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In 2005 all ECB publications will feature a motif taken from the €50 banknote.

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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 States[2] 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,

[1] According 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.

[2] In 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.

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

[4] There 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

[5] This 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

[6] Ireland 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 availabity 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

[7] The 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 carbondioxide 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:

$$index_{ij} = (var_{ij} - \min{}_j)/(\max{}_j - \min{}_j). \tag{1}$$

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

[8] The 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)

[9] Another 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.

[10] However, 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.

[11] One 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.

[12] Rzonca 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 values[14] (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

[13] The 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)

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

[15] The 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.

		1999	
Country	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 test[16]) 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]

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

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

[18] An 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 × 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:

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

where $i = 1, 2, ..., N$ and $t = 1, 2, ..., T$. 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

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

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

[21] The 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.

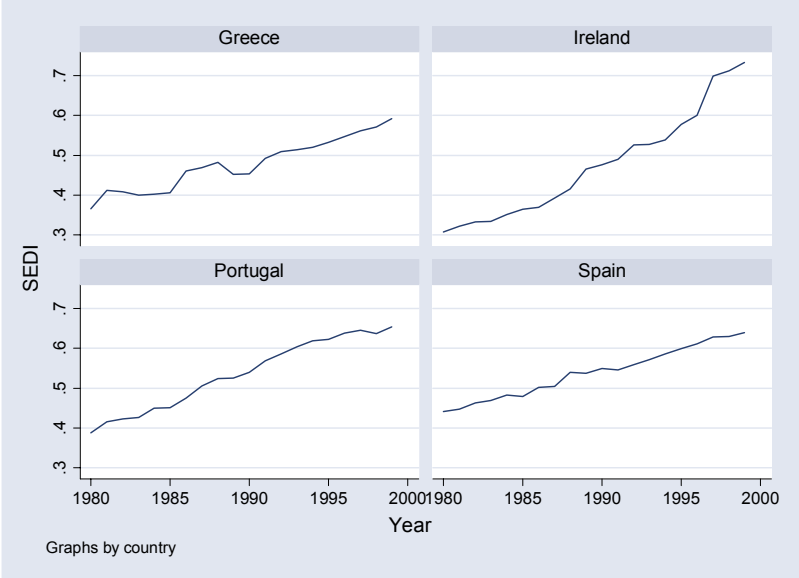

Chart 1: Socio-Economic Development Indicator for cohesion countries 1980-1999.

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.

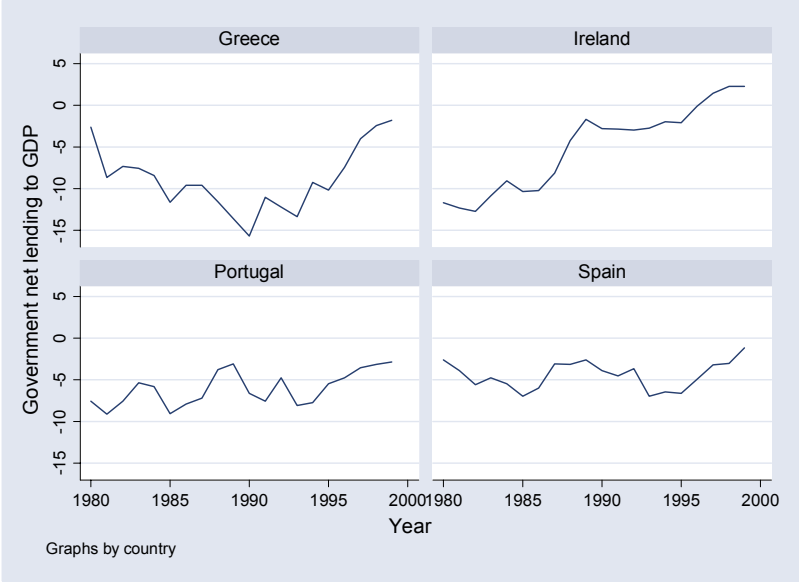

Chart 2: Government net lending to GDP for cohesion countries 1980-1999.

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.

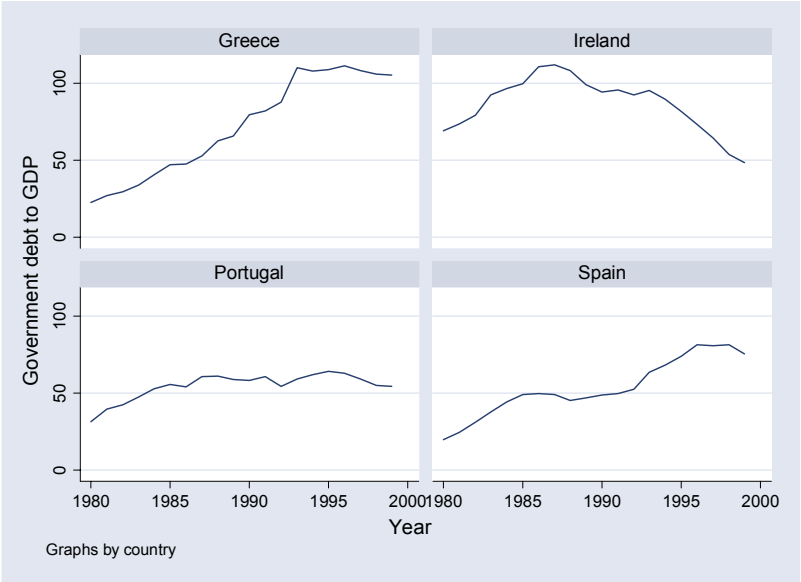

Chart 3: Government debt to GDP for cohesion countries 1980-1999.

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***	-0.3660***	-0.3416***	-0.4070***	-0.3415***
	[0.0205]	[0.0188]	[0.0676]	[0.0331]	[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	0.2476	
			[0.7901]	[0.3435]	
Total Expenditure to Potential GDP			-0.2871		
			[0.5669]		
Current Disbursements Excl. Interest Payments to Potential GDP				-0.6159**	-0.5930***
				[0.2625]	[0.1048]
Net Capital Outlays to Potential GDP				-1.8466***	-1.6444***
				[0.2867]	[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***	-0.0484*	-0.0561***	-0.0595***	-0.0482***
	[0.0181]	[0.0261]	[0.0162]	[0.0169]	[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	-0.1025	
			[0.3091]	[0.3410]	
Total Expenditure to Potential GDP			0.8286**		
			[0.3391]		
Current Disbursements Excl. Interest Payments to Potential GDP				0.9124**	0.7204***
				[0.3568]	[0.1028]
Net Capital Outlays to Potential GDP				-0.7422	-0.1361
				[0.4627]	[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***	-0.0431*	-0.1161***	-0.1316***	-0.1380***
	[0.0254]	[0.0247]	[0.0202]	[0.0212]	[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	-0.2537	
			[0.2828]	[0.2723]	
Total Expenditure to Potential GDP			0.9233***		
			[0.2906]		
Current Disbursements Excl. Interest Payments to Potential GDP				0.8653***	0.5166***
				[0.2788]	[0.0776]
Net Capital Outlays to Potential GDP				-1.8695***	-2.0860***
				[0.3858]	[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

[24] We 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.

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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.

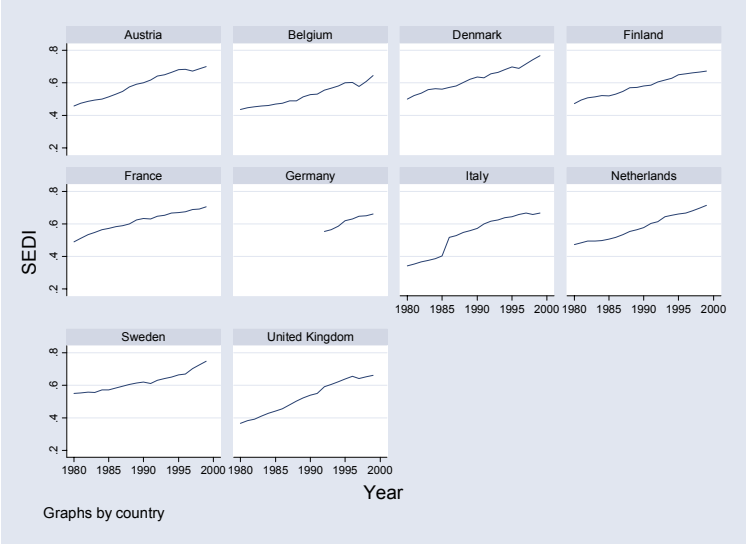

Chart 1: Socio-Economic Development Indicator for EU-11 countries 1980-1999.

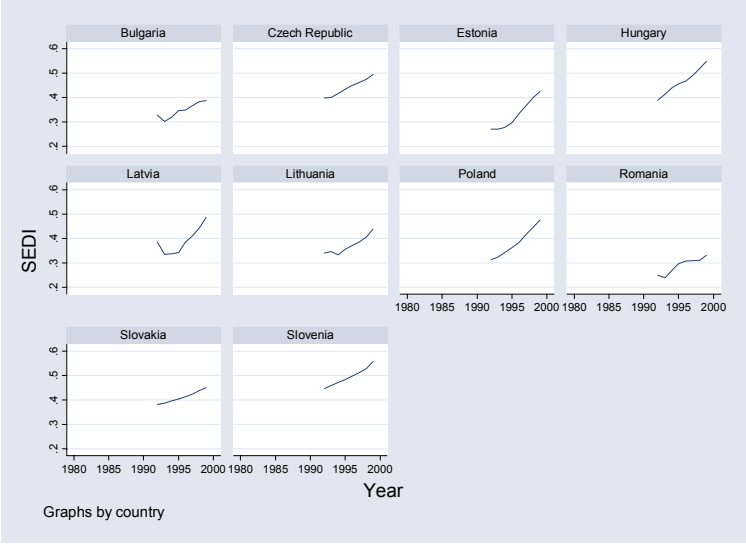

Chart 2: Socio-Economic Development Indicator for new Member States 1980-1999.

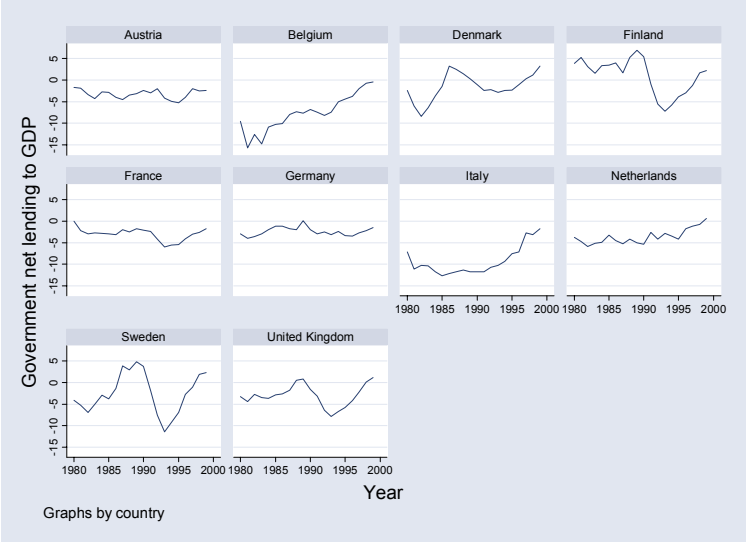

Chart 3: Government net lending for EU-11 countries 1980-1999.

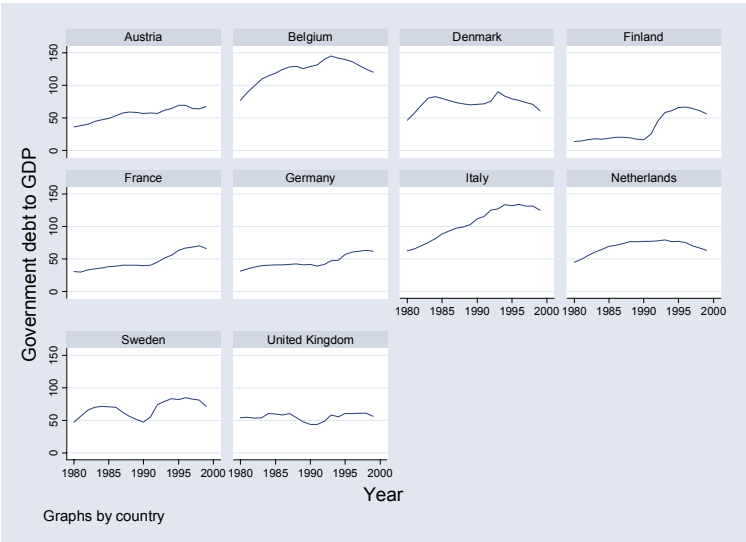

Chart 4: Government debt to GDP for EU-11 countries 1980-1999.

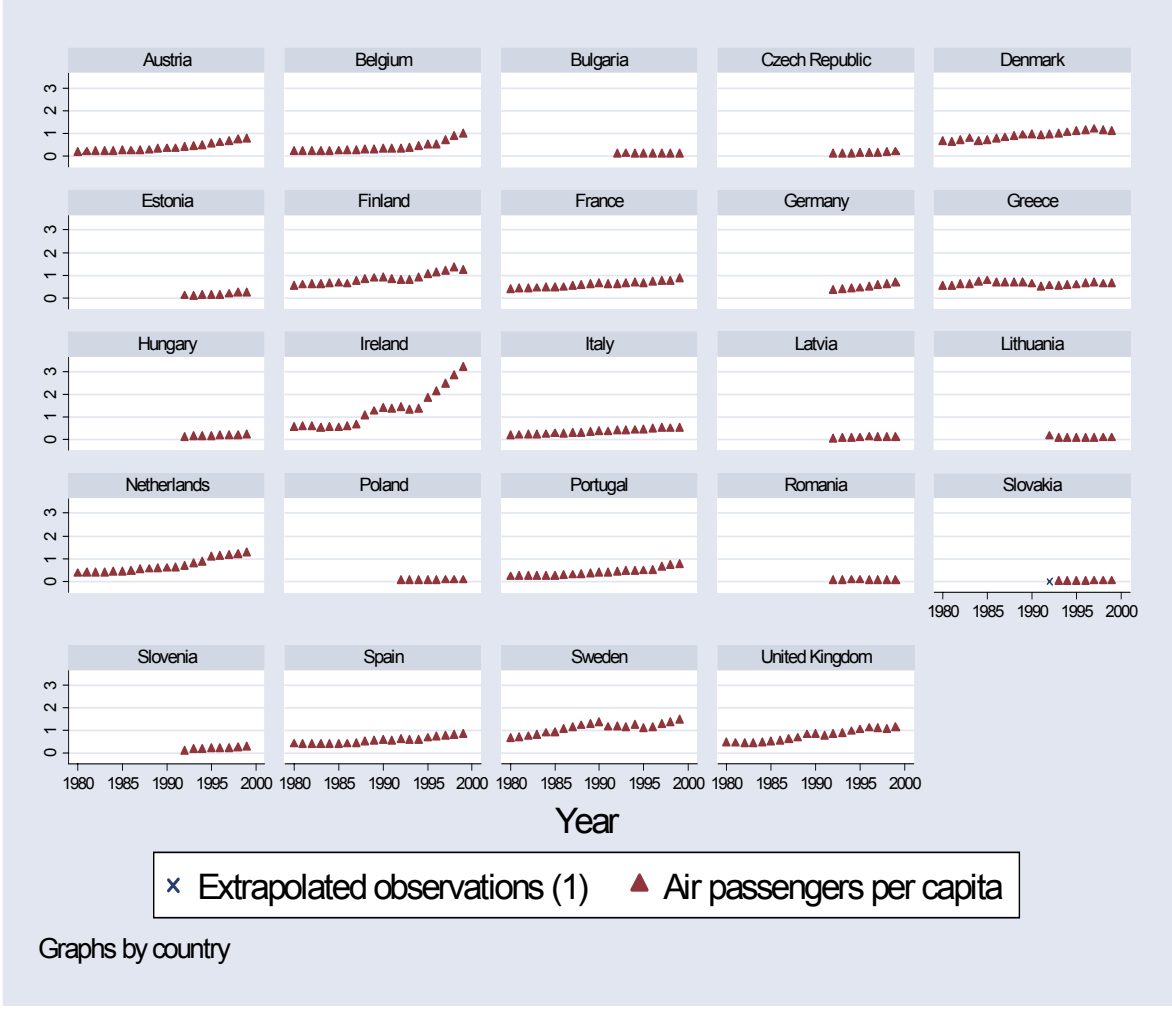

Chart 5: Air passengers carried per capita.

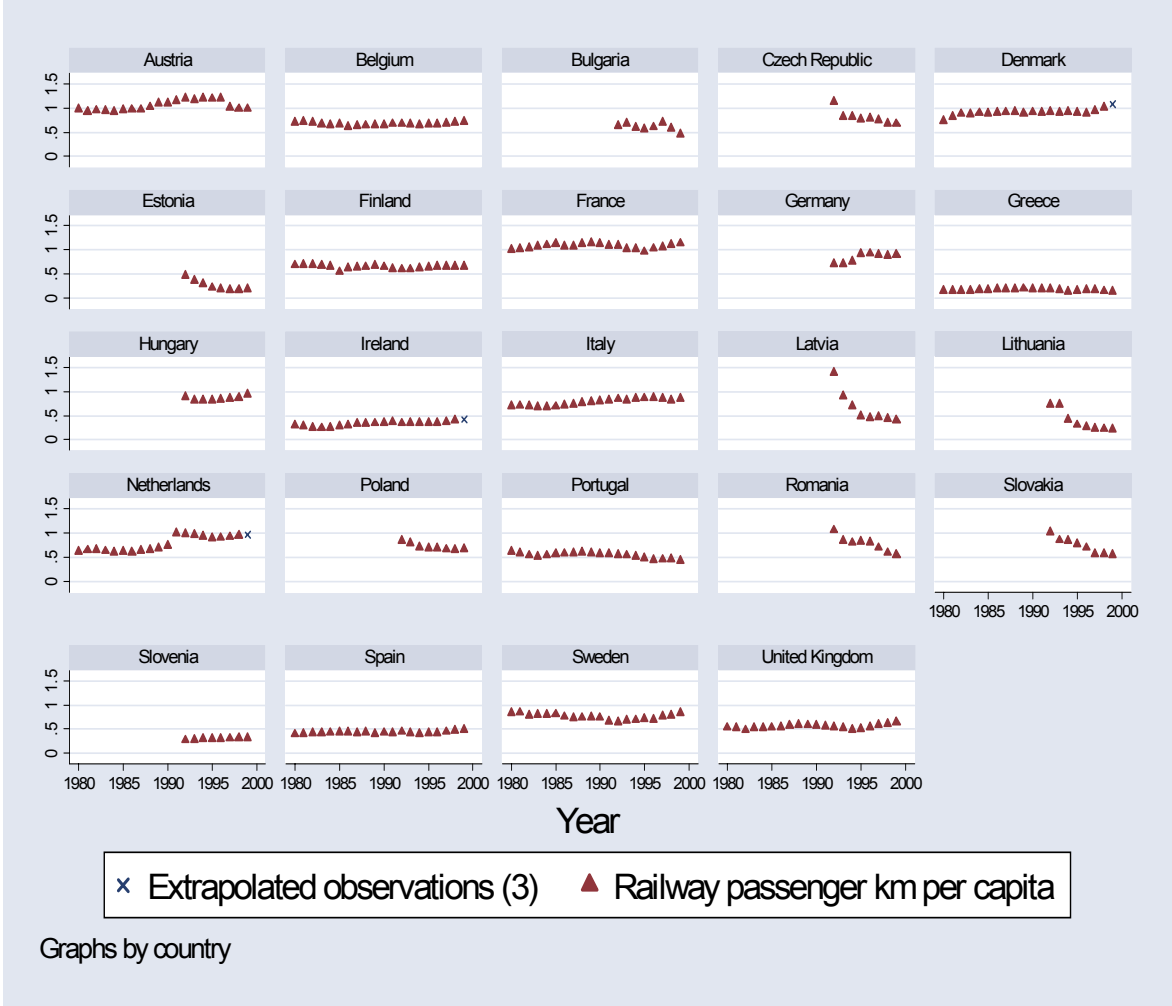

Chart 6: Railway passenger kilometers (1000 km per capita).

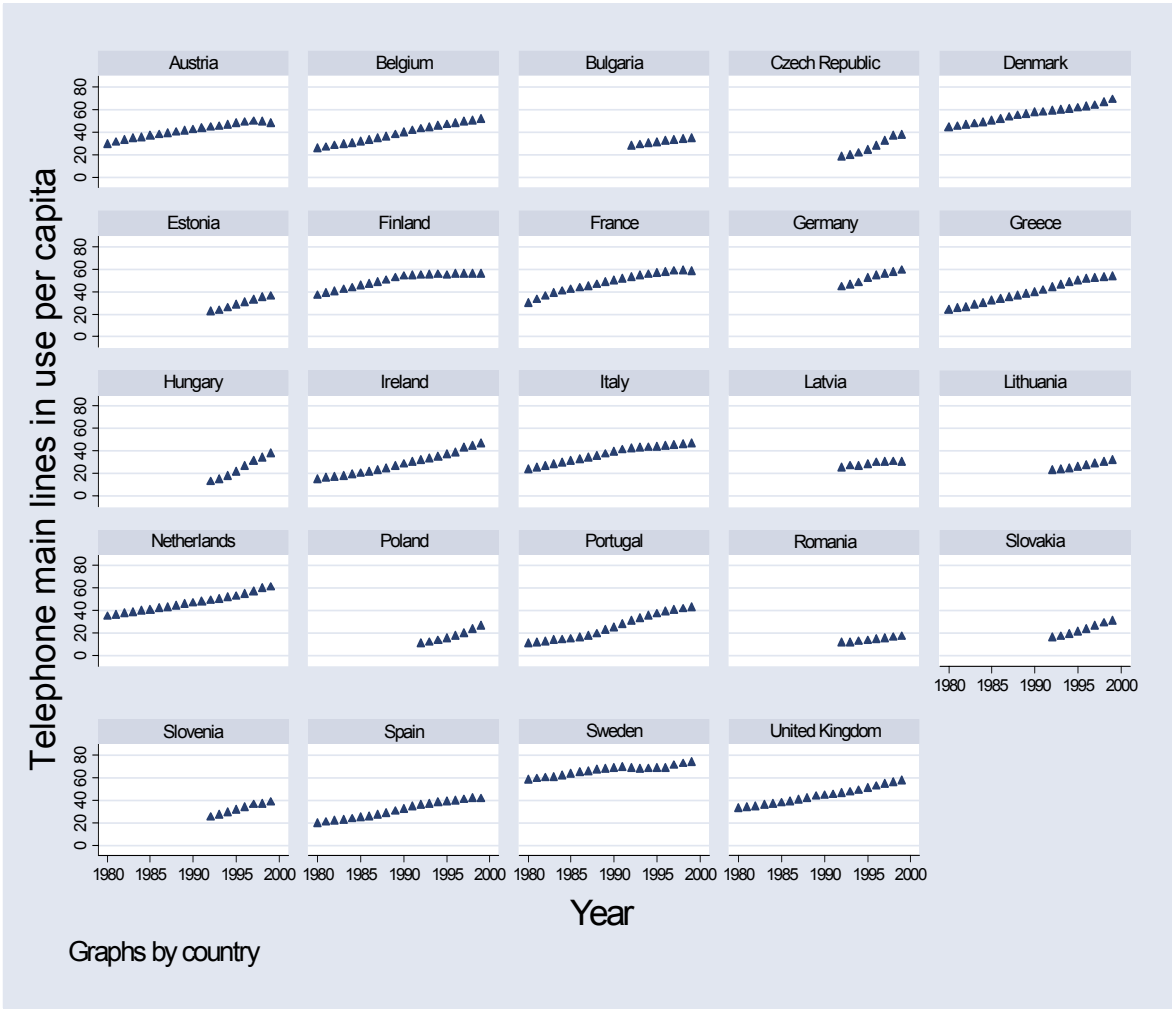

Chart 7: Telephone main lines in use per 100 inhabitants.

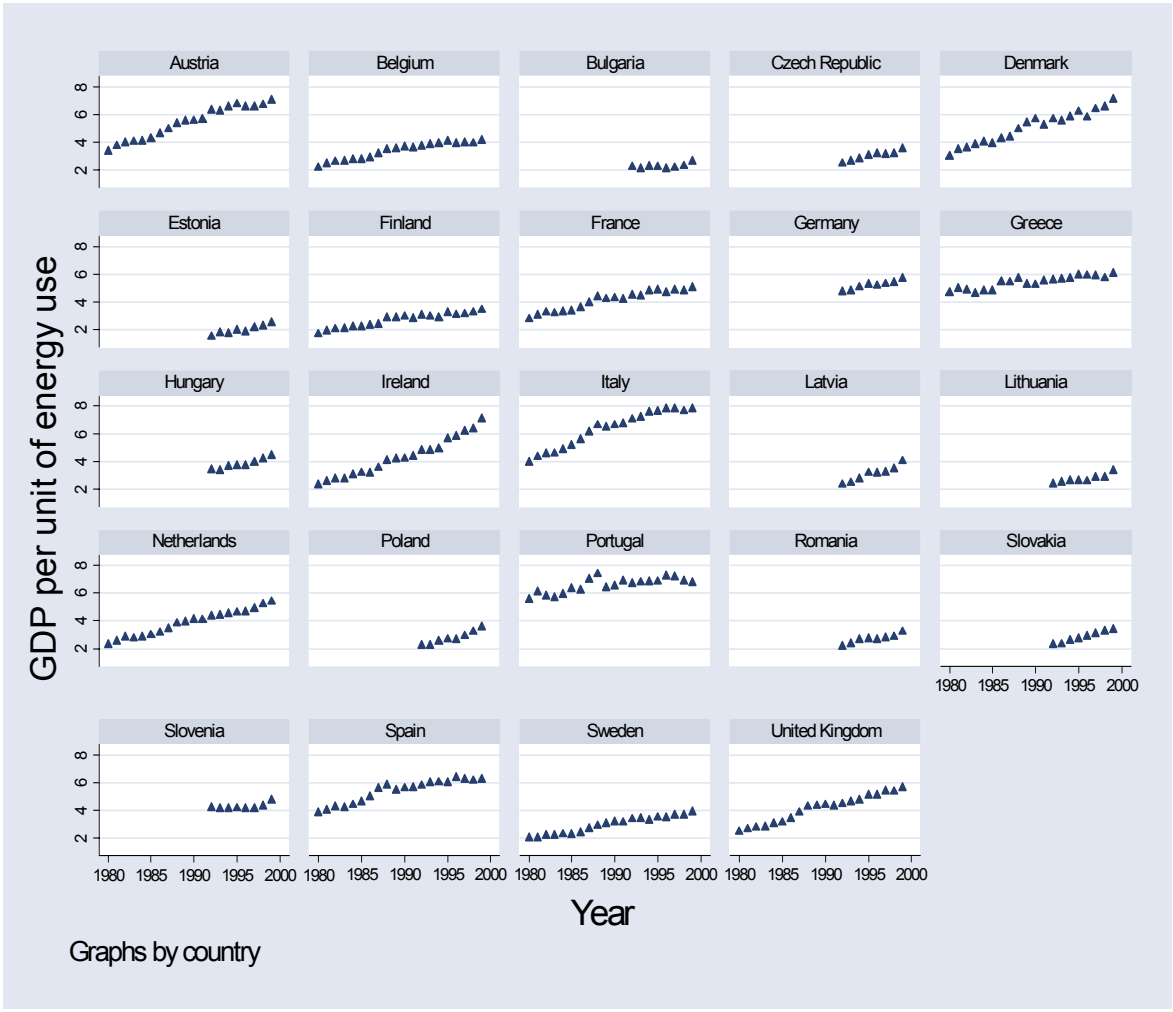

Chart 8: GDP per unit of energy use.

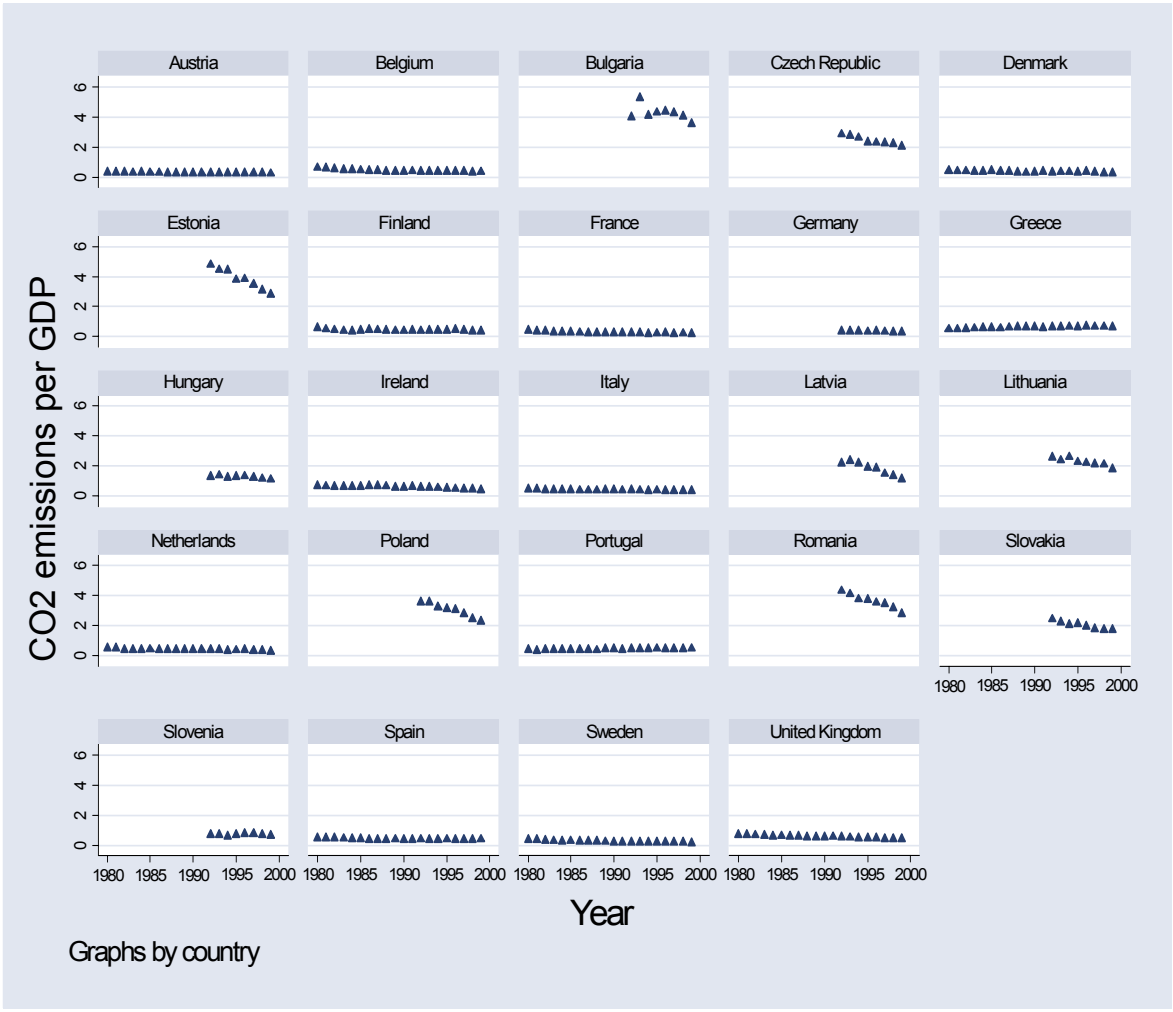

Chart 9: CO2 emissions kg per GDP.

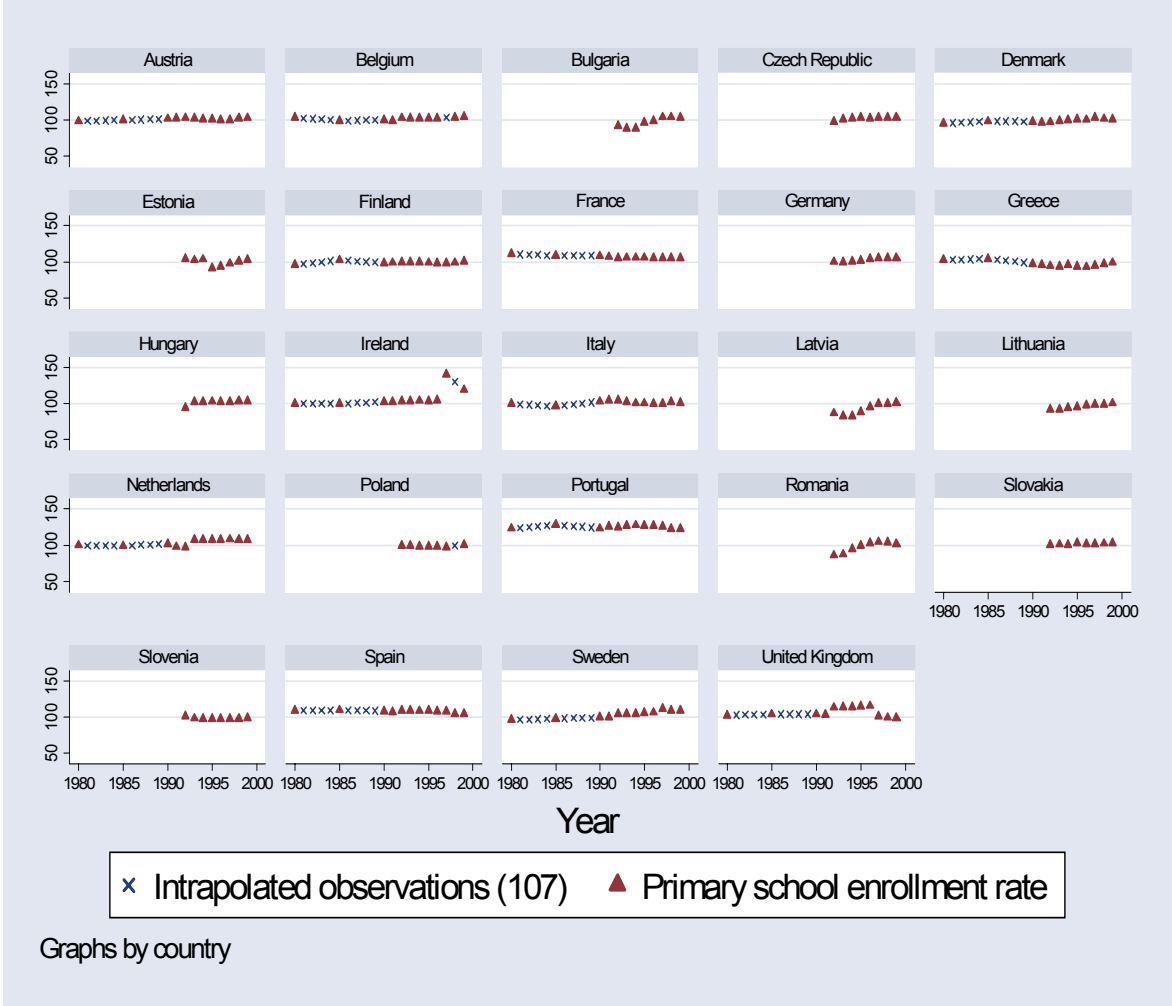

Chart 10: Primary school enrollment percent of gross population.

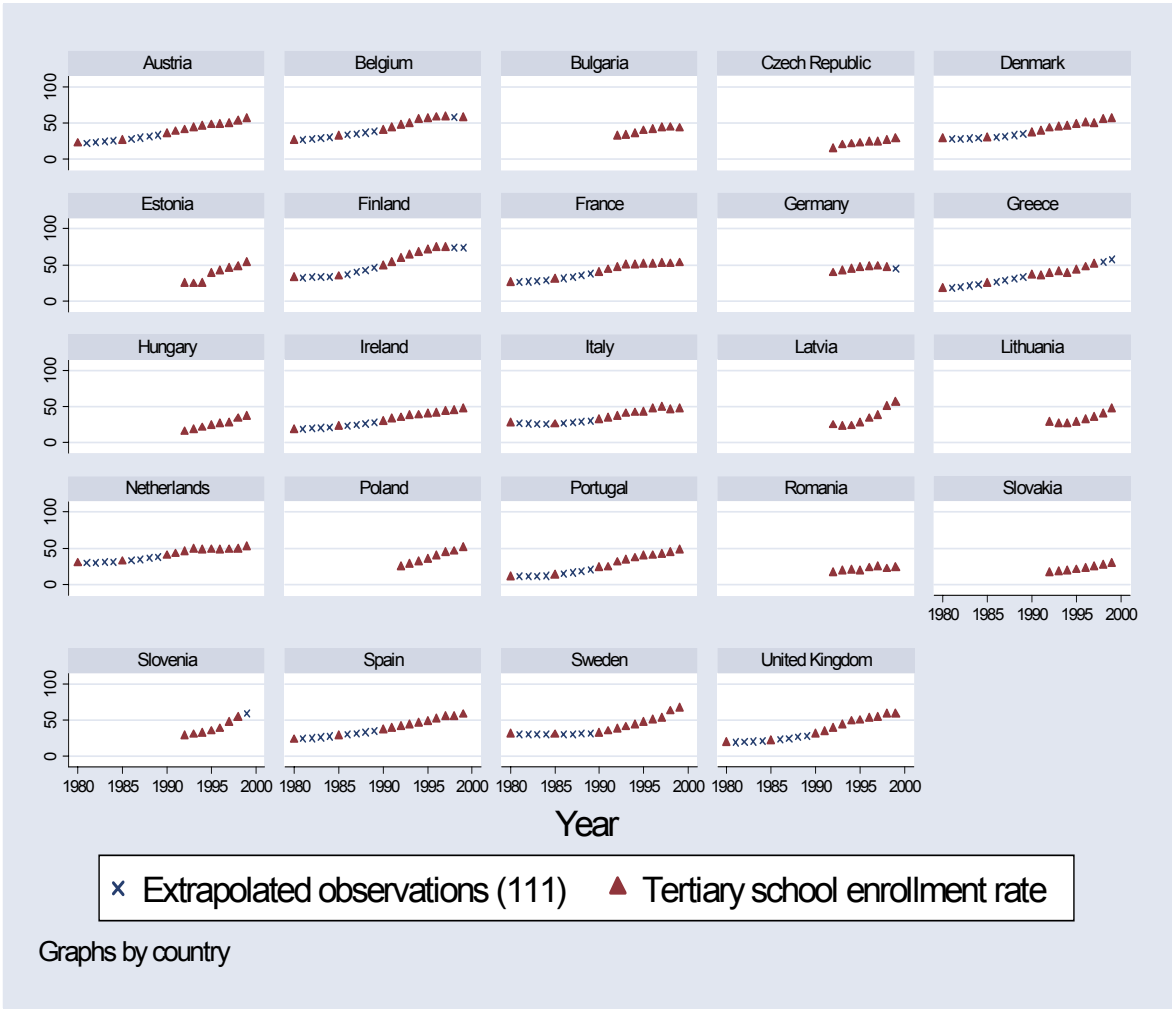

Chart 11: Tertiary school enrollment percent of gross population.

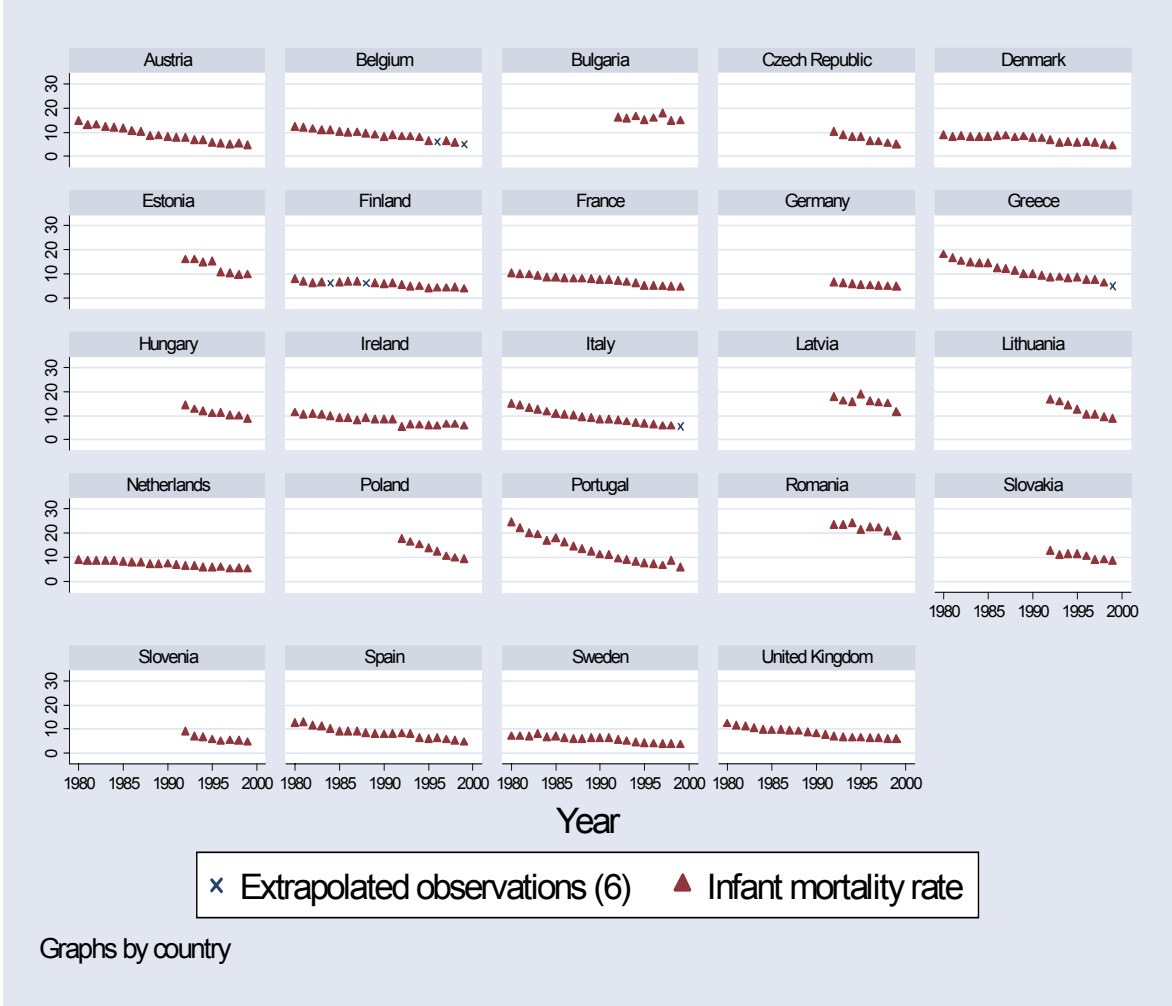

Chart 12: Infant mortality rate per 1000 live births.

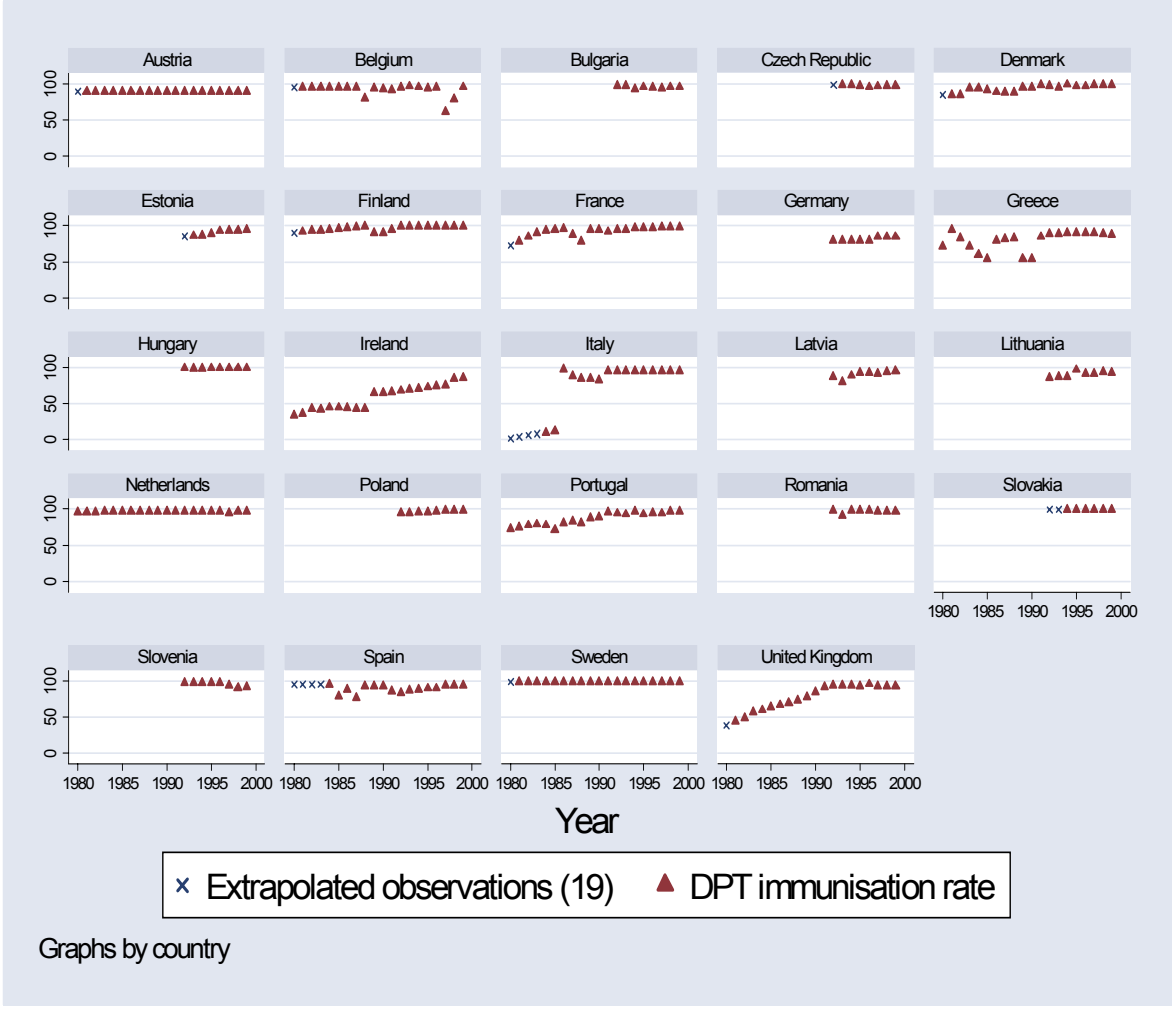

Chart 13: DPT immunisation rate percent of children under 12 months.

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 Carbondioxide 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		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				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										
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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	0.527759	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										
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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	0.3550221	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	1984										
Poland	1985										
Poland	1986										
Poland	1987										
Poland	1988										
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										
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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										
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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										
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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	
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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