



1 Introduction

1.1 Motivation

Regions and nation states in the European Union are dealing with union-wide and global integration processes. For this analysis, two developments arising during this integration process and which are discussed separately will be explored together. Firstly, regions in the EU as an integrating economic area are confronted with structural changes having an impact on the risk exposure and the economic performance. These structural changes are facilitated by increased mobility of products and services within the European Single Market.

Secondly, regions are part of nation states and thus embedded in vertical and horizontal government organisation as part of the public institutions of a country which again influence the regional economic performance.

Deepening political and economic enlargement increased the diversity of the regional economic structure within the European Union of 27 member states. While diversity per se is not a concern for economic efficiency considerations, the aim of economic and social cohesion within the Union might be difficult to achieve if economic integration has a very uneven impact on regional production and employment structures. Additionally, integration is aimed at increasing factor mobility and trade relations between and within member states, which increase interregional competition and labour division (Krieger-Boden and Traistaru-Siedschlag, 2008). A further source of asymmetric regional development is based on global competition effects, where sectors restructure in order to respond to market developments. Depending on the importance of inter- and intrasectoral linkages, sectors with increasing economies of scale tend to be concentrated within specific regions, which poses a risk for the region if sectors are affected by industry specific shocks (Bode *et al.*, 2003). Additionally, based on theoretical considerations from the New Economic Geography Paul Krugman (1993) predicted increasing regional specialisation and sectoral concentration tendencies for integrating European regions. For regions within an economic and monetary union these considerations are particularly important since, monetary and implicitly a substantial part of fiscal policy decisions have been transferred to supranational decision makers. However, the theoretical literature on regional specialisation and integration, including neoclassical and new theories on trade and growth, as well as new economic geography is rather inconclusive on predicting distinct developments, but offers possible determinants for specialisation.²

² For a survey see e.g. Traistaru et al. (2002) von Schütz (2003), and Bode et al. (2003).



Separate from this research area, there has been increasing interest in the organisation of government, not only in academic research but also in international organisations such as the IMF, World Bank and OECD.³ Concerning the vertical organisation, while mostly benefits of decentralising power of authority to subnational level in terms of preference matching and accountability are assumed, the concept might also bear challenges for the relationship between central and subnational level as well as for the efficient provision of public goods. Academic research takes more and more institutional settings in form of political economy models into account in order to analyse the choice and the advantages of one or the other concept (centralisation vs. decentralisation).⁴ Although there is evidence for increasing decentralisation in a majority of OECD countries, a unique pattern to one or the other structure does not seem to occur (Stegarescu, 2005).

The empirical analysis, either the description of recent developments, the empirical research of the impact of decentralisation on economic variables and institutions or the study of decentralisation determinants assumes the use of adequate indicators measuring the degree of decentralisation. However, due to the complexity of government relations, available data do not always reflect the autonomy of subnational levels on revenue and expenditure decisions. Additionally, not only budgetary data are important determinants of autonomy, but also other political and institutional variables reflecting independence of subnational levels from central government decisions.

When considering decentralised systems, not only the vertical structure might influence the performance of the subnational level but also the relationship between horizontal units. Again, conflicting views and theoretical considerations on the benefits and challenges of horizontal jurisdictional competition can be found in theoretical models, but also in empirical work, mainly focussing on the horizontal competition between regional units in the US.

This analysis explores the economic performance of regions in the European Union taking institutions as vertical and horizontal government structure into account. Economic performance in this sense is here twofold: First, it concerns the regional and sectoral economic structure as described by the concept of regional specialisation and sectoral concentration. It will be examined empirically to what extent this economic structure (regional specialisation) is determined by the national vertical government structure (decentralisation) in 13 EU countries.

³ The World Bank provides information on the concept, measurement, data, implementation, and current projects on a specific website: <http://www1.worldbank.org/publicsector/decentralization/what.htm>. The OECD established at the Centre for Tax Policy and Administration a “Fiscal Federalism Network”, providing an updated database and economic analysis on the developments of central and subnational government relations (www.oecd.org/ctp/federalism).

⁴ For a survey on political economy perspective of decentralization see Lockwood (2005).



Second, regional economic growth of functional regions in Germany will be analysed by taking the institutional structure within these functional regions into account.

The main research questions which will be addressed are the following:

- Is regional specialisation and sectoral concentration increasing as possibly predicted by the new economic theories and e.g. stated by Krugman (1993)? What are the recent trends in the incumbent EU member states (EU15) and the new member states in Central and Eastern Europe (CEE) in the course of economic and political integration?
- Considering decentralisation, which recent trends in decentralisation on different dimensions can be observed in recent years?
- How do regions specialise if they have autonomy on taxes and other revenue components?
- Is horizontal competition between local layers of government beneficial for the regional growth performance?

The analysis starts with two chapters explaining the underlying concepts in order to set the ground for the following empirical analyses.

In chapter 2 the concept of decentralisation will be presented: the different forms of decentralisation are explained, the costs and benefits will be described, drawing on an overview of theoretical literature, indicators used in empirical studies will be discussed and finally current trends in EU member states are described.

Chapter 3 will give an overview of the concepts of regional specialisation and sector concentration. A literature overview on trends in EU countries will be followed by an own descriptive empirical analysis based on recent data on regional production and employment.

The empirical analysis in *chapter 4* investigates the fiscal design and location of economic activity. The inclusion of the specialisation and fiscal decentralisation variables will be motivated as well as the other determinants of regional specialisation. A panel data analysis of 13 European countries, encompassing 199 regions will be carried out in order to reveal the relationship between the tax and revenue autonomy of regions and their economic production and employment structure.

Chapter 5 will deal with fragmentation and regional growth of German functional regions. The analysis has to be restricted on Germany since there is no overall concept and data so far available for other European member states. The horizontal competition between administrative units within the functional regions are taken into account when analysing the growth



performance. Moreover, since regions are not independent units across space, spatial econometric techniques are taking into account possible cross-regional spillovers.

The contribution of this work can be summarised in the following points:

- A new dataset and very recent data on 34 sectors for EU15 and 29 sectors for CEE countries provide latest developments of specialisation and concentration in EU member states, including the years of the financial and economic crisis.
- The analysis of decentralisation trends include new indicators encompassing the three dimensions of decentralisation: policy, political and fiscal autonomy.
- The empirical analysis of specialisation determinants and regional growth determinants takes institutional dimensions into account.

1.2 The concept of the region

Before starting with investigation of regional trends in the main analysis, the concept of region stands should be clarified.

In regional economics, different concepts of regions can be identified. On the one hand history and administrative decisions have led to a regional structure of entities which is independent of economic flows. Statistical offices provide data on administrative regions such as counties, districts, provinces and states.⁵ On the other hand, functional regions can be defined by the frequency and intensity of the interaction between economic agents within a certain area. A differentiation can be made between centre-based delineations, i.e. those around a given metropolitan or urban area, or non-centre-based delineations, such as commuting zones in the United States, or employment areas in France (OECD, 2002b). Most analyses take commuter flows as basis for interactions in order to define labour market regions or “travel-to-work” regions, but also the number of patents can be used to define innovative regions (Eckey and Türck, 2005).

The use of properly defined regional units is crucial in regional development studies and evaluations. Data quality and stability is certainly an advantage of administrative units, but resulting regions might not reflect the economic and social relations of the agents in that area, or might even cut commuter flows and trading areas. Three main problems may arise from using inadequate regional boundaries:

⁵ For European regions, data are available on NUTS0 to NUTS3-level, indicating regional disaggregation from country to district-level. NUTS refers to Nomenclature of territorial units for statistics.



- i) Regional indicators, such as GDP per capita (p.c.) or labour productivity, might not cover the appropriate units, since numerator and denominator should correspond to the same regional entities. As an example: If there are considerable commuter flows across administrative borders, measures of GDP p.c. would show too high (low) values in the urban centre (surroundings).
- ii) As administrative boundaries might cut spillover flows, e.g. knowledge spillovers measured as spatial lag, high values of spatial lags could not be interpreted as a pure spillover effect but as a result of arbitrary delineation of spatial units (Keilbach, 2000).
- iii) Modifiable Area Units Problem (MAUP): This refers to the fact that the results of econometric analyses are sensitive to the aggregation level of reported data. In fact, it is the measurement error that creates spatial dependence between observed units (Openshaw, 1984, Anselin, 1988).

Therefore, the analysis of functional regions might be an appropriate solution. However, when analysing and comparing European regions, this concept is difficult to employ since there are no official data available for EU member states. Therefore, different administrative regions, as e.g. NUTS regions provided by Eurostat are the alternative for analysing regional developments.