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SPACE-TIME ANALYSIS OF GDP DISPARITIES AMONG EUROPEAN REGIONS:
A MARKOV CHAINS APPROACH

(DATA APPENDIX)

by

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(Data Appendix)**

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Data appendix

The data are extracted from the Eurostat-Regio database. Eurostat is the Statistical Office of the European Communities. Its task is to provide the European Union with statistics at the European level that enable comparisons between countries and regions. These statistics are used by the European Commission and Institutions so that they can define, implement and analyze Community policies. Regio database is the official source of harmonized annual data at the regional level throughout the 1980-1995 period for the European Union.

We use Eurostat 1995 nomenclature of statistical territorial units, which is referred to as NUTS (Nomenclature of Territorial Units for Statistics). The aim is to provide a single uniform breakdown of territorial units for the production of regional statistics for the European Union. In this nomenclature NUTS1 means European Community Regions while NUTS2 means Basic Administrative Units. For practical reasons to do with data availability and the implementation of regional policies, this nomenclature is based primarily on the institutional divisions currently in force in the Member States following “normative criteria”. It excludes territorial units specific to certain fields of activity or functional units in favor of regional units of a general nature.

We use the series E2GDP measured in Ecus and in purchasing power standards (PPS) per inhabitant, i.e. adjusted for purchasing power parity over the period 1980-1995 for 138 regions on 11 European countries: United Kingdom (11) in NUTS1 level and Belgium (11), Denmark (1), France (21), Germany (30), Greece (13), Luxembourg (1), Italy (20), Netherlands (9), Portugal (5) and Spain (16) in NUTS2 level. For United Kingdom, the use of NUTS1 level is due to the fact that there is no official counterpart to NUTS2 units, which are drawn up only for the European Commission use as groups of counties. This explains data non-availability in NUTS2 level over the whole period for this country. Luxembourg and Denmark can be considered as NUTS2 regions according to Eurostat. Our choice to prefer NUTS2 level to NUTS1 level, when data is available, is based on European regional development policy considerations: indeed it is the level at which eligibility under Objective 1 of Structural Funds is determined. Our empirical results are indeed conditioned by this choice and could be affected by missing regions and different levels of aggregation.

We exclude Groningen in the Netherlands from the sample due to some anomalies related to natural gas production in the North of the Netherlands, which increase notably its per capita GDP¹. We also exclude Canary Islands and Ceuta y Mellila, which are geographically isolated. Corse, Austria, Finland, Ireland and Sweden are excluded due to data non-

¹ As pointed out by a referee, excluding regions like Groningen, could have serious implications for the analysis, since it affects the pattern of spatial causation. In the current study, however, the conclusions do not substantively change with or without Groningen.

availability over the whole 1980-1995 period in the Eurostat-Regio databank. Berlin and East Germany are also excluded due to well-known historical and political reasons.

We use per capita GDP measured in Ecus showing the market value of output in each region rather than real income levels. We also use per capita GDP expressed in purchasing power standards (PPS) in order to take into account price levels variations between countries not reflected by prevailing exchange rates. Per capita GDP measured in Ecus sharpens regional disparities. Indeed with the PPS adjustment, low per capita GDP in less rich regions tend to be partly offset by the lower cost of living. However it is worth stressing that the construction of regional accounts in purchasing power parity that are comparable across space and time is very complicated and can raise serious problems in the European context. First, this adjustment is calculated on the basis of national price levels and, therefore, does not take into account regional differences in prices, which can be significant particularly when there are wide variations in income between regions. Second, per capita GDP expressed in PPS can change in one economy relative to another not only because of a difference in the rate of GDP growth in real terms but also because of a change in relative price levels. This complicates the analysis of changes over time insofar as a relative increase in per capita GDP which arises from a reduction in the relative price level or from a re-estimation of the PPS adjustment might have slightly different implications than one which results from a relative growth in real GDP. Another problem, which also concerns per capita GDP expressed in Ecus, is that commuter flows affect comparisons between regions. In the case of city regions, surplus commuters ensure that production activity in these regions is higher than it would be with resident workers only. As a result, per capita GDP in these regions is generally overestimated, and that of the regions in which the commuters live is generally underestimated. However, note that this effect is significant only in a few cases (Brussels, Luxembourg, Hamburg, Darmstadt, Bremen, Ile-de-France), that poor regions are generally not affected by this problem and that these commuter flows are globally negligible at the NUTS2 level of regional breakdown.