Homework 1
Well-being in the Former East Bloc Nations (1998-2013)

I utilised the dataset from the World Bank's DataBank, which is an analysis and visualisation tool that provides a huge database of time series on different topics[1]. The DataBank relies heavily on the World Development Indicators, which are the major World Bank collection of development indicators, compiled from officially-recognised international sources[2]. It presents the most current and accurate global development data available, and includes national, regional and global estimates. This online database is updated three times a year.

Although the World Bank uses data from official sources in compiling of its development database, it still utilises recognised methodologies in collecting data[3]. These methodologies are mainly the data consistency, the change in terminology, the aggregation rules, the growth rates, the World Bank Atlas Method and the alternative conversion factors.

The dataset I chose contains statistics comprising 28 observations, namely the former communist Eastern Bloc nations. I have brought 12 variables such as Gross Domestic Product (GDP PPP), GDP growth, GDP per capita (PPP), Foreign Direct Investment (FDI, Population Growth, Life Expectancy at Birth, Public health expenditure, Merchandise trade, Household final consumption expenditure, Gross fixed capital formation, Youth unemployment, and Electric power consumption per capita. The variables cover the years 1998 and 2013.

In this piece of work I tried to answer the question of *what factors affected the different level of welfare in the former East Bloc nations*?

In order to answer this question, I chose several major variables reflecting socioeconomic development and general welfare in these countries.
I will focus on some of the variables such as the Gross Domestic Product (GDP PPP), GDP growth, GDP per capita, Foreign Direct Investment, Population growth, Life expectancy at birth, Public health expenditure, Merchandise trade, Household final consumption expenditure, Gross fixed capital formation, Youth unemployment, and Electric power consumption per capita.
Gross Domestic Product (GDP) as a measure of welfare of nations has been used for many years by all major international economic organisations, governments, and research institutes and so on. GDP is basically the market value of the goods and services produced in a certain country over a certain period of time, usually per year. The nominal GDP of a country is calculated at market or government official exchange rates. However, use of GDP by purchase power parity (PPP) in country comparisons is more useful than use of nominal GDP because PPP takes into account the relative cost of local goods, services and inflation rates of the country, rather than using international market exchange rates, which may distort the real differences in per capita income[4].

[1] http://databank.worldbank.org/data/home.aspx
[2] http://data.worldbank.org/data-catalog/world-development-indicators
[3] https://datahelpdesk.worldbank.org/knowledgebase/articles/906531-methodologies
[4] http://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/4-Applications%20and%20Limitations%20of%20ICP%20Data.pdf

GDP as a measure of welfare of countries has of course many drawbacks. GDP is frequently used to describe economic and social welfare. The idea behind this is that GDP tends to correlate with consumption, which in turn is commonly used as a proxy for welfare. In other words, the more people consume the better off and happier they are supposed to be. Assuming causality based on a simple correlation between GDP and welfare may lead to false conclusions which can be highly problematic especially for policy makers.
On the other hand, GDP provides a relatively simple and reliable measure of economy activity through its growth rate and changes in an economy than any other existing measure. It summarizes a whole range of economic information in and determines the comparative strengths and weaknesses of various sectors. GDP helps policy-makers and analysts to easily guide, adjust and implement economic policy. GDP serve as accurate barometer of the business climate, where it provides the government and business useful information to adjust in different kinds of contingency problems like recession and depression.

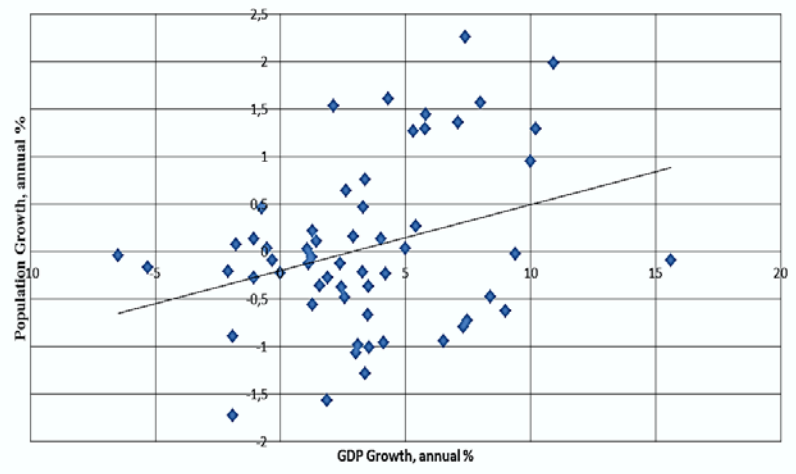
I tried to explore the measures of central tendency for all of my variables using the STATA software. For example, for *GDP PPP (current $)* across all the countries during the years 1998-2013 I obtained a mean of 3.52, standard deviation of 1.01 with minimum range of 4.98 and maximum range of 7.13.

Figure 1. Measures of central tendency, aggregate of all the variables, 1998-2013

Variable	Obs	Mean	Std. Dev.	Min	Max
Time	0				
CountryName	0				
CountryCode	0				
GDPPPPcurr~l	365	3.52e+11	1.01e+12	4.98e+09	7.13e+12
GDPgrowtha~K	365	4.214799	5.257657	-14.81416	34.5
GDPpercapi~t	365	12614.99	8607.362	829.1112	40951.51
Foreigndir~i	365	5.474931	5.547686	-16.09109	50.78472
Population~P	365	.0378333	.907404	-2.850973	2.82285
Lifeexpect~l	365	71.94091	3.891196	63.06568	80.97561
Healthexpe~f	365	3.942778	1.636084	.8246755	7.204017
Merchandis~G	365	83.29436	31.29108	29.3926	170.8526
Householdf~e	365	1.02e+11	3.04e+11	7.27e+08	2.43e+12
Grossfixed~n	365	24.20227	6.373231	7.421252	51.93184
Unemployme~f	365	24.08766	12.37154	4.1	71.9
Electricpo~h	365	3800.55	2770.359	721.7447	17212.95

I operationalize such World Bank variables as *GDP growth* and *population growth* in order to find out the relationship between these variables for the given group of for communist countries.
GDP growth is an annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2010 U.S. dollars[5].
It helps to understand the positive or negative dynamics in a certain economy.

Figure 2. GDP Growth (annual %) vs Population growth (annual %)



Annual population growth rate for year t is the exponential rate of growth of midyear population from year t-1 to t, expressed as a percentage. Population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship.

In this scatter plot (see Figure 2) created in Excel, it

[5] http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG

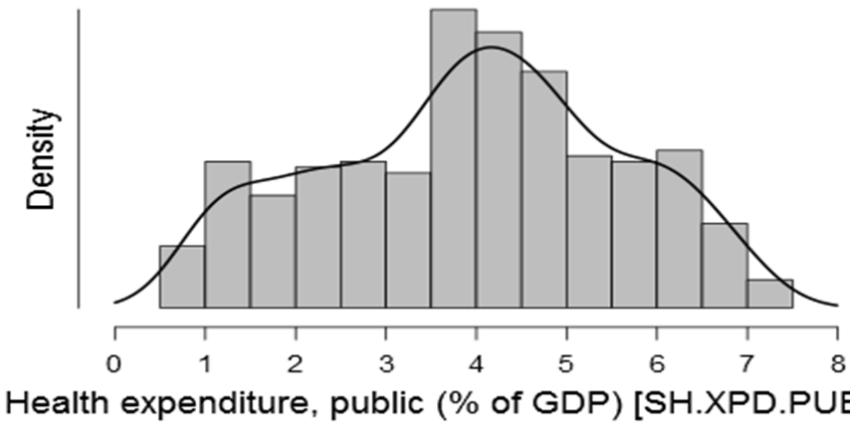
is obvious that the countries in the dataset have very different variables outlying off a line of best fit.

The countries in chosen dataset had different dynamics in GDP growth and population growth over given period of time. While former communist countries in Central and Eastern Europe shown very insignificant/negative population growth and positive and consistent economic growth, other countries of this group shown the exact opposite with high population growth rate and insignificant GDP growth during 1998-2013. This explains the fast recovery after economic reform of 1990s in some of the countries and not so significant success of other countries in this group.

Another variable that affects the welfare in the mentioned countries is public health expenditures (see Figure 3).

The countries were spending different percentage of their respective GDP on public health, which directly affected the welfare. For this variable the measures of central tendency are following: mean 3.952, media 4.033, mode 0.8247, standard deviation 1.624, variance 2.636, min 0.8247 and max 7.204.

Figure 3. Health expenditure across 28 countries, public (% of GDP)



In conclusion, it is noteworthy to mention that the former communist countries under relatively similar circumstances accomplished different types of reforms with different approaches and at the end of the day we have a growing gap between those countries, which successfully transformed their economies into the new realities and those which are still in transition.