Quantitative and Qualitative Comparative Analysis of Free Market Economies and Command Economies in Europe After Wwii - Divergence and Convergence

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Abstract

The article conducts a comparative analysis of the performances of the Western European economies and the Eastern European economies on three different levels 1. Comparison between the performance of the former communist countries and free market economies in a period 1950-1990, 2. Comparison between the performance of the former communist countries in a period 1950-1990, when they were command economies, with the performance in a period after 1990, when they became free market economies, and 3. Comparison between the former communist countries and the Western countries in a period after 1990. The Western European countries were more developed than the Eastern European countries. The least developed Western European country Italy was at the same level of development as the most developed Eastern European country Czechoslovakia. The Western European countries grew faster than the Eastern European countries in a period 1950-1990 with the exception of Yugoslavia. This means that they increased their advantage over the Eastern European countries. Therefore, divergence occurred. In a period 1990-2024, after the transition, the Eastern European countries grew faster than the Western European countries and managed to catch up. Therefore, convergence between the two groups of the countries occurred. The Eastern European countries grew faster in a period 1990-2024 than in a period 1950-1990. This would lead to a conclusion that free market economies have been superior to command economies. However, if qualitative, non-monetary indicators are used, the command economies faired much better in comparison with free market economies than when GDP per capita is used. All of them have had a high Human Development Index. This was the result of excellent health and education system. This is corroborated by the fact that after the transition health and education systems rapidly deteriorated in the former communist countries. Also, differences in distribution of income and wealth dramatically increased, particularly in Russia and Romania. A survey conducted in 2006 asked a simple question: "Life is better now than before". The results of the survey show that a conclusion as regards the satisfaction with life after the transition is inconclusive.

Keywords: Free Market Economy, Command Economy, Convergence, Divergence, Gdp Per Capita (ppp), Human Development Index (hdi).

Introduction

The article offers quantitative and qualitative comparative analysis of the two economic systems in Europe after WWII, namely free market economy and command economy. Quantitative analysis compares a level of development and dynamics of growth in the Western and Eastern European countries in a period 1950-2024, measured by the level of GDP per capita (PPP), and the annual rates of growth of GDP. Qualitative analysis compares the state of health sector, education, and distribution of income in the Eastern European countries during a period of command economy from 1950 until 1990 with a period of free market economy from 1990 until 2024.A full comparison between the two economic system is a complex and paramount task, which would require a team work. It would include a comparative analysis of macroeconomic objectives such as growth rates, inflation, unemployment, external and fiscal balances, the structure of the economy, the level of wages and the standard of living, distribution of income, and externalities, the quality of life and

macroeconomic and microeconomic policies. Outside of the economic sphere it would require philosophical, sociological, legal and cultural comparison between the two systems, the level of freedoms, stability, and many other complex aspects of life. Such complex analysis would certainly require years of research and a team of experts who would cover different aspects of the comparative analysis.

A more limited quantitative analysis would compare the level of GDP and the rates of growth of GDP. Although limited in its scope this economic aspect can shed some light on the relative success of the two systems in a period of 74 years. The article consists of three chapters. A first chapter compares economic performance of free market economies and command economies in a period 1950-1990. A second chapter deals with economic performance of the two groups of countries in a period 1990-2024. A third chapter compares economic performance in the Eastern European countries before and after the transition. The analysis in this chapter is extended to non-monetary indicators, namely the quality of health and education system and distribution of income, the areas in which the command economies stood much better in comparison with the Western countries than when GDP per capita is used. The article ends with a survey. The survey compares a satisfaction with life in the Eastern European countries after the transition with a satisfaction of life in the ancient regime [1].

Limitations of GDP as a Measure of Economic Success
Although GDP is most often used as a measure of development it has many drawbacks

- GDP does not comprise non- marketed activities. For example, if parents take their child to a private kindergarten they will pay for the service, which will be recorded in GDP. If they have relatives (mother, aunts) who can look after the child they will save the money. Although the same service was performed it will not be included in GDP since there was not a monetary transaction. The same applies to cleaning a flat. If we hire a professional cleaner we will need to pay for the service and this will be included in GDP. If we do it ourselves the same service will be performed but it will not be calculated as part of GDP since it is non-monetary and non-market activity. According to some estimates up to 1/3 of GDP consists of non-marketed activities.
- GDP does not comprise value created in informal economy. Informal economy consists of two parts; black and grey. Black economy consists of illegal activities such as drug and weapons trafficking. A larger part of informal economy comprises legal activities which are not recorded for tax purposes. For example, if a plumber comes to our house to fix a boiler we will pay them, but they will not report it for tax purposes. The value of GDP created in informal economy varies from 10-12 per cent in high-income countries to 50 per cent in low-income countries. In Bosnia and Herzegovina, which is a middle-income country, GDP created in informal economy is estimated at 25 per cent.
- GDP calculated at market exchange rate does not take into account huge differences in the level of prices in various countries. Prices are much higher in developed than in developing countries. The difference between prices of goods is smaller than the differences in prices of services. Services are much more expensive in high-income countries. This is

why GDP calculated at market exchange rates gives unrealistically big differences between developed and developing countries. To rectify this, international organizations have started using a concept of GDP at PPP (purchasing power parity). All prices are converted into American prices (international dollars). This measure gives a more realistic picture about differences in GDP across countries. For example, Bosnia and Herzegovina had GDP at market exchange rate of $5,000 and $12,000 at PPP in 2017.
- GDP calculated at market exchange rate does not take into account fluctuations in exchange rates. For example, the euro increased its value against the dollar from $0.84 in 2001 to $1.58 in 2008. Since the KM is pegged (fixed) to the euro a nominal GDP in Bosnia and Herzegovina doubled, although it did not affect a real GDP.
- GDP does not take into account distribution of income. For example, the United States and Sweden had a similar level of GDP in the 1970s. However, a distribution of income is much more egalitarian in Sweden compared to the USA. This means that the standard of living of a majority of people is higher in Sweden than in the USA.
- GDP does not take into account the impact of economic growth on environment. Impressive growth rates could be achieved in a short period of time at the expense of pollution, congestion, and a wanton destruction of natural habitat. The former communist countries recorded staggering growth rates in a period of 20 years, but were notorious for ecocide. Such a model of development is not sustainable and can be achieved only at the expense of future generations.
- A long-term growth in GDP requires investment in infrastructure, modern technologies, and human capital. In a short-term gambling in Las Vegas and Atlantic City and speculations in property markets can artificially increase growth rates of GDP. (Stiglitz 2021). In the first decade of this century speculations in property markets artificially increased growth rates in the peripheral countries of the eurozone. When the day of reckoning came after the credit crunch economies of these countries plunged. Negative growth rates which ensued exceeded positive growth rates before the Great Recession [2].

Recently, an alternative measure of development and the standard of living have been used. Human Development Index (HDI) consist of three components; 1. Income per head, 2. Level of education, which is further decomposed into a literacy level and higher education level and 3. Life expectancy. In-spite of the above-mentioned drawbacks, GDP per capita is still used as a main indicator of the level of development. For GDP per capita is reflected in the standard of living and is therefore considered the most relevant indicator of the level of development [3].

Methodology
The authors, when discussing economic matters, use figures and numbers to corroborate their statements. These numbers are of two types; 1. physical such as the length of railway network, the number of KM of roads, production of agricultural and industrial goods, or the number of workers employed, and 2. Monetary such as the value of production, the level of foreign trade, the amount of banking capital or the level of workers' wages, and macroeconomic indicators such as GDP, GDP per capita, or rate

of growth of GDP. These three indicators are vital in macroeconomic analysis [4]. For with all its drawbacks GDP shows a size of an economy, GDP per capita the standard of living, while a rate of growth of GDP shows a dynamism of an economy and a success of economic policy measures. Economic variables such as GDP, population, inflation, and interest rate grow at a geometric progression. In other words, they have exponential growth, since they rise at a compound rate [1].

There are several formulae related to a compound rate
Factor 72: It is used to calculate the number of years in which one variable will approximately double when it grows at a compound rate.
$n2 = 72/g$, where $n2$ is the number of years in which a variable will double and g is a growth rate

The formula can be obtained in the following way
A double time of a variable which grows with the g% annual rate can be calculated with a formula $(1 + g/100) = 2$. Taking natural logarithm on both sides of the equation we arrive at $n \times \ln (1 + g/100)$ 0 $\ln 2$. Natural logarithm of $(1 + g/100) = g/100$, while natural logarithm of 2 is approximately 0.72. Multiplying both sides with 100 we arrive at our formula (1)

Factor 108: It is used to calculate the number of years in which one variable will approximately triple when it grows at a compound rate.
$n3 = 108/g$, where $n3$ is the number of years in which a variable will triple and g is a growth rate

The formula can be obtained in the following way
A triple time of a variable which grows with the g% annual rate can be calculated with a formula $(1 + g/100) = 3$. Taking natural logarithm on both sides of the equation we arrive at $n \times \ln (1 + g/100) = \ln 3$. Natural logarithm of $(1 + g/100) = g/100$, while natural logarithm of 3 is approximately 109. Multiplying both sides with 100 we arrive at our formula (2)

Factor 144: It is used to calculate the number of years in which one variable will approximately quadruple when it grows at a compound rate.
$n4 = 144/g$, where $n3$ is the number of years in which a variable will triple and g is a growth rate

The formula can be obtained in the following way
A triple time of a variable which grows with the g% annual rate can be calculated with a formula $(1 + g/100) = 4$. Taking natural logarithm on both sides of the equation we arrive at $n \times \ln (1 + g/100) = \ln 4$. Natural logarithm of $(1 + g/100) = g/100$, while natural logarithm of 43 is approximately 144. Multiplying both sides with 100 we arrive at our formula (3)

In the same way we can derive the formulae for five-fold, six-fold, seven-fold, eight-fold, nine-fold, ten-fold, eleven-fold, twelve-fold, thirteen-fold, fourteen-fold, fifteen-fold, and sixteen-fold increase in GDP or any other variable: five-fold factor is 162, six-fold factor is 180, seven-fold factor is 198, eight-fold factor is 216, nine-fold factor is 225, ten-fold factor is 234, eleven-fold factor is 243, twelve-fold factor is 252, thirteen-fold factor is 261, fourteen-fold factor is 270, fifteen-fold factor is 279, and sixteen-fold factor is 288 [5].

It is possible to derive the formula for calculating how many times a variable increased over actual a period of time:
$N = 2na/n$, Where N stands for the number of times a variable increased over an actual period of time, na for an actual number of years, and n for a number of years in which a variable double

Δ GDP – the percentage change in GDP: From the formula (1) we can derive the following formula for calculating the change in GDP:
$\Delta GDP = n \times g \times 100/72$
Where Δ GDP stands for the change in GDP n for the number of years observed g for the growth rate, and 100/72 for the compounding factor (4).

Δ GDP – the percentage change in GDP: If the number of years in which we calculate increase in GDP exceeds the number of years in which this increase doubles, then we can use the following formula:
$\Delta GDP = n_2 \times g \times 100/72 \times (1 + g)^{n - n2}$,

Where n stands for the number of years for which a change in GDP needs to be calculated, and n2 stands for the number of years in which GDP doubles [1].

g – the growth rate. From the formula (4) we can derive the formula for calculating the growth rate:
$g \times 100/72 = \Delta GDP/n$
$g = \Delta GDP/n \times 72/100$ (5)

Δ GDP/Y – the percentage change in GDP: There is an alternative, more complicated way to calculate the percentage change in GDP, which is supposed to give the same result:
$\Delta Y = Y (1 + g)^n – Y$
$\Delta Y = Y ((1 + g)^n - 1)$ (6)

g – the growth rate. From the formula (6) we can derive the formula for calculating the growth rate:
$\Delta Y = Y ((1 + g)^n - 1)$
$\Delta Y/Y = (1 + g)^n - 1$
$\Delta Y/Y + 1 = (1 + g)^n$
$(\Delta Y + Y)/Y = (1 + g)^n$
$((\Delta Y + Y)/Y)^{1/n} = 1 + g$
$g = ((\Delta Y + Y)/Y)^{1/n} - 1$ (7)

g – the growth rate. We can also calculate the growth rate in the following way:
$\Delta Y = Y ((1 + g)^n - 1)/Y$; $\Delta Y/Y = ((1 + g)^n - 1)$; $\Delta Y/Y + 1 = (1 + g)^n$; $\Delta Y + Y/Y = (1 + g)^n$.

We can logarithm both sides of the equation and arrive at:
$\log (\Delta Y + Y) – \log Y = n \log (1 + g)/n$; $(\log (\Delta Y + Y) – \log Y)/n = \log (1 + g)$; $1 + g = 10^{((\log \Delta Y + Y) – \log Y)/n}$; $g = 10^{((\log \Delta Y + Y) – \log Y)/n} - 1$ Chapter 1 - Comparison between free market economies and command economies in a period 1950-1990

The following table shows GDP per capita (PPP) in Western Europe in 1950 and 1990 in international dollars:

Table 1: GDP per capita (PPP) in Western Europe in 1950 and 1990 in 1990 international dollars

COUNTRY	1950	1990
AUSTRIA	3,706	16,881
BELGIUM	5,462	17,194
DENMARK	6,946	18,463
FINLAND	4,253	16,868
FRANCE	5,270	18,093
ITALY	3,502	16,328
NETHERLANDS	5,996	17,267
NORWAY	5,463	18,470
SWEDEN	6,738	17,680
SWITZERLAND	9,064	21,616
UNITED KINGDOM	6,907	16,411
WESTERN EUROPE	5,013	16,872

Source: Angus Maddison:" The World Economy", Millennial Perspective and Historical Statistics, Oecd Publishing 2008, p184.

Algebra, using the data in the table, can help in calculating average annual growth rates in a period 1950-1990 [6].

The following formulae and equations could be used for that purpose:

$(\Delta Y + Y)/Y = (1 + g)^n$

$16\ 881/3706 = (1 + g)^{40}$

$4.55 = (1 + g)^{40}/\log$

$\log 4.55 = 40 \log (1 + g)$

$0.66 = 40 \log (1 + g)$

$\log (1 + g) = 0.0165$

$(1 + g) = 10^{0.0165}$

$1 + g = 1.0387$

$g = 3.87\%$

Belgium

$(\Delta Y + Y)/Y = (1 + g)^n$

$17\ 194/5462 = (1 + g)^{40}$

$3.15 = (1 + g)^{40}/\log$

$\log 3.15 = 40 \log (1 + g)$

$0.5 = 40 \log (1 + g)$

$\log (1 + g) = 0.0125$

$(1 + g) = 10^{0.0125}$

$1 + g = 1.029$

$g = 2.9\%$

Denmark

$(\Delta Y + Y)/Y = (1 + g)^n$

$18\ 463/6946 = (1 + g)^{40}$

$2.66 = (1 + g)^{40}/\log$

$\log 2.66 = 40 \log (1 + g)$

$0.42 = 40 \log (1 + g)$

$\log (1 + g) = 0.0105$

$(1 + g) = 10^{0.0105}$

$1 + g = 1.024$

$g = 2.4\%$

Finland

$(\Delta Y + Y)/Y = (1 + g)^n$

$16\ 868/4253 = (1 + g)^{40}$

$3.96 = (1 + g)^{40}/\log$

$\log 3.96 = 40 \log (1 + g)$

$0.60 = 40 \log (1 + g)$

$\log (1 + g) = 0.015$

$(1 + g) = 10^{0.015}$

$1 + g = 1.0351$

$g = 3.5\%$

France

$(\Delta Y + Y)/Y = (1 + g)^n$

$18093/5270 = (1 + g)^{40}$

$3.43 = (1 + g)^{40}/\log$

$\log 3.43 = 40 \log (1 + g)$

$0.54 = 40 \log (1 + g)$

$\log (1 + g) = 0.0135$

$(1 + g) = 10^{0.0135}$

$1 + g = 1.032$

$g = 3.2\%$

Italy

$\Delta Y + Y)/Y = (1 + g)^n$

$16328/3502 = (1 + g)^{40}$

$4.66 = (1 + g)^{40}/\log$

$\log 3.43 = 40 \log (1 + g)$

$0.67 = 40 \log (1 + g)$

$\log (1 + g) = 0.0135$

$(1 + g) = 10^{0.01675}$

$1 + g = 1.039$

$g = 3.9\%$

Netherlands

$$\Delta Y + Y)/Y = (1 + g)^n$$

$$17267/5996 = (1 + g)^{40}$$

$$2.88 = (1 + g)^{40}/\log$$

$$\log 2.88 = 40 \log (1 + g)$$

$$0.46 = 40 \log (1 + g)$$

$$\log (1 + g) = 0.0135$$

$$(1 + g) = 10^{0.0115}$$

$$1 + g = 1.0268$$

$$g = 2.68\%$$

Switzerland

$$\Delta Y + Y)/Y = (1 + g)^n$$

$$21616/9064 = (1 + g)^{40}$$

$$2.38 = (1 + g)^{40}/\log$$

$$\log 2.38 = 40 \log (1 + g)$$

$$0.38 = 40 \log (1 + g)$$

$$\log (1 + g) = 0.0095$$

$$(1 + g) = 10^{0.0095}$$

$$1 + g = 1022$$

$$g = 2.2\%$$

Norway

$$\Delta Y + Y)/Y = (1 + g)^n$$

$$18470/5463 = (1 + g)^{40}$$

$$3.37 = (1 + g)^{40}/\log$$

$$\log 3.37 = 40 \log (1 + g)$$

$$0.53 = 40 \log (1 + g)$$

$$\log (1 + g) = 0.01325$$

$$(1 + g) = 10^{0.01325}$$

$$1 + g = 1.031$$

$$g = 3.1\%$$

United Kingdom

$$\Delta Y + Y)/Y = (1 + g)^n$$

$$16411/6907 = (1 + g)^{40}$$

$$2.31 = (1 + g)^{40}/\log$$

$$\log 2.31 = 40 \log (1 + g)$$

$$0.36 = 40 \log (1 + g)$$

$$\log (1 + g) = 0.009$$

$$(1 + g) = 10^{0.009}$$

$$1 + g = 1021$$

$$g = 2.1\%$$

Sweden

$$\Delta Y + Y)/Y = (1 + g)^n$$

$$17680/6738 = (1 + g)^{40}$$

$$2.48 = (1 + g)^{40}/\log$$

$$\log 2.48 = 40 \log (1 + g)$$

$$0.40 = 40 \log (1 + g)$$

$$\log (1 + g) = 0.01325$$

$$(1 + g) = 10^{0.01}$$

$$1 + g = 1023$$

$$g = 2.3\%$$

Western Europe

$$\Delta Y + Y)/Y = (1 + g)^n$$

$$16872/5013 = (1 + g)^{40}$$

$$3.36 = (1 + g)^{40}/\log$$

$$\log 3.36 = 40 \log (1 + g)$$

$$0.53 = 40 \log (1 + g)$$

$$\log (1 + g) = 0.01325$$

$$(1 + g) = 10^{0.01325}$$

$$1 + g = 10309$$

$$g = 3.1\%$$

The same table is provided for the Eastern European countries:

Table 2: GDP Per Capita (PPP) in Eastern European Countries in 1950 and 1990 in 1990 International Dollars

COUNTRY	1950	1990
ALBANIA	1001	2480
BULGARIA	1651	5552
CZECHOSLOVAKIA	3501	8570
HUNGARY	2480	6471
POLAND	2447	5115
ROMANIA	1182	3525
FORMER YUGOSLAVIA	1585	5695
EASTERN EUROPE	2120	5437

Source: Angus Maddison: "The World Economy", Millennial Perspective and Historical Statistics, Oecd Publishing 2008, p185.

Using data in the table 2, applying the same method as for the Western European countries, it is possible to calculate average annual growth rates for the Eastern European countries for a period 1950-1990 [7].

Albania

$$\Delta Y + Y)/Y = (1 + g)^n$$

$$2480/1001 = (1 + g)^{40}$$

$$2.48 = (1 + g)^{40}/\log$$

log 2.48 = 40 log (1 + g)

0.40 = 40 log (1 + g)

log (1 + g) = 0.01

(1 + g) = $10^{0.01}$

1 + g = 1023

g = 2.3%

Bulgaria

(Δ Y + Y)/Y = $(1 + g)^n$

5552/1651 = $(1 + g)^{40}$

3.36 = $(1 + g)^{40}$/log

log 3.36 = 40 log (1 + g)

0.53 = 40 log (1 + g)

log (1 + g) = 0.0125

(1 + g) = $10^{0.0125}$

1 + g = 1029

g = 2.9%

Czechoslovakia

(Δ Y + Y)/Y = $(1 + g)^n$

8570/3501 = $(1 + g)^{40}$

2.45 = $(1 + g)^{40}$/log

log 2.45 = 40 log (1 + g)

0.39 = 40 log (1 + g)

log (1 + g) = 0.00975

(1 + g) = $10^{0.00975}$

1 + g = 1022

g = 2.2%

Hungary

(Δ Y + Y)/Y = $(1 + g)^n$

6471/2480 = $(1 + g)^{40}$

2.45 = $(1 + g)^{40}$/log

log 2.45 = 40 log (1 + g)

0.39 = 40 log (1 + g)

log (1 + g) = 0.00975

(1 + g) = $10^{0.00975}$

1 + g = 1022

g = 2.2%

Poland

(Δ Y + Y)/Y = $(1 + g)n$

(Δ Y + Y)/Y = $(1 + g)^n$

5115/2447 = $(1 + g)^{40}$

2.09 = $(1 + g)^{40}$/log

log 2.45 = 40 log (1 + g)

0.32 = 40 log (1 + g)

log (1 + g) = 0.008

(1 + g) = $10^{0.008}$

1 + g = 101859

g = 1.9%

Romania

(Δ Y + Y)/Y = $(1 + g)^n$

3525/1182 = $(1 + g)^{40}$

2.98 = $(1 + g)^{40}$/log

log 2.98 = 40 log (1 + g)

0.48 = 40 log (1 + g)

log (1 + g) = 0.012

(1 + g) = $10^{0.012}$

1 + g = 1028

g = 2.8%

Former Yugoslavia

(Δ Y + Y)/Y = $(1 + g)^n$

5695/1585 = $(1 + g)^{40}$

3.57 = $(1 + g)^{40}$/log

log 3.57 = 40 log (1 + g)

0.55 = 40 log (1 + g)

log (1 + g) = 0.01375

(1 + g) = $10^{0.01375}$

1 + g = 1032

g = 3.2%

Eastern Europe

(Δ Y + Y)/Y = $(1 + g)^n$

5437/2120 = $(1 + g)^{40}$

2.57 = $(1 + g)^{40}$/log

log 3.57 = 40 log (1 + g)

0.41 = 40 log (1 + g)

log (1 + g) = 0.01025

(1 + g) = $10^{0.01025}$

1 + g = 1024

g = 2.4%

Data on average growth rates in the Western European countries and Eastern European countries will be put in one table, to facilitate the comparison.

Table 3: Growth rates of GDP per capita (PPP) in Western and Eastern Europe in a period 1950-1990

WESTERN EUROPEAN COUNTRIES	Average annual growth rate	EASTERN EUROPEAN COUNTRIES	Average annual growth rate
AUSTRIA	3.87%	ALBANIA	2.3%
BELGIUM	2.9%	BULGARIA	2.9%
DENMARK	2.44%	CZECHOSLOVAKIA	2.2%

FINLAND	3.5%	HUNGARY	2.2%
FRANCE	3.2%	POLAND	1.9%
ITALY	3.9%	ROMANIA	2.8%
NETHERLANDS	3.5%	FORMER YUGOSLAVIA	3.2%
NORWAY	3.1%		
SWEDEN	2.3%		
SWITZERLAND	2.2%		
UNITED KINGDOM	2.1%		
WESTERN EUROPE	3.1%	EASTERN EUROPE	2.4%

Source: The author's calculations based on Maddison.

The tables 1, 2, and 3 reveal several important points.

1. Within Western Europe, less developed countries grew faster and managed to converge with most developed countries.
2. With the exception of Albania, the same applies to Eastern Europe. Less developed countries grew faster and managed to converge with more developed countries.
3. Western Europe was more developed than Eastern Europe in 1950. The least developed Western country, Italy, was at the same level of development as the most developed country in Eastern Europe, Czechoslovakia.
4. With the exception of the former Yugoslavia, the Eastern European countries recorded a slower growth compared to the Western European countries. They diverged, which means that in a period 1950-1990 the Western European countries increased its advantage over the Eastern European countries. This would lead to a conclusion that free market economies were superior to command economies. However, if other indicators are included the picture is not that clear. Command economies achieved artificial and in the long-run unsustainable price stability and full employment, while the Western European countries experienced stagflation in the 1970s. Also, the Eastern European countries had a more egalitarian distribution of income. On the other hand, they were notorious for ecocide, i.e. disrespected the impact of industrialization on the environment. Also, soft budget constraints caused by subsidies given to big loss-making companies increased fiscal deficits more than in the Western European countries. But one needs to bear in mind that when non-monetary indicators such as life expectancy, literacy rate, the quality of health and education, and security are taken into account the command economies fare better than when GDP per capita is used for comparison with the free market economies [8-10].

Chapter 2: Comparison between performances of the Western European and the Eastern European countries in a period 1990-2024.

The following table provides the IMF forecast for GDP per capita (PPP) for the Western European and the Eastern European countries in a period 1990-202

Table 4: GDP per capita (PPP) in the Western European and the Eastern European countries in the 2024 international dollars

WESTERN EUROPE	GDP PER CAPITA (PPP)	EASTERN EUROPE	GDP PER CAPITA (PPP)
AUSTRIA	73,051	ALBANIA	21,300
BELGIUM	73,222	BULGARIA	39,815
DENMARK	83,459	THE CZECH REPUBLIC	56,686
FINLAND	64,657	HUNGARY	46,807
FRANCE	65,940	POLAND	51,627
ITALY	60,993	ROMANIA	47,204
NETHERLANDS	81,495		
NORWAY	103,446		
SWEDEN	71,731		
SWITZERLAND	95,837		
UNITED KINGDOM	62,574		

Source: The IMF Projections for 2024

These figures can be divided by 2.41 (a cumulative inflation in the USA in a period 1990-2024) to arrive at the figures for GDP in the 1990 international dollars.

Table 5: GDP per capita (PPP) in the Western European and the Eastern European countries in 2024 in the 1990 international dollars

WESTERN EUROPE	GDP PER CAPITA (PPP)	EASTERN EUROPE	GDP PER CAPITA (PPP)
AUSTRIA	30,311	ALBANIA	8,838

BELGIUM	30,382	BULGARIA	16,259
DENMARK	34,628	THE CZECH REPUBLIC	23,521
FINLAND	26,828	HUNGARY	19,422
FRANCE	27,360	POLAND	21,421
ITALY	25,308	ROMANIA	19,586
NETHERLANDS	33,815		
NORWAY	42,923		
SWEDEN	29,763		
SWITZERLAND	39,766		
UNITED KINGDOM	25,964		

Source: The IMF Projections for 2024 in the 1990 International Dollars

It is possible, using the same method for 1990, to calculate average growth rates for a period 1990-2024 [11-15].

Austria

$(\Delta Y + Y)/Y = (1 + g)^n$

$30{,}311/16{,}881 = (1 + g)^{34}$

$1.80 = (1 + g)^{34}/\log$

$\log 1.80 = 34 \log (1 + g)$

$0.26 = 34 \log (1 + g)$

$\log (1 + g) = 0.0076$

$(1 + g) = 10^{0.0076}$

$1 + g = 10176$

$g = 1.76\%$

Belgium

$(\Delta Y + Y)/Y = (1 + g)^n$

$30{,}382/17{,}194 = (1 + g)^{34}$

$1.80 = (1 + g)^{34}/\log$

$\log 1.77 = 34 \log (1 + g)$

$0.25 = 34 \log (1 + g)$

$\log (1 + g) = 0.007$

$(1 + g) = 10^{0.007}$

$1 + g = 1016$

$g = 1.6\%$

Denmark

$(\Delta Y + Y)/Y = (1 + g)^n$

$34{,}628/18{,}463 = (1 + g)^{34}$

$1.88 = (1 + g)^{34}/\log$

$\log 1.88 = 34 \log (1 + g)$

$0.27 = 34 \log (1 + g)$

$\log (1 + g) = 0.0079$

$(1 + g) = 10^{0.0079}$

$1 + g = 10183$

$g = 1.83\%$

Finland

$(\Delta Y + Y)/Y = (1 + g)^n$

$26{,}828/16{,}868 = (1 + g)^{34}$

$1.59 = (1 + g)^{34}/\log$

$\log 1.59 = 34 \log (1 + g)$

$0.20 = 34 \log (1 + g)$

$\log (1 + g) = 0.0059$

$(1 + g) = 10^{0.0059}$

$1 + g = 10136$

$g = 1.36\%$

France

$(\Delta Y + Y)/Y = (1 + g)^n$

$27{,}360/18{,}093 = (1 + g)^{34}$

$1.53 = (1 + g)^{34}/\log$

$\log 1.53 = 34 \log (1 + g)$

$0.18 = 34 \log (1 + g)$

$\log (1 + g) = 0.00529$

$(1 + g) = 10^{0.00529}$

$1 + g = 10129$

$g = 1.29\%$

Italy

$(\Delta Y + Y)/Y = (1 + g)n$

$(\Delta Y + Y)/Y = (1 + g)^n$

$25{,}308/16{,}328 = (1 + g)^{34}$

$1.55 = (1 + g)^{34}/\log$

$\log 1.55 = 34 \log (1 + g)$

$0.19 = 34 \log (1 + g)$

$\log (1 + g) = 0.0056$

$(1 + g) = 10^{0.0056}$

$1 + g = 1013$

$g = 1.3\%$

Netherlands

$(\Delta Y + Y)/Y = (1 + g)^n$

$33{,}815/17{,}267 = (1 + g)^{34}$

$1.96 = (1 + g)^{34}/\log$

$\log 1.96 = 34 \log (1 + g)$

$0.29 = 34 \log (1 + g)$

$\log (1 + g) = 0.0085$

$(1 + g) = 10^{0.0085}$

$1 + g = 10197$

$g = 1.97\%$

Norway

$(\Delta Y + Y)/Y = (1 + g)^n$

$42{,}923/18{,}470 = (1 + g)^{34}$

$2.32 = (1 + g)^{34}/\log$

$\log 1.96 = 34 \log (1 + g)$

$0.29 = 34 \log (1 + g)$

$\log (1 + g) = 0.0107$

$(1 + g) = 10^{0.0107}$

$1 + g = 1.024$

$g = 2.4\%$

Sweden

$(\Delta Y + Y)/Y = (1 + g)^n$

$29{,}673/17680 = (1 + g)^{34}$

$1.678 = (1 + g)^{34}/\log$

$\log 1.678 = 34 \log (1 + g)$

$0.22 = 34 \log (1 + g)$

$\log (1 + g) = 0.0064$

$(1 + g) = 10^{0.0064}$

$1 + g = 1.0148$

$g = 1.48\%$

Switzerland

$(\Delta Y + Y)/Y = (1 + g)^n$

$39{,}766/21{,}616 = (1 + g)^{34}$

$1.84 = (1 + g)^{34}/\log$

$\log 1.84 = 34 \log (1 + g)$

$0.26 = 34 \log (1 + g)$

$\log (1 + g) = 0.0064$

$(1 + g) = 10^{0.0076}$

$1 + g = 1.0176$

$g = 1.76\%$

United Kingdom

$(\Delta Y + Y)/Y = (1 + g)^n$

$25{,}964/16{,}411 = (1 + g)^{34}$

$1.582 = (1 + g)^{34}/\log$

$\log 1.582 = 34 \log (1 + g)$

$0.2 = 34 \log (1 + g)$

$\log (1 + g) = 0.0059$

$(1 + g) = 10^{0.00588}$

$1 + g = 1.0136$

$g = 1.36\%$

Albania

$(\Delta Y + Y)/Y = (1 + g)^n$

$8{,}838/2{,}480 = (1 + g)^{34}$

$3.56 = (1 + g)^{34}/\log$

$\log 3.56 = 34 \log (1 + g)$

$0.55 = 34 \log (1 + g)$

$\log (1 + g) = 0.016$

$(1 + g) = 10^{0.016}$

$1 + g = 1.0375$

$g = 3{,}75\%$

Bulgaria

$(\Delta Y + Y)/Y = (1 + g)^n$

$16{,}259/5{,}552 = (1 + g)^{34}$

$2.93 = (1 + g)^{34}/\log$

$\log 2.93 = 34 \log (1 + g)$

$0.47 = 34 \log (1 + g)$

$\log (1 + g) = 0.0138$

$(1 + g) = 10^{0.0138}$

$1 + g = 1.032$

The Czech Republic

$(\Delta Y + Y)/Y = (1 + g)n$

$23{,}521/8{,}895 = (1 + g)34$

$2.64 = (1 + g)34/\log$

$\log 2.64 = 34 \log (1 + g)$

$0.42 = 34 \log (1 + g)$

$\log (1 + g) = 0.012$

$(1 + g) = 100.012$

$1 + g = 1.028$

$g = 3.2\%$

Hungary

$(\Delta Y + Y)/Y = (1 + g)^n$

$19{,}422/6{,}477 = (1 + g)^{34}$

$3 = (1 + g)^{34}/\log$

$\log 3 = 34 \log (1 + g)$

$0.48 = 34 \log (1 + g)$

$\log (1 + g) = 0.012$

$(1 + g) = 10^{0.014}$

$1 + g = 1.033$

$g = 3.3\%$

Poland

$(\Delta Y + Y)/Y = (1 + g)^n$

$21{,}421/5{,}115 = (1 + g)^{34}$

$4.19 = (1 + g)^{34}/\log$

$\log 4.19 = 34 \log (1 + g)$

$0.62 = 34 \log (1 + g)$

$\log (1 + g) = 0.018$

$(1 + g) = 10^{0.018}$

$1 + g = 1.0423$

$g = 4.23\%$

Romania

$(\Delta Y + Y)/Y = (1 + g)^n$

$19{,}586/3{,}525 = (1 + g)^{34}$

$5.56 = (1 + g)^{34}/\log$

$\log 5.56 = 34 \log (1 + g)$

$0.62 = 34 \log (1 + g)$

$\log (1 + g) = 0.022$

$(1 + g) = 10^{0.022}$

$1 + g = 1.052$

$g = 5.2\%$

Average annual rates of growth of GDP for the Western and the Eastern European countries will be put in a single table to get a better overview of relative economic performance:

Table 6: Average Annual Rates of Growth of GDP in the Western European and the Eastern European Countries in a Period 1990-1924 [16].

WESTERN EUROPE	Rate of growth of GDP (%)	EASTERN EUROPE	Rate of growth of GDP (%)
AUSTRIA	1.76	ALBANIA	3.75
BELGIUM	1.6	BULGARIA	3.2
DENMARK	1.83	THE CZECH REPUBLIC	2.8
FINLAND	1.36	HUNGARY	3.3
FRANCE	1.3	POLAND	4.23
ITALY	1.3	ROMANIA	5.2
NETHERLANDS	1.97		
NORWAY	2.4		
SWEDEN	1.48		
SWITZERLAND	1.76		
UNITED KINGDOM	1.36		

Source: The Author's Calculations Based on Maddison and the IMF Projections

The Eastern European countries recorded much higher growth rates compared to the Western European countries in a period 1990-2024. This means that they managed to close the gap with the more developed Western economies and converge a good deal.

Chapter 3: Comparison between average annual growth rates in the Eastern European economies and comparison of health sector, education, and distribution of income before and after the transition [17-20].

Table 7: Average Annual Growth Rates in the Eastern European Countries in Periods 1950-1990 and 1990-2024.

COUNTRY	GROWTH RATE (%) 1950-1990	GROWTH RATE (%) 1990-2024
ALBANIA	2.3	3.75
BULGARIA	2.9	3.2
CZECHOSLOVAKIA/THE CZECH REPUBLIC	2.2	2.8
HUNGARY	2.2	3.3
POLAND	1.9	4.23
ROMANIA	2.8	5.2

Source: Author's Calculations Based on Maddison and the IMF Projections.

The data from the tables 5,6, and 7 indicate that the Eastern European countries performed better as free market economies than as command economies.

However, this group of countries experienced deterioration in three areas after the transition, namely health, education, and distribution of income.

Health Care

By the end of the 1980s all countries of Eastern Europe and the former Soviet Union enjoyed a relatively high level of human development index and social welfare. This was reflected in a high life expectancy, which by far exceeded the life expectancy in the other countries at the similar level of development. This was the result of a high level of medical protection. The health system, although inefficient according to the Western criteria, was of a very high quality and free at the point of delivery for all citizens [21, 22].

At the beginning of transition, a sharp fall in GDP negatively affected real consumption and health care. This characterized the health system even when growth was resumed. The percentage of deliveries attended by non-professionals increased. Impoverished medical workers ask for a bribe for performing medical services. This puts poor citizens in unfavorable position. Universal access to health care, taken for granted in the communist system, has been put in danger. This was the result of a friction between the health budget and real costs of medical treatment. As a result, the quality of health care has been deteriorating. In

addition, households feel an increase costs of direct and indirect payment for medical services. The evidence shows that the costs of health care are increasingly regressive. This negatively affects poor layers of population, who are struggling to foot medical bills, which means that the universal access to health care is compromised. In other words, although the health care system is still mainly in the public sector and officially free at the point of delivery, increasing numbers of poor cannot afford a medical treatment [23-25].

Education

Education, the brightest spot of the communist system, became another victim of transition. In the communist system, a high percentage of GDP was allocated to education. Educational standards were extremely high even when compared to most developed Western countries. Primary education was compulsory, and illiteracy among adults was almost eradicated. There was a wide network of kindergartens for children of the age 3 to 6, as well as a network of vocational and technical schools for those who wanted to continue education after completing primary school. However, excellent performances have been deteriorated and it is unlikely that high levels of literacy would be maintained in the future [26].

Deterioration has engulfed both, the demand and the supply side of education. Low salaries and a loss of status teachers had in the previous system prompted many to leave education. With the reduction in investment in education this had negative repercussions on the quality of the educational process.

On the demand side negative impact was threefold. Firstly, the attendance of pupils coming from poor families has fallen due to their inability to afford school uniforms, textbooks, and other necessary school equipment. Secondly, some children do not attend school regularly since they have to work in order to supplement family income or to look after their younger siblings. Thirdly, even if they attend school regularly, they do not have much benefit of it. This can be the result of a lack of heating, poor ventilation, or the absence of elementary resources, or because of the absence of poorly paid teachers who during school hours do other jobs to increase their income.

A conspicuous characteristic of the education system after transition is expansion of private universities. Private universities are richer and better equipped than public universities and offer previously less represented courses such as computer sciences, business studies, marketing, management, accounting, law etc. The quality of private universities varies a lot, since this sector of high education is still unregulated. Establishment of private universities was encouraged by the USA, where the quality of private universities education is higher than the quality of education provided by state universities. However, the former communist countries are still far from the situation in which the same would apply to them [5].

Distribution of Income

Eastern European countries had a pretty egalitarian distribution of income in the communist system. Absolute poverty, at least officially, did not exist, and the percentage of rich did not exceed 5 per cent. The rich were recruited from the ruling establishment (party top brass, ministers, generals, etc.), comprising 2-3 per cent of population, and the same percentage of those who operated in an informal economy. In the absence of significant ownership of capital and land differences in the level of income for the rest of population stemmed from differences in the level of education and responsibility in the work place. These differences, however, were negligible in comparison with those in the Western countries.

Economic transition was accompanied by an increase in inequality in all transition countries. A double process of transition from command to free market economy and privatization of state-owned enterprises played a vital role in a sharp rise in inequality.

A market system increases inequality in distribution of income since it assumes the link between earnings on one hand, with taking a risk, proficiency, individual talents and effort on the other hand. Also, differences in earnings are much higher in the private sector than in the public sector. A trend of increase in inequality has started in Western countries in 1979, when a neoliberal revolution overthrew Keynesianism. However, there were three differences between Eastern European and Western European countries. Firstly, the percentage of privatized means of production in the West was much lower than in the East. Secondly, the Western European countries retained the system of progressive taxation with the aim of correcting a market failure in distribution of income and wealth., while most of the Eastern European countries have had low and flat tax rates. Thirdly, wrong methods of privatization in the Eastern European countries led to concentration of wealth in a small number of hands, and were accompanied by a high increase in unemployment. Unemployed, without a safety net which exists in the Western countries, found themselves in a vulnerable position. An additional factor which contributed to inequality in distribution of income was a large informal sector, unearned income, and violation of contracts with a widespread practice of deference in payment to workers with low wages.

As a result of this, Gini coefficient, which varied between 0.22 and 0.28 in the most of Eastern European countries in 1989, exceeded Gini coefficient in the Western European countries. The highest rise of Gini coefficient occurred in Russia and Romania, where it rose from 0.27 in 1989 to 0.52 in 2001, and from 0.16 to 0.39 respectively [6].

As a result of these trends there has been a surge of nostalgy to the old system among certain layers of population, particularly in the former Yugoslavia [7].

The following table shows subjective assessments of transition

Table 8: Economic situation is better today than in 1989. (percentage of interviewees)

	I agree	I disagree	Undecided
Central European and Baltic states	40	40	20

Commonwealth of independent states	40	46	14
Countries in South-Eastern Europe	20	64	16

Source: Christopher Cviic & Peter Sanfey:"In Search of the Balkan Recovery-The Political and Economic Re-emergence of South-Eastern Europe" EBRD/World Bank, London, 2006, p154

Conclusion

In 1950 the European West was more developed than the European East. The least developed Western country Italy was at the same level of development as the most developed Eastern country Czechoslovakia. In a period 1950-1990 the European West grew faster compared to the European East and increased its advantage. Therefore, a divergence between the two groups of countries occurred. After the transition, in a period 1990-2024, the European East grew faster than the European West and managed to catch up. Therefore, in this period a convergence occurred between the two groups of countries.

The European East grew faster in a period 1990-2024 than in a period 1950-1990. All this would lead to a conclusion that free market economies have been superior to command economies. However, if non-monetary indicators are used the command economies faired much better in comparison with free market economies than when GDP per capita (PPP) is used. The command economies had a high Human Development Index. This was the result of excellent health and education system. In addition, after the transition the European East experienced a rapid deterioration in the quality of health and education system. Also, Gini coefficient significantly increased, particularly in Russia and Romania. A survey conducted in 2006 shows that only a majority of citizens in the Central European and the Baltic states thought that the quality of life improved after the transition. A majority of citizens in the other two groups, namely the Soth-East European countries and the former republics of the former Soviet Union thought that the satisfaction with life was better in the ancient regime. Therefore, the result is inconclusive.

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