

The European Union and the Sustainable Development Goals





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1. Introduction

Since 2018, the Italian Alliance for Sustainable Development (ASviS) regularly monitors the progress of European countries towards the achievement of the 17 Sustainable Development Goals¹ through the selection of over 70 elementary indicators and their aggregation into 16 composite indicators. In this document, ASviS presents the composite indicators² to measure the performance of the European Union and of its individual countries with respect to the SDGs over the years 2010-2017. This analysis³ is based on the most recent SDG indicators published by Eurostat and allows an assessment of progress and a comparison of the relative performance of all European countries with respect to the EU average (see Appendix).

The composite indicators were developed using the Adjusted Mazziotta-Pareto Index (AMPI) method, which was also adopted by the Italian Statistical Institute (Istat) to develop the composite indicators for the Equitable and Sustainable Wellbeing (BES) framework. In particular, a composite indicator was developed for 16 out of the 17 SDGs, while for Goal 6 it was impossible to develop one due the lack of data. The European figure for 2010 represents the reference value (equal to 100), while the evolution of the indicators shows the improvement (if the value rises) or the deterioration (if it falls) of the situation compared to the value for 2010. Note that if a country-specific composite indicator shows improvement, it doesn't necessarily mean that the country is on a path that will allow it to meet the Goals by 2030, but that the country is moving in the right direction. The same happens for the EU indicators, built as averages of national indicators. Therefore, the EU indicators do not take into account the "no one left behind" principle, as they do not reflect the distribution (i.e. aspects relating to inequalities) of the phenomenon.

2. Measuring the situation of the European Union with regard to the SDGs

On the basis of these indicators, between 2010 and 2017, the European Union, the world's most advanced area in terms of the Sustainable Development Goals, showed signs of improvement for nine of the 17 Goals (3, 4, 5, 7, 8, 11, 12, 13 and 14), and significant deterioration for two (15 and 17), while for the other five (1, 2, 9, 10 and 16) the situation was largely unchanged. Between 2016 and 2017, improvements were noted for two thirds of the Goals, namely 1, 2, 3, 4, 5, 8, 10, 11, 14 and 16. Goals 7, 9, 12, 13 and 17 were largely stable, while Goal 15 worsened. For most of the Goals, these aggregated results conceal significant disparities in terms of member states' relative performance. An in-depth analysis of the performances of the 28 countries was therefore carried out (see pages below). Looking once again at the medium-term perspective, between 2010 and 2017, the situation improved for the following

- Goal 3 (Ensure healthy lives and promote well-being for all at all ages). The composite indicator shows a positive trend for all elementary indicators. In particular, life expectancy increased in all EU member states, while the death rate from tuberculosis, hepatitis and HIV decreased by 28% and the share of the population with self-reported unmet need for medical examination and care fell by 1.4 percentage points compared to 2010.
- Goal 4 (Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all). The composite indicator shows an uptrend over the observed period. In this case, all European Union countries report an improvement, albeit of varying degrees, determined by significant increases in the share of the population having attained tertiary education (39.9% in 2017, substantially in line with the 40% target of the Europe 2020 Strategy), and in the share of adults participating in learn-



ing (10.9% in 2017, a level that is still far from the Europe 2020 target of 15%). In addition, the rate of early leavers from education and training has fallen significantly, although the pace of improvement has slowed in recent years, which puts the achievement of the Europe 2020 Strategy target of 10% at risk.

- Goal 5 (Achieve gender equality and empower all women and girls). Here too, the indicator shows a steadily rising trend, thanks to the increase in the seats held by women in national parliaments and of those held by women in senior management positions (for which the figure has doubled). It should be noted that the gender employment gap, after decreasing by 1.5 points from 2010 to 2014, remained fairly stable until 2017.
- Goal 7 (Ensure access to affordable, reliable, sustainable and modern energy for all). The composite indicator for this Goal rose continuously until 2014 and then flattened out. The positive trend is due to the increase in the share of renewable energy in gross final energy consumption (in line with the European target of 20% by 2020), and the decrease in household energy consumption per capita. However, with the economic recovery in 2016, final energy consumption has started growing again, and it is highly likely that the European Union's 2020 target will not be achieved. Despite the significant differences in the levels of consumption in the various countries, almost all of them show fairly similar trends.
- Goal 8 (Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all). The indicator for this Goal was stable until 2013, and then rose in subsequent years, thanks to a reduction in the share of young people not in education, employment or training (NEETs), and increases in the investment share of GDP and the employment rate, which is close to the target of 75% set for 2020. Real GDP per capita has also recovered since 2010 and, despite the decline in the two-year period 2012-2013, shows an average annual increase of 1.2% between 2010 and 2017.
- Goal 11 (Make cities and human settlements inclusive, safe, resilient and sustainable). This composite indicator has risen continuously, driven by an increase in the recycling rate of

- municipal waste, lower exposure of the population to air pollution by particulate matter and a reduction in the number of people killed in road accidents, which declined by 21% compared to 2010. At the same time, the indicators relating to housing problems are also improving.
- Goal 12 (Ensure sustainable consumption and production patterns). The trend for this Goal was positive until 2016, thanks to resource productivity and domestic material consumption (up by 12% between 2010 and 2017) and average CO₂ emissions per km from new passenger cars. A slight deterioration has been registered since 2016, due to an increase in the generation of waste (excluding major mineral wastes by hazardousness), while the recycling rate of waste has been stable throughout the period under consideration. Here, too, similar trends were recorded in the various countries of the European Union.
- Goal 13 (Take urgent action to combat climate change and its impacts). The indicator for greenhouse gas emissions shows a steadily rising trend, due to a reduction in the emissions intensity of energy consumption (down by 6% between 2010 and 2017). The latter have fallen by 10% compared to 2010, exceeding the Europe 2020 Strategy target, despite the fact that over the last four years the situation has not shown any significant improvement.
- Goal 14 (Conserve and sustainably use the oceans, seas and marine resources for sustainable development). This indicator saw a steady increase over the period under review, due to an improvement in all the elementary indicators. In particular, since 2013, the indicator for the surface of marine sites designated under the Natura 2000 network has been rising, doubling in just four years.

The situation has worsened for two Goals:

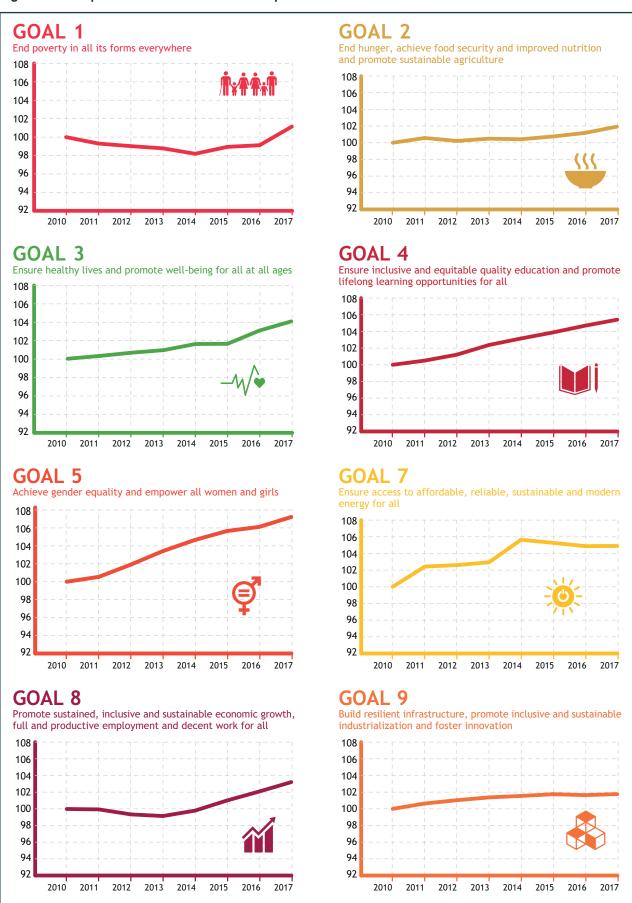
• Goal 15 (Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss). The composite indicator for this Goal has significantly deteriorated. This performance reflects the substantial increase in soil sealing, which grew by about 350 km² per year (an area larger than the surface area of Malta) in the period 2006-2015.

• Goal 17 (Strengthen the means of implementation and revitalise the global partnership for sustainable development). In this case, the indicator's negative performance is affected by decreases in European imports from developing countries and the rise of general government gross debt. This deterioration is only partly offset by the increase in the share of official development assistance (ODA) in gross national income (GNI). In addition, the share of environmental taxes in total tax revenues has declined continuously since 2010 and stood at 6.1% in 2017.

Finally, the situation is stable for these Goals:

Goal 1 (End poverty in all its forms everywhere). The composite indicator for this Goal fell until 2014 due to increases in the population at risk of poverty and social exclusion and in the population living in households with very low work intensity. From 2016, the increase registered for the composite indicator is driven by improvements in all the elementary indicators taken into account.

Figure 1 - Composite indicators for the European Union

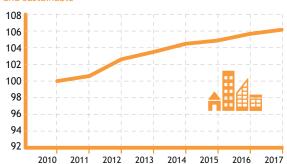




GOAL 10 Reduce inequality within and among countries GOAL 12 Ensure sustainable consumption and production patterns GOAL 14 Conserve and sustainably use the oceans, seas and marine resources for sustainable development

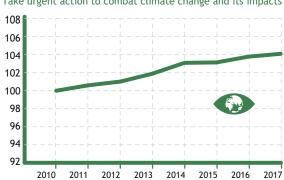
GOAL 11

Make cities and human settlements inclusive, safe, resilient and sustainable



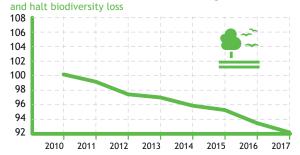
GOAL 13

Take urgent action to combat climate change and its impacts



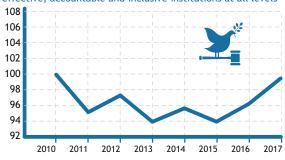
GOAL 15

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation



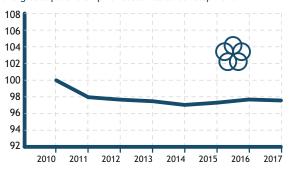
GOAL 16

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels



GOAL 17

Strengthen the means of implementation and revitalize the global partnership for sustainable development



In particular, in 2017 the severe material deprivation index reached its lowest point during the entire historical series. Although the share of people at risk of poverty and social exclusion has decreased to 22.4% between 2016 and 2017, the achieved figure of 113 million people is still a long way off the 96.1 million set for 2020 in the Europe 2020 Strategy.

- Goal 2 (End hunger, achieve food security and improved nutrition and promote sustainable agriculture). The overall situation was stable in the period 2010-2017, affected by minor fluctuations in the elementary indicators that tend to offset each other. Indeed, from 2014 to 2017, the composite indicator grew moderately due to an improvement in agricultural productivity and an increase of areas under organic farming, which rose from 5.1% to 7% of total utilised agricultural area. However, it should be pointed out that ammonia emissions from agriculture continue to rise.
- Goal 9 (Build resilient infrastructure and promote inclusive and sustainable industrialisation and foster innovation). The composite indicator shows a stable trend during the period 2010-2017, since improvements deriving from increases in the share of R&D personnel in the labour force and the gross domestic expenditure on R&D (2.1% in 2017, still a long way off the Europe 2020 target of 3%), are offset by reductions in the share of rail in total freight transport and patent applications to the European Patent Office.
- Goal 10 (Reduce inequality within and among countries). The composite indicator registered a slight downturn until 2014, caused by the worsening of the inequality of income distribution. The slight improvement in 2017 is driven by an increase in purchasing power adjusted GDP per capita and a reduction of the people at risk of income poverty after social transfers.
- Goal 16 (Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels). After a significant reduction, the composite indicator has registered an upturn in the last two years, bolstered by citizens' growing confidence in EU institutions (the European Parliament, the Commission and the European Central Bank), and by a reduction in the death rate due to homicide (0.62 homicides per 100,000 people), which fell by 31% between 2010 and 2017.

3. Disparities between European countries with regard to the 2030 Agenda

As already mentioned, the composite indicator values calculated for the EU are determined on the basis of the level and performance of the elementary indicators relating to the individual countries, which are in turn aggregated, thereby producing composite indicators for each Goal at country level⁴. This approach allows to depict the gaps among countries as measured by the composite indicators, highlighting the disparities between EU Member States.

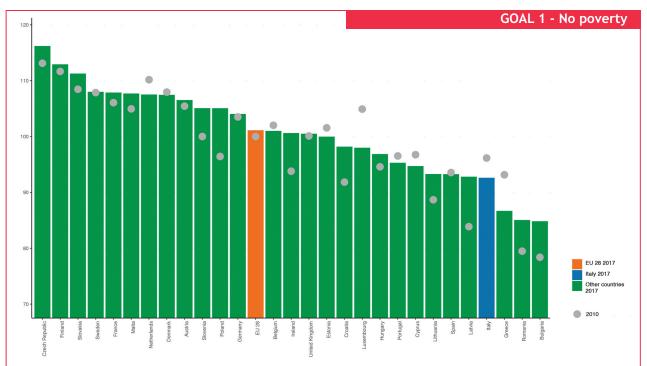
Once the composite indicators for the 16 Goals regarding the individual countries were calculated, a "sensitivity" analysis (also known as influence analysis) was carried out. This allowed for an assessment of whether and to what extent European country rankings change after the elimination of an elementary indicator from the initial set. For each Goal, given the n elementary indicators available, n replications were carried out by eliminating a different indicator each time, and calculating the values of the composite indicators on the basis of the remaining n-1 indicators. For each replication, European country rankings were constructed, calculating the absolute differences in ranking between the position of each country in the original ranking and that in the ranking relating to the *n-1* indicators.

Table 1 shows the elementary indicators used to develop the composite indicators for each Goal, ordered according to their "influence"⁵. Subsequently, the bar charts for each Goal show the differing levels of the composite indicator for the various European countries.

Table 1 - List of elementary indicators used to develop composite indicators for European countries in descending order of "influence" on the performance of the composite indicators

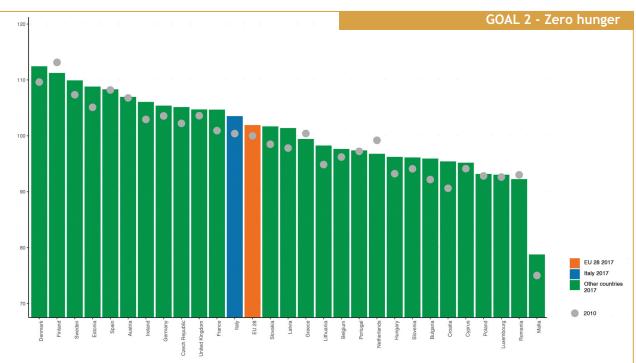
Indicator	Average			
GOAL 1 南南南南				
Population living in a dwelling with a leaking roof, damp walls, floors or foundation or rot in window frames of floor	1,79			
People at risk of income poverty after social transfers	1,64			
In work at-risk-of-poverty rate	1,64			
People living in households with very low work intensity				
Severely materially deprived people	0,71			
People at risk of poverty or social exclusion	0,36			
GOAL 2 W				
Government support to agricultural research and development	2,79			
Area under organic farming	2,64			
Ammonia emissions from agriculture	2,43			
Agricultural factor income per annual work unit (AWU)	2,36			
Agricultural ractor income per annual work unit (Awo)	2,30			
GOAL 3 →√√•				
Self-reported unmet need for medical care	1,36			
Share of people with good or very good perceived health	1,14			
Alchol consumption	1,07			
Death rate due to tuberculosis, HIV and hepatitis	1,07			
Life expectancy at birth	0,61			
Death rate due to chronic diseases	0,50			
CON 4 Mi				
GOAL 4 MI				
Adult participation in learning	2,14			
Tertiary educational attainment	1,93			
Participation in early childhood education	1,79			
Early leavers from education and training	1,57			
Employment rates of recent graduates	1,50			
GOAL 5 €				
Seats held by women in national parliaments	1,86			
Positions held by women as board members	1,79			
Positions held by women as executives	1,64			
Gender pay gap in unadjusted form	1,43			
Gender employment gap	1,36			
Seats held by women in national governments	1,29			
Female/male ratio of inactive population due to caring responsibilities	0,71			
COM 7 ×				
GOAL 7 🎉				
Final energy consumption in households per capita	3,14			
Share of renewable energy in gross final energy consumption	2,79			
Final energy consumption	2,21			
Population unable to keep home adequately warm	2,07			
Energy productivity	2,00			
Primary energy consumption	1,93			
GOAL 8 M				
Real GDP per capita	2,21			
People killed in accidents at work	1,50			
Young people neither in employment nor in education and training	1,43			
Investment share of GDP	1,21			
Employment rate	0,86			
Long-term unemployment rate	0,57			
Long term unemployment rate	0,37			

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Population reporting occurrence of crime, violence or vandalism in their area Population with confidence in EU Parliament	n rate due to homicide	2,07					
Population with confidence in EU Parliament	ation with confidence in EU central bank	1,79					
	Population reporting occurrence of crime, violence or vandalism in their area						
	ation with confidence in EU Parliament	1,07					
Population with confidence in EU Commission	1,07						
GOAL 17 🛞	AL 17 🛞						
General government gross debt	ral government gross debt	5,36					
Shares of environmental taxes in total tax revenues	5,14						
Official development assistance as share of gross national income	4,71						



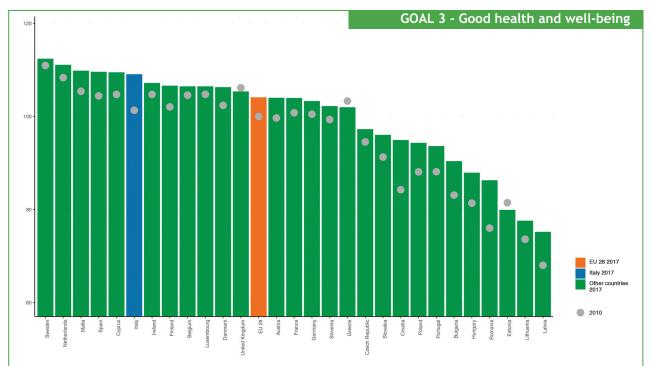
The chart highlights substantial gaps between country performances with respect to Goal 1. There is a 31.4 point difference between the composite indicator value for the best performer (Czech Republic) and that of the country at the bottom of the ranking (Bulgaria). Italy ranks twenty-fourth, ahead of Greece, Romania and Bulgaria. Between 2010 and

2017, individual country trends differ considerably. In terms of "influence", there is a degree of homogeneity between the considered indicators, with the share of the Population living in dwellings with a leaking roof, damp walls, floors or foundation or rot in window frames and of People at risk of income poverty after social transfers being the most relevant.



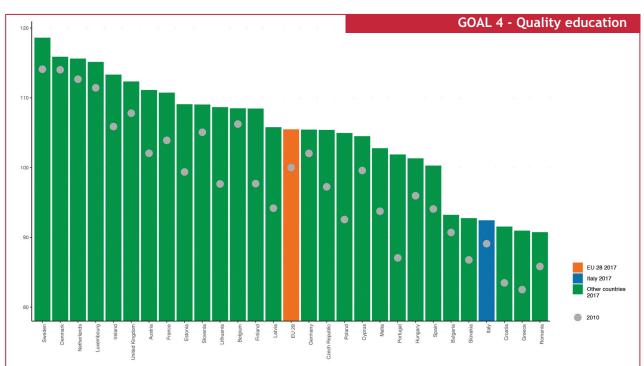
For Goal 2, Denmark is the country with the highest value for the composite indicator, over 33 points above Malta, which ranks last. Italy ranks slightly above EU average.

The indicators that most affect territorial differences are those relating to Government support for agricultural research and development and the Area under organic farming.



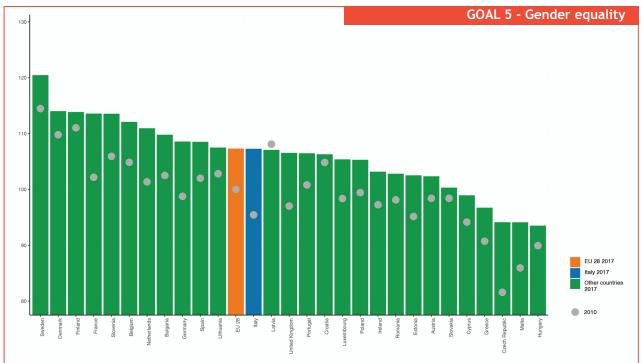
For Goal 3, the gap between the composite indicator for Sweden and Latvia amounts to 37 points, one of the highest. Italy ranks sixth, showing a significant increase compared to 2010, similarly to almost all the countries observed, with the exception of the United Kingdom, Greece and Estonia.

None of the elementary indicators used within the composite indicators has a dominant influence in explaining the disparities among countries.



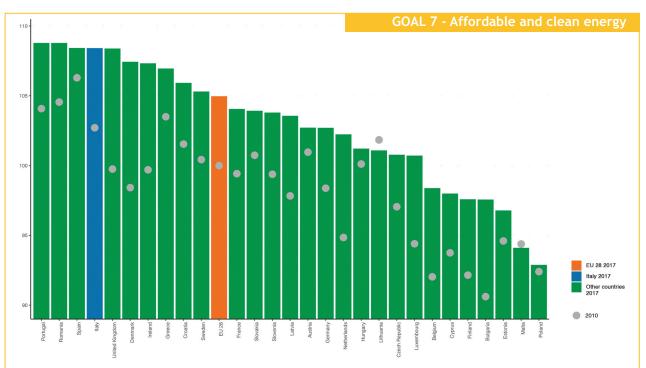
For Goal 4, the maximum value of the composite indicator was obtained by Sweden (118.6), and the minimum value by Romania, marking a 28-point difference. Italy ranks fourth to last, coming ahead of Croatia, Greece and Romania. All countries show im-

provement compared to 2010, which in some cases is substantial. *Adult participation in learning* and *Tertiary educational attainment* are the indicators that most influence the disparities between the countries analysed.



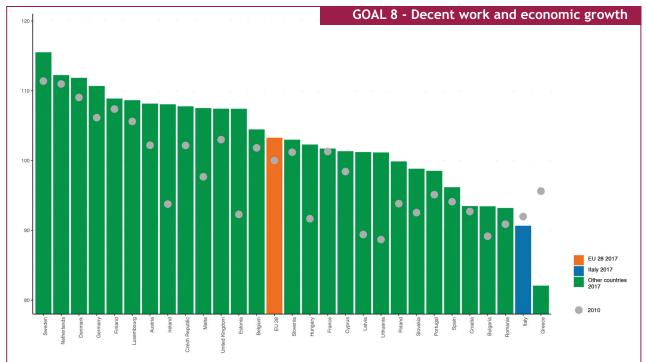
For Goal 5, the differences between countries are relatively less marked than in other cases. Indeed, the difference between the best (Sweden) and the worst performer (Hungary) amounts to 27 points. Italy ranks thirteenth, with a value just below the

European average. In the case of Goal 5, no specific indicator within the composite indicator weighs more than the others on the variability of country performances.



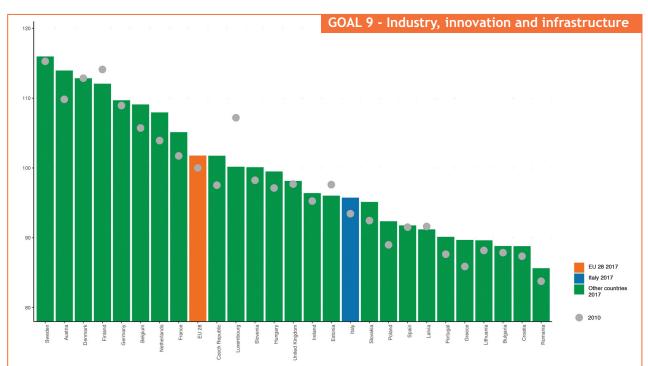
Goal 7 displays the lowest variability between EU countries. Portugal has the highest value, only 15.9 points higher than Poland, the lowest ranked country. Italy is in fourth position, with a value well above the European average. Compared to 2010, many countries have significantly improved, while the performances

of Lithuania and Malta have worsened. The sensitivity analysis shows that the indicators with the greatest influence on the ranking are the Final per capita energy consumption in households and the Share of renewable energy in gross final energy consumption.



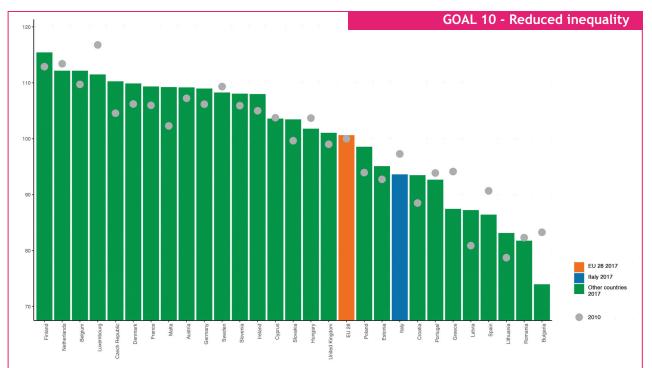
For Goal 8 too, Sweden is the country with the highest value for the composite indicator, which is 33 points above Greece, the country ranking last. Italy is in penultimate position, the only country together with Greece registering a downtrend between 2010 and 2017.

Among the elementary indicators, the one relating to *Real GDP per capita* has the greatest influence on the degree of disparity between the countries under consideration.



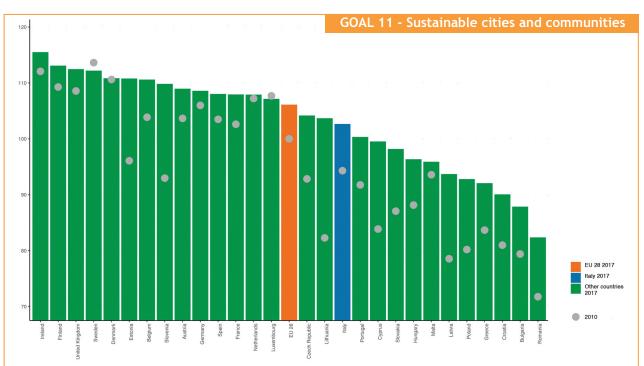
For Goal 9, the difference between the values of the composite indicators calculated for Sweden and Romania, respectively the first and last country in the ranking, corresponds to 30.3 points. Italy ranks seventeenth, registering a slight improvement between

2010 and 2017, a trend that also occurs in most European countries. Given the high level of consistency among the elementary indicators in determining the rankings, none of them appears to be particularly responsible for the disparities noted between countries.



Goal 10 registers greater disparities among countries. The maximum value of the composite indicator is obtained by Finland, whereas Bulgaria registers the minimum value, with a difference of 41.4 points. Italy's performance is below the European average and, like

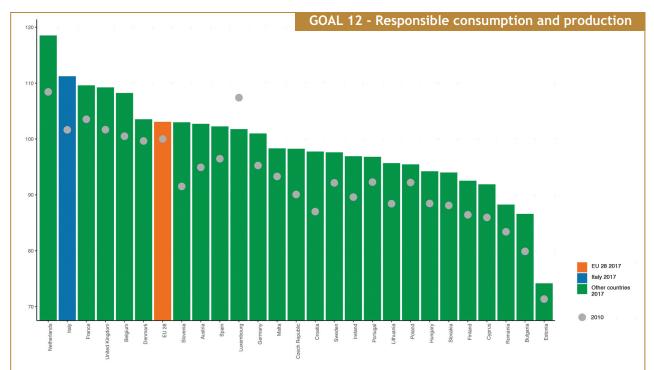
many other countries, has worsened since 2010. As in the case of the previous Goal, none of the indicators under consideration stands out as having a strong influence on the difference in ranking between countries.



For Goal 11, the distance between the best performer (Ireland) and the country at the bottom of the ranking (Romania) amounts to 34 points. Italy's performance is below the European average, but shows a marked improvement between 2010 and 2017, a trend also

manifested in the majority of countries.

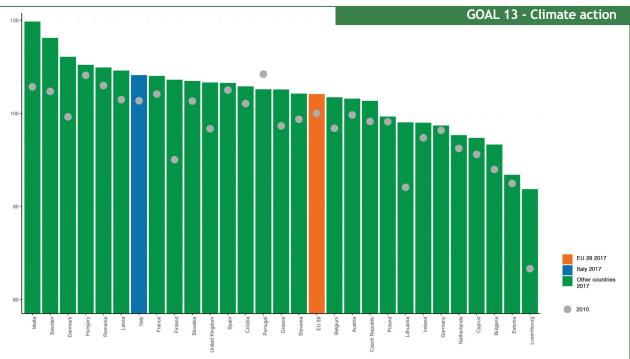
The indicators *Population living in households that* consider they suffer from noise and the *Overcrowding* rate are the ones that have the greatest role in determining territorial disparities.



Goal 12 is the one displaying the greatest territorial disparities. The gap between the Netherlands and Estonia, first and last ranked, is of almost 45 points, but if these two countries are left out, a largely uniform performance may be noted. Italy is in second place,

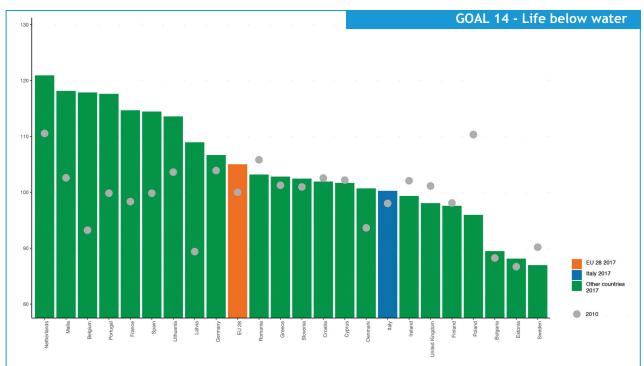
and almost all countries saw a marked improvement between 2010 and 2017.

The indicator with the greatest impact on the ranking of countries is that on *Resource productivity and domestic material consumption (DMC)*.



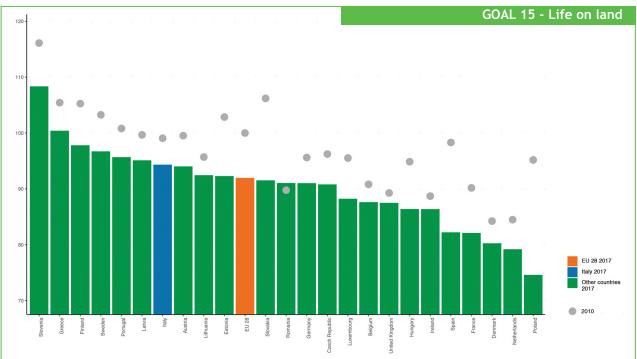
For Goal 13, Malta ranks first and Luxembourg last, with a 36-point gap. Italy is among the leading group, registering an uptrend between 2010 and 2017, as do almost all other countries.

Both indicators used in the composite indicator, *Greenhouse gas emissions* and the *Intensity of greenhouse gas emissions*, have a strong impact on the rankings.



For Goal 14 too, the Netherlands is the best performer, 34 points ahead of Sweden, the lowest ranked country. The internal variability of the indicator is quite high, highlighting a degree of heterogeneity among countries. Italy registered a below-average performance.

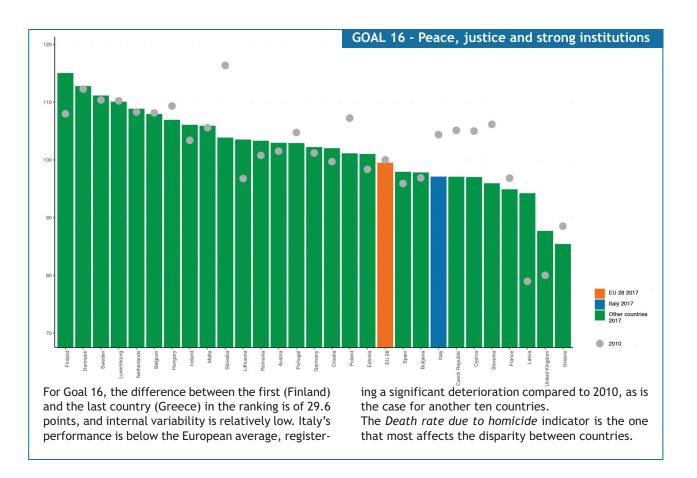
Bathing sites with excellent water quality and Surface of marine sites designated under Natura 2000 are the indicators with the greatest influence on the ranking of countries.

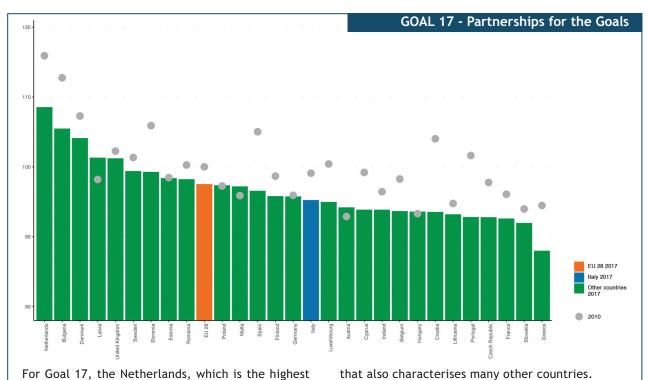


For Goal 15, Slovenia leads the ranking, with a composite indicator that is 33.7 points greater than Poland, the lowest ranked country. Italy is above the European average, but all countries, except for Romania, register a significant deterioration be-

tween 2010 and 2017.

The indicators relating to the *Soil sealing index* and the *Share of forest area* have the greatest impact on country ranking.





Territorial differences are mainly determined by the

indicators relative to General government gross debt

and Share of environmental taxes in total revenues.

ranked country, is only 20.6 points above Greece,

the lowest ranked. In addition, internal variability

between the values of the composite indicators is

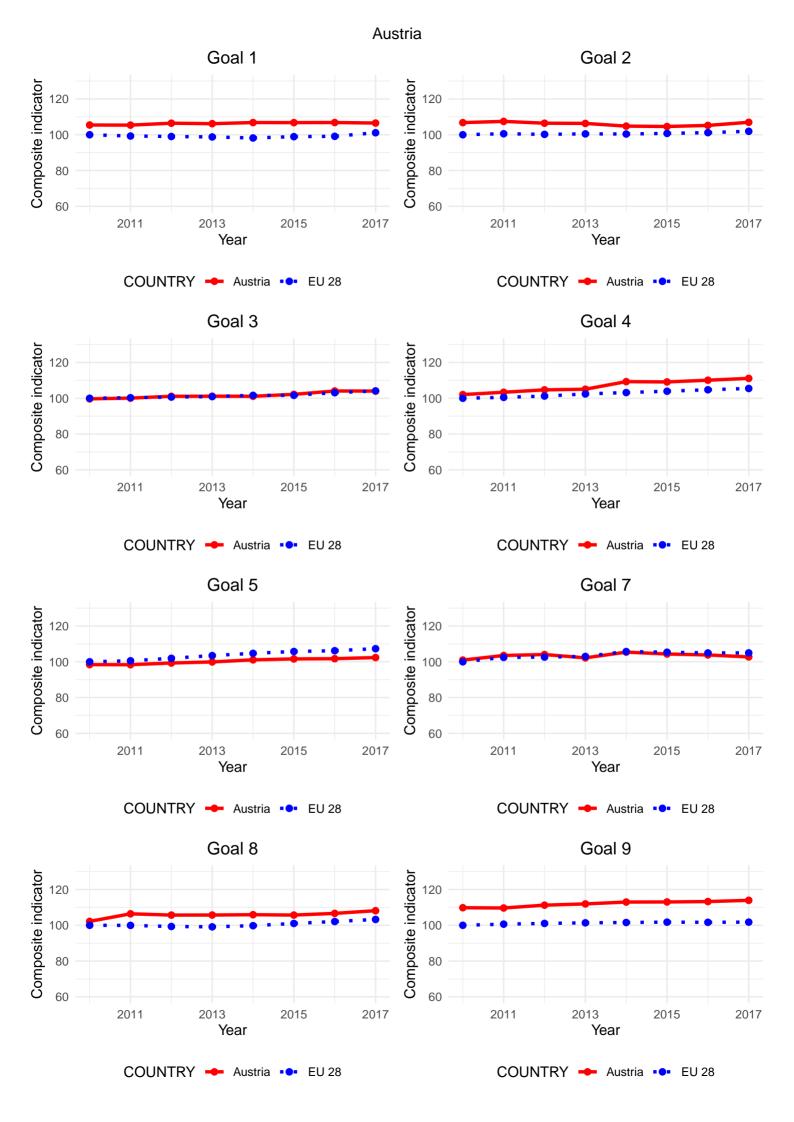
low. Italy stands in the middle of the ranking, registering a deterioration compared to 2010, a trend

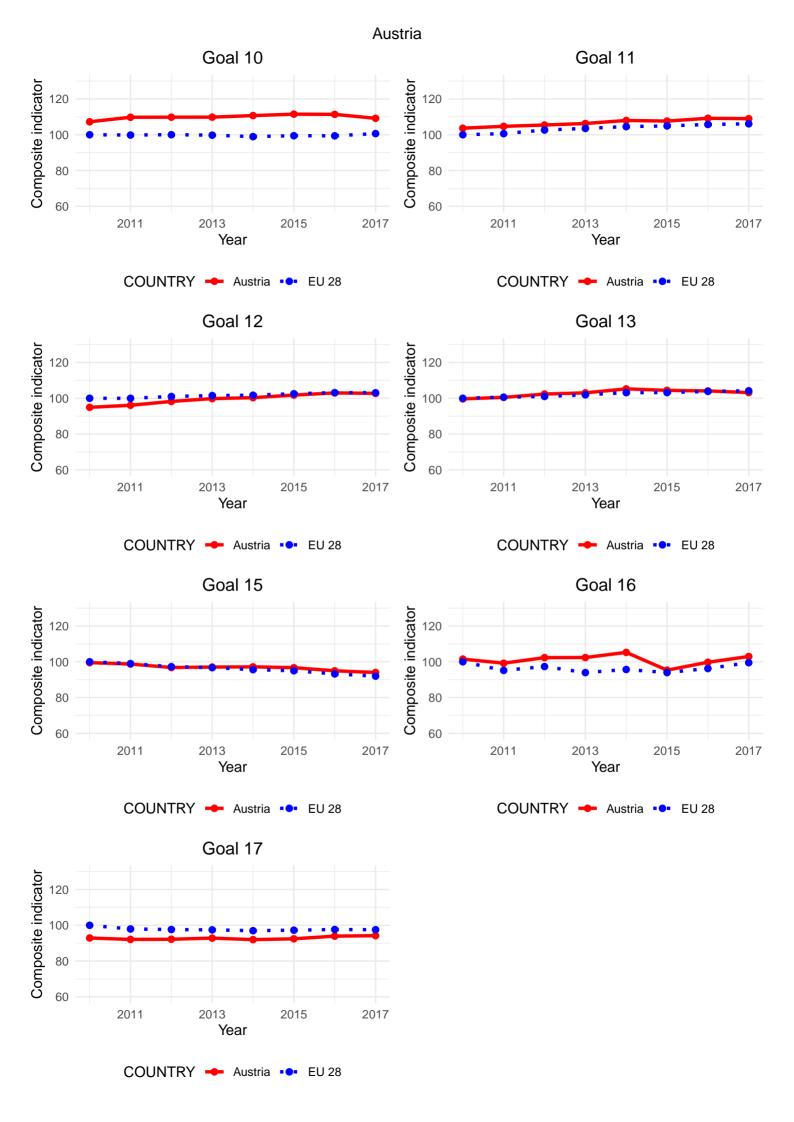
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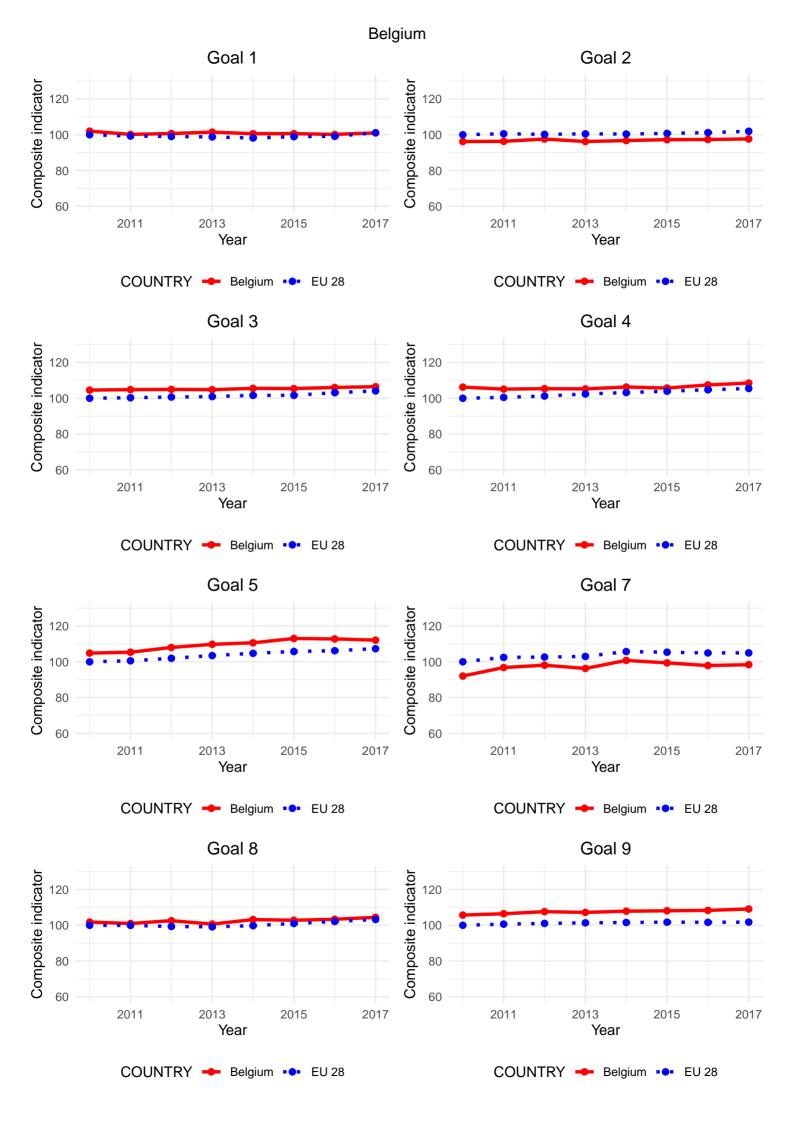
- $^{\mbox{\tiny 1}}$ No results can be produced for Goal 6 due to a lack of data.
- ² Note that in this report the terms "indicators" and "indices" are considered synonymous.
- ³ Detailed analysis regarding the calculation and interpretation of the composite indicators may be found on the ASviS website at asvis.it/dati/.
- ⁴ In some cases, the EU average is not based on all 28 Member States, but only on those for which data are available.
- ⁵ The calculation of influence is based on the absolute average difference in decreasing rank, which expresses, on average, the extent to which elimination of the indicator entails changes in the ranking of countries, and therefore in the value of the composite indicator. Consequently, the higher this average, the more relevant the elementary indicator in determining changes in the composite indicator and, therefore, differences between the countries analysed.

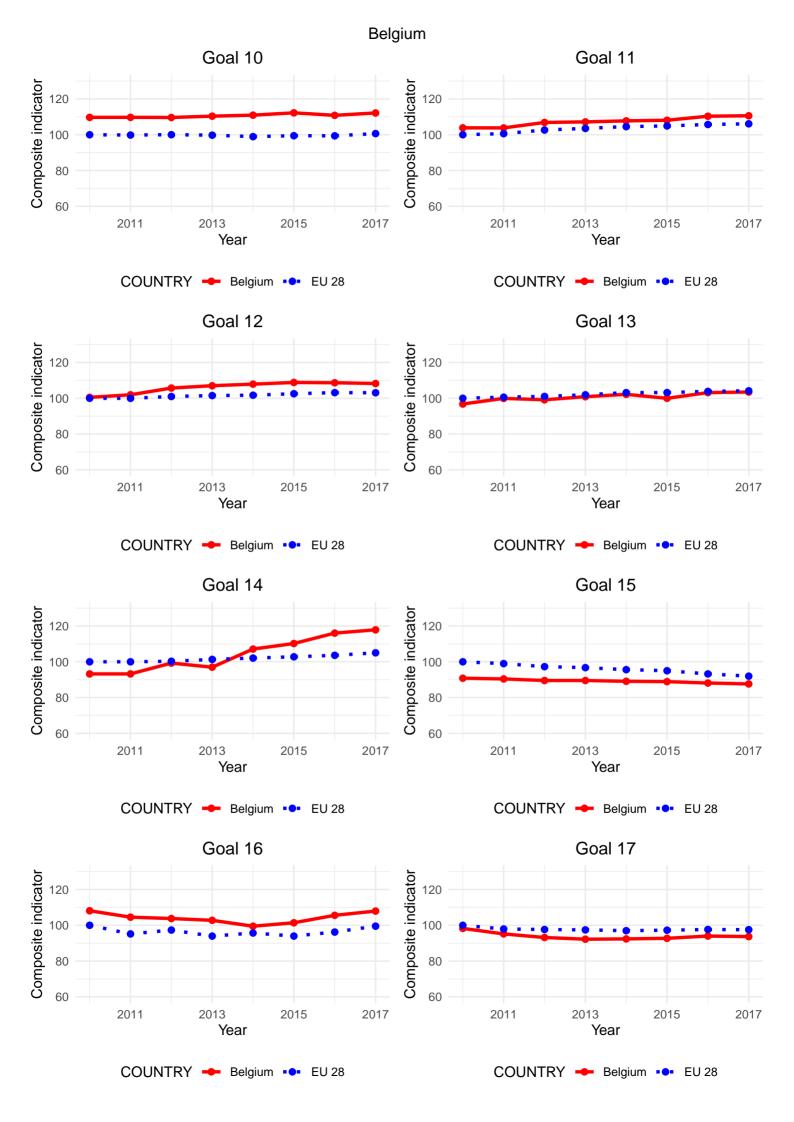
The EU countries and the Sustainable Development Goals

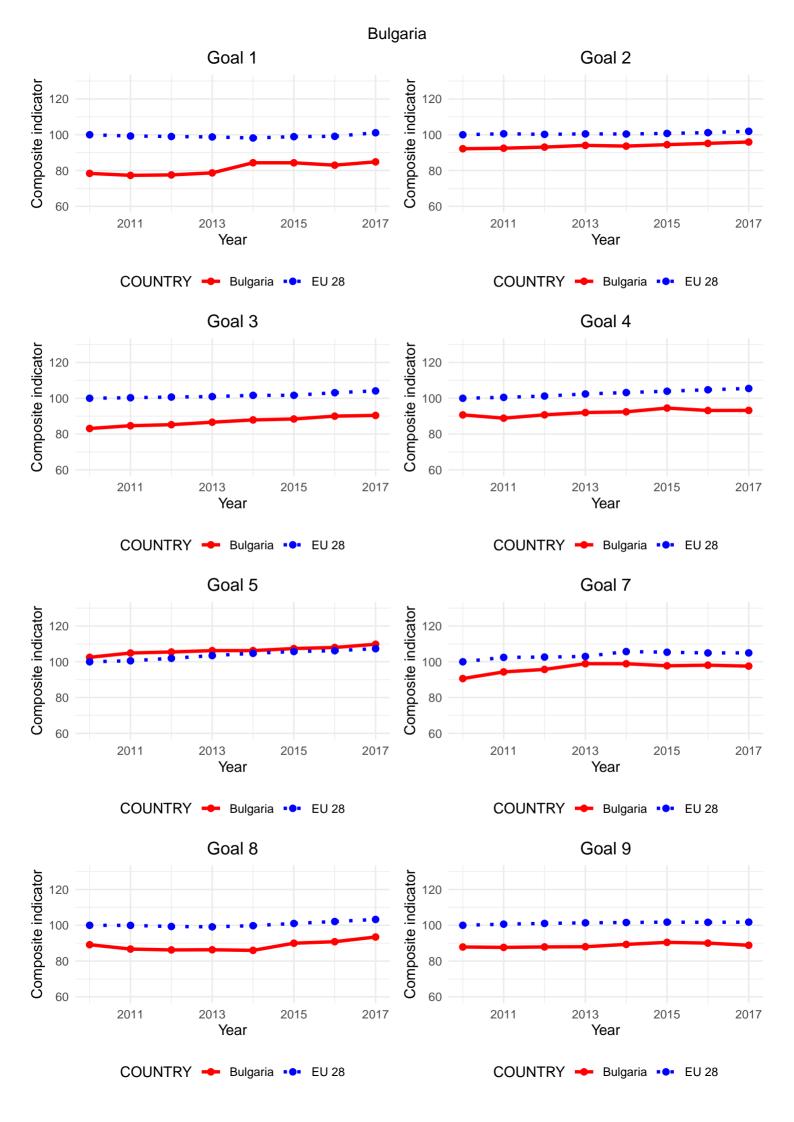
The Annex presents the graphs concerning the composite indicators, built on the Eurostat SDG indicators, for each EU Member State compared with the EU-28 average. In particular, composite indicators were computed for 16 out of the 17 SDGs, as for Goal 6 it was impossible to do that due to the lack of data. The country-specific composite indicators are represented with a red continuous line while the European average is presented with a blue dotted line. Each composite indicator shows the improvement (if the value rises) or the deterioration (if it falls) in the situation compared to the value for the EU-28 in 2010 (equal to 100). Note that if a country-specific composite indicator shows improvement, this doesn't necessarily mean that the country is on a path that will allow it to meet the Goals by 2030, but that the country is moving in the right direction.

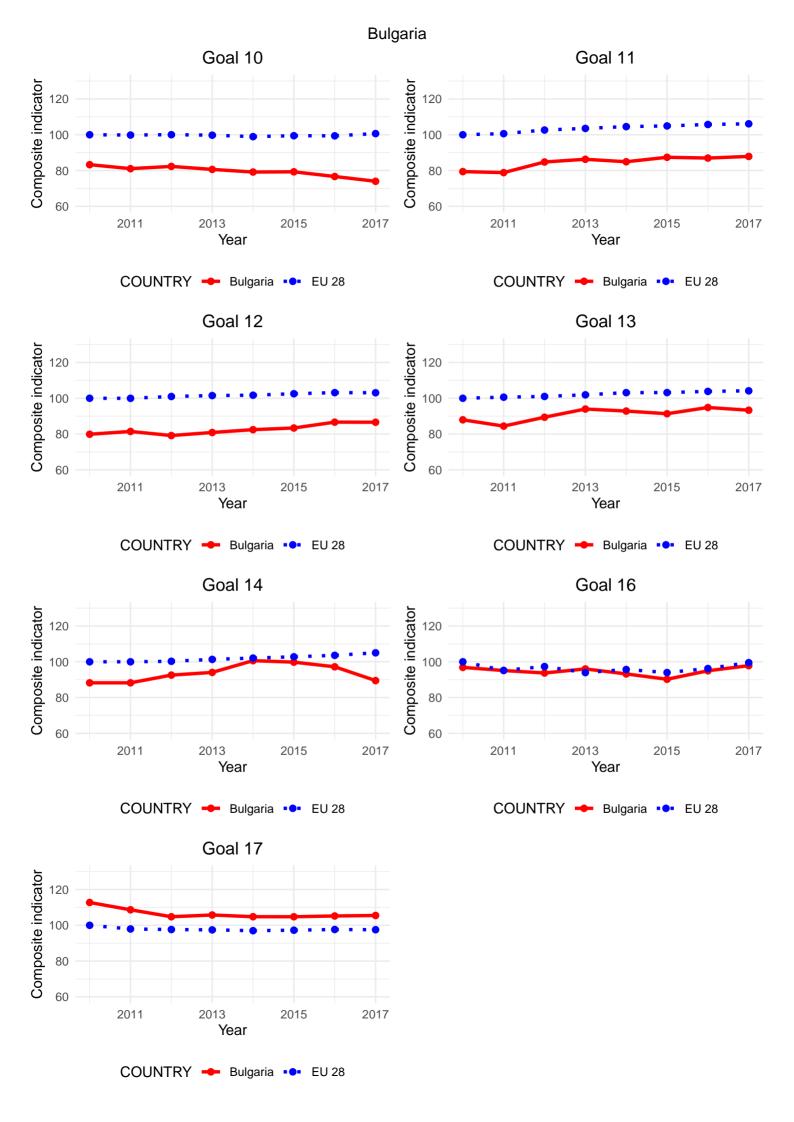


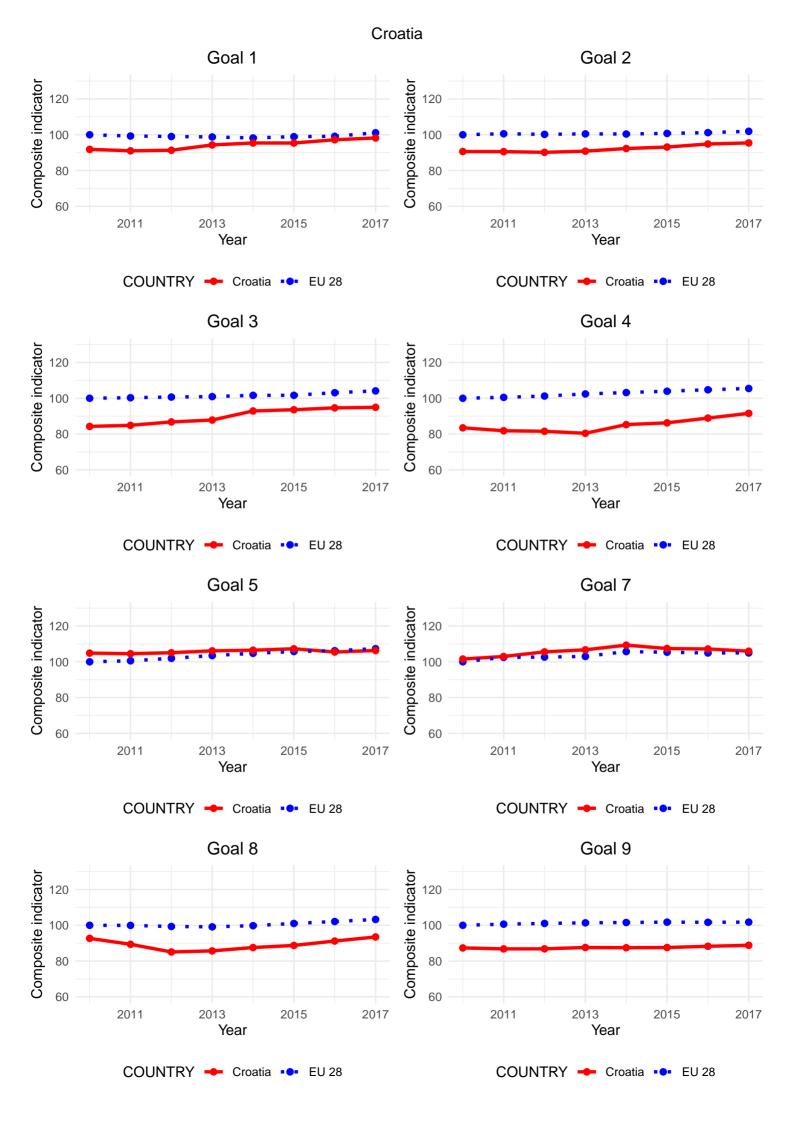


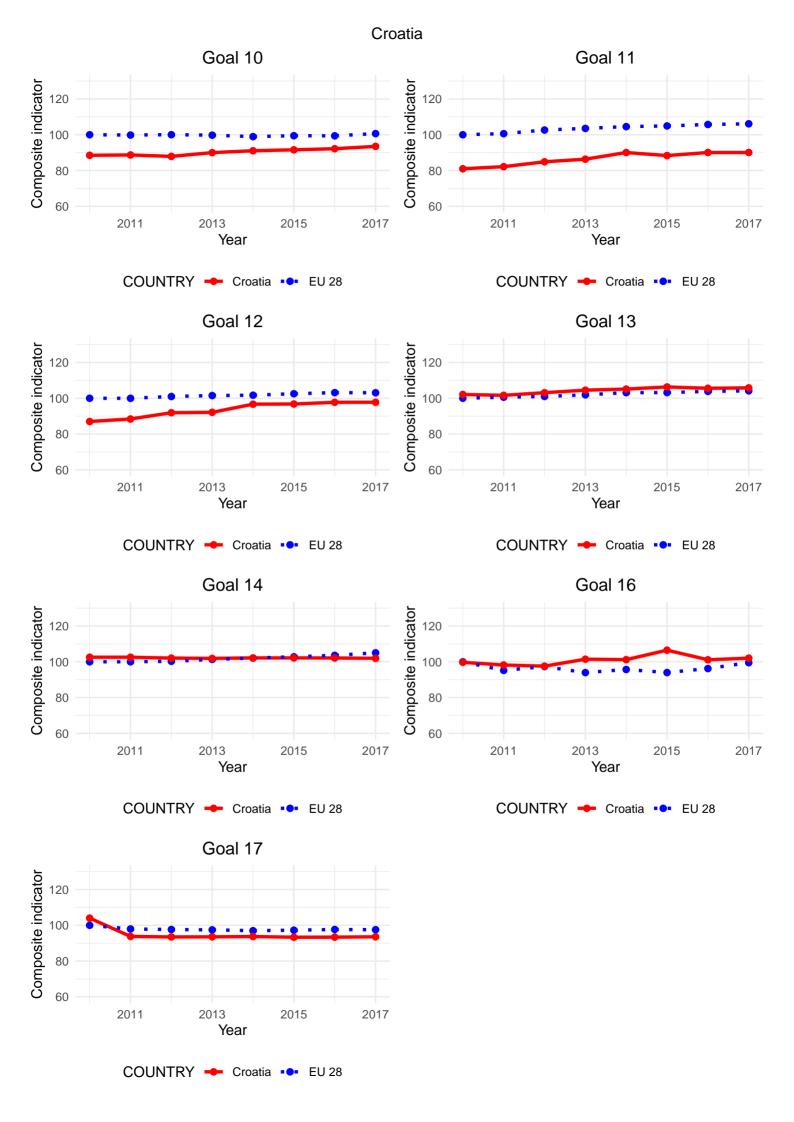


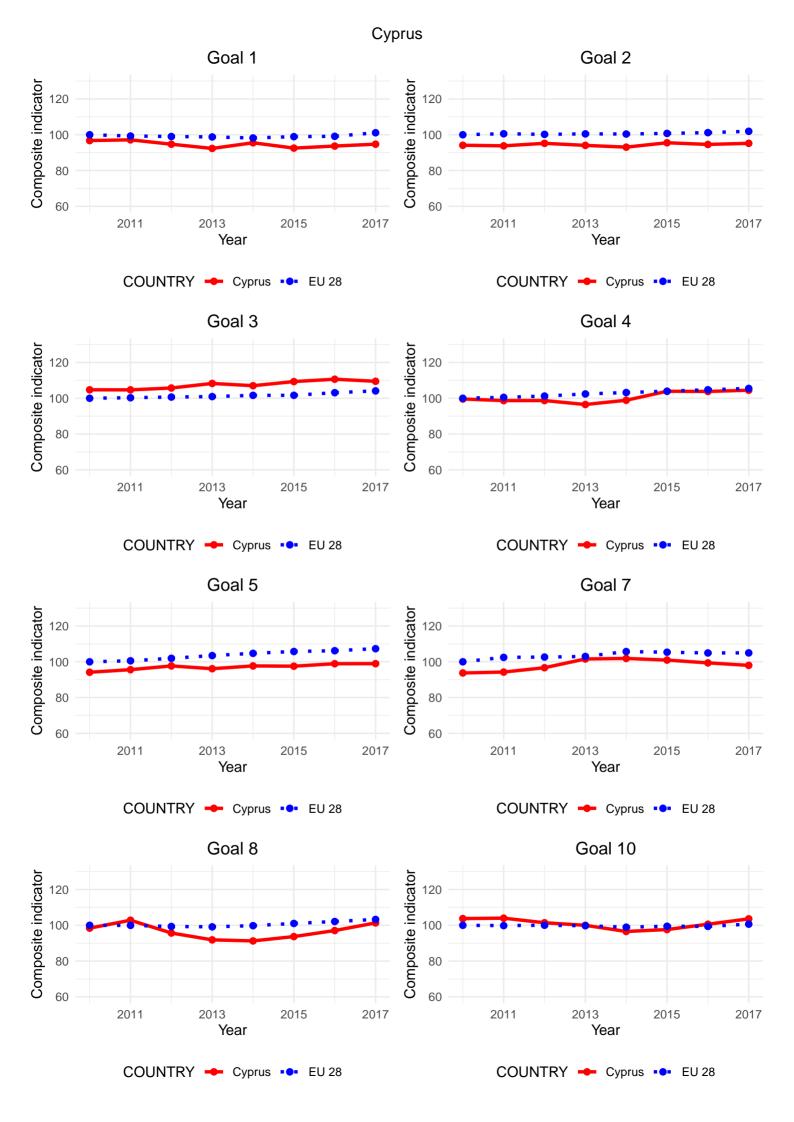


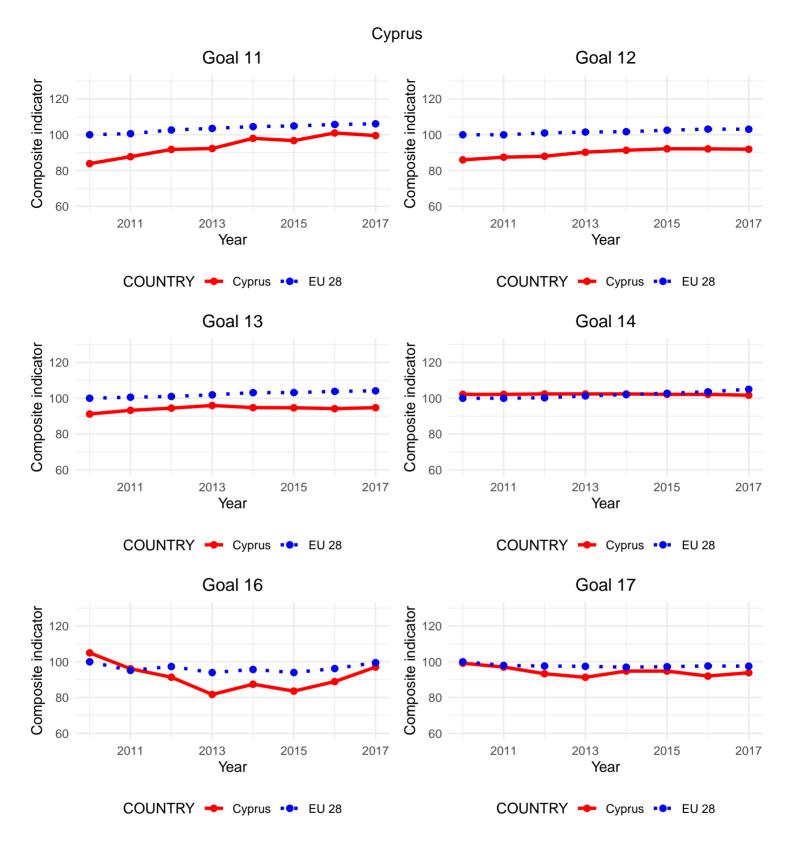


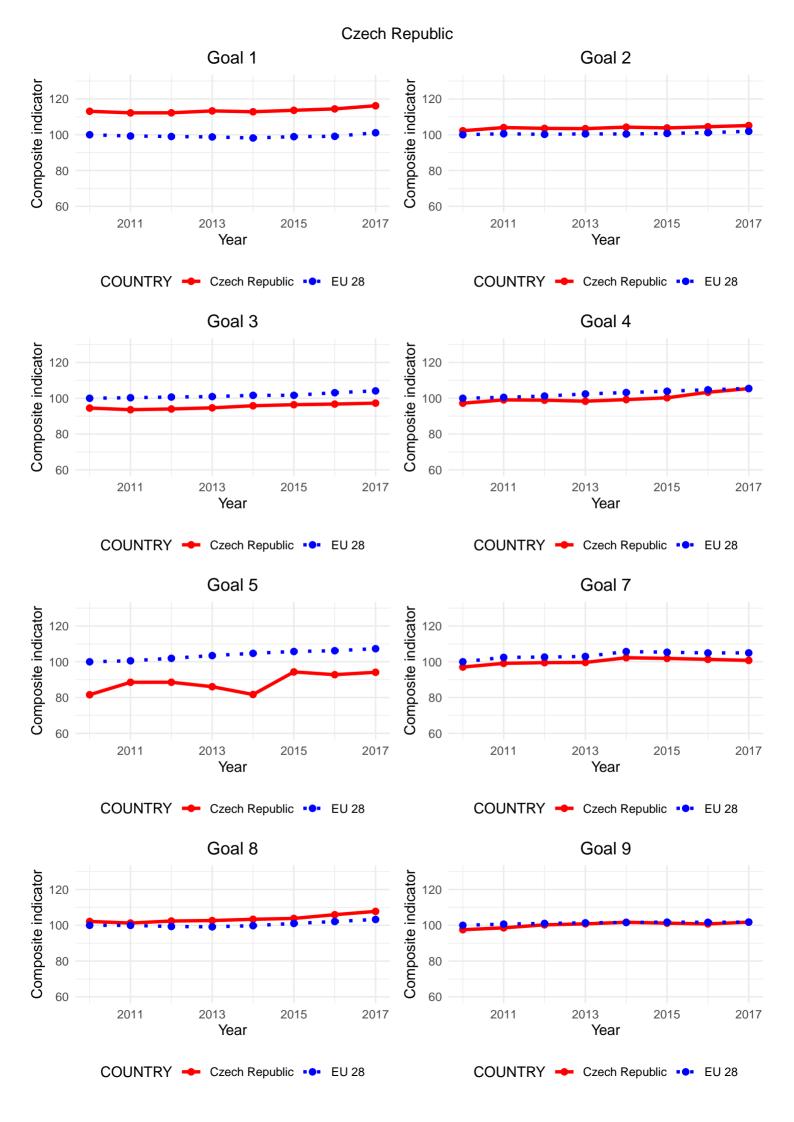


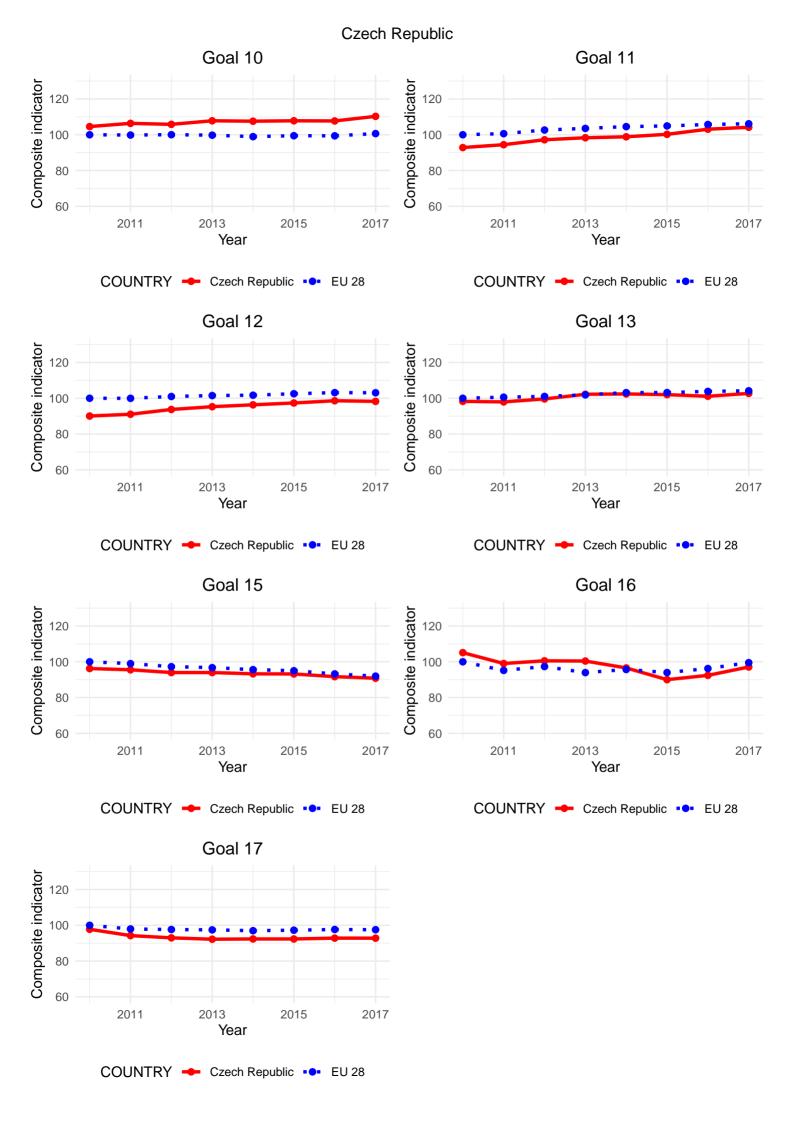


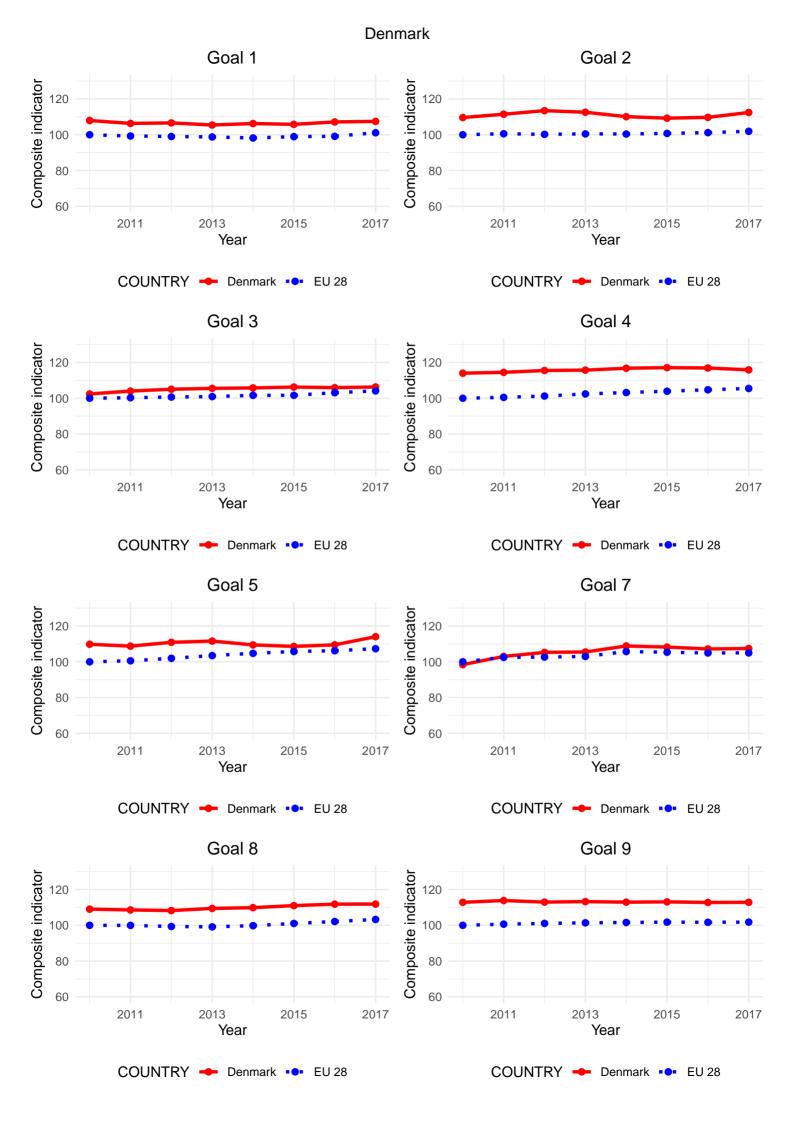


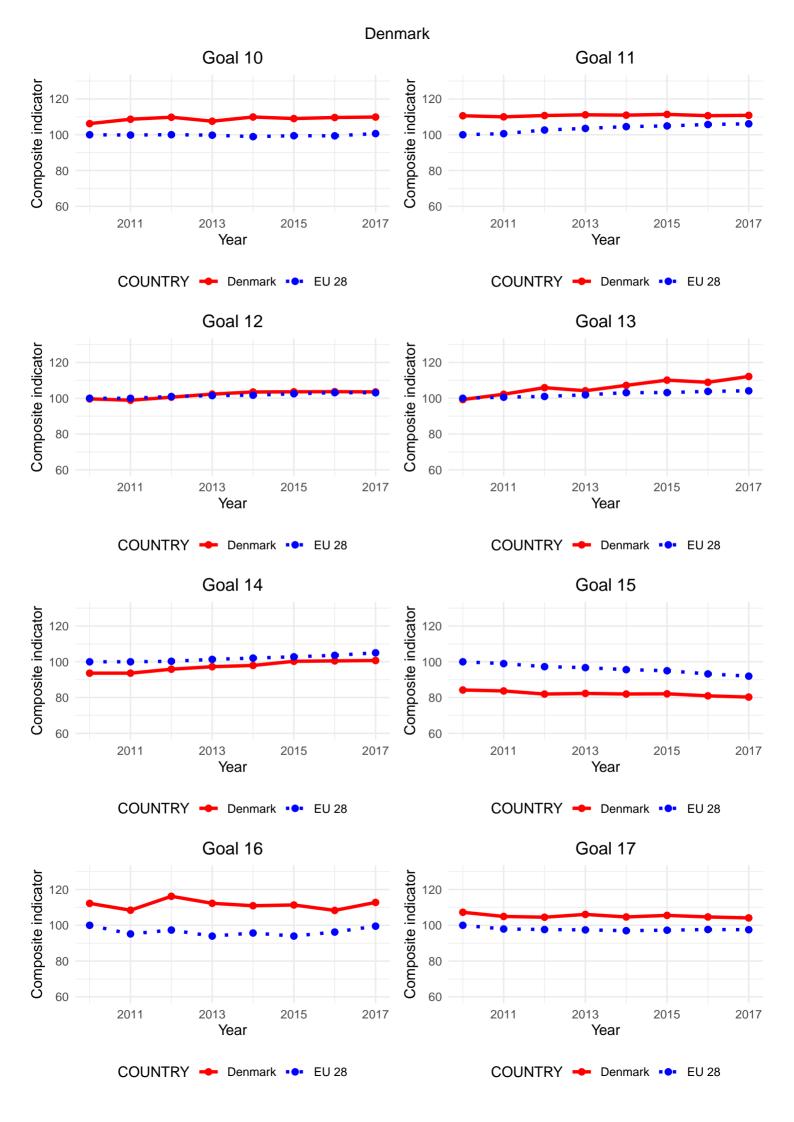


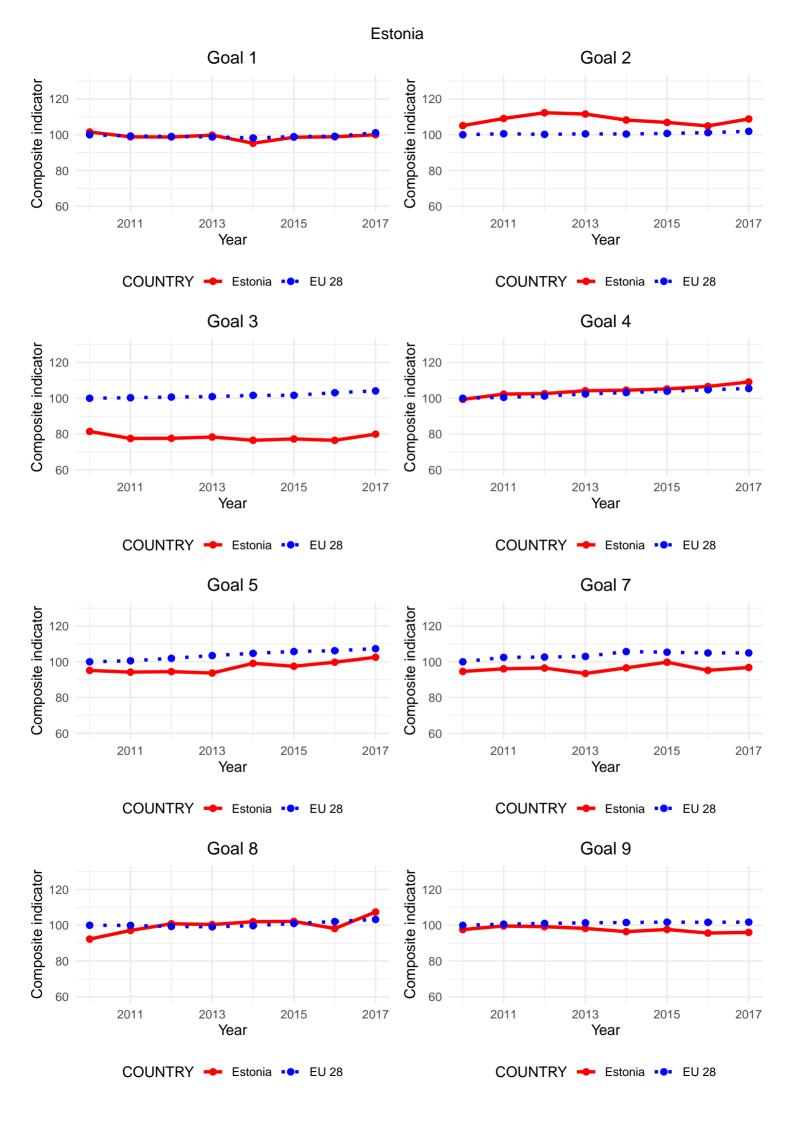


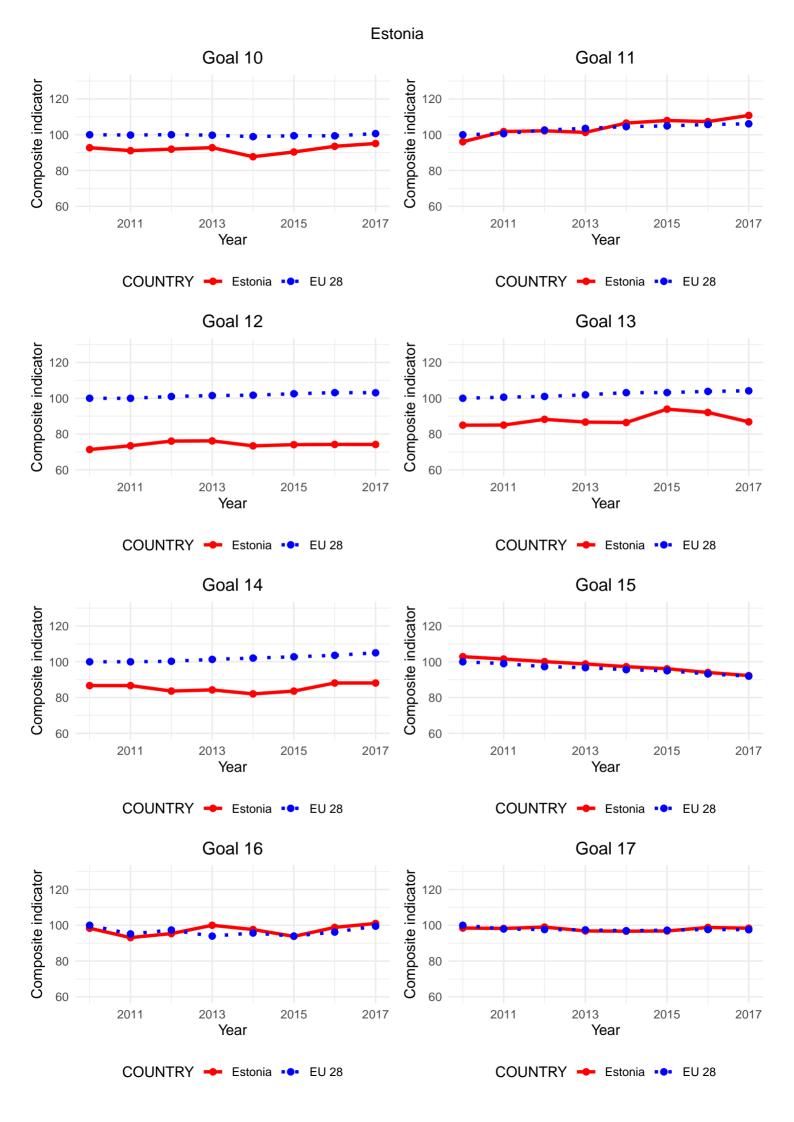


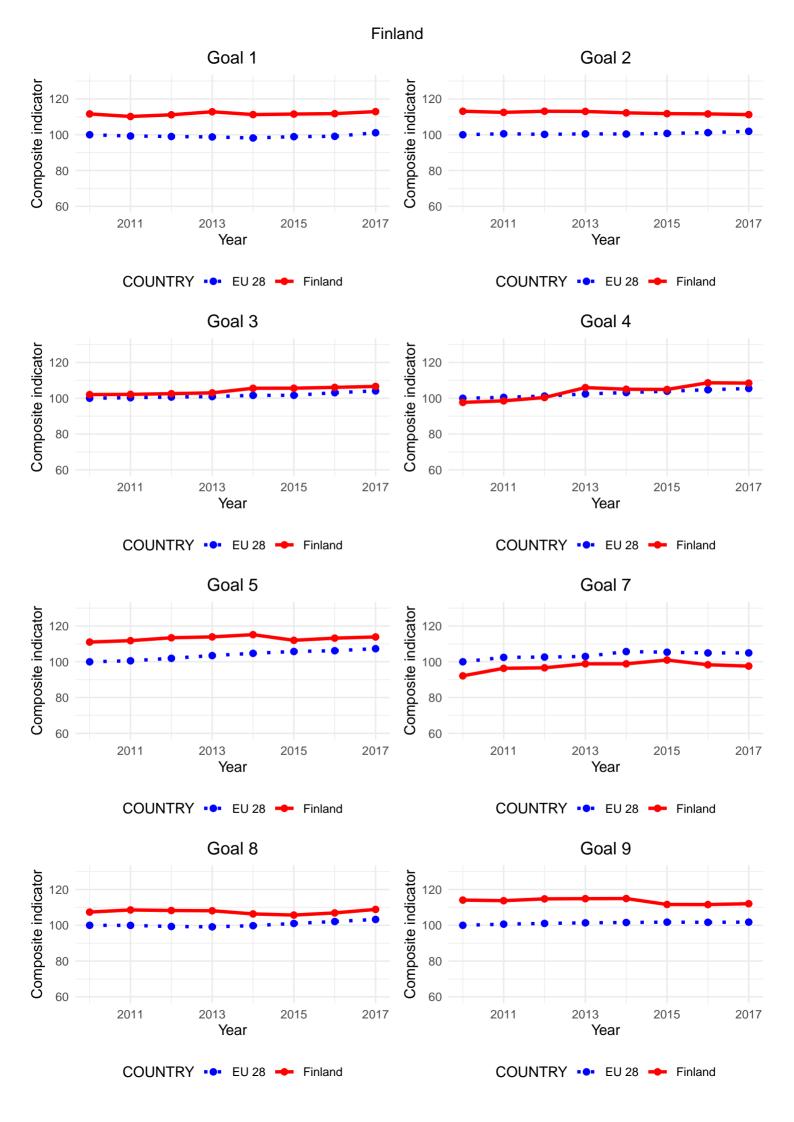


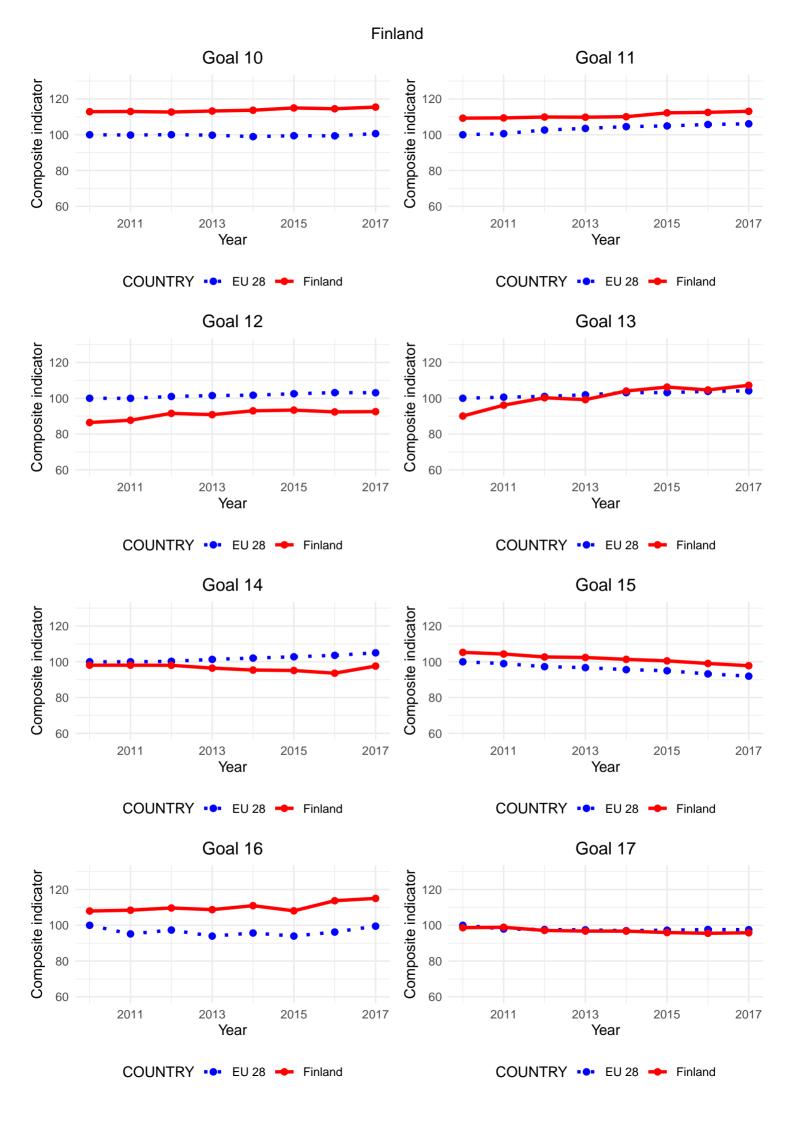


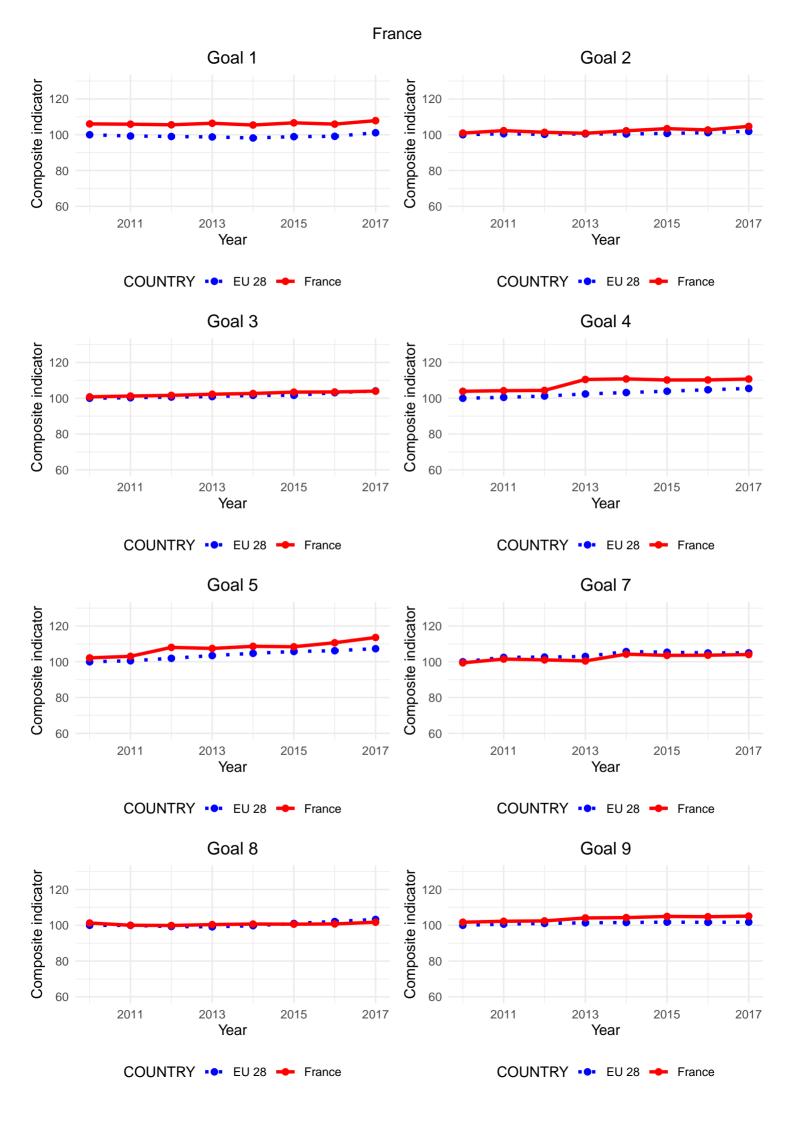


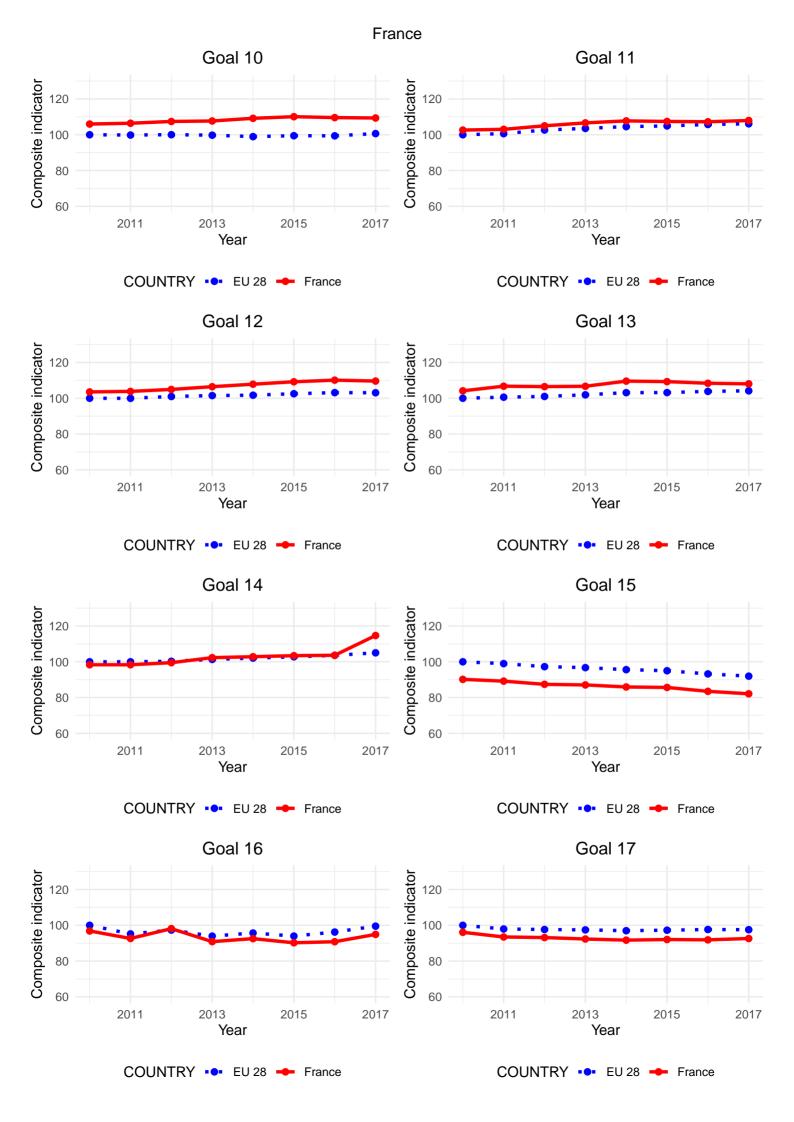


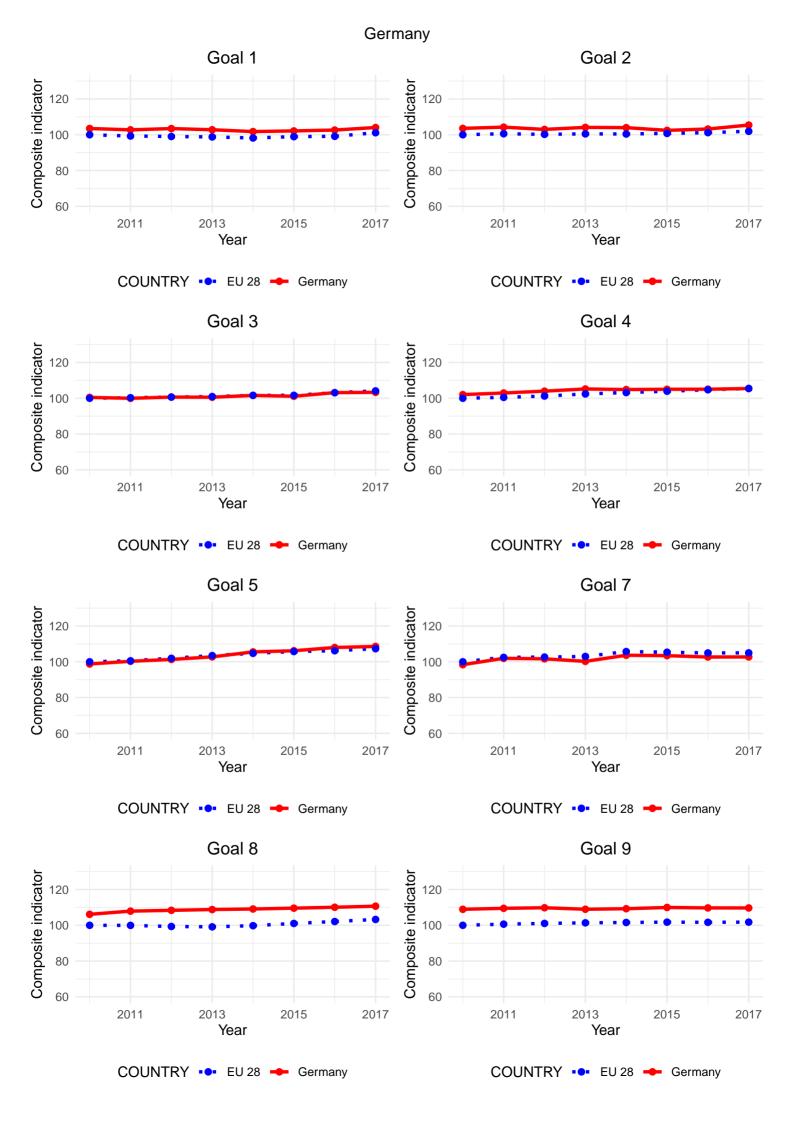


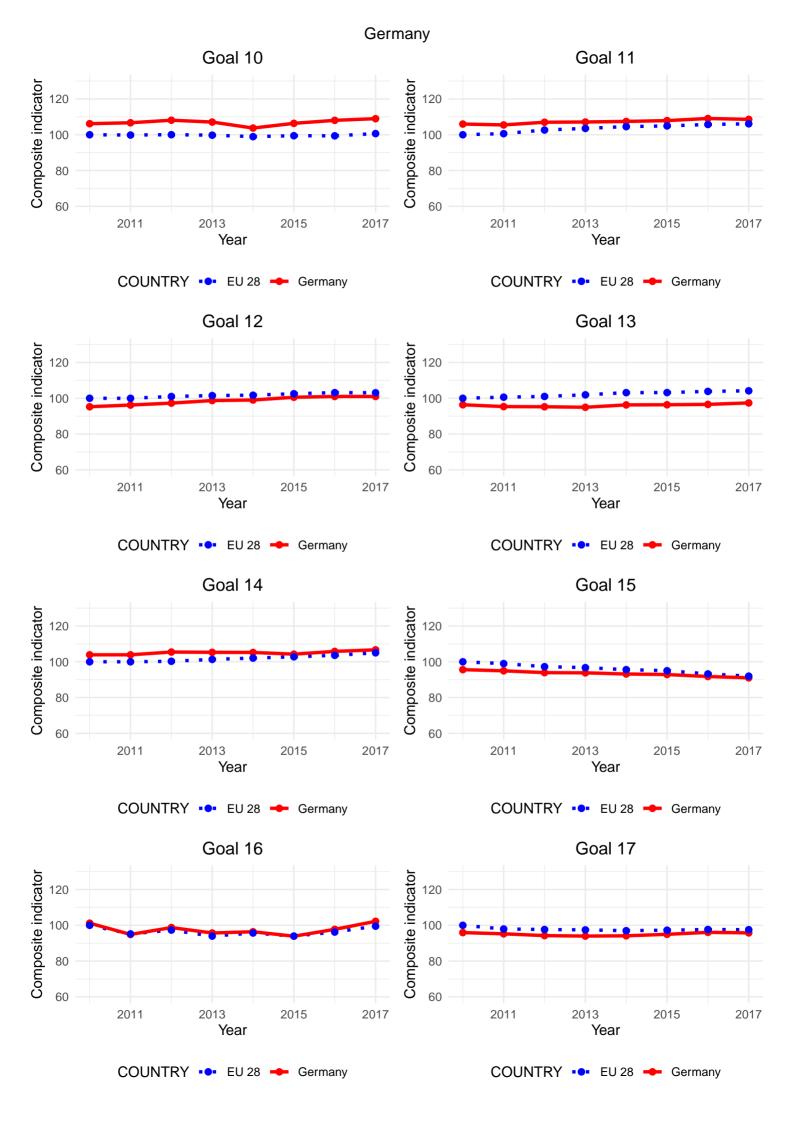


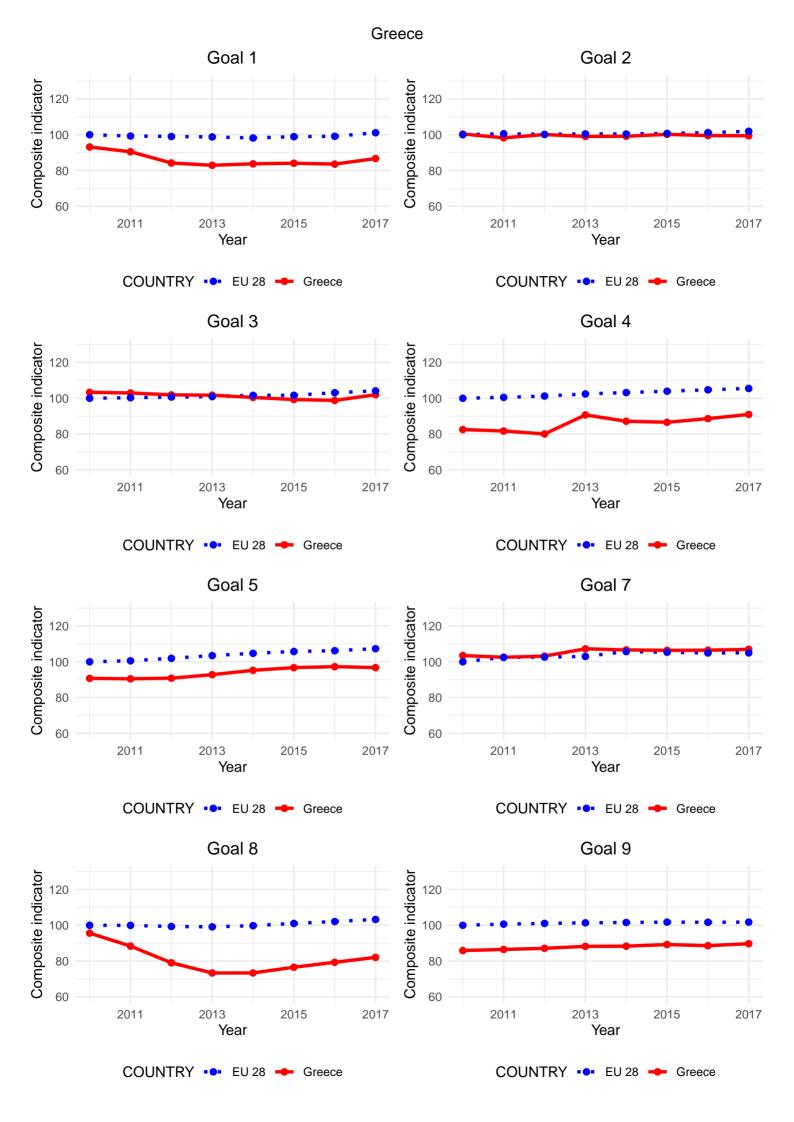


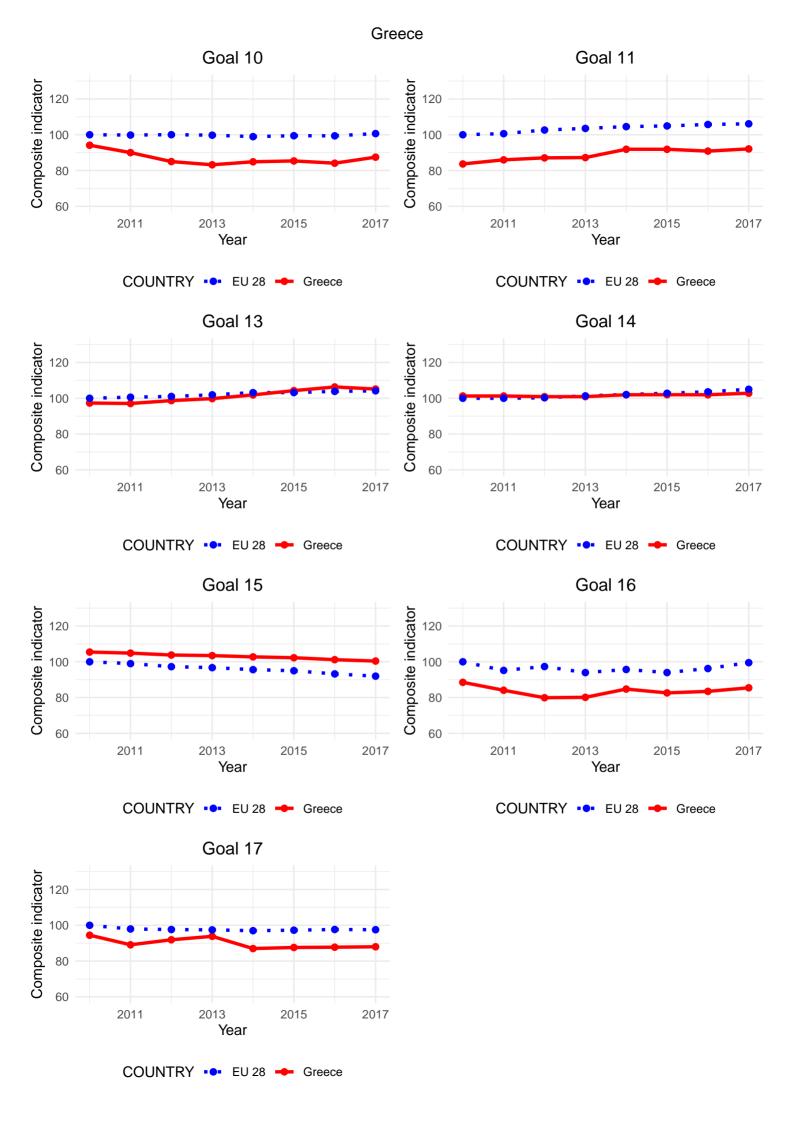


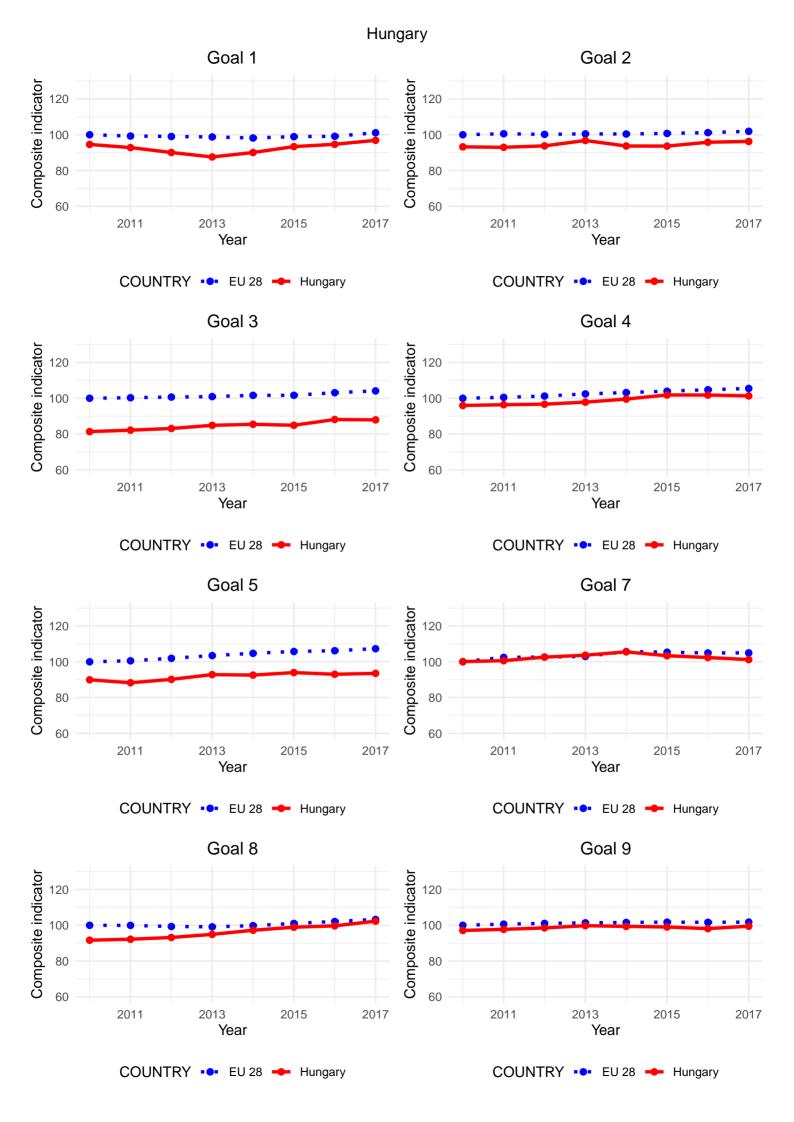


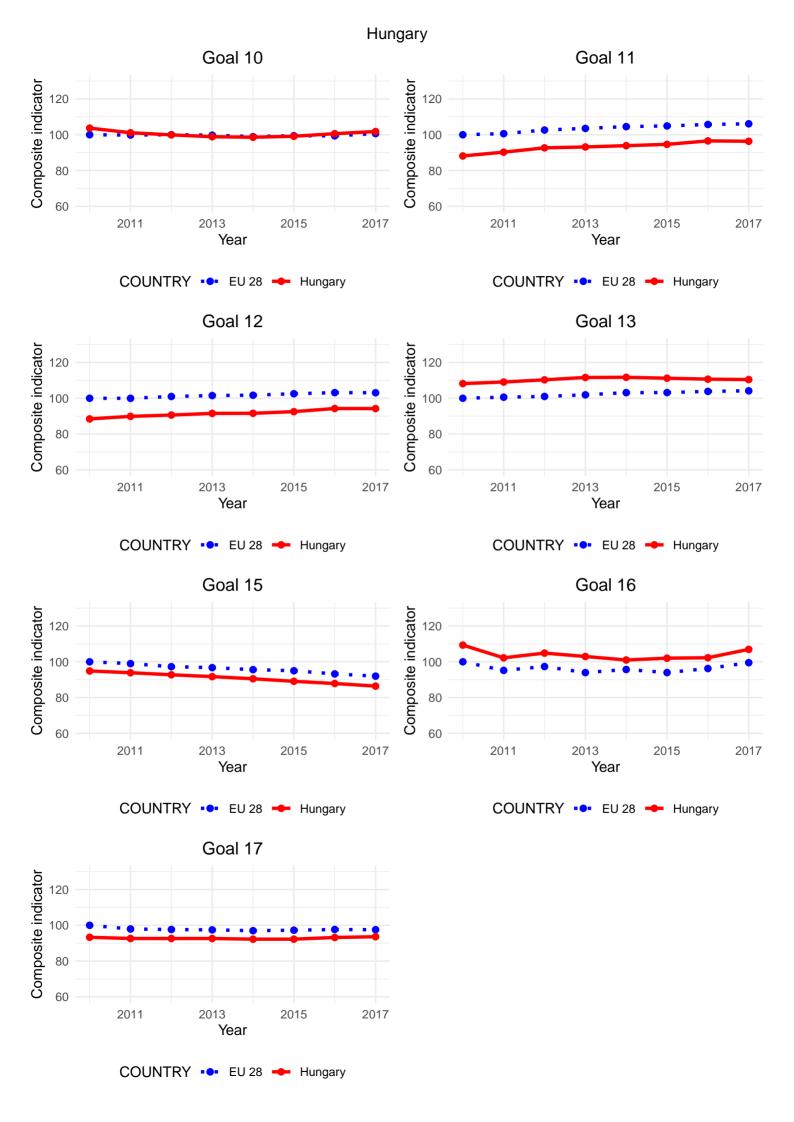


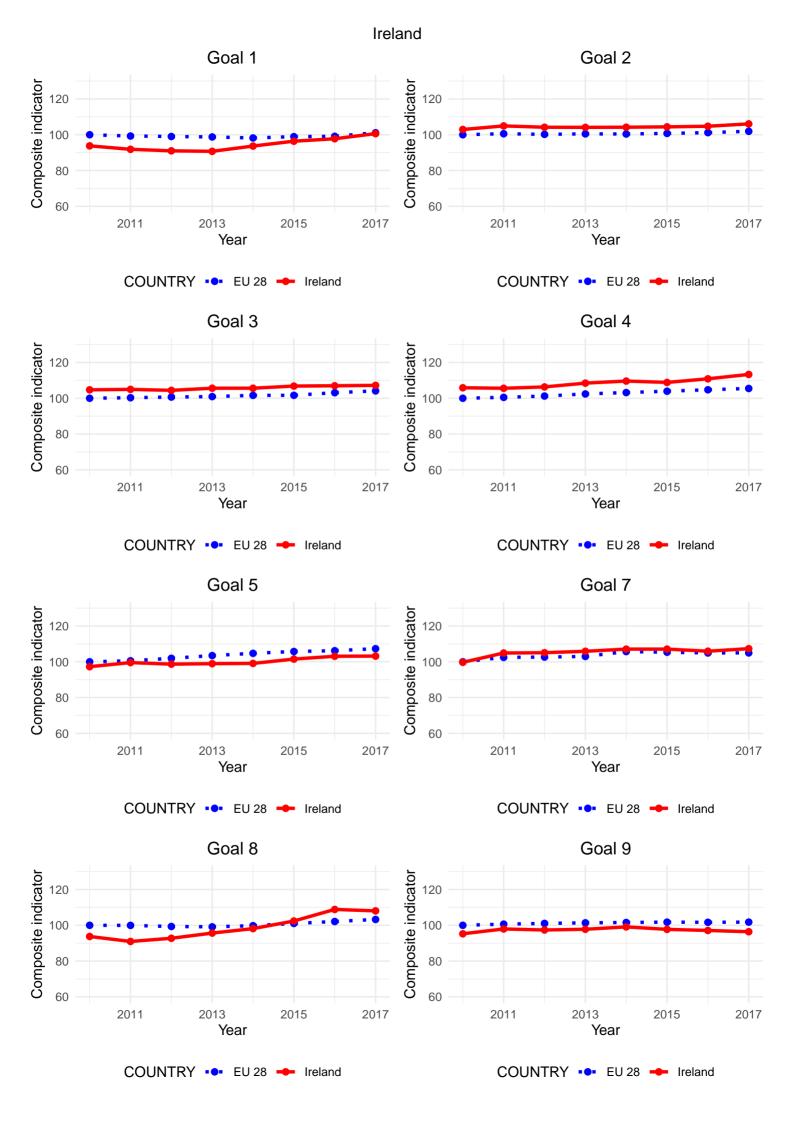


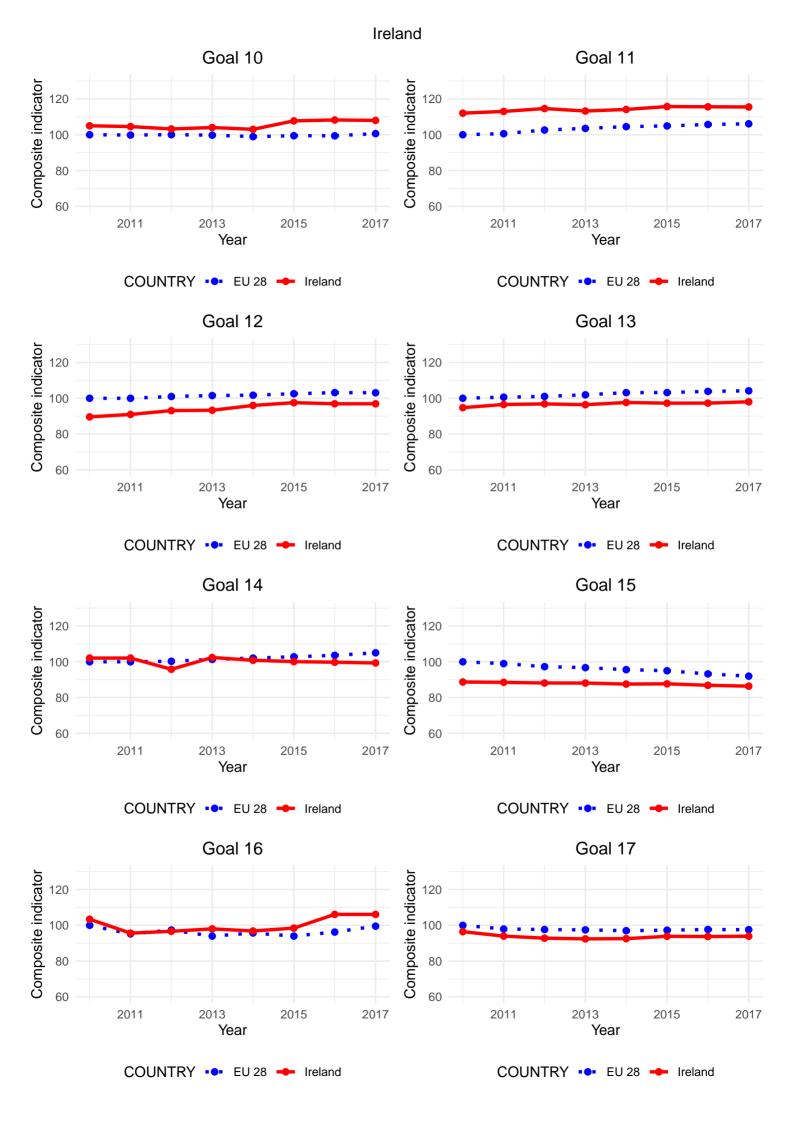


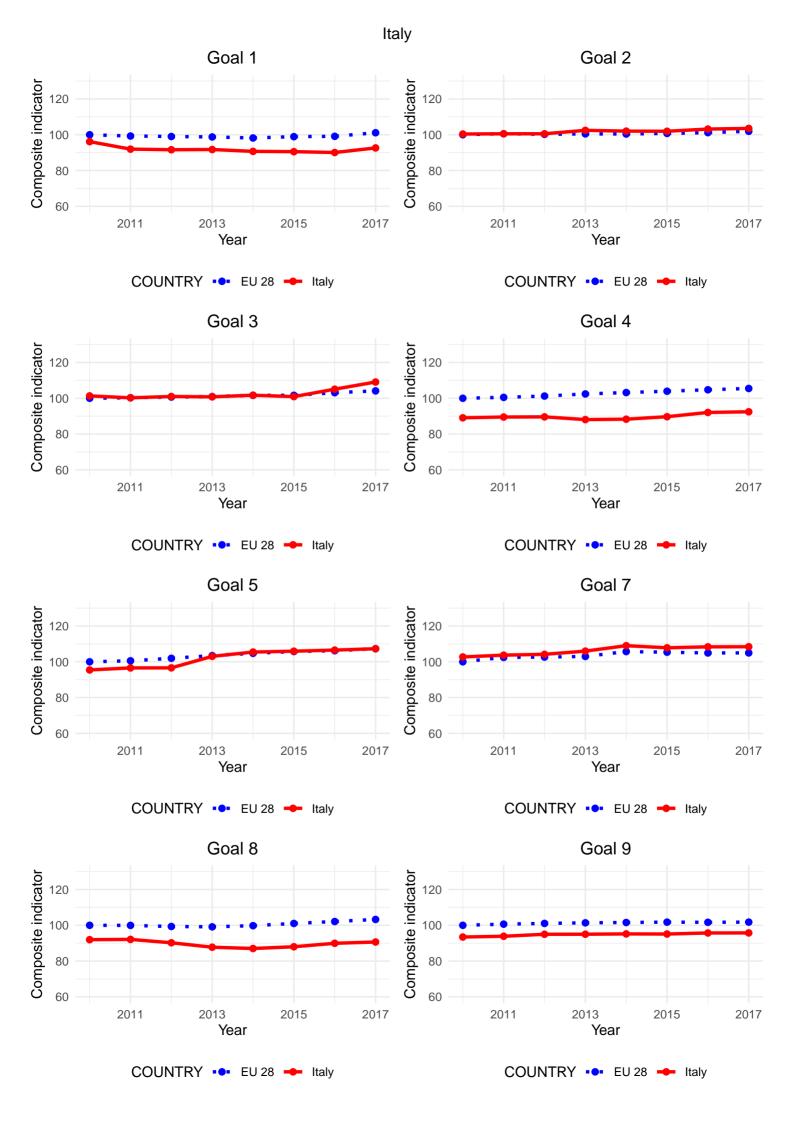


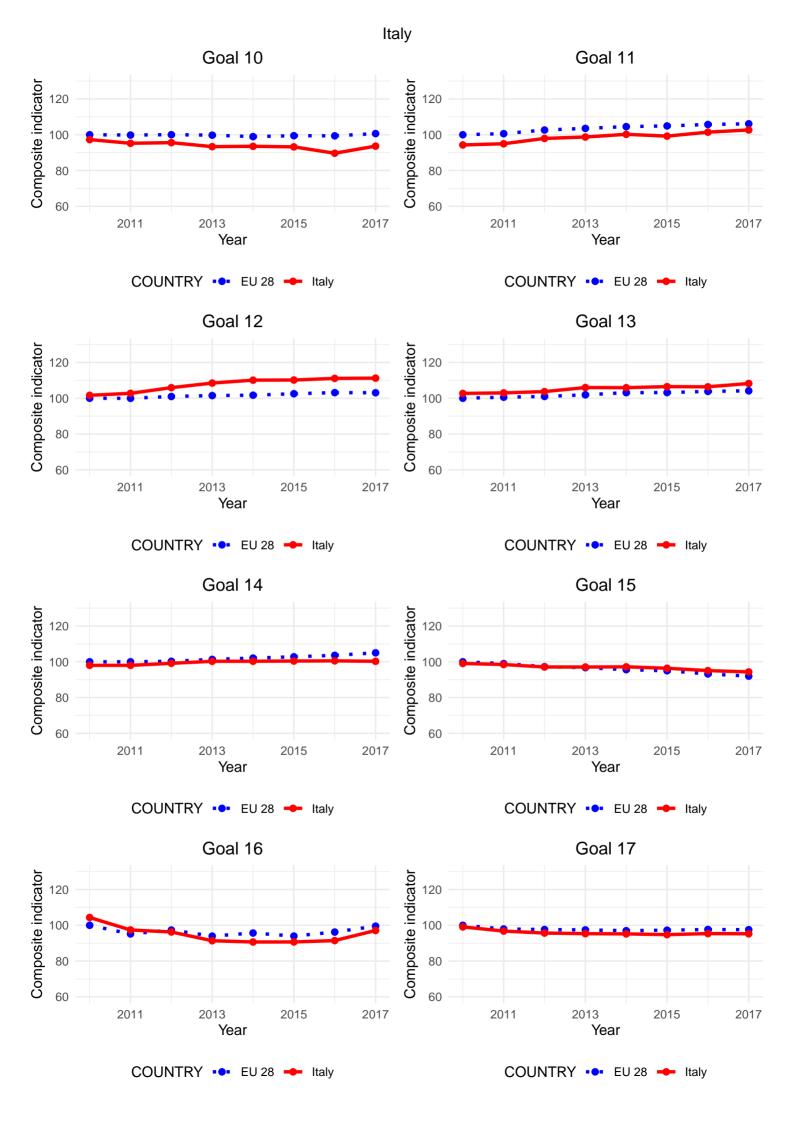


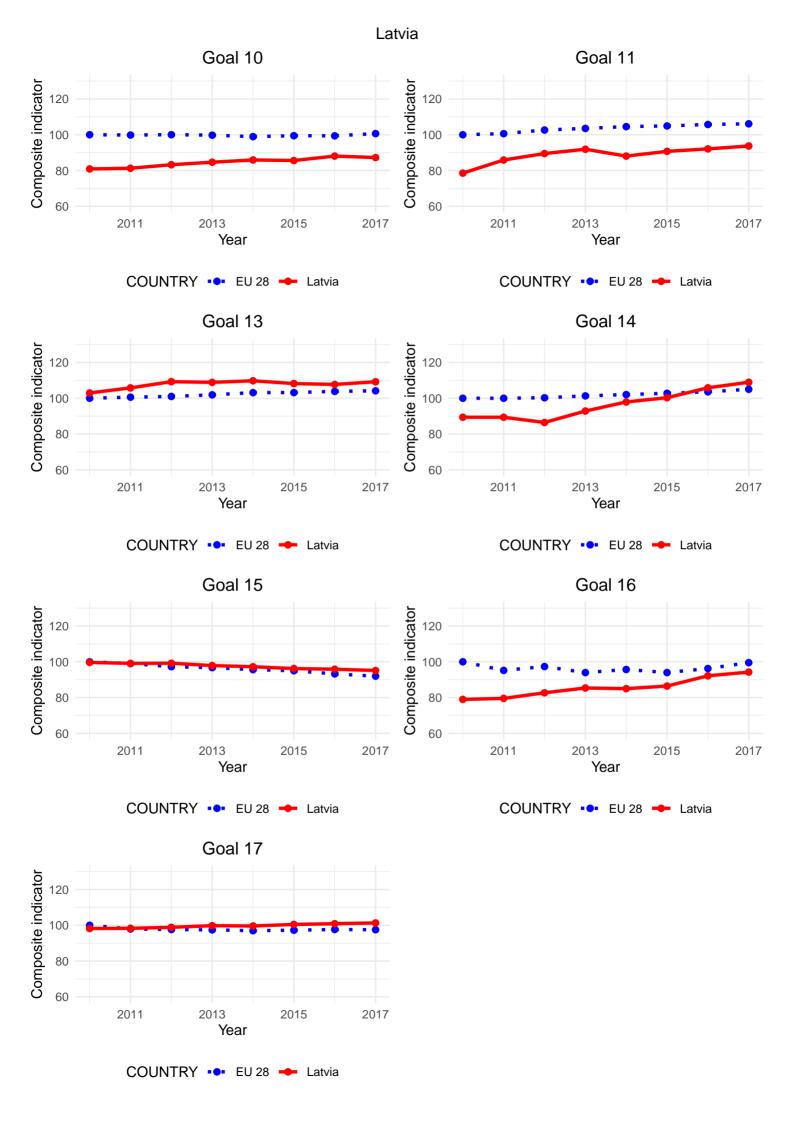


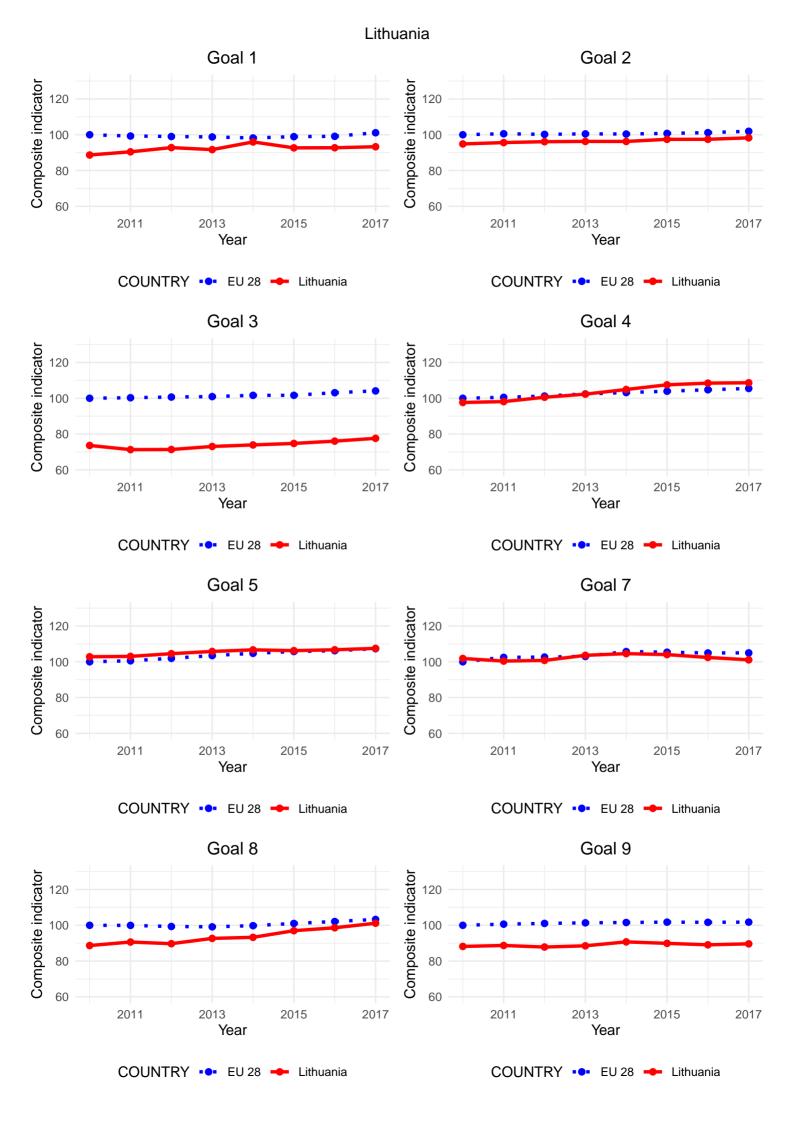


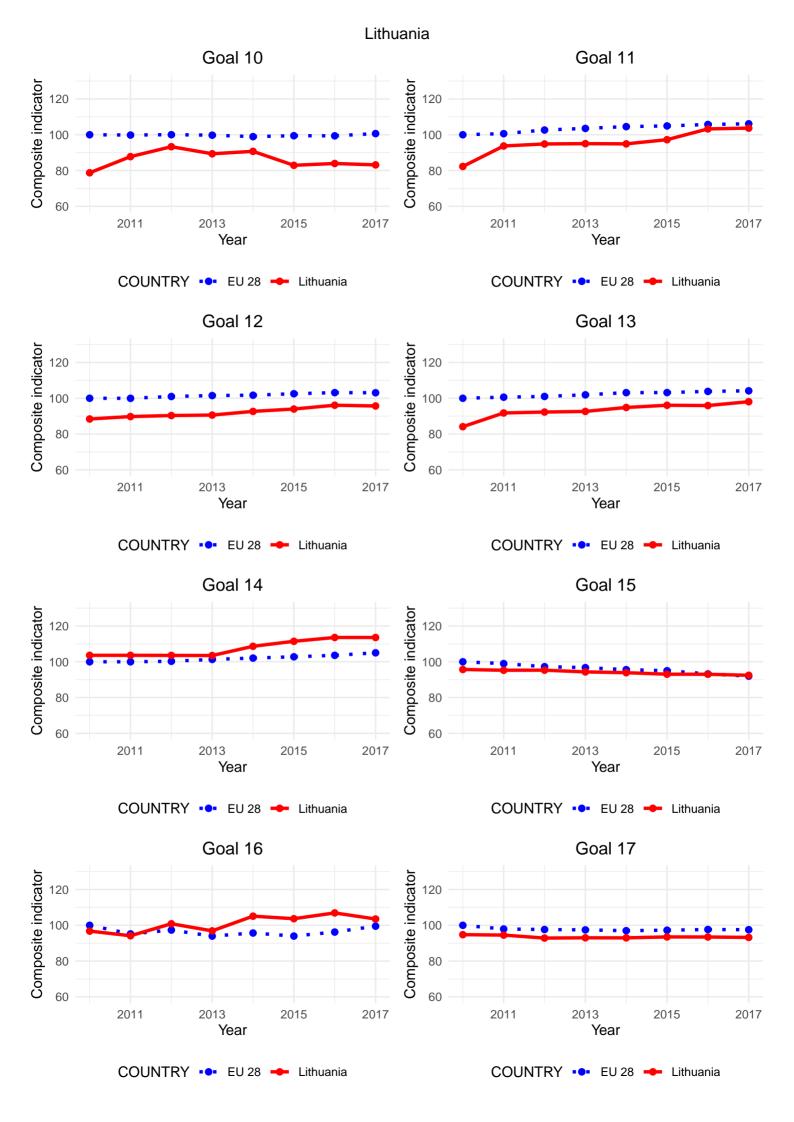


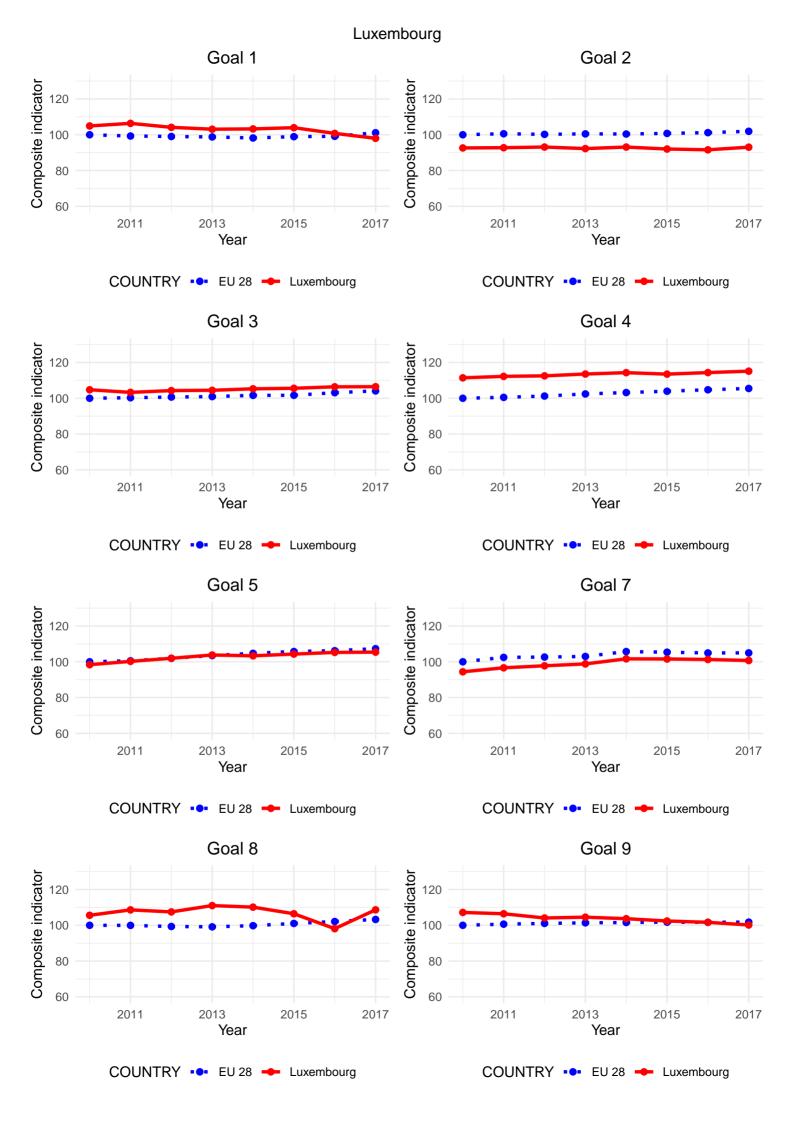


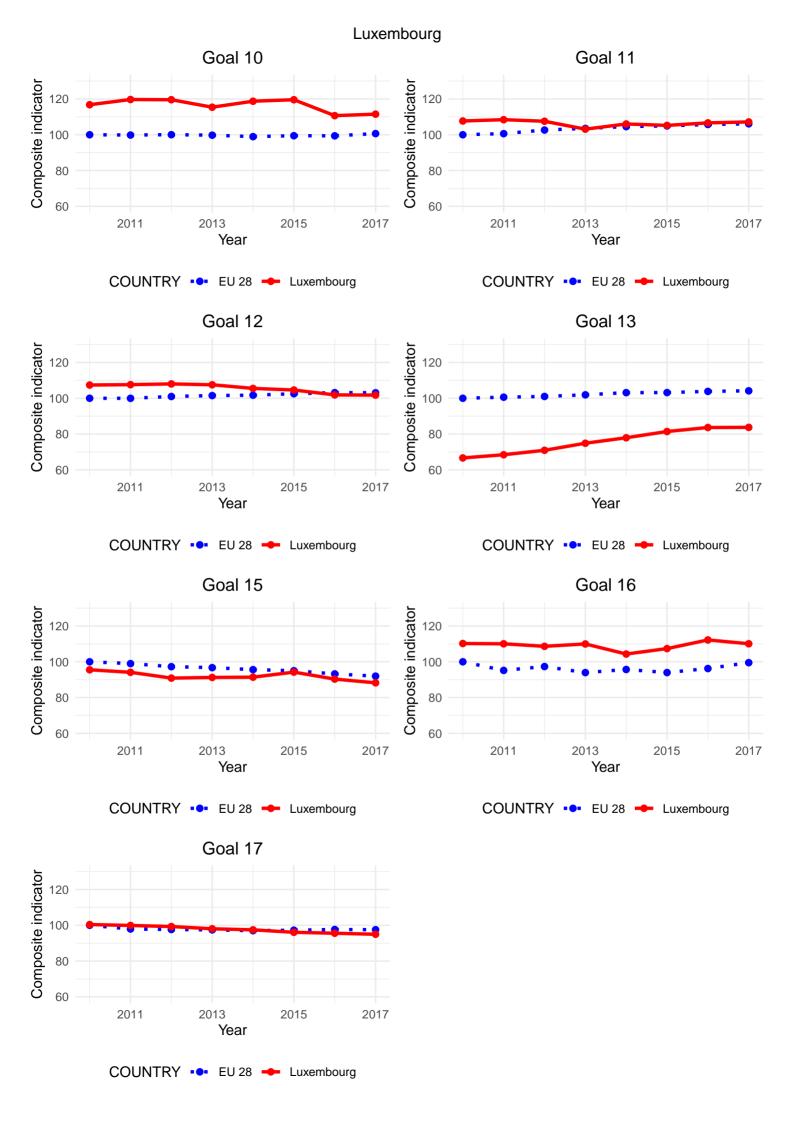


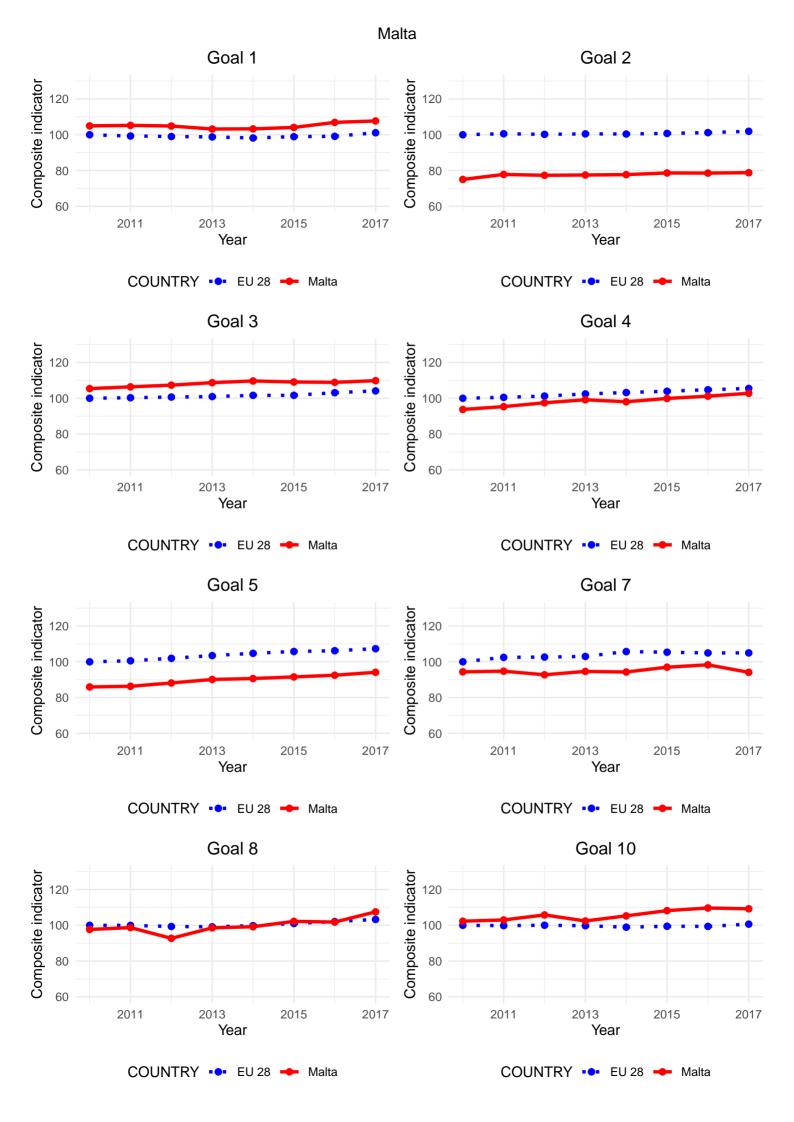


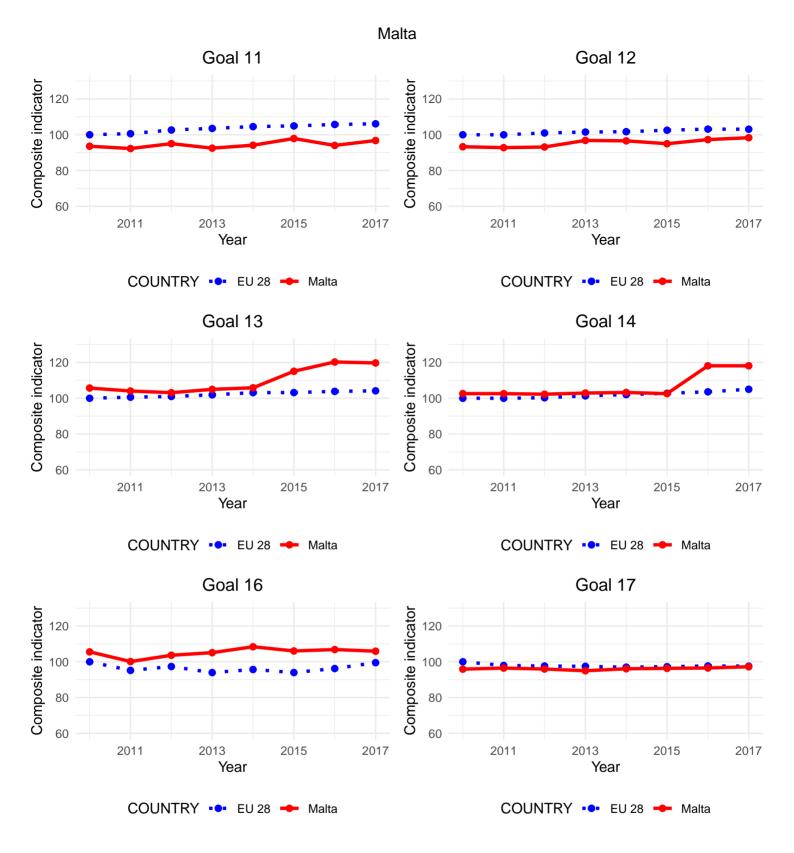


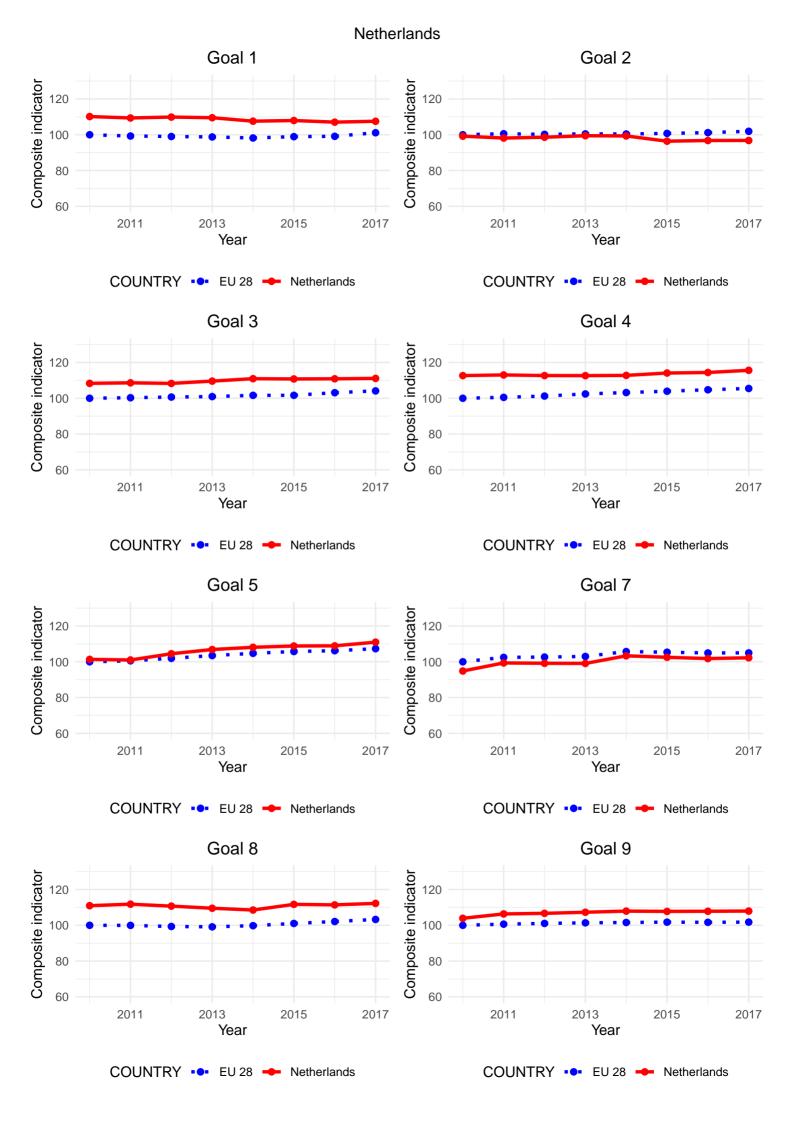


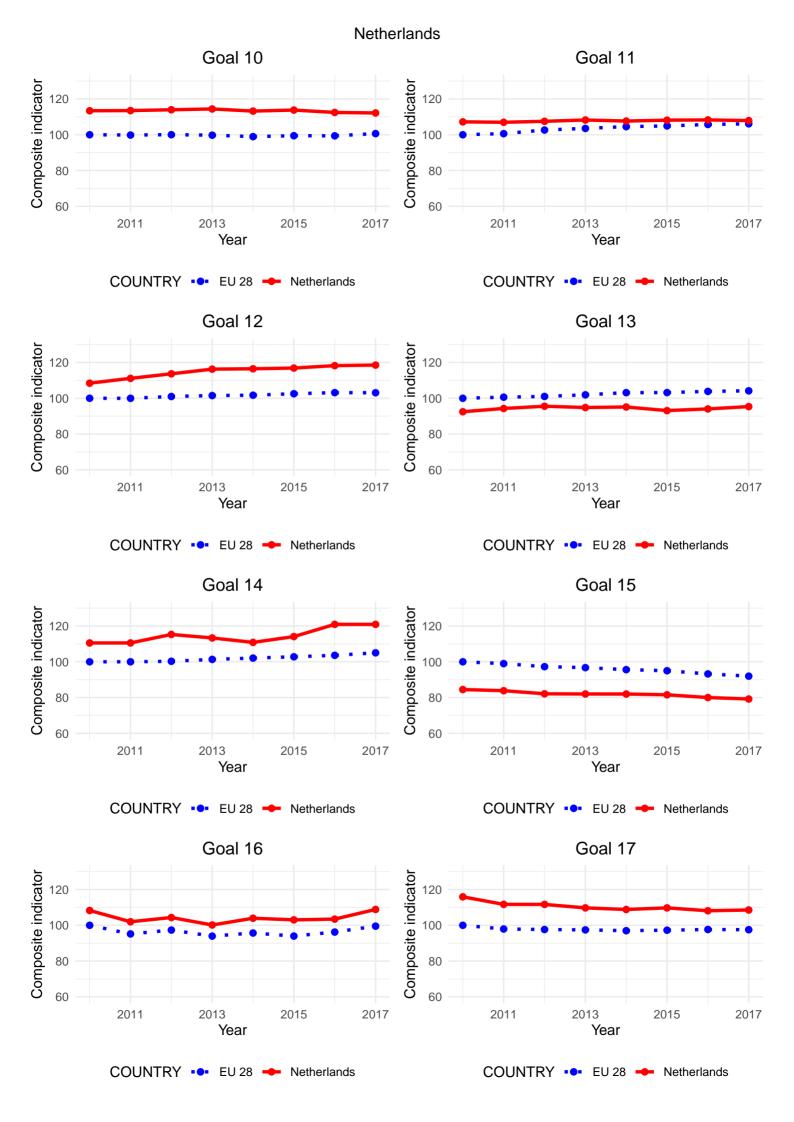


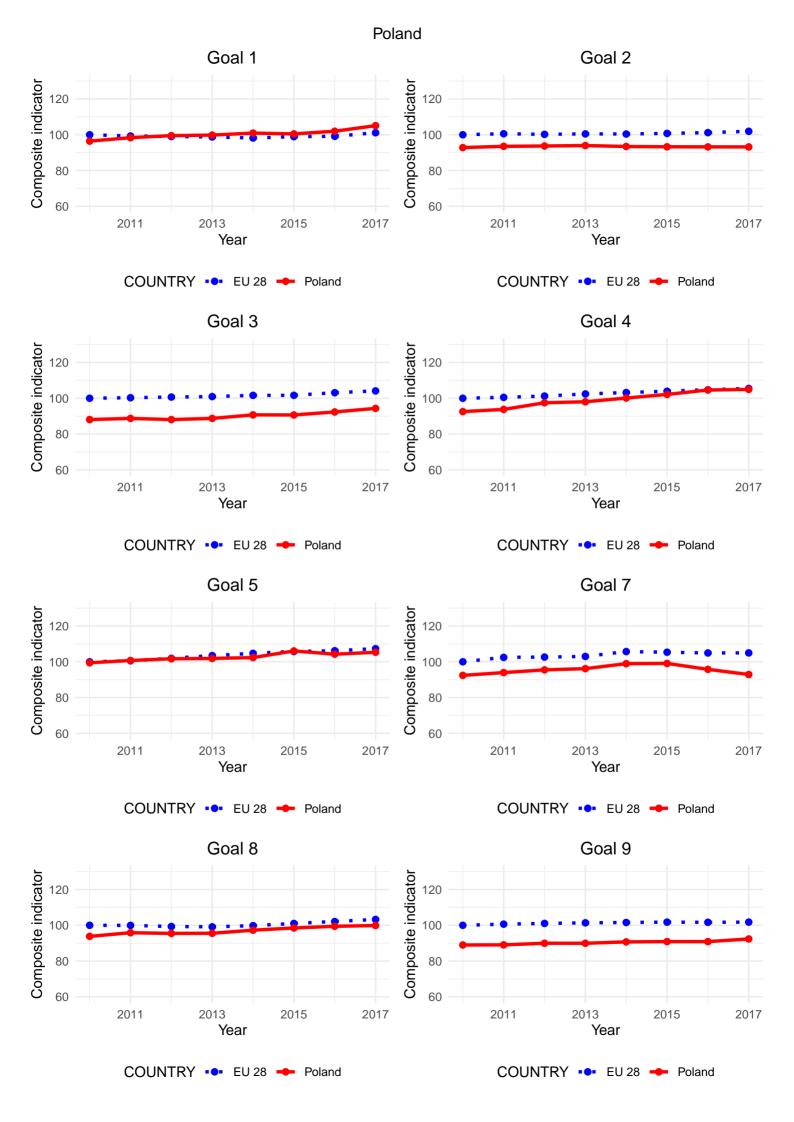


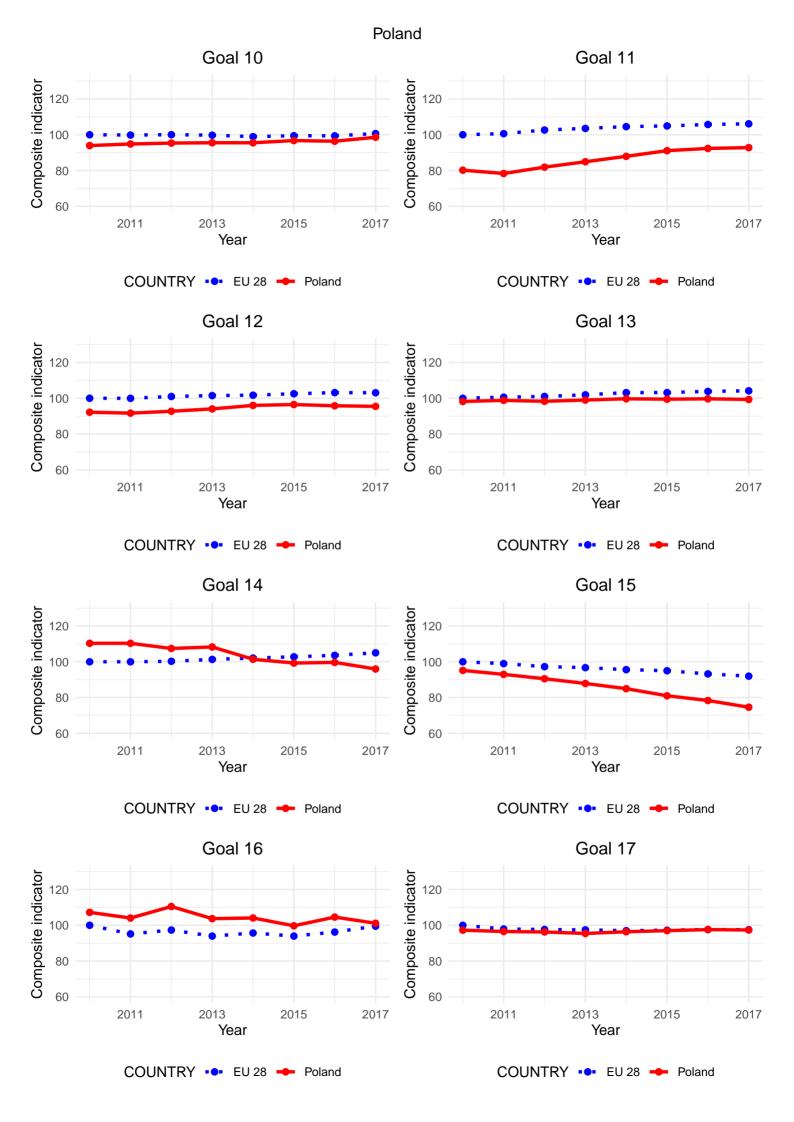


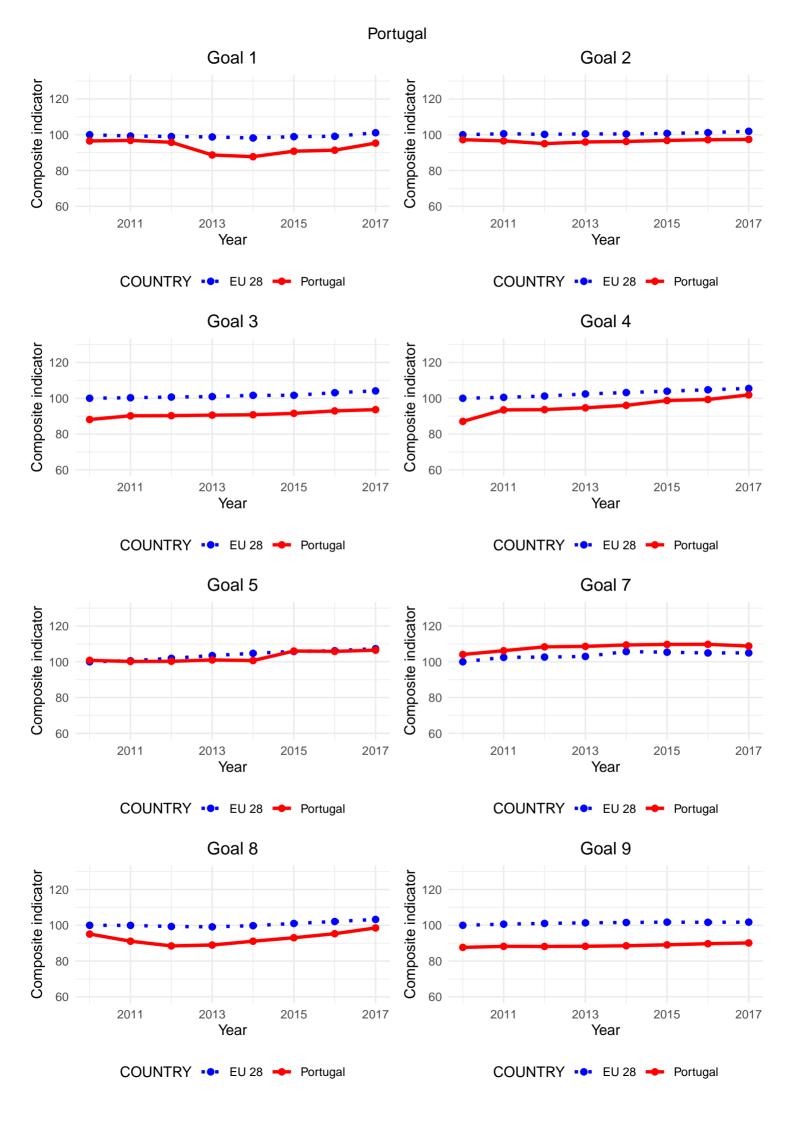


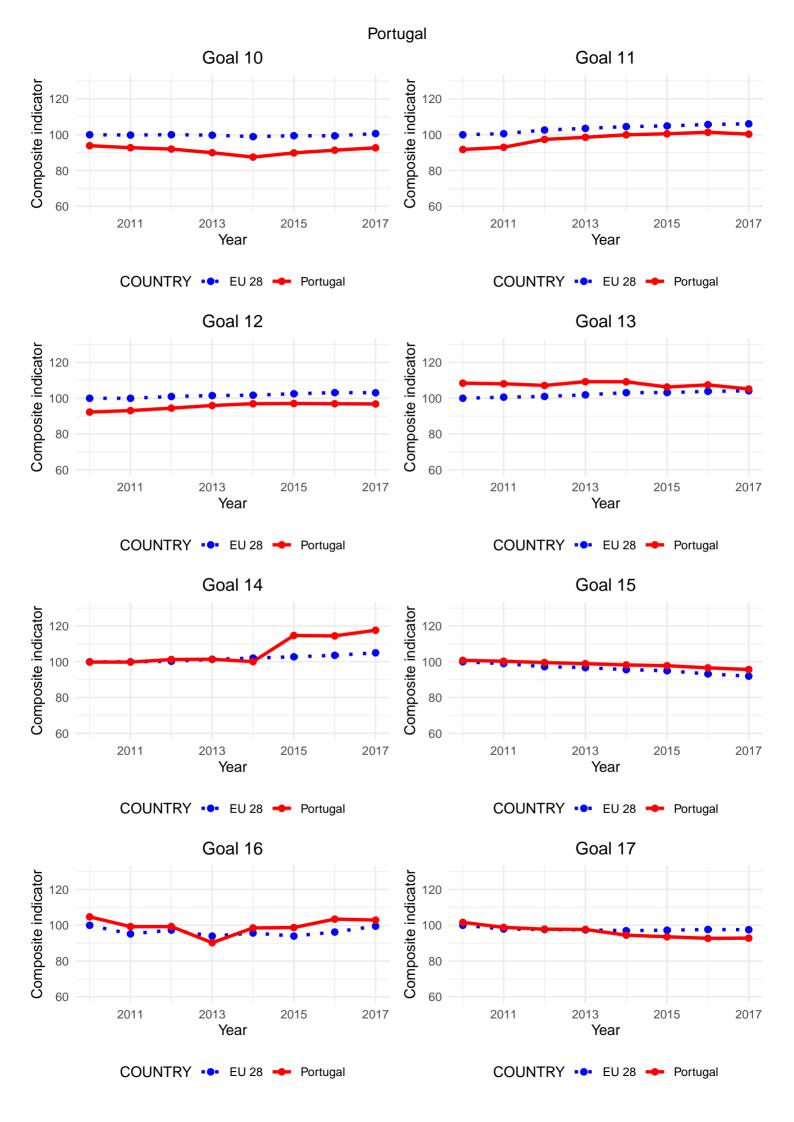


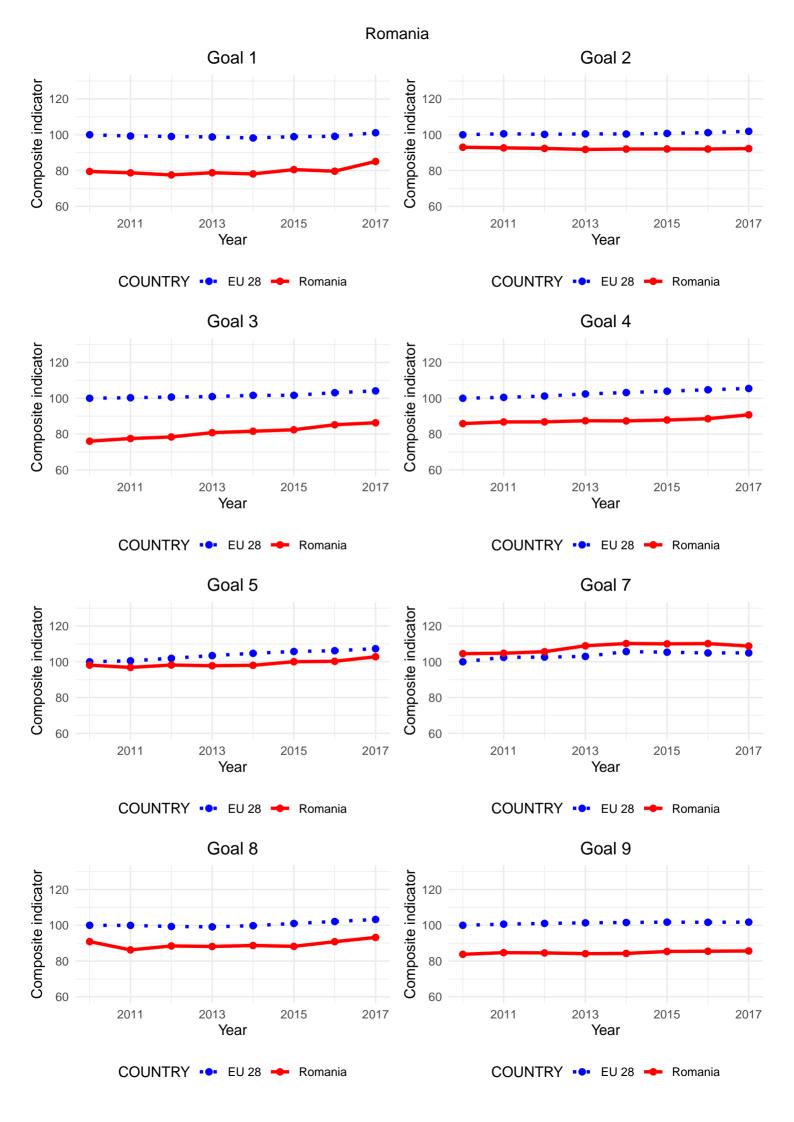


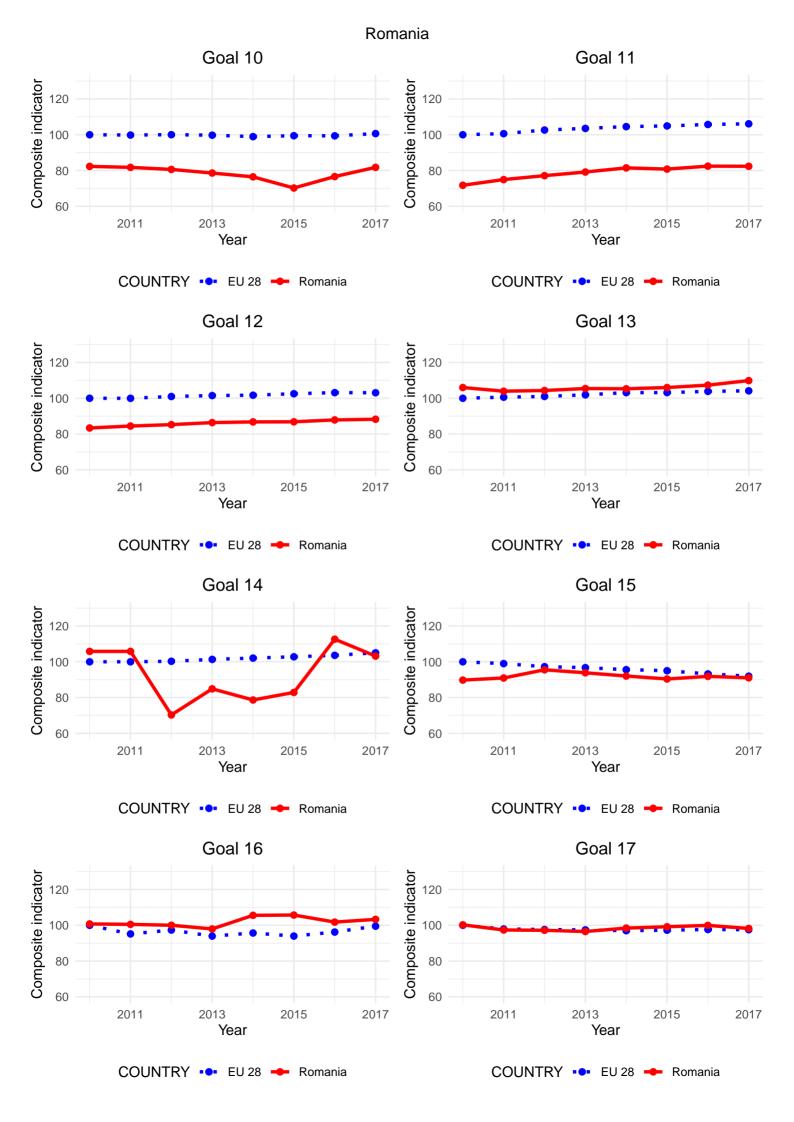


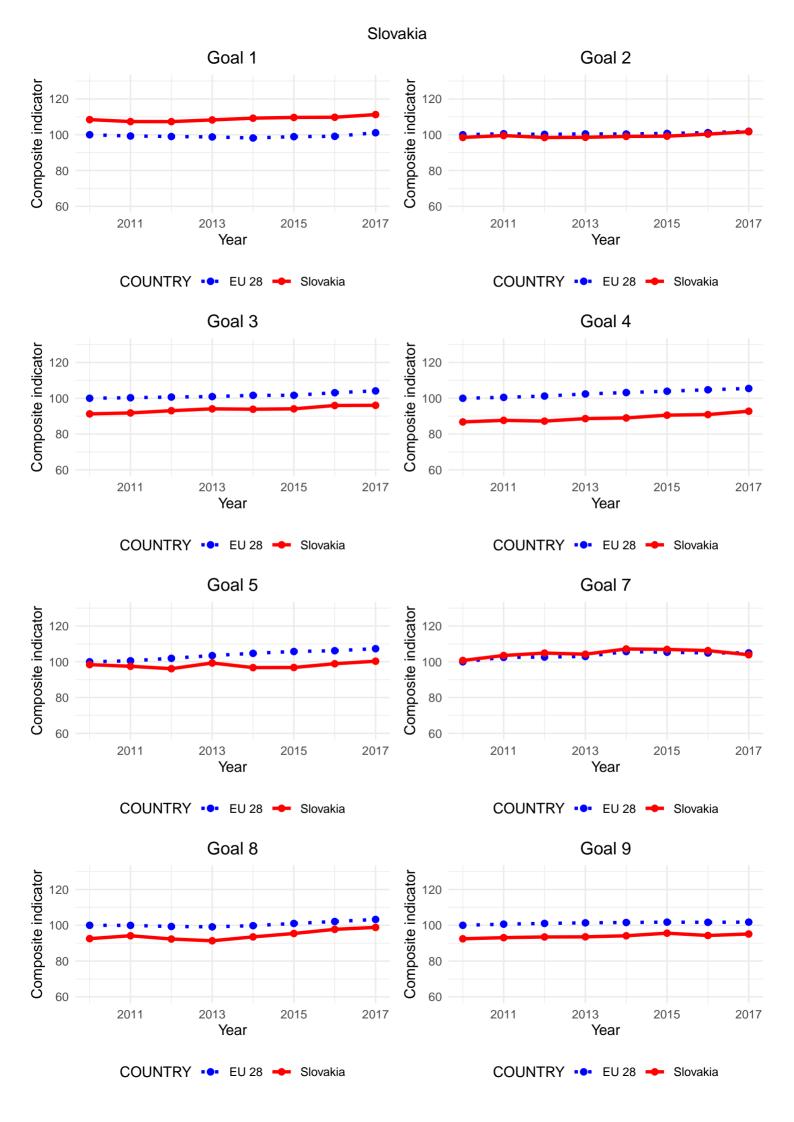


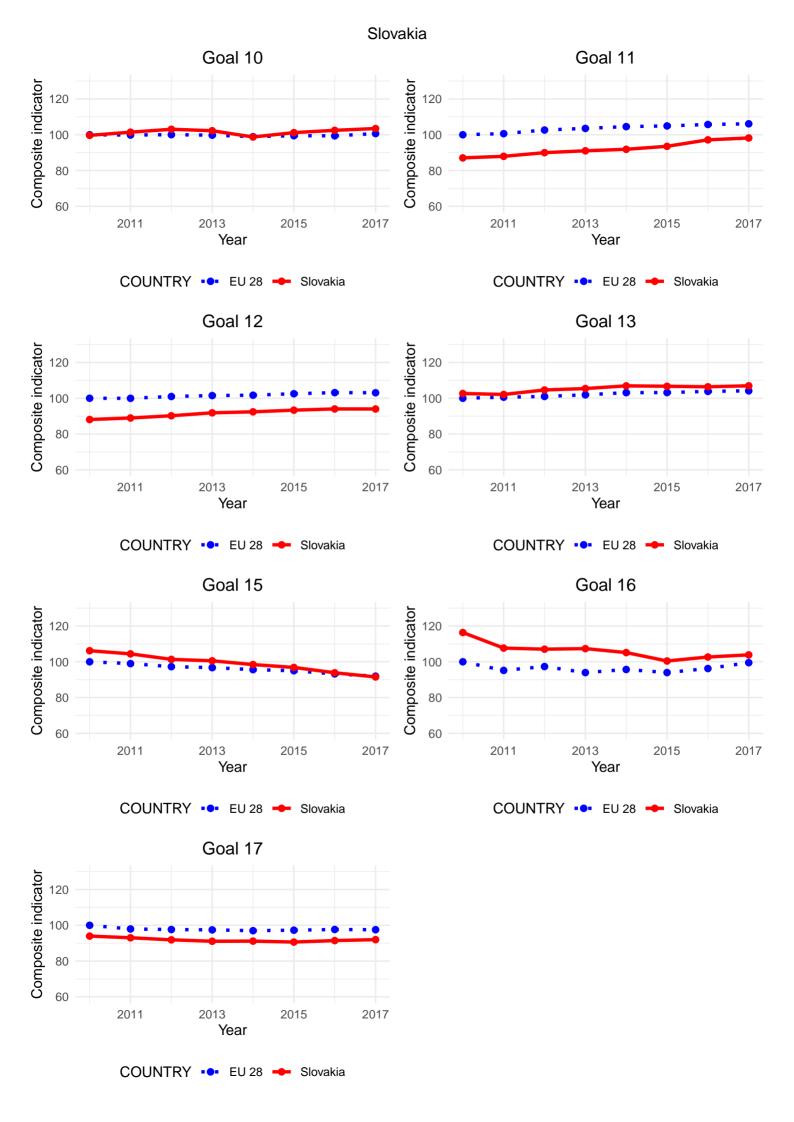


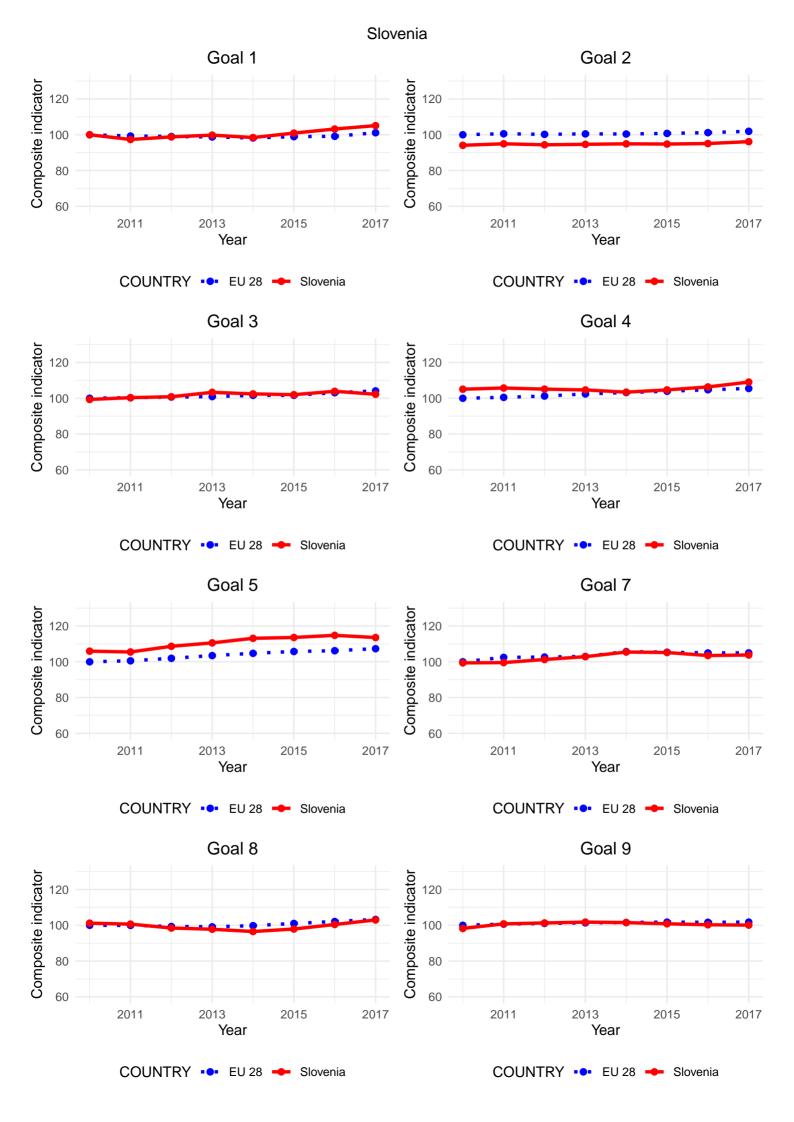


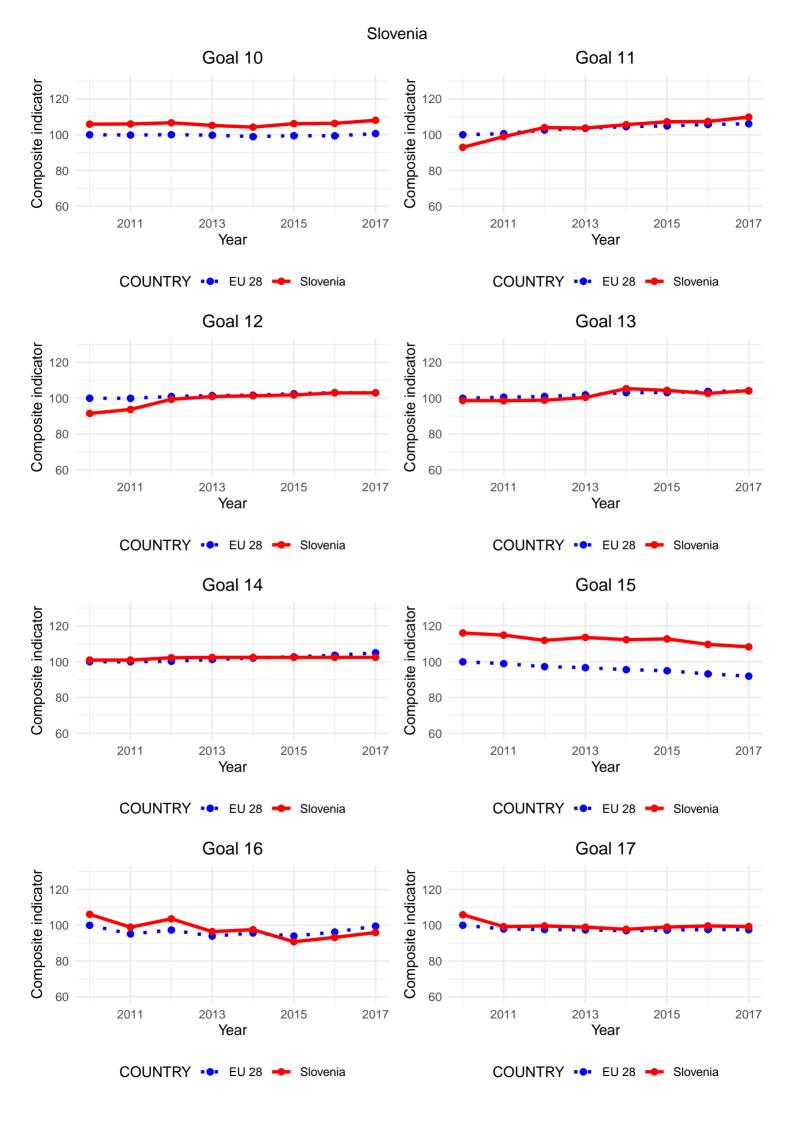


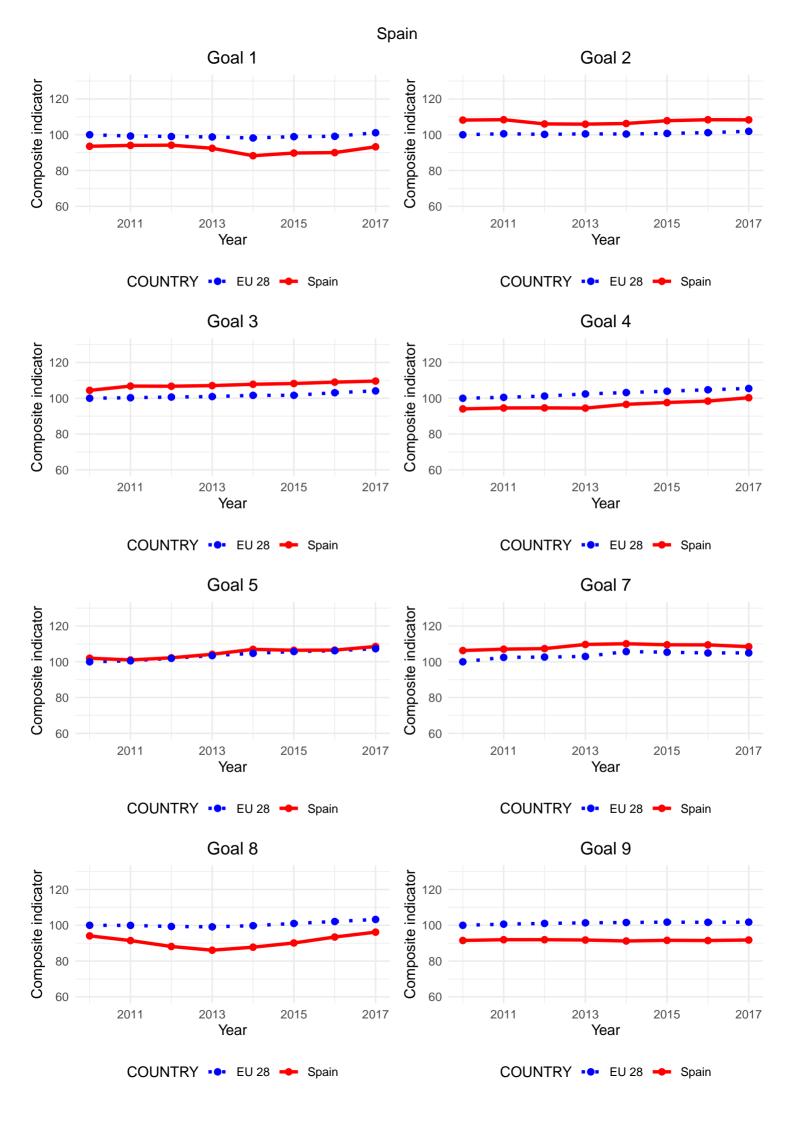


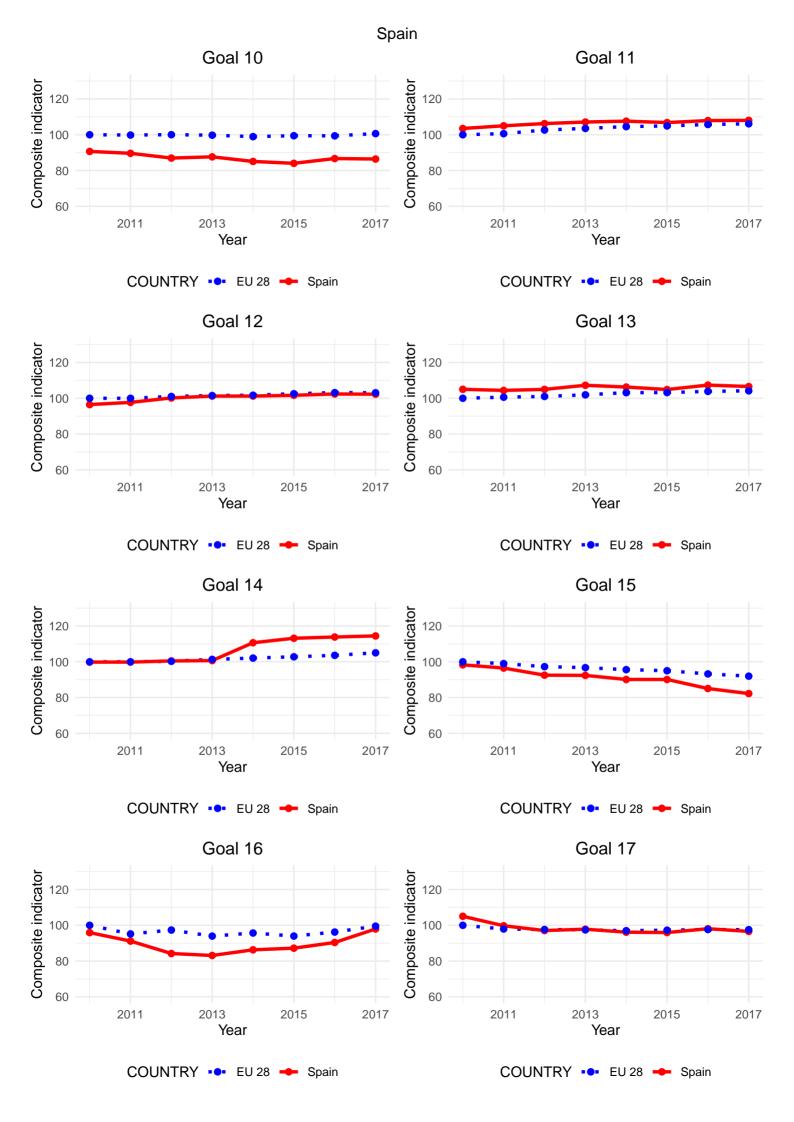


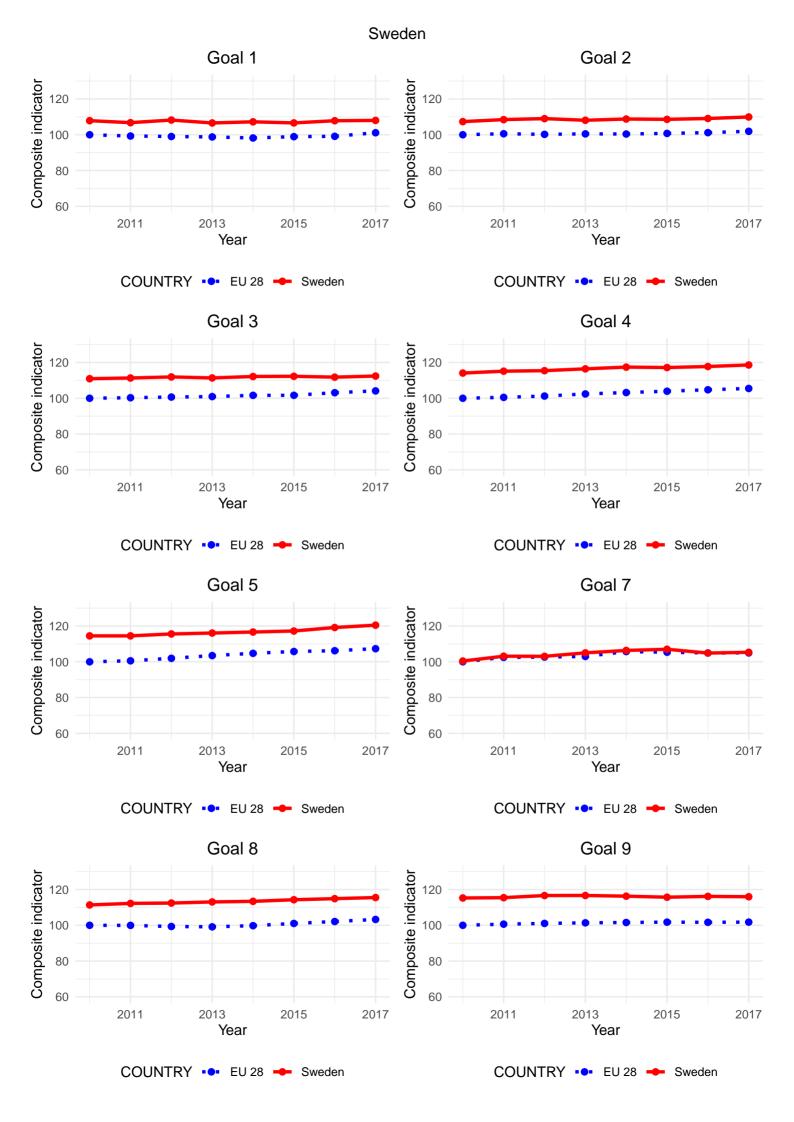


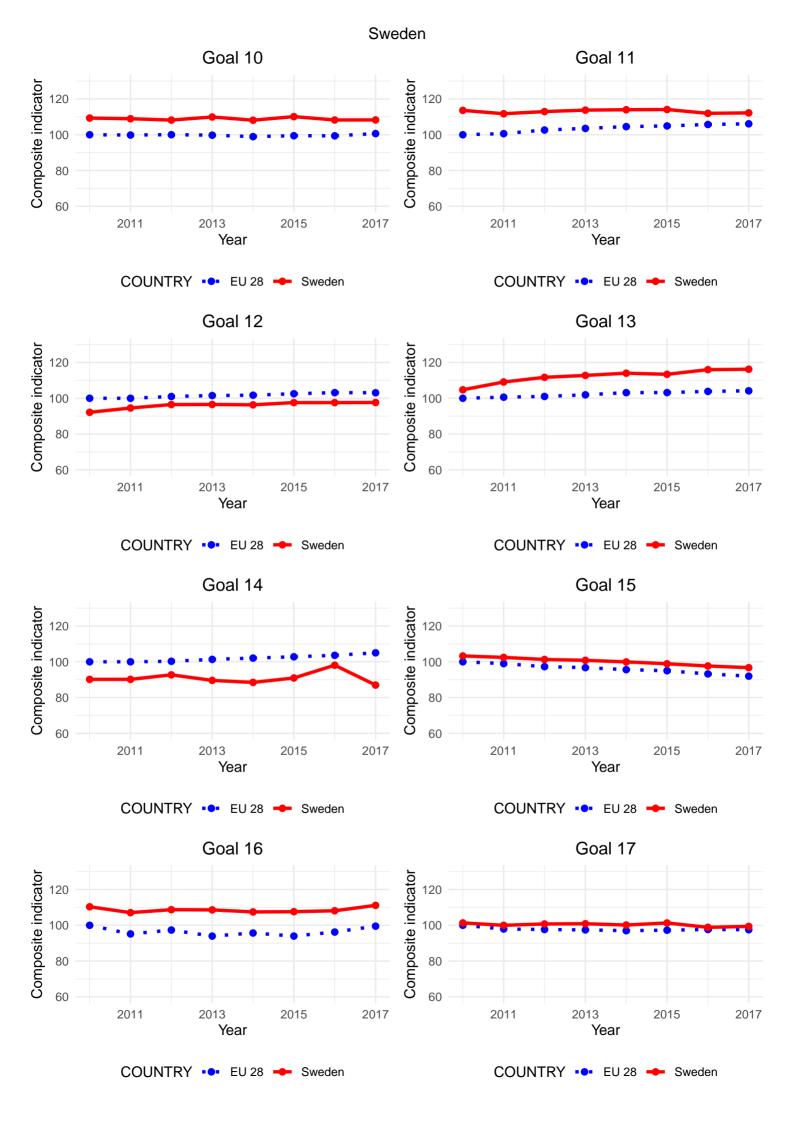


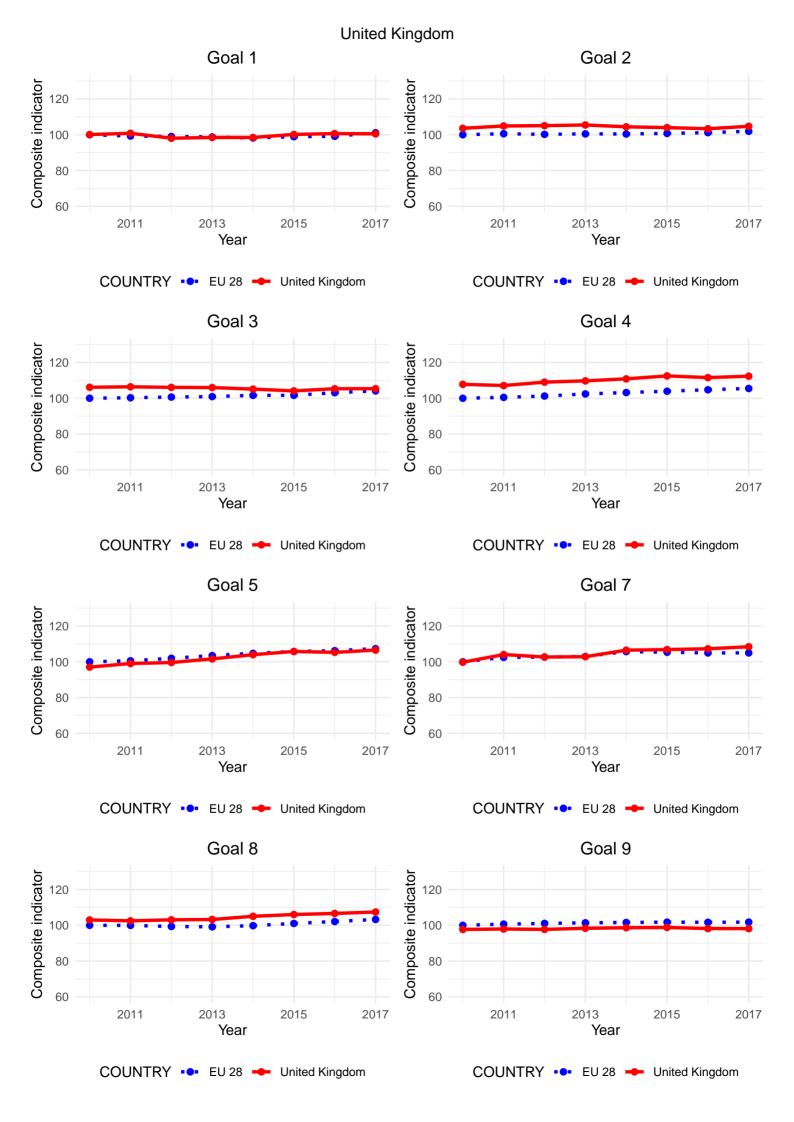


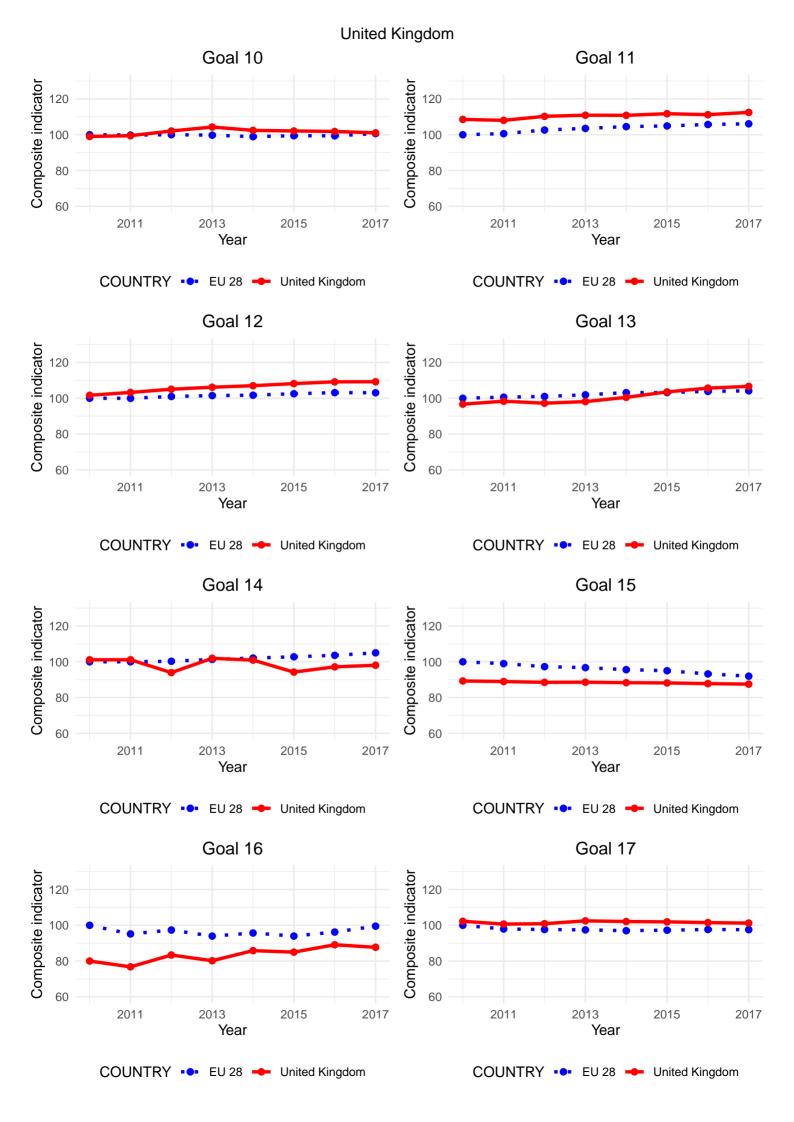












ASviS was established on 3 February 2016, on the initiative of the Unipolis Foundation and Rome's Tor Vergata University. The Alliance is committed to spreading a culture of sustainability at all levels and aims to raise awareness in Italian society and among economic stakeholders and government institutions of the importance of the 2030 Agenda for Sustainable Development. ASviS is the largest network of civil society organisations ever created in Italy and has rapidly become a point of reference for the government and an authoritative source of information on sustainable development, made available via the Alliance's website at www.asvis.it and on social media. The Sustainable Development Festival, organised by ASviS in the period between May and June, involved over 1,000 events throughout Italy in 2019.