Extended abstract

EXTENDED ABSTRACT

Title: On the road to a 'Competitive Sustainability': How can European funds support regions in the transition?

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Abstract

The Covid-19 outbreak drastically affected the European Union (EU) economies, leading to a contraction of the GDP in 2020 even higher than that of the 2008/2009 economic crisis. Mobility restrictions, lockdown, confinement, and other government measures to stop disease spread, affected everyday life and work, and generated changes in consumers' behaviour and preferences. The pandemic accelerated the adoption of digital technologies by companies and households in time of physical distancing. More conscious of the climate change effect in human health, consumers seem also to be more determinate to adopt eco-friendly solutions for everyday life.

The pandemic hit the world when the EU was preparing to adopt specific measures to fight climate change effects, thanks to the European Green Deal (COM/2019/640 final). The EU recovery, supported by the NextGenerationEU, is also expected to be greener and more digital, in line with the goal of the new EU growth strategy to achieve a climate-neutral economy by 2050.

New market trends and needs associated to the green transition, which already started before the pandemic and accelerated during the Covid-19 crisis, change the way in which the factors of production are used, and make employment and other resources shift across sectors. These industrial transitions are hard to achieve for certain regions: barriers to investment activities, gaps in large infrastructure, lack of business innovation

and unavailability of people with the right skills, are all factors which may impede a smooth transition towards a competitive and greener economy. Furthermore, these macro-economic conditions make some regions less attractive to foreign investors. Consequently, the regions struggling with these long-term challenges are at risk of industrial decline, significant job losses in some sectors, and outflows of workers.

It appears important to achieve an understanding of how macro-economic conditions, innovation, and European policies such as the regional structural funds have supported and influenced changes in employment across different sectors in the EU regions over the last decades. This would constitute not only a scientific advancement, but it would also bear a certain relevance for supporting the design of policies instruments to enhance the green transition. Therefore, the paper proposes:

i) a new indicator able to measure transition to a competitive and sustainable economy constructed using sectoral employment data;
ii) and an analysis to identify the determinants of such transition.

Our study innovates on the existing literature in several ways. First, most of the existing contributions have focused on productivity when studying industrial transitions across sectors (usually using highly aggregated ones like agriculture, industry and services - see, among others, Duernecker et al., 2017; McMillan et al., 2014; Herrendorf et al., 2014; and Dabla-Norris et al., 2013). Our indicator uses two dimensions to measure the extent of economic transition: one based on productivity to account for competitiveness, and a second one based on greenhouse gas emissions to account for the green/sustainability dimension.

Second, the vast majority of the existing evidence is based on country-level data, while in our analysis we use both country-level and regional (NUTS 2) data. Third, we focus on the role of public policies and innovation in supporting the transition towards a greener and competitive economy, a dimension which has been overlooked so far due to the fact that the literature has mostly (but not only - see for instance Martins, 2019) focused on secular shifts across macro-sectors, rather than medium-term changes as we do in our paper.

Our Regional Competitive Sustainable (RCS) indicator, expressed in NUTS 2-level, measures changes in the ratio between the employment in economic activities (NACE 2-digits) that have registered simultaneously a growth of their productivity level and a reduction of greenhouse gas emissions (grams per euro) over the total employment in the region (1). Both dimensions have the same weight in the indicator. To build this indicator, we use region-activity data from "Regional Structural Business Statistics" and country-activity data from "Air emissions account" (EUROSTAT). Productivity level is proxied by wages and salaries per employee, since information on gross value added or other output measures are not available with a high degree of granularity at NUTS 2 level and NACE 2-digits. Monetary values are transformed in constant price, using GDP deflator (base 2015).

$$RCS_{i,t} = \Delta \frac{Empl_{i,t}^{SustComp}}{Empl_{i,t}^{Total}}$$, where i refers to region (NUTS 2 level) in year t (1)

The RCS indicator is used as dependent variable of a Spatial Durbin Model (2) to capture direct and indirect (spillover) effects of set of explanatory variables ($X_{i,t}$), which include the EU funds and macroeconomic conditions (e.g. capital accumulation, technological progress, R&D expenditures and quality of human capital). We use a spatial econometric model, because changes in labour market structure in region i could be influenced by what is happening in nearby regions j. The database covers the period 2008-2018 and the 282 regions of the EU27 + UK.

$$RCS_{i,t} = \rho WSC_{i,t} + \beta_1 X_{i,t} + \beta_2 WX_{i,t} + \varepsilon_{i,t} \quad (2)$$

The expected outcome of this study is first a mapping at NUTS 2 level about the speed of the transition to a competitive sustainability and the degree (measured by employment share) of this transition. Secondly, the econometric model will show us which macro-economic factors are able to influence direct or indirectly the transitions and if the EU funds were effective in supporting the transition.

An initial inspection of the newly constructed indicator reveals that the share of employment in economic activities moving to a competitive sustainable economy (more productive and green) has increased between 2008 and 2018. Even if the process is not linear, a positive growth trend could be observed in the long-term. Poland, Czech Republic and Sweden registered the higher average change in the share of employment, whereas, Denmark, Spain and Portugal the lowest.

Preliminary econometric results suggest that competitive sustainable transition is associated with the capital stock and the past performance of the regions. Structural funds also appear to be positively correlated with transition. However, such relationship seems to be only significant in more developed regions. These findings can also suggest that a supportive regional eco-system is also needed in lagging regions in addition to EU funds. The size and direction of other regional covariates such as human capital and government quality remain to be investigated.

The EU regions, as well as other territories over the World, are faced with two big challenges for the next coming years, the Covid-19 pandemic recovery and the transition to a climate neutral economy by 2050. Under the programming period 2021-2027, the EU has mobilized €750 billion to support the EU recovery, in addition to the €1,074 billion of the EU's Multiannual Financial Framework (MFF) for 2021-2027. Faced to the unprecedented huge amount of money available for EU Member States, the results of our study can be particularly useful for policymakers to better understand what can enhance the transitions and in which circumstances public support is the most

effective. In addition, this research is also of interest for academia, because it contributes to the literature on the determinants of sectoral shifts over time. Indeed, our indicator combines two dimensions (competitiveness and sustainability) to capture the quality of the transitions, instead of simply assessing the quantity of people moving from one sector to another, as most of the researches are focusing on.

Keywords: Green transition; Public support; European regions.

JEL Code: R11, L16, H25, O52.

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