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# An Institutional Analysis of the Europe 2020 Strategy

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**Abstract** The inherent complexity of the Europe 2020 Strategy, focused on areas where the European Commission has not full jurisdictional competence, increases the relevance of a timely and precise monitoring system and of effective and efficient institutional settings. This paper performs a quantitative evaluation of countries' performances, using the Europe 2020 Index (Pasimeni in Soc Indic Res 110(2): 613–635, 2011. doi:10.1007/s11205-011-9948-9). We observe differences among countries and across time, and investigate their determinants by means of a model including potential explanatory variables, such as level of wealth, growth, sustainability of public finances and institutions. We refer to institutions in the sense of North (J Econ Perspect 5(1):97–112, 1991), and apply the distinction between formal and informal ones. The analysis confirms the importance of formal and informal institutions, both in absolute and in relative terms, compared with the other factors considered. Institutional variables, such as good governance and social capital, are the most significant ones and have the strongest estimated effects on countries' performances.

**Keywords** Europe 2020 Strategy · Europe 2020 Index · Institutions · Indicators · Social capital · Governance

**JEL Classification** A13 · C2 · O43 · O52 · P48

The opinions expressed in this paper are the author's alone and do not reflect those of the European Commission.

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## 1 Introduction

The Europe 2020 Strategy was launched in 2010 as the main development strategy for the current decade in the European Union (EU). It was the result of a political consensus among the governments of the 27 Member States (MS) to address the main structural challenges of the EU.[1]

Its ambition was to help the EU moving out of the crisis, avoiding "the reflex to try to return to the pre-crisis situation" and changing the model of development, in order to overcome the structural weaknesses in Europe's economy, improve its competitiveness and productivity and underpin a sustainable social market economy (European Commission 2010).

Three priorities were identified as main pillars of this strategy: Smart growth—developing an economy based on knowledge and innovation; Sustainable growth—promoting a more resource efficient, greener and more competitive economy; and Inclusive growth—fostering a high-employment economy delivering economic, social and territorial cohesion.

The new initiative took over from the Lisbon strategy as the overarching political framework for the Union, trying to overcome one of the main weaknesses of the predecessor: the lack of a comprehensive system of monitoring of the performance achieved by the MS towards the common objectives.

One of the key obstacles for such supranational strategies to reach their objectives is that some of the main policy areas they focus on fall outside the EU's legal competence. Most of the core Lisbon targets, for instance, concerned areas where the EU does not have any jurisdictional competence (Erixon 2010). Political will at the national level, then, is decisive to determine the effectiveness of the strategy.

A second reason often presented to explain why the Lisbon Strategy did not actually deliver the expected results relates to the lack of an appropriate system of monitoring and evaluation of performance, based on clear, objective and precise indicators.[2] The risk for the Europe 2020 Strategy was to maintain these inherent strategic weaknesses in its architecture (Sarcinelli 2010).

In the preparation of this new strategy, therefore, there was the conviction that in order to achieve a verifiable progress the related assessments should be grounded in an indicator-based analysis. For this reason a set of eight headline indicators, with targets and expected results, was proposed and accepted by the MS. Moreover, the governance structure of these strategies evolved overtime, from the "national action programmes" of the original Lisbon Strategy, to the "national reform programmes" of the revised Lisbon Strategy, to the new "reform programmes" under the Europe 2020 Strategy. This new strategy goes together with the European Semester[3] and the so-called "country specific recommendations".[4]

[1] The EU had 27 Member States until 1 July 2013, when Croatia joined, becoming the 28th.

[2] The Lisbon Strategy actually had some indicators, and initially foresaw a performance ranking of member states, however this approach was not fully implemented.

[3] The European Semester is the first phase of the EU's annual cycle of economic policy guidance and surveillance. Each European Semester, the European Commission analyses the fiscal and structural reform policies of every Member State, provides recommendations, and monitors their implementation. In the second phase of the annual cycle, known as the National Semester, Member States implement the policies they have agreed.

[4] The country specific recommendations are based on an assessment of every Member State's plans for sound public finances (Stability or Convergence Programmes) and policy measures to boost growth and jobs (National Reform Programmes).

In literature, we find already some attempts to use these indicators to study the preliminary results of the strategy. Pasimeni (2011, 2012) developed a synthetic composite index to quantify, measure and monitor progress achieved by countries in the strategy. This paper will use that index in order to study which factors are more likely to determine success or failure in the Europe 2020 Strategy, measuring the relative importance of economic and institutional factors. The next section reviews the index, develops it for 10 years (2003–2012), and monitors the different performances of the MS. Section 3 presents the current policy context, while Sect. 4 explains the theoretical foundations of the institutional economics hypothesis. Section 5 presents the econometric analysis and results, which are discussed in Sect. 6. Section 7, finally, concludes.

## 2 The Europe 2020 Index

The Europe 2020 Index, as proposed in Pasimeni (2011, 2012), is a composite index, based on three thematic sub-indices representing the three dimensions of growth identified as main pillars of the strategy. The thematic sub-indices, in turn, are built on the eight official headline indicators set when the strategy was launched. These include economic, environmental and social indicators, which are calculated at national level, timely published by Eurostat,[5] and allow comparability over time and across countries.

The eight official indicators defining the targets are: 75 % of the population aged 20–64 should be employed; 3 % of the EU's GDP should be invested in R&D; greenhouse gas emissions should be reduced by 20 % compared to 1990; the share of renewable energy sources in final energy consumption should be increased to 20 %; energy efficiency should improve by 20 %; the share of early school leavers should be under 10 %; at least 40 % of 30–34 years old should have completed tertiary or equivalent education; and the number of people at risk of poverty or social exclusion should be reduced at least by 20 million (Fig. 1).

The eight indicators are normalized through a max–min normalization method,[6] and aggregated in two steps, with a geometric mean.[7] Equal weights are assigned to each one, in order not to privilege any dimension of the strategy over another. The formula composing the index is a double geometric mean:

$$I_g = \prod_{i=1}^{n} \left[ \left( \prod_{i=1}^{l} Xi \right)^{\frac{1}{l}} \right]^{\frac{1}{n}}$$

where $I$ is the index, $X$ the headline indicator, $l$ is the number of headline indicators, and $n$ the number of sub-indices. The first aggregation generates the three sub-indices, corresponding to the three main pillars of the strategy (smart, sustainable and inclusive), and the

[5] Available at: (http://epp.eurostat.ec.europa.eu/portal/page/portal/europe_2020_indicators/headline_indicators).

[6] $X_{ic} = \dfrac{x_{ic} - \min_k\{x_{ik}\}}{\max_k\{x_{ik}\} - \min_k\{x_{ik}\}}$ and $X_{ic} = \dfrac{\max_k\{x_{ik}\} - x_{ic}}{\max_k\{x_{ik}\} - \min_k\{x_{ik}\}}$, for "positive" and "negative" indicators.

[7] The geometric mean: $I_g = \left( \prod_{i=1}^{n} Xi \right)^{\frac{1}{n}}$ is preferred to the arithmetic one, because it accounts for the deviation from the average and satisfies the property of interval-scale unit comparability. In other words, for our purposes of cross-country comparison, it means rewarding those countries presenting more equilibrated values of the three main components of the Index, i.e. a more balanced profile.

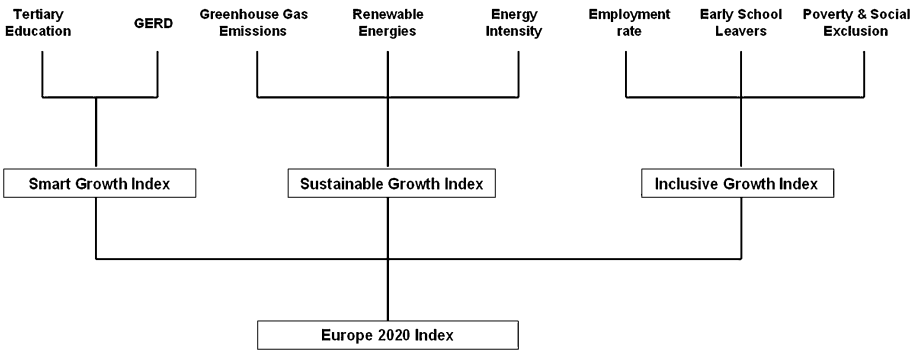


**Fig. 1** Structure of the Europe 2020 Index. *Source*: Pasimeni (2011)

second one produces the main index. The second aggregation generates the overall Europe 2020 Index. This instrument allows for a yearly monitoring of the progress made by each country. With the data available[8] the three sub-indices and the index can be built for ten consecutive years: from 2003 to 2012.

Although the Europe 2020 Strategy has been launched in 2010 and is meant to cover the decade 2010–2020, the availability of all the indicators composing our index already since 2003, makes it interesting to perform an analysis over the whole period for which we are able to construct the index. This period (2003–2012) mainly covers the years when the Lisbon Strategy was the headline strategy for the EU, however the analysis conducted through the Europe 2020 Index is relevant because can help us understand the situation of each member state in terms of the new indicators and identify ongoing trends in the key areas of the new strategy.

The following table presents the overall score of each country, each year, in the Europe 2020 Index (Table 1).

The final score of the Index varies from the lowest value of 0.085, registered by Malta in 2003, to the highest one of 0.849, registered by Sweden in 2012. All the countries have improved their scores in the reference period, for which all the data are available; there is however some variation in these trends. For instance Latvia in 2009 suffered an abrupt worsening of the overall index. By looking more in the details of the components, we find that the abrupt worsening was mainly driven by the "inclusive growth sub-index", due to the critical deterioration of its employment rate, as a consequence of the crisis. The same happened to Cyprus in 2008, when the "sustainable growth sub-index" registered an abrupt fall, driven by the peak in greenhouse gas emissions the country had in that year. Since then the situation is constantly improving.

At the same time we observe some outstanding relative performances throughout the period, like Bulgaria, Poland, and to a certain extent also Malta, who are clearly catching up, starting from lower levels, but also and significantly like Estonia in the last few years for which data are available. In 2011 the Baltic country managed to considerably increase its relative performance and jumped four places up in the ranking, reaching the fourth position. In the last 2 years, we observe a significant decrease of the score of Spain, mainly driven by the "inclusive growth sub-index", due to the dramatic fall in employment levels (Table 2).

[8] Last extraction: 10 July 2014.

**Table 1** Europe 2020 Index overall score (2003–2012)

| | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|---|---|---|---|
| Belgium | 0.445 | 0.445 | 0.456 | 0.476 | 0.490 | 0.503 | 0.530 | 0.540 | 0.547 | 0.571 |
| Bulgaria | 0.133 | 0.231 | 0.236 | 0.254 | 0.273 | 0.324 | 0.349 | 0.355 | 0.339 | 0.359 |
| Czech Rep | 0.355 | 0.356 | 0.366 | 0.378 | 0.396 | 0.417 | 0.444 | 0.468 | 0.504 | 0.540 |
| Denmark | 0.643 | 0.655 | 0.671 | 0.664 | 0.661 | 0.688 | 0.714 | 0.712 | 0.725 | 0.744 |
| Germany | 0.513 | 0.523 | 0.530 | 0.540 | 0.560 | 0.572 | 0.601 | 0.606 | 0.624 | 0.640 |
| Estonia | 0.453 | 0.462 | 0.491 | 0.530 | 0.527 | 0.557 | 0.572 | 0.588 | 0.651 | 0.647 |
| Ireland | 0.391 | 0.414 | 0.424 | 0.437 | 0.454 | 0.476 | 0.510 | 0.509 | 0.521 | 0.532 |
| Greece | 0.327 | 0.331 | 0.342 | 0.349 | 0.354 | 0.354 | 0.364 | 0.378 | 0.386 | 0.390 |
| Spain | 0.390 | 0.377 | 0.382 | 0.405 | 0.407 | 0.442 | 0.466 | 0.479 | 0.474 | 0.466 |
| France | 0.558 | 0.557 | 0.563 | 0.571 | 0.581 | 0.593 | 0.613 | 0.612 | 0.609 | 0.626 |
| Italy | 0.336 | 0.338 | 0.350 | 0.365 | 0.377 | 0.392 | 0.409 | 0.417 | 0.426 | 0.441 |
| Cyprus | 0.261 | 0.264 | 0.272 | 0.278 | 0.261 | 0.192 | 0.300 | 0.325 | 0.335 | 0.351 |
| Latvia | 0.341 | 0.360 | 0.393 | 0.432 | 0.458 | 0.467 | 0.428 | 0.458 | 0.497 | 0.510 |
| Lithuania | 0.412 | 0.451 | 0.476 | 0.498 | 0.504 | 0.519 | 0.519 | 0.514 | 0.546 | 0.563 |
| Luxembourg | 0.343 | 0.382 | 0.418 | 0.423 | 0.457 | 0.474 | 0.508 | 0.491 | 0.492 | 0.502 |
| Hungary | 0.341 | 0.343 | 0.346 | 0.365 | 0.379 | 0.397 | 0.425 | 0.435 | 0.452 | 0.472 |
| Malta | 0.085 | 0.151 | 0.159 | 0.186 | 0.179 | 0.183 | 0.187 | 0.197 | 0.229 | 0.252 |
| Netherlands | 0.469 | 0.454 | 0.471 | 0.486 | 0.498 | 0.516 | 0.533 | 0.524 | 0.549 | 0.564 |
| Austria | 0.538 | 0.542 | 0.553 | 0.567 | 0.580 | 0.597 | 0.626 | 0.624 | 0.629 | 0.654 |
| Poland | 0.279 | 0.302 | 0.320 | 0.335 | 0.357 | 0.385 | 0.417 | 0.430 | 0.445 | 0.476 |
| Portugal | 0.318 | 0.322 | 0.329 | 0.367 | 0.401 | 0.442 | 0.465 | 0.485 | 0.505 | 0.507 |
| Romania | 0.213 | 0.240 | 0.261 | 0.281 | 0.309 | 0.345 | 0.336 | 0.342 | 0.359 | 0.368 |
| Slovenia | 0.481 | 0.504 | 0.503 | 0.527 | 0.535 | 0.540 | 0.580 | 0.602 | 0.626 | 0.651 |
| Slovakia | 0.268 | 0.270 | 0.285 | 0.294 | 0.309 | 0.322 | 0.344 | 0.388 | 0.409 | 0.433 |
| Finland | 0.693 | 0.707 | 0.734 | 0.727 | 0.737 | 0.762 | 0.772 | 0.754 | 0.769 | 0.777 |
| Sweden | 0.734 | 0.744 | 0.771 | 0.792 | 0.802 | 0.822 | 0.834 | 0.819 | 0.836 | 0.849 |
| UK | 0.442 | 0.423 | 0.437 | 0.453 | 0.462 | 0.482 | 0.509 | 0.514 | 0.534 | 0.540 |

*Source*: Own calculations (based on Pasimeni 2012)

Countries are listed according to the EU official protocol

In this table we can actually observe how relative positions have changed throughout the period considered. Some countries have lost ground, notably Spain lost six positions and France four, followed by Greece, which lost three. Others, instead, have remarkably improved their position, in particular Estonia, as already mentioned, Latvia, Poland and Portugal, which are clearly catching up throughout the period. The Estonian exploit in the index is mainly due to the "smart growth sub-index", driven by an important increase (+46 %) of the gross domestic expenditure on R&D in 2011. The constant improvement of Poland in the index throughout the period was initially driven by a particularly strong improvement the "inclusive growth" pillar until 2008, and by the "smart growth" one, since then. Portugal's positive performance has been driven by a steady increase in the tertiary education attainment and a considerable reduction in early school leaving. Falling employment rates, however, have slowed down its performance in the last years. The

**Table 2** Europe 2020 Index overall ranking (2003–2012)

| | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|---|---|---|---|
| Belgium | 10 | 11 | 11 | 11 | 11 | 11 | 10 | 9 | 10 | 9 |
| Bulgaria | 26 | 26 | 26 | 26 | 25 | 24 | 23 | 24 | 25 | 25 |
| Czech Rep | 15 | 17 | 17 | 17 | 18 | 18 | 17 | 17 | 15 | 13 |
| Denmark | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Germany | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 |
| Estonia | 9 | 8 | 8 | 7 | 8 | 7 | 8 | 8 | 4 | 6 |
| Ireland | 13 | 13 | 13 | 13 | 15 | 13 | 12 | 13 | 13 | 14 |
| Greece | 20 | 20 | 20 | 21 | 22 | 22 | 22 | 23 | 23 | 23 |
| Spain | 14 | 15 | 16 | 16 | 16 | 16 | 15 | 16 | 18 | 20 |
| France | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 8 | 8 |
| Italy | 19 | 19 | 18 | 20 | 20 | 20 | 21 | 21 | 21 | 21 |
| Cyprus | 24 | 24 | 24 | 25 | 26 | 26 | 26 | 26 | 26 | 26 |
| Latvia | 18 | 16 | 15 | 14 | 13 | 15 | 18 | 18 | 16 | 15 |
| Lithuania | 12 | 10 | 9 | 9 | 9 | 9 | 11 | 11 | 11 | 11 |
| Luxembourg | 16 | 14 | 14 | 15 | 14 | 14 | 14 | 14 | 17 | 17 |
| Hungary | 17 | 18 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 |
| Malta | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 |
| Netherlands | 8 | 9 | 10 | 10 | 10 | 10 | 9 | 10 | 9 | 10 |
| Austria | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 4 |
| Poland | 22 | 22 | 22 | 22 | 21 | 21 | 20 | 20 | 20 | 18 |
| Portugal | 21 | 21 | 21 | 18 | 17 | 17 | 16 | 15 | 14 | 16 |
| Romania | 25 | 25 | 25 | 24 | 23 | 23 | 25 | 25 | 24 | 24 |
| Slovenia | 7 | 7 | 7 | 8 | 7 | 8 | 7 | 7 | 6 | 5 |
| Slovakia | 23 | 23 | 23 | 23 | 24 | 25 | 24 | 22 | 22 | 22 |
| Finland | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Sweden | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| UK | 11 | 12 | 12 | 12 | 12 | 12 | 13 | 12 | 12 | 12 |

*Source*: Own calculations

Countries are listed according to the EU official protocol

Latvian performance is positively influenced by a particularly high score in the "environmental sustainability" dimension, mainly due to the share of renewable energy in gross final energy consumption, where it is already well above the EU target for 2020.

Table 3 presents the values of the three sub-indices composing the Europe 2020 Index for the most recent year for which data are available. Sweden stands out as the first in all rankings, but most of the other Member States show more heterogeneous profiles, performing quite differently in the three dimensions of the strategy. We can observe great variation in the performances among countries and across time.

**Table 3** "Smart Growth", "Sustainable Growth", and "Inclusive Growth" sub-indices (values and ranking, 2012)

| SMGI (2012) | | | SUGI (2012) | | | INGI (2012) | | |
|---|---|---|---|---|---|---|---|---|
| Sweden | 0.870 | 1 | Sweden | 0.787 | 1 | Sweden | 0.895 | 1 |
| Finland | 0.865 | 2 | Latvia | 0.724 | 2 | Netherlands | 0.871 | 2 |
| Denmark | 0.758 | 3 | Finland | 0.653 | 3 | Austria | 0.846 | 3 |
| Slovenia | 0.693 | 4 | Denmark | 0.653 | 4 | Czech Rep | 0.835 | 4 |
| France | 0.662 | 5 | Lithuania | 0.621 | 5 | Denmark | 0.833 | 5 |
| Belgium | 0.657 | 6 | Austria | 0.614 | 6 | Germany | 0.832 | 6 |
| Germany | 0.630 | 7 | Romania | 0.597 | 7 | Finland | 0.831 | 7 |
| Netherlands | 0.629 | 8 | Estonia | 0.582 | 8 | Luxembourg | 0.805 | 8 |
| Ireland | 0.619 | 9 | Portugal | 0.522 | 9 | Slovenia | 0.787 | 9 |
| Estonia | 0.603 | 10 | Slovenia | 0.506 | 10 | Estonia | 0.773 | 10 |
| UK | 0.590 | 11 | Germany | 0.501 | 11 | UK | 0.768 | 11 |
| Luxembourg | 0.553 | 12 | Italy | 0.492 | 12 | France | 0.761 | 12 |
| Austria | 0.538 | 13 | France | 0.486 | 13 | Slovakia | 0.743 | 13 |
| Spain | 0.455 | 14 | Slovakia | 0.456 | 14 | Cyprus | 0.730 | 14 |
| Czech Rep | 0.420 | 15 | Hungary | 0.451 | 15 | Belgium | 0.725 | 15 |
| Lithuania | 0.405 | 16 | Greece | 0.450 | 16 | Lithuania | 0.709 | 16 |
| Portugal | 0.385 | 17 | Czech Rep | 0.448 | 17 | Poland | 0.705 | 17 |
| Hungary | 0.377 | 18 | Poland | 0.429 | 18 | Latvia | 0.663 | 18 |
| Poland | 0.355 | 19 | Spain | 0.415 | 19 | Ireland | 0.658 | 19 |
| Italy | 0.296 | 20 | Bulgaria | 0.408 | 20 | Portugal | 0.647 | 20 |
| Latvia | 0.277 | 21 | Belgium | 0.392 | 21 | Hungary | 0.619 | 21 |
| Greece | 0.254 | 22 | Ireland | 0.370 | 22 | Malta | 0.611 | 22 |
| Cyprus | 0.244 | 23 | UK | 0.348 | 23 | Italy | 0.587 | 23 |
| Slovakia | 0.239 | 24 | Netherlands | 0.328 | 24 | Romania | 0.555 | 24 |
| Malta | 0.233 | 25 | Luxembourg | 0.284 | 25 | Spain | 0.537 | 25 |
| Bulgaria | 0.219 | 26 | Cyprus | 0.242 | 26 | Greece | 0.520 | 26 |
| Romania | 0.151 | 27 | Malta | 0.113 | 27 | Bulgaria | 0.519 | 27 |

*Source*: Own elaborations (based on Pasimeni 2012)

## 3 Policy Context

The descriptive analysis based on the Europe 2020 Index allows a proper monitoring of the achievements of the Member States in the strategy. However it does not allow us to understand which factors determine these results, what helps improving performances and what causes divergences over time and between countries. Our analysis will try to understand which factors are more likely to be associated with positive performances of the countries in the Europe 2020 Strategy.

The years since the Europe 2020 Strategy was launched have been intensely characterised by deep changes in the governance of the EU. The focus has been put on a new macroeconomic governance, for the Eurozone in particular, but not exclusively. A wide set of legislative acts has been agreed to reform the Stability and Growth Pact (Regulation

(EU) 1175/2011 and 1177/2011), to prevent and correct macroeconomic imbalances (Regulation 1176/2011), to enforce measures that correct excessive macroeconomic imbalances in the euro area (Regulation 1174/2011), to guarantee the effective budgetary surveillance in the euro area (Regulation 1173/2011, and to set the requirements of the budgetary framework for the Member States (Directive 2011/85EU). The Euro Plus Pact, in addition, contains a set of quantitative targets and the commitments by the signatory countries to a list of political reforms, intended to improve their fiscal strength and competitiveness.

The so-called 'six-pack,' the 'two-pack,' the Euro Plus, and the Treaty on Stability, Co-ordination and Governance in the Economic and Monetary Union (the 'fiscal compact') have consequently centred the attention of EU policy-making on the main macroeconomic indicators, while at the same time the Europe 2020 Strategy remained the overarching strategy setting the long term objectives for the EU.

The importance of economic growth and of the sustainability of public finance is central in the new macroeconomic architecture of the EU. Our aim is to understand how relevant they are in ensuring success and sustainability of the Europe 2020 Strategy, and to disentangle their specific impact on countries' performances. In our analysis of the potential determinants of performances in the strategy, we take account of these factors, together with another set of indicators aiming at considering the role of institutions.

The level of general government gross debt and the general government deficit (or surplus) are key fiscal parameters, introduced already by the Maastricht Treaty. They were introduced as building criteria for the Economic and Monetary Union (EMU), and were considered necessary for its sustainability. For a review of the process conducting to the establishment of these parameters and for their macroeconomic significance, see Buiter et al. (1993), Dornbusch (1996, 1997), Delors (2013). We test them in order to assess their importance in the strategy.

While none of the indicators of the Europe 2020 Strategy is based on GDP, a good overall economic performance of the country could also determine good performance in the strategy. For this reason a measure of GDP growth is introduced in our model, to understand to what extent it influences the results.

We also observe from the data that many of the top performing countries, according to our index, happen to be relatively wealthier than the average. Richer countries might be better equipped to progress in the different dimensions of the strategy. In order to disentangle this possible effect, we introduce the measure of GDP per capita, in purchasing power standards, into the model.

Another possible line of thought, instead, emphasises the role of institutions in promoting processes of development. The question of how institutions influence progress has long been central in the study of economic development (Veblen 1898; Commons 1931; Williamson 1975; Coase 1984; North 1991; Rodrik 2008; Dixit 2009). We think that the "institutional" view might also provide a useful interpretative framework to our analysis.

The role of institutions could be another potential determinant of success factors in the Europe 2020 Strategy, and for this reason, we include this perspective in our analysis. We analyse the "institutional economics" literature in order to find possible explanatory variables, which help us disentangling the most significant factors explaining better performances in the strategy, as measured by our index.

## 4 Institutions

The so-called "institutionalism" has become increasingly central in the economic literature (Coase 1998; Hodgson 1998; Williamson 2000; Parada 2001). It attempts to incorporate a theory of institutions into economics (North 1993).

Ronald Coase (1937) first introduced explicitly the notion of transaction costs into economic analysis. Oliver Williamson (1975) and Douglas North (1991) used the concept of reduction of transaction costs to explain why a more efficient institutional system promotes development by "creating order and reducing uncertainty". Since these seminal works, the role of institutions has been studied and recognised as central in the process of economic development.

North (1991) defined institutions as "the rules of the game". They are "humanly devised constraints that structure political, economic and social interaction", and "they consist of both informal constraints, and formal rules" (p. 97). Dixit (2009) highlighted "the structure and functioning of the legal and social institutions that support economic activity and economic transactions by protecting property rights, enforcing contracts, and taking collective action to provide physical and organizational infrastructure" (p. 5).

Many authors have studied the relationship between institutions and economic performances (Olson 1982; Knack and Keefer 1997; Hall and Jones 1999; Rodrik 2008; Acemoglu and Robinson 2010; Chang 2011). All of these studies focus on the effect of institutions on economic growth, on the level of investment or on development.

Acemoglu and Robinson (2010) argued that institutions are the main determinants of differences in prosperity across countries; and in particular Acemoglu et al. (2003) suggested the existence of a "robust and strong effect of institutions on the volatility of economic activity", which in turn has strong implications for economic development.

Dollar and Kraay (2003) studied the relations between institutions and trade, finding that good quality of the institutions was related to higher levels of trade and that both were particularly important in determining the growth prospects of countries. Rodrik et al. (2004) estimated the contribution of institutions, geography and trade in determining income levels around the world, finding that the quality of institutions outranks by far all the other factors.

Some authors (Chang 2011), on the other side, have criticised the dominant view of institutions as determinants of economic development, and have argued that an improvement in the quality of institutions might be the consequence of the process of economic development, mainly driven by a better human capital (Glaeser et al. 2004).

In order to study if and how formal and informal institutions can be associated to success or failure in the Europe 2020 Strategy, the distinction between formal and informal institutions must be introduced.

### 4.1 Formal Institutions

Formal institutions are laws, rules and mechanisms that define the system in which economic agents can operate. They include the constitutional rules of the political game, the legislature that makes specific regulations within this context, the courts, the police, as well as licensing and regulatory agencies that interpret and enforce these rules.

Knack and Keefer (1997) suggest using property rights enforcements as main indicators of institutions; others look at measures of corruption (Mauro 1995), or at the levels of entry

barriers (Djankov et al. 2002), as good proxies. Formal institutions are linked, in literature, to the concept of good governance.

The World Bank developed a set of indicators aimed at measuring all different aspects of good governance: the Worldwide Governance Indicators[9] (WGI) (Kaufmann et al. 2010). Their use in the economic literature is growing exponentially, in parallel with the greater focus on institutional factors as explanatory variables for the process of economic development.

These indicators are widely used, but they are also subject to some criticism, because they may suffer from perceptual biases, adverse selection in sampling, and conceptual conflation with economic policy choices (Kurtz and Schrank 2007), or because their construction is based on untested hypotheses (Glaeser et al. 2004). However, the need to operationalize the concept of institutional quality and to develop robust models to assess their relevance implies that these indicators currently are the best source of data to perform an institutional analysis of the process of economic development.

The analysis of institutions as a key element of good governance moved from the field of development economics, and was initially applied to the study of developing countries. Subsequently, however, it has been found relevant for developed countries as well, and this is of particular relevance for our work.

Sachs and Warner (1997) studied the relation between trade openness and institutional quality and found that such factors are particularly relevant to explain economic development in all countries, not just in developing ones. The role of good institutions is key in explaining the integration in international trade, in particular why rich countries trade with each other, but developing countries less so (Anderson and Marcouiller 2002). The idea that institutional differences are an important determinant of trade flows is confirmed by Levchenko (2004), who shows how countries with better institutions capture larger import shares in industries that are more 'institutionally complex'.

Institutional quality, moreover, is considered to be the prime determinant of capital flows and investment across countries (Lambsdorff 2003; Alfaro et al. 2005), it explains most of variation in per capita incomes across countries (Acemoglu et al. 2001), and seems to be associated with higher investments in R&D (Clarke 2001) and lower volatility of macroeconomic policies (Acemoglu et al. 2003), leading to higher growth.

The concept of government effectiveness is the one on which we focus our attention. Among the governance indicators produced by the World Bank, government effectiveness tries to measure the general quality of public administration in one country, based on perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. Given its comprehensiveness of all the main institutional characteristics relevant to ensure that national governments comply with agreed strategies, we consider it as the most appropriate indicator to test the relevance of formal institutions in determining good performance in a wide, governmental, development agenda like the Europe 2020 Strategy.

Government effectiveness is found to be strictly associated with the existence of transparent budget rules (Blume and Voigt 2013), with higher levels of fiscal decentralisation (Kyriacou and Roca-Sagalés 2011), and with better credit rating rates of sovereign

[9] The Worldwide Governance Indicators report aggregate and individual governance indicators for 215 economies over the period 1996–2012, for six dimensions of governance: (1) Voice and accountability; (2) Political stability and absence of violence; (3) Government effectiveness; (4) Regulatory quality; (5) Rule of law; (6) Control of corruption.

debts (Afonso et al. 2007).[10] It leads to better social outcomes, like lower rates of some crime categories (Azfar and Gurgur 2005), and is the strongest macro-level predictor of support for democracy (Magalhães 2014).

According to Lee and Whitford (2009), much of the variation in the levels of government effectiveness is explained by national income, with wealthier countries experiencing greater perceptions of effectiveness, but in a more recent analysis Adams-Kane and Lim (2014) reverse the causality link, arguing that it is government effectiveness affecting per capita income, and they identify human capital formation as the key channel. The quality of institutions, as measured by government effectiveness, is central to learning and education, and human capital is found to have a significant and positive effect on per capita income levels.

The literature on government effectiveness emphasises the importance of having all the leverages of policy making work in an institutional environment with high quality of governance. This is why we use this indicator as a potential explanatory variable in our model.

### 4.2 Informal Institutions

The idea that informal institutions shaping the organization of a society may have a decisive effect on the economic performance of countries has been in the past one of the fundamental questions of political economy (Cole et al. 1992, p. 1095; Sabatini 2008). "Features of social organization, such as trust, norms, and networks that can improve the efficiency of society by facilitating coordinated actions" (Putnam 1993, p. 167) are what is commonly referred to as "social capital".

The concept of social capital has often been prone to multiple interpretations, having multiple dimensions and possible effects (Serageldin and Grootaert 2000). Its definition has several variations across the social sciences (Bourdieu 1986; Coleman 1988; Putnam 1993; Fukuyama 1995; Woolcock 1998; Ostrom 1999; OECD 2001). In sociology and political science it is often used as a property of organizations or countries, while in economics it is linked to the characteristics of individuals (Pugno and Verme 2012).

Economists have often used it to explain the role social interaction plays in promoting a better functioning of markets (Greif 1993). The literature on game theory, and in particular on repeated games, has highlighted at microeconomic level how cooperation can be enhanced thanks to social capital (Kreps et al. 1982; Abreu 1988). Social connections can even sometimes substitute legal structures and produce the same effect of reducing transaction costs, as we have seen for formal institutions (Arrow 1972; Glaeser et al. 2002).

Informal institutions, synthesised by the concepts of social capital and trust, are extremely relevant even in the most advanced market economies (Dixit 2009), since "reputation and the trust it fosters are the core attributes of market capitalism" (Greenspan 2007, p. 256). As Arrow (1972, p. 357) pointed out: "virtually every commercial transaction has within itself an element of trust, certainly any transaction conducted over a period of time. It can be plausibly argued that much of the economic backwardness in the world can be explained by the lack of mutual confidence".

The dimension of "trust" is considered as the most important to explain the economic function of social capital (Coleman 1988; Fukuyama 1995; Knack and Keefer 1997; Ostrom 1999; Zak and Knack 2001; Sabatini 2008), as an engine for enhanced efficiency

[10] Interestingly, the study by Alfonso, Gomes and Rother has been performed before the start of the financial crisis and of the consequent sovereign debt problems in the Eurozone.

and economic growth (Pugno and Verme 2012), and as a key to overcome market failures linked to the difficulty to enforce or observe contracts (Karlan 2005). Most of the economic analyses of social capital use a generalised measure of interpersonal trust, as provided by the World Values Survey[11] (WVS) (Inglehart 1999; Sabatini 2009; Toya and Skidmore 2012).

The positive effect of social capital on growth and productivity has been highlighted by a very large body of literature (Fukuyama 1995; Knack and Keefer 1997; La Porta et al. 1997; Sobel 2002; Glaeser et al. 2002). Among these studies, it is worth highlighting the macro-econometric analysis by Knack and Keefer (1997), who found that an increase in the WVS measure of trust in one country increases economic growth too.

The same results, but on a wider sample, were found by Zak and Knack (2001), who argued that "growth rises by nearly 1 percentage point on average for each 15 percentage point increase in trust (a one standard deviation increase)" (Zak and Knack 2001, p. 307–309). They also argued that formal institutions may affect growth through their impact on trust: a better institutional setting is likely to enhance trust, thus reducing transaction costs and overcoming potential market failures, which leads to higher growth. Beugelsdijk et al. (2004) tested the robustness of these results, finding that if the first analysis (Knack and Keefer 1997) could be considered as "limitedly robust", the Zak and Knack (2001) results, instead, are highly robust both in terms of statistical significance of the estimated coefficients and in terms of the estimated effect sizes.

The literature on the effects of social capital, as measured by trust, suggests a series of positive effects: on trade (Greif 1993; Woolcock 1998), health (Putnam 2000; Rose 2000), school performance (Coleman 1988), entrepreneurship and innovation (Brüderl and Preisendörfer 1998; Dakhli and De Clercq 2004), the well-functioning of formal institutions (Williamson 2000), in terms of judicial efficiency, control of corruption and civic involvement (La Porta et al. 1997), crime prevention (Wilson 1987), and democratic stability (Inglehart 1999; Uslaner 2003). Social capital is also associated with higher reported levels of happiness (Uslaner 2003; Bjørnskov 2003), and life satisfaction (Helliwell et al. 2009; Pugno and Verme 2012).

Social capital, as measured by trust, seems the to be the best variable to include the role of informal institutions into our model, and to test whether or not it is a key factor in determining the performances of EU countries.

## 5 Econometric Analysis

We study how and to what extent the Europe 2020 Index is influenced by other measures and, if so, which are the most significant factors. Our hypothesis is that institutional factors might be the key explanatory variables, even more than the indicators of economic growth and public finances. For this reason we perform a set of multiple linear regression analyses.

The empirical strategy is to compose a large panel of 270 observations, covering 27 countries for 10 years, since 2003–2012, which are those for which the Europe 2020 Index can be calculated. The model has the Europe 2020 Index as the dependent variable (E2I).

Formal institutions are included in the model through the concept of good governance. The indicator of Government Effectiveness, from the World Governance

[11] The WVS measures generalised trust through the question developed by Rosenberg (1956): "Generally speaking, would you say that most people can be trusted or that you can be too careful in dealing with people?".

Indicators,[12] is used as a measure of good governance. This indicator tries to capture the perceptions citizens have of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.

Informal institutions are included through the concept of social capital. We use the generalised measure of trust (Trust), from the World Values Survey.[13] This indicator is based on a survey asking people whether they think that, generally speaking, most people can be trusted or one needs to be very careful in dealing with other people. The average, then, is computed for each country. It is a generalised measure of trust, which is often used as the best proxy for social capital.

The indicators of sustainability of public finances considered in the model are the general government gross debt (Debt[14]), and the general government deficit or surplus (Deficit[15]), both calculated in percentage of GDP and provided by the AMECO[16] database. Finally we test two additional independent variables: GDP growth (Growth[17]) and GDP per capita in purchasing power standards (GGDPpps[18]), as provided by Eurostat.

The model tests the role of the six explanatory variables in influencing the Europe 2020 Index (Table 4).

We first test the two institutional variables alone, and find a coefficient of determination of 56 %, which means the two variables explain more than half of total variation in the index. Both institutional variables, moreover, are strongly significant ($p = 0.000$) and have positive coefficients.

We gradually include the other variables, in order to understand whether they add explanatory power to the model, and find that debt and deficit do not add much, moreover they are not significant and have coefficients close to zero. The level of GDP per capita in purchasing power standards has the same null effect on our dependent variable. GDP growth is the only one which shows certain significance, but it is associated with extremely low coefficient, close to zero. It might be considered significant in the regression, but it does not influence the variation of our index.

Government effectiveness and trust, on the contrary, maintain their strong significance in all specifications of the model and the estimated effects are quite relevant. An increment of one unit of the government effectiveness indicator, holding constant all the other variables, leads to an increase in the Europe 2020 Index by 0.079 units, while the same increment in the generalised measure of trust leads to an increase in the index by 0.548 units. None of the other variables has a coefficient considerably different from zero, in any of the specifications of the model.

[12] Available at: www.info.worldbank.org/governance/wgi.

[13] Available at: www.worldvaluessurvey.org.

[14] Available at: http://ec.europa.eu/economy_finance/db_indicators/ameco/zipped_en.htm.

[15] Available at: http://ec.europa.eu/economy_finance/db_indicators/ameco/zipped_en.htm.

[16] AMECO is the annual macro-economic database of the European Commission's Directorate General for Economic and Financial Affairs: http://ec.europa.eu/economy_finance/db_indicators/ameco/index_en.htm.

[17] Available at: http://ec.europa.eu/eurostat/tgm/table.do?tab=table&plugin=1&language=en&pcode=tec00115.

[18] Available at: http://ec.europa.eu/eurostat/en/web/products-datasets/-/TEC00114.

**Table 4** Europe 2020 Index and institutional and economic factors

| Dependent variable: Europe 2020 Index | | | | | | |
|---|---|---|---|---|---|---|
| Explanatory variables | (1) | (2) | (3) | (4) | (5) | (6) |
| Gov effectiveness | .074*** (0.013) | .077*** (0.013) | .071*** (0.013) | .078*** (0.016) | .073*** (0.012) | .079*** (0.015) |
| Trust | .566*** (0.060) | .573*** (0.061) | .562*** (0.059) | .564*** (0.060) | .552*** (0.060) | .548*** (0.060) |
| Debt | | .000 (0.000) | | | −.001* (0.000) | −.001* (0.000) |
| Deficit | | −.002 (0.002) | | | .002 (0.002) | .000 (0.002) |
| Growth | | | −.004* (0.002) | | −.005** (0.002) | −.005** (0.002) |
| GPDpps | | | | .000 (0.000) | | .000 (0.000) |
| Constant | .208*** (0.015) | .215*** (0.019) | .220*** (0.016) | .212*** (0.018) | .250*** (0.022) | .257*** (0.024) |
| Observations | 270 | 270 | 270 | 270 | 270 | 270 |
| R-sq | 0.560 | 0.565 | 0.571 | 0.561 | 0.580 | 0.581 |
| n° countries | 27 | 27 | 27 | 27 | 27 | 27 |

Robust t-statistics in brackets. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$. Test (F): Prob > $F = 0.0000$. The main assumptions are verified: linearity of the relationship; independence of the observations; normality of the residuals; homoscedasticity

## 6 Discussion

Our attempt to disentangle the main factors affecting the performance of EU Member States in pursuing the goals of the Europe 2020 Strategy points to the importance of institutions. Formal and informal institutions seem to play a decisive role in explaining the different performances of European countries in the Europe 2020 Strategy, more than the other economic variables, based on GDP, which have been tested through our model. Both formal and informal institutions play a prominent role in such a complex development strategy, with social capital being the first and most relevant factor.

These results confirm the "institutional" view, suggesting that effectiveness of policy making strongly depends on context factors, and that the institutional environment in which it takes place may actually determine a great deal of its chances to succeed.

The results of the analysis give a robust support to the hypothesis that good governance is particularly important in such a strategy. As we saw before, many of the policy fields on which the Europe 2020 Strategy focuses fall out of the direct competences of the EU, and this implies that national policy making plays a decisive role in determining the effectiveness of the strategy and the overall European capacity to achieve its goals. Our analysis has proved the intuitive idea that much of the variation in performances across countries depends on the quality of governance at national level.

The role of social capital, then, appears as particularly strong. More cohesive societies are also those who are better equipped to pursue a broad development strategy. A strategy based on several pillars, whose scope goes well beyond the strict concept of GDP growth,

seems to require a high level of social capital, measured by its component of interpersonal trust.

These results also find support in previous analyses (Easterly 2002; Rodrik 2003; Dixit 2009), which suggested that the quality of institutions becomes more decisive for higher levels of development, which is a particularly interesting suggestion for our case of a developing strategy for a group of developed economies, like the MS of the EU.

Others, like Gros and Roth (2012), specifically mentioned the relevance of institutional factors for the Europe 2020 Strategy. They argued that it can be best achieved with appropriate and sufficiently investment in human and social capital and with efficient government institutions. They claim that the quality of the institutions is more important than other factors, and that "a sufficient level of government effectiveness throughout the EU-27 is a critical condition for making the EU as a whole more competitive", even arguing that "a clear implication would be that the structural funds should be used to build social capital and effective institutions rather than airports and highways" (Gros and Roth 2012).

## 7 Conclusions

The inherent complexity of the Europe 2020 Strategy, focused on areas where the European Commission has not full jurisdictional competence, increases the relevance of a timely and precise monitoring system and of an effective and efficient institutional setting. A supranational strategy so dependent on initiatives and actions by national governments requires a strong monitoring mechanism and a high degree of accountability for the Member States. In order to achieve the best possible results, it is important to understand which are the key factors determining countries' performances. This paper makes contributions in both directions.

The Europe 2020 Index represents a powerful tool to monitor the performances of the MS of the EU towards the achievements of the goals of the strategy, as defined by the eight official headline indicators. The index allows a yearly monitoring and can already be built for ten consecutive years, since 2003. We observe certain differences in performances, both between countries and across time. The need for a better understanding of the determinants of those differences inspired an analysis of potential success factors, such as level of wealth, growth, sustainability of public finances and institutions.

We look at the institutional economics literature in search of explanation, because we thought that such a wide, supranational, complex strategy characterised by multilevel governance, need for continuous political commitment, and policy areas falling beyond the strict competences of the European Commission, would require something more than the coordination of economic policies. We thought that institutions, in the sense of North (1991), could be the key explanatory variables, and decided to test both measures of formal and informal institutions, against the economic criteria based on GDP.

The econometric analysis performed in the paper confirmed the key importance of formal and informal institutions, both in absolute and in relative terms, compared with the other factors considered. Institutional variables are the most significant ones and have the strongest estimated effects. The results do not imply that economic growth, levels of GDP per capita, and fiscal sustainability are not important objectives per se. The main policy implication of our analysis would be that in order for the goals of the Europe 2020 Strategy

to be achieved, policy making should adopt a broader focus including the role of institutions.

**Conflict of interest** The authors declare that they have no conflict of interest.

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