Chapter 14: Population, living standards and wellbeing, 1949-1989

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1. Introduction

The period 1949-1989 was a time when Central and Eastern European countries were forced to participate in arguably the world's largest social and political experiment, state-socialism.¹ All these systems promised a fast way to overcome the long-run backwardness of these eastern, peripheral, regions of Europe and even surpass Western market economies in term of welfare and living standards. They also propagated the idea of egalitarianism and meritocracy, which promised the masses a major improvement over their position in the previous, often oppressive regimes before 1945.

Our main goal in this chapter to find out how much the state-socialist regimes of Europe managed to fulfill their promises, and in which respect they failed. To this end we apply a multi-perspective approach, looking at main dimensions of welfare and well-being being as proposed in the literature, i.e. demographic trends, human capital, and income. In Section 2 we review the main demographic tendencies, fertility, mortality and migration. Section 3 focuses on the two principle components of human capital: health and education. We show that, after initial success in public health, socialism was not able to maintain its complex health system and mortality rates started to increase in the mid-1960s.

In section 4 we deal with the inability of socialist regimes and their centrally planned economies to achieve a convergence with Western Europe in terms of income. Finally, in Section 5 we offer an overview of the main tendencies with the composite indicator Human Development Index (HDI). We also look at alternative indicators that can capture the general mental state of citizens in these regimes, namely mortality due to hypertension and alcohol consumption. In Section 6 we summarize our findings.

2. Demographic tendencies in Eastern Europe during the state-socialist period

Up to the mid-19th century, the Eastern European region was sparsely populated relative to Western Europe. Even though Eastern Europe also participated, mainly via migration, in the large growth in population that occurred during the demographic transition in the 18th and 19th centuries, growth remained modest compared to Western European standards. Eastern Europe started to catch up in the second half of the 19th century, when modern agricultural and medical techniques and improving welfare allowed for a rapid acceleration of net births within the region itself. After World War 2, this catching up process continued at a slow pace as shown by Figure 1.

¹ We will use the word state-socialism to refer to the existing socialist (communist) regimes in Europa. This is to acknowledge the large differences among different ideas and types of socialism, some of them clearly anti-state (social anarchism) while others being etatist. Also, the existing socialist systems were far from the ideal of Communism envisioned by Marx and Engels. State capitalism is perhaps a more fitting description.

Figure 1
European population as percentage, 1938-1990

Note: Central Europe in 1938 does not include Germany, while from 1950 on it includes the GDR. Source: Demographic Yearbook (various issues), Maddison (2009), WDI (2014)

The share of the European socialist countries (with the Asian republics of the USSR omitted) in total European population increased only marginally after World War 2 from 43.5% in 1950 to 46% in 1990 (see Figure 1). In this sense the state-socialist regimes of Europe, considering their often explicit propagation of demographic expansion, just slightly outperformed the European market economies: the average annual growth rate of the population was remarkably similar: 0.7% per annum in the Eastern Europe (0.5% in Central Europe, and 0.9% in South-East Europe and 0.9% in the European half of the Soviet Union) while in the market economies it was about 0.6% per year on average (0.6% in Western and Southern Europe and 0.5% in Scandinavia). Hence, even relative to 1938 (40.6%) the region's importance increased during the decades of state-socialism.

When the whole Soviet Union is also taken into account, the pace of population growth in the socialist countries increases even further. The USSR underwent a rapid population growth after 1945 with a population of circa 174 million in 1946 and 289 million in 1989, which amounts to a 1.18 % annual growth rate roughly twice as high as that in Western Europe (0.6%) and 70% higher than in the Eastern European socialist countries (0.7%). Yet the distribution of this post-war growth was uneven: the highest growth rates can be observed in the Central Asian republics, most notably in Kyrgyzstan (2.3%), Turkmenistan (2.8%), Uzbekistan (3%), and Tajikistan (3.1%).

The relative population growth bonus of European state socialist countries after World War 2 is attributable to three demographic factors, i.e. the population losses during World War II, a phase shift in general demographic tendencies, and migration.

2.1 Population loss and restoration

The war casualties in Eastern Europe were much higher than in Western Europe. For Poland, they are estimated at about 6 million (Materski and Szarota, 2009), those in Hungary and in Romania at 564,000 (Stark, 1995) and circa 500,000 (Urlanis, 1971) respectively, while the Soviet Union suffered ca. 27 million casualties (Davies, 2006). For comparison, the total French losses including those in the colonies, were about 600,000, while the total losses of the UK amounted to circa 450,000 (Frumkin, 1951). That is, Eastern European countries with populations in the range of 9-16 million suffered similar losses in absolute terms as Western European countries with populations in the range of 40-50 million. This fact itself explains why the Eastern European and USSR populations grew annually by 1% and 1.6% respectively between 1947 and 1955 while in the same period the capitalist countries in Europe experienced a growth rate of only 0.8%. The ensuing population growth in 1955-1989 (0.6% and 1.1% annually in Eastern Europe and the USSR respectively) was also above that of the Western countries (0.5% annually). Three notable exceptions are France, Switzerland and the Netherlands whose populations grew by 1%, 1.2% and 1.4% respectively, that is, at a rate comparable to Romania (1.1%) and Poland (1.7%). But the biggest population growth occurred in Albania, at an exceptional 2.1% yearly rate.

2.2 Demographic transition

The second explanation is that, similarly to the phase shift in terms economic and social development between Western and Eastern Europe, the demographic transition occurred later in Eastern Europe than in Western Europe as observed by among others Rychtaříková (1999).

The demographic transition is the historical process of decreasing fertility, interlinked with economic development and social changes (see for example Chesnais 1992) that can be divided into different phases. Before the transition, population changes are characterized by a strong link between fertility and income, with high birth rates, high mortality and early marriages. The first phase of transition is dominated by a reduction in mortality while birth rates remain high, which causes a strong population expansion. In the second phase fertility rates also strongly decrease, achieving a stable low mortality, low fertility state (ageing society, with late marriages and few children). While the first phase started in the 18th century in Western Europe, Eastern Europe experienced the same only from the mid-19th century on. Similarly, while most Western European societies entered the final phase by the 1970s, even as late as the mid-1990s most Eastern European countries were still characterized by marriage at younger age than in Western Europe (Rychtaříková, 1999: Figure 2). As such, the faster population growth rates of the Eastern European countries can be explained by the later onset of the final phase of the demographic transition, roughly 20 years after Western-Europe, as also reflected by the Figures 2a-2c.

In Figure 2a we can observe that the Crude Birth Rate reduced in basically the whole of Europe, which is indicative that by 1950 whole Europe entered the second phase of demographic transition. Accordingly, mortality also decreased everywhere up to the 1960s (Figure 2b), mostly due to improvement in healthcare and nutrition, hence in terms of mortality the population of Western and Eastern Europe could not be divided (Luy et al 2011: 55.). The bifurcation occurred in the years 1961-65 when the crude death rates started to increase in the socialist countries, while the modest improvement continued in Western Europe and the market economies of Southern Europe (including Greece, Spain, Portugal and Italy). The only deviation is in Scandinavian countries, where mortality slowly started to grow as well. This increase in the socialist countries and Scandinavia is partly due to an increased consumption of alcohol, leading to higher chance of infectious, respiratory and cardiovascular diseases, especially in the USSR. Also the probability of violent death grew steadily in the Eastern Blok, while it decreased in the West (Meslésem and Vallinsem, 2002).

Figure 2b
Crude Death Rate (CDR, number of deaths per 1,000 inhabitants), 1950-1990

The net relative change of the population can be calculated as the difference of CBR and CDR (Figure 2c). The post-war population restoration paired with an initial reduction in mortality has led to an initial population growth bonus for the European socialist countries (except the USSR), that started to decline in the 1960s and converged to the Western European level by 1990.

Figure 2c
CBR-CDR, 1950-1990

Another way to look at the main demographic tendencies of Europe is the number of births per women or Total Fertility Rate (TFR, Table 1). Depending on mortality, the replacement level of TFR, that is the level at which the population remains stable, ranges between 2.05 (Reunion) and 3.43 (Sierra Leone). According to Espenshade et al (2003) 2.1 seems a reasonable assumption for Europe and we can expect that the TFR would stabilize at a level around or below 2.1 once the demographic transition is complete.

Looking at the actual fertility rates (see Table 1), we can arrive at some quite surprising results: the first region where the TFR went below the replacement level was the European part of the Soviet Union, signifying the large differences in demographic tendencies among the European and Asian republics, the latter being consistently above the replacement level. The next in line to fall below the replacement threshold were Scandinavia and Western Europe the 1970s and hence the demographic transition was complete there. The socialist countries of Central and Eastern Europe reached the replacement level in the 1980s, roughly in the same period as the Southern European market economies (Spain, Portugal, Italy and Greece).

Table 1

Total Fertility Rate (TFR – births per women in childbearing age) in different European regions (weighted by population)

Region	Year							
	1955	1960	1965	1970	1975	1980	1985	1990
Central Europe	2.91 ¹	2.64	2.35	2.13	2.33	2.19	2.18	2.01
South East Europe	2.96	2.69	2.37	2.74	2.52	2.34	2.29	1.96

USSR	2.82	2.91	2.63	2.55	2.49	2.33	2.43	2.25
European part of USSR	NA	2.47	2.11	2.05	2.01	1.92	2.07	1.89
Western Europe	2.51	2.64	2.73	2.33	1.76	1.71	1.63	1.65
Southern Europe	2.48	2.58	2.72	2.58	2.44	1.93	1.54	1.37
Scandinavia	2.56	2.50	2.56	2.01	1.82	1.65	1.64	1.91

Note: For comparability issues Germany (FRG and GDR) is omitted, ¹ only Poland and Hungary

Sources: World Development Indicators and Demographic Yearbook

The TFR decreased in the decades after the war in Eastern Europe, which was natural in the light of the replenishment of the population. Nevertheless, this demographic tendency resulted in active pro-fertility policies in Eastern European state-socialist countries that sought to counter the effect of demographic transition. As Bradatan and Firebaugh (2007) note, the Marxist ideas of elevating women's status within the society came in conflict with the desire for higher fertility, simply because increasing female earnings and employment opportunities increased the opportunity costs of children. Some regimes introduced harsh, coercive measures to increase fertility, such as the ban of abortions between 1953 and 1957 in Hungary (Tomka, 2002) and in 1966-1990 in Romania (Bradatan and Firebaugh, 2007). The more liberal policies in Hungary following the revolution of 1956 resulted in record low fertility in the 1960s, which changed only temporarily during the 1970s as a result of improving living conditions and welfare policies. Albania had remained steadily anti-abortion until 1991.

Yet, socialist regimes were not uniform in their view on abortions: when some Eastern European socialist regimes made abortion illegal, Soviet laws became more liberal: abortion was prohibited in 1936 but became easily available and free of charge after 1955 resulting in record high number of abortions in the range of 6-7 million a year (Wites, 2004). Similarly, in Poland where abortion had been prohibited since 1932, the law became more lenient in the 1960s and 1970s until the transition, when the government returned to the strict control.

2.3 Intra-European migration

So far we discussed population trends internal to the countries involved. Yet also migration played a significant role. In the 1960s (see Table 2) the migration from Southern to Western European market economies (29.3% of total internal European migration) was the main migration route, dominated by people moving from Italy and Spain to West Germany.

Migration from the European state-socialist countries to the market economies of Europe was the second most important route with 19.2%, while only 3% of all migrants were moving to socialist countries. But most of the inter-bloc migration was due to the immigration of GDR citizens to the FRG (233,715 people, which alone accounts for 18.2% of the total European migration, and hence about 95% of the total east-to-west migration).

The low share of other socialist countries in the migration to the wealthier market economies is mostly due to the drastic measures blocking the freedom of travel of citizens in the state-socialist countries. During this especially intense phase of the Cold War borders between

the two political blocs were strongly controlled, often blocked with minefields, and passports were difficult to acquire.

Table 2
Migration, main destinations around 1960

	DESTINATION	Central Europe	South East Europe	USSR	Western Europe	Southern Europe	Scandinavia
O R I G I N	Total numbers (total intra-European migration: 1,213,728)						
	Central Europe	567	188	191	239,761	28	432
	South East Europe	34	1	19	2,761	3	21
	USSR	123	0	0	2,893	0	165
	Western Europe	4,513	4,207	267	183,537	220,363	12,291
	Southern Europe	4,098	3,829	20,983	376,499	66,918	7,104
	Scandinavia	93	47	833	5,709	637	13,269
	As % of migration from origin						
	Central Europe	0.24%	0.08%	0.08%	99.42%	0.01%	0.18%
	South East Europe	1.20%	0.04%	0.67%	97.25%	0.11%	0.74%
	USSR	3.87%	0.00%	0.00%	90.95%	0.00%	5.19%
	Western Europe	1.06%	0.99%	0.06%	43.17%	51.83%	2.89%
	Southern Europe	0.85%	0.80%	4.38%	78.53%	13.96%	1.48%
	Scandinavia	0.45%	0.23%	4.05%	27.73%	3.09%	64.45%
	As % of intra-European migration (totals 91.39%)						
	Central Europe	0.04%	0.01%	0.01%	18.69%	0.00%	0.03%
	South East Europe	0.00%	0.00%	0.00%	0.22%	0.00%	0.00%
	USSR	0.01%	0.00%	0.00%	0.23%	0.00%	0.01%
	Western Europe	0.35%	0.33%	0.02%	14.31%	17.18%	0.96%
	Southern Europe	0.32%	0.30%	1.64%	29.35%	5.22%	0.55%
	Scandinavia	0.01%	0.00%	0.06%	0.45%	0.05%	1.03%

Source: UN, *Demographic Yearbook* 1977, Table 29.

Note: The migration data has been cross-checked by comparing immigration and emigration figures for all available countries within Europe. Missing countries were interpolated using immigration and emigration of countries that were available.

Note: Since the USSR is one single country while this table only reports between country migration, migration from the USSR to the USSR is set at 0.

By the end of the 1980s this situation changed as more liberal policies in the Eastern Bloc allowed an easier migration and the economic conditions in Southern European countries improved. The European state-socialist countries (without the USSR) became the main origin of intra-European migration being responsible for 44.2% of all internal European migration (Table

3). The predominant direction was toward the market economies of Western Europe, amounting to 91.9% of the total outgoing migration from the region.

Table 3
Migration, main destinations in 1987/88

	DESTINATION	Central Europe	South East Europe	USSR	Western Europe	Southern Europe	Scandinavia
O R I G I N	Total numbers (total intra-European migration: 1,282,870)						
	Central Europe	25,305	2,803	510	392,222	841	3,585
	South East Europe	6,719	8	0	101,139	66	3,396
	USSR	3,384	5	0	56,347	108	956
	Western Europe	1,368	35,291	6,333	168,422	54,134	11,864
	Southern Europe	194	54	333	135,201	1,014	3,070
	Scandinavia	173	515	66	16,315	974	25,263
	As % of migration from origin						
	Central Europe	6.0%	0.7%	0.1%	92.2%	0.2%	0.8%
	South East Europe	6.0%	0.0%	0.0%	90.8%	0.1%	3.1%
	USSR	5.6%	0.0%	0.0%	92.7%	0.2%	1.6%
	Western Europe	0.5%	12.7%	2.3%	60.7%	19.5%	4.3%
	Southern Europe	0.1%	0.0%	0.2%	96.7%	0.7%	2.2%
	Scandinavia	0.4%	1.2%	0.2%	37.7%	2.2%	58.3%
	As % of intra-European migration (totals 87.2%)						
	Central Europe	2.1%	0.2%	0.0%	32.3%	0.1%	0.3%
	South East Europe	0.6%	0.0%	0.0%	8.3%	0.0%	0.3%
	USSR	0.3%	0.0%	0.0%	4.6%	0.0%	0.1%
	Western Europe	0.1%	2.9%	0.5%	13.9%	4.5%	1.0%
	Southern Europe	0.0%	0.0%	0.0%	11.1%	0.1%	0.3%
	Scandinavia	0.0%	0.0%	0.0%	1.3%	0.1%	2.1%

Source: UN, *Demographic Yearbook* 1989, Table 28.

Note: The migration data has been cross-checked by comparing immigration and emigration figures for all available countries within Europe. Missing countries were interpolated using immigration and emigration of countries that were available.

Note: Since the USSR is one single country while this table only reports between country migration, migration from the USSR to the USSR is set at 0.

Unlike in the 1960s, this migration was not dominated by East-Germans moving to the FRG since of the 460,133 immigrants arriving from European socialist countries (with those from the USSR this rises to 514,858) to West-Germany, only 43,314 were from the GDR. The dominant source was Poland with 313,792 immigrants to the FRG, followed by Yugoslavia (56,478) and the Soviet Union (54,725).

3. Human capital: health and education

Human capital is generally defined as the qualitative aspect of labor, that is those skills and abilities that are used in creating new value (value added). Human capital has two components: the health component, which affects the availability of workforce and the quality of its efforts, and the education/training component that is acquired by formal and informal forms of schooling. Since in modern welfare states the health status of labor force is good enough so that it does not act as an observable bottleneck in labor supply, researchers often focus only on the educational stock. In developing regions, however, improvements in health are still a major contributor in the improvement of labor quantity and efficiency. The same may have held true for Eastern Europe in the mid-20th century, hence health is the first component to look at. This is then followed by the discussion on the educational attainment, a popular albeit imperfect measure of educational component, and finally we offer, in our opinion, more apt measure of human capital via its value.

3.1 *Longevity, health and healthcare during socialism*

One obvious indicator of the availability of human capital is longevity which is reflected by Life Expectancy at Birth. It is also an important aspect of quality of life, hence it also is one of the four fundamental indicators used in the traditional version of the Human Development Index. Life expectancy at birth is defined as the number of years that a group of individuals born in the same year are expected to live, provided there are no changes in the mortality pattern (no war or large diseases). Figure 3 visualizes the main trends. We can observe that, with the exception of Albania where life expectancy rose from 62 in 1960 to 71 in 1989,

Figure 3

Life expectancy at birth in European state-socialist and market economies, 1950-1989 (weighted by population)

Source: *World Development Indicators* (2014); UN, *Demographic Yearbook* (historical supplement)

Note: Belgium and Greece are omitted for comparability.

Table 4
Life expectancy at birth

year	Central Europe ¹	South East Europe	USSR	European part of USSR	Western Europe ¹	Southern Europe	Scandinavia
1955	66.2 ²	61.1	66.0	65.4	64.6	66.3	71.0
1960	68.4	65.4	68.7	66.7	70.6	68.5	72.0
1970	69.7	68.4	69.5	68.8	71.9	71.3	73.3
1980	70.0	70.0	69.2	67.6	74.0	74.1	74.9
1990	70.8	71.1	69.9	69.3	76.3	76.7	76.1

¹ without GDR and FRG for comparability, ² Bulgaria is missing

Source: *World Development Indicators* (2014); UN, *Demographic Yearbook* (historical supplement)

Eastern European socialist countries did not book a significant improvement in terms of life expectancy after 1960. Rather, just like the USSR, they remained around 70, while Life expectancy grew steadily in Western and Southern European countries as well as Scandinavia, nearing and exceeding 75 by the 1990s. This is partly due to the inability of state-socialist regimes to preserve the efficiency of their large, often far too complex healthcare systems, which brings us to another important aspect of the health status of the potential labor force.

Even though the socialist regimes celebrated universal healthcare as their own achievement, the region's public health systems underwent a significant improvement already in the interwar period. In Czechoslovakia, for example, compulsory insurance, health facilities and staff were all expanded in the interwar years. This came to an abrupt halt during World War II and only resumed after the socialist take over (Svobodny et al. 2004). Similarly, after health conditions in Hungary worsened during and after World War 1 to such an extent, that the country had one of the highest infant mortalities in Europe, healthcare became a focal point of national development policy. The government set up the National Institute of Public Health in 1927 and the National Social Security Institute in 1928. Also, the regular health control of pupils in public schools became compulsory (Hahn 1960). Hence, the fundamentals of a modern public health system had already been at place by the time the communist parties came into power in the late 1940s and began to faithfully copy the soviet healthcare system.

It was the Soviet Union where archetype of socialist healthcare was introduced and this system was adopted by the state-socialist countries of Europe as well, with some minor differences. The existing medical institutions of Russia were quickly nationalized in 1918, even though some private practices were tolerated into the 1920s. The soviet (and all state-socialist) healthcare system was declared to be the responsibility of the state, available universally at no direct cost. It was also declared that the administration must be centralized and unified, the working class is entitled of preferential treatment and finally preventive medicine was given a priority (Leichter, 1979). Settlements were divided into medical micro districts, removing the freedom of the patients to choose their physicians. A polyclinic system was created to serve multiple districts each, equipped with the diagnostic devices as specialists. Hospitals were supposed to be at the top, offering the most complex care. The achievements of state-socialist regimes in terms of quantitative measures were indeed impressive in the first decades, until the 1960s, for example the number of patients per hospital bed were 767 in Russia in 1913, and only 86 in 1973, similar to Germany in the same year (87) (Leichter, 1979, table 7.2, p. 227).² Also life expectancy grew from 32 in 1913 to about 70 by 1973.

A similar improvement can be seen in other socialist countries in terms of hospital beds (Figure 4a), reflecting the expansion of the healthcare system. Yet, with the exception of the USSR, most socialist countries could just get close to the level of Greece and Belgium (Figure 4b).

Figure 4a

Number of hospital beds/1000 inhabitants in European state-socialist economies, 1960-1989

² The reliability of soviet healthcare statistics is questionable though.

Figure 4b

Number of hospital beds/1000 inhabitants in European market economies, 1960-1989

Yet, the system had its flaws. Firstly, it was not free. The low salaries of medical staff paired with the patients' demand for exceptional treatment, led to the custom of gratuities. At the end of the 1980s, patients could be charged 500 rubles for surgery, when the average salary was still about 200 rubles a month. Secondly, its access was not equal: while the majority received health care via the public health system, the party elite and workers of privileged companies had their own network of hospitals with better equipment and better paid staff (Schultz and Rafferty, 1990). The inability of the state-socialist governments to ensure adequate funding for their large and complex healthcare system became especially visible with the advances of medical technology from the 1960s. For example, in 1988, there were just 50 computerized tomographic scanners in the whole USSR, while only Australia and Japan had 170 and 4,554 in 1987 according to the OECD Health database (see Figure 5).

Figure 5

Computerized tomographic (CT) scanners per million residents, 1980-1990

Source: OECD.Stat (database), OECD Health Statistics 2016.

Nutrition is another important aspect of health. Figure 6 reports the total daily calorie intake in a some selected European countries. Since in all countries the daily intake was significantly above the 2,250 kcalories deemed ideal for an average person, the differences among country averages reflect also cultural differences. What is more worthwhile is to compare are the trends. In wealthy market economies like Austria, Finland or the Netherlands, the caloric intake seems to fluctuate around a long-term trend or perhaps even moderately reduces (Finland). In the arguably wealthiest state-socialist country, Hungary and in the less wealthy market economy, Greece, the caloric intake increased in the period under study. In Poland, the changes in calorie intake reflect economic difficulties, as it sharply dropped from a very high level to the level of Hungary and Greece around 1979. Contrary to the popular view that, in state-socialist economies the increased nutrition came mainly from fat and carbohydrates, Figure 7 shows that the per capita protein intake was very similar in market economies and the more fortunate socialist countries. Unfortunately, we have no data available on nutrition in Romania, Bulgaria or the USSR, which would probably change the overall picture, since these countries had a much more limited availability of food at certain periods than Poland or Hungary.

Figure 6

Average calorie intake per day (kcal)

Source: OECD.Stat (database), OECD Health Statistics 2016.

Figure 7
Average protein consumption per day (gram per capita)

Source: OECD.Stat (database), OECD Health Statistics 2016.

3.2 Education

Besides health, one other area related to human capital on which communist parties and state-socialist regimes put a special emphasis was education. In this respect Eastern Europe had a bad starting position with its average educational level being only 55% of that in Western Europe in 1938 (Figure 8, Table 5) despite some promising initiatives in the interwar period.³ In this respect they were comparable to both the USSR and Southern European countries. This led socialist

³ New universities were founded in Czechoslovakia and Hungary, Poland introduced compulsory education in 1918, a new program of building public schools was started in Hungary and Poland (Sugár et al 2004, Lukowski and Zawadzki, 2006) and Romania allowed minorities to establish secondary schools after 1925 (Hitchins, 2014).

regimes in all countries to begin literacy campaigns that either eradicated or at least strongly reduced illiteracy.

Figure 8

Average years of education in Europe, 1938-1990 (weighted by population)

Source: Van Leeuwen and Van Leeuwen-Li (2014); Foldvari and Van Leeuwen (2014).

Table 5

Regional population weighted means of average years of education

	European market economies			State socialist economies			
	Western Europe	Southern Europe	Scandinavia	Central Europe	South-Eastern Europe	USSR	European part of the USSR
1938	7.4	4.2	6.3	3.4	3.6	3.2	
1950	7.6	4.7	7.1	4.0	4.7	4.6	
1960	8.2	5.4	7.9	4.9	5.8	5.2	
1970	9.7	6.3	9.2	6.0	6.7	6.7	6.7
1980	10.8	7.3	10.5	7.2	7.6	8.6	8.6
1990	11.4	8.3	11.3	8.1	8.6	9.9	9.9

Note: Germany is omitted for comparability.

Source: Van Leeuwen and Van Leeuwen-Li (2014); Foldvari and Van Leeuwen (2014).

In this way, they not only managed to reduce the lag in terms of educational attainment, but even overtook Southern Europe.

Yet educational attainment does not tell the entire story. The main, albeit not sole, role of education in a modern society is to enhance and produce human capital, which encompasses those skills and abilities that are used in creating new value and result in additional income. In this sense, there are major differences between the socialist countries and both Western and Southern Europe as their educational system was characterized by a strong focus on vocational

education and higher education preserved its elite status until the transformation. This was different in Western Europe where higher education underwent a massive expansion in the 1970s and 80s from ca. 8% to 15% attainment causing Eastern Europe to fall behind from 75% of the western level in 1950 to 50% around 1990.

3.3 Human capital

As pointed out, both health and education, as well as various other factors, may affect the “skills and abilities that are used in creating new value and result in additional income”. In order to capture the best possible trend in human capital, we can calculate such a stock by an income-based approach that is an analogue of the way how investments are valued: the current value of an investment equals the discounted sum of all future payouts. Similarly, the value of human capital can be defined as the discounted sum (or present value) of all expected future earnings (Van Leeuwen and Foldvari, 2013). Algebraically:

$$h_{i,x} = \int_{t=0}^{65-\bar{x}} \bar{w} e^{(g-q)t} dt = \frac{\bar{w}}{g-q} \left(e^{(g-q)(65-\bar{x})} - 1 \right), \text{ where } \bar{x} \text{ and } \bar{w} \text{ is average age and the expected real}$$

wage of individual i respectively, and g and q are the expected growth of real earnings and the discount factor which we set at 0.02. The formula above assumes that the individual remains in the labor force until age 65.

Figure 9 reports the estimated income-based human capital estimates of four Eastern European state-socialist countries, and that of Austria and the Federal Republic of Germany for

Figure 9
Income based human capital stock in West Germany, Austria, Spain and four European state-socialist countries, 1938-1989 (2005 Intl. dollar)

Source: Van Leeuwen and Foldvari (2013); Didenko et al. (2013); this text.

comparison. While we find that Eastern European countries were successful in a convergence to the West in terms of educational attainment, this does not hold true for the actual value of human capital.⁴ Human capital grew faster in Austria and the Western Germany than in Eastern Europe and the USSR, reflecting the less efficient situation of various other factors making up the composite human capital stock. Indeed, besides better health facilities, also the much more efficient use of labor (human capital) in market economies played a major role in this divergence. In fact, the same holds true for Southern Europe: whereas the state socialist countries overtook Southern Europe in terms of average years of education, they actually fell behind in terms of human capital suggesting that also compared to Southern Europe, the state-socialist economies experienced less development in other factors making up the stock of human capital.

4. Income and material welfare

4.1 Income per capita

Kornai (1992) characterized the socialist system by five main features: (1) a single party rule, (2) dominance of state or quasi-state ownership and dominance of bureaucratic coordination, (3) a soft budget constraint, (4) a weak responsiveness to prices, and (5) a chronic shortage economy and a seller's market. Throughout the 50 years' history of state-socialism in Eastern Europe, it showed many faces. Ranging from the Stalinist industrialization of the 1950s, which survived into the late 1980s in some countries, most notably in Romania where it was mixed with some Maoist elements, to the most market friendly reform socialism in Hungary after 1968. Yet, even with these many differences, the five main features remained true for all Eastern European socialist countries and so did those inherent weaknesses of the system that resulted in a low economic efficiency, and ultimately the fall of state-socialism as a political and economic system.

The single party rule meant that all fundamental decisions regarding the economy were subject to the Marxist-Leninist ideas that originated from the classical economics and were left untouched by the Marginalist Revolution of economics during the second half of the 19th century. Indeed, Marxism adopted two fundamental ideas from Smith and Ricardo: the distinction between productive and unproductive labor, and the labor theory of value both later rejected or considered dispensable by neoclassical economics. The distinction between productive and unproductive labor resulted in the adoption of the so-called Material Product System (MPS) in the socialist bloc that assigned value to tangible material production and material services only which was coined Net Material Product (NMP).⁵ As a result, the performance of socialist economies relative to market economies reflects a very different picture when the comparison is

⁴ Van Leeuwen and Foldvari (2008) arrive at the same conclusion applying cost-based measures to a selection of European countries in 1995. The large difference in terms of human capital was still found in the sixth years of transition.

⁵ That is, the value of repairing a radio receiver was part of the NMP, but the value produced by intellectual workers, such as teachers, doctors or lawyers, was not.

made in terms of NMP or Gross Domestic Products (GDP). While in terms of GDP per capita the USA and other market economies performed better than the socialist bloc (see Table 6). In terms of Net Material product however the Soviet official statistics declared triumph over the capitalist world in the 1950s and 60s (see Harrison 1993 for revised estimates).

Table 6
GDP per capita growth in different regions

	1951-60	1961-1970	1971-1980	1981-1990	1951-1990
Central Europe	3.8%	1.7%	3.7%	-1.0%	1.9%
South East Europe	4.6%	3.1%	5.1%	-2.2%	2.6%
USSR	3.9%	1.3%	3.2%	0.0%	2.2%
USSR (in terms of NMP)	6.3%	3.6%	0.8%	0.4%	2.8%
Western Europe	2.9%	2.0%	3.5%	2.1%	2.6%
Southern Europe	4.9%	3.1%	5.0%	2.5%	3.9%
Scandinavia	3.1%	2.1%	3.6%	1.9%	2.7%

Source: Maddison (2009)

The small differences in growth rates added up to a divergent pattern in terms of GDP per capita (Figure 10), especially in the 1980s, the decade of serious economic difficulties for all state-socialist countries.

Figure 10
GDP per capita in European regions (in 2005 int. dollar)

Hence we can conclude that while the state-socialist regimes could achieve a growth, this was not on a par with the income growth experienced by the market economies of Europe. They might have performed well in comparison with their own past, but they failed to achieve their declared goal, a convergence in terms of income with the more developed half of Europe, even when considering their own measure of growth (NMP).

There are many possible explanations for this and we only mention a few here. First, centrally planned economies were not able to keep up with the pace of global technological development: older equipment remained in use longer in Eastern Europe than in the West, and technology imports from Western countries were subject to the strict limitations by the Coordinating Committee for Multilateral Export Controls (usually referred to as CoCom). The second factor was the omnipresence of the state: even if a firm was operating at loss, it was often subsidized by the government, leading to what Kornai (1986) refers to as a 'soft budget constraint'. Third, full employment was considered a fundamental feature of a socialist economy (the society of workers), and was enforced even against economic rationality. As a result, more labor was employed than what was needed and unemployment was kept within the firms, a form of hidden unemployment. This led to an economically inefficient allocation of the factors of production relative to market economies. Last but not least, the central planning bureaus simply did not have enough information to achieve the same efficiency in coordination as a free market. This resulted in shortages and a mismatch between demand and supply. The shortage was further aggravated by the forced export of agricultural, and some industrial, goods in exchange for convertible currencies at the expense of internal consumption. The most notorious examples of such policy are Mátyás Rákosi's forced industrialization program in Hungary (Sugár et al, 1994) that led to the Revolution in 1956 and Ceaușescu's forced industrialization and austerity policy in Romania during the 1970s and 1980s, resulting in a deterioration of nutrition and health and culminating in the 1989 revolution (Hitchins, 2014).

Because of large investments in physical capital and the inefficient allocation of labor, one may expect that differences in the standard of living were even larger when measured in terms of real wages instead of GDP. Table 7 reports the ratio of average wage versus GDP in some selected economies. As can be seen, for Western Europe the wage share was higher in Western Europe than in Southern or Eastern

Table 7
Ratio between average real wage and GDP in selected countries

	Hungary	Poland	Spain	Federal Republic of Germany
1950s	75%	67%		95%
1960s	66%	77%		98%
1970s	68%	81%	39%	98%
1980s	67%	82%	50%	95%

Europe. Indeed, even in the German Democratic Republic (DDR) in 1989, which has the highest income per capita within the Eastern Bloc, real wages had only achieved the same level as Finland in the 1950s. As a reaction to low wages and shortage, people in socialist countries often sought side-employment opportunities in the small, tolerated private sector. In Hungary, which from 1962 proved to be the most hospitable to private enterprises, shortages of goods and services were eased by small privately owned shops and individual entrepreneurs (craftsmen and repairmen) supplying the so much needed services at better quality for a higher price.

4.2 Alternative measures of income

This stagnation in wage income, implied also lower levels of consumption, especially in the decade before the fall of socialism. This may be assessed by looking at human stature (e.g. Mandemakers and Van Zanden 1993; Baten 2000). Table 8 gives the result, which is roughly comparable to the results in Tables 4&6, i.e. height of men in Eastern Europe is structurally lower than those in Western Europe and Scandinavia, but higher than those in Southern Europe. Also the stagnation of income in the 1980s in Eastern Europe clearly stands out.

Table 8
Human adult height (in cm) by year of birth

	Eastern Europe	Southern Europe	Western Europe	Scandinavia
1938		167.6	174.7	176.7
1950	173.7	169.6	176.2	178.8
1960	175.8	171.9	178.2	179.7
1970	178.3	173.2	178.6	179.5
1980	178.4	173.8	179.5	180.4

Source: Baten and Blum (2012)

Note: constructed by taking the region trends and benchmarking on population weighted averages.

Even though income, and height, remained behind that of Western Europe, and even stagnated further in the 1980s, many people did not see state-socialism as a complete failure as it resulted in a previously unknown degree of social mobility, with state supported education programs and the rise of politically reliable individuals to prestigious positions (at the expense of the previous elite). Even though this was rather an improvement over the past, especially when compared to the often dictatorial, and economically fragile, political and economic systems of the 1920s and 1930s, this degree of this social mobility was not unknown in Western European countries either in the same period. Indeed, socialism

Figure 11

Income inequality (Gini coefficients) in European market economies and state-socialist countries, 1950-1989

Source: Solt (2009); Van Zanden et al. (2014)

explicitly propagated the idea of equality. Yet its success was only apparent relative to its own past and not in comparison with its main adversary. Figure 11 clearly shows that Western European countries were more successful in reducing income inequality in the post- WW2 period than the Socialist Bloc. The degree of income inequality was from the 1960s in the same magnitude in the two halves of Europe with the exception of Southern European countries where income inequality remained relatively high until 1989. If nothing else, at least the atmosphere of egalitarianism was achieved.⁶

5. Wellbeing in Eastern Europe during the state-socialist period

So far we discussed demography, human capital (i.e. health and education), and income. Whereas demography is clearly linked to well-being since higher population increases pressure on available goods and services, it is the actual availability of goods and services per capita that is often considered to be indicative for well-being. Indeed, wellbeing is a multidimensional concept describing the condition of an individual or a group. The most popular is the Human Development Index (HDI) which is calculated as an average of these two components: per capita income and human capital (i.e. education and life expectancy).

5.1 Human Development Index

The HDI has a long history of combining, using equal weights, income, life expectancy and education. From 2010, the education component is based on average year of schooling (the mean

⁶ At a price of course as sarcastically put by Churchill's in a speech in the House of Commons 22 Oct 1945: "The inherent vice of capitalism is the unequal sharing of blessings. The inherent virtue of Socialism is the equal sharing of miseries."

years that a person older than 25 has spent in school) and the expected years of schooling (the number of years that a 5-year-old is expected to spend in school in total).

In this paper, we start by estimating a hybrid HDI measure that combines feature of the old and the new index. The income component is calculated as:

$$INC_i = \frac{\ln(y_i) - \ln(100)}{\ln(40000) - \ln(100)} \text{ where } y_i \text{ is the per capita GDP in country } i \text{ expressed in international USD at 2005 prices.}$$

The logarithmic transformation is used to introduce the non-linear, decreasing effect of income on wellbeing.

The education component is a modified version of the post-2010 HDI:

$$EDU_i = \frac{educ_i}{15}, \text{ where } educ_i \text{ denotes the average years of schooling in country } i \text{ of the population aged 15 and above.}$$

That is, it is assumed that the maximum average years of education of the present population is 15 years. Also we do not use the expected years of education since it does not reflect the actual situation, rather a prognosis for the future based on certain assumptions.

Finally, the life expectancy component is simply:

$$LE_i = \frac{LifeExp_i - 25}{85 - 25} \text{ where } LifeExp_i \text{ is the life expectancy at birth in country } i.$$

We assume hence that the maximum life expectancy is 85 years (the current level in the most developed countries), while a life expectancy of 25, typical of pre-industrial societies, is the lower limit. Finally, just like in the pre-2010 version of the HDI, the three indices are aggregated by a simple arithmetic average.

Figure 12 has the main trends of HDI in the main European regions. The HDI grew in both state-socialist and capitalist European

Figure 12
Human Development Index by region, 1950-1989

Note: Germany is omitted for comparability.

countries, but there was no obvious convergence between the two regions. This is an indication of the failure of state-socialist regimes to achieve their main, declared goal to achieve and surpass the living standards of the “West” through modernization and a superior socioeconomic system.

Table 8
Average Human Development Index in Europe 1950-1990 (weighted by population)

	European market economies			State socialist economies			
	Western Europe	Southern Europe	Scandinavia	Central Europe	South-Eastern Europe	USSR	European part of the USSR
1950	0.657	0.530	0.669	0.498	0.429	0.489	
1960	0.705	0.597	0.713	0.578	0.519	0.535	
1970	0.766	0.668	0.772	0.624	0.582	0.592	
1980	0.817	0.722	0.823	0.659	0.629	0.641	0.630
1990	0.855	0.772	0.863	0.676	0.658	0.678	0.678

Note: Germany is omitted for comparability.

Indeed, the only place where some convergence occurred is between Eastern and Southern Europe. This convergence, as seen in the previous Sections, was not caused by per capita income, which grew faster in Southern Europe after the 1960s, but partly by increased life expectancy and education levels. All in all, as Table 8 shows, the HDI in the capitalist European countries was already around 1960 higher than the Eastern European average in 1989. Even in Hungary, having the highest HDI among state-socialist countries, the path of HDI is reminiscent to that of Greece.

Map 1
Human Development Index in Europe in 1950

5.2 Happiness

So far we have focused on three indicators reflecting the quantity of welfare, i.e. life expectancy, education, and per capita income. However, as we have seen, even though in terms of education and life expectancy Eastern European countries fared relatively well, indicators telling us something about their quality (like the number of hospital beds and human capital) paint a different picture. Therefore, we now turn to a more direct measure of well-being, i.e. happiness. A very important proxy of well-being is happiness, that is, how pleased people are with their lives (see e.g. Easterlin 1974). Unfortunately, very few studies are available from behind the iron curtain, and even those are from the 1980s, when many socialist systems tried to limit their oppressive nature. Nevertheless, the degree of happiness was higher in Western European countries than in state-socialist countries as can be seen in Table 9.

Table 9
Share of respondents with category “rather happy” or above in the 1980s

country	Year	% of happy respondents	Source
<i>Eastern Europe</i>			

Belarus	1990	43.8	World Values Surveys, 1990/1994: V18
Russia	1990	47.2	World Values Surveys, 1990/1994: V18
Slovakia	1990	52.0	World Values Surveys, 1990/1994: V18
Hungary	1982	76.5	World Values Surveys, 1981/1984: V10
Poland	1989	87.6	World Values Surveys, 1990/1994: V18
<i>Southern Europe</i>			
Italy	1984	81.0	Eurobarometer 22, 1984: V164
Spain	1985	80.8	Eurobarometer 23, 1985: V60
Portugal	1985	78.9	Eurobarometer 23, 1985: V60
Greece	1984	62.1	Eurobarometer 22, 1984: V164
Turkey	1990	81.0	World Values Surveys, 1990/1994: V18
			World Values Surveys, 1990/1994: V18
<i>Western Europe</i>			
Federal Republic of Germany	1982	83.5	Eurobarometer 18, 1982: V54
Belgium	1982	86.6	Eurobarometer 18, 1982: V54
Luxembourg	1982	88.9	Eurobarometer 18, 1982: V54
Netherlands	1982	98.4	Eurobarometer 18, 1982: V54
United Kingdom	1982	85.0	Eurobarometer 18, 1982: V54
<i>Scandinavia</i>			
Finland	1981	93.1	World Values Surveys, 1981/1984: V10
Sweden	1981	94.2	World Values Surveys, 1981/1984: V10

If we want to get a more comprehensive way to measure happiness is by looking at some detailed mortality statistics. Since stressful life increases the likelihood of hypertension it can be considered the inverse of happiness (e.g. Blanchflower and Oswald, 2008). The data on hypertension related fatalities per 100,000 inhabitants are reported in Figure 13. As can be seen, mortalities due to hypertension were about equal around 1950 but strongly diverging afterwards with Eastern European levels in 1980 being about 3 times that of Western Europe and 5 times that of Scandinavia evidencing the oppressive nature of those regimes and their effect on individual lives.

Figure 13

Mortality due to hypertension related causes in European countries, 1952-1989, cases per 100,000

Note: We used hypertension with and without mentioning the heart (1955 revision of the international classification of diseases) and hypertensive diseases (later classifications), USSR data is not available. Germany is omitted for comparability.

Source: UN, Demographic Yearbook (various issues).

Another indicator of stress and frustration is alcoholism. Figure 14 reports the per capita alcohol consumption tendencies in some European countries from 1960. It should be noted that these data reflect the official sales, hence in countries where private distilling was widespread, the actual consumption might have been much higher.

Figure 14
Alcohol consumption per capita (in liters), 1960-1990

Source. OECD.Stat, OECD Health Statistics 2016.

While we can argue that alcohol consumption was higher in Slovakia and Hungary than in most Western countries, Austria had comparably high consumption statistics, indicating the role of regional differences in drinking habits. In Poland and Russia we see suspiciously low numbers that do not square up with the high mortality rates, especially in the USSR, hence suggesting that most of the consumption is simply not reflected by the official statistics.

6. Conclusion

The aim of this paper was to assess the development of well-being in the state-socialist regimes of Central and South-Eastern Europe. After looking at different indicators, it seems that socialist countries failed in their most important objective, the convergence to Western Europe in terms of longevity, welfare and health. After some initial results, especially in education and public health, the impetus of socialist countries seems to have worn off by the mid-1960s. In addition, the initial economic growth was mainly capital intensive and the failure to keep up with technological developments led to ineffective use of factors of production, resulting in a divergence in terms of income per capita between the two halves of Europe.

The population reacted in two ways: the minority managed to migrate to Western Europe, while many needed to improve their life by their own means. These means included taking up, if possible, by-employment in the tolerated private sphere of the economy, or just by searching outlets of unhappiness in their private life. Many reacted to the stagnating or worsening conditions by frustration and turning to alcoholism, leading to a further worsening of mortality statistics.

This general picture is confirmed by the Human Development Indicator, a composite measure of well-being. The expansion of formal education and the improvement of life expectancy caused HDI to grow at the same or slightly lower rate than in Western Europe, but its growth slowed down in the course of the 1970s.

While socialist regimes had some arguable success in certain components of modernization, such as healthcare and education, and they heavily relied on these in their propaganda, the socio-economic balance of their contribution can only be guessed. They performed probably not worse than their predecessor regimes in the inter-war period, or even surpassed them in certain areas, but they could not work off the secular lag in terms of development between Eastern and Western Europe.

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