Socio-political structure and economic growth in the OECD

By

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Abstract: Despite the fact that recent literature on socio-economic restructuring has tended to highlight the close connection between economic growth and social and political factors, most cross-national empirical growth research has faced serious difficulties when introducing noneconomic variables in growth models. Many social, political, and institutional variables in growth models are considered to be non robust when extreme-bounds tests are applied, since they do not stand small changes in the set of conditioning variables. This paper suggests that this lack of robustness may be more linked to problems of modeling social and political variables, and to the number of omitted variables, the strong emphasis on linearity, and the problems of reverse causation common to empirical growth models, than to a real lack of connection between growth and local socio-political structures. The empirical section tackles the connection between growth and social and political structures in the OECD between 1960 and 1994, using cluster analysis as an alternative method. The results highlight a strong association between national growth patterns in the last three and a half decades and nation-specific sets of social and political variables, which would have been difficult to unveil using linear regression models.

Keywords: economic growth, social and political structure, robustness, socio-economic restructuring, OECD.

Introduction

The relationship between social and political factors and economic growth has recently come under closer scrutiny. Theoretical and case study-based research on topics like the passage from a mass to a flexible production system, the processes of socio-economic restructuring and structural change, or globalization has tended to highlight the crucial role played by noneconomic factors in the genesis of the so-called 'new growth spaces' (Komninos 1989; Storper 1997) –or, as Markusen (1996) calls them, 'sticky places'- that is, areas with the ability to attract and/or keep economic activity. If some areas have performed better than others in a world featured by increasing territorial competition is not only because they have had easier access to capital, information, and technology, but also because they possessed the adequate social, institutional, and political settings to cope with and adapt to the new economic conditions. Factors such as entrepreneurship, the availability and quality of human capital, and a high institutional density -or institutional thickness (Amin and Thrift 1994)- have been considered essential to the economic success of areas such as the Silicon Valley, Route 128 in the Boston Area, the German region of Baden-Württemberg, or the Italian industrial districts.

Yet, this whole theoretical and case-study literature about the connection between noneconomic conditions and economic growth has had relatively little impact on cross-national and cross-regional variable-oriented approaches to growth (Martin 1999). Despite the use of an increasing array of social, political, and institutional variables in neoclassical and endogenous growth models, social and political structures are often regarded as minor factors in the genesis of growth. Most social and political variables included in growth models are considered to be

non-robust, since they do not stand small changes in the set of conditioning variables (Levine and Renelt 1992; Levine and Zervos 1993). In fact, the investment/GDP ratio, the initial level of per capita GDP, and the degree of openness to international trade seem to be the only consistently significant regressors in growth models (Bleaney 1997; Levin and Raut 1997), and none of these robust regressors represents the social or political realm. Moreover, these indicators only partially explain cross-country variations in growth and output per worker (Hall and Jones 1999). Why is there such a gap between theoretical and case-study approaches, on the one hand, and variable-oriented approaches, on the other? Does the socio-political and institutional context only play a supporting role to economic conditions in the genesis of growth, as reported by cross-sectional analyses, or is it the crucial role claimed by researchers of structural change? Is the literature on socio-economic restructuring looking at the trees and failing to see the forest?

This paper deals with the problems of lack of robustness of noneconomic variables in traditional models of growth and proposes an alternative model to cross-country linear regressions in order to assess the connection between the socio-political setting and economic performance in 22 OECD countries for the period between 1960 and 1994. The paper will try to demonstrate that this lack of robustness is more the result of the excessive reduction of the social and political dimensions to a handful of variables and of the supporting role these variables play to economic factors in traditional growth models, than of a real absence of connection between economic growth and local social and political structures. In order to achieve this, the paper briefly reviews the main strands of literature which have highlighted the connection between socio-political conditions and growth, before analyzing the use of social and political variables in neoclassical and endogenous growth models. The third section

establishes, by means of cluster analysis, a typology of OECD nations according to their growth performance. Cluster analysis is used again in the fourth section, in order to examine whether groups of nations according to their social and political structure reproduce the growth clusters. Conclusions and policy implications are drawn in the final section.

On the connection between noneconomic factors and growth

Most strands of literature dealing with the spatial impact of the process of socio-economic restructuring have stressed the increasing connection between economic performance and local socio-political and institutional conditions. Favorable socio-political conditions are thought to be at the root of the positive externalities and of the networks and institutional webs responsible for the success of many ‘new growth spaces’ (Martin and Sunley 1998). Noneconomic conditions, for example, play a basic role in the formation of the innovative milieux (Camagni 1992; Maillat *et al.* 1993). Research on the Italian industrial districts has likewise focused on the local social and political structure in order to explain the dynamism of industrial clusters in the Third Italy (Brusco 1982; Bagnasco 1988; Pyke and Sengenberger 1992; Trigilia 1991). This strand emphasizes that the success of small and medium-sized enterprises in central and north eastern Italy "has come not so much through advantageous access to low cost factors of production -cheap labor, land or capital- as from a particularly effective social and economic organisation based on small firms" (Sengenberger and Pyke 1992: 3). The basic characteristic of these ‘new wonder regions’ is that a deep-rooted tradition of entrepreneurship has been put to work in an institutionally rich environment where local small firms become integrated with business associations, trade unions, the local and regional government, and other local actors in networks that contribute to a better use of local resources

(Sforzi 89).

Social and political factors also take center stage in the emergence of the institutions and external economies identified by the California School (Scott 1992, 1993; Storper 1993, 1997). The 'diversified quality production' approach has similarly argued that the institutional and socio-political environments are a key component in the development of economic activity (Sorge and Streeck 1988; Streeck 1991). This group has defended that in areas like Baden-Württemberg "strong non-market institutions that modify and partly suspend individual market rationality and unilateral managerial control [...] make for higher efficiency" (Streeck 1991: 24).

From a different perspective, the French regulation school has also focused on social and institutional structures in order to understand the current transformations in the systems of production and in economic growth rates. Elements like long run and cooperative subcontracting, education and on-the-job training, human resource policies, and explicit long term compromises between managers and wage-earners are regarded as some of the basic features of the post-Fordist era (Aglietta 1976; Boyer 1986, 1989; Leborgne and Lipietz 1993; Lipietz 1993).

One of the common denominators of these strands is that purely economic explanations of economic and industrial change seem to be losing ground. The spatial organization of economic activity can no longer be explained in terms of differences in costs, accessibility, and technology, or of changes in the traditional locational factors. Lower labor and transportation costs, proximity to raw materials or to markets do not *per se* guarantee the emergence or the flow of capital or economic dynamism. In fact, in recent years most hightech economic activity

has been geared towards what can be considered as high-cost areas. The M4 corridor in the United Kingdom, or Route 128 in the US provide perhaps two of the most representative examples of these trends. Even at the national level investment and technology have tended to be directed not towards the most favorable areas in terms of labor costs (usually located in the periphery), but towards already existing cores (Audretsch and Feldman 1996). This phenomenon is also not only restricted to hightech activities. The relocation of lowtech industries often has little relation with cost or accessibility issues, as has been shown in the cases of Italian industrial districts (Brusco 1989; Becattini 1991) or of the successful Danish furniture industry (Maskell 1998).

There are, however, factors which cast doubt on our capacity to generalize the findings of these strands to broader geographical contexts. Most of the aforementioned approaches have looked at the relationship between noneconomic factors and economic growth either from a theoretical perspective or using case studies. Nevertheless, the array of case studies included in these type of analyses has been extremely reduced, mainly limited to what Markusen (1996: 294) considers to be the exceptions to the rule. Little significant research on the connection between growth and the socio-political and institutional structure has been conducted outside the 'new growth spaces', and, moreover, almost no research has dealt with this relationship from a quantitative perspective. The constant focus on the 'wonder regions' or the 'most favorable cases' of Emilia-Romagna and the Third Italy, Baden-Württemberg in Germany, West Jutland in Denmark, the Cambridge-London-Bristol axis along the M4 corridor in the UK, Sophia-Antipolis and Toulouse in France, or the Silicon Valley, Orange County, the Phoenix and Seattle areas, and Route 128 in the United States has led to the somewhat simplistic belief that similar interactions between the economic and socio-political dimensions can happen

almost everywhere. New industrial districts have been sought for and identified in places as far apart as China, Brazil, or Mexico (Patchell 1996; Rabellotti 1998; Wang and Wang 1998; Rabellotti and Schmitz 1999). There is, however, little cross-national or cross-regional evidence supporting the idea that the connection between economic growth and the social, political, and institutional setting holds outside these 'sticky places'. Do all economically dynamic areas in the world have favorable social and political contexts? Is economic decline related to what can be regarded as damaging social and political structures? Are different social, political, and institutional settings connected to different economic outcomes? On the grounds of the research conducted by most authors working on structural change and institutionally rich economies, these questions remain unanswered outside the context of the 'most favorable cases'.

On the robustness of noneconomic factors in growth models

Researchers working on the process of socio-economic restructuring have been wary to cross the limits of theoretical and case-study analysis and wander into the fields of variable-oriented studies. Thus, the task of analyzing the connection between economic growth and the socio-political structure on a wider context has been left to neoclassical and endogenous growth economists, who, as a general rule, have had little or no contact with the literature on structural change. As a result, most quantitative cross-national and cross-sectional research on the topic has ignored the theoretical background of the aforementioned approaches and has been carried out using the theoretical and analytical tools of growth theory, and fundamentally multiple regression models.

Although most traditional neoclassical growth models have included some sort of

measurement of the social, political, and institutional dimension, these approaches have consistently identified capital and investment as the main driving forces behind economic growth (Solow 1994). The outbreak of endogenous growth theory in the second half of the 1980s brought technology (Romer 1986) -and, to a lesser extent human capital (Lucas 1988)- to the fore as basic constituents of growth. The economic performance of a locality, a region, or a country was no longer fundamentally determined by its level of investment or by its stock of capital, but also by its capacity to generate and/or assimilate technological progress and transform it into innovation. Growth had become a factor of two very important economic forces: capital and technology (and, to a lesser extent, labor). The part assigned to noneconomic factors was however still rather limited. Different measurements of human capital were included in almost all models as *explananda*, but their contribution to explaining the dependent variable was generally scarce. This means that growth models have generally focused on direct growth factors or the mechanisms of growth (i.e. investment), rather than on indirect factors or the causes of growth (i.e. what causes investment).

However, there seems to be a growing consensus among neoclassical and endogenous growth theorists that capital, technology and a few indicators of human capital alone are not enough to satisfactorily explain how growth is generated, especially in light of the increasing returns to scale implicit in endogenous growth models (Crafts 1996). Moreover, the explanatory capacity of models based on capital and technology seems to be dwindling (Fagerberg 1994). Large residual elements in empirical analyses have been and are the norm (Hall and Jones 1999). Researchers have thus been busy looking for noneconomic variables, as a way to increase the explanatory capacity of growth models and reduce the residual factor. In the period of a few years noneconomic factors have passed from being almost neglected to attract a

considerable attention in growth equations and models. Authors concentrating on the relationship between social and political factors, on the one hand, and growth, on the other, are now legion. Many researchers have focused on different aspects of human capital (Lucas 1988; Barro 1991; Barro and Lee 1993; Benhabib and Spiegel 1994; Gemmell 1996; Levin and Raut 1997; Chatterji 1998); others have analyzed policy and government spending (Alesina 1988; Barro 1991; Murphy, Shleifer and Vishny 1991; Alesina and Rodrik 1992; Easterly 1993; Easterly and Rebelo 1993; Alesina and Perotti 1993; Persson and Tabellini 1996). Financial policy has also become a popular subject (Greenwood and Jovanovic 1990; Levine 1991; King and Levine 1993) and it is almost impossible to list all the other variables which have been connected to growth: Persson and Tabellini (1994) have, for example, analyzed income distribution; Williamson (1985), North (1989), Frey (1993), and Keefer and Knack (1997) have targeted institutions; religion has been studied by De Long (1988) and Grier (1997); ethnicity by Borjas (1992), social infrastructure by Hall and Jones (1999)... See Temple (1999) for a thorough review of recent empirical literature on economic growth.

The results of models involving social and other noneconomic factors are fairly consistent. As Mankiw (1995: 302) points out, different measures of human capital tend to be positively associated with growth, whereas population growth and fertility, as well as political instability, seem to be negatively related to growth.

This consistency in the results does however not imply that the relationship between economic growth and the social, political, and institutional variables inserted in growth models is a strong one. In most cases, technology and capital tend to perform better than the social or political factors which are included alongside economic indicators. The sway of social and

political indicators on long-term economic growth is thus considered to be fragile and vulnerable to small changes in models, since most policy, institutional, and social indicators are not robustly correlated with growth or the investment share. This view is confirmed by Levine and Renelt's (1992) review of the robustness of the most seminal cross-country growth regressions. Their extreme-bounds analysis of the relationship between economic growth and the social and political variables most commonly used in growth models shows that a large variety of social variables, trade policy measures, fiscal indicators, and an assortment of other political and institutional indicators are not robustly correlated with growth (Levine and Renelt 1992: 959). These results are substantiated by authors like Newman and Thompson, who state that "the impact of social indicators on later economic growth, while significant, is much smaller than the impact of economic indicators on subsequent economic growth" (1989: 469). Crafts (1992) and Levine and Zervos (1993) come to similar conclusions. This lack of robustness means that noneconomic indicators included in the great majority of the neoclassical or endogenous growth models can be easily traded by other factors with little influence on the final results[1] (Levine and Renelt 1992). In brief, social and political variables tend to play a supporting role to investment, capital, and technology and their impact on changes in economic growth is regarded as almost negligible, since one indicator of social or political conditions can be easily exchanged by another.

Explanation of the lack of robustness of social and political variables

Several explanations can be put forward as of why social and political variables included

[1] Levine's and Renelt's robustness analysis has been challenged by Sala-i-Martín, who claims that the extreme-bounds test is "too strong for any variable to pass it" (1997: 179).

in growth equations cannot be considered robust. The relatively thin empirical base of growth theory, the presence of large residual elements and of reverse or simultaneous causation, the strong emphasis on linearity, and the problems related to the omitted variable bias are some of the theoretical and technical factors which explain this lack of robustness. Most of these factors are related to the constant resort to multiple regressions in growth models.

The lack of robustness of social and political variables may be connected, in first place, to the fact that "our theoretical and empirical understanding of the link between social and political institutions and economic growth is still at an early formative stage" (Fedderke and Klitgaard 1998: 457). Economic models of growth have tried to express economic theories in a formal mathematical way. It comes thus as no surprise that neoclassical and endogenous growth theories have encountered difficulties in modeling the connection between growth and various factors -and most notably social and political indicators- which do not lend themselves easily to mathematical modeling. The attachment of multiple regression analysis to an equilibrium framework further limits the inclusion of noneconomic factors (Martin and Sunley 1998: 215). And the concern of many growth theorists with what Sala-i-Martín calls determining the 'true' regression (1997: 178) has meant that social, political, and institutional factors which "cannot be reduced to or expressed in mathematical form [...] are assumed to be of secondary or marginal importance" (Martin 1999: 75).

The presence of large residual elements in most growth equations is another factor to be taken into account. Although capital and technology alone are capable of explaining a large percentage of the variation in economic growth, the unexplained variation is still significant. Yet, the introduction of individual social, political, and institutional variables -being non robust-

has had little influence in reducing this growing residual element (Fagerberg 1994).

In addition, most growth models are affected by problems of reverse or simultaneous causation, especially with regard to economic variables. It is evident that the more a country saves, invests in machinery, and generates technological progress, the greater are its chances to grow. However, less attention has been paid to the fact that the reverse case is also possible. High levels of growth in any country tend to increase investment, in general, and investment in R&D, in particular. Hence, there is always a risk of simultaneous causation which may alter the results of the model and affect our perception of the role played by other factors with no such direct connection to economic growth.

A fourth factor which explains the lack of robustness is the stress put on linearity. As Martin puts it, growth studies "(including the endogenous growth variants) are rooted in the conceptual and methodological strait-jacket of the Cobb-Douglas production function" (1999: 76). The use of linear or log-linear models is partially justifiable: different variants multiple regression models are an adequate way of discerning the relationship between economic growth and a series of factors which can be considered as direct constituents or mechanisms of growth. It is manifest that higher levels of investment or of technology result in higher levels of growth. But the resort to such models is not self-evident when we deal with social, political, and institutional factors, which are not direct constituents of growth and are difficult to operationalize. Which demographic structure is connected to higher economic growth? Does a greater or a lower level of state intervention in the economy trigger greater economic dynamism? Is investment in education always good for growth? And what about trade union membership and labor unrest? These questions have no clear-cut answer. Social and political

factors cannot be regarded as direct and linear constituents of economic growth and are seldom significantly correlated with it (Fedderke and Klitgaard 1998). Certain sets of social and political factors may influence the capacity of any space to generate and/or attract investment or assimilate technology, factors which, in turn, influence economic growth. Social and political factors can thus only be considered as indirect factors since they impinge on the way in which actors (such as entrepreneurs, investors, public decision-makers, etc.) take their decisions on whether to invest in a certain place or not, whether to risk their money in growth producing activities in that precise time and space or to look for alternatives (Keefer and Knack 1997). They are the underlying causes which trigger the mechanisms of growth. It is unlikely that a social or political indicator –as the ones included in multiple regression analyses- will alone have any significant impact on the development of economic activities in any given place. Individual economic decisions are the consequence of a series of complex mechanisms in which, as Streeck (1992) underlines, the socio-political setting as a whole provides opportunities and constraints. Therefore, introducing social and political variables alongside investment and technology (that is, direct alongside indirect constituents of growth) may not be the most adequate solution to assess the relationship between the social and political settings and economic performance, since direct constituents will absorb and/or distort any influence indirect constituents may bear on the final outcome.

But, perhaps the most important factor which explains the lack of robustness of social and political variables included in growth models relates to the difficulties most models face when trying to reproduce the complexity of society. Growth models are driven by the goal of parsimony. This aim of focusing on a reduced set of variables in order to achieve greater explanatory power has enormous theoretical advantages, but it is also a serious drawback when

dealing with social and political variables. Pursuing parsimony implies an extreme reduction of the complex scope of social and political factors which may have an influence on growth. Hence, the connection between one or two isolated social or political variables and growth is almost inevitably irrelevant. The demographic structure or the political orientation of a particular government do not alone determine growth rates. Neither do isolated measures of the structure of the labor force, nor educational enrollment levels. It is the complex interaction among very heterogeneous past and present social and political variables which determines the creation of a certain socio-political setting, which as a whole enhances or limits the growth potential of a certain area (Massey 1984; Santos 1996); the combination in time and space of different factors generates different local path dependencies, by establishing unique local economic, social, and political arrangements, and specific institutions (Cox 1996), which "become locked in through external and self-reinforcing effects" (Martin and Sunley 1998: 211). Hence, a robust association between a certain social and political setting and economic performance can only be observed if the factors which make up this setting are well reproduced in growth models. This has often been achieved at case study level, but has so far proven almost impossible using quantitative multiple regression models of growth. In models dominated by the quest of parsimony, the few social and political variables included cannot address the complexity of the social and political dimensions of the spaces under scrutiny. There is thus a need to try to reproduce this complexity as a step towards solving the problem of lack of robustness of social and political variables in growth models.

In quest of an alternative method

The question is how can we overcome the problem of lack of robustness; how can we

assess in a cross-national framework the connection between different social and political settings and economic performance, detected on a case study level. This paper will try to evaluate the relationship between social and political variables and economic performance by means of using an alternative method which dodges some of the problems related to the insertion of social and political variables in linear regressions. This implies devising a method which allows us to assess the relationship between certain sets of social and political settings[2] and growth, avoiding the distortions associated with the inclusion of direct constituents of growth (capital, investment, and technology), and which reproduces better the complexity of the social and political structure of any given space.

The use of cluster analysis provides a suitable alternative for this purpose. By resorting to cluster analysis in order to identify long-term growth patterns in a set of OECD countries, and then by comparing these growth patterns with sets of countries according to their social and political structures, we are able to determine if there is a certain association between growth and sets of social and political variables. In this way we are also able to avoid the use of traditional economic variables, as well as capable of using much larger sets of variables. Moreover, cluster analysis provides a feasible method of escaping the rigid corset imposed by linear regression models in the relationship between dependent and independent variable, eluding the problems generated by simultaneous causation, spatial autocorrelation, and the omitted variable bias, by

[2] The aim of the paper is not to reproduce the richness, complexity, and subtleties of most recent theories of structural change and socio-economic restructuring (the use of quantitative methods almost precludes this), but rather to identify if the factors which are at the base of these theories have a greater connection with growth performance when analysed together than what has been identified by neoclassical and endogenous models of growth.

means of grouping sundry social data into clusters or taxonomies. The problem of simultaneous causation is solved by analyzing separately the left-hand and the right-hand side variables (the dependent and independent variables) in traditional multiple regression growth models and by the inclusion of lagged variables. The problem of omitted variable bias is also dealt with, since there is a greater capacity to introduce larger sets of variables[3].

The model, the sample, and the data

The aim of using cluster analysis is to establish sets of OECD nations with comparable growth patterns between 1960 and 1994 (the dependent variable) and to see if there is any relationship between the resulting groups and groups of nations with homogenous social and political settings at the beginning of the period of analysis (the 'independent' variables). The underlying hypothesis is that if we admit that growth is primarily associated with the stock of capital and the available innovation, but that there is still a large element that remains unexplained, differences in growth rates may well be the result of how the social, political, and institutional setting provide the conditions for the genesis of local technology and capital or for the attraction and/or assimilation of foreign capital and technology. Hence the original place-specific social and political conditions may determine the capacity of every space to generate growth. This idea is linked with Massey's theory about the production of space, by which the resulting space is the consequence of a combination of superimposed 'layers', which "represent

[3] Cluster analysis is nevertheless not a problem-free method. The main criticisms against this method is that it does not allow for measures of significance and that the number of clusters has to be defined *a priori*.

in turn the succession of roles the local economy has played within wider national and international spatial structures" (1984: 117-8). It is also related to Olson's (1982) and Santos' (1979 and 1996) theories of social rigidities. Place-specific conditions are unique, and, therefore, every economic process adopts in every space a unique behavior, as a result of its interaction with the existing social and political structure. This view is at odds with the traditional view implicit in traditional multiple-regression growth models that changes in one of the independent variables might provoke similar changes in the dependent variables, that is, that if the level of schooling is increased in any given country, the rate of growth will vary accordingly (Romer 1994). In a complex socio-political setting the marginal results of changing a variable might be hard to predict because of the interaction of this variable with all the other social and political variables in each unique territorial context.

The steps in order to check the relationship between economic growth and the underlying social and political context in 22 of the member-states of the OECD are as follows. First, the countries included in the analysis are classified into five groups or clusters according to their growth performance between 1960 and 1994, using iterative partitioning methods (k-means clustering). The choice of precisely five clusters relates to the five possible growth patterns resulting when the starting rates of growth and the growth trend in the period of analysis are taken as the basic criteria for the setting up of groups. The five growth patterns identified according to these criteria include the following types (Figure 1):

a) Countries with above average initial rates of growth and increasing or constant growth trends.

b) Countries with above average initial rates of growth and declining growth trends.

c) Countries with average initial rates of growth and no positive or negative evolution.

d) Countries with below average initial rates of growth and increasing or constant trends.

e) Countries with below average initial growth rates and declining growth trends.

Insert Figure 1 about here

The use of k-means clustering techniques generates five clusters of greatest possible differentiation in terms of growth behavior, by minimizing the variability within each cluster and maximizing the variability between clusters (Aldenderfer and Blashfield 1984). The five resulting groups include countries with similar growth patterns throughout the period of analysis.

Once the growth clusters are established, the same k-means clustering techniques are used in order to arrange five groups of nations according exclusively to their initial social and political indicators and the evolution of those indicators. The traditional variables of capital, investment, and technology, which dominate both neo-classical and endogenous growth models -and which, to a large extent, provoke the lack of robustness of the relationship between growth rates and social and political structures- are dropped from the analysis. If the resulting social and political clusters match the growth clusters, then it could be assumed that the relationship between economic growth and national social-political setting is robust, since different growth patterns are linked to place-specific socio-political structures. If, on the other hand, no significant relationship results from the analysis, the evidence of the lack of robustness of social and political variables already identified in traditional growth models would be confirmed.

The analysis incorporates growth and socio-political data for 22 of the member-states of the OECD[4]. Growth data covers the evolution of national GDP between 1960 and 1994. GDP is measured in 1990 Geary Khamis' dollars (Maddison 1995). National GDP data has been transformed into annual growth rates, and the difference with the OECD average has been calculated. This last indicator is used in the cluster analysis.

The socio-political analysis includes 37 variables covering a wide field of what can be regarded as the social and political setting in every country (Table 1). Indicators encompass a large range of social and political realms, such as population, population growth, labor force structure, education, medical care, access to information, state intervention in the economy, and trade unions and labor unrest. The source for the majority of the social and political data are the World Bank World Tables, with a few variables extracted from the OECD and ILO statistical yearbooks.

Insert Table 1 around here

The social and political data set includes mainly lagged and a few dynamic variables. Lagged variables refer (whenever available) to the social and political conditions in the 1960s. Dynamic variables represent the degree of social and political change throughout the period of analysis. The use of mainly lagged variables is justified because, as has often been pointed out, start-off social and political conditions play an important role in determining the growth

[4] The choice of OECD nations is justified by the existence of large series of economic and, above all, social and political data which go back to the beginning of the period of analysis.

capacities of any space, especially since social and political conditions react more slowly to changes than economic variables and hence they may only have an impact on growth rates on the medium and long terms (Massey 1984; Rodríguez-Pose 1994; Santos 1996). In addition, the use of lagged variables in the social and political analysis prevents growth rates from having an influence on their variation, thus avoiding problems of simultaneous causation. The dynamic variables represent the degree of change of the social and political dimension in the 22 nations included in the analysis. The 37 variables have been checked for multicollinearity, and those with high levels of multicollinearity have been dropped from the analysis. These variables are identified by an asterisk in Table 1.

Growth patterns in the OECD

The performance of k-means cluster analysis on national growth rates in the OECD between 1960 and 1994 identifies five types of growth behaviors (Figure 2), which reproduce the expected growth behaviors depicted in Figure 1. The main features of each group are briefly presented in the following pages.

Insert Figure 2 around here

The first set encompasses the majority of the OECD member-states located in ***Continental Europe***. It includes Austria, Belgium, France, Germany, Ireland, Italy, and the Netherlands (Table 2). The growth rates of the nations included in this group tend to hover around the OECD average (Figure 3). Their average growth trend -as indicated by the linear fitted function in Figure 3- does not show any positive or negative evolution, and remains close to the OECD average throughout the period of analysis. Countries included in this group do not

experience any significant changes in their relative position in terms of GDP. Relatively poor economic performances in the mid-1960s and early 1980s have been compensated by relatively high growth rates in the late 1960s and early 1970s and in the late 1980s. Most countries within the group show remarkable similarities in their annual growth behaviors, probably as a consequence of the degree of integration of their economies. This is the case of Austria, Belgium, France, Germany, and the Netherlands, whose fluctuations in growth rates tend to be a carbon copy of each other (and especially those of Belgium and France, on the one hand, and Austria and Germany, on the other). Growth trends in Ireland and Italy show greater variation. Italy had initial growth levels which exceeded the OECD average, but its growth rates have tended to converge to those of the rest of the OECD. Ireland represents the opposite case: growth rates seem to follow an upward trend, especially as a result of high growth in the late 1980s and early 1990s.

Turkey is the only country that has consistently scored better than the OECD average (Figure 3). Its trend has also been a rising one: from growth rates that in the 1960s were one percentage point above the OECD average to two percentage points in recent years. One of the main features of Turkish economic performance has been its volatility. Years and periods of economic expansion have been followed by spectacular drops in growth. Real growth rates above 8 per cent in 1963, 1966, 1971, 1974-6, 1987, and 1990 have alternated with negative growth rates in 1979, 1980, and 1994, indicating the high exposure to market changes of what is a relatively weak economy.

Insert Figure 3 around here

Another cluster that started from above average growth levels, but which has been unable to maintain its momentum has been that of the ***Mediterranean countries and Japan***. Greece, Japan, Portugal, and Spain enjoyed rates of growth which were on average three to four points above those of the OECD in the 1960s and early 1970s. The oil shocks had a significant impact on growth in these four countries. Re-adapting to the new conditions proved extremely difficult for nations which were heavily dependent on imported energy sources. As a group, Mediterranean Europe and Japan grew in 1974 for the first time below the OECD average. The economic crisis deepened even more at the beginning of the 1980s, with only the Japanese economy showing slight signs of recovery. The late 1980s brought a return to relatively high growth rates, especially in the cases of Japan, Portugal, and Spain, but, once again, the crisis of the early 1990s hit this spatial context (Figure 3). The growth trajectories of all the members of the cluster have been fairly similar, although Japan has managed to fare slightly better throughout the period of analysis, possibly as a result of the greater resources of its economy.

Most Northern European and Anglo-Saxon countries make up the two groups which tend to grow below the OECD average. The set of ***Neutral countries*** includes Finland, Sweden, and Switzerland. Growth levels in these three states have remained below the OECD average in the last three and a half decades, especially during the 1960s, the second half of the 1970s, the late 1980s and early 1990s. Their economic performance also tends to worsen as the period of analysis progresses: if during the 1960s growth in these three countries was on average half a point below that of the OECD, growth in the early 1990s is, on average, one and a half points below the mean (Figure 3). The recent economic decline of these countries is linked to factors such as the collapse of the Soviet Union, which had a profound influence on the Finnish economy, and the increasing costs related to the Scandinavian welfare model, which have

greatly affected Sweden and, to a lesser extent, Finland (Agell 1996; Korpi 1996). Relative economic decline in Switzerland is less prominent than in the two Scandinavian countries.

The final growth group is made up of ***Anglo-Saxon and Northern European*** countries, which started with below average levels of growth in the 1960s, but have recently displayed greater signs of dynamism. The United Kingdom, Denmark, and Norway, as well as the non-European Anglo-Saxon countries of the OECD (Australia, Canada, New Zealand, and the USA) have experienced a relative upward economic trend in recent decades. They have moved from growth rates below the OECD average during the 1960s and most of the 1970s, to rates of growth slightly above the OECD average in the 1980s and early 1990s. In some cases this relative economic recovery coincides with the economic crises of the 1970s. Canada, the United States and, especially, Norway were favored during the heyday of the oil shocks by their huge reserves of oil and other natural resources. Australia, New Zealand, and the United Kingdom had to wait until the first waves of liberalization in the 1980s in order to experience symptoms of relative economic recovery. This upward trend of the 1980s and 1990s has brought the line representing the fitted function above the OECD average at the beginning of the 1990s (Figure 3).

Economic growth and social structure

Cluster analysis applied to national economic growth rates in the OECD during the last three and a half decades identifies clusters of nations with comparable growth trajectories. Some nations improve their relative position, some show signs of relative decline, whereas others remain in a fairly stable position throughout the period of analysis. Which are the possible

explanations behind the formation of these growth clusters? Why do certain nations share similar growth patterns for such long periods? Some of the possible answers to these questions have already been pointed out in previous paragraphs. One of the explanations is linked to the dimension and relative economic strength of each individual country. Countries with a traditionally weak economic base such as Greece, Portugal, Ireland, Spain and, above all, Turkey tend to have more volatile growth patterns, as a consequence of the lower capacity of their economies to face periodic changes in market conditions. In contrast, countries with strong economies have greater capacity to harness market changes and cope better with changes in the economic cycle. Equally, countries rich in oil reserves, such as the USA and Norway, were less affected by the two oil shocks.

A second possible explanation may be linked to different economic cycles in the OECD. As Frankel and Rose (1998) have shown, countries with greater level of economic integration share more highly synchronized business cycles. Hence, the similarity of growth trajectories in economies as integrated as those in Continental Europe, or those of Canada and the United States, or Portugal and Spain comes as no surprise.

Although the strength and depth of national economies and similarities in economic cycles[5] may explain the emergence of clear cut growth clusters in the OECD, are these the only two factors behind long-term similarities in growth patterns? Or are comparable initial socio-political settings also related to growth trends? Do countries with similar social and political structures also share similar growth rates? The hypothesis defended in this paper is that national

[5] It can also be argued that similar economic cycles may also be an endogenous factor, since they may be the outcome of similar social and political structures across nations.

social and political structures may be connected to growth rates across the OECD. In order to determine if there is such a relationship between socio-political structures and economic growth we resorted to the same type of cluster analysis performed with national growth rates. The variables included in the analysis are the socio-political variables of Table 1.

The resulting five clusters of nations according to their socio-political conditions resemble the growth clusters identified in the previous analysis (Table 2). Hence, the results of the analysis confirm the hypothesis of the connection between national socio-political structures and economic growth. Fifteen out of the twenty-two countries included in the analysis (68 per cent) belong to comparable clusters to those resulting of the analysis of growth rates in the last thirty five years; and four out of the five resulting clusters reproduce, to a greater or lesser extent, four of the five growth clusters (Table 2). Moreover, the resulting clusters not only represent groups of countries with similar social and political conditions, but also they tend to match countries with similar welfare regimes, as described by Esping-Andersen (1990 and 1999). The Continental Europe cluster encompasses most countries with what Esping-Andersen calls a conservative welfare regime; the Scandinavian group includes nations with a social-democratic regime; the Anglo-Saxon cluster those with a liberal regime; and the Mediterranean cluster represent the Mediterranean variation of the conservative regime. And "types of welfare states and industrial relations systems go hand-in-hand" (Esping-Andersen 1999: 20). In sum, the results of the analysis highlight the presence in the OECD of certain social and political structures which are linked to welfare regimes and industrial relations systems, and which are ultimately connected to long-terms economic growth patterns. The economic dynamism or lack of dynamism of a give country is thus robustly linked to a complex web of social and political factors which influence the capacity of any space to generate and assimilate economic change.

The results of the analysis also highlight that there is no single set of social or political conditions which relate exclusively to high or low growth. The different socio-political clusters are featured by a complex and variegated combination of factors which makes it difficult to distinguish which social or political factors may be responsible for the economic performance of a certain country. The basic socio-political features of each cluster are presented in the following pages.

Insert Table 2 around here

Most of the countries in ***Continental Europe*** not only share comparable rates of growth, but also similar starting social and political conditions. From a demographic point of view, these are countries with lower levels of population growth and with greater signs of aging. This is a consequence of above average death and lower fertility rates. Germany, Austria, Belgium, Finland, France, Ireland, Italy, the United Kingdom, and Switzerland also have had higher than average growth in activity rates, despite having in most cases highly regulated labor markets. Initial female participation in the labor force was higher than elsewhere in the OECD and the level of part-time working is relatively low (Figure 4).

Contrary to what would be expected, taking into account their growth performance, this cluster did not enjoy especially advantageous conditions in educational terms. School enrolment rates in primary, secondary, as well as university level at the beginning of the period of analysis were slightly below the OECD average and the percentage of the population with higher education at the end of the period does not show any comparative advantage. The stock of population with secondary education is the only indicator in which they outperform the OECD

average.

Continental Europe is also featured by a relatively high level of state intervention in the economy, although the growth of general government outlays between 1965 and 1994 has been less acute than elsewhere in the OCDE. Trade union membership has remained above the OECD average, and the number of days not worked as a result of strikes or lockouts has been -perhaps as a result of the presence of strong trade unions- significantly smaller than the rest of the OECD.

The basic socio-political feature of the countries in Continental Europe is precisely the absence of extreme features. None of the social and political characteristics of countries in Continental Europe is more than one standard deviation away from the OECD average. These are, in general, countries with no particular comparative advantage, but also without any significant shortcomings in terms of their initial social and political structures (Figure 4).

Deviation from the OECD average is much greater when the social and political structures of the ***Anglo-Saxon countries, Japan, and the Netherlands*** are analyzed. This more heterogeneous set of countries includes four of the seven members of the economic cluster of Anglo-Saxon countries and Northern Europe (Table 2). Countries such as Australia, Canada, New Zealand, and the United States, as well as Japan and the Netherlands, stand out because of their relatively high demographic dynamism, based on low mortality rates, relatively low levels of aging, and high population growth.

Their respective national labor markets tend to be -especially in the Anglo-Saxon

countries- more flexible and dynamic, with a clearly dominant service sector. There has been a significant increase in the working population within the period of analysis, and particularly in part-time work (Figure 4). From an educational point of view conditions in this cluster were and are particularly advantageous. Japan, the Netherlands and the Anglo-Saxon countries had above-average initial school enrolment rates in all sectors of education (and especially at the level of higher education).

Government involvement in the economy has remained below the OCDE average during the period of analysis. From an industrial relations point of view, the number of working days lost to strikes is similar to that of Continental Europe (slightly below the OECD average), despite having a lower trade union membership and unions which seem to face increasing problems in order to attract workers.

Insert Figure 4 around here

The only country whose growth fitted function has remained above the OECD average throughout the period of analysis, ***Turkey***, also had a socio-political structure which makes it stand out from the rest of the OECD (Table 2). With few exceptions, its social and political indicators were more than two standard deviations above and below the OECD average. Turkey has been and is a demographically young and dynamic country, with high fertility rates and demographic pyramids with shapes closer to those found in developing countries than in the rest of the OECD. As a result, population growth has remained extremely high in a context in which most countries have faced serious demographic crises.

Labor activity rates in Turkey have been traditionally low and have tended to grow below the OECD average, with a large percentage of the total active population still employed in agriculture. Turkey lagged with respect to the rest of the OECD in terms of the educational attainment of its population. The level of government intervention in the economy is still below that of the other countries included in the analysis, although it has tended to grow at a comparable pace. Trade unions play nowadays a greater role in Turkish life and trade union membership is around the OECD average, a factor which has not prevented levels of industrial conflict only second to those found in Mediterranean countries (Figure 4).

The ***Mediterranean countries*** group includes Greece, Portugal, and Spain. These three countries share a demographic structure featured by an increasing lack of dynamism and incipient signs of aging. Low death rates have been matched in the last twenty years by a steep decline in birth and fertility rates, which are now among the lowest in the world. As a result of this and of the strong outward migration of the 1960s and early 1970s, population growth has remained below the OECD average.

The labor market has suffered serious transformations and the sectoral structures of the Mediterranean countries have converged towards those of the rest of the OECD, despite the persistence of still relatively high rates of employment in agriculture. In spite of starting from lower levels of activity that the rest of the OECD, these countries have not experienced above-average increases in activity rates. The rigidity of local labor markets has, to a certain extent, curtailed a greater expansion of activity and has also prevented the development of part-time work (Bentolila and Saint Paul 1992), although, as Esping-Andersen points out, “the real culprit may simply be the rotten timing of structural change” (1999: 27) (Figure 4).

Low levels of educational enrolment at the beginning of the period have represented a serious handicap for the economic potential of these countries. Despite rapid catch-up in education, the educational gap between Greece, Portugal, and Spain and the rest of the OECD (especially in the levels of educational attainment of the working population) was, and still is, evident.

State intervention in the economy in the 1960s was similar to that found in Turkey, however, and in contrast with this country, it has converged toward the OECD mean. Trade union membership has remained well below the OECD average and there are no signs of increases in membership. Lack of strong unions has contributed to the highest level of industrial conflict of all socio-political clusters (Figure 4).

Finally, the ***Scandinavian Countries*** group is the only one which has not clear match among the growth clusters. Countries such as Denmark and Norway are linked to the Anglo-Saxon countries in terms of their economic trajectories, whereas Sweden's is linked to that of Finland and Switzerland. However, in terms of their socio-political structures, the Scandinavian countries share many things in common. Their main features have been a lack of demographic dynamism, strong signs of aging, high life expectancy, and relatively low fertility rates. These societies also have had throughout the period of analysis a high level of participation of the population in the labor force and a strong tradition of female part-time work, which, little by little, is giving way to greater insertion of women in full-time work. Their educational indicators showed already in the 1960s a greater level of skills than the rest of the OECD.

There is a much greater separation between Denmark, Norway, and Sweden and the rest of the OECD in the political realm. The countries in this set have well-developed welfare states, and, consequently, they have high levels of state intervention in the economy, which were already visible at the beginning of the period of analysis (Korpi 1996). Trade unions not only have the strongest base in the OECD, but also membership has tended to grow above the OECD average. The number of working days lost as a result of strikes and lockouts is comparable to those found in Continental Europe or in the Anglo-Saxon countries (Figure 4).

Conclusions

The groups of countries resulting from the economic and socio-political cluster analyses highlight the existence of a fairly strong association between the economic trajectories of OECD countries since the 1960s and their social and political structure. Countries with comparable initial socio-political and institutional structures (and with similar levels of change in these structures) tend, as a general rule, to share comparable growth patterns. Hence, in contrast with what has been indicated by numerous neoclassical and endogenous growth studies, there seems to be a robust relationship between national socio-political conditions and economic growth. These results support similar conclusions achieved by Fedderke and Klitgaard, who underline that "social, political and economic indicators are linked by webs of association" (1998: 445) and that distinct groupings of social indicators have differentiated impacts on economic growth (*ibid.*).

However, the strength of this association is not just the result of the correlation between a limited number of social and political variables and economic growth, as in most traditional

growth models, but of the interaction of a wide range of social and political factors which, when combined in space, configure a unique socio-political set (the socio-political structure of every country) which favors or repels the development of economic activity in that territory.

The results of the analysis also underscore the lack of a clear-cut and linear relationship between national social and political conditions and economic growth. Economic growth is connected to place-specific combination of social factors, which are difficult to alter in the short term. As a result of these place-specific social and political combinations, any intervention on any individual social or political variable may lead to different economic outcomes in different areas. This implies that the influence of individual social or political variables (such as the ones included in traditional growth models) can be misinterpreted in certain spaces if taken out of its individual social and political context, as is done is cross-country growth regressions. This implies that most traditional growth analyses can be considered “far from a stage where meaningful answers can be given to questions that would interest policy makers” (Agell 1996: 764). In this sense, the traditional recipe of "more schooling and more investment" as the panacea for economic growth (Romer 1994) is, according to the empirical results, difficult to maintain, especially in high income countries. The results of the analysis have highlighted that higher levels of educational attainment are no guarantee of greater economic growth in certain contexts (Neutral countries and Continental Europe), whereas serious educational shortcomings in Turkey have not prevented this country from converging. We also find that the level of state intervention in the economy does not alone determine the level of economic growth. Many countries with different levels of state intervention or with different rates of trade union strength often share comparable growth trajectories. The same can be said about individual demographic or labor force variables. This poses considerable problems to our capacity to draw out causal

connections between growth and social and political structures and to extract policy implications from any type of global social and political analysis of growth trends. It is very difficult to predict the economic implications for any space of social policy changes, since they will depend on how variations in policies are assimilated by local social and political structures.

Finally, the complex interaction between socio-political structure and economic growth shows that there is still a long way to go in order to better understand how economy and society interact, especially in a period in which the greater mobility of factors such as capital or technology might mean that noneconomic factors are playing a more important role in determining why some spaces grow at a faster rate than others.

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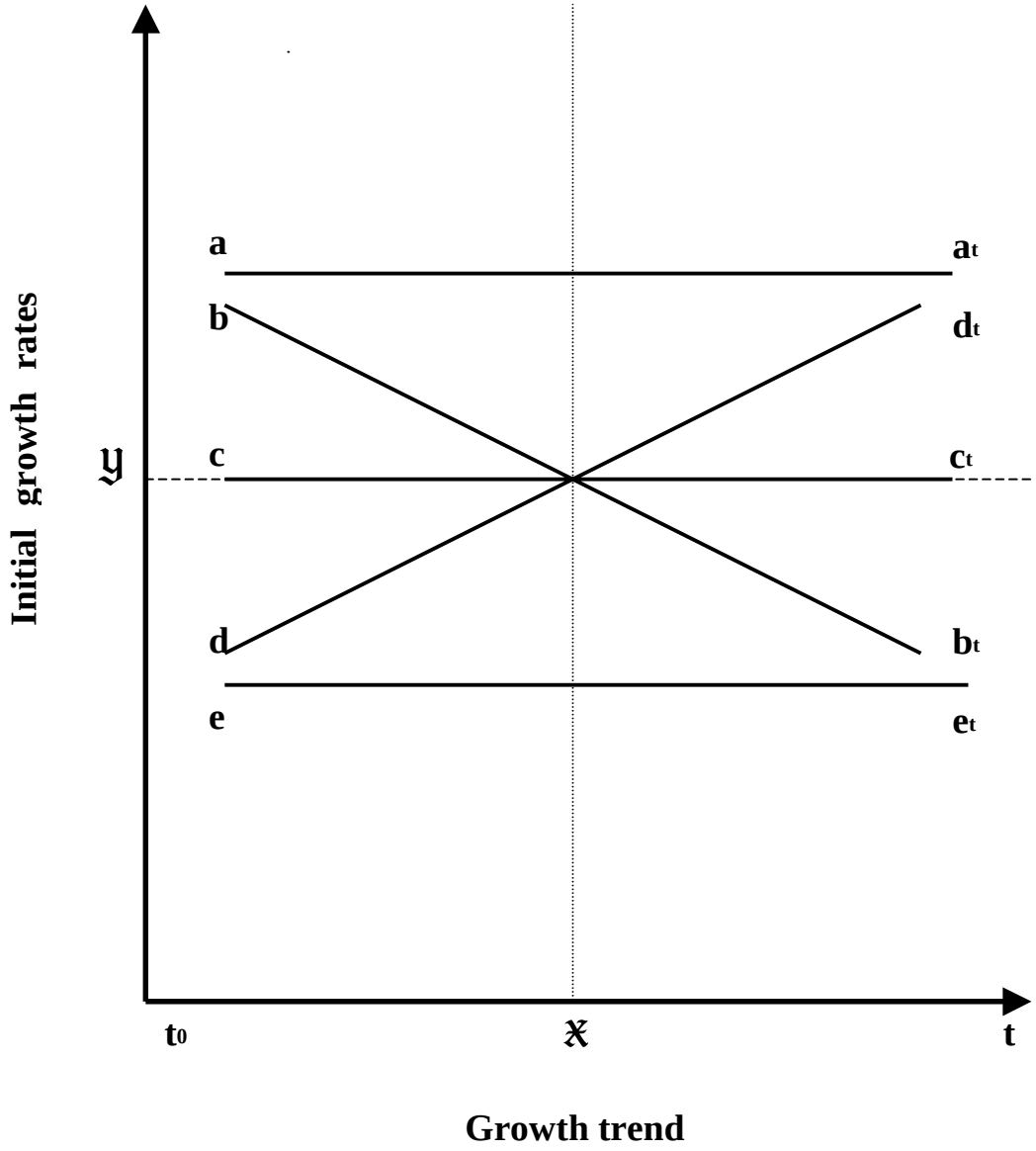

Figure 1. Possible growth patterns, according to the initial growth rate and the growth trend during the period of analysis.

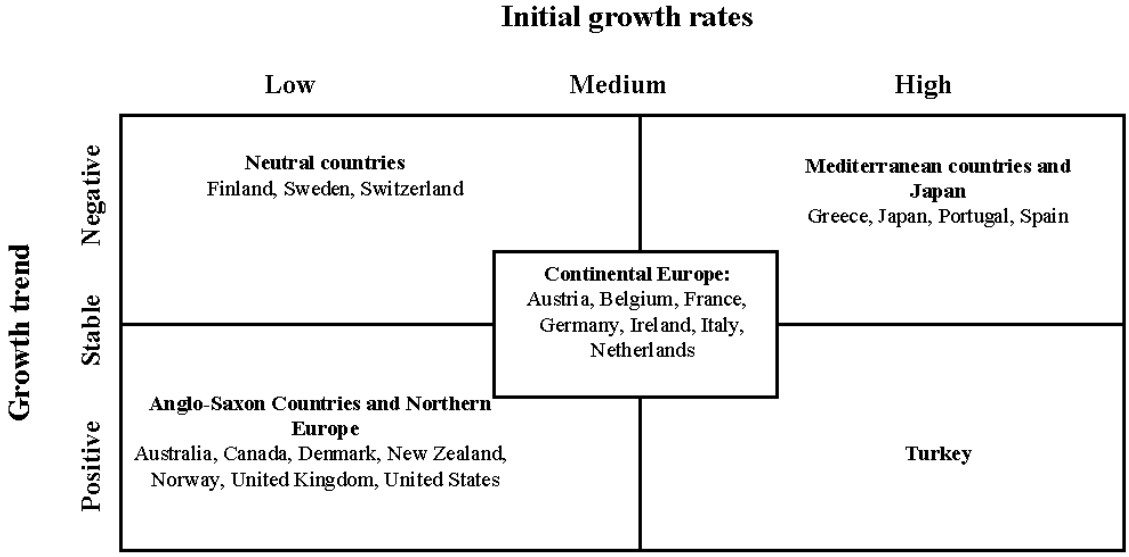

Figure 2. Growth clusters in the OECD, 1960-94.

Table 1

Variables used in the analysis

Growth data

Growth rates from 1960 until 1994 measured in 1990 Geary Khamis' dollars. Complete sets of data for 22 OECD countries. (Source: Maddison 1995)

Socio-political variables

Population

GROWPOP6070:	Population growth rate between 1960 and 1970
URBPOP_65:	Urban population (1965)
LESS15:	Population below the age of 15 (1965)
B1565*:	Population between 15 and 64 (1965)
MORE_64:	Population above the age of 64 (1965)
DEPENRAT*:	Age dependency ratio (1965)

Determinants of population growth

BIRTHRAT*:	Crude birth rate (1967)
DEATHRAT:	Crude death rate (1967)
FERTILIT:	Crude death rate (1967)
LIFEEXPE:	Life expectancy at birth (1967)
INFANMOR:	Infant mortality (1967)

Labour force

ACTIVITY*:	Participation rate in the labour force (1965)
ACT6594:	Growth of active population (in %) between 1965 and 1994 (OCDE)
FEMLABFO:	Female labour force (1965)
LABAGR_65*:	Labour in agriculture (1965) (NZL-ILO)
LABIND_65:	Labour in industry (1965) (NZL-ILO)
LABSER_65:	Labour in services (1965) (NZL-ILO)
PARTTEMP:	Part-time employment as a proportion of total employment (1979) (OECD, GRC 1983)
GROWPART:	Growth in part-time employment as a proportion of total employment (1979-1990) (OECD)
FEMINPAR*:	Part-time employment as a proportion of female employment (1979) (OECD, GRC 1983)

Education

ENROLPRI*:	Gross enrolment ratio, primary (1965) (GER 1970)
ENRPRIFE*:	Female gross enrolment ratio, primary (1965) (GER 1970)
ENROLSEC:	Gross enrolment ratio, secondary (1965) (GER 1970)
ENRSECFE*:	Female gross enrolment ratio, secondary (1965) (GER 1970)
ENROTERT:	Gross enrolment ratio, higher education (1965)(GER 1970)
PUPTEACP:	Pupil-teacher ratio, primary (1965)
PUPTEACS*:	Pupil-teacher ratio, secondary (1965) (DK, FR, NZL 1970)

Table 1 (Contd.)

Variables used in the analysis

POPSECON:	Percentage of the population 25 to 64 years of age that has completed secondary education (1992) (OECD)
POPUNIV:	Percentage of the population 25 to 64 years of age that has completed university education (1992) (OECD)
Medical care	
POPPHYS_:	Population per physician (1965)
POPNURS_:	Population per nurse (1965) (FRA, TUR 1970)
Access to information	
NEWPAPCI:	Daily newspaper circulation (1965) (GRC 1970)
State participation in the economy	
GOVOUTLA:	General government outlays as a percentage of GDP (1965) (OECD)
GROGOVOU:	Growth of general government outlays between 1965 and 1994 (OECD)
Trade unions and labour unrest	
UNIONDEN:	Union density (1970) (OECD, ESP, GRC, TUR 1975)
CHANGDEN:	Change in union density (1970-1988) (OECD)
STRIKES:	Days not worked as a result o strikes and lockouts in manufacturing (per 1,000 workers) (1986-1994) (ILO)

* Variables with an asterisk represent those which may lead to high levels of multicollinearity. They have been dropped from the final analysis.

Sources: World Bank World tables, unless otherwise stated. Other sources: OECD, ILO yearbooks, UN yearbooks. GDP data from Maddison 1995.

Table 2

Clusters and members of clusters

Growth clusters		**Social clusters**	
Continental Europe		*Continental Europe*	
	Distance from cluster center		*Distance from cluster center*
Austria	1.139	**Austria**	0.664
Belgium	1.032	**Belgium**	0.692
France	0.884	Finland	0.744
Germany	1.375	**France**	0.586
Ireland	2.031	**Germany**	0.471
Italy	1.691	**Ireland**	0.747
Netherlands	1.337	**Italy**	0.766
		Switzerland	0.736
		United Kingdom	0.660
Anglo-Saxon countries and Northern Europe		*Anglo-Saxon countries, Japan and the Netherlands*	
	Distance from cluster center		*Distance from cluster center*
Australia	1.748	**Australia**	0.402
Canada	1.408	**Canada**	0.495
Denmark	1.660	Japan	0.752
New Zealand	2.611	Netherlands	0.681
Norway	1.709	**New Zealand**	0.451
United Kingdom	1.879	**United States**	0.811
United States	1.286		
Turkey		*Turkey*	
	Distance from cluster center		*Distance from cluster center*
Turkey	0.000	**Turkey**	0.000
Mediterranean countries and Japan		*Mediterranean countries*	
	Distance from cluster center		*Distance from cluster center*
Greece	1.729	**Greece**	0.752
Japan	1.546	**Portugal**	0.634
Portugal	2.166	**Spain**	0.525
Spain	1.621		
Neutral countries		*Scandinavian countries*	
	Distance from cluster center		*Distance from cluster center*
Finland	1.593	Denmark	0.374
Sweden	1.257	Norway	0.406
Switzerland	1.619	**Sweden**	0.316