be undermined if each Member State were simply to choose individually the indicators of its preference. In order to maintain the disciplinary effect of benchmarking, a common approach and a common list of indicators need to be agreed. In addition, this common list could be at the core of the benchmarking exercise and, beyond that, each Member State could be benchmarked on a further list of indicators of its choice.

2.4 INCENTIVE STRUCTURES AND BENCHMARKING: COMPARING THE LISBON STRATEGY WITH OTHER POLICY APPROACHES

Benchmarking has been used in other EU policy domains beyond structural reform, most notably in the process for adopting the euro. Adopting the euro depends upon the sustainable fulfilment of a number of convergence criteria. At regular intervals, the European Commission and the ECB assess – on the basis of these criteria – a country's readiness to join the euro area (Article 121 of the EC Treaty). The so-called "Maastricht criteria" were used at the start of

Stage Three of EMU to determine which Member States were ready to adopt the single currency. The criteria are generally seen as a key factor explaining the successful convergence process laying the grounds for the start of Monetary Union in 1999 with 11 Member States.

Several arguments have been put forward to explain the success of this convergence process: (i) Member States had a strong incentive to comply with these criteria as the cost of non-membership was considered substantial; (ii) the assessment of the criteria was relatively straightforward as they were few in number and easily measurable; (iii) the rationale underlying the criteria was (broadly) accepted; (iv) the governance framework was enshrined in the Treaty and clearly spelled out the roles of each institution and the relevant decision-making procedures; (v) the convergence process focused the minds of the public at large, allowing national governments to use the criteria as a justification for implementing necessary reforms; and (vi) economic actors gradually came to believe in the success of the convergence process, which in turn facilitated the fulfilment of the criteria (e.g. by lowering inflation expectations).

A lighter form of benchmarking is employed in another key EU policy domain, namely the internal market. Every year, the European Commission publishes an Internal Market Scoreboard, which quantifies Member States' performance in transposing and implementing internal market legislation. These scoreboards have been in some cases instrumental in pressuring the laggards to speed up the application of internal market rules, in particular by raising public pressure.[7] The transposition deficit – the percentage of directives that have not been transposed into national law in time – has indeed fallen from 6% in 1997 to 1.2% in 2007.

The use of benchmarking as a public policy tool is of course not unique to the EU. Certain international organisations also rely on benchmarking in the exercise of their mandate. The OECD evaluates on a regular basis the economic situation in its member states. These evaluations are conducted in a multilateral setting where governments can compare their policy experiences, identify good practices, and apply peer pressure. The results of the OECD country surveys generally receive wide coverage in domestic media and can thus raise public awareness and pressure.

In order to underpin the multilateral surveillance of structural policies, the OECD started in 2005 its "Going for Growth" initiative, which complements the regular country reviews. It is a benchmarking exercise focused on the sources of economic growth. The process starts with the identification of each country's weaknesses, by measuring its performance on a number of structural indicators with a clear link to GDP per capita. On the basis of a cross-country comparison of performance and policy settings, a fixed number of policy priorities are identified for each country. The quantitative exercise is complemented by judgement as the indicator-based priorities are supplemented by judgemental indicators based on country-specific knowledge. Countries' progress in tackling these priorities is reviewed on a regular basis. By employing a precise method for deriving priorities and measuring performance, the approach of the Going for Growth initiative increases transparency. At the same time, the focus on GDP per capita limits policy coverage and the possibility of dealing with multiple objectives.

The IMF also conducts regular country reviews. Much like the OECD, these so-called Article IV reviews are initiated by a report from IMF staff, which is subsequently the subject of multilateral examination at the level of the IMF Board. Although these reviews do not rely on explicit benchmarking, they do very often have recourse to cross-country comparisons. In some cases, the IMF's benchmarking is linked to pecuniary incentives, that is, the loan financing

7 For example, Belgium overhauled its procedures for implementing EU directives in 2004 following press articles about the country's lacklustre score on the Internal Market Scoreboard (De Standaard, 12 February 2004).

undertaken by the organisation. In the context of its lending role, the IMF lays down specific conditions – including "structural benchmarks" – governing the provision of IMF loans to countries facing balance of payments problems. The compliance with these conditions is regularly reviewed by the IMF Board. Under certain circumstances, including an appropriate level of ownership of IMF programmes, such "conditional financing" can be a powerful tool for ensuring the implementation of (structural) reforms by recipients of IMF loans. Finally, the IMF also has recourse to benchmarks for monitoring the implementation by Member States of specific codes of conduct (e.g. on transparency and statistics).

Benchmarking is thus widely used as a policy analysis and assessment tool in a number of policy contexts and in various formats. As the above overview indicates, the effectiveness of benchmarking depends on a number of factors. First, the political salience of the objectives towards which benchmarking is used, as well as a clear political and legal *a priori* commitment (e.g. participation in EMU), can be key in the success of the benchmarking exercise and the achievement of the end goal.

Second, the focus on a single overall goal (e.g. adoption of the euro), or a relatively small number of objectives (e.g. reducing inflation, raising GDP per capita) provides transparency, and can be used to gain acceptance of the process and thereby also increase commitment further.

Third, a transparent and objective framework for conducting the benchmarking exercise that can also be applied relatively easily across countries can also help to promote acceptance among different policy-makers, especially in case they do not share the same short-term goals or incentive structures. In this regard, the OECD Going for Growth experience indicates that methodological transparency, in combination with sound judgement, as well as country-specific prioritisation, can be useful.

Fourth, links to pecuniary incentives, as is the case with the IMF's conditionality, can also be a powerful incentive, although such financial conditionality can create much political controversy and needs to be accompanied by an adequate level of genuine commitment on the part of national authorities. Unless an adequate level of national ownership is secured, the likelihood of implementation of the programme is likely to be poor (Broughton, 2003).

Fifth, wide public communication and media coverage can also work as a strong element of pressure for policy-makers to deliver. At the same time, there may be a trade-off between transparency and the breadth of objectives. For example, focusing on GDP per capita as the dependent variable may be too restrictive for a policy that identifies social welfare or environmental sustainability as major objectives.

Sixth, as for the quantitative indicators used in benchmarking, although the indicators related to policy instruments (input indicators) may be more directly applicable in the short run, performance targets (output indicators), probably over a longer period of time, may be equally powerful depending on other factors surrounding the benchmarking exercise, such as those mentioned above. In any case, it is important that the indicators chosen not only make good analytical sense, but also enjoy political legitimacy.

Finally, it would also seem that whatever the form of benchmarking, it is important that it is backed by thorough (qualitative) analysis, conducted by credible and objective arbiters, which in practice are likely to be independent and highly regarded organisations governed by transparent rules.

2.5 BENCHMARKING IN THE LISBON STRATEGY AT PRESENT

In the case of the Lisbon Strategy, the incentive structure of benchmarking is not as stringent as in these other cases and there is therefore a need to develop the incentive structure arising from benchmarking in parallel with its counterpart, i.e. national ownership. Thus, whichever mode of benchmarking one decides upon, it is important that the approach remains "two-handed". The greater role for Member States in setting their Lisbon priorities should be complemented by a critical assessment of their implementation at the European level.

Since 2000 the use of benchmarking in the context of the Lisbon governance framework has been gradually developed. In particular, the European Commission made qualitative assessments on an annual basis of the national programmes of Member States.[8] For the purpose of its assessments, the Commission developed a long list of structural indicators which it has continued to develop and has also made publicly available.[9] On 8 December 2003, in order to provide guidance with regard to the structural indicators to be used in these assessments, the Council of Ministers adopted a shortlist of 14 structural indicators. Since then, the Commission has used in various ways this officially agreed shortlist of structural indicators. In 2004 the list was used in tabular format to illustrate the top three and bottom three performers for each of the 14 indicators, both in terms of levels and changes. After the 2005 mid-term review, the Commission used the list in its Annual Progress Report to indicate the levels of and changes in the 14 structural indicators, showing EU-wide averages, thereby toning down somewhat the cross-country comparison element and arguably reducing the already limited role of quantitative benchmarking in its assessments. The ECOFIN Council has also used these indicators to make its own assessment of progress achieved with structural reform.

The shortlist of 14 structural indicators covering economic reform, social cohesion and environmental sustainability has been maintained and is the only officially adopted list of such indicators in the EU. The agreement on the list was the outcome of a difficult compromise. It was agreed by the General Affairs Council, bringing together the different perspectives of the ECOFIN, Employment and Environment Council formations. It clearly entailed a difficult political compromise that had to take into account the different preferences of the then 15 EU Member States, as well as three different policy domains (economic, social and environmental). Being the result of the deliberations of no less than four different Council configurations, it can be argued that this list enjoys political legitimacy. Moreover, it is short enough to be easily comprehensible and therefore also suitable for exerting peer pressure by focusing attention and stimulating public awareness.

It may be noted, however, that following critical remarks in 2006 about the outcome of the 2005 mid-term review of the Lisbon Strategy,[10] the Commission and the Economic Policy Committee (EPC) – an advisory committee to the (ECOFIN) Council – have been deliberating further about the use of the structural indicators in benchmarking, also in the context of the annual multilateral surveillance by the Commission and the Council of the Lisbon NRPs. Consequently, the EPC has recently taken the initiative to develop a longer list of 22 structural indicators which relate solely to economic reforms (and not social or environmental) as laid down in the Integrated Guidelines (BEPGs and EGs). These indicators have not, however, been adopted by the Council and therefore do not enjoy the political legitimacy of the 14 structural indicators. Nevertheless, as a relevant EPC report notes:

8 Before the introduction in 2005 of the single documents known as the National Reform Programmes, the Member States adopted multiple national programmes each year covering a variety of policy areas (e.g. Cardiff Reports on Structural Reform, National Action Plans on Employment) which the Commission assessed individually.

9 See http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1133,47800773,1133_47802588&_dad=portal&_schema=PORTAL

10 In their paper of 14 March 2006 entitled "Last exit to Lisbon", Pisani-Ferry and Sapir repeated the call for the use of league tables, as originally suggested by the Kok report.

"The main reason for using indicators for benchmarking and ranking is the positive impact of transparency on the incentive structure. As argued in the Kok Report, enhancing the comparison at EU level and stimulating peer pressure produce 'clear incentives for the Member States to deliver on their commitments by measuring and comparing their respective performance and facilitating exchange of best practice'. […] the pressure of an external anchor may help overcome domestic resistance to reforms. It also helps to identify the current position on structural reform, and to determine priorities and areas for the exchange of best practice. Moreover, benchmarking exercises at EU level help stimulate an evaluation culture. Regular comparison with other countries' performances in specific fields can spur monitoring and evaluation routines. Identification of best practice policies helps countries in avoiding policy mistakes and contributes to mutual learning. Benchmarking should lead to a return to, and re-examination of, the policies which generated the results."[11]

In this context, it should be noted that – at the request of the ECOFIN Council – the EPC is developing a sound and transparent methodology to monitor and assess the reforms undertaken under the Lisbon umbrella. One strand of this work is aimed at identifying the strengths and weaknesses of each Member State by singling out areas where Member States are underperforming relative to a benchmark. This work is expected to be finalised in the course of 2008.

2.6 INCREASING PEER PRESSURE THROUGH RANKING

Ranking is a special form of benchmarking in that it does not only provide a comparison against a particular benchmark, but also provides an order of performance. In the context of the Lisbon Strategy, there have been several proposals to introduce ranking, most notably – as pointed out above – by the Kok High Level Group in 2005 and Pisani-Ferry and Sapir in 2006.

Nevertheless, so far, ranking has not been incorporated into the governance of the Lisbon Strategy. An argument against ranking is that it increases the risks associated with the delivery of inflexible policy messages which do not take account of the starting level of Member States or their national priorities. Also, summarising the performance of countries in a single figure is inherently a simplification, which can lead to the loss or distortion of information. However, an argument in favour of ranking is that it caters for a higher degree of transparency than other forms of benchmarking, which in turn facilitates comparison and communication, stimulates peer pressure and focuses attention.

The transparency effect of ranking can be further increased by the combination of various quantitative indicators into a single composite indicator. This has the advantage of depicting the overall achievements of the Member States by means of one single indicator, thereby effectively creating an economic reform "league table". This obviously strengthens the incentives for reform, encourages peer pressure and focuses public debate. The drawback of this approach is that it necessarily entails an even higher degree of simplification, as some information may get lost. In turn, drawing policy lessons and deriving best practices may become more complicated, as it is not immediately obvious where a Member State over- and underperforms. By way of analogy, a football league table indicates which teams perform best, but it does not show whether this good performance is due to having good defenders or even better strikers.

This drawback can be partly addressed in the methodology used to construct the ranking. Moreover, it should be stressed that in monitoring progress with structural reforms, an eclectic and wide-ranging approach, combining a composite indicator ranking with quantitative information on the performance of countries on each indicator, as well as qualitative analysis, is of the essence. An overall Lisbon ranking should be considered as the start of the assessment of the performance of the EU Member States, and not the final word. To return to the analogy above, the teams at

11 EPC (2006).

the bottom of the table should see their overall position as an incentive to look closer at the reasons underlying their underperformance.

3 RANKING THE ECONOMIC PERFORMANCE OF EU MEMBER STATES

3.1 A POSSIBLE APPROACH TO RANKING THE ECONOMIC PERFORMANCE OF EU MEMBER STATES

The ranking presented in this Section is based on the structural indicators that were commonly agreed by the governments of the Member States in December 2003 (see Table 1 below) and have been used to monitor the Lisbon Strategy. For a complete picture of the implementation of the Lisbon Strategy by each Member State, a ranking based on all 14 structural indicators should be divided into 3 groups, corresponding to the main pillars of the Strategy: economic performance/reform (8 indicators), social cohesion (3 indicators) and environmental sustainability (3 indicators). A non-differentiated assessment would raise analytical problems, as: (i) the economic indicators outnumber the other indicators and would thus receive too much weight; (ii) the indicators measure very different things; and (iii) the overall picture may be blurred by inter-pillar trade-offs.

In this paper we limit our analysis to the economic dimension of the Lisbon Strategy, which offers better indicators in terms of data quality and coverage (see Section 3.2). Therefore, we present a ranking strategy for the EU25 Member States based on composite indicators which synthesize in one number the information contained in the eight structural indicators measuring economic performance.[12] The methodology is not specific to the indicators presented here, and can be applied to other indicators as well.[13]

12 Bulgaria and Romania are not included due to lack of data. Furthermore, their recent entry into the EU did preclude their full participation in the peer review process of the Lisbon Strategy.

13 A possibility would be to use the methodology to construct a ranking based on a list of 22 indicators that has been proposed in the EPC "Report on Structural Indicators" (ECFIN/EPC(2006) REP/55713) for use in the future surveillance of the Broad Economic Policy Guidelines and the Employment Guidelines.

Table 1 Lisbon structural indicators

Indicator	Economic growth	Measurement
1	GDP per capita	Index EU-25 average
2	Labour productivity	Index EU-25 average
3	Employment rate *	Percentage total population
4	Employment rate of older workers *	Percentage total population 55- 64
5	Youth educational attainment (20-24) *	Perc. pop. aged 20 to 24 with at least upper sec. educ
6	Gross domestic expenditure on R&D	Percentage of GDP
7	Comparative price levels	Index EU-25 average
8	Business investment	Percentage of GDP
Social Cohesion		
9	At risk-of-poverty rate after social transfers *	Percentage with income below risk -level
10	Long-term unemployment rate *	Percentage active population
11	Dispersion of regional employment rates *	Coefficient variation NUTS-regions within country
Environment		
12	Greenhouse gas emissions	Index basis year ('90)
13	Energy intensity of the economy	Kgoe per 1000 euro (1995 prices)
14	Volume of freight transport relative to GDP	Index basis year ('95) tonne-km/GDP *

* Indicators disaggregated by gender.

3.2 DATA QUALITY OF THE STRUCTURAL INDICATORS

No composite indicator will be better than its component indicators, the quality of which in turn depends on the quality, availability and comparability of the relevant data. The adoption of the shortlist of structural indicators by the Council, after a process of political negotiation involving various trade-offs, has been described in Section 2. While the indicators used enjoy political legitimacy, not every indicator is easily interpretable from a strictly economic perspective.[14]

The quality of the data for each of the structural indicators varies, with the economic and environmental indicators being generally of high quality and comparability. The data availability for the eight indicators measuring economic performance and reform is good, whereas the three environmental indicators are available one year later than the economic indicators. The quality of the social cohesion indicators is mixed, with low data quality in the case of indicator 9 (at-risk-of-poverty rates) and limited data availability in the case of indicator 11 (dispersion of regional unemployment rates). The only social cohesion indicator which covers all or most of the EU25 Member States (i.e. all of the EU excluding Bulgaria and Romania) is indicator 10 (long-term unemployment), which is highly correlated with the employment indicators among the economic indicators. For these reasons, in this paper, a ranking based only on the eight structural indicators relating to economic performance/reform is presented.[15] For the sake of brevity, these eight indicators are referred to below as the "Lisbon structural indicators" or simply the "structural indicators".

3.3 METHODOLOGY FOR THE CONSTRUCTION OF THE COMPOSITE INDICATOR

Combining data in a composite indicator necessarily involves choices on the normalisation of the data, the treatment of missing data, the weighting of the components for the construction of the composite indicator, and the (graphical) presentation of the ranking. The main choices made in the construction of the composite indicator proposed here are:

1. *Normalisation*: The structural indicators are normalised by dividing each country's score by the score of the best-performing country (i.e. the country with the best value of the considered indicator). As a result, the normalised indicators are all measured on a scale ranging between 0 and 1. This method of normalisation provides comparable indicators that contain information on the performance of Member States relative to each other, and on the magnitude of these performance differences. Since the normalisation method is dependent on the differences between the country scores, it is potentially sensitive to outliers. Sensitivity analysis shows that our results are not significantly influenced by possible outliers.[16] Indicators for which a high score corresponds to a bad performance are transformed, so that a high score corresponds

14 Among the economic indicators, indicator 7 (the price level of a country compared with the EU average) is the most difficult to interpret due to the large difference in starting levels among EU Member States. This indicator can be considered as a measure of market integration and, accordingly, we recalculated it as the difference from the EU average price level, with the smallest difference considered the best-performing country and the largest difference the worst-performing country. However, large countries do better on this indicator since it is calculated as an index of the EU25 weighted average.

15 It should be recognised that some correlations may exist between the eight economic indicators themselves. Concerning the levels of the indicators, the correlation is high between GDP and productivity and between the overall employment and the employment of old workers. The correlation is relatively high also for other indicators. Concerning the changes in the indicators, the correlation is generally low, with the exception of that between GDP and productivity and that between the overall employment and the employment of old workers. A thorough examination in terms of theory and empirical evidence of these correlations would go beyond the scope of this paper. Nevertheless, correlation matrices for the levels of and the changes in the eight economic indicators are provided in Annex A2.1.

16 In order to check the robustness of our results we carefully checked the data for outliers. A possible outlier is the high score of Luxembourg for indicator 1 (GDP per person employed) and indicator 2 (labour productivity per person employed). Sensitivity analysis shows that the exclusion of Luxembourg does not alter the results (see Annex A2.2 and Table 8). A normalisation achieved through ranking countries on the basis of each of the structural indicators would not be sensitive to outliers, but has the disadvantage that the information contained in the magnitude of the differences in the indicators' scores across countries is lost.

to a good performance for all the normalised indicators. Annex A2.2 gives a more detailed description of how indicators are normalised.

2. *Weighting:* For the construction of the composite indicator, country-specific weights are determined by using benefit of the doubt analysis, a form of data envelopment analysis (Cherchye et al., 2004).[17] The advantage of this method is that the weights are country-specific and determined by the result of a maximisation procedure, instead of arbitrarily choosing a single set of weights for all countries (such as equal weighting). For each country, the weighting scheme chosen results in the best composite indicator score for that country, subject to general constraints on the set of weights.[18] The defining characteristic of the benefit of the doubt analysis is that higher weights are assigned to the indicators on which a country performs well relative to the best-performing country. Put simply, each country is depicted from its best possible angle. This approach helps to take into consideration the performance environment of each country. We provide greater detail on the weighting method and its consequences below (see Section 3.4) and in Annex A2.3.

3. *Presentation:* Composite indicators are constructed for both the *level* of and the *change* in the structural indicators, using different country-specific weights for each (on the basis of the benefit of the doubt approach). The chosen form of presentation gives combined information on both the level and change dimensions simultaneously, and allows for a comparison of the progress of countries with similar starting levels.

3.4 THE BENEFIT OF THE DOUBT APPROACH

3.4.1 BENEFIT OF THE DOUBT WEIGHTING

Setting weights for each country with the benefit of the doubt analysis involves finding the set of weights that maximises a given composite indicator. The composite indicator is defined as the weighted average of the performance of a country on a set of n indicators relative to the weighted performance of the best-performing country, under the same set of weights for both countries. It is possible to write the composite indicator for country j, CI_j , in the following way:

$$CI_j = \frac{\underset{1xn}{w^*} \underset{nx1}{I_j}}{\underset{1xn}{w^*} \underset{nx1}{I_{bench}}}$$

where I_j is the $nx1$ column vector containing the values of the n indicators for country j; I_{bench} is the $nx1$ column vector containing the values of the indicators for the benchmark country, which is defined as the country that achieves the best performance (i.e. the country that maximises the denominator of the CI) under the set of n weights contained in the vector w^*. The weights in w^* are chosen in order to maximise the composite indicator, CI, for country j. Any other set of weights would result in a lower composite indicator score for country j. The maximum value for CI is 1, which is obtained when there exists a set of weights for which country j itself is the best-performing country.

The benefit of the doubt analysis thus results in country-specific weights which provide each country with its best possible score relative to the benchmark country, which helps to legitimise cross-country comparisons.[19] The country-specific weights determined by the benefit of the doubt analysis are based on the performance of each country and are therefore less arbitrary than using a single set of weights for all countries determined by consulting experts or political compromise. By showing every country in the most flattering way, the benefit of the doubt

17 The paper does not discuss the feasibility and appropriateness of alternative approaches, such as a pure DEA or factor analysis. This could be an interesting avenue for further research.

18 The minimal constraints are that the weights cannot be negative and should sum up to 1.

19 The weighting scheme obtained with the benefit of the doubt analysis can be interpreted as revealed priorities of the policy-makers. Interpreting the endogenously selected weights in this way requires the assumption that there is a causal relationship among policy priorities/actions and good performance on the indicators measuring them. However, policy-makers may lack the policy instruments to intervene or the indicator scores may be exogenous in the sense that they do not only reflect the outcome of policy decisions and actions, but they also reflect factors that are not under the control of policy-makers.

approach addresses the criticism that the ranking method chosen insufficiently recognises the peculiarities of different countries.

3.4.2 WEIGHTING SCHEMES AND RESTRICTIONS

In order to construct a composite indicator that ranks countries according to the Lisbon structural indicators, there are considerations that speak in favour of some weight restrictions. These have to do with the fact that without any weight restrictions a country may outperform all others on the basis of only one indicator. This may or may not be acceptable, depending on normative judgements about the policy orientation of a specific country.

In the case of the Lisbon structural indicators, the adoption by the Council of eight structural indicators in the economic sphere – apart from giving them political legitimacy – implies that all of them should be taken into account, at least to a minimum degree.[20] Accordingly, our composite indicator should not be exclusively determined by one single indicator.

A strict interpretation of the Council's decision would support equal weighting since the Council did not emphasise one indicator more than another. A less strict interpretation, taking into account the policy compromise described earlier, would suggest that equal weighting of the structural indicators would be insufficiently representative of the situation in individual countries.

The use of benefit of the doubt weighting addresses the criticism that a particular set of weights, applied to all Member States, does not take country-specific differences into account. However, the benefit of the doubt method also requires a set of weight restrictions. The most basic approach would entail only two minimal restrictions, namely that the weights add up to 100% and cannot be negative. More elaborate restrictions on the maximal or minimal weights can, however, be deemed appropriate, in order to prevent too much weight being assigned to a single indicator and too little to the rest. However, restricting the maximum weights assigned to a single indicator reduces the possibilities for a country to reach the highest composite indicator score (1). If the possible set of weights is restricted to one for all countries, only one country obtains a composite indicator score of 1. Equal weights for all indicators are an example.

As the weight restrictions determine the possibilities for different composite indicator scores, they can influence the result and need legitimacy for the ranking to be acceptable. However, since a set of *weight restrictions* allows for a greater variety among countries than a single set of *weights*, it will be easier to obtain consensus on the weight restrictions than on any particular set of weights. It can also be considered an advantage that the benefit of the doubt method is not an entirely mechanical exercise since the weight restrictions are a matter of political choice, while the results are transparent and equal treatment is ensured once the weight restrictions are set.

The weight restrictions used in the ranking presented here should therefore not be considered as the only possible ones, but as an example.[21] Our weight restrictions contain both a minimum value of the total weight for each indicator (5%) and a maximum value (30%), and are motivated by the following considerations:

1. Without a minimum restriction on the weights, some of the structural indicators receive zero weights (see Annex), which would seem contrary to the Council's agreement to use each of the structural indicators to measure progress with the Lisbon Strategy.

20 The component indicators of other composite indicators are usually selected on the basis of established mutual relationships or on the basis of expert opinion. In the context of the Lisbon Strategy, a possible example of the former would be to determine the structural indicators, and their relative weights, on the basis of an economic model explaining which are the most important areas of reform in terms of contribution to economic growth. This, however, is beyond the scope of this paper.

21 As a comparison, the benefit of the doubt analysis is also carried out with other weight restrictions. The results are discussed in Annex A2.3.

2. The minimum weight restriction leaves more than half of the total weight (60%) to be allocated freely.

3. The maximum weight restriction ensures that the ranking is not overly dependent on a single indicator, also to prevent measurement problems.

4. The weight restrictions reduce to some extent the possible changes in the assigned weights, which facilitate the comparison of rankings in different years.

3.5 RANKING ON THE BASIS OF THE LISBON STRUCTURAL INDICATORS

The analysis has two main goals. The first is to assess the state of implementation of the Lisbon Strategy in 2000, at its start, and in 2006. The second is to assess the performance of Member States during the period 2000-2006.

To achieve the first goal, we compute the composite indicator for the level of the economic structural indicators in 2006 and 2000. To achieve the second goal, i.e. to evaluate the performance of Member States during the period 2000-2006, we proceed in two steps. First (Step 1), we look at the *overall progress* that Member States have made between 2000 and 2006. The overall progress is measured by the difference between the composite indicator in 2006 and 2000. We also look at the progress made by Member States compared with their starting level in 2000.

One problem with the measure of overall progress is that Member States that recorded a good performance in dimensions, in which they previously scored relatively weakly, are assigned low overall progress. This is a consequence of the way the overall progress measure is calculated under the benefit of the doubt analysis: by assigning lower weights to indicators where the country previously scored rather badly, progress made on these indicators is not reflected as much in the overall composite score.

To resolve this issue and fully recognise Member States' performance, we compute in Step 2 the composite indicator for the change in the economic structural indicators between 2000 and 2006. This composite indicator assigns the greatest weights to those indicators where the country concerned has recorded the strongest increases over the years. Since this latter composite indicator provides a gauge of the improvement achieved by Member States in each of the indicators which may be concealed by our weighting method for computing overall progress scores, we call it *underlying progress*. Finally, we create groups of countries, ranking them on the basis of the combinations of overall progress and underlying progress.[22]

Sections 3.5.1 and 3.5.2 present the analysis of the implementation of the Lisbon Agenda in 2006 and 2000 and look at the overall progress between 2000 and 2006. Section 3.5.3 measures the underlying progress of Member States and Section 3.5.4 groups countries according to their overall and underlying progress.

3.5.1 THE IMPLEMENTATION OF THE LISBON STRATEGY IN 2006 AND 2000

The benefit of the doubt composite indicator scores based on the level of the economic indicators in 2006 and the country-specific weights are provided in Table 2. The first column of Table 2 shows the composite indicator score for the level of the eight economic structural indicators in 2006, with equal weighting. The ranking resulting from the benefit of the doubt analysis, reported in the second column, shows six countries with a composite indicator score of 1 and the rest with scores lower than 1.

As regards the countries with scores lower than 1, the interpretation of the scores is straightforward. Given the maximum and minimum weight restrictions, the set of weights in the table provides the country with its optimal composite indicator score. The set of weights therefore provides information about the areas

22 Annex 1 provides a short description of the different steps of the ranking procedure and a short presentation of the findings.

Table 2 Composite indicator for the level of economic indicators in 2006

Country	CI (equal weights)	CI (benefit of the doubt analysis)	Weight of indicator number: 1	2	3	4	5	6	7	8	# of better performing countries	relative frequency of: 1	0.9
se	1.000	1.000	-	-	-	-	-	-	-	-	0	57.45%	91.95%
lu	0.972	1.000	-	-	-	-	-	-	-	-	0	35.34%	78.60%
at	0.949	1.000	-	-	-	-	-	-	-	-	0	7.02%	70.14%
ie	0.886	1.000	-	-	-	-	-	-	-	-	0	0.15%	26.16%
es	0.849	1.000	-	-	-	-	-	-	-	-	0	0.03%	12.59%
ee	0.780	1.000	-	-	-	-	-	-	-	-	0	0.02%	4.55%
nl	0.903	0.999	0.06	0.07	0.21	0.20	0.06	0.05	0.29	0.07	2	0.00%	34.63%
dk	0.849	0.992	0.10	0.08	0.29	0.07	0.05	0.07	0.05	0.29	4	0.00%	9.04%
de	0.907	0.989	0.05	0.05	0.12	0.21	0.05	0.07	0.28	0.17	2	0.00%	34.53%
fi	0.925	0.973	0.06	0.10	0.12	0.05	0.23	0.10	0.05	0.30	4	0.00%	65.40%
lv	0.703	0.967	0.05	0.05	0.15	0.05	0.30	0.05	0.05	0.30	3	0.00%	0.62%
be	0.872	0.964	0.05	0.23	0.05	0.05	0.20	0.06	0.08	0.28	3	0.00%	15.75%
uk	0.889	0.962	0.09	0.06	0.11	0.22	0.08	0.05	0.29	0.11	5	0.00%	22.04%
si	0.773	0.951	0.05	0.05	0.15	0.05	0.26	0.09	0.06	0.29	6	0.00%	0.43%
fr	0.879	0.943	0.06	0.21	0.12	0.07	0.27	0.05	0.06	0.15	6	0.00%	16.14%
gr	0.804	0.926	0.05	0.08	0.09	0.14	0.20	0.05	0.11	0.29	12	0.00%	0.38%
cy	0.801	0.924	0.05	0.05	0.16	0.15	0.18	0.05	0.17	0.19	8	0.00%	0.40%
cz	0.716	0.916	0.05	0.05	0.17	0.05	0.30	0.06	0.05	0.26	13	0.00%	0.00%
sk	0.635	0.910	0.06	0.07	0.14	0.05	0.30	0.05	0.05	0.28	14	0.00%	0.00%
it	0.801	0.902	0.05	0.08	0.05	0.11	0.05	0.05	0.30	0.30	6	0.00%	0.00%
lt	0.646	0.886	0.05	0.05	0.20	0.06	0.30	0.05	0.05	0.24	19	0.00%	0.00%
pt	0.710	0.867	0.05	0.05	0.20	0.18	0.05	0.05	0.16	0.25	17	0.00%	0.00%
hu	0.610	0.808	0.05	0.05	0.19	0.05	0.30	0.06	0.05	0.25	21	0.00%	0.00%
pl	0.568	0.804	0.05	0.05	0.20	0.06	0.30	0.05	0.05	0.24	22	0.00%	0.00%
mt	0.579	0.700	0.05	0.16	0.28	0.07	0.05	0.05	0.07	0.27	23	0.00%	0.00%

Notes: "CI (equal weights)" is the composite index built by equally weighting the normalised structural indicators. "CI (benefit of the doubt analysis)" is the composite indicator obtained by using the benefit of the doubt analysis. The weights reported, numbered from 1 to 8, are those computed for each structural indicator by using the benefit of the doubt analysis. Restrictions have been put on the weights by limiting their range between 0.05 and 0.30. Column "# of better performing countries" reports the number of countries that perform better under the given weighting scheme. The columns "Relative frequency of 1 and >0.9" report the results of a simulation study where we computed the relative frequency of a score equal to 1 or higher than 0.9 by generating 100,000 random sets of weights.

in which a country performs relatively well (high weights) and less well (low weights). A lower score indicates a greater distance from the best-performing country under the chosen set of weights. In addition, the number of countries that achieve a better performance than each individual country under the chosen set of weights is also listed in the table.

With regard to the countries with a composite indicator score of 1, the interpretation of the scores is less straightforward. A composite indicator score of 1 means that there is at least one set of weights with which the country has the highest weighted performance on the component indicators. Possibly, there are more sets of weights for which the country has the highest weighted performance on the component indicators (which also result in a composite indicator score of 1).

To differentiate among the countries with a composite indicator score of 1, we perform a simulation exercise by generating 100,000 random sets of weights for the same data and under the same weight constraints. The results of this exercise are used to compute in how many instances a country has a composite indicator score of either 1 or at least higher than 0.9 (see Table 2, last two columns). In this simulation, the result differs greatly, with only one country (Sweden) scoring 1 for more than 50% of the sets of weights generated by the simulation, and the others only for a minority of the sets of weights. These results provide an understanding of the sensitivity to the weights given to the best-scoring countries. A country that scores 1 in only a few instances (e.g. Spain or Estonia) is more dependent on a particular set of weights, and its score is dependent on a good performance for a smaller number of indicators than the

Table 3 Composite indicator for the level of economic indicators in 2000

Country	CI (equal weights)	CI (benefit of the doubt analysis)	weight of indicator number: 1	2	3	4	5	6	7	8	# of better performing countries	relative frequency of: 1	0.9	change in CI 2000/2006
se	1.000	1.000	-	-	-	-	-	-	-	-	0	54.20%	90.04%	0.00
lu	0.986	1.000	-	-	-	-	-	-	-	-	0	44.04%	82.89%	0.00
at	0.935	1.000	-	-	-	-	-	-	-	-	0	1.61%	57.80%	0.00
nl	0.927	1.000	-	-	-	-	-	-	-	-	0	0.30%	50.80%	0.00
dk	0.899	1.000	-	-	-	-	-	-	-	-	0	0.00%	27.19%	-0.01
de	0.911	0.984	0.05	0.05	0.15	0.06	0.07	0.21	0.28	0.13	4	0.00%	35.38%	0.00
cz	0.714	0.984	0.05	0.05	0.10	0.12	0.28	0.05	0.05	0.30	2	0.00%	0.20%	-0.07
pt	0.758	0.980	0.05	0.05	0.17	0.19	0.05	0.05	0.14	0.30	3	0.00%	0.43%	-0.11
ie	0.891	0.978	0.07	0.09	0.10	0.15	0.17	0.05	0.11	0.26	3	0.00%	24.09%	0.02
fi	0.922	0.974	0.06	0.12	0.07	0.06	0.24	0.13	0.07	0.25	4	0.00%	49.80%	0.00
be	0.895	0.967	0.05	0.10	0.06	0.05	0.17	0.11	0.28	0.18	3	0.00%	27.88%	0.00
si	0.762	0.958	0.05	0.05	0.15	0.05	0.30	0.05	0.05	0.30	2	0.00%	0.28%	-0.01
fr	0.881	0.958	0.06	0.06	0.06	0.09	0.26	0.12	0.30	0.05	7	0.00%	13.77%	-0.02
sk	0.617	0.945	0.05	0.05	0.07	0.13	0.30	0.05	0.05	0.30	7	0.00%	0.00%	-0.03
es	0.791	0.944	0.05	0.09	0.05	0.22	0.06	0.05	0.18	0.30	8	0.00%	0.15%	0.06
uk	0.883	0.944	0.08	0.10	0.26	0.11	0.08	0.05	0.10	0.22	8	0.00%	11.72%	0.02
it	0.817	0.928	0.05	0.08	0.05	0.16	0.07	0.05	0.30	0.25	6	0.00%	0.22%	-0.03
ee	0.674	0.913	0.05	0.05	0.12	0.12	0.26	0.05	0.05	0.30	13	0.00%	0.00%	0.09
cy	0.775	0.911	0.05	0.05	0.16	0.16	0.17	0.05	0.24	0.11	10	0.00%	0.01%	0.01
gr	0.769	0.873	0.05	0.05	0.11	0.16	0.21	0.05	0.16	0.21	15	0.00%	0.00%	0.05
pl	0.623	0.864	0.05	0.05	0.07	0.13	0.30	0.05	0.05	0.30	18	0.00%	0.00%	-0.06
lv	0.611	0.863	0.05	0.05	0.17	0.12	0.21	0.05	0.05	0.30	19	0.00%	0.00%	0.10
hu	0.601	0.841	0.05	0.05	0.15	0.05	0.30	0.05	0.05	0.30	19	0.00%	0.00%	-0.03
lt	0.597	0.817	0.05	0.05	0.16	0.11	0.25	0.05	0.05	0.28	23	0.00%	0.00%	0.07
mt	0.615	0.759	0.05	0.08	0.22	0.15	0.05	0.05	0.10	0.30	22	0.00%	0.00%	-0.06

Notes: See notes to Table 2. The last column reports the difference between the composite indicators in 2006 and 2000.

countries that reach the maximum score more frequently. Even though the country already achieves the maximum composite indicator score with some sets of weights, its performance can be improved by a more balanced policy that gives importance to a broader number of structural indicators.

For comparison, the same composite indicator is computed based on the average level of the eight structural indicators that relate to economic reform in the period 1999-2001 [23] (from now on 2000 for brevity). Table 3 provides results for 2000 and the last column shows the change in the level of the composite indicator between 2000 and 2006, our measure of overall progress.

A comparison of the composite indicator scores in 2000 and 2006 shows that overall progress in the first five years of the Lisbon Strategy was mixed. The change in the composite indicator between 2000 and 2006 (last column of Table 3) shows that nine countries have improved and the rest remained unchanged or experienced a decrease. The countries that experienced an increase greater than 0.03 in the composite indicator are Latvia (+ 0.10), Estonia (+ 0.09), Lithuania (+ 0.07), Spain (+ 0.06) and Greece (+ 0.05). The countries experiencing a decrease greater than or equal to 0.03 are Hungary (-0.03), Slovakia (-0.03), Malta (-0.06), Poland (-0.06), Czech Republic (-0.07) and Portugal (-0.11).[24]

As the maximum level of all but two of the indicators increased between 2000 and 2006, an

23 The time span chosen should help to attenuate the impact of one-off results.

24 The measure of overall progress depends on: (i) the change in the underlying structural indicators; and (ii) the difference between the weights that are used in the 2000 and 2006 composite indicators. In order to disentangle (i) and (ii), we looked at the change in the composite indicator between 2000 and 2006 by keeping the 2000 weights constant (see Annex A2.9). The ranking of countries based on the change in the composite indicator is only marginally affected. The magnitude of the change tends to be smaller, since when holding the weights constant, countries are valued less favourably.

increase in the composite indicator score in almost all cases signifies an improvement in the position of the Member State, rather than a deterioration of the performance of the best-performing country. However, the maximum scores fell between 2000 and 2006 for two indicators: indicators 5 (youth educational attainment) and 6 (gross domestic expenditure on R&D). Countries that assign a high weight to these indicators derive any improvement to some extent from a deterioration of the best-performing country. It is notable that Poland and Hungary, among the worst performers in 2000 and 2006, both have a weight of 30% on indicator 5 in 2006 and 2000. In other words, the indicators for which the maximum level fell – rather than the indicators for which the maximum level rose or remained constant – heavily contributed to their results.

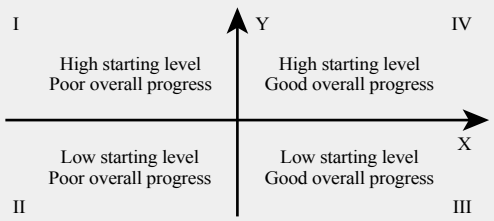
3.5.2 OVERALL PROGRESS OF MEMBER STATES COMPARED WITH THE STARTING LEVEL IN 2000

To be able to take into account differences in starting levels among Member States when assessing the overall progress made with the implementation of the Lisbon Strategy, Chart 1 Part B contains the benefit of the doubt composite indicators computed for the level of the economic indicators in 2000 (y axis) and our overall progress measure, the change in the composite indicator scores between 2000 and 2006 (x axis).[25] The figure is divided into four quadrants by two lines through the median scores of both, to facilitate the comparison of the performance of the Member States. As can be seen from Chart 1 Part A:

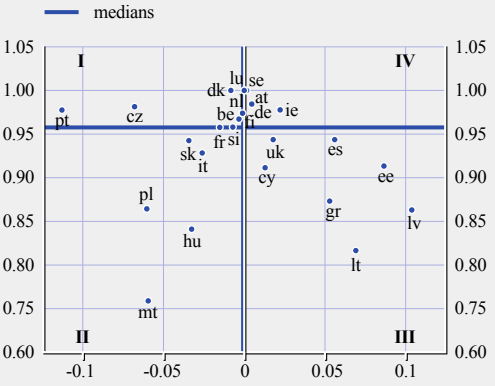
- countries in quadrant I combine a high starting level in 2000 with slow overall progress up to 2006;
- those in quadrant II had a low starting level and made slow overall progress;
- the countries in quadrant III started at a low level in 2000, but made good overall progress; and
- quadrant IV countries had a high starting level and made good overall progress.

Chart 1 Relative position of Member States

Part A



Part B



Note: Benefit of the doubt composite indicator for the level of structural indicators in 2000 (y axis) and its change (overall progress) between 2000 and 2006 (x axis).

As Chart 1 Part B shows, in general, the progress made by countries over the period 2000-2006 is very mixed and not necessarily linked to the starting level. The countries making most progress, i.e. the Baltic States, Spain and Greece, have below-median composite indicator scores for the level in 2000. However, there are large differences with regard to the change among countries with similar starting levels. For example, Latvia and Poland have comparable composite indicator scores for the level in 2000, but Latvia has the highest positive change in the composite indicator over the past five years and Poland the third greatest deterioration. Likewise, there is a

25 For comparison, the same figure, but on the basis of equal weighting, is included in Annex A2.8. The position of most countries – although certainly not all – is roughly similar under both weighting schemes.

significant difference in the composite indicator scores for the change among the countries that started with a high level (composite indicator above or equal to 0.95), for example Portugal and Ireland. The ranking presented in this way provides information on the relative progress made by a country compared with all EU Member States as well as compared with its peer group of countries with a similar starting level.

Against this background, catching-up effects show up in the ranking, but do not fully drive the results. The starting level of some countries which would generally be considered to be catching-up countries, such as the Czech Republic and Slovenia, is higher than that of countries that have been EU Member States for much longer, such as Italy or the UK. This starting position can be attributed to the use of a wider variety of indicators than only those directly associated with catching-up, such as GDP per head. Also, the use of PPP in the measurement of indicators incorporates catching-up effects to a certain extent. The differences in progress made by various catching-up countries point to the difficulty of realising catching-up potential: most of the best-performing countries are catching-up countries, but so are the worst-performing countries.

3.5.3 UNDERLYING PROGRESS OF MEMBER STATES IN ACHIEVING THE GOALS OF THE LISBON STRATEGY

Any increases in the composite indicator score reflect a relative improvement in the position of the Member States, and should therefore be interpreted positively, just as a decrease should be interpreted negatively. The table and figures presented above should be considered as a measure of the performance of the Member States in relation to each other.

However, additional important information can be derived from analysing composite indicator scores based on the *change in the economic indicators*, in addition to the *change in the level of the composite indicator* (which we used above to measure overall progress). A similar change in the structural indicators of two countries can be reflected differently in the composite indicator score, depending on the weights selected by the benefit of the doubt analysis.

An example is the easiest way to clarify the difference. Take a country in which the employment rate (indicator 3) increased as much as its employment rate of older workers (indicator 4) decreased between 2000 and 2006, relative to the maximum score. If both indicators receive the same weight under the benefit of the doubt analysis, there is no effect on the composite indicator score in 2006. If the country started with a relatively low employment rate in 2000 and a relatively high employment rate of older workers, resulting in a low weight for indicator 3 and a high weight for indicator 4 respectively, the negative influence of the decrease in the employment rate of older workers on the composite indicator score outweighs the positive influence of the increase of the employment rate, resulting in a negative net effect on the composite indicator score. Conversely, a high weight for an indicator that increases and a low weight for a decreasing indicator would result in a positive net effect. If the downward change in the indicators with the low weight in 2000 would result in an even lower weight in 2006, the net positive effect on the composite indicator would be even stronger. Complementing the analysis of (the change in) the composite indicator scores based on the level of the structural indicators with an analysis of the change in the structural indicators can therefore show progress made by the Member State (or the lack thereof) on individual indicators, which might otherwise be overlooked. To measure the progress by Member States which may be concealed by the weighting method used for measuring overall progress, we compute a composite indicator for the change in the structural indicators. This allows us to gauge the "underlying progress" made by Member States.

Table 4 Composite indicators of the change in economic indicators between 2000 and 2006 (underlying progress)

Country	CI (equal weights)	CI (benefit of the doubt analysis)	Weight of indicator number: 1	2	3	4	5	6	7	8	# of better performing countries	relative frequency of: 1	0.9
lv	1.000	1.000	-	-	-	-	-	-	-	-	0	53.40%	99.22%
ee	0.993	1.000	-	-	-	-	-	-	-	-	0	46.88%	95.33%
lt	0.829	0.993	0.05	0.30	0.05	0.05	0.30	0.05	0.15	0.05	1	0.00%	3.21%
sk	0.605	0.925	0.08	0.18	0.05	0.24	0.05	0.05	0.30	0.05	2	0.00%	0.00%
es	0.705	0.911	0.05	0.05	0.30	0.11	0.05	0.08	0.30	0.07	2	0.00%	0.00%
cz	0.606	0.852	0.05	0.05	0.05	0.16	0.15	0.20	0.30	0.05	3	0.00%	0.00%
mt	0.491	0.848	0.05	0.05	0.05	0.05	0.30	0.30	0.15	0.05	3	0.00%	0.00%
hu	0.610	0.844	0.06	0.20	0.05	0.24	0.05	0.05	0.30	0.05	4	0.00%	0.00%
lu	0.504	0.831	0.30	0.30	0.05	0.15	0.05	0.05	0.05	0.05	3	0.00%	0.00%
at	0.552	0.779	0.05	0.05	0.05	0.05	0.26	0.30	0.18	0.05	5	0.00%	0.00%
gr	0.630	0.758	0.07	0.30	0.05	0.05	0.24	0.05	0.19	0.05	4	0.00%	0.00%
ie	0.625	0.733	0.28	0.23	0.05	0.06	0.21	0.07	0.05	0.05	4	0.00%	0.00%
si	0.625	0.705	0.10	0.28	0.05	0.13	0.16	0.05	0.18	0.05	7	0.00%	0.00%
cy	0.581	0.689	0.05	0.05	0.05	0.05	0.25	0.20	0.30	0.05	8	0.00%	0.00%
fi	0.524	0.677	0.05	0.05	0.05	0.30	0.05	0.30	0.15	0.05	7	0.00%	0.00%
pt	0.378	0.669	0.05	0.15	0.05	0.05	0.30	0.05	0.30	0.05	10	0.00%	0.00%
uk	0.474	0.665	0.05	0.22	0.05	0.05	0.23	0.05	0.30	0.05	9	0.00%	0.00%
pl	0.375	0.664	0.05	0.15	0.05	0.05	0.30	0.05	0.30	0.05	11	0.00%	0.00%
it	0.449	0.663	0.05	0.05	0.30	0.05	0.30	0.05	0.15	0.05	4	0.00%	0.00%
se	0.440	0.633	0.05	0.22	0.05	0.05	0.23	0.05	0.30	0.05	14	0.00%	0.00%
de	0.436	0.623	0.05	0.05	0.05	0.30	0.05	0.15	0.30	0.05	10	0.00%	0.00%
dk	0.450	0.576	0.05	0.15	0.05	0.05	0.30	0.30	0.05	0.05	12	0.00%	0.00%
nl	0.407	0.533	0.05	0.30	0.05	0.30	0.15	0.05	0.05	0.05	12	0.00%	0.00%
fr	0.452	0.526	0.05	0.15	0.05	0.05	0.30	0.05	0.30	0.05	18	0.00%	0.00%
be	0.377	0.476	0.05	0.15	0.05	0.05	0.30	0.05	0.30	0.05	21	0.00%	0.00%

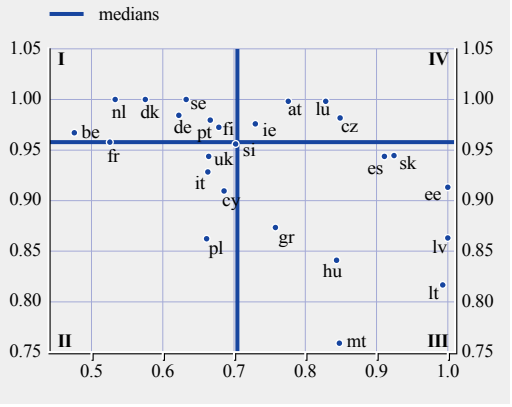
Note: See notes to Table 2.

Table 4 presents the composite indicator for the change in the structural indicators between 2000 and 2006, with the weights calculated with the benefit of the doubt analysis. The composite indicator of the change in the structural indicators over the first five years of the Lisbon Strategy shows the Member States again from their best angle, but this time with country-specific weights determined in accordance with the increases recorded in the different indicators. The composite indicator thus assigns the greatest weights to those indicators where the country concerned has recorded the strongest increases over the years. For comparison, the composite indicator based on equal weights is again included.

For indicators 1 (GDP per capita) and 2 (labour productivity), the change is calculated as the rate of growth. For indicator 7 (comparative price level), the change has been computed as the absolute distance from the EU price level in 2000 minus the absolute distance in 2006, so that increases can be interpreted as convergence to the EU price level. For the other indicators, change is calculated as the difference between the levels in 2006 and 2000, as there is no clear connection between the percentage change and the starting level.

Compared with the composite indicator scores for the level, the scores for the change are more dispersed. Only two countries have a score of 1, compared with six for the level in 2006. The countries with a score of less than 1 have a more skewed weight distribution, with almost all minimum weights for indicator 8 (business investment) and more maximum weights assigned to the other indicators. The average lower composite indicator scores imply a greater distance to the best-performing country than for the benefit of the doubt analysis

Chart 2 Composite indicators (benefit of the doubt analysis) computed for the level of structural indicators in 2000 (y axis) and for the change between 2000 and 2006 (x axis, underlying progress)



carried out on the level of structural indicators (Tables 2 and 3).

Chart 2 plots the composite indicator computed for the level of structural indicators in 2000 (y axis) and our measure of underlying progress between 2000 and 2006 (x axis). The results show that the countries with the highest composite indicator score for the change in the structural indicators (underlying progress) are generally the ones with lower starting levels. Nevertheless, the differing performance across countries shown in Chart 2 shows that other factors are also at play, such as policy efforts or cyclical factors. Indeed, some countries with a low starting level (e.g. Poland) have made relatively poor underlying progress. Conversely, some countries with a high starting level (e.g. Luxembourg) have made good underlying progress.

3.5.4 GROUPING MEMBER STATES ACCORDING TO OVERALL AND UNDERLYING PROGRESS

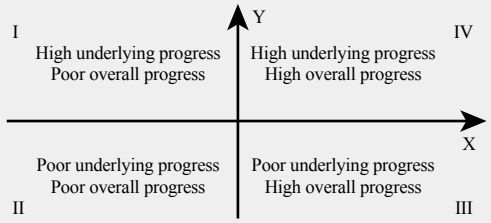
Having plotted independently the starting level of each country against its "overall progress" and "underlying progress", we now move on to consider the relationship between our two measures of progress. Chart 3 Part B plots the composite indicators computed for the change in structural indicators between 2000 and 2006 (y axis), i.e. our measure of underlying progress, and the change in the composite indicator for the level of the structural indicators between 2000 and 2006 (x axis), i.e. our measure of overall progress. In this figure, the median scores of both measures are again used to divide the Member States into four groups, as illustrated in Chart 3 Part A.

Quadrant IV contains the countries that combine underlying progress with overall progress, i.e. the three Baltic countries and Spain. Their mirror image is to be found in the bottom-left corner of quadrant II, which groups countries with a poor record on both overall progress and underlying progress. Portugal, Poland and Italy combine the greatest fall

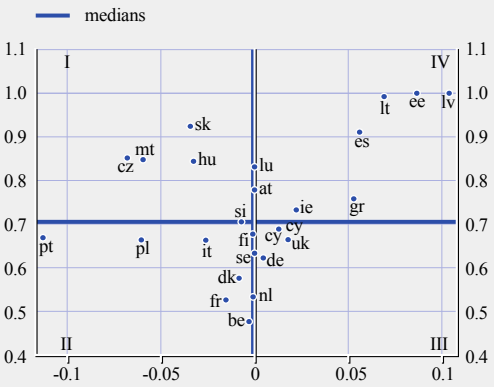
Chart 3 Measuring performance using overall progress and underlying progress

Part A

x-axis: overall Progress (change in the composite indicator between 2000 and 2006)
y-axis: underlying progress (composite indicator of the change in the structural indicators between 2000 and 2006)



Part B



Note: Composite indicators computed for the change in structural indicators between 2000 and 2006 (y-axis) and change in the composite indicator computed for the level of structural indicators between 2000 and 2006 (x-axis).

in the composite indicator score for the level with poor underlying progress, while France and Belgium combine the lowest underlying progress with a below-median overall progress.

Quadrant I contains countries that combine high underlying progress with poor overall progress, which means that they improved in indicators on which they have not done well so far (and are therefore weighted low in their country-specific set of weights). An example is Slovakia which has a high composite indicator computed for the change in the structural indicators, which indicates that the country is making good underlying progress. However, the composite indicator for Slovakia computed for the levels of structural indicators decreased between 2000 and 2006. The weights in Table 4 show that the indicators in which Slovakia performs well in terms of change (i.e. those with larger weights, namely employment of older workers and comparative price level) are not those that receive larger weights in the composite indicator for the levels in 2000 and 2006 (youth educational attainment and business investment). In other words, Slovakia performed well on indicators where it did not score very well in the past.

Quadrant III includes countries which combine a low underlying progress with an improvement in overall progress, by making improvements mainly on indicators on which they do well already (and which are therefore given a high weight in the benefit of the doubt analysis). For example, Germany experienced a relatively strong increase in indicators 4 and 7 between 2000 and 2006 and this is reflected in the high weights of these dimensions in the composite indicator computed for the change in the structural indicators (underlying progress measure). These dimensions already received high weights also in the composite indicators computed for the level of the structural indicators in 2000 and 2006, which meant the change had a large effect on the change in the composite indicator score of Germany.

To assess the position of the Member States in the ranking, the overall progress dimension should be emphasised over the underlying progress dimension. The overall progress made by a country is negative when it falls behind on more indicators than it improves and/or the loss in the falling indicators outweighs the gains in the rising ones. However, if a country combines a negative overall progress score with a high underlying progress score, its overall progress score can be expected to improve in the future as the indicator(s) on which it does well will receive more weight in the benefit of the doubt analysis. From that perspective, Germany could be encouraged to strengthen its favourable performance by making a broader effort. Sweden has a low underlying progress score, which means that its maximum score for the composite indicator of the level could in the future be in jeopardy. Slovakia on the other hand should be encouraged to continue on its current path, as this will soon also be reflected in its level scores.

Furthermore, combining both progress measures with the composite indicator level in 2000 (Charts 1 Part B and 2 respectively) facilitates the assessment of the performance of countries along both dimensions. For example, the first figure shows that the UK's overall progress was good, although from a low starting level. The second figure shows that the UK scored only a below-median score for underlying progress, lower than the countries with comparable starting levels, such as Spain and Slovakia.

3.6 SENSITIVITY ANALYSIS AND ROBUSTNESS

To assess the robustness of the composite indicators for the level of and change in the economic structural indicators and their sensitivity to different specifications, a number of alternative versions are summarised below (see Annex 2 for more detail).

(i) To assess the possible influence of outliers, the composite indicator of the level in 2000 and 2006 has been compared with the composite

indicator scores for the same period, excluding Luxembourg from the sample. This does not have a significant impact on the results (see Table 8 in Annex 2).

(ii) The weight restrictions used in the calculation of the composite indicator result in the occurrence of more minimum than maximum weights. In the composite indicator for the level of the economic indicators (2006 as well as 2000), one indicator receives the maximum weight among approximately half of the Member States with a composite indicator score of less than 1, and two countries have two maximum weights for two indicators. In contrast, all countries with a composite indicator score of less than 1 have at least one minimum score, and eight countries have a minimum score for four out of eight indicators. The weight restrictions result in considerably more minimum and maximum weights in the computation of the composite indicator scores for the change in economic indicators, which reflects the more dispersed scores for the change in the indicators. Half of the Member States are not constrained by the weight restrictions for only one indicator.

To assess the influence of the weight restrictions on the order of the scores, the composite indicators have been calculated with minimal weight restrictions such that weights cannot be negative and all weights sum up to 100%, and a minimum weight restriction of 5% for each indicator (see Tables 9, 10, 14 and 17 in Annex 2). By definition, the introduction of weight restrictions reduces the possibility to obtain a high composite indicator score, resulting in lower or equal scores with the introduction of more binding weight restrictions. It is notable that the composite indicator scores under minimum weight restrictions are close to those under minimum and maximum weight restrictions for most countries. The ranking is mostly unaffected, the exceptions being countries which obtain a higher composite indicator under the minimum weight restrictions only, due to highly skewed weights.

(iii) Some indicators are disaggregated by gender. Since considering genders separately would increase the weight of a dimension in the composite indicator, we decided to aggregate the indicators by gender along dimensions. To assess whether a different method of incorporating gender differentiation would influence the results, we compared the composite indicator scores with equal weights for both genders with the possibility of differentiated weights, based on the benefit of the doubt analysis. This does not have a significant impact on the ranking (see Tables 11, 12, 15 and 18 in Annex 2).

(iv) To assess the robustness of the ranking to indicator 7 (comparative price level), which is the indicator that is most difficult to interpret from an economic perspective, we compared the indicator scores with those calculated without indicator 7 (see Tables 13, 16 and 19 in Annex 2). As expected, our recalculation of the indicator as the distance to the EU average price level is favourable to large Member States, since they have a greater influence on the average price level than small Member States. Accordingly, the exclusion of this indicator lowers the composite indicator scores of the large EU countries for the level in 2000 and 2006. Our analysis suggests that, should a revision of the structural indicators be undertaken, this indicator might be reconsidered.

(v) It should be recalled that the analysis is limited to the period 2000-2006. It could be argued that this period is too short for a complete view of the success of the Lisbon Strategy, as the impact of some structural reforms may take quite some time to filter through. To check the accuracy of these claims, it would be necessary to repeat this exercise with data over a longer time period. This could be an avenue for future research.

4 CONCLUSION

The pursuit of structural reforms – which is already difficult within a national political context – is, in the European Union, further complicated by the fact that the Member States

are invited to consider their own reform priorities within a process of deepening integration. From that perspective, the decision of the EU Heads of State or Government in March 2000 to embark upon a shared blueprint of reforms, called the Lisbon Strategy, was ambitious yet also absolutely necessary. In the past eight years, progress has been made in setting up an appropriate governance framework for coordinating the economic policies of Member States in a framework of deepening integration. However, given the mixed progress made in the first half of the decade, further adjustment of the governance framework might be required, especially in view of the importance of the Lisbon objectives for the European economies and the functioning of Monetary Union.

The attempt to increase national ownership of the Lisbon Strategy during the 2005 mid-term review was therefore a positive step. However, this step was not matched with stronger benchmarking. Greater national ownership of the Lisbon Strategy should not be equated with the absence of commitment at the EU level, but is an argument for stronger benchmarking of the implementation of the objectives set by national governments. Indeed, benchmarking – including its strong variant of ranking – is a crucial tool for closing the implementation gap at the national level.

The ranking method presented in this paper is a way to summarise the performance of Member States in a composite indicator, thus drawing direct attention to the implementation of the Lisbon Strategy and increasing peer pressure. By incorporating both the level and the change of the component indicators and by using country-specific weights, the methodology addresses the most frequent criticisms of ranking. The ranking methodology of this paper is put forward as a way of improving the conduct of benchmarking at the EU level. It should therefore be seen as one possible component in the wider multilateral surveillance process that is foreseen in the EC Treaty and that takes place annually at the EU level in order to assess progress with the National Reform Programmes of Member States and the Lisbon Strategy.

With the methodology proposed in this paper, it is possible to construct a composite indicator that: (i) summarises in one number a multitude of indicators and identifies where countries stand in the implementation of the Lisbon Strategy; and (ii) identifies the progress made by countries taking into account differences in the starting level. On the basis of this approach we are able to identify top and bottom performers. Furthermore, robustness checks show that the method is robust.

Some controversy is an unavoidable aspect of any ranking or league table, and such controversy is likely to also focus the debate and provide the pressure to pursue reforms. In this respect, the scepticism of some observers about ranking can be interpreted as a sign that it could actually work – a league table that nobody is afraid of would not be effective. At the same time, too much controversy may undermine the credibility of the ranking. A Lisbon ranking should be considered as the starting-point for a debate on the performance of the EU Member States, not the final word, and should be presented within a broader assessment, including ranking and benchmarking on the basis of individual indicators, as well as qualitative assessment.

As a first step, the ranking methodology presented in this paper could be used to measure the economic progress made by the Member States, on the basis of the eight structural economic indicators that have been adopted by the EU Council. The ranking methodology could be used by the Council and the Commission in the surveillance framework under Articles 99 and 128 of the Treaty. More specifically, the Commission could potentially consider using such an approach in its Annual Progress Report, which is appropriately accompanied by more qualitative assessments of the progress made by the Member States.

The ranking methodology could potentially be extended to all 14 structural indicators, which have legitimacy through their adoption by the Council. A condition for this would be an improvement of their quality and availability or a revision of the structural indicators in the future. Alternatively, the methodology could also be applied to a longer list of economic indicators, such as the one drawn up by the Economic Policy Committee of the EU in 2006, in an effort to bring the assessment of structural reforms closer to the implementation of the Integrated Guidelines. However, making ranking conditional on the existence of an undisputed set of structural indicators would mean indefinite postponement of one of the few means of improving the implementation of the Lisbon Strategy whilst remaining within the boundaries of soft coordination.

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ANNEX I

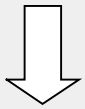
METHODOLOGY OF THE BENEFIT OF THE DOUBT RANKING

The ranking presented in Section 3 is based on a weighted average of the 8 of the 14 structural indicators adopted by the EU Council in December 2003, relating to economic performance and reform. The ranking gives information on the performance of the 25 EU Member States (excluding Bulgaria and Romania) relative to each other regarding the starting level at the beginning of the Lisbon Strategy and the progress made in the following five years. The process by which we arrive at the ranking is summarised in a flowchart, and the methodology is set out in more detail below.

1. Assessing the implementation of the Lisbon Strategy

Where do we stand in 2006 and where did we stand at the beginning of the Lisbon Strategy?

Normalisation of the structural indicators (between 0 and 1), determination of the weights with the benefit of the doubt analysis, and computation of the composite indicator.



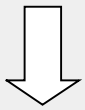
Where do we stand? ⟶ Composite indicator in 2006 (Chart 4)

Where did we stand at the start of the Lisbon Strategy? ⟶ Composite indicator average for the period 1999-2001 (Chart 4)

2. Assessing the performance of Member States in the implementation of the Lisbon Strategy

2A. Overall progress of Member States

Difference between the composite indicator in 2006 and the composite indicator average for the period 1999-2001 (overall progress)

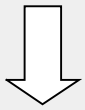


Overall progress of Member States conditional on their starting level in 2000 (Chart 5)

Member States may have a low overall progress measure because they make progress mostly in dimensions in which they are relatively weak. As a consequence these dimensions have low weights in the composite indicator and any progress in these dimensions is less than proportionally reflected in the change of the composite indicator. But which countries saw a relative improvement in the structural indicators?

2B. Underlying progress of Member States

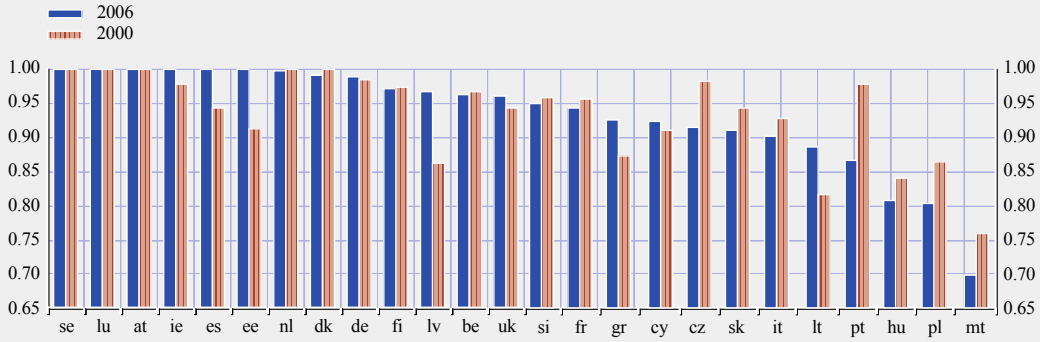
Computation of the change in the structural indicators, normalisation of the change in the structural indicators (between 0 and 1), determination of the weights with the benefit of the doubt analysis, and computation of the composite indicator for the change in the structural indicators.



Evaluation of the underlying progress made by Member States in combination with the overall progress achieved in the period 2000-2006 (Chart 6).

Chart 4 Assessing the implementation of the Lisbon Strategy

(Composite indicator of the level of structural indicators in 2006 and 2000.)

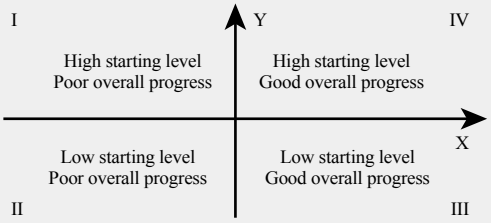


Note: Ranking according to the level and the frequency of 1 in the simulation exercise in 2006 (see Table 2).

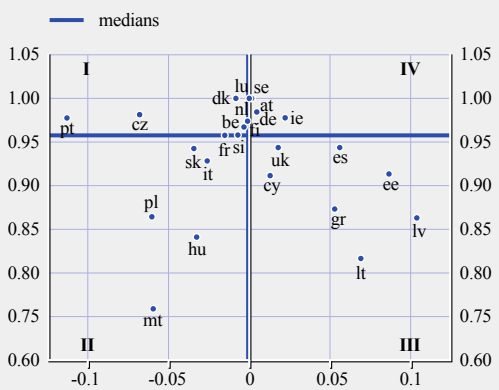
Chart 5 Performance and starting level of Member States

Part A

x-axis: change in the composite indicator score 2000-2006
y-axis: composite indicator level of economic indicators in 2000



Part B

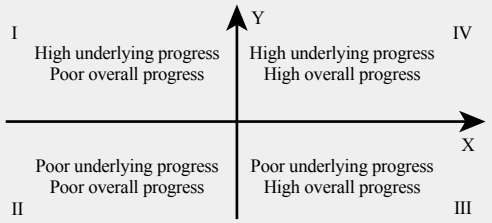


Note: Benefit of the doubt composite indicator for the level of structural indicators in 2000 (y axis) and its change (overall progress) between 2000 and 2006 (x axis).

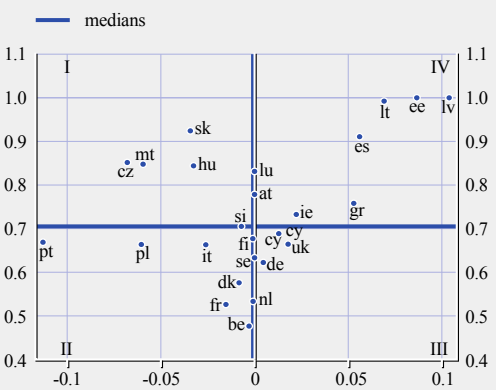
Chart 6 Performance of Member States

Part A

x-axis: overall Progress (change in the composite indicator between 2000 and 2006)
y-axis: underlying progress (composite indicator of the change in the structural indicators between 2000 and 2006)



Part B



Note: Composite indicators computed for the change in structural indicators between 2000 and 2006 (y-axis) and change in the composite indicator computed for the level of structural indicators between 2000 and 2006 (x-axis).

ANNEX 2

A2.1 DATA SELECTION

The ranking is based on the structural indicators adopted by the EU Council of Ministers to measure progress on the Lisbon Strategy. The source of the data is Eurostat.

In case of missing observations, data for the nearest available year have been used.

Analysis of the 2006 data: Regarding indicator 6 (gross domestic expenditure on R&D), 2005 data have been used for Italy, Luxembourg, Portugal and the UK.

Analysis of the average of the indicators in the period 1999-2001 (referred to in the main text as 2000): Malta and Cyprus have no data for 1999 for indicator 3 (employment rate) and indicator 4 (employment rate of old workers). Malta has no data for 1999 for indicator 5 (youth educational attainment). Regarding indicator 6 (gross domestic expenditure on R&D), 2002 data have been used for Malta, while data for Luxembourg are missing for 1999 and 2001, and data for Greece and Sweden are missing for 2000.

The same data used in the analysis for 2000 and 2006 have been used to compute the change between 2000 and 2006.

With regard to the possibility of correlations referred to in Section 3.2, the matrices below show the correlations among the levels of and changes in the eight economic indicators.

Table 5 Correlation among the levels of the economic structural indicators

	1	2	3	4	5	6	7	8
1	1.00	-	-	-	-	-	-	-
2	0.90	1.00	-	-	-	-	-	-
3	-0.33	-0.18	1.00	-	-	-	-	-
4	-0.33	-0.06	0.87	1.00	-	-	-	-
5	-0.35	-0.13	0.05	0.39	1.00	-	-	-
6	-0.69	-0.34	0.50	0.74	0.57	1.00	-	-
7	0.07	-0.30	-0.48	-0.64	-0.53	-0.63	1.00	-
8	0.60	0.36	-0.27	-0.44	-0.55	-0.76	0.31	1.00

Notes: The table displays the correlation among the structural economic indicators over the period 1999-2006 for the EU25 countries. If gender differentiation is available, the indicator has been averaged across both gender dimensions.

Table 6 Correlation among the changes in the changes in the economic structural indicators

	1	2	3	4	5	6	7	8
1	1.00	-	-	-	-	-	-	-
2	0.88	1.00	-	-	-	-	-	-
3	0.07	0.04	1.00	-	-	-	-	-
4	0.08	0.07	0.96	1.00	-	-	-	-
5	-0.10	-0.08	-0.10	-0.09	1.00	-	-	-
6	-0.07	-0.09	0.01	0.02	0.14	1.00	-	-
7	-0.29	-0.24	0.04	0.08	0.01	0.24	1.00	-
8	0.10	-0.04	-0.02	-0.04	0.07	0.15	0.18	1.00

Notes: The table displays the correlation among the changes in the structural economic indicators over the period 1999-2006 for the EU25 countries. If gender differentiation is available, the indicator has been averaged across both gender dimensions.

A2.2 NORMALISATION OF THE DATA

The structural indicators are rescaled by dividing each country's score by the score of the best-performing country (i.e. the country with the best score in that dimension). The normalised indicators range between 0 and 1.[26] The same procedure is adopted to normalise the level of and the change in the structural indicators.

Indicator 7 (comparative price level) is recalculated as the absolute difference to the EU average. Furthermore, as indicator 7 is the only one for which the lower the score the better, after the usual normalisation, the scale of the indicator is inverted by subtracting it from one and once again normalised between 0 and 1 by dividing by the maximum score.

Table 7 shows the maximum level of each indicator for the average of 1999-2001, which is used in the analysis as the starting level, and for 2006.

This method of normalisation provides comparable indicators that contain information on the performance of Member States relative to each other, and on the magnitude of the performance differences. Since the normalisation method is dependent on the differences between the country scores, it is potentially sensitive to outliers.[27] A check of the data showed that with regard to the level of the structural indicators, the high scores of Luxembourg on indicator 1 (GDP per capita) and indicator 2 (labour productivity) could be regarded as outliers. In order to check the sensitivity of the results, we calculated the composite indicator without Luxembourg (see Table 8). Overall, there are no significant changes in the final ranking after dropping Luxembourg.

26 The normalised indicator assumes a value of 0 only if the score of a country in the indicator is 0. Therefore, while the maximum value of the normalised indicator is always 1, the minimum value of the normalised indicators is not always 0.

27 A normalisation achieved through ranking would not be sensitive to outliers, but would instead ignore the magnitude of cross-country differences.

Table 7 Maximum level of the structural economic indicators in the period 1999-2001 and in 2006 [1)]

YEAR	1	2	3	4	5	6	7	8
1999-2001	239.33	171.40	76.08	65.22	94.20	3.93	57.23	25.03
2006	279.60	183.90	77.30	69.60	91.75	3.82	43.40	29.80

1) When differentiation between genders is available, the indicator is averaged across genders.

Table 8 Ranking based on the structural economic indicators in 2006, excluding Luxembourg

(constraints: weights must sum to 1, and must be greater than or equal to 5% and less than or equal to 30%)

Country	Rank	CI (benefit of the doubt analysis)	CI (benchmark)	Weight of indicator number:							
				1	2	3	4	5	6	7	8
at	1	1.000	1.000	-	-	-	-	-	-	-	-
be	9	0.977	0.964	0.10	0.30	0.05	0.05	0.13	0.05	0.11	0.21
cy	16	0.917	0.924	0.05	0.05	0.16	0.16	0.16	0.05	0.20	0.17
cz	17	0.904	0.916	0.05	0.05	0.18	0.06	0.30	0.07	0.05	0.25
de	7	0.990	0.989	0.06	0.06	0.11	0.23	0.05	0.06	0.29	0.15
dk	8	0.981	0.992	0.12	0.05	0.23	0.14	0.05	0.07	0.05	0.29
ee	1	1.000	1.000	-	-	-	-	-	-	-	-
es	1	1.000	1.000	-	-	-	-	-	-	-	-
fi	10	0.973	0.973	0.05	0.15	0.09	0.05	0.19	0.12	0.05	0.30
fr	14	0.946	0.943	0.08	0.24	0.07	0.13	0.16	0.05	0.14	0.12
gr	15	0.921	0.926	0.05	0.19	0.08	0.13	0.15	0.05	0.12	0.23
hu	22	0.799	0.808	0.05	0.05	0.22	0.05	0.30	0.05	0.05	0.23
ie	1	1.000	1.000	-	-	-	-	-	-	-	-
it	19	0.901	0.902	0.05	0.15	0.05	0.05	0.05	0.05	0.30	0.30

Table 8 Ranking based on the structural economic indicators in 2006, excluding Luxembourg (continued)

(constraints: weights must sum to 1, and must be greater than or equal to 5% and less than or equal to 30%)

Country	Rank	CI (benefit of the doubt analysis)	CI (benchmark)	Weight of indicator number:							
				1	2	3	4	5	6	7	8
lt	20	0.866	0.886	0.05	0.05	0.16	0.10	0.30	0.05	0.05	0.24
lu	-	-	1.000	-	-	-	-	-	-	-	-
lv	11	0.961	0.967	0.05	0.05	0.20	0.07	0.23	0.05	0.05	0.30
mt	24	0.695	0.700	0.05	0.18	0.28	0.08	0.05	0.05	0.08	0.22
nl	6	0.992	0.999	0.16	0.09	0.17	0.16	0.07	0.05	0.20	0.10
pl	23	0.790	0.804	0.05	0.05	0.22	0.05	0.30	0.05	0.05	0.23
pt	21	0.859	0.867	0.05	0.05	0.21	0.17	0.05	0.05	0.17	0.25
se	1	1.000	1.000	-	-	-	-	-	-	-	-
si	13	0.952	0.951	0.05	0.05	0.14	0.05	0.30	0.08	0.05	0.29
sk	18	0.903	0.910	0.05	0.05	0.15	0.05	0.30	0.05	0.05	0.30
uk	12	0.959	0.962	0.09	0.10	0.18	0.18	0.05	0.05	0.22	0.13

Notes: The column "Rank" reports the rank of a country under the composite indicator (CI) displayed in column "CI (benefit of the doubt analysis)". The latter is the composite indicator obtained by using the benefit of the doubt analysis under the weight restrictions specified under the title of the table. "CI (benchmark)" is the CI indicator in the benchmark specification as reported in Table 2. The weights reported, numbered from 1 to 8 (each number corresponds to an indicator; see Table 1 in the main text), are those computed for each structural indicator by using the benefit of the doubt analysis.

A2.3 WEIGHT DETERMINATION WITH BENEFIT OF THE DOUBT ANALYSIS

Setting weights for each country with the benefit of the doubt analysis involves finding the weights that maximise the composite indicator defined in Section 3.4.1.

Restrictions on the maximal or minimal weights prevent too much weight being assigned to a single indicator and too little to the other indicators. However, restricting the weights assigned to a single indicator reduces the possibilities for a country to reach the highest composite indicator score (1). A comparison of the composite indicator scores with different weight restrictions provides insight into the influence of weight restrictions.

Imposing minimal weight restrictions results in ten countries achieving the highest composite indicator score for the 2006 data (see Table 9), considerably more than for the benchmark specification reported in

Table 9 Ranking based on the level of the structural economic indicators in 2006, with minimal weight restrictions

(constraints: weights must sum to 1 and cannot be negative)

Country	Rank	CI (benefit of the doubt analysis)	CI (benchmark)	Weight of indicator number:							
				1	2	3	4	5	6	7	8
at	1	1.000	1.000	-	-	-	-	-	-	-	-
be	14	0.987	0.964	0.01	0.31	0.00	0.00	0.25	0.02	0.09	0.33
cy	13	0.988	0.924	0.00	0.00	0.19	0.20	0.21	0.00	0.18	0.22
cz	18	0.970	0.916	0.06	0.02	0.20	0.02	0.43	0.07	0.00	0.21
de	12	0.989	0.989	0.05	0.05	0.12	0.21	0.05	0.07	0.28	0.17
dk	1	1.000	0.992	-	-	-	-	-	-	-	-
ee	1	1.000	1.000	-	-	-	-	-	-	-	-
es	1	1.000	1.000	-	-	-	-	-	-	-	-
fi	11	0.989	0.973	0.09	0.12	0.14	0.00	0.20	0.14	0.00	0.31
fr	21	0.943	0.943	0.06	0.21	0.12	0.07	0.27	0.05	0.06	0.15
gr	20	0.952	0.926	0.00	0.08	0.13	0.15	0.21	0.00	0.15	0.29
hu	24	0.899	0.808	0.00	0.06	0.20	0.02	0.61	0.01	0.00	0.10
ie	1	1.000	1.000	-	-	-	-	-	-	-	-
it	23	0.925	0.902	0.00	0.08	0.03	0.08	0.16	0.00	0.32	0.34

Table 9 Ranking based on the level of the structural economic indicators in 2006, with minimal weight restrictions (continued)

(constraints: weights must sum to 1 and cannot be negative)

Country	Rank	CI (benefit of the doubt analysis)	CI (benchmark)	Weight of indicator number: 1	2	3	4	5	6	7	8
lt	17	0.978	0.886	0.01	0.01	0.22	0.06	0.58	0.00	0.00	0.13
lu	1	1.000	1.000	-	-	-	-	-	-	-	-
lv	1	1.000	0.967	-	-	-	-	-	-	-	-
mt	25	0.750	0.700	0.00	0.22	0.54	0.01	0.00	0.00	0.05	0.18
nl	1	1.000	0.999	-	-	-	-	-	-	-	-
pl	16	0.983	0.804	0.00	0.02	0.11	0.00	0.82	0.00	0.05	0.00
pt	22	0.932	0.867	0.00	0.00	0.34	0.26	0.00	0.00	0.17	0.22
se	1	1.000	1.000	-	-	-	-	-	-	-	-
si	19	0.959	0.951	0.01	0.04	0.18	0.03	0.30	0.07	0.07	0.30
sk	1	1.000	0.910	-	-	-	-	-	-	-	-
uk	15	0.983	0.962	0.07	0.07	0.18	0.21	0.09	0.00	0.20	0.17

Note: See notes to Table 8.

Section 3. For the countries that score less than 1, a weighting scheme which maximises their composite indicator score is identified. The resulting weights show which indicators are more important for those countries (youth educational attainment, business investment and the employment rate), and on which indicators they score comparatively less well (GDP per capita, gross domestic expenditure on R&D and labour productivity). Table 9 also shows that with no minimum weight restrictions, the weights distribution is skewed for a number of countries. Many indicators have a zero weight, which implies that they are disregarded completely in the calculation of the composite indicator scores, whereas others receive a high share of the total weight. According to the analysis carried out on 2006 data, some examples of countries with a very concentrated weight distribution are Poland (82% weight for indicator 5 – youth educational attainment), Malta (54% for indicator 3 – employment rate) and Lithuania and Hungary (more than 50% for indicator 5 – youth educational attainment).

Imposing a minimum weight restriction ensures that all indicators are used in the composite indicator (see Table 10). Without the imposition of a minimum weight, 10 out of 25 countries obtain

Table 10 Ranking based on the structural economic indicators in 2006, with minimum weight restrictions

(constraints: weights must sum to 1 and must be greater than or equal to 5%)

Country	Rank	CI (benefit of the doubt analysis)	CI (benchmark)	Weight of indicator number: 1	2	3	4	5	6	7	8
at	1	1.000	1.000	-	-	-	-	-	-	-	-
be	12	0.965	0.964	0.05	0.23	0.05	0.05	0.20	0.06	0.08	0.28
cy	19	0.924	0.924	0.05	0.05	0.16	0.15	0.18	0.05	0.17	0.19
cz	16	0.949	0.916	0.05	0.05	0.05	0.06	0.48	0.05	0.05	0.21
de	9	0.989	0.989	0.05	0.05	0.12	0.21	0.05	0.07	0.28	0.17
dk	8	0.992	0.992	0.10	0.08	0.29	0.07	0.05	0.07	0.05	0.29
ee	1	1.000	1.000	-	-	-	-	-	-	-	-
es	1	1.000	1.000	-	-	-	-	-	-	-	-
fi	11	0.975	0.973	0.05	0.07	0.11	0.05	0.20	0.13	0.05	0.34
fr	17	0.943	0.943	0.06	0.21	0.12	0.07	0.27	0.05	0.06	0.15
gr	18	0.926	0.926	0.05	0.08	0.09	0.14	0.20	0.05	0.11	0.29
hu	24	0.844	0.808	0.05	0.05	0.05	0.05	0.52	0.05	0.05	0.18
ie	1	1.000	1.000	-	-	-	-	-	-	-	-
it	21	0.904	0.902	0.05	0.05	0.05	0.06	0.07	0.05	0.32	0.34

Table 10 Ranking based on the structural economic indicators in 2006, with minimum weight restrictions (continued)

(constraints: weights must sum to 1 and must be greater than or equal to 5%)

Country	Rank	CI (benefit of the doubt analysis)	CI (benchmark)	Weight of indicator number:							
				1	2	3	4	5	6	7	8
lt	20	0.909	0.886	0.05	0.05	0.05	0.06	0.48	0.05	0.05	0.21
lu	1	1.000	1.000	-	-	-	-	-	-	-	-
lv	10	0.977	0.967	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.65
mt	25	0.702	0.700	0.05	0.15	0.30	0.07	0.05	0.05	0.07	0.26
nl	7	0.999	0.999	0.06	0.07	0.21	0.20	0.06	0.05	0.29	0.07
pl	22	0.888	0.804	0.05	0.05	0.05	0.05	0.65	0.05	0.05	0.05
pt	23	0.867	0.867	0.05	0.05	0.20	0.18	0.05	0.05	0.16	0.25
se	1	1.000	1.000	-	-	-	-	-	-	-	-
si	14	0.951	0.951	0.05	0.05	0.15	0.05	0.26	0.09	0.06	0.30
sk	15	0.949	0.910	0.05	0.05	0.05	0.05	0.46	0.05	0.05	0.24
uk	13	0.962	0.962	0.09	0.06	0.11	0.22	0.08	0.05	0.29	0.11

Note: See notes to Table 8.

the maximum score. After imposing a minimum weight of 0.05, 6 countries out of 25 get the maximum score of 1. For Poland and Latvia, all the freely assigned weight (65%) is concentrated within one indicator, while the minimum weight is assigned to the other indicators.

A2.4 SENSITIVITY AND ROBUSTNESS ANALYSIS: GENDER DIFFERENTIATION

Some of the structural indicators are disaggregated by gender, to account for the developments for males and females separately. In the ranking presented in Section 4.2 and in the tables above, those indicators are constructed as the unweighted average of the male and female indicators, which gives equal weight to both gender dimensions within the weights determined by the benefit of the doubt analysis. An alternative would be to allow full gender differentiation, i.e. treating both gender dimensions as separate indicators. This approach results in higher combined weights for the indicator concerned, for example the weights assigned to indicator 5 (F + M) for Poland are higher than the maximum weight constraint (see Table 11). Introducing additional weight constraints can maximise the sum of the weights assigned to both gender dimensions of each indicator, but this results in even more pronounced differences in the weight assigned to the gender dimensions of a single indicator than with full gender differentiation, e.g. the weights assigned to indicators 5F and 5M for Slovakia (see Tables 11 and 12). The differentiation in weights is the result of a (much) better

Table 11 Ranking based on the structural economic indicators in 2006, with complete gender differentiation

(constraints weights must sum to 1, and must be greater than or equal to 5% and less than or equal to 30%)

Country	Rank	CI (benefit of the doubt analysis)	CI (benchmark)	Weight of indicator number :										
				1	2	3F	3M	4F	4M	5F	5M	6	7	8
at	1	1.000	1.000	-	-	-	-	-	-	-	-	-	-	-
be	12	0.953	0.964	0.05	0.20	0.05	0.05	0.05	0.05	0.14	0.07	0.05	0.10	0.20
cy	14	0.950	0.924	0.05	0.05	0.05	0.13	0.05	0.12	0.11	0.05	0.05	0.20	0.13
cz	17	0.920	0.916	0.05	0.05	0.05	0.06	0.05	0.05	0.15	0.19	0.05	0.05	0.25
de	9	0.975	0.989	0.05	0.05	0.06	0.08	0.08	0.09	0.05	0.05	0.09	0.26	0.14
dk	8	0.986	0.992	0.08	0.05	0.14	0.17	0.05	0.05	0.05	0.05	0.05	0.05	0.26
ee	1	1.000	1.000	-	-	-	-	-	-	-	-	-	-	-
es	1	1.000	1.000	-	-	-	-	-	-	-	-	-	-	-
fi	11	0.959	0.973	0.07	0.12	0.08	0.07	0.05	0.05	0.13	0.11	0.05	0.05	0.24

Table 11 Ranking based on the structural economic indicators in 2006, with complete gender differentiation (continued)

(constraints weights must sum to 1, and must be greater than or equal to 5% and less than or equal to 30%)

Country	Rank	CI (benefit of the doubt analysis)	CI (benchmark)	Weight of indicator number :										
				1	2	3F	3M	4F	4M	5F	5M	6	7	8
fr	16	0.937	0.943	0.07	0.14	0.05	0.07	0.09	0.05	0.10	0.09	0.05	0.18	0.12
gr	18	0.914	0.926	0.06	0.11	0.05	0.11	0.05	0.08	0.11	0.07	0.05	0.14	0.17
hu	24	0.808	0.808	0.05	0.05	0.05	0.05	0.05	0.05	0.18	0.18	0.05	0.05	0.24
ie	1	1.000	1.000	-	-	-	-	-	-	-	-	-	-	-
it	20	0.895	0.902	0.05	0.05	0.05	0.05	0.05	0.16	0.05	0.05	0.05	0.22	0.22
lt	21	0.890	0.886	0.05	0.05	0.05	0.05	0.05	0.05	0.19	0.17	0.05	0.05	0.24
lu	1	1.000	1.000	-	-	-	-	-	-	-	-	-	-	-
lv	10	0.971	0.967	0.05	0.05	0.05	0.07	0.05	0.15	0.05	0.15	0.05	0.05	0.28
mt	25	0.749	0.700	0.05	0.08	0.05	0.30	0.05	0.05	0.05	0.05	0.05	0.06	0.22
nl	7	0.992	0.999	0.05	0.05	0.11	0.15	0.08	0.09	0.05	0.05	0.05	0.23	0.10
pl	23	0.833	0.804	0.05	0.05	0.05	0.05	0.05	0.05	0.30	0.25	0.05	0.05	0.05
pt	22	0.844	0.867	0.06	0.05	0.11	0.15	0.06	0.08	0.05	0.05	0.05	0.16	0.18
se	1	1.000	1.000	-	-	-	-	-	-	-	-	-	-	-
si	15	0.941	0.951	0.05	0.05	0.05	0.08	0.05	0.05	0.14	0.16	0.05	0.06	0.26
sk	19	0.914	0.910	0.05	0.05	0.05	0.05	0.05	0.05	0.13	0.22	0.05	0.05	0.25
uk	13	0.951	0.962	0.09	0.09	0.08	0.12	0.05	0.08	0.08	0.08	0.05	0.16	0.11

Notes: See notes to Table 8. When a gender differentiation is available, male and female indicators are considered as separate indicators. See Table 1 in the main text for the list of indicators.

Table 12 Ranking based on the structural economic indicators in 2006, with gender differentiation and additional weight restrictions

(constraints: weights must sum to 1, and must be greater than or equal to 5% and less than or equal to 30%. Special constraints are imposed when gender differentiation is available (min. 2.5% for each gender indicator and sum between the genders max. 30%)

Country	Rank	CI (benefit of the doubt analysis)	CI (benchmark)	Weight of indicator number:										
				1	2	3F	3M	4F	4M	5F	5M	6	7	8
at	1	1.000	1.000	-	-	-	-	-	-	-	-	-	-	-
be	13	0.965	0.964	0.05	0.21	0.03	0.03	0.03	0.03	0.18	0.10	0.05	0.07	0.22
cy	11	0.972	0.924	0.05	0.05	0.03	0.15	0.03	0.17	0.13	0.03	0.05	0.20	0.13
cz	19	0.922	0.916	0.05	0.05	0.05	0.14	0.03	0.06	0.14	0.16	0.05	0.05	0.22
de	9	0.975	0.989	0.05	0.05	0.08	0.09	0.07	0.09	0.03	0.05	0.11	0.25	0.15
dk	8	0.986	0.992	0.11	0.08	0.14	0.16	0.03	0.06	0.05	0.03	0.05	0.05	0.23
ee	1	1.000	1.000	-	-	-	-	-	-	-	-	-	-	-
es	1	1.000	1.000	-	-	-	-	-	-	-	-	-	-	-
fi	12	0.966	0.973	0.09	0.12	0.09	0.08	0.03	0.03	0.13	0.12	0.06	0.05	0.21
fr	17	0.942	0.943	0.07	0.14	0.04	0.06	0.09	0.03	0.11	0.11	0.05	0.17	0.12
gr	16	0.948	0.926	0.05	0.11	0.03	0.10	0.03	0.14	0.12	0.03	0.05	0.13	0.22
hu	23	0.811	0.808	0.05	0.05	0.06	0.14	0.03	0.03	0.15	0.15	0.05	0.05	0.24
ie	1	1.000	1.000	-	-	-	-	-	-	-	-	-	-	-
it	20	0.903	0.902	0.05	0.05	0.03	0.09	0.03	0.13	0.08	0.03	0.05	0.24	0.23
lt	21	0.886	0.886	0.05	0.05	0.10	0.10	0.03	0.04	0.15	0.15	0.05	0.05	0.24
lu	1	1.000	1.000	-	-	-	-	-	-	-	-	-	-	-
lv	10	0.974	0.967	0.05	0.05	0.04	0.10	0.03	0.13	0.06	0.14	0.05	0.05	0.30
mt	25	0.767	0.700	0.05	0.12	0.03	0.28	0.03	0.14	0.03	0.03	0.05	0.08	0.19
nl	1	1.000	0.999	-	-	-	-	-	-	-	-	-	-	-
pl	24	0.806	0.804	0.05	0.05	0.06	0.15	0.03	0.03	0.16	0.14	0.05	0.05	0.23
pt	22	0.873	0.867	0.05	0.05	0.10	0.18	0.05	0.11	0.03	0.03	0.05	0.12	0.24
se	1	1.000	1.000	-	-	-	-	-	-	-	-	-	-	-
si	14	0.959	0.951	0.05	0.05	0.08	0.10	0.03	0.03	0.15	0.15	0.05	0.05	0.26
sk	18	0.933	0.910	0.05	0.05	0.04	0.10	0.03	0.03	0.03	0.27	0.05	0.05	0.30
uk	15	0.959	0.962	0.09	0.09	0.08	0.14	0.05	0.10	0.05	0.05	0.05	0.18	0.12

Notes: See notes to Table 8. When a gender differentiation is available, male and female indicators are considered as separate indicators. See Table 1 in the main text for the list of indicators.

performance on one gender dimension than the other, which can potentially "reward" countries with very diverging performances in both gender dimensions. Unlike assigning different weights to different indicators, different weights for both gender dimensions of a single indicator can less easily be justified by giving the benefit of the doubt to previous policies. In practice, this approach alters the composite indicator scores of only a few countries and only marginally.

A2.5 SENSITIVITY AND ROBUSTNESS ANALYSIS: EXCLUDING INDICATOR 7 (COMPARATIVE PRICE LEVEL)

Indicator 7 (comparative price level) does not have a straightforward economic interpretation. As a measure of market integration, it is transformed into an indicator that measures the absolute distance of the price level of country j from the EU average. The greater the distance, the worse the performance of the country. However, this benefits large countries, which have greater influence on the EU average. Computing the composite indicator gives an indication of the size of this advantage for large countries. Without indicator 7, Germany, France, Italy, the UK, Spain and the Netherlands, as well as Austria, Belgium and Cyprus, have a lower composite indicator in 2006 (see Table 13). At the same time, there is a marginal increase in the composite indicator of those countries that in the benchmark specification are bound by the minimum weight constraint, such as Latvia and the Czech Republic. The ranking of countries based on the composite indicator changes compared with the benchmark specification, with five countries achieving the maximum score of 1, compared with six under the benchmark specification reported in Section 3.

For the average level of the structural indicators for the period 1999-2001, calculating the composite indicators without indicator 7 has a similar impact (see Table 19).

Table 13 Ranking based on the structural economic indicators in 2006, excluding indicator 7 (comparative price level)

(constraints: weights must sum to 1 and must be greater than or equal to 5% and less than or equal to 30%.)

Country	Rank	CI (benefit of the doubt analysis)	CI (benchmark)	weight of indicator number:							
				1	2	3	4	5	6	7	8
at	8	0.968	1.000	0.10	0.15	0.17	0.05	0.22	0.09	-	0.22
be	13	0.923	0.964	0.05	0.17	0.11	0.05	0.28	0.10	-	0.24
cy	17	0.905	0.924	0.05	0.05	0.30	0.06	0.28	0.05	-	0.21
cz	11	0.932	0.916	0.06	0.06	0.20	0.05	0.30	0.08	-	0.24
de	19	0.893	0.989	0.10	0.11	0.29	0.05	0.07	0.12	-	0.27
dk	1	1.000	0.992	-	-	-	-	-	-	-	-
ee	1	1.000	1.000	-	-	-	-	-	-	-	-
es	9	0.947	1.000	0.13	0.13	0.22	0.07	0.05	0.10	-	0.30
fi	7	0.975	0.973	0.11	0.16	0.12	0.05	0.17	0.12	-	0.28
fr	15	0.912	0.943	0.05	0.15	0.14	0.05	0.27	0.09	-	0.25
gr	20	0.890	0.926	0.05	0.11	0.16	0.05	0.30	0.05	-	0.28
hu	23	0.822	0.808	0.05	0.06	0.22	0.05	0.30	0.07	-	0.24
ie	1	1.000	1.000	-	-	-	-	-	-	-	-
it	21	0.838	0.902	0.05	0.10	0.23	0.05	0.30	0.06	-	0.21
lt	18	0.903	0.886	0.05	0.05	0.22	0.11	0.30	0.05	-	0.22
lu	1	1.000	1.000	-	-	-	-	-	-	-	-
lv	6	0.975	0.967	0.05	0.05	0.20	0.05	0.30	0.05	-	0.30
mt	25	0.694	0.700	0.05	0.28	0.30	0.05	0.05	0.05	-	0.22
nl	12	0.931	0.999	0.14	0.14	0.30	0.06	0.11	0.06	-	0.19
pl	24	0.821	0.804	0.05	0.05	0.29	0.05	0.30	0.05	-	0.21
pt	22	0.826	0.867	0.07	0.06	0.30	0.22	0.05	0.05	-	0.26
se	1	1.000	1.000	-	-	-	-	-	-	-	-
si	10	0.947	0.951	0.05	0.06	0.18	0.05	0.27	0.11	-	0.28
sk	14	0.922	0.910	0.06	0.09	0.19	0.05	0.30	0.05	-	0.26
uk	16	0.911	0.962	0.14	0.15	0.19	0.12	0.15	0.05	-	0.20

Note: See notes to Table 11.

A2.6 RANKING BASED ON THE LEVEL OF THE STRUCTURAL ECONOMIC INDICATORS (AVERAGE FOR THE PERIOD 1999-2001)

Table 14 Ranking based on the structural economic indicators in 2000, with minimal weight restrictions

(constraints: weights must sum to 1 and cannot be negative)

Country	Rank	CI (benefit of the doubt analysis)	CI (benchmark)	Weight of indicator number:							
				1	2	3	4	5	6	7	8
at	1	1.000	1.000	-	-	-	-	-	-	-	-
be	10	0.993	0.967	0.00	0.17	0.01	0.00	0.18	0.23	0.29	0.12
cy	17	0.969	0.911	0.00	0.00	0.18	0.23	0.21	0.00	0.25	0.13
cz	1	1.000	0.984	-	-	-	-	-	-	-	-
de	13	0.984	0.984	0.05	0.05	0.15	0.06	0.07	0.21	0.28	0.13
dk	1	1.000	1.000	-	-	-	-	-	-	-	-
ee	11	0.989	0.913	0.01	0.00	0.13	0.28	0.17	0.00	0.04	0.37
es	14	0.981	0.944	0.01	0.09	0.05	0.21	0.10	0.00	0.12	0.42
fi	16	0.974	0.974	0.06	0.12	0.07	0.06	0.24	0.13	0.07	0.25
fr	18	0.968	0.958	0.00	0.20	0.02	0.07	0.20	0.20	0.31	0.00
gr	21	0.912	0.873	0.00	0.06	0.12	0.21	0.23	0.00	0.16	0.22
hu	23	0.874	0.841	0.05	0.05	0.19	0.02	0.34	0.00	0.03	0.32
ie	1	1.000	0.978	-	-	-	-	-	-	-	-
it	15	0.980	0.928	0.00	0.10	0.00	0.12	0.03	0.00	0.54	0.21
lt	24	0.872	0.817	0.02	0.01	0.20	0.22	0.26	0.00	0.01	0.28
lu	1	1.000	1.000	-	-	-	-	-	-	-	-
lv	20	0.933	0.863	0.01	0.00	0.16	0.20	0.15	0.00	0.08	0.40
mt	25	0.835	0.759	0.00	0.22	0.19	0.09	0.00	0.00	0.00	0.49
nl	1	1.000	1.000	-	-	-	-	-	-	-	-
pl	22	0.891	0.864	0.00	0.01	0.17	0.10	0.33	0.00	0.08	0.32
pt	1	1.000	0.980	-	-	-	-	-	-	-	-
se	1	1.000	1.000	-	-	-	-	-	-	-	-
si	12	0.985	0.958	0.00	0.01	0.18	0.04	0.28	0.04	0.07	0.38
sk	1	1.000	0.945	-	-	-	-	-	-	-	-
uk	19	0.944	0.944	0.08	0.10	0.26	0.11	0.08	0.05	0.10	0.22

Note: See notes to Table 8.

Table 15 Ranking based on the structural economic indicators in 2000, with gender differentiation and additional weight restrictions

(constraints: weights must sum to 1, and must be greater than or equal to 5% and less than or equal to 30%. Special constraints are imposed when gender differentiation is available (min. 2.5% for each gender indicator and sum between the genders max. 30%).

Country	Rank	CI (benefit of the doubt analysis)	CI (benchmark)	weight of indicator number:										
				1	2	3F	3M	4F	4M	5F	5M	6	7	8
at	1	1.000	1.000	-	-	-	-	-	-	-	-	-	-	-
be	10	0.978	0.967	0.05	0.14	0.03	0.03	0.03	0.03	0.22	0.03	0.17	0.22	0.08
cy	15	0.962	0.911	0.05	0.05	0.03	0.15	0.03	0.21	0.11	0.04	0.05	0.24	0.05
cz	6	0.998	0.984	0.05	0.05	0.03	0.03	0.03	0.13	0.15	0.14	0.05	0.05	0.30
de	9	0.984	0.984	0.05	0.05	0.05	0.05	0.09	0.06	0.03	0.05	0.11	0.23	0.23
dk	1	1.000	1.000	-	-	-	-	-	-	-	-	-	-	-
ee	19	0.919	0.913	0.05	0.05	0.03	0.10	0.03	0.12	0.13	0.10	0.05	0.05	0.30
es	14	0.962	0.944	0.05	0.05	0.03	0.11	0.03	0.20	0.03	0.03	0.05	0.14	0.30
fi	12	0.970	0.974	0.07	0.11	0.07	0.04	0.05	0.03	0.16	0.13	0.07	0.11	0.17
fr	13	0.963	0.958	0.05	0.10	0.03	0.04	0.09	0.03	0.14	0.11	0.08	0.25	0.08
gr	20	0.897	0.873	0.05	0.08	0.03	0.11	0.03	0.12	0.14	0.09	0.05	0.15	0.15
hu	23	0.844	0.841	0.05	0.05	0.13	0.03	0.03	0.03	0.28	0.03	0.05	0.05	0.30
ie	7	0.995	0.978	0.08	0.10	0.03	0.09	0.03	0.13	0.11	0.08	0.05	0.12	0.19
it	18	0.929	0.928	0.05	0.10	0.03	0.06	0.03	0.13	0.10	0.03	0.05	0.30	0.14

Table 15 Ranking based on the structural economic indicators in 2000, with gender differentiation and additional weight restrictions (continued)

(constraints: weights must sum to 1, and must be greater than or equal to 5% and less than or equal to 30%. Special constraints are imposed when gender differentiation is available (min. 2.5% for each gender indicator and sum between the genders max. 30%).

Country	Rank	CI (benefit of the doubt analysis)	CI (benchmark)	weight of indicator number:										
				1	2	3F	3M	4F	4M	5F	5M	6	7	8
lt	25	0.819	0.817	0.05	0.05	0.09	0.08	0.03	0.06	0.17	0.13	0.05	0.05	0.24
lu	1	1.000	1.000	-	-	-	-	-	-	-	-	-	-	-
lv	21	0.877	0.863	0.05	0.05	0.07	0.07	0.03	0.09	0.17	0.06	0.05	0.05	0.30
mt	24	0.840	0.759	0.05	0.05	0.03	0.27	0.03	0.14	0.03	0.03	0.05	0.06	0.28
nl	1	1.000	1.000	-	-	-	-	-	-	-	-	-	-	-
pl	22	0.866	0.864	0.05	0.05	0.03	0.07	0.08	0.03	0.18	0.12	0.05	0.05	0.30
pt	8	0.990	0.980	0.05	0.05	0.06	0.12	0.06	0.15	0.03	0.03	0.05	0.11	0.30
se	1	1.000	1.000	-	-	-	-	-	-	-	-	-	-	-
si	11	0.973	0.958	0.05	0.05	0.13	0.03	0.03	0.03	0.28	0.03	0.05	0.05	0.30
sk	16	0.951	0.945	0.05	0.05	0.03	0.03	0.03	0.12	0.18	0.12	0.05	0.05	0.30
uk	17	0.940	0.944	0.09	0.09	0.09	0.13	0.04	0.09	0.07	0.08	0.05	0.14	0.13

Note: See notes to Table 8 and 12.

Table 16 Ranking based on the structural economic indicators in 2000, excluding indicator 7 (comparative price level)

(constraints: weights must sum to 1, and must be greater than or equal to 5% and less than or equal to 30%)

Country	Rank	CI (benefit of the doubt analysis)	CI (benchmark)	weight of indicator number :							
				1	2	3	4	5	6	7	8
at	1	1.000	1.000	-	-	-	-	-	-	-	-
be	11	0.955	0.967	0.06	0.19	0.09	0.05	0.25	0.10	-	0.28
cy	23	0.857	0.911	0.05	0.07	0.26	0.06	0.26	0.05	-	0.26
cz	1	1.000	0.984	-	-	-	-	-	-	-	-
de	12	0.945	0.984	0.09	0.10	0.20	0.07	0.17	0.07	-	0.30
dk	1	1.000	1.000	-	-	-	-	-	-	-	-
ee	15	0.921	0.913	0.05	0.05	0.18	0.12	0.24	0.05	-	0.30
es	17	0.905	0.944	0.07	0.15	0.16	0.10	0.17	0.05	-	0.30
fi	7	0.984	0.974	0.05	0.11	0.11	0.05	0.29	0.09	-	0.30
fr	16	0.920	0.958	0.06	0.18	0.15	0.05	0.26	0.06	-	0.23
gr	19	0.873	0.873	0.05	0.13	0.11	0.09	0.28	0.05	-	0.29
hu	21	0.865	0.841	0.05	0.10	0.18	0.06	0.29	0.05	-	0.27
ie	6	0.986	0.978	0.08	0.13	0.12	0.10	0.22	0.05	-	0.30
it	22	0.857	0.928	0.06	0.17	0.13	0.10	0.19	0.05	-	0.30
lt	24	0.839	0.817	0.05	0.05	0.20	0.11	0.26	0.05	-	0.28
lu	1	1.000	1.000	-	-	-	-	-	-	-	-
lv	18	0.877	0.863	0.05	0.05	0.23	0.11	0.21	0.05	-	0.30
mt	25	0.763	0.759	0.05	0.20	0.25	0.10	0.05	0.05	-	0.30
nl	9	0.971	1.000	0.10	0.10	0.27	0.05	0.13	0.05	-	0.30
pl	20	0.867	0.864	0.05	0.10	0.17	0.05	0.30	0.05	-	0.28
pt	13	0.943	0.980	0.05	0.05	0.29	0.21	0.05	0.05	-	0.30
se	1	1.000	1.000	-	-	-	-	-	-	-	-
si	10	0.962	0.958	0.06	0.08	0.18	0.05	0.28	0.07	-	0.28
sk	8	0.975	0.945	0.05	0.11	0.14	0.05	0.30	0.05	-	0.30
uk	14	0.932	0.944	0.10	0.12	0.24	0.09	0.13	0.05	-	0.26

Note: See notes to Table 8.

A2.7 CHANGE BETWEEN 2000 AND 2006

The change has been computed as a percentage change from the average of 1999-2001 to 2006 for indicators 1 and 2. For indicator 7 the change has been computed as the absolute value of the distance from the average EU price level for the period 1999-2001 (value of the indicator - 100), minus the absolute distance from the EU price level in 2006. A positive value means that the price level of one country got closer to the EU price level. For the other indicators, the change has been computed as the value of the indicator in 2006 minus its average value in 1999-2001.

Table 17 Ranking based on the change in the structural economic indicators between 2000 and 2006, with minimal weight restrictions

(constraints: weights must sum to 1 and cannot be negative)

Country	Rank	CI (benefit of the doubt analysis)	CI (benchmark)	Weight of indicator number:							
				1	2	3	4	5	6	7	8
at	1	1.000	0.779	-	-	-	-	-	-	-	-
be	25	0.527	0.476	0.00	0.15	0.00	0.11	0.39	0.00	0.29	0.06
cy	20	0.759	0.689	0.00	0.00	0.00	0.00	0.33	0.23	0.36	0.08
cz	1	1.000	0.852	-	-	-	-	-	-	-	-
de	19	0.760	0.623	0.00	0.01	0.00	0.39	0.00	0.14	0.46	0.00
dk	22	0.658	0.576	0.00	0.15	0.00	0.00	0.40	0.41	0.00	0.04
ee	1	1.000	1.000	-	-	-	-	-	-	-	-
es	1	1.000	0.911	-	-	-	-	-	-	-	-
fi	17	0.783	0.677	0.00	0.00	0.00	0.56	0.00	0.03	0.40	0.00
fr	24	0.577	0.526	0.00	0.16	0.00	0.15	0.24	0.00	0.44	0.00
gr	14	0.810	0.758	0.16	0.31	0.07	0.00	0.22	0.00	0.24	0.00
hu	10	0.974	0.844	0.04	0.10	0.00	0.33	0.01	0.13	0.40	0.00
ie	15	0.808	0.733	0.47	0.22	0.00	0.06	0.22	0.01	0.00	0.01
it	11	0.924	0.663	0.00	0.00	0.17	0.00	0.67	0.04	0.10	0.02
lt	1	1.000	0.993	-	-	-	-	-	-	-	-
lu	1	1.000	0.831	-	-	-	-	-	-	-	-
lv	1	1.000	1.000	-	-	-	-	-	-	-	-
mt	1	1.000	0.848	-	-	-	-	-	-	-	-
nl	23	0.621	0.533	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
pl	13	0.811	0.664	0.00	0.20	0.00	0.00	0.27	0.00	0.53	0.00
pt	12	0.873	0.669	0.00	0.00	0.00	0.00	0.57	0.00	0.43	0.00
se	16	0.808	0.633	0.00	0.06	0.00	0.00	0.25	0.00	0.58	0.11
si	21	0.717	0.705	0.45	0.18	0.00	0.14	0.14	0.01	0.07	0.00
sk	1	1.000	0.925	-	-	-	-	-	-	-	-
uk	18	0.778	0.665	0.11	0.12	0.00	0.02	0.24	0.01	0.50	0.01

Note: See notes to Table 8.

Table 18 Ranking based on the change in the structural economic indicators between 2000 and 2006, with gender differentiation and additional weight restrictions

(constraints: weights must sum to 1, and must be greater than or equal to 5% and less than or equal to 30%. Special constraints are imposed when gender differentiation is available (min. 2.5% for each gender indicator and sum between the genders max. 30%).

Country	Rank	CI (benefit of the doubt analysis)	CI (benchmark)	weight of indicator number:										
				1	2	3F	3M	4F	4M	5F	5M	6	7	8
at	11	0.827	0.779	0.05	0.05	0.03	0.03	0.03	0.16	0.07	0.03	0.30	0.22	0.05
be	25	0.558	0.476	0.05	0.05	0.03	0.03	0.03	0.28	0.03	0.28	0.05	0.29	0.06
cy	14	0.752	0.689	0.05	0.05	0.15	0.03	0.03	0.04	0.27	0.03	0.06	0.36	0.08
cz	6	0.953	0.852	0.06	0.06	0.03	0.03	0.03	0.17	0.03	0.03	0.24	0.30	0.05
de	20	0.683	0.623	0.05	0.16	0.05	0.03	0.03	0.27	0.03	0.03	0.06	0.46	0.00
dk	22	0.613	0.576	0.05	0.15	0.03	0.03	0.03	0.03	0.03	0.28	0.30	0.00	0.04
ee	1	1.000	1.000	-	-	-	-	-	-	-	-	-	-	-
es	1	1.000	0.911	-	-	-	-	-	-	-	-	-	-	-

Table 18 Ranking based on the change in the structural economic indicators between 2000 and 2006, with gender differentiation and additional weight restrictions (continued)

(constraints: weights must sum to 1, and must be greater than or equal to 5% and less than or equal to 30%. Special constraints are imposed when gender differentiation is available (min. 2.5% for each gender indicator and sum between the genders max. 30%).

Country	Rank	CI (benefit of the doubt analysis)	CI (benchmark)	weight of indicator number:										
				1	2	3F	3M	4F	4M	5F	5M	6	7	8
fi	12	0.759	0.677	0.05	0.05	0.03	0.03	0.03	0.28	0.03	0.03	0.15	0.40	0.00
fr	24	0.585	0.526	0.05	0.05	0.03	0.03	0.03	0.28	0.03	0.28	0.05	0.44	0.00
gr	13	0.756	0.758	0.18	0.20	0.09	0.03	0.03	0.04	0.12	0.10	0.05	0.24	0.00
hu	7	0.884	0.844	0.06	0.14	0.03	0.03	0.03	0.22	0.03	0.03	0.10	0.40	0.00
ie	16	0.725	0.733	0.10	0.20	0.14	0.03	0.03	0.03	0.19	0.08	0.10	0.00	0.01
it	15	0.735	0.663	0.05	0.05	0.28	0.03	0.03	0.03	0.03	0.28	0.05	0.10	0.02
lt	5	0.982	0.993	0.22	0.18	0.03	0.03	0.03	0.03	0.20	0.10	0.05	0.09	0.05
lu	9	0.856	0.831	0.30	0.19	0.08	0.03	0.03	0.11	0.10	0.03	0.05	0.05	0.05
lv	1	1.000	1.000	-	-	-	-	-	-	-	-	-	-	-
mt	8	0.882	0.848	0.05	0.05	0.03	0.03	0.03	0.10	0.27	0.03	0.28	0.10	0.05
nl	23	0.600	0.533	0.05	0.15	0.03	0.03	0.03	0.28	0.28	0.03	0.05	0.00	0.00
pl	18	0.701	0.664	0.05	0.15	0.03	0.03	0.03	0.03	0.03	0.27	0.05	0.53	0.00
pt	19	0.685	0.669	0.07	0.13	0.03	0.03	0.03	0.03	0.19	0.11	0.05	0.43	0.00
se	21	0.669	0.633	0.05	0.22	0.03	0.03	0.03	0.03	0.07	0.16	0.05	0.58	0.11
si	10	0.830	0.705	0.05	0.30	0.03	0.03	0.03	0.28	0.03	0.03	0.05	0.07	0.00
sk	1	1.000	0.925	-	-	-	-	-	-	-	-	-	-	-
uk	17	0.707	0.665	0.05	0.10	0.03	0.03	0.03	0.07	0.28	0.03	0.05	0.50	0.01

Note: See notes to Table 8 and 12.

Table 19 Ranking based on the change in the structural economic indicators between 2000 and 2006, excluding indicator 7 (comparative price level)

(Constraints: weights must sum to 1, and must be greater than or equal to 5% and less than or equal to 30%)

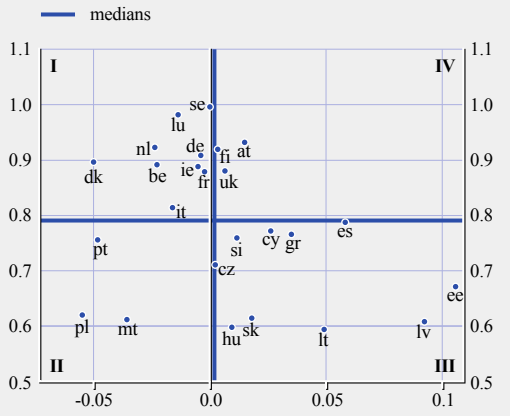
Country	Rank	CI (benefit of the doubt analysis)	CI (benchmark)	weight of indicator number:							
				1	2	3	4	5	6	7	8
at	11	0.712	0.779	0.07	0.20	0.05	0.11	0.22	0.30	-	0.05
be	25	0.455	0.476	0.05	0.30	0.05	0.20	0.30	0.05	-	0.05
cy	14	0.654	0.689	0.05	0.05	0.05	0.05	0.30	0.30	-	0.20
cz	12	0.700	0.852	0.07	0.20	0.05	0.20	0.13	0.30	-	0.05
de	21	0.527	0.623	0.05	0.20	0.05	0.30	0.05	0.30	-	0.05
dk	18	0.589	0.576	0.05	0.20	0.05	0.05	0.30	0.30	-	0.05
ee	1	1.000	1.000	-	-	-	-	-	-	-	-
es	5	0.816	0.911	0.11	0.05	0.30	0.10	0.05	0.20	-	0.18
fi	16	0.647	0.677	0.05	0.20	0.05	0.30	0.05	0.30	-	0.05
fr	23	0.503	0.526	0.05	0.30	0.05	0.20	0.30	0.05	-	0.05
gr	9	0.741	0.758	0.26	0.30	0.08	0.05	0.21	0.05	-	0.05
hu	10	0.720	0.844	0.08	0.30	0.05	0.27	0.05	0.20	-	0.05
ie	7	0.770	0.733	0.30	0.26	0.05	0.05	0.22	0.07	-	0.05
it	15	0.653	0.663	0.05	0.05	0.30	0.05	0.30	0.20	-	0.05
lt	3	0.979	0.993	0.20	0.30	0.05	0.05	0.30	0.05	-	0.05
lu	4	0.842	0.831	0.30	0.30	0.05	0.20	0.05	0.05	-	0.05
lv	1	1.000	1.000	-	-	-	-	-	-	-	-
mt	6	0.797	0.848	0.20	0.05	0.05	0.05	0.30	0.30	-	0.05
nl	20	0.535	0.533	0.05	0.30	0.05	0.30	0.20	0.05	-	0.05
pl	17	0.605	0.664	0.20	0.30	0.05	0.05	0.30	0.05	-	0.05
pt	19	0.588	0.669	0.05	0.30	0.05	0.05	0.30	0.20	-	0.05
se	24	0.475	0.633	0.20	0.30	0.05	0.05	0.21	0.05	-	0.13
si	13	0.694	0.705	0.21	0.30	0.05	0.14	0.15	0.10	-	0.05
sk	8	0.744	0.925	0.27	0.30	0.05	0.23	0.05	0.05	-	0.05
uk	22	0.523	0.665	0.20	0.30	0.05	0.05	0.30	0.05	-	0.05

Note: See notes to Table 8.

A2.8 RANKING WITH EQUAL WEIGHTING

Chart 7 contains the composite indicators in 2000 and the change between 2000 and 2006, similar to Chart 1 Part B in Chapter 3, but on the basis of equal weighting. By definition, the composite indicator scores of all Member States with benefit of the doubt weighting are higher than or equal to equal weighting, since the country-specific weights enable a higher score by giving more weight to indicators on which the country performs well. With some notable exceptions, the order of performance is largely similar with both weighting schemes. The Baltic States and Spain made most progress from a low starting level, whereas the countries with the highest starting level made relatively less progress. The composite indicator changes most for countries with a very high weight for some indicators under the benefit of the doubt weighting, such as Portugal and the Czech Republic. With equal weighting, they have a much lower starting level, but also a smaller subsequent change.

Chart 7 Equal-weighting composite indicator for the level of the structural economic indicators in 2000 (y axis) and its change between 2000 and 2006 (x axis)



A2.9 COMPOSITE INDICATOR IN 2006 USING THE BENEFIT OF THE DOUBT 2000 WEIGHTS

Table 20 Change in the composite indicator with 2000 and 2006 weights

Country	CI 2000 (benefit of the Doubt) (A)	CI 2006 (using 2000 weights) (B)	Change (2000 weights) (B - A)	CI 2006 (benefit of the Doubt) (D)	Change (2006 weights) (D-A)
at	1.000	-	-	1.000	0.000
be	0.967	0.918	-0.049	0.964	-0.003
cy	0.911	0.922	0.010	0.924	0.013
cz	0.984	0.882	-0.102	0.916	-0.068
de	0.984	0.955	-0.030	0.989	0.005
dk	1.000	-	-	0.992	-0.008
ee	0.913	1.000	0.087	1.000	0.087
es	0.944	1.000	0.056	1.000	0.056
fi	0.974	0.965	-0.009	0.973	-0.001
fr	0.958	0.915	-0.043	0.943	-0.015
gr	0.873	0.904	0.031	0.926	0.053
hu	0.841	0.793	-0.048	0.808	-0.033
ie	0.978	0.983	0.005	1.000	0.022
it	0.928	0.900	-0.029	0.902	-0.026
lt	0.817	0.861	0.045	0.886	0.069
lu	1.000	-	-	1.000	0.000
lv	0.863	0.962	0.099	0.967	0.104
mt	0.759	0.673	-0.086	0.700	-0.059
nl	1.000	-	-	0.999	-0.001
pl	0.864	0.763	-0.101	0.804	-0.060
pt	0.980	0.856	-0.124	0.867	-0.113
se	1.000	-	-	1.000	0.000
si	0.958	0.947	-0.011	0.951	-0.007

Table 20 Change in the composite indicator with 2000 and 2006 weights (continued)

Country	CI 2000 (benefit of the Doubt) (A)	CI 2006 (using 2000 weights) (B)	Change (2000 weights) (B - A)	CI 2006 (benefit of the Doubt) (D)	Change (2006 weights) (D-A)
sk	0.945	0.883	-0.062	0.910	-0.034
uk	0.944	0.948	0.004	0.962	0.018

Notes: Column (A) reports the benefit of the doubt benchmark composite indicator for 2000, as reported in Table 3. Column (B) shows a composite indicator for 2006 computed using the benefit of the doubt weights determined for 2000, as they are reported in Table 3. Column (B-A) reports the difference between the composite indicators in columns (B) and (A). Column (D) displays the benefit of the doubt benchmark composite indicator for 2006, as reported in Table 2. Column (D-A) reports the difference between the composite indicators in columns (D) and (A).

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