

Some visualisation examples for descriptive statistics

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How to make comparisons of indicators more understandable to policy makers, managers, media and to general public by complementing with the time distance perspective

I. Theoretical background:

Two obvious generic directions of time series comparison - by time and by level

Besides the levels of the variable (indicator) the two most widely used measures for comparisons are growth rate and static difference between two or more units. However, at the same level of generality there exist two companion **generic statistical measures S-time-distance and S-time-step as a special category of time distances defined by the level of the variable**. The first measures the distance (proximity) in time between the points in time when the two series compared reach a specified level of the indicator X; the second is an additional measure of dynamics measuring time that was needed to reach the next level of X.

The time distance approach brings about two persuasive advantages for extensive practical use. **Expressed in time units it is intuitively understood by policymakers, professionals, managers, media and the general public**, facilitating their subjective perception about their position in this additional dimension. Another technical and presentation advantage is that time and time distance is **comparable across variables, fields of concern, and units of comparison**. This makes it an **excellent analytical, presentation and communication tool**.

This innovation opens the possibility for simultaneous two-dimensional comparisons of time series data in two specified dimensions: vertically (standard measures of static difference) as well as horizontally (Sicherl time distance), providing a new dimension of analysis to a variety of problems. The following examples do not deal here with the calculation of time distances but focus only on the examples how the visualisation of the time distance results can complement the visualisation of other statistical measures like static indexes to provide a broader understanding in the dynamic context.

Empirically, the degree of disparity may be very different in static terms and in time distance, which leads to new conclusions and semantics important for policy considerations. **Therefore, we need both dimensions, especially when we compare indicators across different domains**. The few examples here show the visualisation of time matrix transformation of the usual time series database (i.e. time when a specified level of the variable was achieved in each compared unit), followed by examples for S-time-distance and S-time-step for life expectancy over OECD countries.

Visualisation with the help of selected types of time distance graphs (or S-time-distance and S-time-step tables as well) can be included **in publications or in the respective web pages** of statistical offices, international and national organisations, NGOs, by media to enhance knowledge and understanding. **Seeing with new eyes and telling new stories can facilitate stakeholders to build their perceptions and decisions**. Faster application of this complementary methodology by **potential imaginative users in numerous fields** can be helped by developing of also more complex software.

II. Comparing format of conventional tables and of complementary time distance tables

We shall compare in a schematic way two ways of presentation of an indicator over many units and over time. The starting points are the conventional tables in statistical publications and on web pages where the indicator values for many units and many points in time (e.g. years) are arranged in the format A1 shown below. The identifiers are units and times, labelling the row and column headers, the values of the indicator corresponding to them are in the main body of the table. This is fine, it is the starting point for presentation and charting of the indicator and it allows very precise format for each value. However, when such table is very large like the example mentioned in Section III for life expectancy for 34 OECD countries over the period 1960-2007 with around 1500 data points it becomes very difficult to understand the main patterns.

The time distance methodology enables additional understanding of the information contained in the time series database. In addition to the existing mostly static statistical measures some of the relations in data can be analysed and described in time measures that help the stakeholders to form broader perception of the situation. The intention is to complement rather than replace the existing mostly static measures to provide a broader dynamic analytical framework. More details on methodology and applications are available on www.gaptimer.eu.

Below we present side by side such complementary presentation formats. Format B1 shows the level-time matrix format complementing the usual A1 format. Here data are arranged by selected levels of indicators showing in which year these levels of the indicators were achieved by given country.

The identifiers in level-time matrix are units and selected levels of indicator while the corresponding times are in the main body of the table. Calculating these times by interpolations may pose a small problem of the degree of accuracy compared to original data but it gains additional understanding about time dimension of disparities and a good summary overview.

Statistical measure S-time-step in format B2 is an alternative expression of the dynamics complementing growth rates or indices of dynamics in format A2. Both have advantages and disadvantages, best is to use both; they are two ways of describing the same reality.

Comparison of levels in static format B3 (static index expressed as benchmark = 100 by years) can be complemented by format B3 with S-time-distance showing time lead or time lag from benchmark unit for the given level of the indicator.

Schematic tables on the next page are followed by the numerical examples for the B1, B2 and B3 tables for life expectancy for OECD countries for period 1960-2007.

PRESENTATION OVER MANY UNITS AND OVER TIME

(LONG-TERM)

A. Conventional table format as the base

B. Possible additional complementary presentation

1. DATA FOR INDICATORS (example: life expectancy)

Table

A1	Time				
	1960	...	...	...	2007
Countries (units)	Indicator values at specific point in time				

Level-time matrix or table-graph

B1	Indicator value				
	66	...	...	...	82
Countries (units)	Time when the selected indicator value was achieved				

2. DYNAMICS AND COMPARISON OF DYNAMICS

Table of growth rates or indexes of dynamics

A2	Time				
	1961	...	...	...	2007
Countries (units)	Annual growth rate or index of dynamics				

S-time-step (in years)

B2	Indicator value				
	67	...	...	...	82
Countries (units)	Time needed to achieve next level of the selected indicator value				

3. COMPARISON OF LEVELS

Index: benchmark = 100 by years

A3	Time				
	1960	...	...	...	2007
Countries (units)	Index values by years				

S-time-distance (in years) from benchmark

B3	Indicator value				
	66	...	...	...	82
Countries (units)	S-time-distance (in years): - time lead, + time lag from benchmark				

Example 1, table format B1:

Life expectancy at birth (years)																	
Years in which a given value of the life expectancy was achieved																	
Level	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82
Japan			1960	1962	1963	1966	1970	1971	1975	1976	1979	1983	1986	1991	1996	2000	2005
Switzerland							1964	1970	1973	1976	1981	1985	1992	1996	2000	2004	
Iceland								1961	1969	1974	1975	1983	1995	1997	2000	2004	
Italy					1962	1966	1971	1976	1980	1984	1986	1990	1994	1998	2003	2005	
Australia						1970	1974	1976	1979	1982	1986	1990	1995	1999	2002	2006	
Sweden									1968	1976	1981	1988	1992	1996	2002	2007	
Spain					1961	1965	1970	1974	1977	1979	1982	1990	1994	1999	2004	2007	
France						1964	1970	1975	1978	1983	1987	1991	1996	2000	2004	2007	
Canada							1966	1972	1976	1979	1982	1988	1994	1999	2003		
Israel									1980	1984	1989	1993	1996	2000	2003		
Norway									1969	1974	1981	1991	1995	2002	2004		
New Zealand								1974	1979	1985	1989	1992	1996	1999	2002	2006	
Austria				1960	1970	1973	1977	1982	1985	1988	1993	1996	2000	2003	2007		
Netherlands									1973	1977	1981	1993	2000	2004	2007		
Germany					1963	1972	1976	1980	1984	1987	1992	1996	1999	2004	2007		
Greece					1960	1965	1970	1974	1978	1982	1985	1989	2000	2004			
Luxembourg					1971	1976	1978	1982	1985	1989	1993	1997	2003	2004			
Ireland					1960	1968	1979	1983	1987	1991	1997	2001	2002	2004			
United Kingdom						1963	1972	1979	1982	1987	1991	1996	2000	2005			
Finland			1963	1968	1973	1976	1978	1981	1990	1993	1997	2001	2005				
Belgium					1960	1970	1974	1978	1983	1986	1990	1995	2001	2005			
Korea	1980	1982	1984	1986	1987	1989	1991	1994	1996	1998	2000	2002	2004	2006			
Portugal	1969	1971	1974	1976	1977	1979	1981	1985	1988	1993	1998	2001	2004	2007			
Denmark									1968	1976	1990	1997	2001	2005			
Chile			1979	1981	1982	1984	1986	1989	1992	1995	1999	2001	2005				
Slovenia						1984	1987	1989	1995	1999	2002	2003	2005				
United States					1963	1970	1974	1976	1981	1989	1996	2001	2006				
Czech Republic					1971	1984	1991	1993	1997	2000	2005	2007					
Poland			1963	1964	1971	1992	1995	1999	2000	2004							
Mexico	1978	1980	1982	1984	1986	1991	1993	1997	2000	2007							
Slovak Republic						1971	1991	1992	1999	2005							
Turkey	1989	1990	1992	1994	1997	2000	2002	2005									
Hungary			1962	1963	1995	1999	2001	2006									
Estonia		1994	1995	1996	1999	2002	2004	2007									
OECD average				1964	1966	1973	1977	1981	1986	1990	1995	1999	2003	2006			
China		1984	1991	1994	1997	2002	2005										

Source: Own calculations from data in OECD, Factbook 2010

Source: Own calculations from data in OECD, Factbook 2010

Example 1, table format B2:

S-time-step (years)																	
Time needed to reached the next level of life expectancy																	
LEXP Level	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82
Japan				1.9	1.1	2.6	4.0	1.3	3.2	1.9	2.2	4.4	2.8	4.7	5.1	4.1	5.3
Switzerland								6.0	2.9	3.5	5.1	3.7	7.0	3.8	4.5	3.4	
Iceland									8.8	4.3	1.3	7.9	12.3	2.1	2.7	4.2	
Italy						4.5	4.5	5.3	3.7	4.0	2.3	3.3	4.5	3.5	5.6	2.2	
Australia							3.9	2.2	2.2	3.9	3.4	4.2	5.3	3.7	3.0	3.5	
Sweden										8.0	4.7	7.3	3.8	4.3	6.3	4.7	
Spain						4.5	4.5	3.8	2.8	2.4	2.5	8.5	3.8	5.6	4.2	3.5	
France							6.2	5.2	3.3	5.1	3.3	4.3	4.5	4.3	3.9	3.3	
Canada								5.5	4.8	2.5	3.6	5.7	6.0	5.0	4.3		
Israel										3.9	4.4	4.0	3.2	4.7	3.0		
Norway										4.8	7.0	9.8	4.5	6.8	1.8		
New Zealand								5.3	5.7	3.5	3.2	4.0	3.3	3.0	3.7		
Austria					9.7	2.8	4.2	5.0	3.4	2.2	5.1	3.6	3.4	3.7	3.1		
Netherlands										4.0	4.5	12.0	7.0	3.7	2.8		
Germany						9.0	4.3	4.0	3.2	3.5	5.0	4.4	2.9	4.3	3.3		
Greece						4.8	4.8	4.0	4.0	3.7	3.3	4.0	11.0	3.5			
Luxembourg						4.9	1.9	4.4	2.8	4.1	3.9	3.9	6.1	0.7			
Ireland						8.3	10.3	4.0	3.9	4.0	6.5	3.7	1.6	1.9			
United Kingdom							8.4	6.9	3.1	4.8	4.8	5.1	4.0	4.2			
Finland					5.4	4.2	3.4	2.0	3.2	8.8	3.3	3.3	4.3	3.8			
Belgium						9.4	4.1	4.7	4.6	3.3	3.4	5.5	5.4	4.3			
Korea	2.0	1.8	1.5	1.7	1.8	2.4	2.1	2.5	2.3	1.7	2.0	2.0	1.8				
Portugal	2.2	2.5	2.3	0.8	1.7	2.8	3.6	3.3	5.1	4.6	3.0	2.7	2.8				
Denmark									8.0	14.3	6.5	4.3	3.5				
Chile				1.4	1.4	1.8	2.5	2.8	3.0	3.3	3.4	2.5	3.8				
Slovenia							2.5	2.9	5.6	3.5	3.0	1.4	2.4				
United States						7.3	3.5	2.2	4.8	7.8	7.3	4.9	5.0				
Czech Republic						12.6	7.0	2.3	3.2	3.0	5.0	2.5					
Poland				1.9	6.9	20.3	3.4	4.3	1.0	3.8							
Mexico	1.9	1.9	2.2	2.5	4.2	2.8	3.7	3.3	6.7								
Slovak Republic						19.8	1.1	6.6	6.3								
Turkey	0.5	1.8	2.8	2.5	2.9	2.7	2.7										
Hungary				1.0	32.0	4.0	1.3	5.0									
Estonia			0.7	0.5	3.0	3.4	2.0	3.0									
OECD average					2.3	7.3	3.4	4.6	4.3	4.7	4.7	4.0	4.0	3.0			
China				7.1	2.7	3.5	4.6	3.1									

Source: Own calculations from data in OECD, Factbook 2010

Example 1, table format B3:

Life expectancy at birth (years)

S-time-distance (in years) from the benchmark OECD average for a given level of the indicator

Level	69	70	71	72	73	74	75	76	77	78	79
Japan	-1	-3	-7	-7	-10	-11	-14	-16	-16	-17	-16
Switzerland				-13	-12	-13	-14	-14	-14	-11	-10
Iceland					-21	-16	-17	-20	-16	-8	-9
Italy		-4	-7	-6	-5	-6	-6	-9	-10	-9	-9
Australia			-3	-3	-5	-7	-8	-9	-9	-8	-7
Sweden						-18	-14	-14	-11	-11	-10
Spain		-5	-8	-7	-7	-9	-11	-14	-9	-9	-7
France			-10	-7	-6	-7	-7	-8	-8	-8	-6
Canada				-11	-10	-9	-12	-13	-11	-9	-7
Israel						-5	-6	-6	-6	-7	-6
Norway						-16	-16	-14	-8	-8	-4
New Zealand				-3	-2	-1	-2	-3	-3	-4	-4
Austria	-3	4	-1	0	1	0	-3	-2	-3	-3	-3
Netherlands						-13	-14	-14	-6	-3	-2
Germany		-3	-1	0	-1	-2	-3	-3	-3	-4	-2
Greece		-6	-8	-7	-7	-8	-9	-10	-10	-3	-3
Luxembourg		5	3	1	1	0	-1	-2	-2	0	-2
Ireland		-6	-5	2	1	1	0	2	2	-1	-2
United Kingdom			-10	-5	-3	-4	-4	-4	-3	-3	-2
Finland	-1	2	-1	-1	-3	-5	0	-2	-3	-2	-2
Belgium		-6	-4	-3	-3	-3	-4	-5	-4	-2	-1
Korea	22	21	16	15	12	10	8	5	3	1	0
Portugal	12	11	5	5	4	3	3	3	2	1	1
Denmark					-13	-10	0	2	2	2	
Chile	17	16	10	10	8	6	5	4	2	2	
Slovenia			11	10	8	9	8	7	4	2	
United States		-3	-3	-3	-5	-5	-2	1	2	3	
Czech Republic		5	11	14	12	11	9	10	8		
Poland	1	5	18	18	18	15	14				
Mexico	20	20	17	17	16	15	17				
Slovak Republic		5	18	15	17	19					
Turkey	31	31	26	26	24						
Hungary	0	29	26	24	24						
Estonia	32	33	29	27	26						
OECD average	0	0	0	0	0	0	0	0	0	0	0
China	27	28	24	25	24						

Source: Own calculations from data in OECD, Factbook 2010
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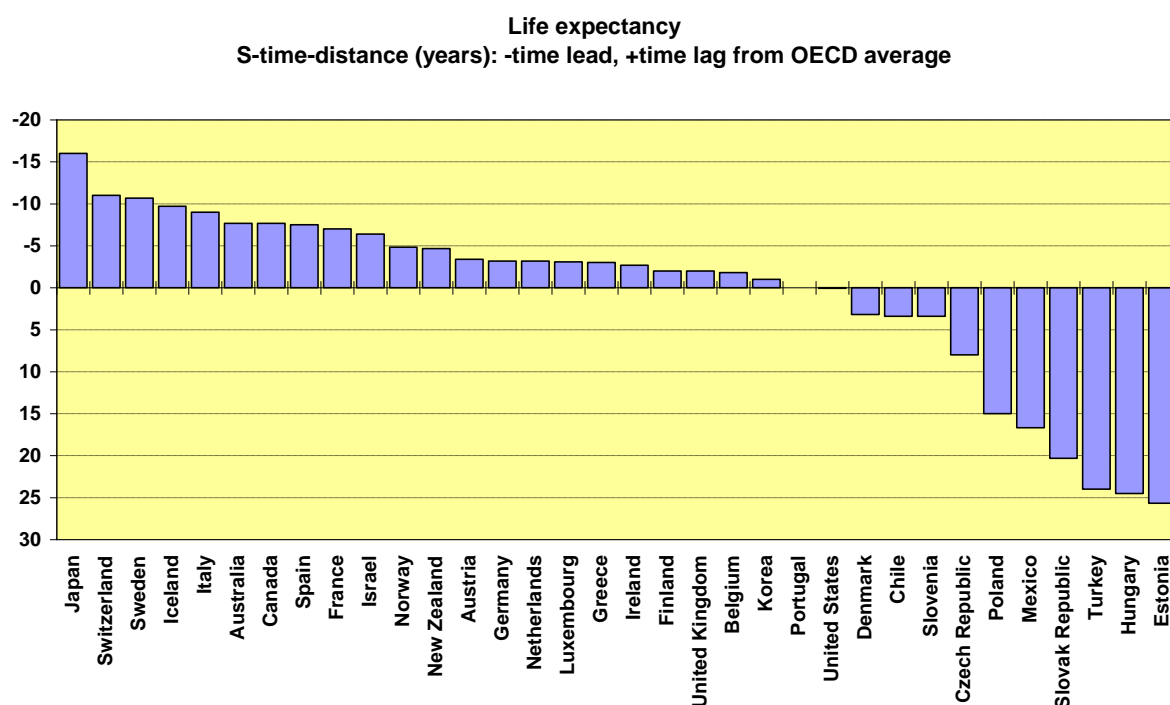
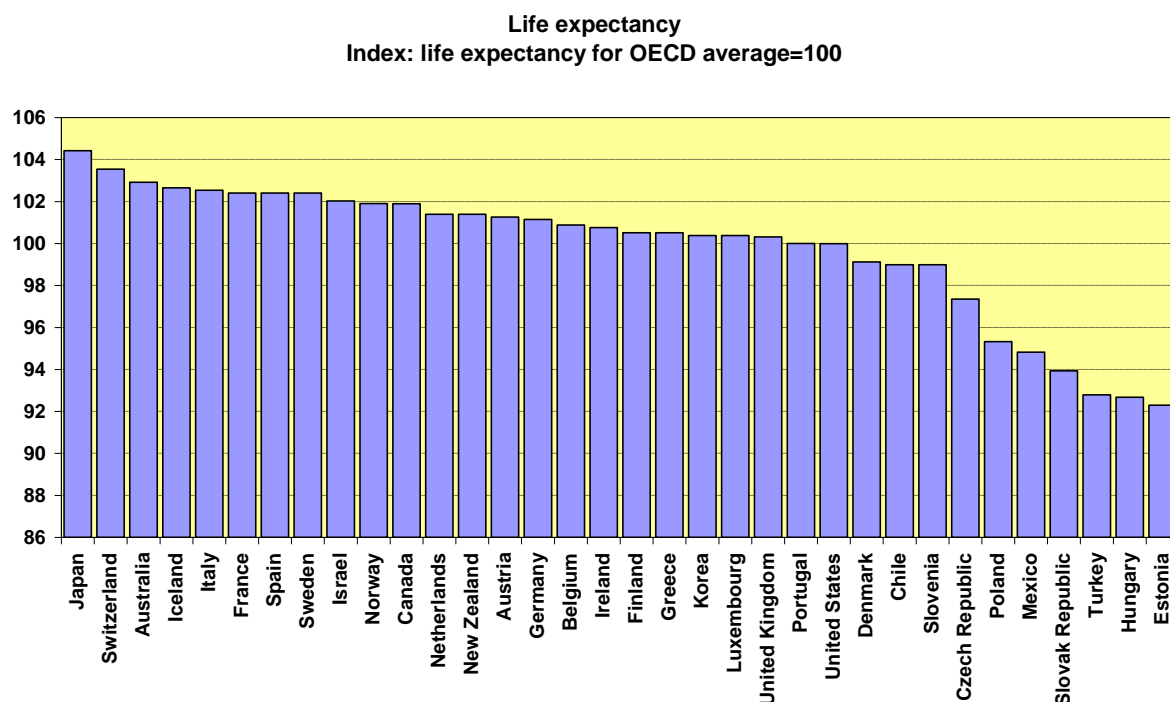
It is easy to explain the relationship between the three tables above. Two operators applied to such level-time matrix B1 lead to the derivation of two statistical measures, expressed in standardized units of time: S-time-distance and S-time-step. Subtracting the respective times in the series for each unit in the time matrix for consecutive levels of the variable we get S-time-step in Table B2, a possible measure of the dynamic characteristics of a series. S-time-distances in B3 for selected levels of X_L are arrived at by subtracting the respective times between units and the times for the benchmark unit (in this case OECD average) in the level-time matrix.

There is a wealth of information and of possible comparisons in the tables not discussed here.

Example 2: Comparing disparities in life expectancy at birth total

These two tables show an additional option for comparing differences between countries in two dimensions: static index (OECD average=100) and S-time-distance (in years, time lead or time lag from OECD average) for any selected single year. The calculation of S-time-distances in this case is somewhat different from that in Table B3 above since it allows comparisons on more detailed data than selected indicator values above, based on interpolation and rounding.

Bar examples by location (e.g. countries) by years (here 2007)



III. Visualization example for level-time matrix for life expectancy and conventional time series table

The next page compares visually the example for life expectancy from Factbook 2010 in terms of the quick understanding of the situation for 34 OECD countries over 48 years from 1960 to 2007. The starting point is always the original data table as Table A1. It is not easy to comprehend the information and comparisons from the original Table A1 and even more difficult to see the relevant development stories directly. For instance, if the Table A1 would have all positions available, it would come to 1680 entries (35×48), in reality there are 1457 data entries.

The level-time matrix compresses this information in 376 entries, which is a great advantage for a way of presentation complementing and not replacing the original A1 table. It is the table-graph which provides (with some interpolation) a visual impression of both levels of the indicator and the number of steps experienced over time. In addition to that each selected level is related also to the time when it was achieved.

From such level-time matrix also two statistical measures S-time-distance and S-time-step can be further calculated as explained above. Even by itself such time matrix can be used in publications, web pages and other software as one of the easily understandable first level visualization to help ‘Turn Statistics into Knowledge’.

A good example of this is the presentation Sicherl, P. (2011), ‘Visualization of 50 years of OECD countries at a glance’, SICENTER, where time matrices for 14 indicators are shown.
<http://www.gaptimer.eu/images/stories/texts/50%20years%20of%20OECD%20countries%20at%20a%20glance.pdf>
http://www.wikiprogress.org/index.php/Visualization_of_50_years_of_OECD_countries_at_a_glance

The easily understandable visualisation provides quick pattern recognition of disparities between countries and their dynamics for a given indicator as well as between indicators. For the majority of the selected indicators it is obvious at a glance that the differences between OECD countries are large (for some indicators values for the best countries are 4 to 5 times higher than for the lowest countries). All OECD countries have enjoyed important progress in domains like life expectancy and GDP per capita, less in road fatalities and tertiary attainment. For some structural indicators (like total employment rate, gross domestic expenditures in R&D, current account balance) there was very little change for OECD average, but there were substantial changes within countries.

Visualization software prepared such as Gapminder, Statistics eXplorer and Google Public Data Explorer are very useful for visual presentation of changes of levels over time. Their disadvantage is that they are not yet fully equipped to present the relevant tables of descriptive measures that are very suitable for building understanding and comparisons at a level that is one level higher than the data themselves (like static indexes or time distances). The time matrix visualisation and the tables of S-time-step and S-time-distances could thus serve both as descriptive measures on its own value as well as an introductory representation of what issues and hypothesis could be best suited for more in depths examination and presentation by other visualisation tools.

Table A1. Example of original data table for life expectancy from Factbook 2010

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007		
Australia	70.9	71.2	71	71.1	70.7	71	70.8	71.2	70.9	71.1	70.8	71.6	72	72.1	71.9	72.7	72.8	73.4	73.7	74.3	74.6	74.9	74.7	75.5	75.8	75.6	76.1	76.3	76.3	76.5	77	77.4	77.5	78	78	77.9	78.2	78.5	78.7	79	79.3	79.7	80	80.3	80.6	80.9	81.1	81.4		
Austria	68.7	69.7	69.4	69.6	70	69.8	70.2	70	70.2	69.9	70	70.2	70.5	71.1	71.1	71.2	71.6	72	72.1	72.4	72.6	72.9	73	73.1	73.7	73.8	74.3	74.7	75.2	75.3	75.5	75.6	75.8	76.1	76.4	76.4	76.6	76.9	77.3	77.7	77.8	78.1	78.6	78.8	78.8	79.3	79.5	79.9	80.1	
Belgium	69.8	70.6	70.3	70.1	70.8	70.7	72	72.9	75.1	75.3	75.5	75.9	76.2	76.5	76.5	76.6	77	77	77.3	77.6	77.8	78	77.9	78	78.1	78.3	78.5	78.8	79	79.3	79.6	79.7	79.9	80.2	80.4	80.7	...			
Canada	...	71.3		
Czech Republic	70.8	70.7	69.9	70.5	70.7	70.3	70.6	70.5	70.1	69.6	69.8	69.8	70.3	70.2	70.2	70.8	70.7	70.7	70.8	70.9	70.4	70.8	70.9	70.7	71	71.2	71.1	71.6	71.8	71.8	71.5	72	72.4	72.9	73.2	73.3	73.9	74.1	74.7	74.9	75.1	75.3	75.4	75.3	75.9	76.1	76.7	77		
Denmark	72.4	72.8	73	73.2	73.3	73.3	73.4	73.6	73.7	74	74	74.2	74.5	74.4	74.3	74.2	74.4	74.5	74.5	74.6	74.7	74.8	74.9	74.9	75.3	75.3	75.2	75.5	75.3	75.7	76.1	76.5	76.6	76.8	77	77.1	77.4	77.8	78.2	78.4	78.4	...		
Finland	69	69	69.8	...	70.8	70.1	70.7	71.2	71.2	71.7	72	72.4	73	73.2	73.6	73.9	74.5	74.4	74.7	74.4	74.8	74.8	74.8	75	75	75.4	75.6	75.8	76.6	76.6	76.9	77.1	77.3	77.5	77.7	78.1	78.3	78.5	78.9	79.1	79.5	79.5	...	
France	70.3	71	70.5	70.5	71.4	71.3	71.5	71.5	71.5	71.3	72.2	72.1	72.4	72.5	72.8	73	73.2	73.8	73.9	74.2	74.3	74.5	74.8	74.8	75.3	75.4	75.6	76.2	76.4	76.6	76.9	77	77.3	77.4	77.8	77.9	78.1	78.4	78.6	78.7	79.1	79.2	79.4	79.4	80.3	80.2	80.7	81		
Germany	69.1	69.7	69.9	70	70.5	70.5	70.6	70.8	70.4	70.3	70.6	70.8	71	71.2	71.5	71.4	71.8	72.4	72.4	72.8	72.9	73.2	73.5	73.8	74.2	74.3	74.6	75	75.2	75.4	75.3	75.5	76	76.1	76.4	76.6	76.8	77.3	77.7	77.9	78.2	78.5	78.5	78.6	79.2	79.4	79.8	80		
Greece	69.9	72	76	76.4	76.2	76.7	77	77.1	77.2	77.5	77.7	77.8	78.2	77.9	78.1	78	78.5	78.7	78.9	79.1	79.3	79.6	79.5	...			
Hungary	68	68.9	67.8	68.9	69.4	69.1	69.9	69.5	69.3	69.4	69.2	69.1	69.8	69.6	69.5	69.4	69.6	69.9	69.4	69.6	69.1	69.2	69.4	69.1	69.2	69.1	69.6	69.3	69.7	70.1	69.6	69.4	69.2	69.2	69.5	69.9	70.4	70.8	70.7	70.8	71.7	72.3	72.6	72.6	72.8	72.8	73.2	73.3		
Iceland	72.9	73.5	73.5	...	74.3	74.6	...	76.1	76.1	76.4	76.4	76.7	76.7	76.7	76.7	77.1	77.1	77.6	77.9	77.2	77.1	78.1	78	78	78.7	78.9	79.2	78	78.9	78.9	79.6	79.6	80.1	80.2	80.6	81.2	81	81.2	81.2	81.2	
Ireland	70	73.5		
Italy	...	69.8	72		
Japan	67.8	68.4	68.7	69.8	70.3	70.3	71	71.5	71.7	71.9	72	72.9	73.2	73.4	73.7	74.3	74.8	75.3	75.7	76.2	76.1	76.5	76.9	77	77.4	77.6	78.1	78.5	78.4	78.8	78.9	79.1	79.2	79.4	79.8	79.6	80.3	80.5	80.6	81.2	81.5	81.8	81.8	82.1	82	82.4	82.6	...		
Korea	52.4	62.2	62.6	63	63.3	63.7	64.1	64.4	64.8	65.1	65.4	65.9	66.4	66.9	67.4	68	68.7	69.3	69.9	70.5	71	71.4	71.8	72.3	72.8	73.2	73.5	74	74.4	74.8	75.5	76	76.4	77	77.4	78	78.5	79.1	79.4		
Luxembourg	69.4	69.7	70.9	70.8	70.8	70.8	70.8	72.2	72	72.7	72.8	72.6	72.7	73.5	73.3	73.8	74.7	74.2	75	74.8	75.5	75.6	75.3	75.9	76.9	76.8	76.7	77	77.3	77.9	78	77.9	78.1	77.8	78.2	79.5	79.4	79.4			
Mexico	57.5	58.2	58.8	59.3	59.9	60.3	60.7	61	61.3	61.6	60.9	62.4	63.1	63.7	64.2	64.7	65.2	65.7	66.1	66.6	67.2	67.7	68.2	68.6	69.1	69.5	69.9	70.2	70.6	70.8	70.6	71.4	71.7	71.9	72.2	72.5	72.7	73	73.4	73.7	73.9	74.2	74.3	74.5	74.6	74.7	74.8	75		
Netherlands	73.5	73.8	73.4	73.4	73.8	73.6	73.6	73.9	73.7	73.6	73.7	73.9	73.8	74.2	74.6	74.6	74.7	75.3	75.3	75.7	75.9	76	76.1	76.3	76.4	76.4	76.4	76.8	77	76.8	77	77.1	77.3	77	77.5	77.5	77.5	77.9	77.9	77.9	78	78.3	78.4	78.6	79.2	79.4	79.8	80.2		
New Zealand	...	71.1	71.2	71.2	71.2	71.2	71.3	71.4	71.4	71.5	71.5	71.6	71.7	71.9	72	72.1	72.3	72.5	72.8	72.9	73.2	73.4	73.5	73.7	73.8	74	74.1	74.5	74.8	75.2	75.5	75.8	76.6	76.8	77.1	77.4	77.8	78	78.4	78.7	79	79.3	79.5	79.8	80.1	80.2				
Norway	73.8	73.8	73.7	73.4	73.9	74	74.2	74.3	74.2	73.9	74.4	74.4	74.6	74.7	75	75.1	75.3	75.7	75.7	75.7	75.9	76	76.2	76.3	76.4	76.1	76.4	76.3	76.4	76.7	76.7	77.1	77.3	77.3	77.9	77.9	78.3	78.3	78.5	78.4	78.8	78.9	79	79.6	80.1	80.3	80.5	80.6		
Poland	67.8	67.8	67.5	68.5	68.7	69.5	69.9	69.5	70.3	69.8	70	69.7	70.7	70.7	71.2	70.6	70.7	70.5	70.4	70.9	70.2	71.2	71.2	71.1	70.9	71.1	71.3	71.5	71.2	70.7	71.3	71.5	71.2	71.7	71.8	72	72.4	72.8	73.1	72.7	73.9	74.3	74.6	74.7	75	75.1	75.3	75.4		
Portugal	63.9	62.7	64.1	64.7	64.9	65.7	65.2	66	66.3	65.9	66.7	66.4	68.4	67.5	68.1	68.4	68.9	70.1	70.5	71.3	71.4	71.7	72.5	72.4	72.7	73	73.4	73.8	73.8	74.4	74.1	74.7	74.6	75.5	75.4	75.3	75.7	76	76.2	76.7	77	77.2	77.4	78.3	78.1	78.9	79.1			
Slovak Republic	70.6	70.6	70.4	70.8	71.2	70.4	70.6	71.1	70.6	70.1	69.8	69.9	70.3	70.1	70.3	70.3	70.5	70.5	70.5	70.9	70.6	70.9	70.8	70.9	70.6	70.9	70.8	71.1	71.2	71.3	71.2	71	71.3	71.9	72.6	72.4	72.4	72.9	72.8	72.7	73.1	73.3	73.6	73.8	73.9	74.1	74	74.3	74.3	
Spain	69.8	72	
Sweden	73.1	73.5	73.4	73.6	73.8	73.9	74.2	74.2	74	74.1	74.7	74.7	74.7	74.9	75	75	75	75.5	75.5	75.6	75.8	76.1	76.4	76.6	76.8	76.8	77	77.2	77	77.7	77.6	77.7	78.1	78.2	78.8	78.8	79	79.3	79.4	79.5	79.7	79.9	79.9	80.2	80.6	80.6	80.8	81		
Switzerland	71.4	71.8	71.3	71.3	72.2	72.3	72.4	72.7	72.7	72.7	73.1	73.2	73.8	74.1	74.4	74.8	74.9	75.4	75.4	75.7	75.6	75.9	76.2	76.2	76.8	77	77.3	77.7	77.7	77.7	77.7	77.7	78.1	78.3	78.6	78.6	79.1	79.3	79.5	79.8	79.9	80.3	80.5	80.6	81.2	81.4	81.7	81.9		
Turkey	48.3	49	49.7	50.3	51	51.6	52.2	52.9	53.4	53.8	54.2	54.6	55	55.4	55.7	56.1	56.5	56.9	57.3	57.7	58.1	58.5	58.9	59.7	60.9	62.1	63.2	64.4	65.2	65.7	67.5	67.8	68.2	68.5	68.9	69.3	69.7	70.1	70.4	70.8	71.1	71.5	71.9	72.2	72.6	73	73.2	73.4		
United Kingdom	70.8	70.7	71.9	71.9
United States	69.9	70.4	70.2	70	70.3	70.3	70.3	70.7	70.4	70.6	70.9	71.2	71.3	71.5	72.1	72.7	73	73.4	73.5	73.9	73.7	74.1	74.5	74.6	74.7	74.7	74.7	74.9	74.9	75.1	75.3	75.5	75.7	75.5	75.7	76.1	76.5	76.7	76.7	76.8	77.1	77.2	77.5	77.8	77.8	78.1				