State of the Future Index Results: Hungary

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4. SOFI Results: Hungary

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Historic SOFI

Hungary's SOFI starts from 0.78 in 1995, meaning that the average yearly growth rate of the index between 1995 and 2014 was 1.3%, which shows a considerably slower progress than the PPS GDP/capita (4.2%). The SOFI climbed up to 0.98 in 2008, but the global economic crisis pushed it lower, and it was only in 2014 that it could rise above the 2008 level. Using a different approach, the 1995-2014 period can be divided into three stages: 1995-2001, when there was a relatively quick improvement in the index value, reaching an annual rate of 2.8%; 2002-2008, when there was a major slowdown, with an annual growth rate below 1%; and finally the 2009-2014 period during which the SOFI first dropped, then climbed back, but the overall value was similar in 2014 to the 2008 value. The first phase's dynamic growth could have been caused by the correction process, when some of the indicators returned back to normal after the shock of the transition period, and the development rate experienced in phase 2 is probably closer to the long term Hungarian trend.

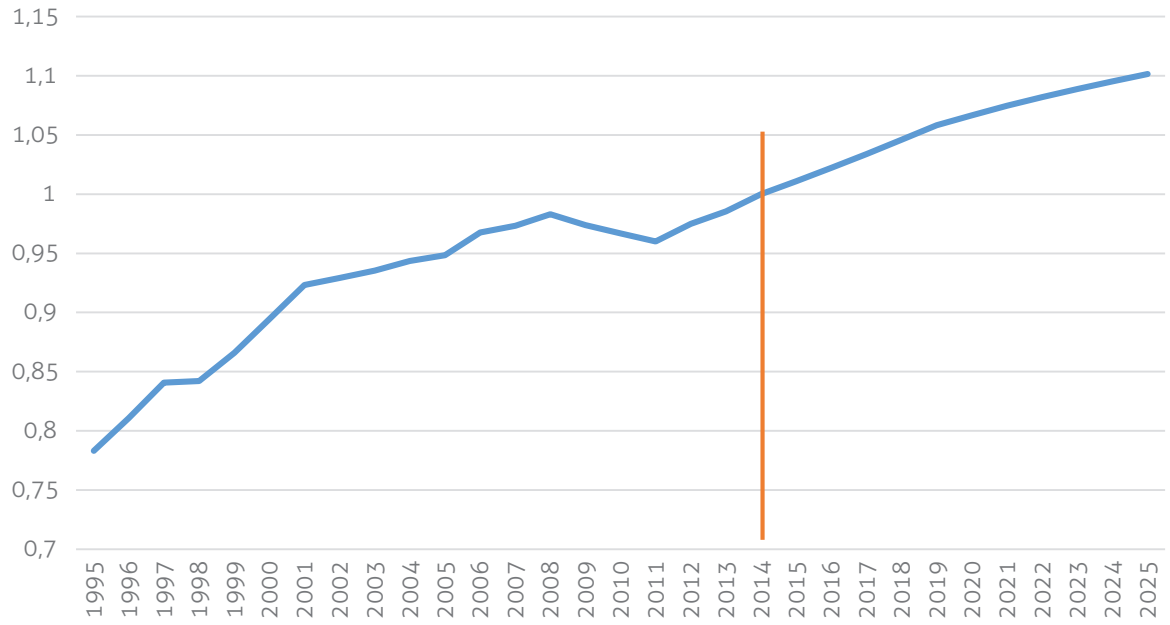

Figure 1. Historic and extrapolated SOFI for Hungary (source: own calculations)

If we take a closer look at the individual components of the index, the non-surprising general trend was that there had been a steady drop in the value of "bad" indicators, while most of the "good" indicators showed some growth. The most important outliers from this general trend are the following:

- there has been a quick improvement in renewable energies (10.8% yearly growth) and internet users (27.9% yearly growth), but both of those variables started from very low values;

- the number of people living from $1.25 or less has also dropped at a great pace (-14.7%/year);

- the three indicators where the change has gone against the trend were the population change (an annual 0.2% drop), HIV prevalence (4.6% increase/year), and the general government debt (an average of 1.3% increase every year).

Projected SOFI

The 2015-2025 projected SOFI that is based purely on the extrapolated indicator values shows slow progress (Figure 1). The average annual growth rate is around 0.9%. As the extrapolations were made on the previous 20 years' performance, it does not come as a surprise that the component's general direction of change is the same as it was in the 1995- 2014 period. There are only two exceptions, but neither of them can be interpreted as signals of something significant: according to the projections both the prevalence of HIV and the government debt will drop by a bit.

As there are no major trend changes in the projected SOFI, the threats are likely to remain the same as they were in the early 2000s. Namely, the following two areas seem to be the most threatening for Hungary:

- Population change: according to the projections, Hungary's population will be dropping at an average annual rate of 0.35%. The change however will be intensifying: by 2025 the annual drop will reach 0.4%. As a result of these changes the current Hungarian population of 9.85 million will drop to 9.5 million.

- Life expectancy at birth: although life expectancy continues to improve, the rate of change is very slow, only 0.2% per year. The slow rate of improvement would not necessarily be concerning, the current low value is what makes it a major problem. The life expectancy is projected to rise from 74.8 (2014) to 76.2 (2025), but Hungary will continue to have the worst value among the Visegrad countries. At its current rate Hungary will only reach the 2014 Czech life expectancy (77.85 years) in 2038; the current Austrian figure (81 years; Source: World Bank, World Development Indicators, http://data.worldbank.org/indicator/SP.DYN.LE00.IN) can only be reached in 2062.

SOFI scenarios

As part of our SOFI analysis a Real Time Delphi (RTD) was conducted. The goal of the RTD was to ask our experts how likely they think the projected variable values were, and to identify possible alternative paths for the individual components (by giving values and probabilities to the best and worst case scenarios). Twelve experts participated in the RTD. According to our experts the following extrapolated values are the least likely to come true by 2025:

- General government debt: according to our calculations the government debt will stay at around 78% of the GDP. The average likelihood given to this scenario is only 25%, while

the chance of a better debt/GDP ratio was estimated to be 45%.

- R&D expenditure: although the analysis projected the R&D expenditures to reach 1.8% of the GDP by 2025 (not a particularly high value), only a 25% chance was given to this value, while a worse outcome got a 45% chance.

- Seats held by women: Hungarian politics has traditionally been very masculine, but the RTD suggests that there is almost a 50% chance that the ratio of parliamentary seats held by women will rise.

- GDP per capita: the PPP GDP/capita is projected to climb to USD 28,600 by 2025, rising by an average annual rate of 2.9% in the 2015-25 period. The RTD gives a 28% probability to this outcome, while around 36-36% chances are given to a better and a worse value.

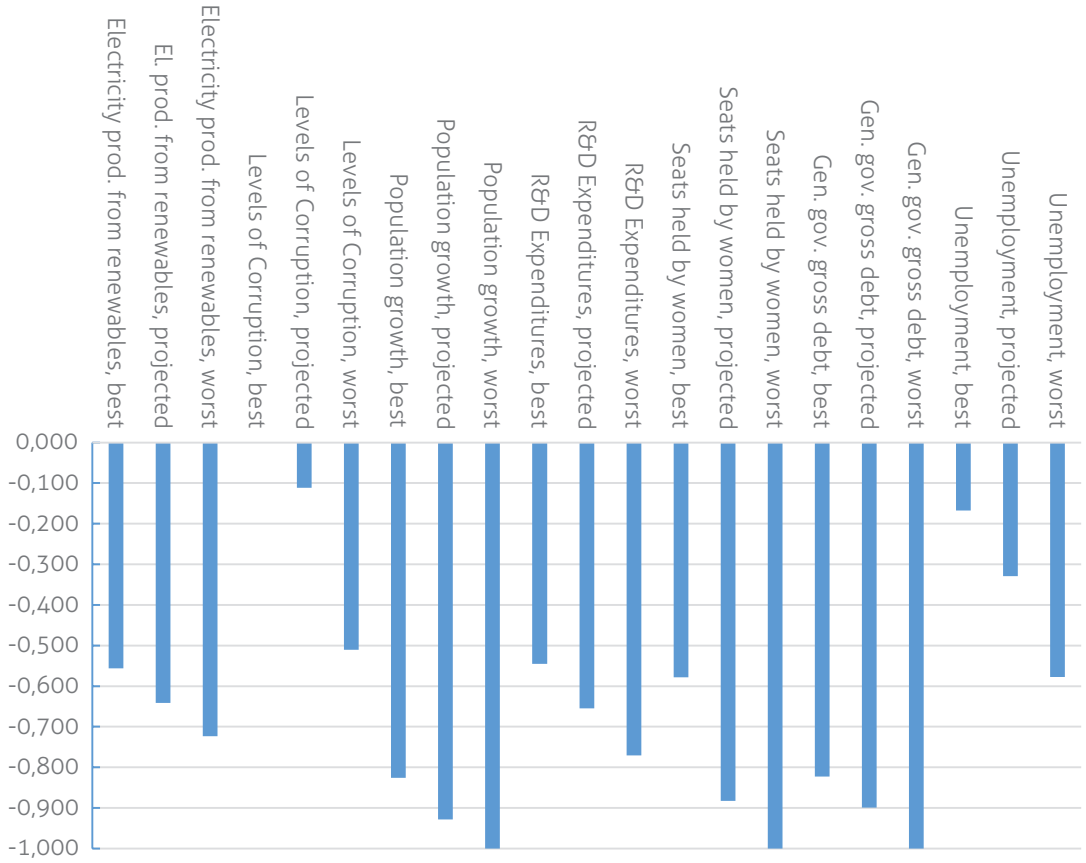

Figure 2. Standardized weighted deviation of indicator values from the maximum level (Source: own calculations)

If we take a look at how far the indicator values are from the optimal (maximum) level (Figure 2), we can identify the areas where there is a great need (and room) for improvement. Figure 2 lists seven components, where the distance from the maximum SOFI value is the greatest. All seven components have three versions, as the best and worst case scenario values obtained from the RTD are also included.

- Electricity production from renewable sources, excluding hydroelectric (% of total): this is a variable which has improved fast for Hungary, yet the 7.6% (or 9.6% if we take the best case value from the RTD) forecasted for 2025 is still way below the 20.5% maximum SOFI level. There is room for further and faster improvement, as Hungary has a significant geothermal energy potential (Szanyi-Kovacs, 2009), and the energy intensity of industrial consumption has also been improving (Kadarne, 2013).

- Levels of Corruption (as measured by Transparency International surveys): corruption is a sensitive issue in the Visegrad countries. Because it is influenced very strongly by cultural characteristics (Rethi, 2012), corruption levels can only be expected to change in the very long term.

- Population growth (annual %): as already mentioned, population change is one of the biggest challenges for Hungary.

- R&D Expenditures (percent of GDP): R&D has been in the focus of EU's Lisbon Strategy (http://ec.europa.eu/archives/growthandjobs_2009/), and its successor, Europe 2020 (http://ec.europa.eu/europe2020/index_en.htm). Hungary's weak results indicate that there is much more to be done.

- Seats held by women in the national parliament (percent of all national members): after the general elections held in 1990, 11.4% of the MPs were women. This initial number was not high in the first place, but over the next 25 years it has become even lower. Some countries have introduced quotas to improve this indicator (EC, 2012).

- General government gross debt (Percent of GDP): the Government gross debt/GDP value currently stands at around 79%. Hungary has included a 50% threshold value in its constitution. Until the threshold is reached, the budget deficit every year has to be limited to a value that ensures the reduction of the debt/GDP ratio.

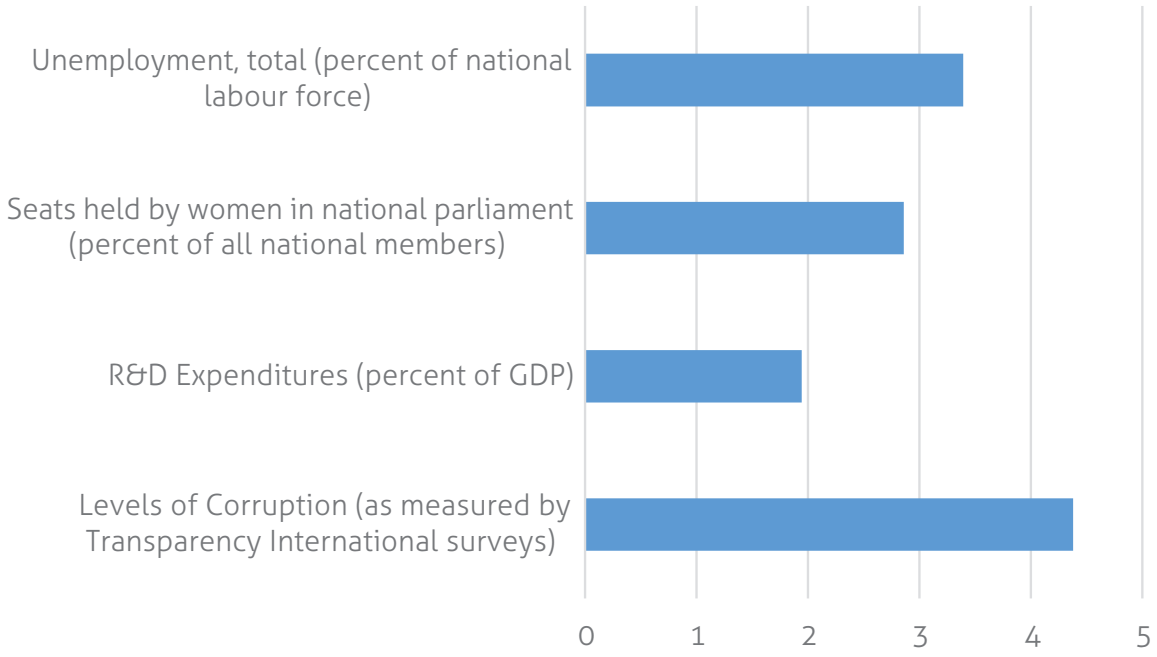

Figure 3. Standardised weighted differences between worst and best case scenarios (Source: own calculations)

Finally, by calculating the standardised weighted differences between the worst and best RTD scenario values, and picking the components where the differences are largest, we can find areas of the greatest risks and opportunities. The four largest-difference components are shown in Figure 3. Corruption, where the distance is the largest, can probably be interpreted more as a risk than an opportunity. Due to its cultural embeddedness, major leaps forward are unlikely to happen, but there is always the risk of slipping towards the worst case scenario given a lack of proper political commitment to transparency.

Unemployment constitutes the second largest best-worst difference. Although the unemployment rate is not the best indicator of labour market conditions, these results can definitely be regarded as a warning sign. Hungary has been doing well recently in lowering the unemployment rate, however the country still faces two great challenges concerning workers at the opposite ends of the labour force spectrum: creating jobs for the unskilled, and offering jobs with competitive wages to the best educated.

Policy implications

Figure 4 shows the possible outcomes of the worst, middle-of-the-road and best scenarios with the help of a Monte Carlo simulation. The spread of the different simulated scenario outcomes is between 0.98 and 1.2. In order to get closer to the higher end of the Figure 4 spread, the following areas should be in the focus of policy makers:

- Population growth. Several tax incentives (Bartha, 2014) have been introduced to boost the Hungarian birth rate, yet, despite all the effort there are no signs of improvement. Given the fact that earlier incentive policies had also failed to turn the trends

permanently, one can assume that such direct actions do not have a long-term effect on the birth rate. In such circumstances migration seems the only alternative, and a stricter immigration policy that was suggested by Hungary's prime minister in January 2015, will definitely not help in stopping the population drop.

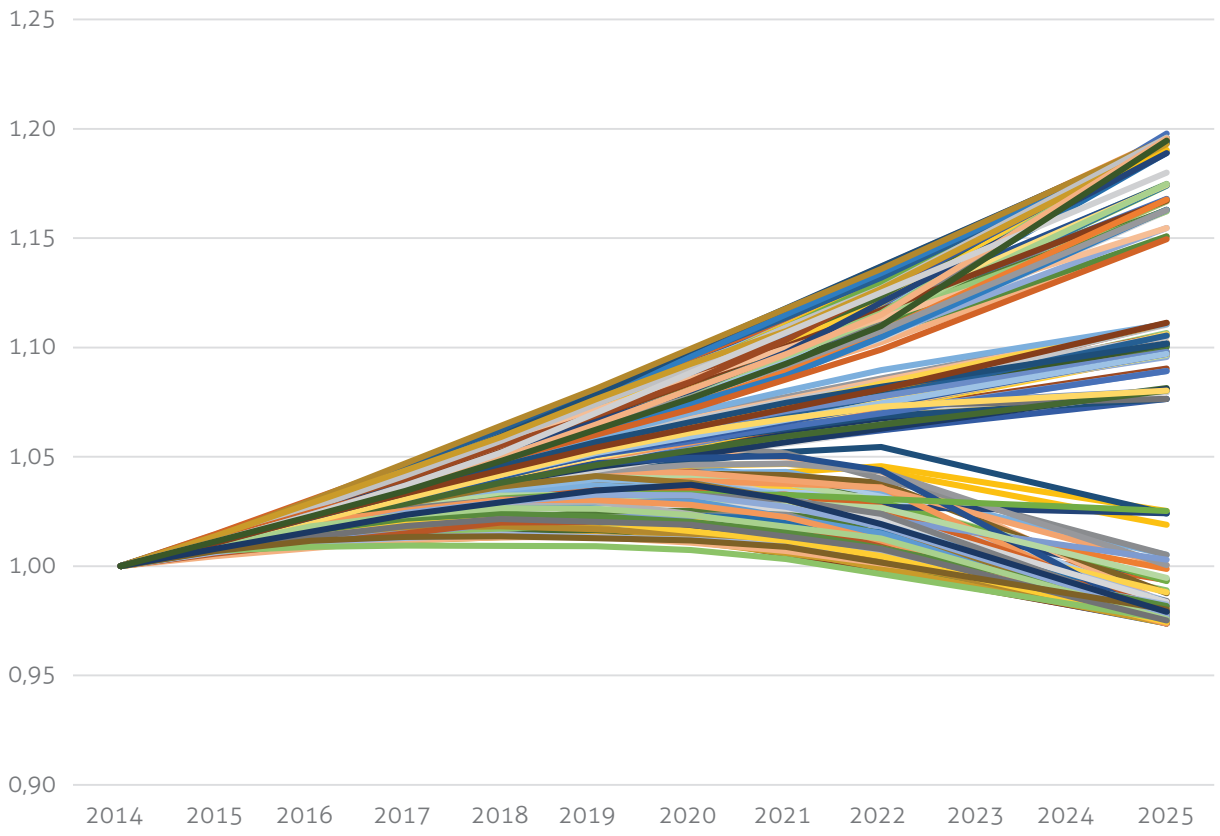

Figure 4. Monte Carlo simulated scenarios based on the RTD results (Source: own calculations)

- Life expectancy. Hungary has the lowest life expectancy among the Visegrad countries, and although it will continue to increase, the rate of improvement is very low. Life expectancy is a very complex indicator, and many factors influence it. Some of them are related to the traditions of the country: e.g. diet, or corruption, which means that patients are expected to pay extra illegal fees. When the latter is combined with long queues, and a non-friendly atmosphere, the result is patients only visiting doctors when it is too late, and so disease prevention cannot be conducted efficiently. The level of medical education (traditionally high in Hungary), and the competitive wages that keep the skilled labour force in the Hungarian health-care system also contribute to life expectancy.

Low life expectancy is connected with poverty: the residents of underdeveloped Hungarian micro-regions live 3-4 years less than those living in richer regions (Csite-Nemeth, 2007).

- Renewable energies. Although Hungary has a great geothermal energy potential, greater state commitment is needed, if we want to exploit it. Experience shows that pure market-based efforts alone cannot lead to dynamic development of the geothermal energy sector (Kis-Orloczki, 2014).

- Research & Development. The latest Hungarian strategy for higher education puts great emphasis on university-business cooperation (HG, 2014), which is a welcome shift in education policy. It is still unanswered, however, how basic research will be funded in the country.

- Government debt. Improvement in this field is almost guaranteed, because of the constitutional commitment to the 50% threshold in the debt/GDP ratio.

- Corruption. Quick improvement is very unlikely, however there is a clear danger that the levels of corruption might rise. A strong commitment to transparency at all levels of government is needed to sustain and slowly improve on the current level.

- Unemployment. The creation of jobs is especially important at the two ends of the labour force spectrum: for unskilled labour, and for highly educated people.

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