

# **ANALYSIS OF REACHING THE LISBON STRATEGY TARGETS AT THE NATIONAL LEVEL: THE EU-27 AND SLOVENIA**

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## **Abstract**

Adopted by the European Council in 2000, the Lisbon Strategy is a long-term strategy and its main target is to make Europe the most competitive, dynamic and knowledge-based economy in the world by 2010. During the 2005 mid-term review, the Lisbon Strategy refocused its two main targets on economic growth and employment, and formally integrated the Cohesion policy into its implementation. In spite of the review, the efforts to meet the strategic targets have proven to be insufficient both at the EU and Slovenian levels. While certain progress has been observed, the strategy should be further adjusted, coordinated and supplemented at the national and pan-European levels so that the Lisbon targets can be attained. The article investigates the current stage of the achievement of the targets, using the time-distance method to calculate the time lead or lag in implementing the Lisbon Strategy targets at the European Union and Slovenia levels.

## 1. Introduction

By adopting the Lisbon Strategy, the European Union (EU) set itself an ambitious strategic goal of becoming the most dynamic, competitive, knowledge-based economy in the world and thus bringing prosperity to all people living in the EU. From the very beginning, in 2000 and until today, the strategy has radically changed so as to improve its efficiency and attain the set targets. However, due to the unsatisfactory progress and the ever-widening gap between Europe's potential growth and other economies' growth rates, the EU redefined the main targets and priorities of the Lisbon Strategy during the 2005 mid-term review and formally integrated the Cohesion policy into its implementation. The main targets of the revamped strategy were the creation of new and better jobs and the achievement of a stronger, lasting economic growth.

This article basically aims to present the current state of affairs in the European Union and Slovenia regarding implementation of the Lisbon Strategy targets. The first part delves into the role of the Lisbon Strategy and is followed by a presentation of time distance, whereas the central part discusses - using the application of the Socio-economic Indicators Center (SICENTER)<sup>1</sup> - the time lead or lag in implementing the Lisbon Strategy at the EU and Slovenia levels. The last part touches upon the future of the strategy and summarizes the main findings of the analysis.

## 2. The Lisbon Strategy

The European Union's basic objective is sustainable development stemming from an orientation to balanced economic growth and price stability, a highly competitive economy geared towards full employment and social progress, a high level of environmental protection and improvement in the quality of the environment. The notion of sustainable development is enshrined in the Lisbon Strategy which was devised in response to the new challenges posed by globalization, technological development and ageing of the population. The Lisbon Strategy has a long-term horizon and its principal strategic objective is to make the EU the most competitive, dynamic and knowledge-based economy in the world by 2010 (Lisbon Strategy, 2008).

Soon after the adoption of the Lisbon Strategy in 2000, it was criticized for failing to yield the expected results. The reason for its failure was supposedly the large number of targets and their vagueness, the conflicting priorities and insufficient coordination between the EU member states. In 2005, the European Council met in Brussels for the mid-term review of the strategy and presented a reformed version with two main targets focusing on economic growth and employment. The Presidency Conclusions recapitulated that Europe should in fact rebuild the bases of its competitiveness, boost its growth and productivity potentials and reinforce social cohesion by strongly emphasizing knowledge, innovation and the better valuation of human capital. To meet

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<sup>1</sup> SICENTER is a private, non-profit research institution. Its activities focus on research and consultancy in the field of the analysis of economic and social indicators at various levels of aggregation, with an application to economics, politics, business and statistics. The principal researcher is Prof. Dr. Pavle Sicherl.

these targets, the EU must integrate all national and Community resources – including the Cohesion policy – into a three-dimensional (economic, social and environmental) strategy aimed at better exploiting the synergies within the general framework of sustainable development (European Council in Brussels - Presidency Conclusions, 2005, pp. 1-2).

When it joined the EU in 2004 Slovenia committed itself to implement as many targets of this strategy as possible, using different measures. In 2005, the Government of the Republic of Slovenia adopted Slovenia's Development Strategy (SDS) which redefines the vision and development objectives, while at the same time integrating the Lisbon goals in the national setting. In accordance with the renewed governance of the Lisbon process and based on the SDS, Slovenia drew up a National Reform Program to work towards the Lisbon Strategy targets. The program particularly focused on reforms related to the efficient creation, transfer and use of knowledge, measures boosting the competitiveness of the economy and economic growth as well as reforms geared towards the modernization of the social state and the increase of the employment.

### **3. Calculations of the time distances and leads or lags in meeting the Lisbon Strategy targets**

In the decision-making on economic and social development, an important role is played by the selected conceptual framework, terminology, statistical measures and indicators, all of which improve communication with the public about the nature of the problems, possible alternative scenarios and the positions of individual groups in society or in a broader globalized setting. Access to information should be increased while simplified presentation and information formats should also be developed to enable participation in decision-making by all sectors of society. The notion of time distance and the S-time-distance statistical measure are presented from this broader perspective. While complementing other conventional measures of differences, it also offers vast potential use in the analysis of temporally defined data in comparisons between various units, regressions, models, forecasting and monitoring. On the other hand, the proposed methodology introduces into the literature a new perspective on the level of disparity in development and welfare, thus offering a better analytical framework for evaluations made by individuals and groups at various levels about their relative position in society as well as for new hypotheses on ways to link growth and disparity problems in theory and practice. This link is one of the keynotes of the European development paradigm as expressed in the Lisbon Strategy (Sicherl, 2003, p. 203).

#### **3.1. Time distance**

In general, time distance is the distance in time between two events. S-time distance is a special category of time distance which is defined for a specified level of a variable (indicator). In contrast to statistical measures defined by a specific time unit, the S-time distance is defined for a specific level of variable and measures the distance in time between points when the two units being compared reach a given level of the observed variable. The specified distance in time (e.g. the number of years, months, days etc.) is

used as a dynamic (temporal) measure of the disparity between the two observed units, in the same way that the difference (absolute or relative) at a given point in time is used as a static measure of disparity between the observed units (Sicherl, 2003, p. 188).

When two functions or series with time subscripts are compared for a specified level of variable  $X$ , the difference in time between the obtained values  $t_1$  and  $t_2$  equals the time distance between the two units for a given level of variable  $X$ . For a given level of variable  $X_L$ ,  $X_L = X_i(t_i) = X_j(t_j)$ , the S-time distance between the (i) and (j) units is defined as:

$$S_{ij}(X_L) = \Delta T(X_L) = t_i(X_L) - t_j(X_L) \quad (1)$$

where  $T$  is defined by  $X_L$ . In a particular case,  $T$  can be a function of the level of variable  $X_L$ , whereas as a rule one may expect to obtain several values for time  $T$  when the given level of the variable was achieved at several points in time or time intervals. In such cases the S-time distance becomes a vector whose elements are also linked with time, besides the level of variable  $X_L$ . Generally speaking, the S-time distance between the (i) and (j) units is defined by the level of variable  $X_L$  in a given time ( $t$ ). The following three subscripts are required to characterize the specific value of the S-time distance: (1 and 2) two units which are used to measure the time distance and (3) the level of variable  $X$  (similarly to using the time subscript for characterizing statistical measures of differences). As a rule, a fourth subscript is required to indicate the point in time defining the time distance ( $T_1, T_2, \dots, T_n$ ). The sign of the time distance used for comparing two units is important to distinguish whether we are dealing with a time lead (-) or lag (+) (in a statistical sense and not as a functional relationship).

$$S_{ij}(X_L) = -S_{ji}(X_L) \quad (2)$$

To calculate the S-time distance at macro level, two time series are needed: the time series of the actual values of indicator and the time series of the anticipated target values (line to target). Time distance is therefore the distance between the actual time and the time on the line to the target for each actual value of the variable (Sicherl, 2008, p. 2.):

$$S(X_t) = \text{actual time } t - \text{time on the target line } T \text{ for each actual value of variable } X_t \quad (3)$$

$$S(X_t) = t(X_t) - T(X_t) \quad (4)$$

The introduction of time distance in the analysis of differences is intended to complement, rather than replace, the conventional static methods and measurements as well as to broaden the overall theoretical and methodological approach. The application of the time-distance concept and its operationalization using the S-time-distance statistical measure are instruments complementing the existing methods of analysis, thus enhancing the understanding of the problem and improving two areas, conceptual and analytical. An advantage of the S-time distance lies in the fact that the latter is expressed in time units and is thus understandable by everyone, while another advantage is its ability to leave all previous methods and results (not necessarily the conclusions) unchanged since the time distance adds a new dimension rather than replaces other perspectives (Sicherl, 2003, p. 189).

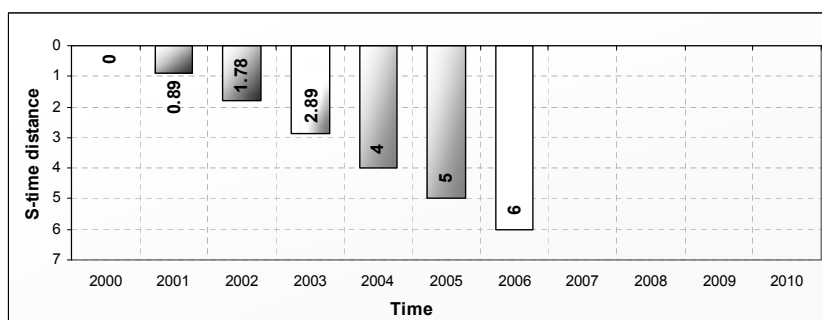
### 3.2. Calculation of the lags and leads in meeting the Lisbon Strategy targets using the SICENTER application

To evaluate time distances and deviations from the Lisbon targets an application by the Socio-economic Indicators Center (SICENTER) was used to calculate the time lead or lag in implementing the Lisbon Strategy targets at the level of both the European Union and individual member states.

Faced with unsatisfactory results after the first few years, the EU revamped the strategy in 2005 and defined as the two main targets the creation of more and better jobs and the achievement of stronger, long-lasting economic growth. The most important two targets of the growth and jobs agenda thus included the achievement of 3% of EU GDP for R&D by 2010 and 70% employment in the EU by the same year. The analysis uses SICENTER's application to calculate time distances and deviations from the abovementioned two Lisbon targets at the levels of the EU and Slovenia as well as from the target of the average 3% annual GDP growth rate in the EU and Slovenia.

#### 3.2.1. Lisbon target: 3% of EU GDP for R&D by 2010

In line with the target, research and development expenditure should rise to account for 3% of EU GDP by 2010. The indicator which most clearly shows the lag is time distance (S-time distance). It is evident that already in the first year of implementation the EU-27 lagged behind the target value by nearly one year and the lag was only increasing (Figure 1). In 2006, the lag already equaled six years and revealed that the most alarming situation in the EU concerned investments in R&D and that R&D investments lagged considerably behind the target. The last three columns (for years 2004, 2005 and 2006) in the figures (1 and 2) showing time distances denote the years in which the actual indicator value was lower compared to the initial 2000 indicator value.

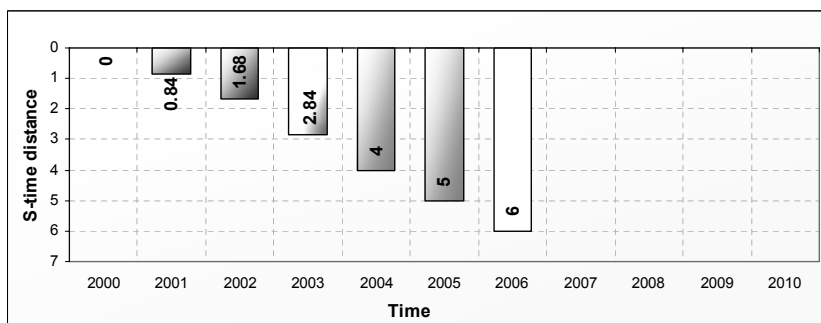


Note: S-time distance: (-) actual ahead or (+) behind the line to target (in years).

**Figure 1:** Time distance of the EU-27 in meeting the target of 3% of EU GDP for R&D by 2010. Source: Eurostat, own calculations.

The Commission and the member states soon realized that the target of 3% of EU GDP for R&D by 2010 was too ambitious, which is why some member states redefined the targets in their National Reform Programs to a more realistic level. For example,

Spain reset the target value at 2% of GDP for R&D (Cyprus only 0.75%), whereas the most developed countries which had already attained the 3% target raised it even higher (Sweden and Finland to 4% of GDP for R&D). Slovenia left this target unchanged. However, due to the corrections Slovenia started pursuing a newly set target of 2.6% of GDP for R&D which is in fact the average of all the redefined target values of the EU-27. The results do not differ much compared to the original target, hence the time distance in 2006 was still six years (Figure 2).

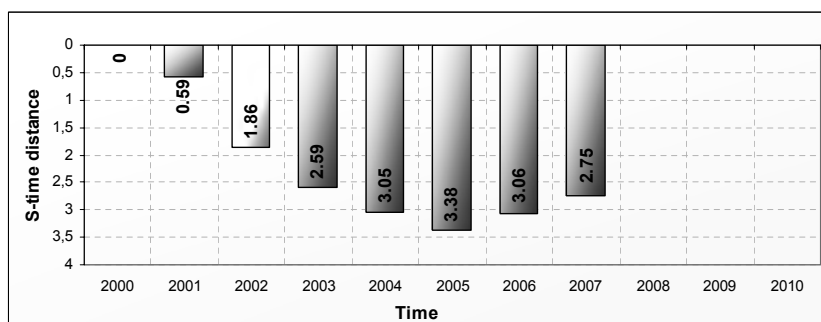


Note: S-time distance: (-) actual ahead or (+) behind the line to target (in years).

**Figure 2:** Time distance of the EU-27 in meeting the target of 2.6% of EU GDP for R&D by 2010. Source: Eurostat, own calculations.

### 3.2.2. Lisbon target: a 70% employment rate in the EU by 2010

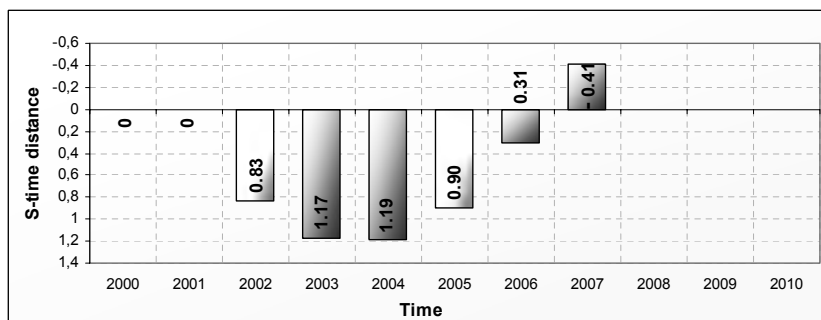
Besides investments in R&D, another key target of the Lisbon Strategy is to attain a 70% employment rate in the EU by 2010. Two sub-targets are enshrined in this target, namely a 60% employment rate for women in the EU and a 50% employment rate for the elderly (aged between 55 and 64), both by 2010. Compared to the targeted GDP share for R&D, the situation regarding the realization of the 70% employment rate target painted a better picture. In 2007, the lag equaled somewhat less than three years and had thus improved slightly after the year 2006 (Figure 3).



Note: S-time distance: (-) actual ahead or (+) behind the line to target (in years).

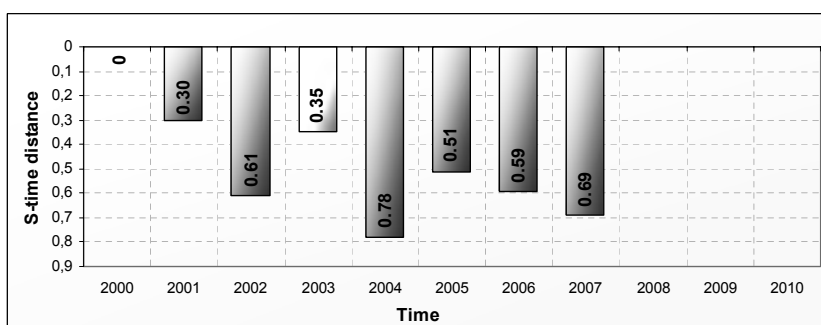
**Figure 3:** Time distance of the EU-27 in meeting the target of a 70% employment rate by 2010. Source: Eurostat, own calculations.

Developments in implementation of the other two sub-targets related to employment give reason for more optimism. In 2007, the targeted employment rate for women in the European Union was attained for the first time, as the time lead was 0.41 of a year (Figure 4). The sub-target of a 50% employment rate of the elderly performed worse as the 2007 lag was 0.69 of a year (Figure 5).



Note: S-time distance: (-) actual ahead or (+) behind the line to target (in years).

**Figure 4:** Time distance of the EU-27 in meeting the target of a 60% employment rate for women by 2010. Source: Eurostat, own calculations.

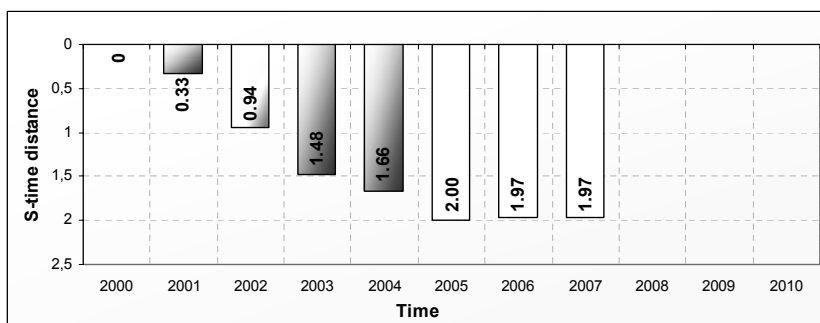


Note: S-time distance: (-) actual ahead or (+) behind the line to target (in years).

**Figure 5:** Time distance of the EU-27 in meeting the target of a 50% employment rate for the elderly by 2010. Source: Eurostat, own calculations.

### 3.2.3. Lisbon target: average 3% annual growth in EU GDP by 2010

Besides the main two targets, the strategy also mentions the target of average 3% annual growth in GDP. The fact that the target was defined only vaguely, without any numerical value for 2010, made measurement of the time distance slightly difficult. The line to target was defined by assuming that 2000 was the basis year with the value 1; consequently, the average 3% annual growth in GDP in ten years yielded the targeted value of 1.34. It can be established that the EU-27 lagged behind the target values from the very beginning of the Lisbon Strategy implementation, whereas Figure 6 shows that in the last three investigated years the lag leveled off at about two years. In 2007, the time distance was 1.97 years.



Note: S-time distance: (-) actual ahead or (+) behind the line to target (in years).

**Figure 6:** Time distance of the EU-27 in meeting the target of average 3% annual growth in GDP. Source: Eurostat, own calculations.

A recapitulation of the targets in the table (Table 1) shows that if the two basic targets (employment rate and the GDP share for R&D) are compared, the odds are in favor of the 70% employment rate target. In 2006 the lag behind the target value at the EU-27 level was nearly three years smaller compared to the targeted 3% GDP for R&D. It is interesting that the lags in the share of GDP for R&D are practically the same in terms of the number of studied EU member states (EU-15 and EU-27); however, there are bigger differences in the employment rate as a result of the high dispersion of the results of the 27 members. Differences can also be observed in implementation of the target of an average 3% annual GDP growth rate, where the lags of the EU-15 exceeded those of the EU-27, which is understandable given that less-developed, newly-associated countries are growing faster on average than the old member states.

**Table 1:** Monitoring the implementation of the Lisbon Strategy in the time dimension

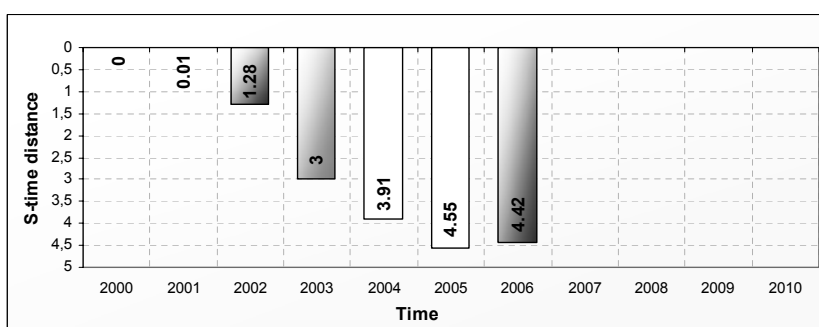
Targets	S-time distance in years							
	2000	2001	2002	2003	2004	2005	2006	2007
<b>Employment rate</b>								
EU-27	0	0.59	1.86	2.59	3.05	3.38	3.06	2.75
EU-15	0	0.05	0.73	1.58	1.95	2.02	1.94	1.42
<b>% of R&amp;D in GDP</b>								
EU-27	0	0.89	1.78	2.89	4	5	6	nd
EU-15	0	0.89	1.77	2.89	4	5	6	nd
<b>Annual GDP growth rate</b>								
EU-27	0	0.33	0.94	1.48	1.66	2.00	1.97	1.97
EU-15	0	0.37	1.00	1.58	1.81	2.28	2.36	2.30

Note: S-time distance: (-) actual ahead or (+) behind the line to target (in years); nd - no data. Source: Eurostat, own calculations.



### 3.2.4. Lisbon target for Slovenia: 3% of GDP for R&D by 2010

Similarly to the trend witnessed by almost all EU member states, Slovenia is also lagging behind in terms of investments in research and development. In fact, this lag behind the target value existed from the outset but the positive aspect is that a slight improvement was recorded in the last year under discussion and that the lag is smaller than the EU-27 average. The 2006 lag at the EU level was six years and in Slovenia it was 4.42 years (Figure 7). Unlike some other countries, Slovenia failed to set in its National Reform Program a redefined, more realistic target which would be more easily attainable by 2010. The column corresponding to year 2003 in figures (7, 8 and 9) showing time distances denote the year in which the actual indicator value was lower compared to the initial 2000 indicator value, in the Slovenian case.

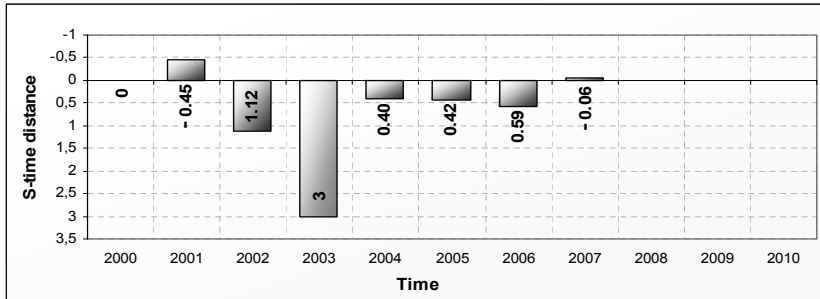


Note: S-time distance: (-) actual ahead or (+) behind the line to target (in years).

**Figure 7:** Time distance of Slovenia in meeting the target of 3% of GDP for R&D by 2010. Source: Eurostat, own calculations.

### 3.2.5. Lisbon target for Slovenia: a 70% employment rate by 2010

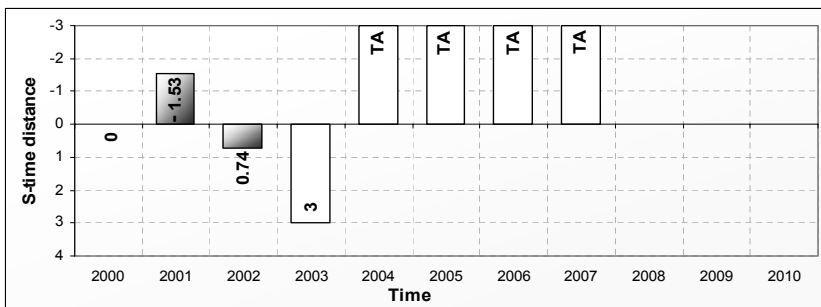
At the EU level the average 2007 lag of the actual employment rate behind the targeted one was slightly less than three years. In Slovenia, the situation in employment is much better. In the 2004-2006 period a small lag was observed; however, in regard to employment Slovenia moved close to the line of the target and even exceeded it in the last year studied. The 2007 time lead was 0.06 of a year which was much better compared to the EU-27 level. Should there be no upheavals in the global economy Slovenia could be well on the road to achieving this Lisbon target in 2010.



Note: S-time distance: (-) actual ahead or (+) behind the line to target (in years).

**Figure 8:** Time distance of Slovenia in meeting the target of a 70% employment rate by 2010. Source: Eurostat, own calculations.

One of the sub-targets of the Lisbon Strategy related to employment is the attainment of a 60% employment rate for women by 2010. In this area, Slovenia was close to the target value already prior to implementation of the strategy and therefore this sub-target was perhaps insufficiently ambitious for Slovenia in contrast to the targeted GDP share for R&D. Despite to a big lag in 2003, which was mainly due to the use of new statistical data capture methodology, Slovenia succeeded in exceeding the target value already a year later, as shown in Figure 9, and the trend continued in subsequent years.

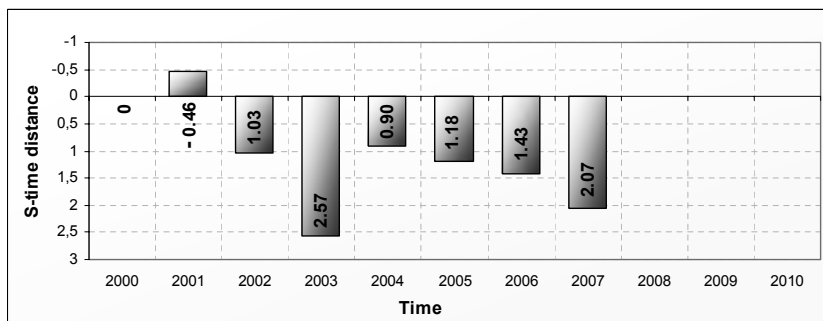


Note: S-time distance: (-) actual ahead or (+) behind the line to target (in years); TA- target already achieved.

**Figure 9:** Time distance of Slovenia in meeting the target of a 60% employment rate for women by 2010. Source: Eurostat, own calculations.

The second sub-target is a 50% employment rate for the elderly, aged between 55 and 64, by 2010. The data revealed a less favorable picture compared to other employment-related targets. The employment rate for the elderly was increasing as of 2004; however, the lag behind the target value was also on the rise which proved that the growth was simply not fast enough. Figure 10 shows that the lag in the last four studied years was indeed smaller than in 2003 but still had a negative trend. The time distance in 2007 was

2.07 years, which means that the level attained by Slovenia in 2007 should have been attained already 2.07 years earlier. The negative trend in employment of the elderly raises concern and, if there is no positive reversal in the final years, the Lisbon target will not be achieved by 2010. Of all three targets related to employment, the segment of the elderly came off the worst and therefore more attention has to be paid to the life-long learning and active ageing strategies.

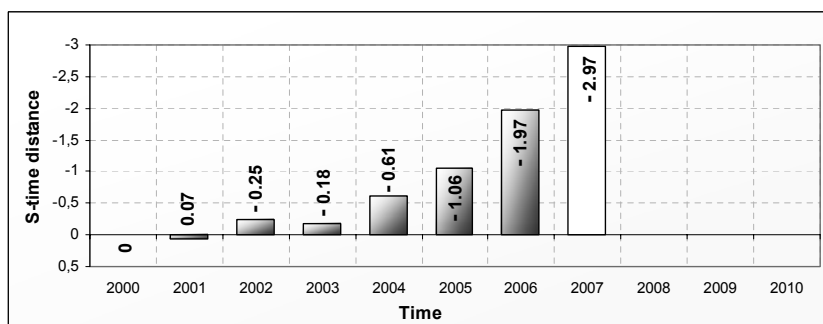


Note: S-time distance: (-) actual ahead or (+) behind the line to target (in years).

**Figure 10:** Time distance of Slovenia in meeting the target of a 50% employment rate for the elderly by 2010. Source: Eurostat, own calculations.

### 3.2.6. Lisbon target for Slovenia: average 3% annual growth in GDP by 2010

As a recently associated and young member state, Slovenia has achieved good results in terms of its economic growth compared to the EU average. From the very beginning, the actual values exceeded the targeted ones which is also reflected in the time-distance results (Figure 11). In 2007, Slovenia recorded a nearly three-year (2.97) time lead which increased over the last four years under study.

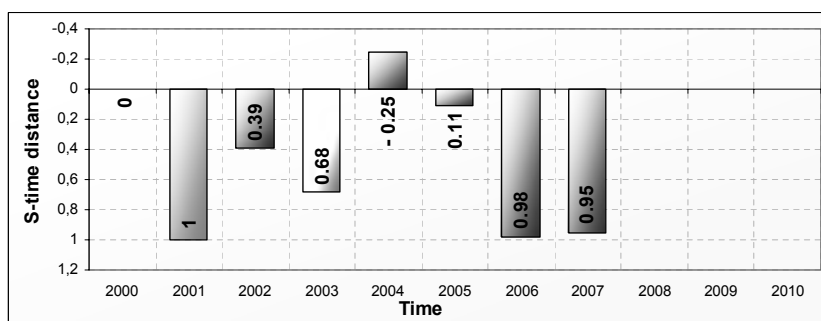


Note: S-time distance: (-) actual ahead or (+) behind the line to target (in years).

**Figure 11:** Time distance of Slovenia in meeting the target of average 3% annual growth in GDP. Source: Eurostat, own calculations.

### 3.2.6.1. Economic development targets of Slovenia

Given that SDS also includes the economic development target to achieve or exceed the average level of economic development of the EU (measured by GDP per capita in purchasing power parity) by 2013, we were also interested in establishing the time distance for this target. Slovenia's economic development is expressed as the percentage of the average GDP p.c. of the European Union and, in line with the target, it should reach 100% in 2013. The analysis used the value on the line to target in 2010 as the target value since the period under scrutiny was again 2000-2010. The target value for 2010 was thus 95.34. The column corresponding to year 2001 in figure 12 denotes the year in which the actual indicator value was lower compared to the initial 2000 indicator value, in the Slovenian case.



Note: S-time distance: (-) actual ahead or (+) behind the line to target (in years).

**Figure 12:** Time distance of Slovenia in meeting its economic development target.

Source: Eurostat, own calculations.

It can be established that, with the exception of the year 2004, Slovenia lags behind the line to target. Of great concern is the deterioration in the last two years under study as the 2007 lag was almost one year (Figure 12). However, when discussing this indicator as a measure of Slovenia's performance one must be aware that approximation to the average value of EU economic development is not necessarily a consequence of the fast growth in Slovenia's GDP p.c. since the inclusion of new, less-developed countries such as Romania and Bulgaria decreases the average level of development of the EU and thus enhances Slovenia's approximation to the set target.

The results of the time distance in Slovenia's implementation of its economic development target are not too encouraging. Moreover, in the period characterized by the global economic crisis and slower, even negative economic growth, how Slovenia copes with the recession will be particularly important because it will have to reverse the negative trend to achieve the set target.

### 3.2.7. Analysis of the results

If the results of the analysis of the discussed targets for Slovenia are recapitulated in a table (Table 2) together with the EU-level results, a much clearer picture emerges

about Slovenia's position vis-à-vis other EU member states. Besides the EU-27, the table also shows the results at the EU-15 level, encompassing old and generally more developed member states, and offers a better basis for comparison for a young state such as Slovenia.

**Table 2:** Time distances of Slovenia, the EU-27 and the EU-15 in meeting the Lisbon Strategy targets

Targets	S-time distance in years							
	2000	2001	2002	2003	2004	2005	2006	2007
Target 1								
EU-27	0	0.89	1.78	2.89	4	5	6	nd
EU-15	0	0.89	1.77	2.89	4	5	6	nd
SLO	0	0.01	1.28	3	3.91	4.55	4.42	nd
Target 2								
EU-27	0	0.84	1.68	2.84	4	5	6	nd
EU-15	0	0.83	1.66	2.83	4	5	6	nd
SLO	0	0.01	1.28	3	3.91	4.55	4.42	nd
Target 3								
EU-27	0	0.59	1.86	2.59	3.05	3.38	3.06	2.75
EU-15	0	0.05	0.73	1.58	1.95	2.02	1.94	1.42
SLO	0	0.45	1.12	3	0.40	0.42	0.59	-0.06
Target 4								
EU-27	0	0.00	0.83	1.17	1.19	0.90	0.31	-0.41
EU-15	0	-0.59	-0.64	-0.33	-0.70	-1.22	-1.72	-2.51
SLO	0	-1.53	0.74	3	TA	TA	TA	TA
Target 5								
EU-27	0	0.30	0.61	0.35	0.78	0.51	0.59	0.69
EU-15	0	0.07	-0.20	-0.51	-0.19	-0.51	-0.47	-0.40
SLO	0	-0.46	1.03	2.57	0.90	1.18	1.43	2.07
Target 6								
EU-27	0	0.33	0.94	1.48	1.66	2.00	1.97	1.97
EU-15	0	0.37	1.00	1.58	1.81	2.28	2.36	2.30
SLO	0	0.07	-0.25	-0.18	-0.61	-1.06	-1.97	-2.97

Note: Target 1: 3% GDP EU for R&D by 2010; Target 2: 2,6% GDP EU for R&D by 2010; Target 3: EU employment rate of 70% by 2010; Target 4: EU employment rate for women of 60% by 2010; Target 5: EU employment rate for older workers of 50% by 2010; Target 6: 3% annual EU GDP growth; TA - target already achieved; nd - no data.

Source: Eurostat, own calculations.

It is interesting that the time-distance results for the target of the GDP share for R&D are practically the same at the level of both the EU-27 and the EU-15. One would expect the lag of the 15 member states to be smaller; however, the Mediterranean countries Spain, Greece, Italy and Portugal reduce the average value, whereas Sweden and Finland stand out for investing nearly 4% of their GDP in research and development. Slovenia's lag behind the target of 3% of GDP for R&D is thus smaller than the EU-27 and EU-15 average. In 2006, the gap between the EU and Slovenia equaled more than 1.5 years. It must also be considered that the inclusion of new, less developed countries (with Bulgaria and Romania being the last of all) decreases the average value at the EU level and further widens the gap. This, of course, should not provide a justification for big lags, with the exception of Sweden and Finland which both achieved the set goal, whereas all other member states lagged behind the line to target and nothing seems to reverse this situation. It is evident that investments in research and development are insufficient in practically all member states and that progress is too slow. On the other hand, this incapacity of the countries to pursue the set target shows that the target was too ambitious. When the Lisbon Strategy was adopted the state of affairs in research and development in the EU was not assessed realistically, nor was the readiness of the member states to improve this situation. The gap between the actual and target values thus widens over the years, which is why a number of countries put more realistic national targets in their National Reform Programs - even though they are still lagging behind them. In the case of Slovenia the time distances in targets 1 and 2 are the same due to the fact that the original target was not corrected.

It has to be noticed that Slovenia performs better than the EU average but the lags behind the target value are still worrying. In 2006, the lag was 4.42 years. It is clear that the target of 3% of GDP for R&D by 2010 will not be achieved; however, it is important that gross domestic expenditure for research and development as a share of GDP has increased since 2004, the biggest progress being recorded in 2006 when the share equaled 1.59% of GDP and the lag, compared to the year before, decreased for the first time (from 4.55 to 4.42 years). On the other hand, R&D expenditure as a share of GDP in the EU member states has not increased on average which, in turn, was reflected in the ever-widening lag. The trend in Slovenia in the last period was positive but the progress was not fast enough which is why Slovenia has a lot of work ahead of it in the years to come. It is of the utmost importance for Slovenia to formulate a research and innovation strategy and to strengthen its efficient implementation, part of which includes an evaluation of the adopted measures and their results. The clarity and simplicity of the time-distance method make it an important link in the evaluation chain as this method clearly illustrates the countries' actual state of affairs in different areas, including the share of investments in R&D.

As regards to the employment rate targets the results are more reassuring. A closer look at the time distance of the target of a 70% employment rate in the EU by 2010 (Target 3) reveals that Slovenia performed far better in this indicator than the EU average. The gap had widened until 2003 when it reached its nadir, but afterwards it was less than one year. In 2006 the lag was 0.59 of a year, whereas the latest data show that in 2007

it turned into a lead when the actual employment rate exceeded the targeted one. This puts Slovenia well on the road to achieve or even exceed the 70% employment rate target in 2010, provided that the global economy does not witness any upheavals. As regards the employment target, the differences in time distances are considerable and depend on the size of the EU (EU-15 or EU-27) – quite the contrary to the GDP share for the R&D target – whereas the lags are particularly big at the EU-27 level and slightly smaller at the EU-15 level. This can be ascribed to the fact that the results of the 27 countries are highly dispersed. By 2007, seven member states had already met the set target, six were nearing the line to target and as many as 14 lagged behind, with eight of them lagging behind by at least four years.

Slovenia's best results were recorded in women's employment rate as the 60% target value had already been achieved in 2004 and increased further in the next four years. In the EU-15 the average actual value was higher than the targeted one, whereas in the EU-27 the time lag turned into a lead for the first time in 2007. Hence it can be concluded that by 2010 this target will be achieved if the upward trend continues. By 2007 as many as 15 countries had achieved the set target, whereas six countries lagged behind by at least five years. As regards the targeted employment rate for the elderly, Slovenia performed poorer than the EU, lagging behind both the EU-15 and the EU-27. The employment rate for the elderly in Slovenia indeed rose but its pace was too slow which is why the time distance kept increasing and reached 2.07 years in the last year studied. It is obvious that the time-distance method offers another perspective on the efficiency of meeting the targets as, judging from the positive growth in the employment rate for the elderly, one could easily conclude that the implementation was nearing the target when in fact the time distance reveals an ever larger lag. The negative trend and the widening gap in the last three years under discussion augur ill for Slovenia in its achievement of the target in 2010 and, given the current situation in the world economy, a substantial increase in the lag can be expected.

As regards the targeted average of 3% annual EU GDP growth rate, it can be established that the time-distance results are much more favorable at the Slovenian level than at the EU-27 and particularly EU-15 levels. In 2007, the lag behind the target value was nearly two years at the EU-27 level, while Slovenia was nearly three years ahead in the same year. This is in line with the expectations since the average economic growth in Slovenia in the 2000-2007 period was above and in the EU-27 below 3%. In the mentioned period, Slovenia's economic growth recorded an average rate of 4.4% whereas those at the EU-27 and EU-15 levels were 2.4% and 2.2%, respectively. Considering that the goals of the Cohesion policy and the Lisbon Strategy also include a reduction in development disparities between countries and regions and thus the achievement of convergence, the Slovenia's result met the expectations because the less developed countries must grow faster than the developed ones to draw closer or catch up with them.

The results of the calculation of the time distances generally corroborate the expectations and the estimates prepared on the basis of statistical indexes. An important difference between indexes and time distances is demonstrated by comparing the gap width, as in some cases the time distances paint a different picture due to the fact that the ability

to move close the targets differs by area. The perception of the differences expressed as time distance differs from the perception of differences expressed as indexes, as the calculation of gaps expressed in time units (years) is clearer and more comprehensible and easier to present to all publics.

#### **4. Conclusions**

At the EU level, many initiatives and proposals were put forward to help achieve its goal of becoming the most competitive economy in the world. These served as a basis for drawing up the Lisbon Strategy, which was reviewed in 2005. The strategy was mainly implemented as a counterbalance to the increasing lag behind the US economy and the lurking danger of the growing Asian economy. Despite the 2005 mid-term review, it has failed to yield the anticipated results and, to call a spade a spade, was lagging behind them. We measured the size of these lags behind the Lisbon Strategy targets by using an application of the Socio-economic Indicators Center (SICENTER) which enables the calculation of time distances and deviations from the targets. The main advantage of using the time-distance method is its clarity and understandability and the fact that the results of the analysis (not necessarily the conclusions) remain unchanged, as the time distance adds a new dimension to other approaches rather than replaces them. The relaunched strategy set new main targets within the growth and jobs agenda, namely the achievement of 3% of EU GDP for R&D by 2010 and a 70% employment rate in the EU by the same year. Using SICENTER's application, time distances were calculated along with deviations from the two main targets, their sub-targets and the target of average annual GDP growth at the levels of the EU and Slovenia.

The empirical results show that investments in research and development were insufficient in practically all member states and the progress was too slow. In 2006 the time distance at the EU-27 level was six years, whereas Slovenia scored slightly better with a lag of four years. It can be concluded that at the time the Lisbon Strategy was adopted the state of affairs in the EU's research and development and, above all, the readiness of the member states to improve this situation were not assessed realistically. The member states' incapacity to pursue the set target in itself shows that the target was too ambitious. For this reason, many member states put more realistic national targets in their National Reform Programs, yet they are still lagging behind. As regards the employment rate targets, the results are better mainly in implementation of the employment rate targets for women and the elderly in the EU. In 2007 the time distance of the target of a 70% employment rate by 2010 was slightly less than three years at the EU level, whereas in Slovenia the lag had turned into a lead for the first time. With the 2007 lead of nearly three years, Slovenia's implementation of the target of an average 3% annual growth rate in GDP was highly encouraging, whereas at the EU level the results were much poorer with the lag behind the target value mainly being a consequence of the slower growth in the old member states. The calculation of the 2007 time distance in Slovenia's implementation of the economic development target shows a nearly 1-year lag. However, with a positive reversal in the years to come Slovenia could achieve or even exceed the average level of EU economic development by 2013.



The results also show that both the EU and Slovenia lagged behind the Lisbon targets. It can be concluded that the strategy targets at the EU level will most likely not be achieved by 2010 because the lag is too big. Similar holds for Slovenia which is in a better position compared to the EU average, especially as regards the growth and employment rates; however, the global recession and hence slower economic growth and higher unemployment will thwart the achievement of the targets or even render it impossible. The EU should therefore accordingly adapt its existing policies and instruments as well as build on new policies so as to respond more effectively to the concerns of people dealing with the negative consequences of the economic and social changes. Within this framework, a bigger role should be attributed to the social dimension, flexicurity policies, energy and climate changes as well as education and professional qualifications as elements of modernizing European markets, promoting innovation and providing new possibilities for citizens in the knowledge-based society.

Nevertheless, we should be aware that the Lisbon Strategy cannot prevent natural economic cycles from occurring. Though it cannot prevent external shocks, it can boost Europe's potential in the structural reforms and contribute to economies becoming more flexible and resistant. Therefore, in a time of financial and economic crisis it is vital that the implementation of the strategy proceeds in deeper layers so as to mitigate the effects of the recession. Throughout its history, the European Union has overcome a series of crises and always succeeded in becoming even stronger and more united. The current global economic crisis creates another window of opportunity for the EU to demonstrate its unity and produce an even more sophisticated and efficient strategy for the future.

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