The Organization for Economic Cooperation and Development and its influence on the Human Development Index

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Abstract

Since its foundation, the OECD has claimed and proven to be very successful in reaching its goal. The organization is often addressed to be a 'rich countries club', but in this paper it is assessed in what extent this phrase is true. This is assessed by calculating and comparing the Human Development Indexes (HDI) of both member and non-member countries. The main question for this study was the following: *"What has been the influence of the membership of the OECD for the member countries compared to non-member countries regarding HDI from 1980 until now?"*

The HDI was calculated by the United Nations for the first time in 1975. Ever since it has been an important measure for the collective development of a country and it acts like an objective tool to compare this development between the countries. The HDI consists of three main indicators, being the Education Index, Life Expectancy Index and the Income Index.

The results show a growth in HDI for all countries, both members and non-members. However, the growth for non-member countries is higher than for the member countries. The correlation coefficient supports these thoughts.

Concluding, it can be said that there seems to be a negative correlation between membership of the OECD and the growth of the HDIs of the countries. But, several limitations have to be taken into account, such as the fact that countries have been excluded due to no data, or the big scatter of improvement rates in non-member countries.

Keywords: human development index (HDI), Organization for Economic Cooperation and Development (OECD).

Introduction

The Organization for Economic Cooperation and Development (OECD) was founded in 1948 as the Organization for European Economic Cooperation (OEEC). It was founded in order to execute the Marshall plan and to rebuild the member states after the Second World War The initial members of the OEEC were Austria, Belgium, Denmark, France, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Sweden, Switzerland, Turkey, United Kingdom, and Western Germany. Ever since the establishment of the OEEC the fundaments of the cooperation have been clear and summarized into five principles (1).

- To promote co-operation between participating countries and their national production programs for the reconstruction of Europe;
- To develop intra-European trade by reducing tariffs and other barriers to the expansion of trade;
- To study the feasibility of creating a customs union or free trade area;
- To study multi-lateralization of payments, and;
- To achieve conditions for better utilization of labor.

During the years OEEC developed into an important player on the world stage. Due to the recognition of the individual governments that the economies of the member states were depending on each other, a close cooperation on several topics started. This cooperation made the success of the OEEC (1).

In 1960, the cooperation was so successful that the US and Canada wanted to take part in the OEEC. On 14 December 1960, the convention on the OECD was signed by the OEEC-countries, the US and Canada. The convention only entered into force in September 1961. Nowadays 34 countries are represented in the OECD. Together with its partners the OECD represents for around 40 countries that are responsible for 80% of the world trade. According to the website of the OECD has the cooperation been a huge success (2). For example, the gross product per head of the population has been tripled during 50 years OECD in the US. This paper addresses the effect of membership of the OECD on another level (1).

By using the Human Development Index (HDI) it is explored whether there is a difference in the development of the HDI between OECD-member countries and non-member countries. And, when there is benefit, in what way do the citizens of the member states profit from it. HDI is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living. The HDI is the geometric means of normalized indices for each of the three dimensions (3).

The main research question for this paper was the following: *"How has the HDI developed from 1980 until now, when comparing OECD-members to non-members?"*

Methods

The Human Development Index (HDI) is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living (3). The human development index has been calculated by the United Nations for the first time in 1975. The results of the Human Development Index have been published in the Human Development Program. The United Nations Development Program has published its first report in 1990.

As said before, the human development index is a composite index that consists of three main components (1):

- The health of the countries (Life Expectancy Index):

The Life Expectancy Index measured by the life expectancy at birth. The countries with higher life expectancies are ranked higher than those with lower life expectancies. The life expectancy (LE) at birth component of the HDI is calculated using a minimum value of 20 years and maximum value of 85 years (UNDP, 2014). The calculation for the life

expectancy index is the following:

$$\frac{LE - 20}{85 - 20}$$

- Mean years of schooling and expected years of schooling (Education Index):

The education index is calculated as a mean from the sum of the Mean years of schooling index and the expected years of schooling index. The Mean years of schooling is defined by the average number of years of education that people have received when they are over 25 years old. The mean years of schooling is topped to be 15 years. The expected year of schooling is the number of years of schooling that a child who starts education can expect, taken into account that enrolment patterns exist throughout the child's life. The expected years of schooling is topped to be 18 years. Both indicators are produced and/or estimated by the UNESCO institute for statistics. To calculate the indexes for both Mean years of schooling and Expected years of schooling the fractions of the maximum, respectively 15 for mean years of schooling index (MYSI) and 18 years for expected years of schooling (EYSI), have to be determined. The formula for the Education Index (EI) is the following:

$$\frac{MYSI - EYSI}{2}$$

- A decent standard of living (Gross National Income per capita) / Income Index:

The Gross National Income (GNI) is the cumulative income of the economy of a country, which is generated by its own production less the costs made for production factors owned by other countries and converted to international dollars by using the purchasing power parity. For the GNI per capita this cumulative income has to be divided by the mid-year population of the country. The minimum GNI per capita (GNIpc) used in the formula is $100, because of the fact that it is considerably lower than in any economy during the last few years. The maximum is set at $75.000. In order to calculate the Income Index (II) a logarithm of income is used, due to the fact that income is of a lesser importance at the moment the income rises. The formula for the income index is the following:

$$\frac{\ln(GNIpc) - \ln(100)}{\ln(75.000) - \ln(100)}$$

For calculating the HDI all indicators are aggregated into one composite index by calculating an average over the three indicators. The formula to be conducted is:

$$\sqrt[3]{LEI \cdot EI \cdot II}$$

In order to gather the data needed several kinds of databases have been researched. But only the database of the UNDP has been used. When looking at the methodology of this database several things have to be addressed. As said earlier, the data regarding the expected and mean years of schooling have been gathered by the UNESCO institute for Statistics. The other two indicators are also obtained from other resources. The life expectancy at birth has been obtained from the UNDESA, the United Nations Department of Economic and Social Affairs, whilst the GNI per capita has been obtained from several institutions: the World Bank, the International Monetary Fund, United Nations Statistics Division and UNDESA (4).

For few countries at least one out of four of the numbers for the indicators were missing. The Human Development Report Office has estimated these numbers by using cross-country regression models. These numbers have been excluded for the research. The number used in Table 1 and Table 2 are extracted from the online database of the (5).

For the research an ecological approach is chosen. According to Bouter and Van Dongen ecological studies are very well suitable for the comparison of

countries (6). When using an ecological study it has to be taken into account that no causal relations can be distinguished. But, regarding the fact that very little comparable studies have been conducted, it would give an insight for further studies.

In order to analyse these kinds of studies a point biserial correlation is highly preferable (7). Since the point-biserial correlation is simply the special case of the Pearson product moment correlation applied to a dichotomous and a continuous variable, the coefficients produced by correlations are point-biserial correlations when these types of variables are involved (8). SPSS has been used to calculate the point-biserial correlation.

Results

The first and second table show the figures of the HDI scored for respectively the OECD members and non-members in both 2014 and 1980. Next to this, the percentage change is shown. Overall, it can be said that the member countries have a higher score on the HDI than the non-member countries. Also, all countries have improved very much during the study period. In table 1 it is showed that most members have improved in HDI between ten and twenty percent, only Germany (23%) and Ireland (22%) seem to be positive outliers. Both the HDIs of 1980 and 2014 of the member countries are relatively close to each other.

Table 1. HDI ranked top ten OECD-members of 2014 and scores of 1980

Country	HDI (2014)	HDI (1980)	Percentage gained
Norway	0.944	0.793	19%
Australia	0.933	0.841	11%
Switzerland	0.917	0.806	14%
Netherlands	0.915	0.783	17%
United States	0.914	0.825	11%
Germany	0.911	0.739	23%
New Zealand	0.910	0.793	15%
Canada	0.902	0.809	11%
Denmark	0.900	0.781	15%
Ireland	0.899	0.734	22%

Table 2 shows similar characteristics as the first table. All ten countries show a big improvement over the years. When having the same assumptions are made regarding 'normal percentages gained', a lot more positive outliers can be distinguished. With Singapore and Hong Kong only small extra percentages are gained, but Saudi Arabia (43%) and the Republic of Korea (42%) show extreme outliers compared to the other values. When looking at the spreading of the HDIs in 1980 it can be said that the countries were very much apart from each other, whilst the numbers from 2014 show that the countries have come very much closer to each other. Also the HDIs of the non-member countries have come closer to the HDIs of the member countries.

Table 2. HDI ranked top ten OECD-non members of 2014 and scores of 1980

Country	HDI (2014)	HDI (1980)	Percentage gained
Singapore	0.901	0.744	21%
Hong Kong	0.891	0.698	28%
Republic of Korea	0.891	0.628	42%
Brunei Darussalam	0.852	0.740	15%
Qatar	0.851	0.729	17%
Saudi Arabia	0.836	0.583	43%
Malta	0.829	0.704	18%
United Arab Emirates	0.827	0.704	17%
Bahrain	0.815	0.677	20%
Cuba	0.815	0.681	20%

Figure 1 and table 3 show the numbers regarding the correlation of the percentages gained. Membership and non-membership have been redefined into numbers for the calculation. Membership was assigned the value 1 and non-membership was assigned the value 0. As shown in figure 1 there is a small discrepancy between member states and non-member states. Where the growth percentage of the member countries appear to be very close to each other, does the percentage of the non-member countries appear to be less centralized.

Figure 1. Scatterplot of the gained percentages and the correlation

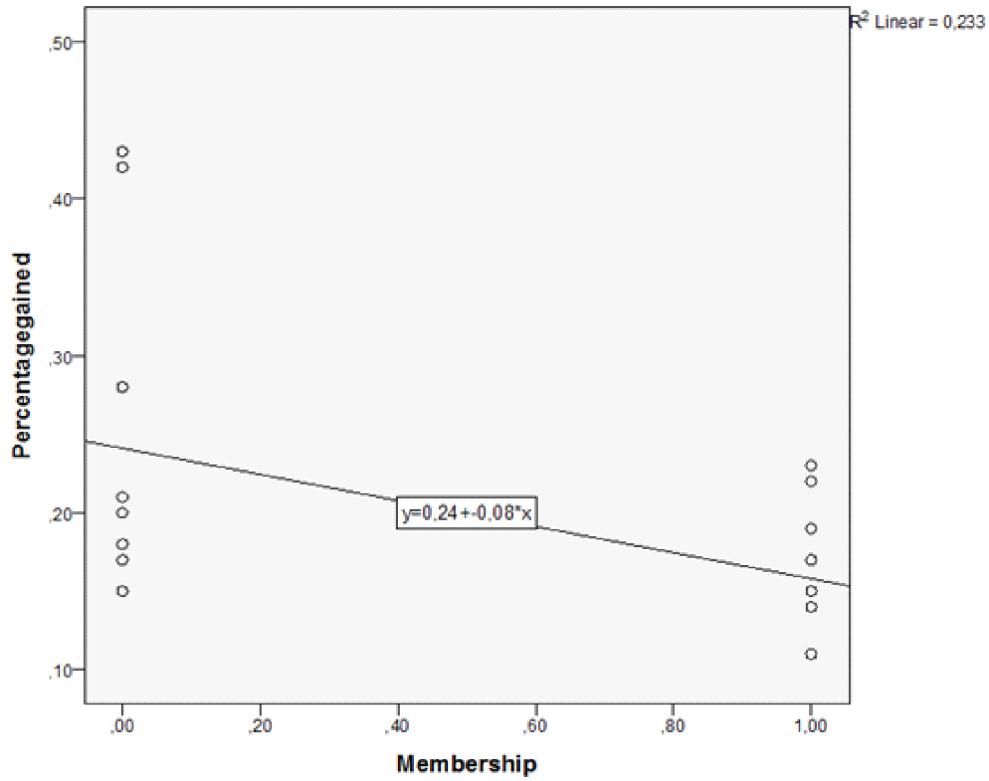

Table 3 shows calculations of the Pearson Correlation, which is used as the point biserial correlation in SPSS. It shows that there is a negative correlation between membership and growth of the state. Furthermore, the correlation between membership and growth is statistically significant (P<0.05).

Table 3. Point biserial correlation coefficient for HDI growth in member and non-member states

		Percentage gained
Membership	Pearson Correlation	-0.483
	Sig. (2-tailed)	0.031
	N	20

Discussion

When considering the figures reported in the results section, it can be concluded that there seems to be a negative influence of the membership of the OECD on the growth of the HDIs of the countries. Although the difference seems to be small, the difference is statistically significant. Even though the OECD has claimed to be very successful, this shows that the organization is not as successful as assumed. Next to this it can be said that the member countries have grown together over time, whereas this is less the case in non-member countries.

But it has to be taken in to account that this study has some limitations. First of all, only the top ten countries of members and non-members have been taken into account in order to keep amount of data for this study manageable. Most of the non-member countries belong to the wealthier countries in the world and, therefore, they may not comprise a sufficient sample for all non-member countries. However, by comparing the member countries with rich non-member countries could show a clean comparison between the countries regarding the membership.

Another problem that occurred was that data was missing for some countries. Three countries of the initial top ten non-member countries had to be dropped due to missing values. Liechtenstein, Lithuania and Andorra, did show big improvements over the last few years, but no data was available of the HDIs at 1980 (or earlier). With the exclusion of these countries, the correlation coefficient would probably have been different than it is now.

Another problem of this statement is that there is a big spread between the non-member countries. It could be very well possible that certain countries have improved better than the member countries, but it is very hard to generalize this to all non-member countries.

Another explanation of the negative correlation could be law of the handicap of the head start. Due to the fact there were no numbers available from before 1980 it could be very likely that the OECD member countries have had a big beneficial growth before the 1980s, and this way the most of the growth potential has been fulfilled before the numbers were available.

Acknowledgements: First of all, I want to thank Peter Schröder-Bäck for his consultations and feedback on the article. Second, I want to thank Jeroen van de Pol, who helped me figuring out the point biserial statistics.

Conflicts of interest: None declared.

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