ber States. Peripheral countries fear being left behind and do not like the idea of multiple standards. On the other hand, some argue that a „multi-speed Europe" could encourage cherry-picking and be the first step in giving up the idea of Europe as a single, common project. To some extent, integration at different speeds is already happening. The Eurozone, the Schengen-Area and the European Economic Area represent frameworks of different stages of integration.[1]

3. EU Regional Development Policies and Convergence

The integration of different markets and policy frameworks is supposed to go hand in hand with economic convergence. However, this is not always the case, which is one reason for the strategic targeting of weaker regions by the EU. In the following section, we will first provide an overview of funds available for EU development policies and examine the recent evolution of EU-wide convergence in order to ground the concept of a „multi-speed Europe" in economic realities. One of the central goals of the European Union is to create economic cohesion by improving economic well-being and fostering development in all regions. Especially structurally weak and poor regions are supported with the aim of limiting regional disparities. In order for this to be achieved, the European Union relies on targeted policy instruments aimed at levelling economic divergences between countries and regions. Development is measured in terms of GDP per capita, giving rise to three categories of regions: „more developed" (with GDP per capita over 90% of the EU average), „transition" (between 75% and 90%), and „less developed" (less than 75%).

There are five major funds available to different categories of regions, which together account for about one third of the EU budget: the Regional Development Fund (ERDF) and the Social Fund (ESF) can be accessed by all regions, whereas the Cohesion Fund (ECF) makes up an additional source of financing only accessible to less developed and transition regions. There are two supplementary, specialised funds: the Maritime and Fisheries Fund (EMFF), reserved for funding the Common Fisheries Policy of EU MS, and the Agricultural Fund for Rural Development (EAFRD), which makes part of the common agricultural policy and has spatial targets, such as strengthening the competitiveness of the agricultural sector and improving the quality of life in rural areas. Finally, the Youth Employment Initiative fund is designed to offer targeted assistance in regions where unemployment of young people is most acute (exceeding 25%).

In this section, we mostly address the first three funds, which together contribute to the Convergence Objective (previously known as Objective 1) of the Cohesion policy of the EU.

Figure 2: Budget Allocations (Amount of EU contributions only, excludes national contributions) by Fund and Country (2014-2020)
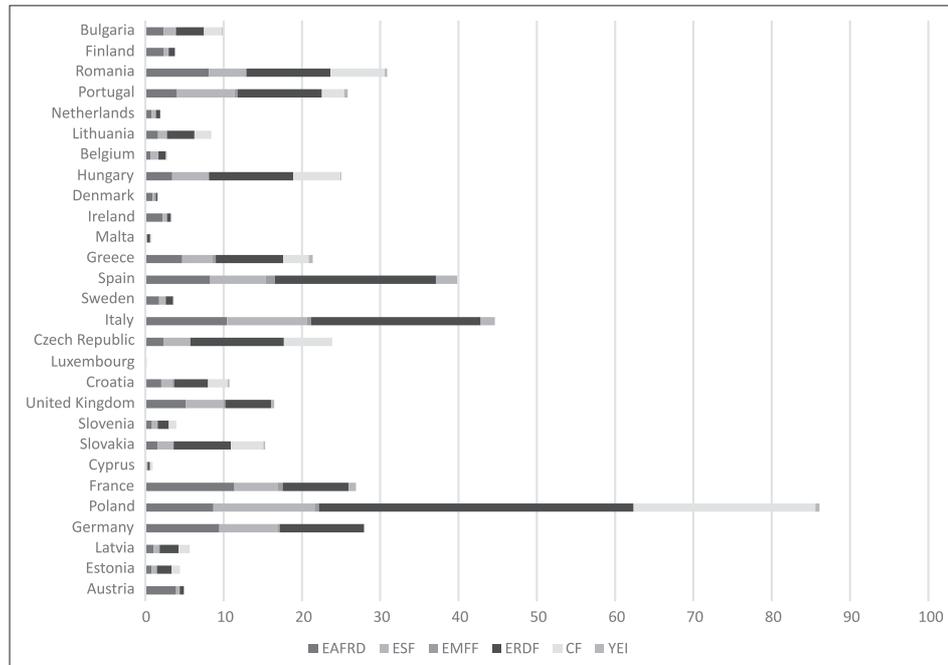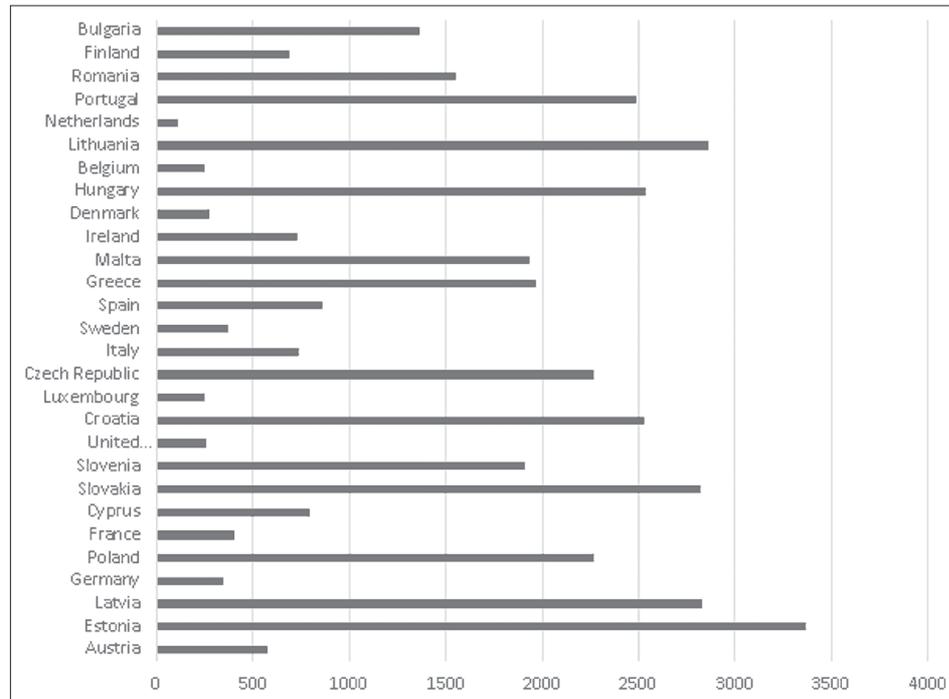

European Commission data (04/05/2018), own representation.

The ERDF contributes to cohesion within the Union by „correcting imbalances between regions".[2] It focuses on four priority areas: the digital agenda, financing the low-carbon economy, innovation and research, and providing support for SMEs. Depending on the development level of the region accessing the Fund, various thresholds (80% for developed regions, 60% for transition regions and 50% in less developed regions) must be allocated to at least two of the aforementioned key areas.

The ESF is available to all regions and focuses on four thematic areas: employment and labour mobility, combatting poverty, investing in education and enhancing institutional capacity.[3] Over € 80 billion are foreseen for the 2014-2020 period, with € 3.2 billion allocated to the Youth Employment Initiative. ESF allocations thus make up 24.8% of the Structural Funds (ESF & ERDF) budget. The Cohesion Fund is available for regions Member States having a GNI that is less than 90% of the EU average („transition" and „less developed"). This includes Bulgaria, Croatia, Cyprus, the Czech Republic, Estonia, Greece, Hungary, Latvia, Lithuania, Malta, Poland, Portugal, Romania, Slovakia and Slovenia for the 2014-2020 period.[4] It totals € 63.4 billion and aims to reduce economic and social disparities by focussing on infrastructure (transport) and environmental projects.

Figure 3: Per capita Budget Allocations (Amount of EU contributions only, excludes national contributions) by Country (2014-2020)

European Commission and World Bank data (04/05/2018), own representation.

The effectiveness of these funds is topic of a debate that has been going on for many years. A large number of studies has tried to find out whether the Structural Funds indeed promote regional economic growth and convergence. The findings have been very heterogeneous. Becker et al (2008) find a small, positive growth effect for Objective 1 payments and no effect on employment. They further conclude that the programs are efficient, generating a return approximately 1.2 times higher than the GDP costs associated with them.

Mohl and Hagen (2009) analyse the impact of structural funds on 124 NUTS 1 and 2 regions for the timespan 1995-2005, distinguishing between Objective 1, 2 and 3 payments. The results point towards a positive and significant effect of Objective 1 payments on regional growth rates, both in the short and the long term (up to four years after the payments have been made). Mixed and inconclusive results are obtained for the cumulative effect of structural funds for all objectives. A recent meta-analysis by Dall'Erba and Fang (2017) looks into 17 studies and shows that the contradictory evidence is rooted mainly in differences of the characteristics of the data used, but not the functional form of the estimation that research-

ers apply. A learning effect is observable: seemingly, in recent years the efficiency of funds has increased.

Turning to convergence, a voluminous body of literature has analysed the phenomenon of regional disparities in the past decades. Consistent with various phases of European integration, different studies have identified the presence of increasing national convergence, as well as persistent differences between regions throughout the 1980s and 1990s. Broadly speaking, there are two main approaches to analysing regional convergence: regression-based beta-convergence tests and alternative, nonparametric methods.

Eckey and Turk (2007): up to 2005, most studies find evidence for very limited, slow and diminishing convergence processes with rates often under 1%. A small number of studies find no evidence for convergence whatsoever, while others point towards increasing and significant convergence processes. The sometimes contradictory results can be explained by criticism of conventional beta-convergence approaches, that lies either in the specification of the model (too many controls for diverging factors, misspecification of regions), not taking into account distortionary factors such as commuting when analysing GDP/capita or cyclical effects when analysing growth rates, or the use of inappropriate data (see Cheshire & Magrini, 2000, Petrakos, Rodriguez-Pose & Rovolis, 2005, and Quah, 1996). Studies based on spatial models, measures of inequality and concentration or Markov chains approaches also find weak, if any, evidence towards convergence, although regional mobility can sometimes be observed (Eckey and Turk, 2007). Looking at the recent literature on the topic, the impression persists that there is no clear-cut direction with respect to European convergence. Cuadrado-Roura & Parellada (2013) review existing facts and studies and maintain that convergence is limited in terms of GDP per capita, slightly more significant in terms of productivity and there is a distinction between regions lagging behind and regions with high positive fixed effects (metropolitan areas and large economic activity centres). Petrakos et al. (2011) examine 249 NUTS regions using a beta convergence framework for the timeframe 1990-2003 and find evidence for increased regional divergence that can be traced back to factors such as agglomeration economies, geography, economic integration and economic structure. Bartkowska and Riedl (2012) examine convergence clubs in per capita incomes of European regions. Using data up for 1990-2002, they establish the existence of six different groups of regions with different steady state paths. Roses and Wolf (2018) find a U-shaped evolution of regional inequality between 1990 and 2010. Beugelsdijk et al (2018) show that the large and persistent regional disparities can be traced back to large total factor productivity differences within countries. Borsi and Metiu (2015) find no evidence for EU-wide regional income convergence

but identify convergence clubs based on geographical divides between North/South and Western/Eastern Member States. Finally, looking at determinants of convergence for the timespan 1995-2005, Crespo-Cuaresma et al. (2014) establish that the catching up process of regions in new Member States is driving between-country convergence while within-country convergence mostly takes place in regions of the core Member States. Unsurprisingly, regions with a capital city also grow faster.

Overall, the literature on regional convergence within the European Union is rich in explanations for the catching-up process, or the lack thereof. The main takeaway is that economic disparities are long-lasting and that convergence between countries may not necessarily translate into a catching-up process between regions or evenly distributed gains on a regional level. Nonetheless, as most of the aforementioned studies use data that are at least a decade old, they could not have foreseen the future enlargement waves of the European Union, and the inclusion of Eastern European countries with very different regional levels of development. To the best of our knowledge, our work is one of the very few studies extending the analysis horizon up to 2014 while also taking into account all phases of EU expansion. In this sense, it is interesting to analyse the convergence process for subsequent expansion phases of the EU and verify if the trade-off between convergence on a country level and divergence on the regional level still persists.

4. Empirical Strategy

Our work contributes to and supplements the findings of existing literature by taking into account recent economic developments and providing a combined spatial and economic decomposition of existing disparities. We use data on gross value added (GVA) as a proxy for GDP, employment and population from Cambridge Econometrics and analyse the distribution of economic activity within the European Union for a sample of 189 regions for the time period 1991-2014.

GVA is a measure of economic activity, defined as the regional output less intermediate consumption. The data is deflated to 2005 prices and thus real, the unit being 2005 Euro. For employment and population, it should be noted that employment is measured at the workplace, while population is registered at the residency, which can result in some distortion of the results, as commuting is disregarded. However, as we use quite large regions, the effect should be minor.

In our analysis, we take into account the different phases of European enlargement and simulate the evolution of disparities in economic activity for five different groups of countries: EU-12, EU-15, EU-25, EU-27 and