1. Introduction

In context with the Eastern enlargement of the European Union (EU), this research deals with the effects of pre-enlargement integration policies on industry agglomeration and regional development in Hungary. Without the fall of the Berlin Wall and the people-induced processes which led to it, no Eastern enlargement of the EU and no German unification would have been possible. Hungary played a major role in this unprecedented political and economic process in Europe, undergoing subsequently the successful transition to a market economy and a pluralistic democracy governed by the rule of law. The profound processes part of the transition to a market economy affected the industrial set-up and regional economic structure to an unprecedented extent until about 1995, entailing a decline in industry output and employment by one third. In the almost two decades analysed by this research, Hungary’s share of exports to the EU market rose from one third to over 80%. The institution of the European agreement which governed the lion share of the period played an important role in this development. During the 5 years since the Eastern enlargement of the EU in 2004, trade volumes have tripled in the enlarged EU from 175 billion Euro to 500 billion, and Central and East European countries (CEECs) now trade 5 times as much with each other than prior to their EU accession.

Hungary was chosen for this research for several reasons. Firstly, Hungary used to be the show case among CEECs when this research project was started. Having embarked on economic reforms towards a market economy much earlier than other CEECs, already during the mid-1980s, the country was economically well off. The highest stock of foreign direct investment (FDI) in any of the CEECs endorsed the attractiveness as a location for investors, due to favourable conditions regarding productivity, training of the workforce, the legislative framework, as well as the geographic location of the country functioning as a hub for reaching neighbouring markets in the area. By spring 2009, the economy had fallen behind among CEECs because Hungarians had lived beyond their means for years, the general government - as manifested in mounting public debt - as well as the people. The current world economic crisis hit Hungary harder than most of its neighbours. Austerity and fiscal policy measures taken by the new

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1 Many people in Hungary have financed their housing mainly in debts denominated in foreign currencies; the serving of this debt consumes a rising share of their disposable income now due to the devaluation of the Hungarian forint in which their income is denominated.

2 The decline in Hungary’s GDP forecast for 2009 is -6.3%, according to the European Commission (2009a).
Hungarian government in office since April 2009\(^3\) are to contribute to the economic recovery. Secondly, as this research is interested in economic effects of the EU's pre- and post-accession integration policies, Hungary seemed particularly suitable as a small open economy.\(^4\) The early political orientation towards the West entailed that Hungary was among the first beneficiaries of the PHARE aid programme and the first to negotiate a Europe agreement with the EU, whilst the application for full membership followed in 1994. The manufacturing industry - the sector based on which agglomeration is analysed and which was at the core of trade liberalisation by the Europe agreement - is more important in Hungary in terms of employment, exports and output than for example in Poland where the agricultural employment was over 26% prior to EU accession. Hungarian government policies such as the free-trade zones and industrial parks policy contributed to the spur in exports towards the EU’s market. And thirdly, the regional structure of Hungary and the availability of data also played a role in the choice. A sufficient number of regions at the Nuts-3 level and the good availability of reliable data from the national statistical office from 1992 onwards and in English were additional arguments.\(^5\)

The theories of the new economic geography (NEG) make certain predictions about the formation and development of agglomeration as well as about regional specialization during integration processes. Integration processes are mainly modelled by a reduction in transport costs, which the European context can be taken to comprise costs for transportation, for non-tariff barriers (NTBs) and for administrative formalities due to the passing of national borders.\(^6\) Empirical proof for one of the key propositions of NEG, namely that trade induces agglomeration, is scarce so far and has been called for.\(^7\) Overall, the results of this research on manufacturing agglomeration and regional specialization in Hungary contribute to bringing such an empirical confirmation.

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3 Recent austerity measures include the elimination of the 13th monthly pension and the 13th monthly salary for public civil servants paid out last for 2009.
4 Hungary’s exports to the world set in relation to GDP were 80% in 2007, according to the Economic forecast of spring 2009, *European Commission* (2009a), p. 85.
5 The availability and reliability of data for Poland is much worse until the time of finishing this research. No data were published by Eurostat for Poland’s regional disparities at Nuts-3 level, measured in terms of GDP per capita relative to the EU average, at the time of writing (7th of May 2009).
6 In the EU, where customs duties and quotas have been eliminated decades ago - the customs union had been completed among the initial 6 EU member states in 1968 - and between Hungary and the EU by the Europe agreement since the early 1990s, NTBs have played the dominant role ever since. NTBs can take multiple forms such as different national rules, norms and product standards as well as regulations for market access including professional degrees and accreditations.
7 For example by *Head & Mayer* (2004) in their article: “The Empirics of Agglomeration and Trade".
This research analyses three dimensions of industry agglomeration: (i) the degree of concentration per manufacturing sector and the development over time - strong or relatively weak concentration, and was there a pattern in the development? (ii) Where in space did agglomerations form? And (iii) which influences played a role - industry-specific factors or integration factors or regional characteristics?

Similarly, the multiple dimensions of regional specialization are examined: the degree and development of specialization for the Hungarian regions during the phases of economic integration - was there a common pattern for groups of regions? And which influences played a role, region-specific factors or integration variables?

A particular feature of this research is that it combines concrete empirical research with policy relevance in light of practical work-experience of the author gained in European policy making. Further, Hungary as a transformation economy and the profound economic processes entailed are examined in context with European integration over the time span of almost two decades, much longer than previous studies on transition countries. With respect to the empirical analysis of industry agglomeration, the present research uses regional-level data to analyse agglomeration for Hungary, whereas most previous research was based on country-level data for a group of countries (EU or CEECs). With reference to the tools, a special contribution of this research is that it applies six different concentration indices to the same set of manufacturing employment data, thereby allowing for a comparative analysis. Regression analysis on the influences working onto industry concentration and in particular on regional specialization has rarely been performed before nor been based on data from Central and Eastern Europe.

The empirical results regarding the effects of pre- and post accession policies on Hungarian manufacturing industries and regional development have certain policy implications. Conclusions will be drawn for the role which agglomerations - industrial agglomerations, networks of towns and cities - can play in fostering economic growth at the country-level. The option of strategic specialization for a region will be discussed as a possible road towards fostering regional economic development. In the face of the new challenges after Eastern enlargement in Hungary, and probably to a similar extent in the other CEEC, proposals for the next reform of European regional policy will be discussed, taking into account the current debate at the academic and political level. Finally, the pre-accession policy perspective will be opened towards current enlargement candidates of the EU such as Croatia in the nearer future and Ukraine further away on the horizon.

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The remainder of this research is structured as follows: Chapter 2 will introduce the theoretical framework of models chosen for this research and give an overview of previous empirical research regarding agglomeration and regional specialization, leading to the formulation of the hypothesis for this research. In an empirical descriptive analysis, chapter 3 will look at the main elements playing a role in Hungary’s trade structure with the EU, manufacturing industries, and foreign direct investment, at the one hand, and the regional set-up and main characteristics of the regions including economic development and inter-regional net migration, on the other hand. This is done with a view to identifying indications for the ensuing econometric analysis. The development of agglomeration in Hungary’s manufacturing industries will be analysed in chapter 4, using as a tool six different concentration measures, thereby allowing for the comparative analysis of these indices. The development of regional specialization will be analysed in chapter 5. The pattern during different phases of the integration process will also be examined for various groups of regions. Chapter 6 presents the results of an econometric analysis based on panel regressions regarding influences playing a role for an industry’s concentration - integration factors and/or industry-specific characteristics - as well as separately regarding factors playing a role for a region’s specialization. Chapter 7 will summarize the main empirical findings of this research. Policy implications regarding the future shape of European regional policy will be inferred from the different degree of adjustments and challenges among Hungary’s regions in the light of the current academic and political debate. The role which agglomerations can play in national growth strategies and the option of using specialization as a tool in regional development will be discussed. This research concludes by giving a perspective on policies for future EU accession countries with a view to the economic geography of an ever wider Europe.