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Socio-economic development and fiscal policy: lessons from the cohesion countries for the new member states

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EUROPEAN CENTRAL BANK

WORKING PAPER SERIES

NO. 467 / APRIL 2005

**SOCIO-ECONOMIC
DEVELOPMENT AND
FISCAL POLICY**

**LESSONS FROM THE
COHESION COUNTRIES
FOR THE NEW MEMBER
STATES**

by Aaron N. Mehrotra
and Tuomas A. Peltonen

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SOCIO-ECONOMIC DEVELOPMENT AND FISCAL POLICY

LESSONS FROM THE COHESION COUNTRIES FOR THE NEW MEMBER STATES ¹

by Aaron N. Mehrotra ²
and Tuomas A. Peltonen ³

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Abstract

This paper examines the link between socio-economic development and fiscal policy. We introduce an indicator for socio-economic development (SEDI) and investigate its relationship with different fiscal variables, using data for the cohesion countries, namely Greece, Portugal, Spain and Ireland for 1980-1999. We find that an improvement in the net lending position of the government, as well as a fall in the level of public debt, would be beneficial for socio-economic development in the medium term. Furthermore, fiscal consolidation is found to be more relevant for promoting socio-economic development in the cohesion countries than in the other EU-15 Member States. Our results provide support for incentives to curb spending, such as the fiscal criteria of the Maastricht Treaty or the Stability and Growth Pact.

JEL classification: H6, H5, I0.

Keywords: socio-economic development, fiscal consolidation, EU enlargement, Stability and Growth Pact

Non-technical summary

This paper investigates the relationship between fiscal policy and socio-economic development. We are particularly interested in whether the fiscal austerity required by the Treaty of Maastricht and the Stability and Growth Pact would restrict and be harmful for the socio-economic catching-up process of the new Member States. According to theory, if government spending and investment are efficient and beneficial for socio-economic development, fulfilling the fiscal criteria might be detrimental for the new Member States as many of them are currently running high government deficits and notable consolidation measures would be required. Alternatively, fiscal austerity could be beneficial for socio-economic development, for economic growth and stability and thus ultimately for welfare.

To tackle our question at hand, we evaluate the level of socio-economic development by constructing a 'Socio-Economic Development Index'. This measure consists of various socio-economic indicators that are largely affected by public policies. According to our index, the cohesion countries Portugal, Spain, Greece and Ireland were approximately at the same level of socio-economic development in the 1980s, when they joined the European Union, as the new Member States were in 1999. Importantly, we also found that the levels of government debt and net lending of the cohesion countries in the 1980s were highly similar to the respective variables in the new Member States in 1999. This allows us to use data for the cohesion countries to evaluate the relationship between socio-economic development and fiscal policy, and to draw policy implications for the new Member States. Furthermore, we replicate the analysis for the other EU-15 Member States, in order to investigate whether fiscal consolidation would be equally relevant in promoting socio-economic development in these economies.

Our results show that fiscal consolidation would be beneficial for socio-economic development in the medium term. In line with previous literature about the effects of fiscal consolidation on economic output, we find that fiscal retrenchment, including a lower level of public debt, would be advantageous to socio-economic development. The effects of fiscal consolidation are found to be more prominent in promoting socio-economic development in the cohesion countries than in the other EU-15 Member States. Finally, we evaluate how long it would take for the new Member States to achieve the EU benchmark levels in terms of the development indicator, assuming the average speed of development of the cohesion countries during 1980-1999. The times vary from 8.5 years (Slovenia) to 24 years (Romania). However, it is important to note that this analysis and its implications should not be confused with the convergence criteria that are a prerequisite for euro area entry.

The results could also be seen to support maintaining the Stability and Growth Pact or an equivalent intergovernmental fiscal rule to curb public spending and debt. As a policy implication, in order to increase their level of socio-economic development the new Member States should pursue fiscal consolidation and pay attention to their government debt levels.

1 Introduction

On 1 May 2004, the European Union (EU) expanded to a union of 25 Member States. An important feature of this enlargement is that many of the new Member States are still undergoing a transition process from command to market economies, and most of them fall quite far below the average EU income levels. Furthermore, the dispersion of income levels among these countries and their regions is striking (Vaitilingam 2002, 11). Despite the differences in their economic structures, the new Member States are expected to join the third stage of the European Monetary Union (EMU) and to follow considerable fiscal and monetary discipline prior to the adoption of the euro.

Fiscal policy will have an important role in the new Member States' economic policies during their process to adopt the euro. Upon EU accession, the new Member States are subject to the Treaty of Maastricht and the Stability and Growth Pact. According to a protocol to the Treaty, the general government deficit to GDP ratio should not exceed 3 percent and the public debt to GDP ratio should be lower than 60 percent. Additionally, the Stability and Growth Pact requires Member States to reach a budgetary position close to balance or in surplus over the medium term. However, the average fiscal deficit of the new Member States was 5.6 percent in 2003, with only the Baltic countries (Estonia, Lithuania and Latvia) and Slovenia fulfilling the excessive deficit threshold of 3 percent of GDP.¹

Against this background, it is clear that if the new Member States aim at an early adoption of the euro, most of them need to consolidate their fiscal balances in order to meet the EU fiscal criteria. The implementation of fiscal consolidation might be a challenging task, as completion of the transition process together with the implementation of the *acquis communautaire* will increase the expenditure side of the government budgets, while pressures to introduce tax reforms could shrink the revenue side. Finally, the structural nature of the fiscal imbalances would certainly not ease this task.

The aim of our paper is to provide new insights into the convergence process of the new Member States² towards the common currency. More specifically, we want to examine the impact of different fiscal policy variables on socio-economic and structural development. We are especially interested in whether the fiscal austerity required by the Maastricht Treaty would restrict and be harmful for the socio-economic catching-up process of the new Member States. According to theory, if government spending and investment are efficient and beneficial for socio-economic development, fulfilling the fiscal criteria might be detrimental for the new Member States as many of them are currently running high government deficits and notable consolidation measures would be required. Alternatively,

¹According to the Eurostat statistics. In contrast, the EU-15 fiscal deficit was 2.7 percent of GDP in 2003. However, the general government gross debt of the EU-15 amounted to 64.3 percent of GDP in 2003, while it was 42.1 percent in the new Member States.

²In this study the term new Member States is used to refer to the 10 new EU countries excluding Cyprus and Malta, but including the Accession Countries, Bulgaria and Romania. Note also that the term EU-15 is used for the Member States prior to the latest EU enlargement, excluding Luxembourg (for reasons of data availability). Furthermore, the term EU-11 is used to refer to the EU-15 less the cohesion countries.

fiscal austerity could be beneficial for socio-economic development, for economic growth and stability and thus ultimately for welfare.

The socio-economic indicator that we calculate in our paper provides evidence that the Southern EU Member States, namely Portugal, Spain, and Greece, together with Ireland (cohesion countries henceforth) were at approximately the same level of socio-economic development in the 1980s, when they joined the European Union, as the new Member States were in 1999. Importantly, we also found that the levels of government debt and net lending of the cohesion countries in the 1980s were highly similar to the respective variables in the new Member States in 1999.³ This facilitates our analysis, as we can use data from these countries, where there is longer time series data available, to evaluate the relationship between socio-economic development and fiscal policy. Furthermore, the cohesion countries have also been subject to structural funds from the EU and capital inflows that are currently affecting the new Member States. Finally, the privatization of government enterprises started in the chosen time period in the cohesion countries, and this is also expected to happen in the new Member States.⁴

In the empirical part of the paper, we assess the extent to which the new Member States will have to adjust in order to achieve the socio-economic development levels of the former EU-15 Member States, and especially, what is the role of fiscal policy in order to achieve this aim. Our 'Socio-Economic Development Index' (SEDI) consists of various socio-economic indicators that are to a large extent affected by public policies. We measure the change in the development index during 1980-1999 in the cohesion countries and estimate the role of fiscal policy in the adjustment process. Using instrumental variable methods, we regress the SEDI on various fiscal variables, such as government primary surplus and public debt. Furthermore, we replicate the analysis for the other EU-11 Member States, in order to find whether fiscal consolidation would be equally relevant in promoting socio-economic development in the other EU countries. Finally, we evaluate the time it would take for the new Member States to achieve the EU benchmark levels in terms of the development indicator, assuming the average speed of development of the cohesion countries during 1980-1999. The times vary from 8.5 years (Slovenia) to around 24 years (Romania). However, it is important to note that the aforementioned analysis and its implications should not be confused with the convergence criteria that are a prerequisite for euro area entry.

Our results show that fiscal consolidation would be beneficial for socio-economic development in the medium term. In line with previous literature about the effects of fiscal consolidation on economic output, we find that fiscal retrenchment, including a lower level of public debt, would be advantageous to socio-economic development in the cohesion countries. The effects of fiscal consolidation are found to be more prominent in promoting socio-economic development in the cohesion countries than in the other EU-15 Member States.

³Pelkmans et al. (2000) also suggested that this was the case for the level of GDP.

⁴There are also important differences. A significant one is that the new Member States are former command economies while the cohesion countries were market economies. This has an impact on the role and size of the public sector, and therefore on the level of socio-economic development.

Because the levels of socio-economic development, government debt and net lending of the new Member States in 1999 bear close resemblance to those of the cohesion countries in 1980s, they would seem to be the most relevant ones for our analysis. Findings from the transition literature suggest that those Central Eastern European countries that have adopted tighter fiscal policies in their transition process have been more successful with their stabilization policies and have experienced a faster recovery in output growth (see e.g. Budina and van Wijnbergen, 1997). These results emphasize the need for fiscal consolidation, in accordance with the Maastricht convergence criteria and additional recommendations from the EU Commission. They could also be seen as support for the Stability and Growth Pact or an equivalent intergovernmental device to curb public spending and debt. As a policy implication, new Member States wishing to increase their level of socio-economic development should pursue fiscal consolidation and pay attention to their government debt levels.

Next, we turn our focus to the relevant theoretical and empirical literature. As has been shown by e.g. Modigliani (1961), an increase in public debt decreases the capital stock of the economy (crowding out effect) and therefore lowers the growth rate of the economy. Furthermore, as shown by Diamond (1965) and later by Saint-Paul (1992), an increase in the level of public debt generally decreases the welfare of the economy. Moreover, a number of empirical studies have shown that fiscal retrenchment might have a favorable impact on economic activity in the medium term.⁵ As explained by theoretical models, these non-Keynesian effects can occur through demand-side (effects on expectations, lowered risk premium, wealth effects) and supply-side channels (e.g. through increased competitiveness). Interestingly, according to the European Commission (2003), roughly half of the fiscal consolidation episodes undertaken in EU countries in the past three decades have been followed by an immediate acceleration in economic growth. In addition, the European Commission reports that fiscal consolidation has a positive impact on output in the medium term if it is conducted through expenditure retrenchment rather than through tax increases. Furthermore, Perotti (1999) found that fiscal consolidations are more likely to have non-Keynesian effects in countries with high debt levels.

In a conceptually similar study to ours, Afonso et al. (2003) examined public sector performance and efficiency in 23 OECD countries. The authors considered indicators for the 'opportunity-providing' activities of the government, such as education, health and infrastructure; and the 'Musgravian' tasks, such as allocation, distribution and stabilization. Whereas we consider a breakdown of fiscal balances, the study by Afonso et al. (2003) used total government spending in order to evaluate the level of public sector efficiency. Interestingly, the authors found that, when fiscal consolidation took place between 1990 and 2000, there was a considerable improvement in the public sector performance of the countries used in our study: Greece, Portugal, Spain and Ireland.

Concerning the link between structural reforms and fiscal policy, most of the transition literature sees the issue as a trade-off between structural reforms and fiscal balances, where rapid structural reforms may generate costs in the form of

⁵This line of research includes studies by Giavazzi and Pagano (1990, 1996), Alesina and Perotti (1995), Alesina and Ardagna (1998), Perotti (1999, 2002) and Giavazzi et al. (2000).

deteriorating fiscal balances (Pirttilä, 2001). This conclusion is drawn from the theoretical models such as Dewatripont and Roland (1992), Chadha and Coricelli (1997), and Coricelli (1998). If the transition process is seen as the release of factors of production from a declining state sector to an expanding private sector, as in Chadha and Coricelli (1997), then at least three factors contribute to the deterioration of the government budget balance. Firstly, the decline of the state sector decreases the established tax base. Secondly, the creation of a new and effective private sector tax system takes time. Thirdly, if there are frictions in the economy, the transition process is likely to result in higher unemployment, increasing the expenditures for unemployment benefits. However, the literature investigating the interaction of fiscal policy and socio-economic development is limited, and even more so, as far as the new Member States are concerned. Our paper tries to fill this gap, and provides policy recommendations for the new Member States in their convergence process.

The paper is structured as follows. The next section presents the empirical analysis, where we discuss the calculation of the Socio-Economic Development Index, our model specifications and the time-series properties of the data. This is followed by the estimation results, together with the possible implications for the new Member States. The final section concludes.

2 Empirical analysis

Our main aim is to investigate the relationship between fiscal policy and socio-economic development in the four cohesion countries: Greece, Ireland, Spain and Portugal. In addition, we calculate the average speed of socio-economic development in these countries and then use this information to project the time required for the new Member States to attain similar levels of socio-economic development to the EU-15 Member States. Furthermore, we use the EU-11 Member States as a control group in the analysis about the relationship between socio-economic development and fiscal policy. The aim is to determine whether there are differences in the effects of fiscal consolidation in the promotion of socio-economic development between the two different groups of countries.

As mentioned before, the cohesion countries are relevant for our analysis, since their socio-economic development level and fiscal balances in the 1980s, at the time when they joined the EU, were highly similar to the ones of the new Member States in 1999. The estimation period, 1980-1999, captures the catching-up and the economic convergence period from the EU membership to the start of the third stage of the EMU.⁶ Our estimation period was also characterized by capital flows from the EU to the respective economies, which were included in their government revenues, and are assumed to be approximately of the same magnitude as those of the new Member States. In addition, the countries in the estimation sample experienced the privatization of government

⁶Ireland became an EU member in 1973, Greece in 1981, and Spain and Portugal in 1986. As Ireland became an EU member in 1973, it may have been preferable to use an estimation period also covering the 1970s. However, data availability for the socio-economic development index for the period 1970-1979 is limited, and this period may be too early to capture the effects of EU accession in Portugal and Spain that only joined in 1986.

enterprises,⁷ which is assumed to continue in the new Member States. Finally, our main assumption is that socio-economic development acts as an input and a catalyst for economic growth and convergence.

This chapter consists of four sections. First, the Socio-Economic Development Index (SEDI) is derived. Second, the model specification issues are discussed. Third, the data sources and time series properties of the data are described. Finally, the evolution of the main variables is analyzed.

2.1 Calculation of the SEDI

Assessment of the development level of the individual countries is based on the Socio-Economic Development Index (SEDI) that we derive in this section. The index consists of different indicators of health, infrastructure, environment and education. The SEDI is constructed to be as comprehensive an indicator of the level of socio-economic development as possible, taking into account the public/private sector nature of the variables and data limitations.

The variables that are included in the Socio-Economic Development Index are listed in table 1 below. The data source for these variables is the World Bank World Development Indicators (WDI) 2003 Database.

| Variables |
|---|
| Air passengers carried (per capita) |
| Railway passenger kilometers (1000km, per capita) |
| Telephone main lines in use (per 100 inhabitants) |
| GDP per unit of energy use (PPP USD per kg of oil equivalent) |
| Carbondioxide emissions (kg per 1995 USD GDP) |
| Primary school enrollment (% of gross population) |
| Tertiary school enrollment (% of gross population) |
| Infant mortality rate (per 1000 live births) |
| Immunisation DPT (% of children under 12 months) |

Table 1: Variables in the Socio-Economic Development Index (SEDI).

In the SEDI, infrastructure is represented by the number of air passengers and railway passenger kilometers, as well as telephone main lines in use. The environmental variables used include carbondioxide emissions and the amount of GDP attained per unit of energy use. Both the primary and tertiary school enrollment are indicators of education and, finally, the level of public health is represented by the infant mortality rate and the rate of DPT immunisation. As argued by Afonso et al. (2003), these types of variables could be called 'opportunity' indicators, as a well-functioning health and education system provide many accessible opportunities for the population. As the authors claimed, the variables could also be seen as indicators of allocative efficiency.

The calculation of our index follows quite closely the one of the Human Development Index (HDI) of the United Nations (UN). There is, however, one

⁷The revenues from the sales of mobile phone licenses in the four countries in question are not relevant, because they are outside the sample period. The revenues were included in the government balances of 2000, 2001 or 2002, depending on the country in question.

major qualitative difference between the two indicators: unlike the UN index, our development indicator does not include the GDP level of the country in question.⁸ One reason for this is that we regress the development index on a set of fiscal variables and the 'opportunity' indicators of our index are variables predominantly determined by government measures. Another reason is that GDP may not properly illustrate the welfare of the population. In the case of Ireland, for example, Laski and Römisch (2003) mentioned that there is a large difference between the GDP and GNP figures, and suggest that GNP may serve as a better measure of welfare. When net factor income from abroad is negative, as has increasingly been the case in Ireland in the 1990s, funds cannot be consumed nor saved in the country itself. Finally, we are controlling the GDP level on the right-hand side of the equation and having GDP on both sides of the equation might cause us some econometric problems.

The SEDI is calculated as follows.⁹ First, we look for the smallest (min) and largest (max) absolute value for each variable j in the sample of 24 countries (EU-15 together with the new Member States excluding Luxembourg, Cyprus and Malta, but including Romania and Bulgaria) i for the period of 1980-1999.¹⁰ In the case where a smaller value for a variable would correspond to a higher level of socio-economic and structural development, as is the case with the infant mortality rate and carbon dioxide emissions, we use the inverse of the original values.¹¹ Then, the index number for any given observation (var in the formula below) for variable j for country i is yielded by:

$$index_{ij} = (var_{ij} - \min_j) / (\max_j - \min_j). \quad (1)$$

From this construction it follows that all the values for $index_{ij}$ are between 0 and 1. One should note that as the values are obtained linearly, we implicitly assume that the fiscal measures would need to be as large as to get from value 0.1 to 0.2 as from 0.9 to 1.0. Therefore, we are assuming constant returns to scale, which is admittedly a constraining hypothesis.¹² The Socio-Economic Development Index for each country i is obtained by an arithmetic average of

⁸The United Nations HDI measures a country's performance in terms of three different aspects of human development: longevity, knowledge and a decent standard of living. Longevity is measured by life expectancy at birth, knowledge by a combination of adult literacy rate and school enrolment at different levels. The standard of living is measured by GDP per capita. (United Nations, 2003)

⁹Another possibility would have been to proceed using the methodology of the UN in calculating the human development index, where 'goalposts' are selected, such as a maximum value of 85 and a minimum value of 25 for life expectancy. However, our methodology is very similar in that also the UN index has as its goalposts the feasible values at the extremes.

¹⁰However, in the case of the new Member States and Germany, we only used data from 1992 onwards in the construction of the SEDI. This was due to many missing variables for the new Member States before the start of the transition, and to the German unification that may have caused problems in the analysis.

¹¹One could claim that a threshold level of emissions is necessary for a certain level of development, such as in the transition process from an agricultural to an industrial economy. However, industrialization had already taken place in the acceding countries, with heavy industries and excessive pollution being common phenomena.

¹²Rzonca and Cizkowicz (2003) mentioned problems with using indices whose values are bounded at the extremes in econometric analysis. Our values for the countries under study, even if bounded by 0 and 1, fall in the middle of this range, with no visible slowdown in the growth rate of the index.



the $J = 9$ indices for country i .¹³

$$SEDI_i = \frac{\sum_{j=1}^J index_{ij}}{J}. \quad (2)$$

Next, we display a table with the ranks of the UN HDI for 2001 and our SEDI index for 1999, together with their values¹⁴ (The UN index is predominantly based on data from 1999 and is thus comparable).

| SEDI | Value | HDI | Value |
|----------------|--------|----------------|--------|
| Denmark | 0.766 | Sweden | 0.936 |
| Sweden | 0.748 | Belgium | 0.935 |
| Ireland | 0.733 | Netherlands | 0.931 |
| Netherlands | 0.715 | Finland | 0.925 |
| France | 0.706 | France | 0.924 |
| Austria | 0.699 | United Kingdom | 0.923 |
| Finland | 0.673 | Denmark | 0.921 |
| Italy | 0.667 | Austria | 0.921 |
| United Kingdom | 0.663 | Germany | 0.921 |
| Germany | 0.661 | Ireland | 0.916 |
| Portugal | 0.654 | Italy | 0.909 |
| Belgium | 0.645 | Spain | 0.908 |
| Spain | 0.640 | Greece | 0.881 |
| Greece | 0.592 | Portugal | 0.874 |
| Slovenia | 0.558 | Slovenia | 0.874 |
| Hungary | 0.549 | Czech Republic | 0.844 |
| Czech Republic | 0.494 | Slovakia | 0.831 |
| Latvia | 0.487 | Hungary | 0.829 |
| Poland | 0.476 | Poland | 0.828 |
| Slovakia | 0.450 | Estonia | 0.812 |
| Lithuania | 0.438 | Lithuania | 0.803 |
| Estonia | 0.425 | Latvia | 0.791 |
| Bulgaria | 0.387 | Bulgaria | 0.772 |
| Romania | 0.332 | Romania | 0.772 |
| Average EU15 | 0.683 | | 0.916 |
| Average NMS+AC | 0.460 | | 0.816 |
| (NMS+AC)/EU15 | 67.3 % | | 89.0 % |

Table 2: Ranking and values of countries' SEDI and HDI. Sources: Authors' calculations and United Nations (2001).

As is clear from the previous table, the ranking in our Socio-Economic Development Index is strikingly close to the UN development index for the year 1999. The top performer in the UN index, Sweden, ranks second in ours. The two worst performers, Bulgaria and Romania, are the same in both indices. The biggest differences between the two indices are witnessed for Belgium, Denmark and Ireland.¹⁵ The development levels of most of the new Member States are not far apart in our index. Slovenia at 0.558 and Hungary at 0.549 were in 1999

¹³The UN development index is also constructed by a simple average of the different 'dimension' indices: life expectancy, education and GDP. However, the weights within the dimensions vary. For example, in the education dimension, a 2/3 weight is given to adult literacy and a 1/3 weight to gross enrolment. (United Nations, 2003)

¹⁴In the UN HDI, we only list the countries included in our study.

¹⁵The SEDI and UN HDI indices differ in their composition, which explains the different ranking given by each index to the same country. For example, the very high scores in health and education explain the high position of Belgium in the UN HDI, whereas the country

rather close to the level of Greece at 0.592. A country group consisting of the Czech Republic, Latvia and Poland were very close to one another. Slovakia, Lithuania and Estonia precede Bulgaria and Romania, which ranked lowest according to our index. As a comparison of the differences among the EU-15 Member States, Denmark's index was at 0.766, Germany at 0.661 and the lowest, as already mentioned, was Greece at 0.592. The EU-15 average in 1999 was 0.683. As a comparison the Socio-Economic Development Indicator is presented in table 3 for the cohesion countries in 1980, 1999, and in the year the respective country joined the European Union, with the exception of Ireland that joined the EU in 1973. As can be seen from table 3, at the time the cohesion countries joined the EU, they were at a comparable level of development to most of the new Member States in 1999.

| SEDI | 1980 | 1981 | 1986 | 1999 |
|----------|-------|-------|-------|-------|
| Greece | 0.366 | 0.412 | | 0.592 |
| Ireland | 0.308 | | | 0.733 |
| Portugal | 0.388 | | 0.475 | 0.654 |
| Spain | 0.441 | | 0.502 | 0.640 |

Table 3: Socio-Economic Development Index of the cohesion countries in 1980, 1999, and in the year the respective country joined the EU. Source: Authors' calculations.

Referring to the literature about the effects of fiscal consolidation on output, table 4 shows the levels of the SEDI, government debt and net lending for the new Member States in 1999. In addition, at the bottom of the table, the average values of the respective variables are shown for the cohesion countries, as well as for the EU-11 Member States. The finding of very similar levels of government debt and net lending adds to the relevance of using the cohesion countries in the analysis.

| Country | 1999 | | |
|---------------------------------|-------|------------------------|-----------------|
| | SEDI | Government net lending | Government debt |
| Slovenia | 0.558 | -2.1 % | 24.9 % |
| Hungary | 0.549 | -5.6 % | 61.2 % |
| Czech Republic | 0.494 | -3.6 % | 13.4 % |
| Latvia | 0.487 | -4.9 % | 12.6 % |
| Poland | 0.476 | -1.4 % | 40.3 % |
| Slovakia | 0.450 | -6.4 % | 47.2 % |
| Lithuania | 0.438 | -5.6 % | 23.0 % |
| Estonia | 0.425 | -3.7 % | 6.0 % |
| Bulgaria | 0.387 | 0.4 % | 79.3 % |
| Romania | 0.332 | -4.5 % | 24.0 % |
| Avg. NMS+AC | 0.460 | -3.7 % | 33.2 % |
| Avg. Cohesion countries in 1980 | 0.376 | -3.9 % | 35.9 % |
| Avg. EU11 in 1980 | 0.454 | -1.2 % | 44.4 % |

Table 4: Socio-Economic Development Index, government net lending and level of government debt. Sources: Authors' calculations and Eurostat.

obtains somewhat lower values for the infrastructure and environmental variables that are included in the SEDI.

2.2 Model specifications

In this section, the model specifications are discussed. Our methodology is similar to one used by Alesina et al. (2002), where the authors investigated the effects of fiscal policy on investment and profits of firms. They regressed profits on measures of government expenditure and revenues, and further used a breakdown of the series of government spending, similarly to our paper. In our analysis, we use cyclically adjusted variables in order to exclude the automatic response of fiscal variables to changes in economic conditions (such as the automatic stabilizer effects) and to measure the actual stance of fiscal policy. Some variables, such as the debt interest payments, are not, however, cyclically adjusted. Nevertheless, as they are to a large extent uncorrelated with business cycles, this point might be of minor importance. Finally, like Gali and Perotti (2003), we include the public debt to GDP ratio in our regressions, in addition to the government spending and revenue variables. We use ratios of the fiscal variables to potential GDP (and to trend GDP as a robustness test¹⁶) in the estimations.

Following the OECD data structure, we use a breakdown of government expenditure and revenues as follows. In the two most basic specifications, the independent variables are primary government balance and debt, and net lending and debt, respectively. Government net lending can be disaggregated into current receipts less current disbursements (excluding gross interest payments) less net capital outlays. Furthermore, the variable current receipts is disaggregated into taxes and received social security contributions. We use these fiscal variables with the public debt to GDP ratio to explain the evolution of the Socio-Economic Development Indicator of Greece, Ireland, Portugal and Spain for the period 1980-1999. In addition, the same estimation was conducted for the EU-11 Member States, as a control group, and as a robustness test for the entire sample of EU-15. In order to tackle the possible endogeneity issue, we used the instrumental variables estimation method (two stage least squares), using the first and second lags of the independent variables as instruments.¹⁷ Linear and quadratic trends were also included in the models, as well as constant terms.

Even if changes in the variables in our index are to a large extent (or even exclusively) determined by fiscal policy, providing support for our model, the time frame of the impacts on some variables could be questioned. For example, a reduction in the child mortality rate certainly reflects a longer term commitment in health care by the public sector than one captured by yearly changes in fiscal policy. However, even if the impact on some variables would only arise after a longer time period, our approach can be defended by the fact that countries have generally followed 'trends' in fiscal policies: years of fiscal profligacy are generally followed by years of fiscal consolidation.¹⁸

¹⁶The trend GDP was estimated for each country by regressing the log of real GDP against a constant, a linear and a quadratic trend.

¹⁷To increase the robustness of the results, we also estimated fixed effects models and obtained qualitatively very similar results. These results are available on request.

¹⁸An example is Greece, where the budget deficit worsened from 1980 to 1990, then declined modestly until 1995, and fell at an accelerated pace until 1999.

2.3 About the data

For the development and fiscal indicators, the data are annual. The SEDI is constructed using data from the World Bank WDI 2003 database mentioned earlier.¹⁹ The data for fiscal policy variables are obtained from the OECD Economic Outlook 75 database. Other data source is the Eurostat for the fiscal variables in table 4. In the estimations, we used the STATA 8.2 statistical software.

The limited dimension of the panel of observations (4 countries \times 20 annual observations for the fiscal series) creates problems for the evaluation of the time series properties of the series. On one hand, the number of time series observations is small to apply the single time series unit root tests, such as augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests. On the other hand, the number of cross-sections is also rather small to properly apply panel unit root tests.²⁰ However, using panel unit root tests can still be considered one way of increasing the power of the univariate tests, as stated by Maddala and Wu (1999, 631). We chose to use the panel unit root tests by Levin, Lin and Chu (2002) (LLC test), given that also the cross-sectional dimension of the panel is limited.

The LLC test is based on an analysis of the following equation:

$$\Delta y_{i,t} = \alpha_i + \delta_i t + \theta_t + \rho_i \Delta y_{i,t-1} + \varsigma_{i,t}, \quad (3)$$

where $i = 1, 2, \dots, N$ and $t = 1, 2, \dots, T$. This model allows for fixed effects (α and θ) and unit-specific time trends. The unit-specific fixed effects are an important source of heterogeneity, since the coefficient of the lagged dependent variable is restricted to be homogeneous across all units of the panel. The null hypothesis $H_0 : \rho_i = 0$ for *all* i is tested against the alternative $H_A : \rho_i = \rho < 0$ for *all* i (all series are stationary). Like most of the unit root tests in the literature, the LLC test assumes that the individual processes are cross-sectionally independent. Given this assumption, Levin et al. (2002) derived conditions under which the pooled OLS estimate of ρ will have a standard normal distribution under the null hypothesis.

When the LLC panel unit root test was applied to the fiscal series with respect to potential GDP, in 8 cases out of 9, the null hypothesis that *all four countries had a unit root* in their series at hand was rejected at a minimum of 5 percent level of significance against the alternative that *all countries are stationary*. Only in the case of government debt, the null hypothesis was not rejected at the conventional levels of significance. When the LLC test was applied to series with respect to trend GDP, the null hypothesis of a unit root could be rejected for all series at a minimum of 5 percent level of significance.²¹ When the LLC tests were conducted for the entire sample of EU-15, the null hypothesis could be rejected for all series at the minimum of 5 percent level of significance, with series expressed both as shares to trend and to potential

¹⁹The data used is described in more detail in the Appendix.

²⁰Therefore, we also made the panel unit root tests using the full sample of EU-15 countries.

²¹The null hypothesis for the variable "net capital outlays to trend GDP" was rejected at the 10 % level of significance.

GDP. Finally, the SEDI variable was found to be stationary or trend stationary at the conventional levels of significance for all the country groups.

We can claim that these results would seem to justify estimating the models in levels instead of differences. Furthermore, there is a trade-off between differencing the series and losing information, and estimating the series in levels with a small possibility of (co)integrated series. In our case, it is hard to justify the usefulness of applying a panel cointegration analysis for this simple study with the limited panel of observations. Therefore, we proceeded with our analysis treating the variables as stationary or trend stationary. As a robustness check, we also estimated the models in first differences, but no conclusions could be drawn from those estimates. Finally, we should point out that our method is very similar to the one used in Alesina et al. (2002), where the authors estimated their models using the fiscal data from the same source, treating the variables as stationary.

2.4 Evolution of the main variables

Chart 1 below depicts the evolution of the Socio-Economic Development Index in the cohesion countries during 1980-1999. The SEDI variables of the EU-11 Member States, as well as of the new Member States are presented in the Appendix.

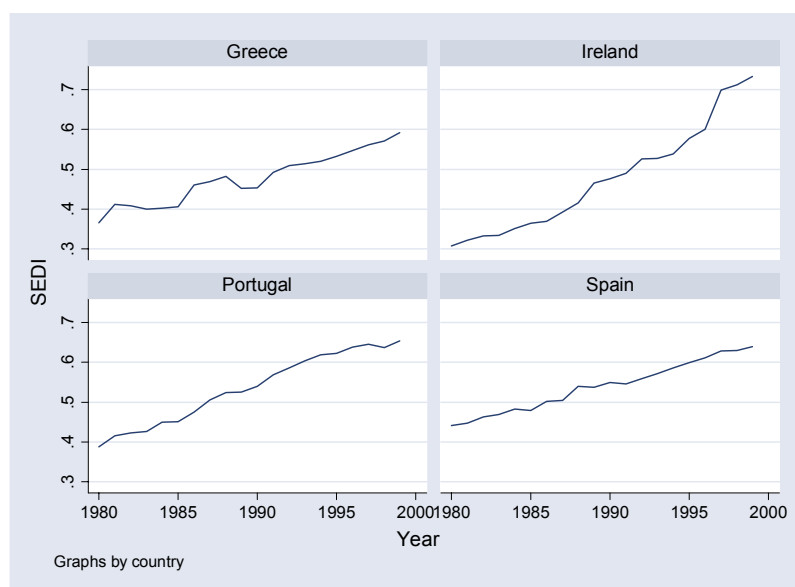


Chart 1: Socio-Economic Development Indicator for cohesion countries 1980-1999.

According to our indicator, Ireland was, in 1980, at the lowest level of socio-economic development of the cohesion countries. However, Ireland also had the fastest development rate: its socio-economic conditions improved during the sample period by a total of 138.3 percent, as measured by our index. Similarly, the smallest change in the development index, about 45.1 percent, took place

in Spain that had the highest level of development in 1980. The lowest level of development in the EU-15 in 1999 was, according to our results, in Greece, where the index stood at 0.592. Finally, the average annual growth rate of the SEDI in the cohesion country group was 0.0147 SEDI units in 1980-1999.

During the sample period, the economies under study went through a notable fiscal consolidation. Charts 2 and 3 depict the evolution of government net lending relative to GDP, as well as the development of gross government debt to GDP in 1980-1999.

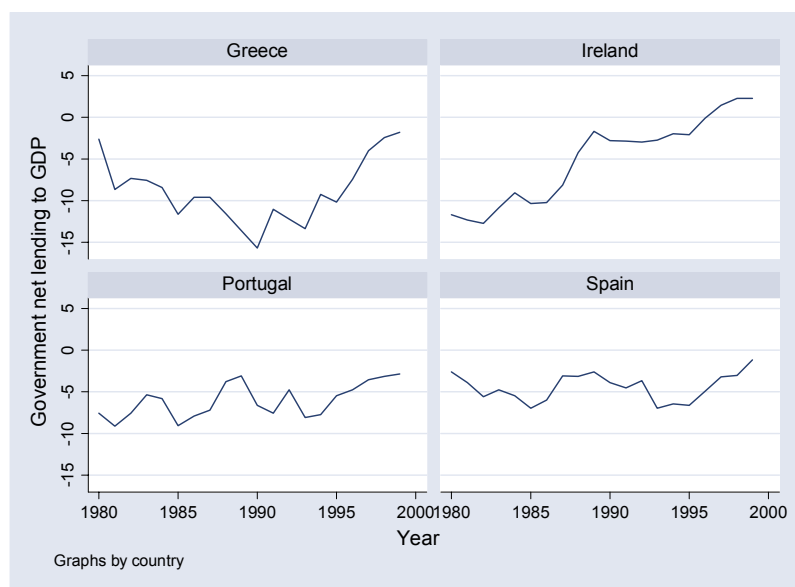


Chart 2: Government net lending to GDP for cohesion countries 1980-1999.

In Ireland, after peaking at -12.7 percent of GDP in 1982, government net lending significantly increased. Laski and Römisch (2003) reported that this was due to government expenditure growing more slowly than the GDP, and government revenues growing at a faster pace. Finally, government net lending turned positive in Ireland in 1997. In Greece, the budget deficit initially worsened rapidly and net lending reached -15.9 percent of GDP in 1990. There was a modest decline in the deficit until 1995, which was then followed by a faster improvement in the fiscal position, with net lending amounting to -1.8 percent of GDP in 1999. According to Laski and Römisch (2003), the average tax rate in Greece increased from 8.5 percent to 14.6 percent of GDP between 1995-2000. Similarly to the other economies under study, Portugal started from a very high budget deficit in the early 1980s (net lending in 1981 stood at -9.2 percent of GDP), whereas after that the budget deficit, expressed in terms of net lending, slowly declined to -2.9 percent of GDP in 1999. In Spain, the deficit in net lending rose first in the early 1980s, decreased somewhat in the late 1980s, and then rose rapidly to reach almost 7 percent of GDP in 1993. After that, fiscal consolidation was very fast and net lending amounted to -1.2 percent of GDP in 1999.

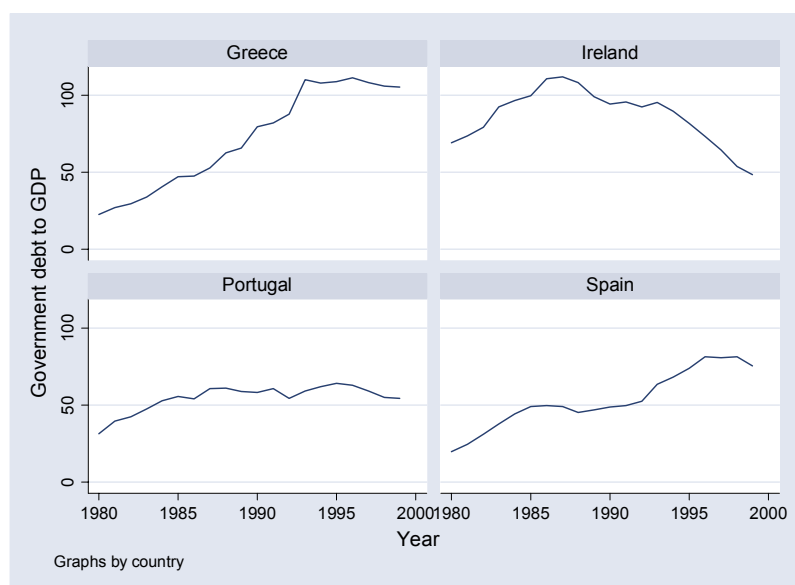


Chart 3: Government debt to GDP for cohesion countries 1980-1999.

Government debt to GDP was on a steadily increasing path during the examination period in Spain, Greece and to some extent also in Portugal. However, the deterioration in the debt to GDP ratio was notable in Greece in the early 1990s (from 66 to 110 percent of GDP between 1989 and 1993). In contrast, the debt to GDP ratio decreased from 96.5 to 49.3 percent of GDP during 1993-1999 in Ireland.

3 Empirical results

3.1 Socio-economic development and fiscal policy

The regression results for the cohesion countries are presented in table 5. The dependent variable is the natural logarithm of the Socio-Economic Development Indicator, while the independent variables are different fiscal measures in levels. The LOG-LIN models were estimated using fiscal variables with respect to potential GDP (calculated by the OECD). In the models, the level of government debt and its accumulation (with respect to different subcomponents) were controlled for.

TWO STAGE LEAST SQUARES LOG-LIN model for cohesion countries

Dependent variable: ln of SEDI, independent variables are used as instruments lagged 1 and 2 time periods

| | 1 | 2 | 3 | 4 | 5 |
|--|------------------------|------------------------|------------------------|------------------------|------------------------|
| Government Debt to Potential GDP | -0.4430*** [0.0205] | -0.3660*** [0.0188] | -0.3416*** [0.0676] | -0.4070*** [0.0331] | -0.3415*** [0.0148] |
| Primary Government Balance to Potential GDP | 1.3098*** [0.1885] | | | | |
| Net Lending to Potential GDP | | 0.8067*** [0.1548] | | | |
| Current Receipts to Potential GDP | | | -0.1969 [0.7901] | 0.2476 [0.3435] | |
| Total Expenditure to Potential GDP | | | -0.2871 [0.5669] | | |
| Current Disbursements Excl. Interest Payments to Potential GDP | | | | -0.6159** [0.2625] | -0.5930*** [0.1048] |
| Net Capital Outlays to Potential GDP | | | | -1.8466*** [0.2867] | -1.6444*** [0.2983] |
| Total Taxes to Potential GDP | | | | | -0.7053*** [0.2154] |
| Social Contributions Received to Potential GDP | | | | | 0.1597 [0.2170] |
| Observations | 72 | 72 | 72 | 72 | 72 |
| R-squared | 0.958 | 0.956 | 0.943 | 0.969 | 0.976 |
| Hansen J-statistics | 0.509 | 0.983 | 3.574 | 3.333 | 7.577 |
| P-value | 0.775 | 0.612 | 0.311 | 0.504 | 0.181 |

Huber/White robust standard errors in brackets

* significant at 10%; ** significant at 5%; *** significant at 1% level

Table 5: Estimation results for cohesion countries.

According to the results, an improvement in the ratio of primary government balance to GDP by 1 percentage point would increase the Socio-Economic Development Index by 1.31 percent *ceteris paribus*. Similarly, the coefficient for net lending is 0.81, and for current disbursements of a magnitude between -0.59 and -0.62. Furthermore, a decrease in the ratio of government debt to GDP by 1 percentage point would increase the Socio-Economic Development Index by 0.34 percent to 0.44 percent *ceteris paribus*. Both lower government spending and total taxes increase the SEDI, suggesting that socio-economic development benefits from the down-sizing of the public sector. A similar result is also suggested by the theoretical transition model by Chadha and Coricelli (1997). Contrasting evidence is found with respect to models where public capital investments contribute to aggregate production, as we find a significant negative coefficient on net capital outlays.²²

Similar models were estimated for the group of the EU-11 Member States, and the results are reported in table 6. Again, a reduction of government debt improves our development index, but the coefficients are substantially lower for the other EU-11 Member States than for the cohesion countries. In addition, an increase in government net lending has a positive impact on the SEDI. However, the coefficient is only marginally significant at 10 percent level, while the coefficient for primary government balance is not statistically significant. These results implicate that fiscal consolidation would be more prominent in promoting

²² However, a possible explanation could be that if the level of government capital stock and investment are higher than the social optimum, then the tax burden on firms and citizens may also be too high and welfare could be improved by decreasing the government capital stock and spending.

socio-economic development in the cohesion countries. In contrast to our findings for the cohesion countries, an increase in government spending and taxes is found to be beneficial for socio-economic development in the other EU-11 Member States. This may be an indication of the public sector expenditure being more efficiently used in the EU-11 Member States. Then, fiscal consolidation would be beneficial for socio-economic development when conducted through an increase in revenues rather than through cuts in expenditure. As the literature emphasizes, the size and persistence of the fiscal adjustment, its composition and the initial state of public finances are important factors in determining the outcome of the economic policy. However, as the government debt levels for the cohesion countries were actually lower, but the net lending variables more strongly in deficit than the ones for the EU-11 Member States in the 1980s, it is likely to be the initial level of government net lending that causes the differing impacts of fiscal policy on socio-economic development between these two groups. Finally, it is important to note that we found the levels of government debt and net lending, as well as socio-economic development of the cohesion countries in the 1980s to have been strikingly close to those of the new Member States in 1999.

TWO STAGE LEAST SQUARES LOG-LIN model for EU-11 countries

Dependent variable: ln of SEDI, independent variables are used as instruments lagged 1 and 2 time periods

| | 1 | 2 | 3 | 4 | 5 |
|--|------------------------|----------------------|------------------------|------------------------|------------------------|
| Government Debt to Potential GDP | -0.0863*** [0.0181] | -0.0484* [0.0261] | -0.0561*** [0.0162] | -0.0595*** [0.0169] | -0.0482*** [0.0151] |
| Primary Government Balance to Potential GDP | -0.0067 [0.3502] | | | | |
| Net Lending to Potential GDP | | 0.4881* [0.2767] | | | |
| Current Receipts to Potential GDP | | | 0.0227 [0.3091] | -0.1025 [0.3410] | |
| Total Expenditure to Potential GDP | | | 0.8286** [0.3391] | | |
| Current Disbursements Excl. Interest Payments to Potential GDP | | | | 0.9124** [0.3568] | 0.7204*** [0.1028] |
| Net Capital Outlays to Potential GDP | | | | -0.7422 [0.4627] | -0.1361 [0.4906] |
| Total Taxes to Potential GDP | | | | | 1.0013*** [0.2811] |
| Social Contributions Received to Potential GDP | | | | | 0.1108 [0.1062] |
| Observations | 170 | 170 | 170 | 170 | 170 |
| R-squared | 0.721 | 0.731 | 0.833 | 0.834 | 0.852 |
| Hansen J-statistics | 1.194 | 3.413 | 0.384 | 0.918 | 5.133 |
| P-value | 0.550 | 0.181 | 0.944 | 0.922 | 0.400 |
| Huber/White robust standard errors in brackets | | | | | |

* significant at 10%; ** significant at 5%; *** significant at 1% level

Table 6: Estimation results for EU-11 countries.

To test for the robustness of the results, we also estimated the previous models for the whole sample of EU-15 Member States. The results from this estimation are reported in table 7. This specification, even if it does not emphasize the differences between the cohesion countries and the EU-11 Member States, may be econometrically preferable due to a bigger sample size.²³ All in

²³ However, in the second specification where government debt and net lending are used as independent variables, the Hansen J-test for exogeneity of our instruments is rejected.

all, the results are in line with the ones previously reported. Similarly to the case of the cohesion countries and the EU-11 Member States, reductions in government debt increase socio-economic development. Furthermore, an increase in total expenditure now increases the development index, suggesting that results for the EU-11 Member States (excluding the cohesion countries) are dominating the findings from this specification. Notably, the effects of fiscal consolidation on socio-economic development are again weaker in terms of the estimated coefficients (with the exception of the net lending and net capital outlays variables) than in the case of the cohesion countries.

TWO STAGE LEAST SQUARES LOG-LIN model for EU-15 countries

Dependent variable: ln of SEDI, independent variables are used as instruments lagged 1 and 2 time periods

| | 1 | 2 | 3 | 4 | 5 |
|--|------------------------|-----------------------|------------------------|------------------------|------------------------|
| Government Debt to Potential GDP | -0.1549*** [0.0254] | -0.0431* [0.0247] | -0.1161*** [0.0202] | -0.1316*** [0.0212] | -0.1380*** [0.0201] |
| Primary Government Balance to Potential GDP | 0.9430*** [0.3519] | | | | |
| Net Lending to Potential GDP | | 1.2947*** [0.2134] | | | |
| Current Receipts to Potential GDP | | | -0.0942 [0.2828] | -0.2537 [0.2723] | |
| Total Expenditure to Potential GDP | | | 0.9233*** [0.2906] | | |
| Current Disbursements Excl. Interest Payments to Potential GDP | | | | 0.8653*** [0.2788] | 0.5166*** [0.0776] |
| Net Capital Outlays to Potential GDP | | | | -1.8695*** [0.3858] | -2.0860*** [0.4299] |
| Total Taxes to Potential GDP | | | | | 0.2680 [0.2529] |
| Social Contributions Received to Potential GDP | | | | | 0.2881*** [0.1098] |
| Observations | 242 | 242 | 242 | 242 | 242 |
| R-squared | 0.67 | 0.703 | 0.819 | 0.832 | 0.835 |
| Hansen J-statistics | 3.516 | 8.523 | 1.367 | 4.073 | 5.926 |
| P-value | 0.172 | 0.014 | 0.713 | 0.396 | 0.313 |

Huber/White robust standard errors in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 7: Estimation results for EU-15 countries.

As a further robustness test, we estimated the models with variables expressed as ratios to trend GDP. For all the country groups (EU-15, EU-11 and the cohesion countries), the main results, including the sizes of the statistically significant coefficients, remained broadly unchanged. For models expressed both as ratio to potential and trend GDP, the results were not robust to a first difference transformation. These results are available on request.

3.2 Implications for the new Member States

In this section, we use our results to assess the implications for the new Member States. We first discuss the time it would take for the new Member States to reach the average and lowest welfare levels of the EU-15 in 1999, the year when the single currency was introduced. Then, we discuss some of the recent developments in the fiscal balances of the new Member States. It is important to note that this analysis and its implications should not be confused with the convergence criteria that are a prerequisite for euro area entry.

In table 8, we list the number of years it would take for the new Member States to reach the development levels of the average EU-15 member and Greece in 1999, assuming the new Member States developed at the average annual growth rate (0.0147 SEDI units) of the cohesion countries in 1980-1999,²⁴ and experienced similar paths of fiscal consolidation.

| Country | Years to average EU-15 in 1999 | Years to Greece in 1999 |
|----------------|--------------------------------|-------------------------|
| Slovenia | 8.5 | 2.4 |
| Hungary | 9.1 | 3.0 |
| Czech Republic | 12.8 | 6.7 |
| Latvia | 13.4 | 7.2 |
| Poland | 14.1 | 8.0 |
| Slovakia | 15.8 | 9.7 |
| Lithuania | 16.7 | 10.5 |
| Estonia | 17.6 | 11.4 |
| Bulgaria | 20.1 | 13.9 |
| Romania | 23.9 | 17.7 |

Table 8: Socio-Economic Development convergence time.

It is clear from table 8 that the convergence times vary significantly, depending on the level of development that is aspired to. In 1999, Slovenia was lagging behind the EU-15 average level of development by 8.5 years, but only 2.4 years behind the level in Greece. For Romania, the numbers of years are 23.9 and 17.7, respectively. We find that the convergence times in terms of socio-economic development are slightly lower than the often-investigated income convergence times. As an example, Fischer et al. (1998) examined how long it would take the transition countries of Eastern and Central Europe to close the income gap to the current EU countries, and arrived at an average time of 30 years. Similarly, Wagner and Hlouskova (2002) suggested that except for Slovenia and the Czech Republic, the average time it would take for the new Member States to achieve 70 percent or 80 percent of the enlarged EU's average GDP level is 30-40 years. However, one should note that the convergence times reported in table 8 are the times required to reach the desired socio-economic development level that the EU-15 Member States had in 1999, not the catching-up times.

What do the predictions from the theoretical model by Chadha and Coricelli (1997) imply, if they are considered together with our results? First, as Coricelli (1998) has argued, the new Member States may experience some slowdown in their convergence process. This would be a response to fiscal constraints that have become tighter as convergence has progressed. If restructuring is still sought at a rapid pace, this may make it more difficult to keep fiscal balances in order. This would, according to our results, be detrimental in terms of welfare, as it would have a negative impact on the socio-economic development indicator. Second, unemployment is a major problem in most new Member States. Depending on how far the convergence process has progressed, there are differences in its impact on socio-economic development. If the convergence process is still at the initial stages, a fast restructuring would imply further unemployment, worsening fiscal balances and an adverse impact on the socio-economic

²⁴We justify this assumption again by pointing to the similar development levels of the cohesion countries at the time of their EU accession and the new Member States in 1999.

development. However, it is more likely that in many new Member States the convergence has already progressed somewhat further. Then, advancements in the convergence process would instead increase output growth, decrease unemployment, improve the fiscal balances and, according to our results, have a positive impact on welfare.

In many new Member States, government spending and the general government deficit have recently increased significantly, especially in Hungary, Slovakia and the Czech Republic. Moreover, with high GDP growth lowering the value of the fiscal variables expressed as ratios to GDP, it becomes clear that the deficits have their origins in strong expenditure pressures and, as the EBRD (2003) points out, the deficits in these countries are largely structural in nature. Therefore, the task of reducing budget deficits and government debt levels will be a challenging one.

4 Conclusion

The aim of our paper was to examine the link between socio-economic development and fiscal policy. In order to achieve our aim, we first constructed a Socio-Economic Development Index (SEDI) and then regressed it on a number of fiscal variables, including variables from both the expenditure and revenue side of the government balance sheet, from Greece, Ireland, Portugal and Spain for 1980-1999. During this time period, the countries entered the European Union and started the necessary adjustments toward the single currency, introduced in 1999. We then used the results from our instrumental variables regressions to evaluate the implications for the new Member States. Finally, we also calculated how long it would take for the new Member States to achieve the EU benchmark levels in 1999 in terms of the development indicator, assuming a speed of development of the above countries during 1980-1999. The times varied from 8.5 years (Slovenia) to 24 years (Romania).

Our results show that fiscal consolidation would be beneficial for socio-economic development in the medium term. In line with the literature on the effects of fiscal consolidation on economic output and growth, we find that fiscal retrenchment through a lower government debt and an improved net lending position would be advantageous to socio-economic development. The effects of fiscal consolidation in promoting socio-economic development are found to be much stronger for the cohesion countries than for the other EU-15 Member States. Whereas an overall down-sizing of the public sector was found to improve socio-economic development in the cohesion countries, in the other EU-15 Member States increases in government current disbursements were found to have beneficial effects on development, suggesting a more efficient public sector in those economies. All in all, the results could be seen to support maintaining the Stability and Growth Pact or an equivalent intergovernmental device to curb public spending and debt.

References

- [1] Afonso, A., Schuknecht, L. & V. Tanzi (2003). 'Public Sector Efficiency: An International Comparison'. ECB Working Paper No. 242.
- [2] Alesina, A. & S. Ardagna (1998). 'Tales of fiscal adjustment'. *Economic Policy*, No. 27, pp. 487-546.
- [3] Alesina, A., Ardagna, S., Perotti, R. & F. Schiantarelli (2002). 'Fiscal Policy, Profits, and Investment'. *American Economic Review*, 92(3), pp. 571-589.
- [4] Alesina, A. & R. Perotti (1995). 'Fiscal expansions and adjustments in OECD countries'. *Economic Policy*, No. 21, pp. 205-240.
- [5] Budina, N. & S. van Wijnbergen (1997). 'Fiscal Policies in Eastern Europe'. *Oxford Review of Economic Policy*, 13, pp. 47-64.
- [6] Chadha, B. & F. Coricelli (1997). 'Fiscal Constraints and the Speed of Transition'. *Journal of Development Economics*, 52, pp. 221-249.
- [7] Coricelli, F. (1998). 'Macroeconomic Policies and the Development of Markets in Transition Economies'. Budapest: Central European University Press.
- [8] Dewatripont, M. & G. Roland (1992). 'The Virtues of Gradualism and Legitimacy in the Transition to a Market Economy'. *The Economic Journal*, 102, pp. 291-300.
- [9] Diamond, P. (1965). 'National Debt in a Neoclassical Growth Model'. *American Economic Review*, No. 55(5), pp. 1126-1150.
- [10] EBRD (2003). 'Transition Report Update'.
- [11] European Commission (2003). 'Public Finances in EMU 2003'. Directorate-General for Economic and Financial Affairs. May 2003.
- [12] Fischer, S., Sahay, R. & C. Vegh (1998). 'How far is Eastern Europe from Brussels?'. IMF Working Paper No. 98/53.
- [13] Gali, J. & R. Perotti (2003). 'Fiscal Policy and Monetary Integration in Europe'. *Economic Policy*, 18(37), pp. 533-572.
- [14] Giavazzi, F. & M. Pagano (1990). 'Can severe fiscal adjustments be expansionary? Tales of two small European countries'. *NBER Macroeconomic Annual*, Vol. 5.
- [15] ——— (1996). 'Non-Keynesian effects of fiscal policy changes: international evidence and Swedish evidence'. *Swedish Economic Policy Review*, 3(3), pp. 67-103.
- [16] Giavazzi, F., Jappelli, T. & M. Pagano (2000). 'Searching for non-linear effects of fiscal policy: evidence from industrial and developing countries'. *European Economic Review*, 44(7), pp. 1259-1289.

- [17] Laski, K. & R. Römisch (2003). 'From Accession to Cohesion: Ireland, Greece, Portugal and Spain and Lessons for the Next Accession'. WIIW Research Reports No. 298, July 2003.
- [18] Levin, A., Lin, C. F. & C. S. Chu (2002). 'Unit Root Tests in Panel Data: Asymptotic and Finite-Sample Properties'. *Journal of Econometrics* 108, pp. 1-24.
- [19] Maddala, G. S. & S. Wu (1999). 'A Comparative Study of Unit Root Tests with Panel Data and a New Simple Test'. *Oxford Bulletin of Economics and Statistics*, Special Issue, pp. 631-652.
- [20] Modigliani, F. (1961). 'Long-Run Implications of Alternative Fiscal Policies and the Burden of the National Debt'. *Economic Journal*, 71(284), pp. 730-755.
- [21] Pelkmans, J., Gros, D., & J. Nunez Ferrer (2000). 'Long-Run Economic Aspects of the European Union's Eastern Enlargement'. Netherlands Scientific Council for Government Policy Working Paper No. 109.
- [22] Perotti, R. (1999). 'Fiscal policy in good times and bad'. *Quarterly Journal of Economics*, No. 114, pp. 1399-1436.
- [23] ——— (2002). 'Estimating the Effects of Fiscal Policy in OECD Countries'. ECB Working Paper No. 168.
- [24] Pirttilä, J. (2001). 'Fiscal Policy and Structural Reforms in Transition Economies - an Empirical Analysis'. *Economics of Transition*, 9(1), pp. 29-52.
- [25] Rzonca, A. & P. Cizkowicz (2003). 'A Comment on The Relationship Between Policies and Growth in Transition Countries'. *Economics of Transition*, 11(4), pp. 743-748.
- [26] Saint-Paul, G. (1992). 'Fiscal Policy in an Endogenous Growth Model'. *Quarterly Journal of Economics*, No. 107, pp. 1243-1259.
- [27] United Nations (2001). 'Human Development Report 2001'. Oxford: Oxford University Press.
- [28] United Nations (2003). 'Human Development Report 2003'. Oxford: Oxford University Press.
- [29] Vaitilingam, R. (ed.) (2002). 'Who's Afraid of the Big Enlargement? Economic and Social Implications of the European Union's Prospective Eastern Expansion'. CEPR Policy Paper No 7.
- [30] Wagner, M. & J. Hlouskova (2002). 'The CEEC10s Real Convergence Prospects'. CEPR Discussion Paper No. 3318.

5 Appendix

The Appendix describes the data sources and other data related issues.

First, all the fiscal variables were obtained from the OECD Economic Outlook 75 database. In the baseline models, the fiscal variables were transformed into ratios to potential GDP (as calculated by the OECD). As a robustness test, the models were estimated also using fiscal variables as ratios to real trend GDP that was obtained by regressing the real GDP (deflated by the GDP deflator, obtained from the OECD) against a constant, a linear and a quadratic trend.

Second, the variables for the Socio-Economic Development Indicator (SEDI) were obtained from the World Bank World Development Indicators (WDI) 2003 database. The SEDI was constructed using data for the EU-15 countries (1992-1999 for Germany, 1980-1999 for the other EU-15 Member States) and for the new Member States (1992-1999). Due to limited data availability, some variables included in the SEDI needed to be interpolated or extrapolated, as follows (missing years in parenthesis):

The variable "air passengers carried" was missing for Slovakia (1992).

The variable "rail passenger kilometers" was missing for Denmark (1999), Ireland (1999), and the Netherlands (1999).

The variable "infant mortality rate" was missing for Belgium (1996, 1999), Finland (1984, 1988), Greece (1999), and Italy (1999).

The variable "immunisation DPT" was missing for Austria (1980), Belgium (1980), the Czech Republic (1992), Denmark (1980), Estonia (1992), Finland (1980), France (1980), Italy (1980-83), Slovakia (1992-93), Spain (1980-83), Sweden (1980), and the United Kingdom (1980).

Finally, the variables "primary and tertiary school enrollment" were available before 1990 for all countries only in 1980, 1985 and 1990. Therefore, the variables were linearly interpolated for all countries for 1981-1989. In addition, "primary school enrollment" was also missing in Belgium (1997), Ireland (1998), Poland (1998), and "tertiary school enrollment" in Belgium (1998), Finland (1998-99), Germany (1999), Greece (1998-99), and Slovenia (1999).

Note, however, that the missing observations for the new Member States had no impact on the actual panel estimations, as the models were estimated using data for the cohesion countries and the other EU-15 Member States only. Finally, the natural logarithm of SEDI was used in the models.

Other data source is the Eurostat for the fiscal variables in table 4.

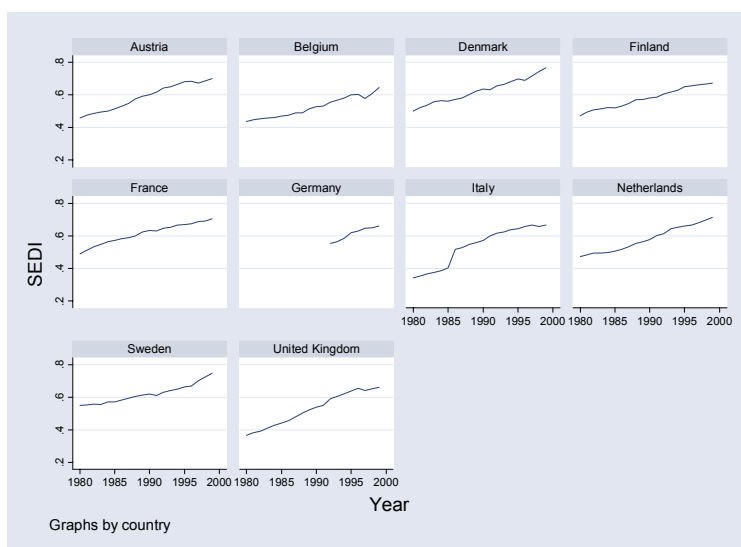


Chart 1: Socio-Economic Development Indicator for EU-11 countries 1980-1999.

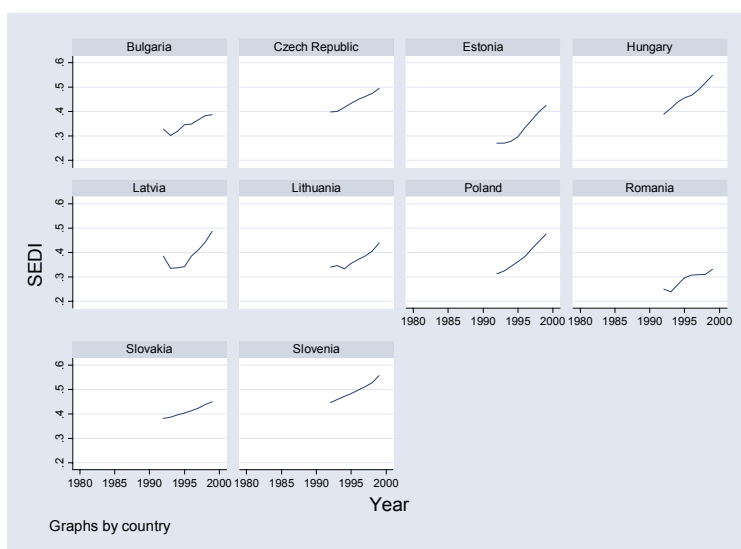


Chart 2: Socio-Economic Development Indicator for new Member States 1980-1999.



Chart 3: Government net lending for EU-11 countries 1980-1999.

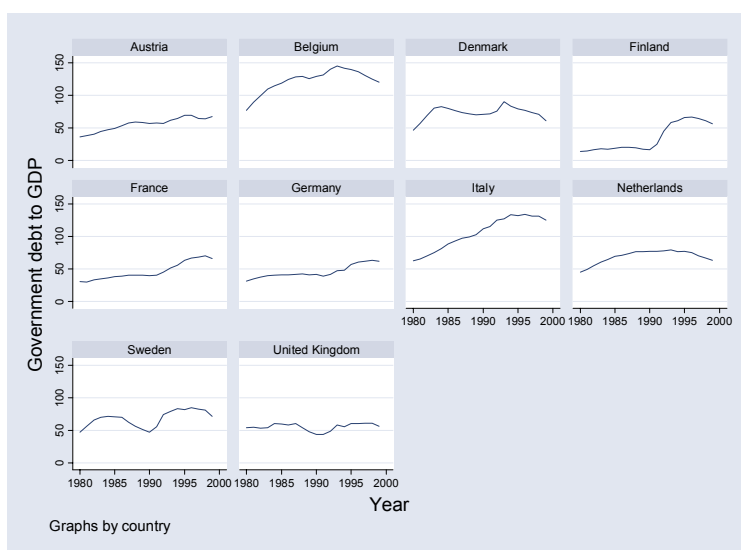


Chart 4: Government debt to GDP for EU-11 countries 1980-1999.

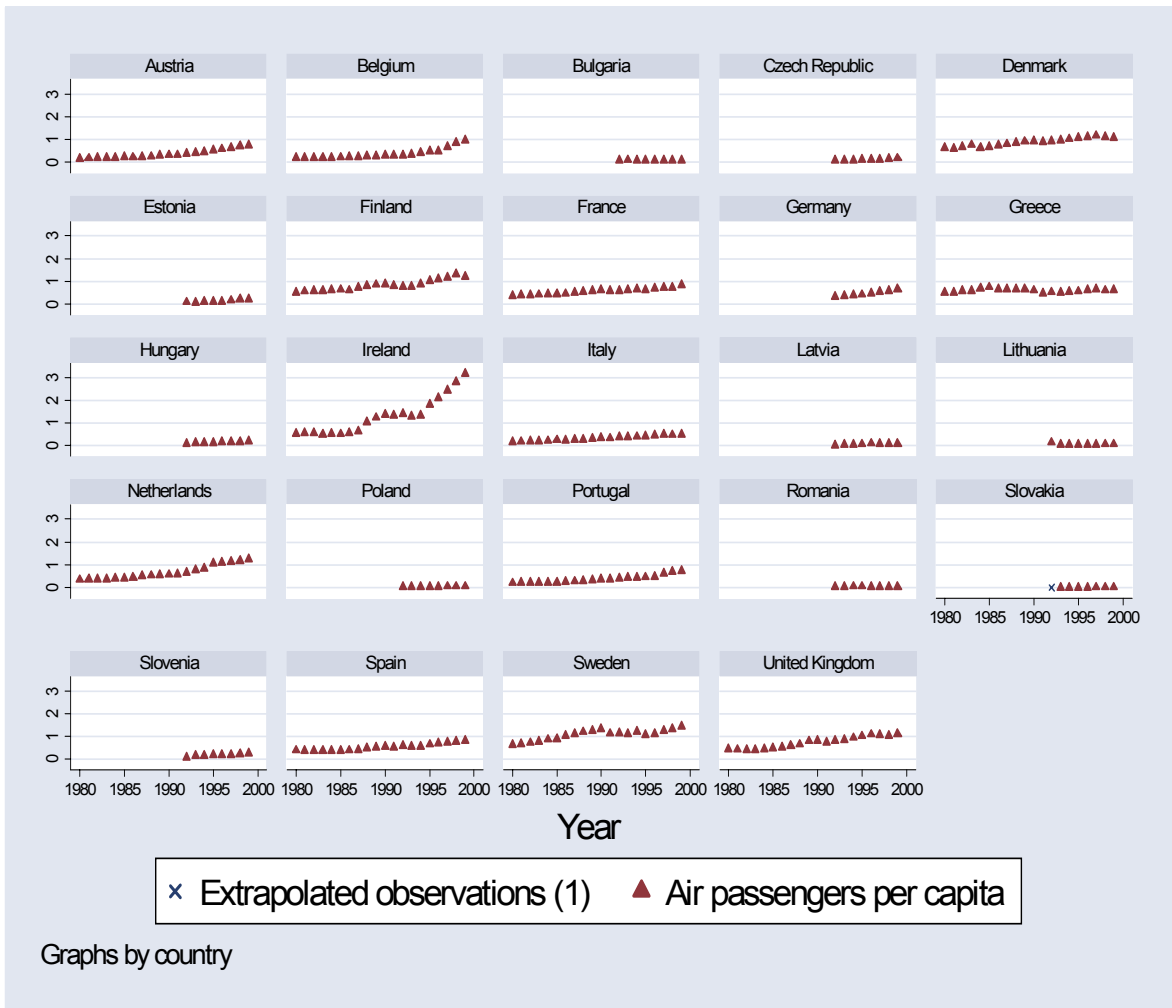


Chart 5: Air passengers carried per capita.

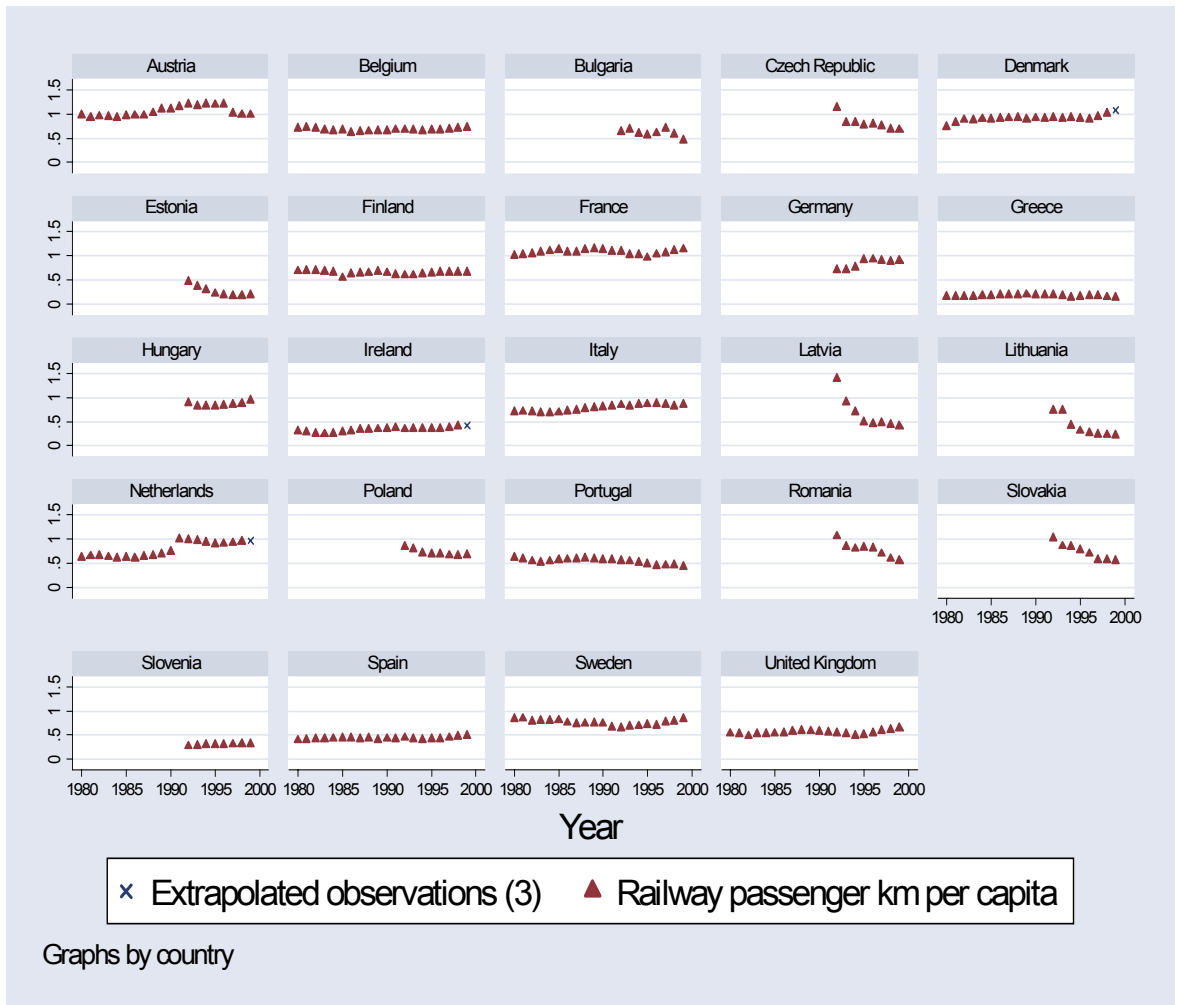


Chart 6: Railway passenger kilometers (1000 km per capita).

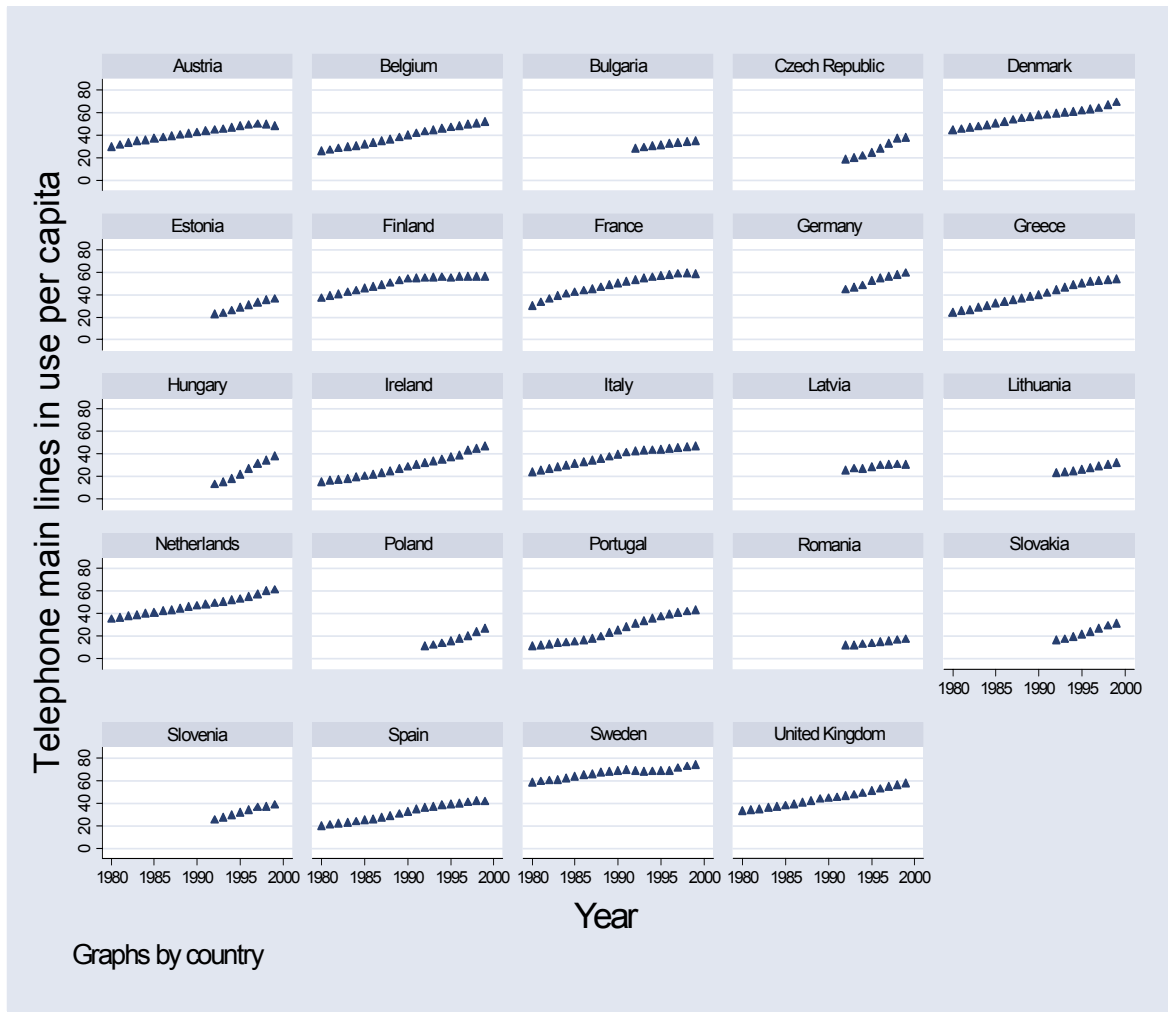


Chart 7: Telephone main lines in use per 100 inhabitants.

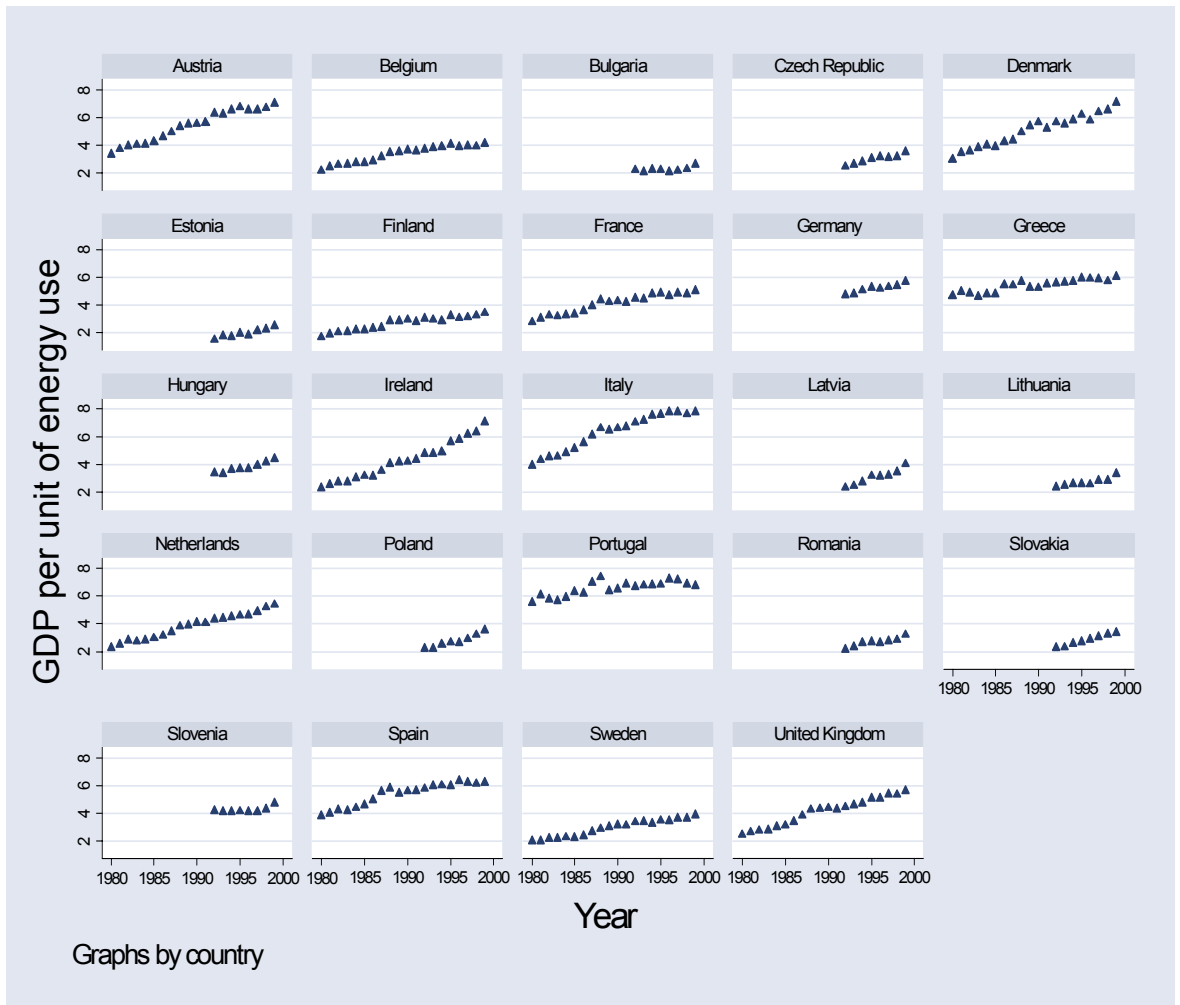


Chart 8: GDP per unit of energy use.

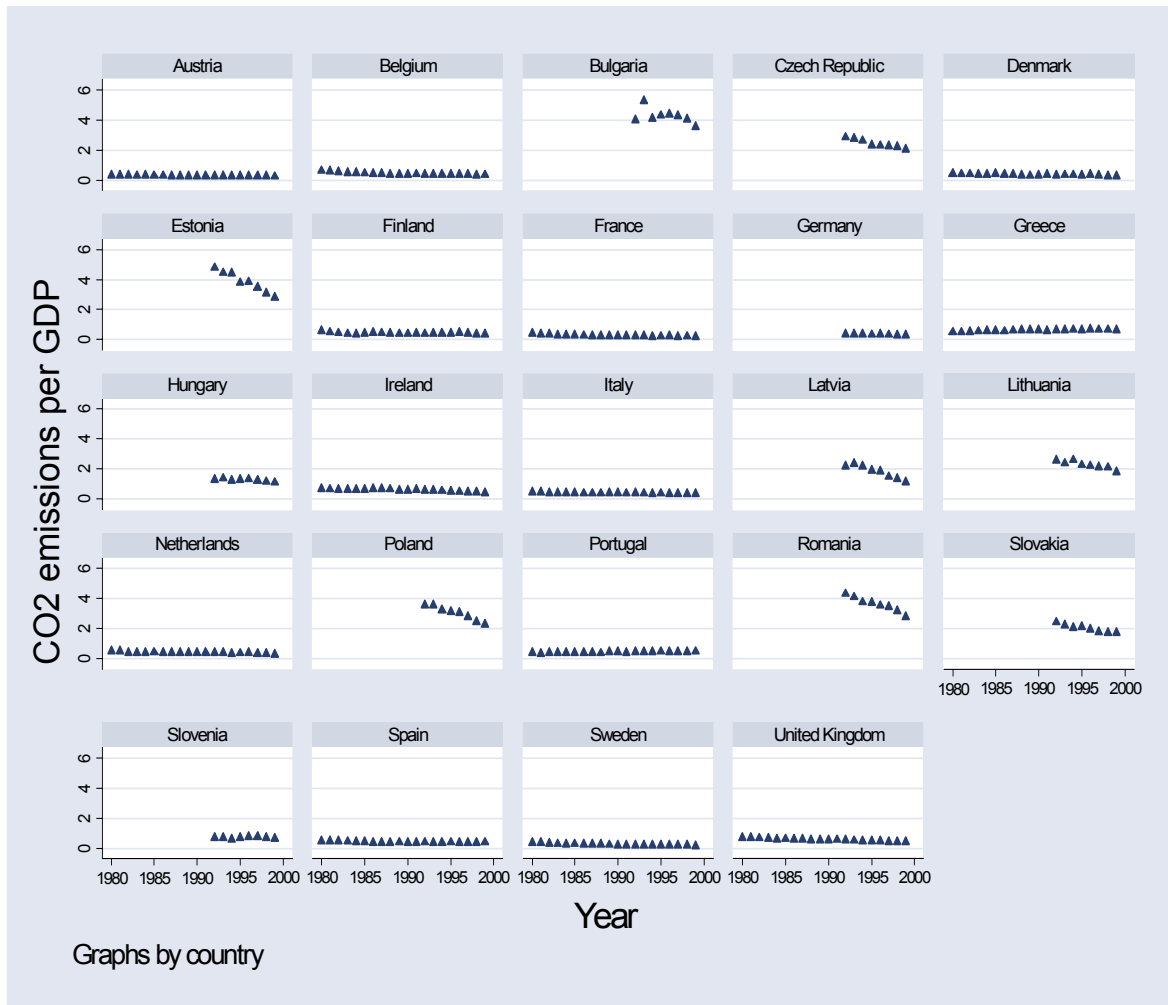


Chart 9: CO2 emissions kg per GDP.

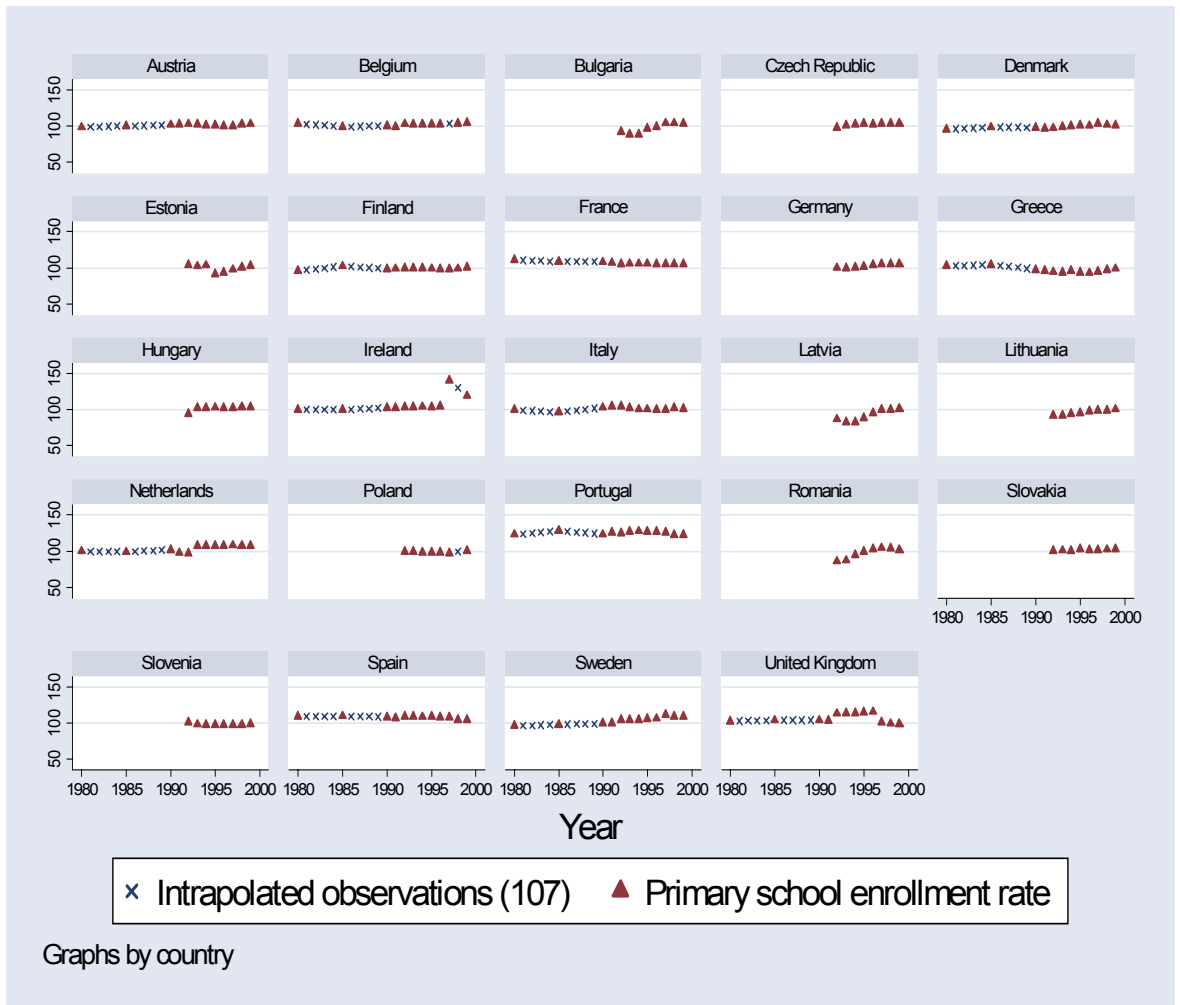


Chart 10: Primary school enrollment percent of gross population.

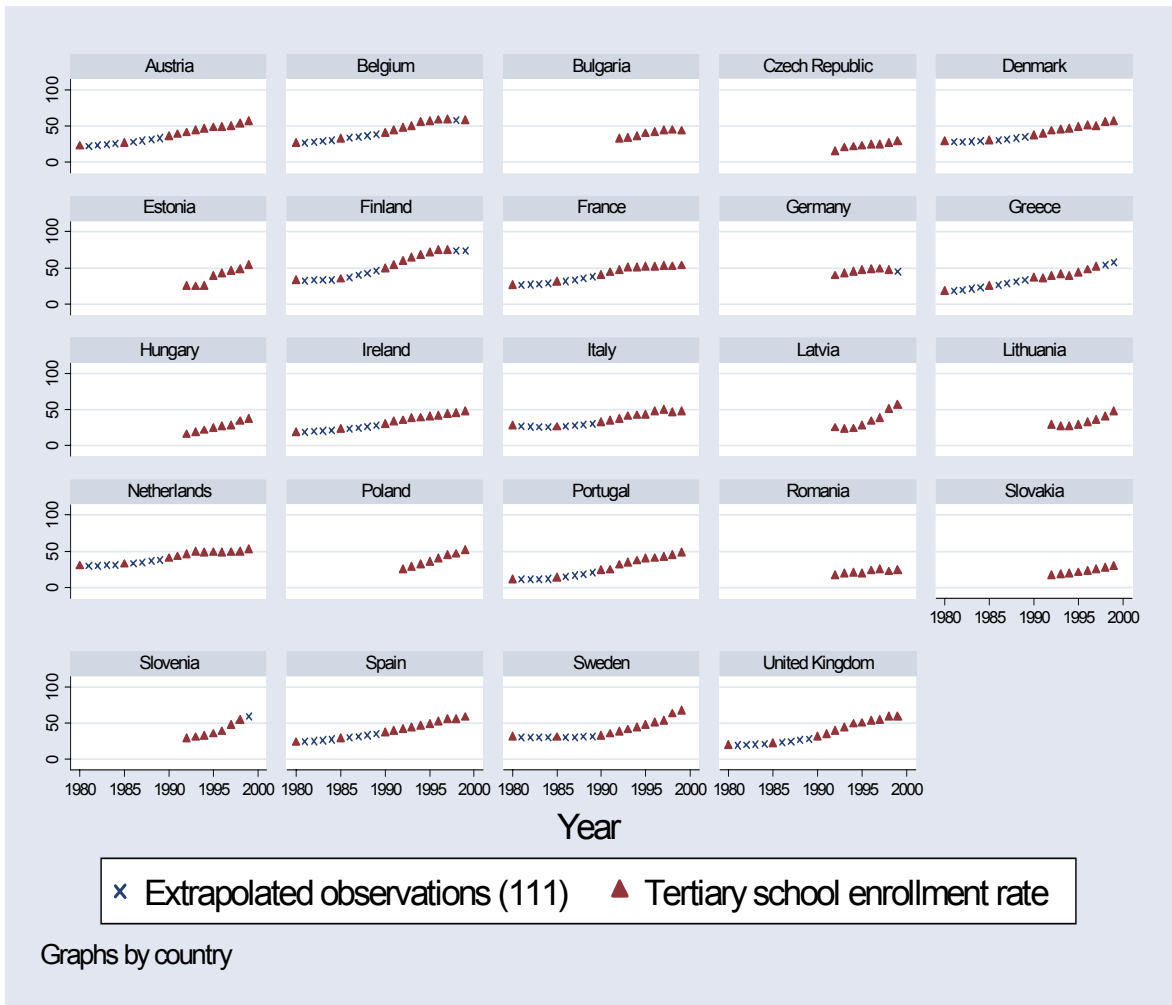


Chart 11: Tertiary school enrollment percent of gross population.

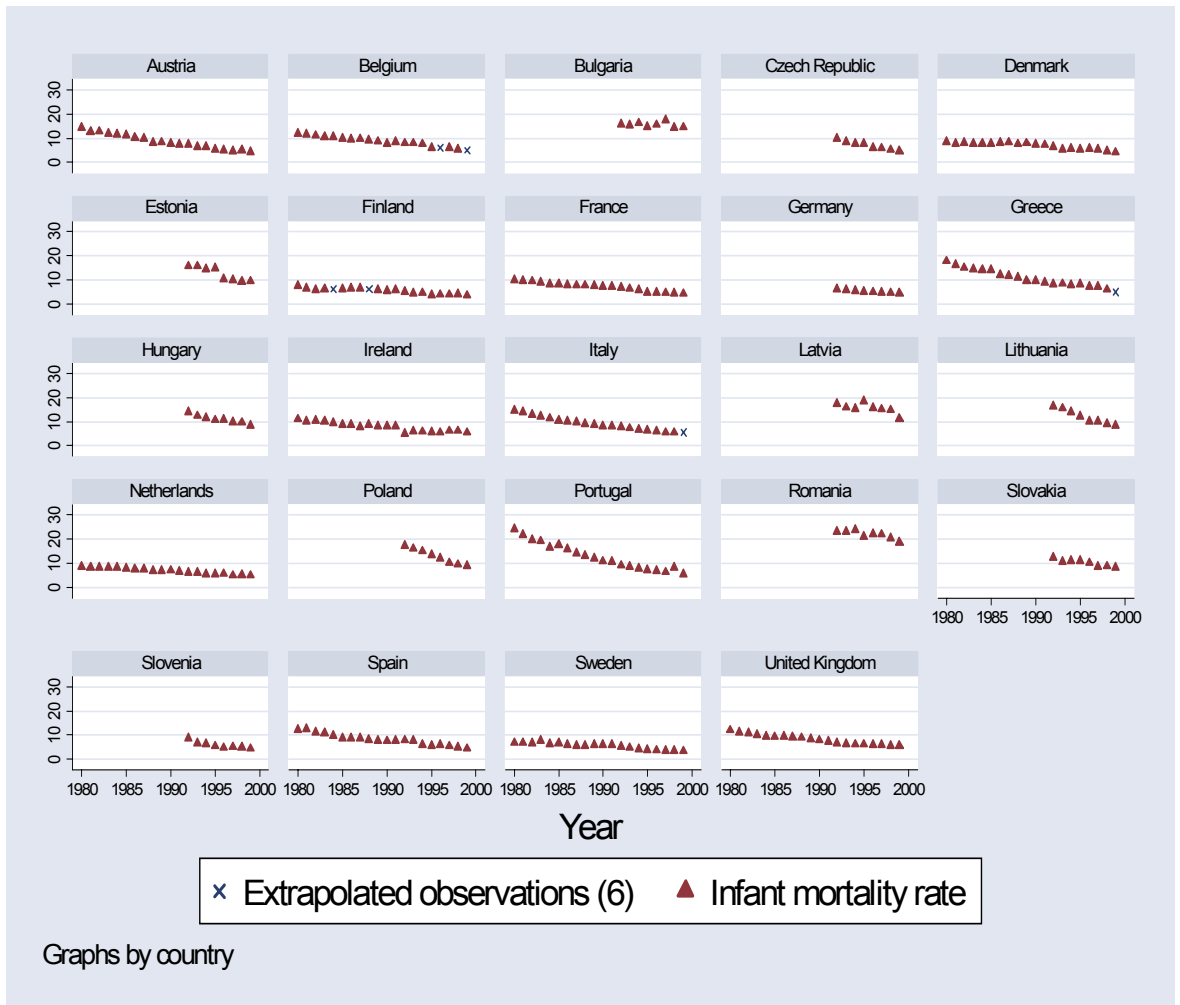


Chart 12: Infant mortality rate per 1000 live births.

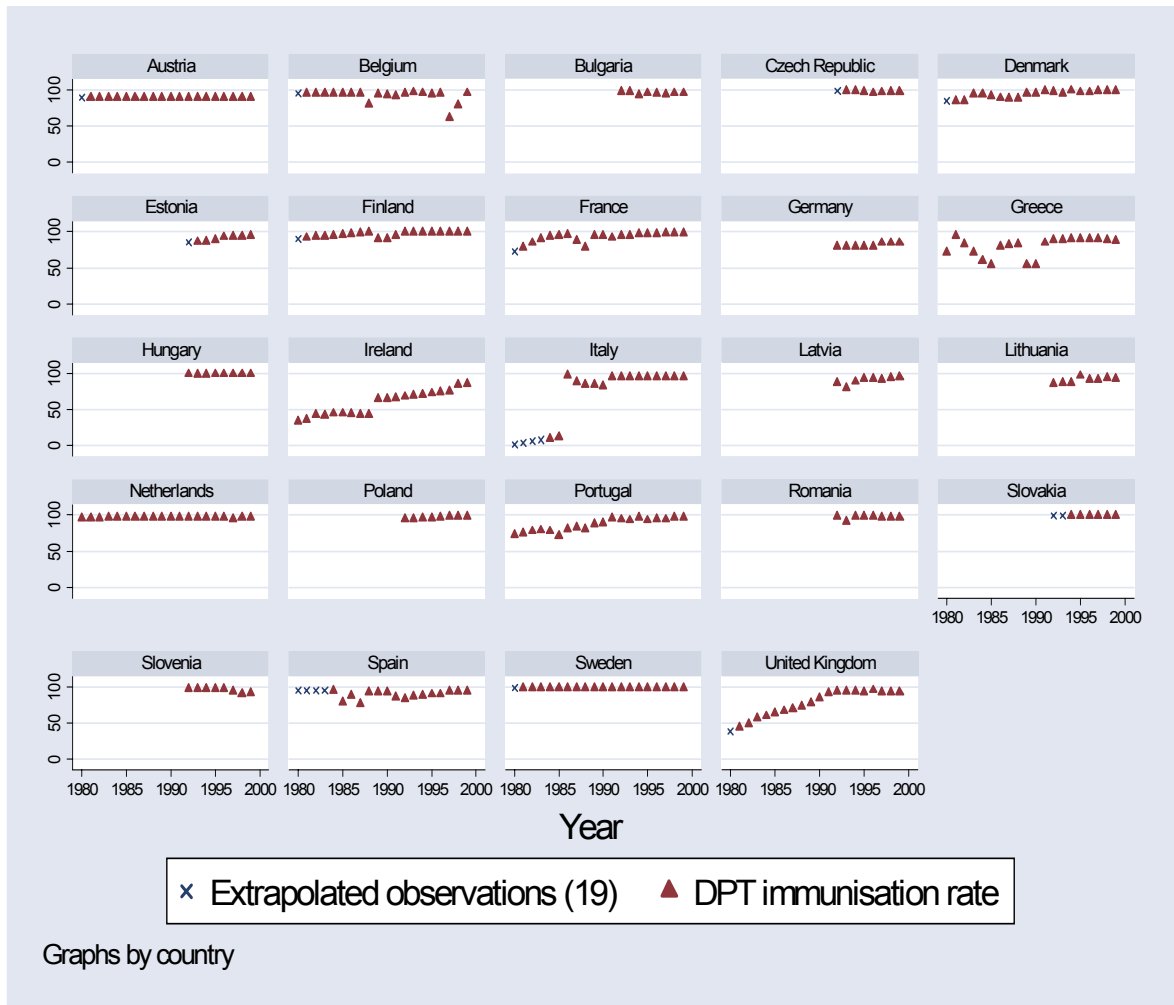


Chart 13: DPT immunisation rate percent of children under 12 months.

Socio-Economic Development Index (SEDI) by country and the raw data used in its construction.

In the table, the numbers correspond to the following variables:

- 1 Air passengers carried (per capita)
- 2 Railway passenger kilometers (1000km, per capita)
- 3 Telephone main lines in use (per 100 inhabitants)
- 4 GDP per unit of energy use (PPP USD per kg of oil equivalent)
- 5 Carbon dioxide emissions (kg per 1995 USD GDP)
- 6 Primary school enrollment (% of gross population)
- 7 Tertiary school enrollment (% of gross population)
- 8 Infant mortality rate (per 1000 live births)
- 9 Immunisation DPT (% of children under 12 months)

| Country | Year | SEDI | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|----------|------|-----------|-----------|-----------|---------|----------|-----------|----------|----------|------|----|
| Austria | 1980 | 0.4580566 | 0.1700649 | 0.9770952 | 29.0237 | 3.370565 | 0.3120573 | 98.56654 | 21.88048 | 14.3 | |
| Austria | 1981 | 0.4746484 | 0.1795241 | 0.930998 | 30.7072 | 3.748849 | 0.335397 | | | 12.6 | 90 |
| Austria | 1982 | 0.4848855 | 0.1911275 | 0.9528651 | 32.2107 | 3.958588 | 0.3150961 | | | 12.8 | 90 |
| Austria | 1983 | 0.4956077 | 0.198411 | 0.9467691 | 33.7382 | 4.039414 | 0.2933035 | | | 12 | 90 |
| Austria | 1984 | 0.5010508 | 0.2004767 | 0.9274364 | 34.9642 | 4.059267 | 0.3047681 | | | 11.5 | 90 |
| Austria | 1985 | 0.5148507 | 0.2260754 | 0.9649239 | 36.1126 | 4.2667 | 0.2984027 | 100.1348 | 26.35367 | 11.2 | 90 |
| Austria | 1986 | 0.5317359 | 0.2168407 | 0.9692003 | 37.2513 | 4.609067 | 0.287885 | | | 10.3 | 90 |
| Austria | 1987 | 0.547499 | 0.2482107 | 0.9722699 | 38.3728 | 4.947736 | 0.2870703 | | | 9.8 | 90 |
| Austria | 1988 | 0.5747908 | 0.2586702 | 1.0247531 | 39.517 | 5.344766 | 0.26636 | | | 8.1 | 90 |
| Austria | 1989 | 0.5914409 | 0.2992636 | 1.1066122 | 40.698 | 5.520629 | 0.2617043 | | | 8.3 | 90 |
| Austria | 1990 | 0.6001766 | 0.3277502 | 1.0954347 | 41.7616 | 5.556649 | 0.2707142 | 101.8964 | 35.1581 | 7.8 | 90 |
| Austria | 1991 | 0.6173272 | 0.3329585 | 1.1487497 | 42.8973 | 5.627656 | 0.2748249 | 103.0021 | 38.2211 | 7.5 | 90 |
| Austria | 1992 | 0.6424963 | 0.3822585 | 1.2009252 | 43.9164 | 6.29209 | 0.2511292 | 103.2046 | 40.42055 | 7.4 | 90 |
| Austria | 1993 | 0.6493111 | 0.4127058 | 1.1694311 | 44.7991 | 6.268974 | 0.2490117 | 102.2764 | 42.89899 | 6.5 | 90 |
| Austria | 1994 | 0.6652374 | 0.4668826 | 1.1995017 | 45.9751 | 6.560336 | 0.2465617 | 101.5811 | 45.39201 | 6.3 | 90 |
| Austria | 1995 | 0.6798536 | 0.5300609 | 1.1960979 | 47.184 | 6.753763 | 0.245833 | 101.0242 | 47.35129 | 5.4 | 90 |
| Austria | 1996 | 0.6828039 | 0.5854786 | 1.2022002 | 48.413 | 6.573061 | 0.2474447 | 100.1489 | 48.28051 | 5.1 | 90 |
| Austria | 1997 | 0.671936 | 0.6384768 | 1.0084017 | 49.181 | 6.570379 | 0.2489474 | 100.1643 | 48.86029 | 4.7 | 90 |
| Austria | 1998 | 0.6856489 | 0.7268102 | 0.9866992 | 49.0983 | 6.707581 | 0.2591873 | 102.4148 | 52.98741 | 4.9 | 90 |
| Austria | 1999 | 0.6994482 | 0.7484445 | 0.9882295 | 47.2355 | 7.050332 | 0.2366123 | 103.1537 | 56.15292 | 4.4 | 90 |
| Belgium | 1980 | 0.4347304 | 0.2004875 | 0.7071189 | 24.7994 | 2.177576 | 0.6262294 | 103.9091 | 25.98964 | 12.1 | |
| Belgium | 1981 | 0.4479915 | 0.2083841 | 0.7184328 | 26.257 | 2.458327 | 0.580297 | | | 11.5 | 95 |
| Belgium | 1982 | 0.4538616 | 0.2030032 | 0.6979505 | 27.6188 | 2.595005 | 0.5497202 | | | 11.1 | 95 |
| Belgium | 1983 | 0.4586178 | 0.1985187 | 0.6727881 | 28.5955 | 2.61238 | 0.4735718 | | | 10.5 | 95 |
| Belgium | 1984 | 0.4603094 | 0.206191 | 0.654014 | 29.68 | 2.72349 | 0.4732209 | | | 10.7 | 95 |
| Belgium | 1985 | 0.4697959 | 0.2219923 | 0.6666667 | 30.761 | 2.761081 | 0.4643019 | 98.95877 | 32.18005 | 9.8 | 95 |
| Belgium | 1986 | 0.4761044 | 0.2264449 | 0.6153924 | 32.7232 | 2.890401 | 0.440981 | | | 9.6 | 95 |
| Belgium | 1987 | 0.4887038 | 0.2393212 | 0.6352584 | 34.1154 | 3.162912 | 0.4286099 | | | 9.7 | 95 |
| Belgium | 1988 | 0.489112 | 0.2630378 | 0.6410826 | 35.6435 | 3.486899 | 0.3744667 | | | 9.1 | 80 |
| Belgium | 1989 | 0.5150425 | 0.2829644 | 0.6439928 | 37.348 | 3.532209 | 0.3882266 | | | 8.7 | 94 |
| Belgium | 1990 | 0.5292317 | 0.3142946 | 0.6560387 | 39.2558 | 3.661254 | 0.3931275 | 100.5069 | 40.15688 | 7.9 | 93 |
| Belgium | 1991 | 0.5313622 | 0.3016842 | 0.6767954 | 41.0482 | 3.585046 | 0.4039021 | 99.43958 | 43.0142 | 8.4 | 92 |
| Belgium | 1992 | 0.5559417 | 0.3132205 | 0.6767546 | 42.584 | 3.73307 | 0.3930716 | 103.1936 | 46.37009 | 8 | 95 |
| Belgium | 1993 | 0.5668614 | 0.3620011 | 0.663791 | 43.741 | 3.814795 | 0.3816918 | 102.6731 | 49.42437 | 8 | 97 |
| Belgium | 1994 | 0.582076 | 0.4144984 | 0.6562142 | 45.0522 | 3.891188 | 0.3832256 | 102.6833 | 54.79816 | 7.6 | 96 |
| Belgium | 1995 | 0.6002656 | 0.4933411 | 0.6665812 | 46.2631 | 4.089062 | 0.3829517 | 102.9438 | 56.33482 | 6.1 | 94 |
| Belgium | 1996 | 0.6027047 | 0.509363 | 0.6683076 | 47.3991 | 3.882347 | 0.3851925 | 102.9151 | 57.67453 | 9.5 | 95 |
| Belgium | 1997 | 0.5792682 | 0.6749926 | 0.6859837 | 48.7082 | 3.962049 | 0.3589669 | | 58.79469 | 6.1 | 62 |
| Belgium | 1998 | 0.6092599 | 0.8574341 | 0.6955797 | 49.5061 | 3.924717 | 0.3390014 | 103.5437 | | 5.5 | 79 |
| Belgium | 1999 | 0.644918 | 0.9744964 | 0.7191473 | 50.9301 | 4.116099 | 0.3417 | 104.9341 | 56.99263 | | 96 |
| Bulgaria | 1980 | | | | | | | | | | |
| Bulgaria | 1981 | | | | | | | | | | |
| Bulgaria | 1982 | | | | | | | | | | |
| Bulgaria | 1983 | | | | | | | | | | |
| Bulgaria | 1984 | | | | | | | | | | |
| Bulgaria | 1985 | | | | | | | | | | |
| Bulgaria | 1986 | | | | | | | | | | |
| Bulgaria | 1987 | | | | | | | | | | |
| Bulgaria | 1988 | | | | | | | | | | |
| Bulgaria | 1989 | | | | | | | | | | |
| Bulgaria | 1990 | | | | | | | | | | |
| Bulgaria | 1991 | | | | | | | | | | |
| Bulgaria | 1992 | 0.3267861 | 0.0953162 | 0.6314988 | 27.3966 | 2.229479 | 4.008719 | 92.28517 | 31.43473 | 15.9 | 98 |
| Bulgaria | 1993 | 0.3023699 | 0.1080973 | 0.6889754 | 28.4584 | 2.100084 | 5.284334 | 88.59088 | 33.23661 | 15.5 | 98 |
| Bulgaria | 1994 | 0.3184454 | 0.0935625 | 0.5997629 | 29.4777 | 2.262573 | 4.120466 | 88.91252 | 35.43393 | 16.3 | 93 |
| Bulgaria | 1995 | 0.346084 | 0.1027024 | 0.5586905 | 30.4746 | 2.236387 | 4.294881 | 96.79388 | 39.39836 | 14.8 | 96 |
| Bulgaria | 1996 | 0.3488736 | 0.0859502 | 0.6061513 | 31.6682 | 2.090403 | 4.389359 | 98.85053 | 41.20063 | 15.6 | 95 |

| Country | Year | SEDI | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|----------------|------|-----------|-----------|-----------|---------|----------|-----------|----------|----------|-------|-------|
| Bulgaria | 1997 | 0.3658721 | 0.0868255 | 0.7081269 | 32.2632 | 2.175699 | 4.273636 | 104.4 | 43.17972 | 17.5 | 94 |
| Bulgaria | 1998 | 0.3829966 | 0.1002422 | 0.5740584 | 33.0853 | 2.302422 | 4.060233 | 104.4354 | 43.96357 | 14.4 | 96 |
| Bulgaria | 1999 | 0.3874976 | 0.0895102 | 0.4652778 | 34.2232 | 2.636649 | 3.529285 | 103.5465 | 42.72464 | 14.6 | 96 |
| Czech Republic | 1980 | | | | | | | | | | |
| Czech Republic | 1981 | | | | | | | | | | |
| Czech Republic | 1982 | | | | | | | | | | |
| Czech Republic | 1983 | | | | | | | | | | |
| Czech Republic | 1984 | | | | | | | | | | |
| Czech Republic | 1985 | | | | | | | | | | |
| Czech Republic | 1986 | | | | | | | | | | |
| Czech Republic | 1987 | | | | | | | | | | |
| Czech Republic | 1988 | | | | | | | | | | |
| Czech Republic | 1989 | | | | | | | | | | |
| Czech Republic | 1990 | | | | | | | | | | |
| Czech Republic | 1991 | | | | | | | | | | |
| Czech Republic | 1992 | 0.3987861 | 0.0943788 | 1.1390773 | 17.6225 | 2.469999 | 2.859861 | 98.32088 | 14.56718 | 9.9 | |
| Czech Republic | 1993 | 0.4003095 | 0.0992063 | 0.8274126 | 19.0929 | 2.616218 | 2.788211 | 101.4286 | 19.59805 | 8.5 | 99 |
| Czech Republic | 1994 | 0.4175972 | 0.1036765 | 0.8205302 | 21.0634 | 2.829132 | 2.63264 | 102.4107 | 20.77418 | 7.9 | 99 |
| Czech Republic | 1995 | 0.4340183 | 0.1243442 | 0.7765947 | 23.647 | 3.037433 | 2.333473 | 104.0115 | 21.84375 | 7.7 | 98 |
| Czech Republic | 1996 | 0.4508922 | 0.1351042 | 0.7863306 | 27.3109 | 3.157452 | 2.297314 | 102.2348 | 23.52325 | 6 | 96 |
| Czech Republic | 1997 | 0.4608849 | 0.1405072 | 0.7482458 | 31.8425 | 3.13029 | 2.286065 | 103.7388 | 24.0375 | 5.9 | 97 |
| Czech Republic | 1998 | 0.4747576 | 0.1554945 | 0.6800455 | 36.3428 | 3.189408 | 2.216573 | 104.0211 | 26.04959 | 5.2 | 98 |
| Czech Republic | 1999 | 0.4942492 | 0.1801614 | 0.6738306 | 37.0139 | 3.535575 | 2.033137 | 104.0822 | 28.66481 | 4.6 | 98 |
| Denmark | 1980 | 0.5007952 | 0.6499512 | 0.7423385 | 43.4297 | 3.002513 | 0.4498067 | 95.48325 | 28.28093 | 8.4 | |
| Denmark | 1981 | 0.5216534 | 0.5983991 | 0.8213588 | 44.6824 | 3.465518 | 0.3968266 | | | 7.9 | 85 |
| Denmark | 1982 | 0.5349855 | 0.6910707 | 0.8847206 | 45.9358 | 3.602713 | 0.397408 | | | 8.2 | 85 |
| Denmark | 1983 | 0.5576133 | 0.7719398 | 0.8713336 | 46.9934 | 3.831562 | 0.3652807 | | | 7.7 | 94 |
| Denmark | 1984 | 0.5629452 | 0.6316901 | 0.9033646 | 48.2393 | 4.034007 | 0.3579479 | | | 7.7 | 94 |
| Denmark | 1985 | 0.5612248 | 0.6832225 | 0.8924521 | 49.7319 | 3.913142 | 0.4113614 | 98.55318 | 29.11032 | 7.9 | 92 |
| Denmark | 1986 | 0.5716749 | 0.7486819 | 0.9066589 | 51.2853 | 4.26367 | 0.3870101 | | | 8.2 | 89 |
| Denmark | 1987 | 0.5806239 | 0.8090696 | 0.9206163 | 52.8698 | 4.374378 | 0.3838643 | | | 8.3 | 88 |
| Denmark | 1988 | 0.6022151 | 0.8531579 | 0.9216374 | 54.4199 | 4.94443 | 0.3391469 | | | 7.6 | 88 |
| Denmark | 1989 | 0.6220096 | 0.9196571 | 0.8983051 | 55.46 | 5.419391 | 0.2935477 | | | 8 | 95 |
| Denmark | 1990 | 0.6360937 | 0.9416926 | 0.9200389 | 56.6887 | 5.6723 | 0.3103429 | 98.25787 | 36.47199 | 7.5 | 95 |
| Denmark | 1991 | 0.6312672 | 0.8890182 | 0.9039581 | 57.3355 | 5.234787 | 0.3799303 | 96.69802 | 38.70307 | 7.3 | 99 |
| Denmark | 1992 | 0.6571162 | 0.933617 | 0.9280464 | 58.1937 | 5.669713 | 0.3271405 | 97.42215 | 42.87272 | 6.5 | 98 |
| Denmark | 1993 | 0.6653442 | 0.9785893 | 0.9128927 | 58.9629 | 5.521366 | 0.3420771 | 99.32037 | 44.88474 | 5.4 | 95 |
| Denmark | 1994 | 0.6822032 | 1.0338136 | 0.93122 | 60.0006 | 5.81588 | 0.347906 | 100.0779 | 45.73206 | 5.7 | 99.44 |
| Denmark | 1995 | 0.6989322 | 1.0882364 | 0.9148814 | 61.0845 | 6.223293 | 0.3093933 | 101.4924 | 48.1701 | 5.3 | 97 |
| Denmark | 1996 | 0.6902295 | 1.1197263 | 0.8966173 | 61.9141 | 5.798515 | 0.3923013 | 100.7475 | 50.00819 | 5.7 | 97 |
| Denmark | 1997 | 0.7178025 | 1.1801931 | 0.944321 | 63.3256 | 6.399557 | 0.3158414 | 103.5407 | 48.73947 | 5.5 | 99 |
| Denmark | 1998 | 0.7415669 | 1.1217883 | 1.0128278 | 65.9683 | 6.550524 | 0.2740486 | 101.9821 | 54.58595 | 4.7 | 99 |
| Denmark | 1999 | 0.7663863 | 1.084358 | | 68.4684 | 7.116213 | 0.2489596 | 101.8604 | 56.12616 | 4.2 | 99 |
| Estonia | 1980 | | | | | | | | | | |
| Estonia | 1981 | | | | | | | | | | |
| Estonia | 1982 | | | | | | | | | | |
| Estonia | 1983 | | | | | | | | | | |
| Estonia | 1984 | | | | | | | | | | |
| Estonia | 1985 | | | | | | | | | | |
| Estonia | 1986 | | | | | | | | | | |
| Estonia | 1987 | | | | | | | | | | |
| Estonia | 1988 | | | | | | | | | | |
| Estonia | 1989 | | | | | | | | | | |
| Estonia | 1990 | | | | | | | | | | |
| Estonia | 1991 | | | | | | | | | | |
| Estonia | 1992 | 0.2701949 | 0.0954338 | 0.470972 | 21.9746 | 1.494166 | 4.793505 | 104.5086 | 24.62488 | 15.8 | |
| Estonia | 1993 | 0.2698755 | 0.0854752 | 0.3594378 | 23.0575 | 1.757683 | 4.448599 | 102.6918 | 23.59284 | 15.8 | 86 |
| Estonia | 1994 | 0.2782611 | 0.1075188 | 0.2877649 | 25.2048 | 1.683658 | 4.431151 | 103.5968 | 24.35418 | 14.5 | 87 |
| Estonia | 1995 | 0.2959291 | 0.1173278 | 0.2150313 | 27.7422 | 1.927591 | 3.792174 | 91.25474 | 38.082 | 14.8 | 89 |
| Estonia | 1996 | 0.3338414 | 0.1055085 | 0.184322 | 29.867 | 1.8415 | 3.838823 | 94.04575 | 41.81344 | 10.4 | 93 |
| Estonia | 1997 | 0.3667643 | 0.1646429 | 0.1685714 | 32.1397 | 2.126818 | 3.489976 | 97.81973 | 44.921 | 10.06 | 94 |
| Estonia | 1998 | 0.3985469 | 0.2145434 | 0.1716924 | 34.39 | 2.269304 | 3.100966 | 101.0861 | 47.50586 | 9.3 | 94 |
| Estonia | 1999 | 0.4250635 | 0.2195246 | 0.1911754 | 35.7383 | 2.478478 | 2.831101 | 102.8041 | 52.81549 | 9.5 | 95 |
| Finland | 1980 | 0.4710358 | 0.5255649 | 0.6849372 | 36.4007 | 1.681678 | 0.5776041 | 96.19817 | 32.16014 | 7.6 | |
| Finland | 1981 | 0.4935514 | 0.5731458 | 0.6929167 | 38.2917 | 1.899704 | 0.4970645 | | | 6.5 | 92 |
| Finland | 1982 | 0.5084911 | 0.5831987 | 0.691734 | 39.942 | 2.044313 | 0.4415573 | | | 6 | 94 |
| Finland | 1983 | 0.5129815 | 0.5760502 | 0.6746293 | 41.6186 | 2.056534 | 0.3926156 | | | 6.2 | 94 |
| Finland | 1984 | 0.5223332 | 0.6127202 | 0.6603851 | 43.0971 | 2.181934 | 0.3672554 | | | 9.5 | 95 |
| Finland | 1985 | 0.5188665 | 0.6432681 | 0.5458996 | 44.6691 | 2.185132 | 0.4216026 | 102.4903 | 34.1042 | 6.3 | 96 |
| Finland | 1986 | 0.5317104 | 0.6075234 | 0.6226108 | 46.1976 | 2.289171 | 0.4721426 | | | 6.5 | 97 |
| Finland | 1987 | 0.5478162 | 0.7350699 | 0.6379485 | 47.8842 | 2.392842 | 0.4463303 | | | 6.5 | 98 |

| Country | Year | SEDI | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---------|------|-----------|-----------|-----------|---------|----------|-----------|----------|----------|------|----|
| Finland | 1988 | 0.5699446 | 0.8099172 | 0.6479499 | 49.8587 | 2.837314 | 0.3985983 | | | | 99 |
| Finland | 1989 | 0.5730665 | 0.8664853 | 0.6713019 | 51.9099 | 2.86849 | 0.3957633 | | | 6 | 90 |
| Finland | 1990 | 0.5818962 | 0.8925391 | 0.6478139 | 53.4153 | 2.949198 | 0.395555 | 98.82974 | 48.93255 | 5.6 | 90 |
| Finland | 1991 | 0.5852438 | 0.797507 | 0.6096929 | 54.0386 | 2.81334 | 0.4158751 | 99.10409 | 52.70948 | 5.8 | 95 |
| Finland | 1992 | 0.6068977 | 0.7731852 | 0.5963903 | 54.2442 | 3.039638 | 0.3966803 | 99.37923 | 58.765 | 5.2 | 99 |
| Finland | 1993 | 0.6183072 | 0.7792144 | 0.5994868 | 54.4138 | 2.942195 | 0.4130049 | 99.64262 | 63.29436 | 4.4 | 99 |
| Finland | 1994 | 0.6280962 | 0.8826882 | 0.6256632 | 54.9323 | 2.876714 | 0.432114 | 99.44003 | 67.00161 | 4.7 | 99 |
| Finland | 1995 | 0.6492887 | 1.0203406 | 0.6370399 | 54.2785 | 3.224176 | 0.405039 | 99.18739 | 70.43665 | 3.9 | 99 |
| Finland | 1996 | 0.6563485 | 1.0921951 | 0.6587317 | 55.3748 | 3.064827 | 0.4537612 | 98.54408 | 74.05428 | 4 | 99 |
| Finland | 1997 | 0.6606814 | 1.167799 | 0.6570243 | 55.5858 | 3.123864 | 0.4286796 | 98.66225 | 73.85951 | 4 | 99 |
| Finland | 1998 | 0.6684629 | 1.3140113 | 0.6627207 | 55.0678 | 3.241831 | 0.3612177 | 99.14929 | | 4.2 | 99 |
| Finland | 1999 | 0.6732228 | 1.2084414 | 0.6592449 | 55.1841 | 3.430703 | 0.3726127 | 100.511 | | 3.6 | 99 |
| France | 1980 | 0.4889743 | 0.3623051 | 1.0107647 | 29.5063 | 2.758142 | 0.4182655 | 111.1262 | 25.2756 | 10 | |
| France | 1981 | 0.5120331 | 0.398494 | 1.0274076 | 32.747 | 3.018966 | 0.3725574 | | | 9.7 | 79 |
| France | 1982 | 0.5320432 | 0.4106535 | 1.0435756 | 35.7447 | 3.238189 | 0.3486533 | | | 9.5 | 85 |
| France | 1983 | 0.5473377 | 0.4253417 | 1.0707499 | 38.2349 | 3.187378 | 0.326457 | | | 9.1 | 90 |
| France | 1984 | 0.5650218 | 0.431221 | 1.0990591 | 40.1379 | 3.292035 | 0.3091831 | | | 8.3 | 94 |
| France | 1985 | 0.5733106 | 0.4439351 | 1.125068 | 41.6586 | 3.346184 | 0.3007625 | 108.5526 | 29.77575 | 8.3 | 95 |
| France | 1986 | 0.5829464 | 0.4551287 | 1.0806225 | 43.0466 | 3.580784 | 0.2810327 | | | 8 | 96 |
| France | 1987 | 0.5886149 | 0.5024303 | 1.0780155 | 44.4318 | 3.921211 | 0.261494 | | | 7.8 | 88 |
| France | 1988 | 0.5994825 | 0.5487671 | 1.1325245 | 46.0232 | 4.38042 | 0.2457502 | | | 7.8 | 79 |
| France | 1989 | 0.6254222 | 0.6020182 | 1.1427103 | 47.7508 | 4.205834 | 0.2476107 | | | 7.5 | 95 |
| France | 1990 | 0.6336916 | 0.6338927 | 1.1234688 | 49.5238 | 4.270576 | 0.2426644 | 108.4713 | 39.64775 | 7.3 | 95 |
| France | 1991 | 0.6304312 | 0.581419 | 1.0934141 | 51.0741 | 4.194826 | 0.2587712 | 107.1339 | 43.17373 | 7.3 | 92 |
| France | 1992 | 0.6468936 | 0.5933357 | 1.0871331 | 52.5856 | 4.484818 | 0.2401436 | 105.6584 | 46.11937 | 6.8 | 95 |
| France | 1993 | 0.6521561 | 0.6199045 | 1.0198453 | 53.77 | 4.428112 | 0.237247 | 106.0836 | 49.65975 | 6.4 | 95 |
| France | 1994 | 0.6678723 | 0.6619772 | 1.0220044 | 54.9784 | 4.776419 | 0.2156052 | 106.0251 | 49.93379 | 5.9 | 97 |
| France | 1995 | 0.6710615 | 0.6227163 | 0.9605145 | 56.0127 | 4.830435 | 0.2243985 | 106.1368 | 51.01392 | 4.9 | 97 |
| France | 1996 | 0.6766991 | 0.710933 | 1.0300555 | 56.6987 | 4.662325 | 0.236389 | 105.0363 | 51.01758 | 4.8 | 97 |
| France | 1997 | 0.6897897 | 0.745614 | 1.0622251 | 57.8968 | 4.851299 | 0.2152036 | 105.0439 | 51.83864 | 4.7 | 98 |
| France | 1998 | 0.6929684 | 0.7231823 | 1.1038049 | 58.3904 | 4.803263 | 0.2276937 | 105.4316 | 51.41671 | 4.6 | 98 |
| France | 1999 | 0.7063079 | 0.8450409 | 1.1359604 | 57.8067 | 5.022124 | 0.2106202 | 105.1561 | 52.53107 | 4.3 | 98 |
| Germany | 1980 | | | | | | | | | | |
| Germany | 1981 | | | | | | | | | | |
| Germany | 1982 | | | | | | | | | | |
| Germany | 1983 | | | | | | | | | | |
| Germany | 1984 | | | | | | | | | | |
| Germany | 1985 | | | | | | | | | | |
| Germany | 1986 | | | | | | | | | | |
| Germany | 1987 | | | | | | | | | | |
| Germany | 1988 | | | | | | | | | | |
| Germany | 1989 | | | | | | | | | | |
| Germany | 1990 | | | | | | | | | | |
| Germany | 1991 | | | | | | | | | | |
| Germany | 1992 | 0.5532754 | 0.3420545 | 0.7099623 | 43.7432 | 4.70751 | 0.3616343 | 100.3366 | 38.65017 | 6.2 | 80 |
| Germany | 1993 | 0.5644754 | 0.3618044 | 0.7147099 | 45.4891 | 4.784735 | 0.3586334 | 99.63232 | 41.39681 | 5.8 | 80 |
| Germany | 1994 | 0.5857437 | 0.3982691 | 0.7601207 | 47.5848 | 5.052596 | 0.3611336 | 100.4292 | 44.26034 | 5.6 | 80 |
| Germany | 1995 | 0.6189489 | 0.4247826 | 0.9182774 | 51.3338 | 5.256912 | 0.337669 | 101.901 | 46.05959 | 5.3 | 80 |
| Germany | 1996 | 0.632045 | 0.4897744 | 0.9275198 | 53.7725 | 5.172466 | 0.3472451 | 103.8957 | 47.20501 | 5 | 80 |
| Germany | 1997 | 0.6477427 | 0.5581082 | 0.900647 | 55.0834 | 5.291944 | 0.3319944 | 105.68 | 47.94161 | 4.9 | 85 |
| Germany | 1998 | 0.6511714 | 0.6006289 | 0.882287 | 56.7183 | 5.407263 | 0.3222381 | 105.8148 | 46.30446 | 4.7 | 85 |
| Germany | 1999 | 0.6607817 | 0.6657912 | 0.8964513 | 58.6757 | 5.685502 | 0.3037451 | 105.3628 | | 4.5 | 85 |
| Greece | 1980 | 0.3659438 | 0.5072384 | 0.15182 | 23.547 | 4.654101 | 0.5013487 | 102.889 | 17.09408 | 17.9 | 72 |
| Greece | 1981 | 0.4116981 | 0.5037208 | 0.15572 | 24.678 | 4.980355 | 0.4993254 | | | 16.3 | 95 |
| Greece | 1982 | 0.4090195 | 0.575475 | 0.1533197 | 25.8878 | 4.848255 | 0.520407 | | | 15.1 | 83 |
| Greece | 1983 | 0.4003329 | 0.5902102 | 0.1570021 | 27.5657 | 4.582467 | 0.561394 | | | 14.6 | 72 |
| Greece | 1984 | 0.4026527 | 0.6950687 | 0.1669361 | 29.5645 | 4.776762 | 0.5649774 | | | 14.3 | 60 |
| Greece | 1985 | 0.4054469 | 0.7506141 | 0.1743507 | 31.3751 | 4.784311 | 0.5804898 | 104.2251 | 24.19048 | 14.1 | 54 |
| Greece | 1986 | 0.4606726 | 0.650291 | 0.1957045 | 33.0386 | 5.468977 | 0.5638 | | | 12.2 | 80 |
| Greece | 1987 | 0.4686346 | 0.6566943 | 0.1972803 | 34.7137 | 5.418453 | 0.6139588 | | | 11.7 | 82 |
| Greece | 1988 | 0.4820889 | 0.663515 | 0.195676 | 36.0365 | 5.687409 | 0.6269923 | | | 11 | 83 |
| Greece | 1989 | 0.4525706 | 0.6572844 | 0.1993062 | 37.5436 | 5.284882 | 0.6590974 | | | 9.7 | 54 |
| Greece | 1990 | 0.453641 | 0.6037398 | 0.1946659 | 38.8647 | 5.240187 | 0.653643 | 97.81532 | 36.05005 | 9.7 | 54 |
| Greece | 1991 | 0.4922537 | 0.4817996 | 0.1946911 | 40.8395 | 5.490492 | 0.586201 | 96.33401 | 34.50002 | 9 | 85 |
| Greece | 1992 | 0.5094627 | 0.5295001 | 0.1941484 | 43.5712 | 5.575542 | 0.6427825 | 94.56652 | 38.01162 | 8.4 | 89 |
| Greece | 1993 | 0.5144399 | 0.527857 | 0.1663134 | 45.7034 | 5.652483 | 0.6526367 | 94.34357 | 40.04642 | 8.5 | 89 |
| Greece | 1994 | 0.5195805 | 0.5575388 | 0.1341838 | 47.7105 | 5.670141 | 0.6682744 | 95.80546 | 37.94948 | 7.9 | 90 |
| Greece | 1995 | 0.5318308 | 0.5742972 | 0.1500287 | 49.4045 | 5.933425 | 0.658787 | 93.9029 | 42.32182 | 8.2 | 90 |
| Greece | 1996 | 0.5473766 | 0.6105967 | 0.1672554 | 50.8715 | 5.89609 | 0.6856241 | 93.22688 | 46.84338 | 7.3 | 90 |
| Greece | 1997 | 0.5615636 | 0.6726493 | 0.1698581 | 51.6143 | 5.874429 | 0.6642681 | 95.05949 | 50.46806 | 7.2 | 90 |
| Greece | 1998 | 0.5709414 | 0.6089777 | 0.1475987 | 52.2219 | 5.728263 | 0.6638851 | 97.15314 | | 6.1 | 89 |

| Country | Year | SEDI | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---------|------|-----------|-----------|-----------|---------|----------|-----------|----------|----------|------|-------|
| Greece | 1999 | 0.5924053 | 0.6254223 | 0.137882 | 52.8052 | 6.044936 | 0.6446514 | 99.05338 | | | 88 |
| Hungary | 1980 | | | | | | | | | | |
| Hungary | 1981 | | | | | | | | | | |
| Hungary | 1982 | | | | | | | | | | |
| Hungary | 1983 | | | | | | | | | | |
| Hungary | 1984 | | | | | | | | | | |
| Hungary | 1985 | | | | | | | | | | |
| Hungary | 1986 | | | | | | | | | | |
| Hungary | 1987 | | | | | | | | | | |
| Hungary | 1988 | | | | | | | | | | |
| Hungary | 1989 | | | | | | | | | | |
| Hungary | 1990 | | | | | | | | | | |
| Hungary | 1991 | | | | | | | | | | |
| Hungary | 1992 | 0.3890094 | 0.0996804 | 0.8895777 | 12.4904 | 3.388398 | 1.312879 | 94.24212 | 15.09001 | 14.1 | 99.44 |
| Hungary | 1993 | 0.4135896 | 0.1182145 | 0.8191179 | 14.5255 | 3.340459 | 1.372456 | 102.3376 | 18.06355 | 12.5 | 99 |
| Hungary | 1994 | 0.4387181 | 0.1291687 | 0.829159 | 17.2628 | 3.616434 | 1.246929 | 102.9755 | 20.85958 | 11.5 | 99 |
| Hungary | 1995 | 0.455679 | 0.1281552 | 0.8252029 | 21.0541 | 3.705827 | 1.289196 | 103.2256 | 23.59348 | 10.7 | 99.44 |
| Hungary | 1996 | 0.4674578 | 0.1533798 | 0.8419504 | 25.9618 | 3.699534 | 1.329504 | 102.4855 | 26.0276 | 10.9 | 99.44 |
| Hungary | 1997 | 0.4899905 | 0.1609749 | 0.8536681 | 30.4236 | 3.937039 | 1.234862 | 102.7346 | 26.79617 | 9.9 | 99.44 |
| Hungary | 1998 | 0.5182493 | 0.1729484 | 0.8783864 | 33.5852 | 4.159509 | 1.161413 | 103.6667 | 33.47796 | 9.7 | 99.44 |
| Hungary | 1999 | 0.5488815 | 0.1930373 | 0.9449742 | 37.0946 | 4.413231 | 1.100034 | 103.4136 | 36.68666 | 8.4 | 99.44 |
| Ireland | 1980 | 0.3075628 | 0.5381358 | 0.3034402 | 14.2017 | 2.309443 | 0.6793646 | 99.8507 | 18.14343 | 11.1 | 34 |
| Ireland | 1981 | 0.3223956 | 0.5746733 | 0.2889922 | 15.5678 | 2.532357 | 0.6579309 | | | 10.3 | 36 |
| Ireland | 1982 | 0.3328208 | 0.5600862 | 0.2548851 | 16.6552 | 2.715827 | 0.6401933 | | | 10.5 | 43 |
| Ireland | 1983 | 0.3340198 | 0.5082192 | 0.2414384 | 17.5024 | 2.723476 | 0.6358693 | | | 10.1 | 42 |
| Ireland | 1984 | 0.3515451 | 0.5209691 | 0.2558799 | 18.9648 | 3.015985 | 0.6134891 | | | 9.6 | 45 |
| Ireland | 1985 | 0.3644853 | 0.5166102 | 0.2889831 | 19.8588 | 3.173069 | 0.6105426 | 99.92676 | 22.33011 | 8.8 | 45 |
| Ireland | 1986 | 0.3697303 | 0.5569048 | 0.3035866 | 21.2032 | 3.14942 | 0.6865511 | | | 8.9 | 44.33 |
| Ireland | 1987 | 0.392886 | 0.6425148 | 0.3357767 | 22.4789 | 3.539675 | 0.6836407 | | | 7.9 | 43.67 |
| Ireland | 1988 | 0.4158742 | 1.04104 | 0.3344946 | 23.8179 | 4.036645 | 0.6569936 | | | 8.9 | 43 |
| Ireland | 1989 | 0.4651578 | 1.2469868 | 0.3476279 | 26.0597 | 4.181574 | 0.5860937 | | | 8.1 | 65 |
| Ireland | 1990 | 0.4769639 | 1.3726682 | 0.3497062 | 28.0617 | 4.193072 | 0.5632565 | 102.8119 | 29.29824 | 8.2 | 65 |
| Ireland | 1991 | 0.4899283 | 1.3513912 | 0.3658848 | 29.7244 | 4.353396 | 0.6174319 | 102.8098 | 32.66912 | 8.2 | 66.57 |
| Ireland | 1992 | 0.5258473 | 1.4104984 | 0.3454397 | 31.3914 | 4.770504 | 0.56411 | 103.7373 | 34.73577 | 5 | 68.14 |
| Ireland | 1993 | 0.5277216 | 1.3050824 | 0.3575337 | 32.8143 | 4.789515 | 0.5555065 | 104.0155 | 37.27594 | 6 | 69.71 |
| Ireland | 1994 | 0.5381844 | 1.3514717 | 0.352872 | 34.5828 | 4.90166 | 0.5466822 | 104.229 | 37.97971 | 5.9 | 71.29 |
| Ireland | 1995 | 0.576987 | 1.8285675 | 0.358412 | 36.3306 | 5.619236 | 0.4988639 | 103.774 | 39.62073 | 5.7 | 72.86 |
| Ireland | 1996 | 0.6000217 | 2.1136564 | 0.3565529 | 38.3333 | 5.779142 | 0.4895276 | 104.4997 | 41.01984 | 5.5 | 74.43 |
| Ireland | 1997 | 0.6993776 | 2.4424251 | 0.3782016 | 42.5613 | 6.174091 | 0.4600406 | 140.7202 | 42.95932 | 6.2 | 76 |
| Ireland | 1998 | 0.7125121 | 2.8020474 | 0.4014009 | 44.0768 | 6.335253 | 0.4437407 | | 44.57924 | 6.2 | 85 |
| Ireland | 1999 | 0.7328655 | 3.1846482 | | 46.3856 | 7.062959 | 0.4224466 | 119.3923 | 46.37112 | 5.5 | 86 |
| Italy | 1980 | 0.3398491 | 0.1764149 | 0.7014743 | 23.0732 | 3.926353 | 0.4516774 | 99.94585 | 26.96904 | 14.6 | |
| Italy | 1981 | 0.3535798 | 0.1857155 | 0.7095324 | 24.5297 | 4.311063 | 0.4399668 | | | 14.1 | |
| Italy | 1982 | 0.3666585 | 0.2053445 | 0.6993138 | 25.9499 | 4.548345 | 0.4243221 | | | 13 | |
| Italy | 1983 | 0.373208 | 0.212089 | 0.6866558 | 27.4545 | 4.561455 | 0.4050958 | | | 12.3 | |
| Italy | 1984 | 0.3865266 | 0.2225922 | 0.6901214 | 28.9924 | 4.827221 | 0.4032464 | | | 11.4 | 10 |
| Italy | 1985 | 0.4014583 | 0.2545898 | 0.6925592 | 30.4511 | 5.152332 | 0.399394 | 96.48367 | 25.45765 | 10.5 | 12 |
| Italy | 1986 | 0.5179031 | 0.2440296 | 0.7155983 | 31.8991 | 5.562728 | 0.3793386 | | | 10.2 | 98 |
| Italy | 1987 | 0.5277759 | 0.2697449 | 0.7313346 | 33.3237 | 6.104486 | 0.3846987 | | | 9.8 | 88 |
| Italy | 1988 | 0.5471041 | 0.276346 | 0.7653852 | 34.9777 | 6.61003 | 0.3781532 | | | 9.3 | 85 |
| Italy | 1989 | 0.5582156 | 0.3076952 | 0.7842144 | 36.9578 | 6.439537 | 0.386536 | | | 8.7 | 85 |
| Italy | 1990 | 0.5727763 | 0.3482078 | 0.8024295 | 38.7617 | 6.616252 | 0.3872156 | 103.1286 | 32.10476 | 8.2 | 83 |
| Italy | 1991 | 0.5992368 | 0.3320964 | 0.8180825 | 40.6537 | 6.700597 | 0.3848065 | 104.611 | 34.2224 | 8.1 | 95 |
| Italy | 1992 | 0.617222 | 0.3828189 | 0.8505426 | 41.6972 | 7.04074 | 0.3868691 | 104.9643 | 36.38816 | 7.9 | 95 |
| Italy | 1993 | 0.6241078 | 0.3839051 | 0.8256236 | 42.3611 | 7.183344 | 0.3756757 | 102.3504 | 40.34756 | 7.3 | 95 |
| Italy | 1994 | 0.6377679 | 0.4019485 | 0.8560924 | 42.8539 | 7.562941 | 0.3635822 | 100.8642 | 41.57521 | 6.7 | 95 |
| Italy | 1995 | 0.6444169 | 0.4137088 | 0.8688204 | 43.3346 | 7.615728 | 0.3733272 | 100.9193 | 42.32424 | 6.3 | 95 |
| Italy | 1996 | 0.6597129 | 0.450305 | 0.8766121 | 44.0206 | 7.779765 | 0.3639072 | 100.6227 | 46.88033 | 6 | 95 |
| Italy | 1997 | 0.6677852 | 0.4899588 | 0.8605254 | 44.7953 | 7.765899 | 0.3598285 | 100.6554 | 49.26727 | 5.5 | 95 |
| Italy | 1998 | 0.6591753 | 0.4768823 | 0.8210912 | 45.3073 | 7.643984 | 0.3601186 | 102.5372 | 45.27352 | 5.5 | 95 |
| Italy | 1999 | 0.6668768 | 0.4905978 | 0.8573708 | 46.2167 | 7.768539 | 0.361197 | 101.4106 | 46.63902 | 95 | |
| Latvia | 1980 | | | | | | | | | | |
| Latvia | 1981 | | | | | | | | | | |
| Latvia | 1982 | | | | | | | | | | |
| Latvia | 1983 | | | | | | | | | | |
| Latvia | 1984 | | | | | | | | | | |
| Latvia | 1985 | | | | | | | | | | |
| Latvia | 1986 | | | | | | | | | | |
| Latvia | 1987 | | | | | | | | | | |
| Latvia | 1988 | | | | | | | | | | |
| Latvia | 1989 | | | | | | | | | | |

| Country | Year | SEDI | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|-------------|------|-----------|-----------|-----------|---------|----------|-----------|----------|----------|------|----|
| Latvia | 1990 | | | | | | | | | | |
| Latvia | 1991 | | | | | | | | | | |
| Latvia | 1992 | 0.3849126 | 0.024962 | 1.3890578 | 24.8923 | 2.334208 | 2.205987 | 87.00412 | 24.31016 | 17.4 | 87 |
| Latvia | 1993 | 0.3341885 | 0.0430008 | 0.9122196 | 26.6402 | 2.44748 | 2.354416 | 82.76656 | 22.68903 | 15.9 | 80 |
| Latvia | 1994 | 0.3365669 | 0.0655416 | 0.7040816 | 26.0006 | 2.707526 | 2.206163 | 82.87609 | 23.10169 | 15.5 | 89 |
| Latvia | 1995 | 0.3429869 | 0.0687873 | 0.4994036 | 27.8515 | 3.168304 | 1.924925 | 88.6926 | 27.18123 | 18.5 | 93 |
| Latvia | 1996 | 0.3842651 | 0.1107587 | 0.4612605 | 29.5479 | 3.162922 | 1.853009 | 95.78527 | 33.33215 | 15.8 | 93 |
| Latvia | 1997 | 0.4115888 | 0.0935102 | 0.4710204 | 29.8445 | 3.222248 | 1.491637 | 100.3174 | 37.26347 | 15.2 | 92 |
| Latvia | 1998 | 0.4434671 | 0.0950622 | 0.4394191 | 30.1944 | 3.438138 | 1.337859 | 100.6463 | 49.99817 | 14.9 | 94 |
| Latvia | 1999 | 0.4867507 | 0.0820921 | 0.4117155 | 29.988 | 4.011953 | 1.139792 | 101.2221 | 56.10786 | 11.3 | 95 |
| Lithuania | 1980 | | | | | | | | | | |
| Lithuania | 1981 | | | | | | | | | | |
| Lithuania | 1982 | | | | | | | | | | |
| Lithuania | 1983 | | | | | | | | | | |
| Lithuania | 1984 | | | | | | | | | | |
| Lithuania | 1985 | | | | | | | | | | |
| Lithuania | 1986 | | | | | | | | | | |
| Lithuania | 1987 | | | | | | | | | | |
| Lithuania | 1988 | | | | | | | | | | |
| Lithuania | 1989 | | | | | | | | | | |
| Lithuania | 1990 | | | | | | | | | | |
| Lithuania | 1991 | | | | | | | | | | |
| Lithuania | 1992 | 0.3396761 | 0.1505946 | 0.7405405 | 22.4239 | 2.368315 | 2.587969 | 91.84106 | 28.25163 | 16.5 | 86 |
| Lithuania | 1993 | 0.3465444 | 0.0406462 | 0.733098 | 23.0518 | 2.492127 | 2.385013 | 92.55237 | 26.18523 | 15.6 | 87 |
| Lithuania | 1994 | 0.3326498 | 0.0531711 | 0.4302898 | 24.1447 | 2.603111 | 2.609775 | 94.69934 | 26.3745 | 13.9 | 87 |
| Lithuania | 1995 | 0.3562052 | 0.0577919 | 0.3111233 | 25.3503 | 2.574843 | 2.264639 | 95.85487 | 28.21703 | 12.4 | 97 |
| Lithuania | 1996 | 0.3719081 | 0.059362 | 0.2646325 | 26.7756 | 2.569391 | 2.212367 | 97.97283 | 31.42942 | 10.1 | 92 |
| Lithuania | 1997 | 0.38573 | 0.0661453 | 0.2351955 | 28.4655 | 2.860886 | 2.127247 | 98.65036 | 34.84149 | 10.3 | 92 |
| Lithuania | 1998 | 0.4061182 | 0.072827 | 0.2250352 | 30.0698 | 2.854306 | 2.102764 | 98.76843 | 40.23786 | 9.2 | 94 |
| Lithuania | 1999 | 0.4381674 | 0.0706882 | 0.2109884 | 31.1593 | 3.306502 | 1.810748 | 100.8463 | 46.55312 | 8.6 | 93 |
| Netherlands | 1980 | 0.4730684 | 0.352212 | 0.629682 | 34.5731 | 2.275103 | 0.5117772 | 100.2028 | 29.34539 | 8.6 | 96 |
| Netherlands | 1981 | 0.4841485 | 0.350221 | 0.6478557 | 35.8202 | 2.530344 | 0.4843356 | | | 8.3 | 96 |
| Netherlands | 1982 | 0.4953527 | 0.3634388 | 0.6550688 | 36.9664 | 2.843275 | 0.3809539 | | | 8.3 | 96 |
| Netherlands | 1983 | 0.4940583 | 0.3674323 | 0.630055 | 38.0177 | 2.734331 | 0.3914225 | | | 8.4 | 97 |
| Netherlands | 1984 | 0.4970709 | 0.392048 | 0.609401 | 39.1223 | 2.814807 | 0.4094355 | | | 8.3 | 97 |
| Netherlands | 1985 | 0.5055183 | 0.4159329 | 0.6215153 | 40.1836 | 2.981734 | 0.4254553 | 99.19834 | 31.81228 | 8 | 97 |
| Netherlands | 1986 | 0.5168494 | 0.4379632 | 0.6120642 | 41.3739 | 3.153395 | 0.3958775 | | | 7.7 | 97 |
| Netherlands | 1987 | 0.5330142 | 0.5048346 | 0.6407092 | 42.5094 | 3.428008 | 0.4015224 | | | 7.6 | 97 |
| Netherlands | 1988 | 0.5531335 | 0.5325271 | 0.6547425 | 43.8076 | 3.814762 | 0.3783233 | | | 6.8 | 97 |
| Netherlands | 1989 | 0.56429 | 0.5558219 | 0.689272 | 45.0535 | 3.915867 | 0.4116893 | | | 6.8 | 97 |
| Netherlands | 1990 | 0.5774254 | 0.5724585 | 0.7397004 | 46.4183 | 4.087401 | 0.4015943 | 102.3896 | 39.82991 | 7.1 | 97 |
| Netherlands | 1991 | 0.6021584 | 0.5901261 | 1.0082946 | 47.6111 | 4.06321 | 0.3933487 | 97.8429 | 42.11889 | 6.5 | 97 |
| Netherlands | 1992 | 0.6144702 | 0.664633 | 0.9869548 | 48.7218 | 4.345982 | 0.3818117 | 97.34482 | 44.56546 | 6.3 | 97 |
| Netherlands | 1993 | 0.6455497 | 0.7706344 | 0.9678581 | 49.9705 | 4.389597 | 0.394774 | 107.5547 | 48.44886 | 6.3 | 97 |
| Netherlands | 1994 | 0.651996 | 0.8383519 | 0.9387477 | 51.0616 | 4.525014 | 0.3568837 | 107.3689 | 47.40078 | 5.6 | 97 |
| Netherlands | 1995 | 0.6617067 | 1.0593726 | 0.904075 | 52.4336 | 4.602344 | 0.367357 | 107.3631 | 47.96793 | 5.5 | 97 |
| Netherlands | 1996 | 0.6656809 | 1.1029387 | 0.9106786 | 54.1591 | 4.657733 | 0.3966075 | 107.7625 | 47.28049 | 5.7 | 97 |
| Netherlands | 1997 | 0.6816279 | 1.1462741 | 0.9281092 | 56.5983 | 4.85827 | 0.328936 | 108.2403 | 47.98497 | 5 | 95 |
| Netherlands | 1998 | 0.6983762 | 1.1896738 | 0.9478277 | 59.2441 | 5.207196 | 0.3192199 | 108.0939 | 48.85526 | 5.2 | 97 |
| Netherlands | 1999 | 0.7151498 | 1.2490478 | | 60.5965 | 5.387493 | 0.2803308 | 107.929 | 52.16167 | 5 | 97 |
| Poland | 1980 | | | | | | | | | | |
| Poland | 1981 | | | | | | | | | | |
| Poland | 1982 | | | | | | | | | | |
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| Poland | 1989 | | | | | | | | | | |
| Poland | 1990 | | | | | | | | | | |
| Poland | 1991 | | | | | | | | | | |
| Poland | 1992 | 0.3126093 | 0.0287269 | 0.8489836 | 10.2636 | 2.2012 | 3.5767 | 99.732 | 23.83 | 17.3 | 95 |
| Poland | 1993 | 0.3234715 | 0.0330196 | 0.802543 | 11.4786 | 2.2228 | 3.5523 | 99.277 | 27.405 | 16.1 | 95 |
| Poland | 1994 | 0.3416742 | 0.0376664 | 0.7163316 | 12.9893 | 2.5092 | 3.2452 | 98.5 | 31.005 | 15.1 | 96 |
| Poland | 1995 | 0.3628012 | 0.042949 | 0.6902476 | 14.8445 | 2.6706 | 3.1124 | 98.145 | 34.973 | 13.6 | 96 |
| Poland | 1996 | 0.3835469 | 0.0467632 | 0.6879952 | 16.9145 | 2.6341 | 3.0624 | 98.419 | 39.321 | 12.2 | 97 |
| Poland | 1997 | 0.4162598 | 0.0516947 | 0.6676843 | 19.4308 | 2.9161 | 2.7914 | 97.7 | 44.252 | 10.2 | 98 |
| Poland | 1998 | 0.4436623 | 0.0572206 | 0.663733 | 22.7603 | 3.2179 | 2.4692 | | 45.677 | 9.5 | 98 |
| Poland | 1999 | 0.475524 | 0.0553753 | 0.6776864 | 26.265 | 3.5664 | 2.3 | 100.99 | 50.44 | 8.9 | 98 |
| Portugal | 1980 | 0.3877824 | 0.2025497 | 0.6222609 | 10.6716 | 5.547783 | 0.3783937 | 123.2378 | 10.72322 | 24.3 | 73 |

| Country | Year | SEDI | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|----------|------|-----------|-----------|-----------|---------|----------|-----------|----------|----------|------|----|
| Portugal | 1981 | 0.4155265 | 0.2201299 | 0.5944574 | 11.2984 | 6.096235 | 0.351968 | | | 21.8 | 75 |
| Portugal | 1982 | 0.4230662 | 0.2292489 | 0.5462342 | 12.1903 | 5.765072 | 0.3945068 | | | 19.8 | 78 |
| Portugal | 1983 | 0.4272223 | 0.222854 | 0.5218745 | 13.1422 | 5.656453 | 0.4035026 | | | 19.2 | 79 |
| Portugal | 1984 | 0.4499398 | 0.2314346 | 0.5462008 | 13.8325 | 5.884869 | 0.3936973 | | | 16.7 | 78 |
| Portugal | 1985 | 0.4505618 | 0.2312564 | 0.5718481 | 14.5272 | 6.309887 | 0.4091645 | 128.7096 | 12.29859 | 17.8 | 72 |
| Portugal | 1986 | 0.4747033 | 0.2420011 | 0.5796797 | 15.5957 | 6.221434 | 0.3809895 | | | 15.9 | 81 |
| Portugal | 1987 | 0.5059693 | 0.2787272 | 0.5910546 | 17.0279 | 6.982439 | 0.385263 | | | 14.2 | 83 |
| Portugal | 1988 | 0.5243124 | 0.3034811 | 0.6055377 | 18.9453 | 7.378271 | 0.3631136 | | | 13.1 | 81 |
| Portugal | 1989 | 0.5253612 | 0.3207507 | 0.5945456 | 22.3527 | 6.379625 | 0.4302751 | | | 12.2 | 88 |
| Portugal | 1990 | 0.5397911 | 0.354133 | 0.5723525 | 24.2584 | 6.494524 | 0.4294933 | 123.4165 | 23.16913 | 10.9 | 89 |
| Portugal | 1991 | 0.5685499 | 0.3619212 | 0.5767555 | 27.3073 | 6.876924 | 0.4123085 | 126.6043 | 23.73149 | 10.8 | 96 |
| Portugal | 1992 | 0.5858236 | 0.4164184 | 0.5568055 | 30.5107 | 6.688104 | 0.4531644 | 125.3566 | 30.51819 | 9.2 | 94 |
| Portugal | 1993 | 0.6040492 | 0.4431636 | 0.5461998 | 32.9586 | 6.785851 | 0.4494537 | 127.6467 | 33.75878 | 8.6 | 93 |
| Portugal | 1994 | 0.6192216 | 0.4402747 | 0.519996 | 35.052 | 6.804906 | 0.4542091 | 127.9801 | 36.47403 | 7.9 | 97 |
| Portugal | 1995 | 0.6218547 | 0.4623854 | 0.4875592 | 36.7199 | 6.842445 | 0.4709457 | 127.5941 | 38.83886 | 7.4 | 93 |
| Portugal | 1996 | 0.6376277 | 0.4839376 | 0.4534743 | 38.4724 | 7.224727 | 0.4315644 | 127.5872 | 39.91687 | 6.8 | 95 |
| Portugal | 1997 | 0.6459424 | 0.6316139 | 0.4588235 | 40.1964 | 7.169328 | 0.4341269 | 126.1947 | 41.27156 | 6.4 | 94 |
| Portugal | 1998 | 0.6363369 | 0.7045646 | 0.4616774 | 41.2538 | 6.873269 | 0.4526109 | 123.0723 | 43.87751 | 8.4 | 97 |
| Portugal | 1999 | 0.6541727 | 0.7347382 | 0.4384823 | 42.3086 | 6.750123 | 0.4805958 | 122.7108 | 47.05634 | 5.6 | 97 |
| Romania | 1980 | | | | | | | | | | |
| Romania | 1981 | | | | | | | | | | |
| Romania | 1982 | | | | | | | | | | |
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| Romania | 1989 | | | | | | | | | | |
| Romania | 1990 | | | | | | | | | | |
| Romania | 1991 | | | | | | | | | | |
| Romania | 1992 | 0.2502208 | 0.0403221 | 1.0649436 | 11.2848 | 2.181867 | 4.315135 | 86.50667 | 16.14751 | 23.3 | 98 |
| Romania | 1993 | 0.2378067 | 0.0430411 | 0.8526478 | 11.4389 | 2.343862 | 4.091976 | 87.49331 | 18.65154 | 23.3 | 91 |
| Romania | 1994 | 0.2681739 | 0.0546698 | 0.8056399 | 12.3401 | 2.633316 | 3.766422 | 94.63965 | 19.70792 | 23.9 | 98 |
| Romania | 1995 | 0.2955778 | 0.0548874 | 0.8323707 | 13.0862 | 2.699775 | 3.738498 | 99.89486 | 18.28777 | 21.2 | 98 |
| Romania | 1996 | 0.3065736 | 0.0403972 | 0.811925 | 14.0461 | 2.642762 | 3.545073 | 103.4845 | 22.5031 | 22.3 | 98 |
| Romania | 1997 | 0.3092905 | 0.0441252 | 0.7003192 | 15.0554 | 2.762824 | 3.455716 | 104.9419 | 24.43149 | 22 | 97 |
| Romania | 1998 | 0.3108616 | 0.0403324 | 0.5964538 | 16.0141 | 2.858567 | 3.161669 | 104.2679 | 21.2681 | 20.5 | 97 |
| Romania | 1999 | 0.331733 | 0.0436504 | 0.5478674 | 16.6951 | 3.223403 | 2.788737 | 102.0756 | 23.21014 | 18.6 | 97 |
| Slovakia | 1980 | | | | | | | | | | |
| Slovakia | 1981 | | | | | | | | | | |
| Slovakia | 1982 | | | | | | | | | | |
| Slovakia | 1983 | | | | | | | | | | |
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| Slovakia | 1989 | | | | | | | | | | |
| Slovakia | 1990 | | | | | | | | | | |
| Slovakia | 1991 | | | | | | | | | | |
| Slovakia | 1992 | 0.381656 | | 1.0276077 | 15.4592 | 2.295708 | 2.425361 | 100.9804 | 16.06572 | 12.6 | |
| Slovakia | 1993 | 0.3866057 | 0.0034369 | 0.8580926 | 16.731 | 2.314277 | 2.223445 | 101.2863 | 17.07043 | 10.6 | |
| Slovakia | 1994 | 0.3964737 | 0.0042077 | 0.8505227 | 18.7421 | 2.578753 | 2.064323 | 100.8872 | 18.66736 | 11.2 | 99 |
| Slovakia | 1995 | 0.4029307 | 0.0076626 | 0.7834174 | 20.8401 | 2.712003 | 2.124303 | 102.8246 | 20.24416 | 11 | 99 |
| Slovakia | 1996 | 0.4120703 | 0.0116491 | 0.7013672 | 23.1729 | 2.891532 | 1.96511 | 101.8114 | 22.08281 | 10.2 | 99 |
| Slovakia | 1997 | 0.4234637 | 0.014991 | 0.5678747 | 25.8327 | 3.068273 | 1.788516 | 101.6732 | 24.22304 | 8.7 | 99 |
| Slovakia | 1998 | 0.4387177 | 0.0199048 | 0.5735847 | 28.5422 | 3.246348 | 1.716411 | 102.5329 | 26.49661 | 8.8 | 99 |
| Slovakia | 1999 | 0.4502879 | 0.0205 | 0.5501268 | 30.6665 | 3.383271 | 1.712809 | 102.8484 | 28.85402 | 8.3 | 99 |
| Slovenia | 1980 | | | | | | | | | | |
| Slovenia | 1981 | | | | | | | | | | |
| Slovenia | 1982 | | | | | | | | | | |
| Slovenia | 1983 | | | | | | | | | | |
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| Slovenia | 1991 | | | | | | | | | | |

| Country | Year | SEDI | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|----------------|------|-----------|-----------|-----------|---------|----------|-----------|----------|----------|------|----|
| Slovenia | 1992 | 0.4453754 | 0.0943604 | 0.2739657 | 24.765 | 4.185862 | 0.7284539 | 101.4099 | 28.18098 | 8.9 | 98 |
| Slovenia | 1993 | 0.4587367 | 0.1480578 | 0.2877771 | 26.5157 | 4.122095 | 0.7260339 | 98.42702 | 29.78814 | 6.8 | 98 |
| Slovenia | 1994 | 0.4723925 | 0.1707476 | 0.2966464 | 29.0204 | 4.152802 | 0.5940301 | 98.22363 | 31.53461 | 6.5 | 98 |
| Slovenia | 1995 | 0.4831631 | 0.1862814 | 0.298995 | 30.9331 | 4.17004 | 0.7334128 | 97.67266 | 34.45781 | 5.5 | 98 |
| Slovenia | 1996 | 0.4985586 | 0.1973882 | 0.3078855 | 33.406 | 4.155914 | 0.7453848 | 97.93658 | 37.97029 | 4.8 | 98 |
| Slovenia | 1997 | 0.5118607 | 0.2033274 | 0.3101774 | 35.7739 | 4.117669 | 0.7542256 | 98.1027 | 47.07465 | 5.2 | 94 |
| Slovenia | 1998 | 0.5278533 | 0.2319681 | 0.3253304 | 36.2872 | 4.325515 | 0.6932147 | 97.64882 | 53.33133 | 5 | 91 |
| Slovenia | 1999 | 0.5575675 | 0.2797784 | 0.3137749 | 38.091 | 4.744449 | 0.6510121 | 99.11096 | | 4.5 | 92 |
| Spain | 1980 | 0.4408779 | 0.4036003 | 0.3965656 | 19.3356 | 3.844172 | 0.4926735 | 109.0221 | 23.16209 | 12.3 | |
| Spain | 1981 | 0.4474991 | 0.3868949 | 0.4109854 | 20.2755 | 4.016956 | 0.4922136 | | | 12.5 | |
| Spain | 1982 | 0.4625559 | 0.3857787 | 0.4196558 | 21.1209 | 4.24671 | 0.4864056 | | | 11.3 | |
| Spain | 1983 | 0.4690907 | 0.3813646 | 0.4259332 | 22.1417 | 4.218925 | 0.4666677 | | | 10.9 | |
| Spain | 1984 | 0.4829296 | 0.3732109 | 0.4329684 | 23.1645 | 4.405227 | 0.4290021 | | | 9.9 | 95 |
| Spain | 1985 | 0.4791388 | 0.3866564 | 0.4443345 | 24.2578 | 4.610001 | 0.4360839 | 110.0425 | 28.53601 | 8.9 | 79 |
| Spain | 1986 | 0.5017623 | 0.3998936 | 0.4355253 | 25.3059 | 4.971698 | 0.3854638 | | | 8.7 | 88 |
| Spain | 1987 | 0.5040867 | 0.428742 | 0.4276723 | 26.4335 | 5.601799 | 0.3753364 | | | 8.9 | 77 |
| Spain | 1988 | 0.5393063 | 0.4906361 | 0.438319 | 27.9754 | 5.823678 | 0.3672368 | | | 8 | 93 |
| Spain | 1989 | 0.537584 | 0.5228616 | 0.4126857 | 29.8347 | 5.456189 | 0.3989673 | | | 7.8 | 93 |
| Spain | 1990 | 0.5498321 | 0.5575239 | 0.4309404 | 31.5956 | 5.614932 | 0.3906932 | 108.5539 | 36.6643 | 7.6 | 93 |
| Spain | 1991 | 0.5462148 | 0.5382002 | 0.4204183 | 34.1229 | 5.668145 | 0.388511 | 107.3354 | 38.91375 | 7.8 | 86 |
| Spain | 1992 | 0.5590123 | 0.5995437 | 0.4506743 | 35.3573 | 5.797681 | 0.4005315 | 109.0441 | 40.80465 | 7.9 | 84 |
| Spain | 1993 | 0.5713155 | 0.5700535 | 0.4219226 | 36.4669 | 6.009068 | 0.3711855 | 109.0996 | 43.63508 | 7.7 | 87 |
| Spain | 1994 | 0.5853274 | 0.571272 | 0.4123854 | 37.5111 | 6.04173 | 0.3820477 | 108.7315 | 45.44048 | 6 | 88 |
| Spain | 1995 | 0.5994081 | 0.6571206 | 0.4229023 | 38.4991 | 6.023213 | 0.3988245 | 109.0259 | 47.79916 | 5.6 | 90 |
| Spain | 1996 | 0.6117861 | 0.7056314 | 0.4229081 | 39.2479 | 6.358647 | 0.3892387 | 108.5086 | 51.41824 | 6 | 90 |
| Spain | 1997 | 0.6278179 | 0.7627551 | 0.4499434 | 40.3182 | 6.23172 | 0.3938343 | 108.1826 | 54.5611 | 5.5 | 94 |
| Spain | 1998 | 0.6293889 | 0.7927659 | 0.4736155 | 41.372 | 6.160357 | 0.3814702 | 104.8164 | 55.03655 | 4.9 | 94 |
| Spain | 1999 | 0.6397858 | 0.8347694 | 0.4890055 | 40.994 | 6.264739 | 0.4046309 | 104.9073 | 57.56093 | 4.47 | 94 |
| Sweden | 1980 | 0.5489665 | 0.6268833 | 0.8421179 | 57.9954 | 2.02157 | 0.3793553 | 96.54179 | 30.79793 | 6.9 | 99 |
| Sweden | 1981 | 0.5536413 | 0.6769231 | 0.8487981 | 58.8065 | 2.040573 | 0.3638887 | | | 6.9 | 99 |
| Sweden | 1982 | 0.5572499 | 0.7316637 | 0.7913514 | 59.6361 | 2.213188 | 0.3191403 | | | 6.7 | 99 |
| Sweden | 1983 | 0.556187 | 0.7911175 | 0.8005041 | 60.2328 | 2.213257 | 0.291085 | | | 7.8 | 99 |
| Sweden | 1984 | 0.5717007 | 0.8798369 | 0.8024469 | 61.504 | 2.292322 | 0.2726786 | | | 6.3 | 99 |
| Sweden | 1985 | 0.5727836 | 0.9113293 | 0.8147305 | 62.7844 | 2.262679 | 0.2915265 | 97.87197 | 30.02857 | 6.8 | 99 |
| Sweden | 1986 | 0.5832262 | 1.0410872 | 0.7602151 | 64.1935 | 2.365553 | 0.2802125 | | | 5.9 | 99 |
| Sweden | 1987 | 0.5951421 | 1.1226098 | 0.739969 | 65.2596 | 2.712238 | 0.2626056 | | | 5.7 | 99 |
| Sweden | 1988 | 0.6051477 | 1.2105145 | 0.7454955 | 66.394 | 2.903682 | 0.2540136 | | | 5.8 | 99 |
| Sweden | 1989 | 0.6129764 | 1.2781114 | 0.74791 | 67.3025 | 3.070365 | 0.2374286 | | | 6 | 99 |
| Sweden | 1990 | 0.6194434 | 1.3322234 | 0.7422596 | 68.0823 | 3.163998 | 0.2080976 | 99.76488 | 31.99598 | 6 | 99 |
| Sweden | 1991 | 0.6120982 | 1.140344 | 0.6666744 | 68.9139 | 3.133149 | 0.2185011 | 100.3852 | 34.67582 | 6.1 | 99 |
| Sweden | 1992 | 0.6307347 | 1.1448431 | 0.6445547 | 68.212 | 3.389265 | 0.2269663 | 104.4286 | 37.70896 | 5.3 | 99 |
| Sweden | 1993 | 0.6403909 | 1.1147432 | 0.6882986 | 67.5806 | 3.403306 | 0.215003 | 104.5565 | 40.29124 | 4.8 | 99 |
| Sweden | 1994 | 0.6510115 | 1.2308472 | 0.6904916 | 67.6808 | 3.308974 | 0.2172546 | 105.0561 | 43.04342 | 4.4 | 99 |
| Sweden | 1995 | 0.6627606 | 1.0755294 | 0.7206432 | 68.0396 | 3.497196 | 0.1938778 | 105.8703 | 46.66288 | 4 | 99 |
| Sweden | 1996 | 0.6709076 | 1.1171548 | 0.7029289 | 68.2006 | 3.494596 | 0.2225147 | 106.5092 | 50.28778 | 3.8 | 99 |
| Sweden | 1997 | 0.7043983 | 1.2799567 | 0.7650202 | 70.6856 | 3.638747 | 0.1925285 | 111.4245 | 52.41237 | 3.5 | 99 |
| Sweden | 1998 | 0.7254031 | 1.3418401 | 0.7904607 | 72.1569 | 3.635559 | 0.1895946 | 109.6762 | 62.30344 | 3.5 | 99 |
| Sweden | 1999 | 0.7479392 | 1.4583964 | 0.8392982 | 73.566 | 3.879522 | 0.1736412 | 109.3761 | 66.32339 | 3.4 | 99 |
| United Kingdom | 1980 | 0.3666516 | 0.4535984 | 0.5371738 | 32.2404 | 2.474839 | 0.7260911 | 102.8664 | 19.05998 | 12.1 | |
| United Kingdom | 1981 | 0.3828633 | 0.4361638 | 0.5274702 | 33.3564 | 2.65748 | 0.6988792 | | | 11.2 | 44 |
| United Kingdom | 1982 | 0.3905125 | 0.4238876 | 0.4835221 | 34.1722 | 2.772057 | 0.6835747 | | | 11 | 49 |
| United Kingdom | 1983 | 0.4118964 | 0.4146407 | 0.5239016 | 35.2654 | 2.820307 | 0.657365 | | | 10.2 | 57 |
| United Kingdom | 1984 | 0.4280104 | 0.4570435 | 0.52221 | 36.3904 | 3.031304 | 0.6089023 | | | 9.6 | 60 |
| United Kingdom | 1985 | 0.4416163 | 0.4980048 | 0.5359619 | 37.3998 | 3.14078 | 0.6236044 | 104.1799 | 21.65551 | 9.3 | 64 |
| United Kingdom | 1986 | 0.4550176 | 0.516659 | 0.5470168 | 38.2767 | 3.39934 | 0.6090841 | | | 9.5 | 67 |
| United Kingdom | 1987 | 0.480093 | 0.5912277 | 0.5813117 | 39.8103 | 3.868566 | 0.5886298 | | | 9.2 | 70 |
| United Kingdom | 1988 | 0.5027274 | 0.6573551 | 0.6004759 | 41.5325 | 4.290808 | 0.557847 | | | 9 | 73 |
| United Kingdom | 1989 | 0.5227146 | 0.8081593 | 0.5866313 | 43.2305 | 4.348378 | 0.5546378 | | | 8.4 | 78 |
| United Kingdom | 1990 | 0.5384429 | 0.8184986 | 0.5766231 | 44.0723 | 4.404275 | 0.5473078 | 104.1926 | 30.1572 | 7.9 | 85 |
| United Kingdom | 1991 | 0.5498084 | 0.7422814 | 0.5622546 | 44.8179 | 4.311319 | 0.5676475 | 103.2811 | 34.25156 | 7.4 | 92 |
| United Kingdom | 1992 | 0.590534 | 0.8258629 | 0.5477843 | 45.7035 | 4.466156 | 0.5343741 | 113.3845 | 38.90767 | 6.6 | 94 |
| United Kingdom | 1993 | 0.605063 | 0.8647076 | 0.5231364 | 46.9707 | 4.610087 | 0.5186558 | 113.7156 | 43.47611 | 6.3 | 94 |
| United Kingdom | 1994 | 0.6213011 | 0.9539045 | 0.4926385 | 48.5574 | 4.740385 | 0.4920534 | 114.1722 | 48.4635 | 6.2 | 94 |
| United Kingdom | 1995 | 0.6383714 | 1.0247004 | 0.515691 | 50.1798 | 5.120247 | 0.4770514 | 115.1131 | 49.60609 | 6.2 | 93 |
| United Kingdom | 1996 | 0.6570131 | 1.1005189 | 0.5507865 | 52.1668 | 5.107831 | 0.4858414 | 115.7022 | 52.30074 | 6.1 | 96 |
| United Kingdom | 1997 | 0.6410838 | 1.0740177 | 0.5931096 | 54.0194 | 5.382243 | 0.4476159 | 101.2846 | 53.62012 | 5.9 | 93 |
| United Kingdom | 1998 | 0.6518032 | 1.0582321 | 0.6196635 | 55.4198 | 5.375778 | 0.4364201 | 99.67249 | 58.38505 | 5.7 | 93 |
| United Kingdom | 1999 | 0.6625812 | 1.1213195 | 0.6541314 | 57.1772 | 5.639144 | 0.4255948 | 99.17355 | 57.83549 | 5.8 | 93 |

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