

## NEGATIVE IMPACT OF COMMUNISM ON EASTERN EUROPE POPULATION HEALTH

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### **Abstract**

The failure of central planning and elimination of democratic freedoms in the totalitarian systems of the USSR and its satellites adversely affected not only the economy but also the population health. While in the countries with established democracy (DEM) the general health steadily improved, in „socialist“ (SOC) countries the life expectancy (LE) was stagnant and in the USSR even decreased. Dramatic changes in Russia after the demise of Soviet Union resulted in extraordinary destabilization of LE. Twenty years after the breakdown of the Iron Curtain there persists a gap in the general health between the DEM and former SOC regions of Europe. Even within the territory of the former Soviet influence there are differences in LE: Central Europe is much better off than Russia, Romania and Bulgaria. Main causes of high premature mortality in the post totalitarian Eastern Europe are cardiovascular diseases, cancer, external causes of mortality, respiratory and digestive system diseases. Romania and Bulgaria, when compared with the Russian Federation, Ukraine and Moldova has lower mortality of most of these factors with the exception of malignancy. Cancer mortality in Romania and Bulgaria is similar to cancer in countries situated to their east.

**Keywords:** Western Europe, Romania, Bulgaria, Russian Federation, Ukraine, Moldova, life expectancy, cardiovascular diseases, external causes, liver diseases, cancer.

Monstrosities of the communist totality exerted their toll on the health of subjugated populations. Although specificities of the communist grip varied, the Balkan countries Romania and Bulgaria were also affected, in addition to the Central and Eastern Europe<sup>(1)</sup>. In this review we focus on Romania and Bulgaria, comparing the impact of decades of communism on the population health in relation to other European countries.

The data presented here are based mostly on reports of the World Health Organization Regional Office for Europe - European Health for All database updated in July 2010<sup>(2)</sup>, Mortality Indicators by 67 Causes of death, age and sex, updated in July 2010<sup>(3)</sup> and NationMaster.com 2003-2010<sup>(4)</sup>.

### **Life Expectancy (Le) in Romania and Bulgaria before and after the Fall of Iron Courtain**

(LE) is defined as the average number of years a group of people born in the same year can be expected to live if mortality at each age remains constant in the future. This index has been validated as an indicator of the general health of a population.

After the end of World War II the health of most European countries, irrespective of their social order, started to improve. Infant mortality had prominently decreased and the LE

improved. Fig. 1 documents that in 1970 the male LE in Bulgaria was higher than in Austria and the Czech Republic. Further development during the expansion of the Soviet power and until the fall of communism brought about stark differences among nations<sup>(1)</sup>. In the DEM countries the LE continually improved. The SOC regions expressed either stagnation or even a decline in the LE, along with the onset of recession of the centrally directed economies. Male LE for years 1970 and 1990 was in Bulgaria 69.1 and 68.3 years, respectively and in Romania for the same years it was 65.7 and 66.6 years. The LE for the female population shows similar trend.

With the fall of the Iron Curtain and the 1989 revolution, Romania started a series of political and economic reforms. After a decade of post-revolution economic problems, which lead to the decline of LE to 65 years, Romania made successful economic interventions, improving its LE. It joined the European Union in January 2007 and the LE in Romania is further increasing. The improved LE in Romanian women amply confirms the salutary health trend after the fall of communism (Fig. 2).

### **Specific Problems of USSR and Russia**

Events in Russia of the 20th century, marked by dramatic and tragic sequences exerted a definitive impact on the health of its population. After the World War II the Soviet Union was doomed by a slow fateful degeneration of its centrally planned one - party directed political system. A prominent decline in general health occurred in the 1970's to the early 1980's (Fig. 3). During the Gorbatschew perestroika the LE increased due to a measure of political relief and an intensive anti-alcohol campaign. But afterwards social changes related to the overall collapse of the Soviet system resulted in an unprecedented decrease of male LE to 57 years. Such a sharp and sudden drop in LE as in the Russian Federation has not been observed anywhere else in the world<sup>(6)</sup>. Sudden transformation from seventy years of central planning and one-party hegemony to the market economy, induced in Russia a remarkable and devastating rise in unemployment and in general poverty. An unprecedented gap between the dirt poor and the very rich brought along dire human consequences. Official data indicate that up to 30 % of Russians strive below the poverty level. It took until Putin years after 2000, to note some stability and a modest improvement in the LE. The changes of LE were paralleled in Ukraine – Fig 3.

Despite a modest rise in LE in the Russian federation in the past few years, the overall LE is impressively below many other countries (Tab. 1). Russian males have to expect to live almost twenty years less than men in Iceland. Russian males have lives shorter by 7 to 10 years even when compared with countries of the developing world, India, Brazil, Egypt, Algeria, Sri Lanka, Chile and Panama.

### **Population Health Trends in Eastern Europe in Recent Years**

After the breakdown of communism the group of formerly SOC countries in Central Europe (especially the Czech republic) rapidly recovered and their LE started to trail the west of Europe. Austria, in spite of partial and temporary occupation by the Soviet army maintained a democratic system. The level of male and female LE in Austria is impressive (Fig.1).

Remarkably, even twenty years after the breakdown of the Iron Curtain there persists a gap in the general health between the DEM and former SOC regions of Europe.

Table 1 reflects the European LE reported most recently (2007 – 2009). The front runners in high LE are Iceland, Switzerland and Sweden. Icelandic men reached the LE of 80 years but several other DEM countries are trailing close to Iceland. Females who traditionally had better LE than males, have French women as the favorites (85 years). Remarkably, women in

19 other European countries have LE above 80 years. That includes the Czech and Polish females. Of former SOC countries the Czech Republic is a notable exception, demonstrating a more favorable LE for both men and women.

Overall, former SOC countries in Europe have prominently shorter LE when compared with Western Europe. On the average, SOC males lag behind their West European counterparts full ten years, formerly SOC women have LE shorter by six years (both differences at  $P < 0.001$ ).

The male LE of Balkan countries Romania and Bulgaria comes close to that of Slovakia and Hungary and it is impressively better than that of Lithuania, Moldova, Belarus, Ukraine and the Russian Federation. Women in Romania and Bulgaria have the LE shorter than females in 21 other European countries located more to the west.

What are the root causes of such widely disparate LE among European countries, most of which are now joined politically and economically in the European Union?

The main factor responsible for such striking difference in the LE is cardiovascular disease (CVD). Included in Fig. 4 are data on premature male CVD mortality. This statistical health index is even more relevant than the overall mortality because premature male mortality has profound social and economic consequences. Leader in CVD mortality is the Russian Federation with countries formerly belonging to the Soviet Union. Next high in CVD mortality is Bulgaria followed by Romania. Fig. 5 documents interesting trends in CVD mortality: In the Czech Republic a dramatic drop in CVD mortality began right after its Velvet Revolution. In Romania and Bulgaria a more prominent decline in CVD mortality occurred only after 1995. Romania has a more impressive decrease in male premature CVD mortality than Bulgaria.

Malignancy and its impact on population health is of major concern for the Balkan countries. Premature male cancer mortality is an important adverse factor especially in Romania and partly also in Bulgaria (Fig. 6). Cancer mortality in both of these countries has been on a rise since the 1970's (Fig. 7) and, unlike in the Czech Republic, this rising trend continues even after the demise of communism.

Putative important mechanism for excessive cancer mortality in Eastern Europe and in Romania is cigarette smoking. Up to 43.5 % of adult Romanians smoke<sup>(4, 6)</sup>. In Greece, an European country widely known for excessive smoking, 42 % adults smoke, compared with a much lower European Union average of 29 %.

Eastern Europe including Romania has an unfavorable distinction in alcohol consumption<sup>(6)</sup>. Alcoholism, especially binge drinking is prominent in the Russian Federation, Belarus and Ukraine<sup>(7)</sup>. Although not all liver disease is caused by alcohol, drinking has an important contributing role. Liver mortality in Bulgaria is lower than in Romania which has an unfavorable trend to closely follow in the liver disease the Ukraine (Fig. 8).

Strangely enough, the Russian statistical reports as opposed to other countries, do not list mortality related to chronic liver disease and liver cirrhosis. Premature male liver mortality in Ukraine - a country with a very sizeable proportion of Russian population is very high. Ukraine had more than twice the liver disease mortality compared with the Czech Republic and four times higher mortality than France, the wine growing empire. Predictably, the mortality related to liver disease may be extremely high in Russia.

Enigmatic is the health statistics of Hungary. This country has the unfavorable distinction of a leader in cancer and liver mortality in all Europe. Considering that the environmental adverse factors in Hungary do not differ that extensively from other Eastern European nations, it is possible that there is a genetic predisposition for malignancy and liver disease. This is of importance for Romania that has a sizeable Hungarian ethnic population in its western part, Transylvania.

Fig. 9 compares the most important causes of premature mortality in six former communist countries in Eastern Europe. Again, CVD mortality is the leading cause of premature mortality. There appears to be an east – west gradient in CVD mortality. Highest premature CVD mortality is in the Russian Federation, decreasing to Ukraine and Belarus. Of these six countries, CVD mortality is lowest in Romania. Similar trend exists for mortality induced by external causes (trauma, intoxication, murder, suicide). For various unspecified reasons, Moldova has very prominent mortality related to disorders of the digestive and respiratory systems. Again, this of interest for Romania, geographically and historically close to Moldova.

Surprisingly, mortality related to malignancy appears to be almost equally high in all of these six post SOC countries.

These observations suggest that CVD mortality appears to respond to improved political and economic conditions in the post-communist world. In contrast, persistence of high cancer mortality in most post-communist countries (not reflected in DEM Europe), provides an urgent stimulus for active search to elucidate causes of such devastating effect on the health and well being of Europeans living in the East.

The extent of resources for funding of health care in Eastern Europe is another important mechanism, besides biomedical factors, affecting the health of populations. More than elsewhere the negative impact of communist mismanagement of economy can be documented here (Fig. 10). The national wealth generated by a country and its proportion allocated to health care plays a decisive role. Norway contributes of all European countries the most to the health of its people. The Czech Republic, Slovakia and Hungary invest in health only about a third of what Norway does. Unfortunately, the Russian Federation, Ukraine, Bulgaria and Romania provide incomparably lower funding for health.

Not only the money but also the intellectual wealth affect the quality of health care. It is obvious that a well functioning economy, absence of corruption and adequate level of financial reimbursement affect the work force of health professionals. In Romania but also in other Eastern European countries the remuneration of health professionals is relatively low and frequently is not based on a straight patient- professional relation.

This results in a continuing exodus, a brain drain to the West of qualified health professionals.

## Conclusion

Comparing population health statistics among European countries is illuminating, especially when most of Europe is now united in an Union. The wide gap between the East and the West, between established DEM and the post SOC countries has one straight explanation: the profound and still lasting consequence of totalitarian mismanagement.

The main cause of relatively high mortality in the post totalitarian Europe is the cardiovascular disease (CVD). Among females about 80% difference in LE between DEM and post SOC countries is related to premature CVD mortality. In posttotalitarian males about 50 % of the higher mortality is caused by CVD, 20 % is related to external factors (trauma, suicide) and 10 % is oncologic disorders. The main suggested cause of such excess mortality is an improper life style: alcoholism, smoking and inadequate intake of protective nutrients<sup>(5-7)</sup>.

Eastern Europe is gradually recovering from decades of suppressed growth induced by totalitarian dictatorship and elimination of democratic freedoms. It is expected that the overall improvement of social and economic standards will result in better accessibility to advanced patient care and substantial infusion of funds into the population health. Social and economic disparities adversely affecting health also have to be addressed<sup>(8)</sup>. While Romania and Bulgaria are on a good track to catch up with their neighboring countries and Western Europe,

the Russian Federation, Ukraine and Belarus will predictably take much longer on their way to full recovery of population health.

### References

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COUNTRY	Male life expectancy	Female life expectancy
Iceland	80,1	83,3
Switzerland	79,6	84,5
Sweden	79,3	83,4
Italy	78,8	84,4
Netherlands	78,6	82,6
Norway	78,5	83,3
Spain	78,3	84,7
Ireland	78,1	82,7
Austria	77,9	83,4
Greece	77,8	82,5
France	77,8	85,0
U.K.	77,7	81,9
Germany	77,2	82,4
Finland	76,6	83,4
Denmark	76,2	80,8
Belgium	76,2	82,0
Portugal	74,9	81,6
<b><u>Mean ± SD</u></b>	<b>77,9 ± 1,3</b>	<b>83,1 ± 1,2</b>
Czech Rep.	74,2	80,6
Poland	71,3	80,1
Slovakia	70,3	78,2
Hungary	70,0	78,3
Romania	69,9	77,5
Bulgaria	69,8	77,1
Estonia	68,7	79,6
Latvia	67,0	77,8
Lithuania	66,3	77,7
Moldova	65,5	73,3
Belarus	64,6	76,3
Ukraine	62,3	74,0
Russia	60,5	73,3
<b><u>Mean ± SD</u></b>	<b>67,7 ± 3,8</b>	<b>77,2 ± 2,4</b>

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***Table 1. Life expectancy (years) in Europe in 2006-2009***

**Figure legends:**

Figure 1. Different trends in male life expectancy at birth in Romania, Bulgaria, Czech Republic and Austria.

Figure 2. Improving life expectancy in Romanian women.

Figure 3. Extensive variability in recent decades in male life expectancy at birth in the Russian Federation and Ukraine.

Figure 4. European premature cardiovascular disease mortality.

Figure 5. Different trends of male premature cardiovascular mortality in Romania, Bulgaria and in the Czech Republic.

Figure 6. European premature male cancer mortality.

Figure 7. Different trends of male premature oncologic mortality in Romania, Bulgaria and in the Czech Republic.

Figure 8. Premature male mortality of liver disease and cirrhosis in the democratic countries (blue) and postcommunist states (red).

Figure 9. Premature mortality (males+females) of cardiovascular diseases, cancer, external causes of death, respiratory and digestive diseases in six postcommunist countries (recent data).

Figure 10. Health expenditure in European countries (in international \$).

Fig.1

## Male life expectancy at birth

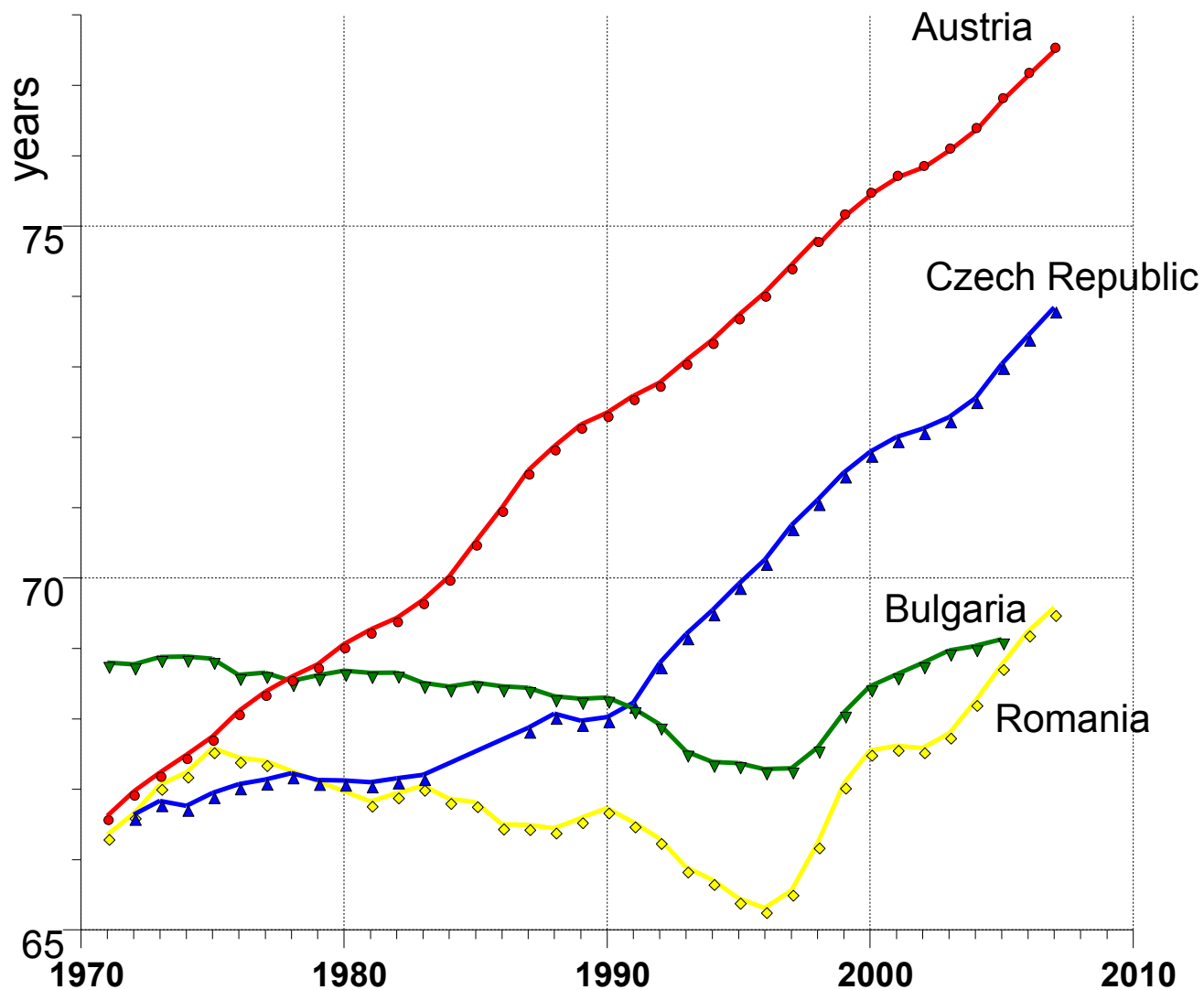


Fig 2

## Trend of life expectancy in Romanian women

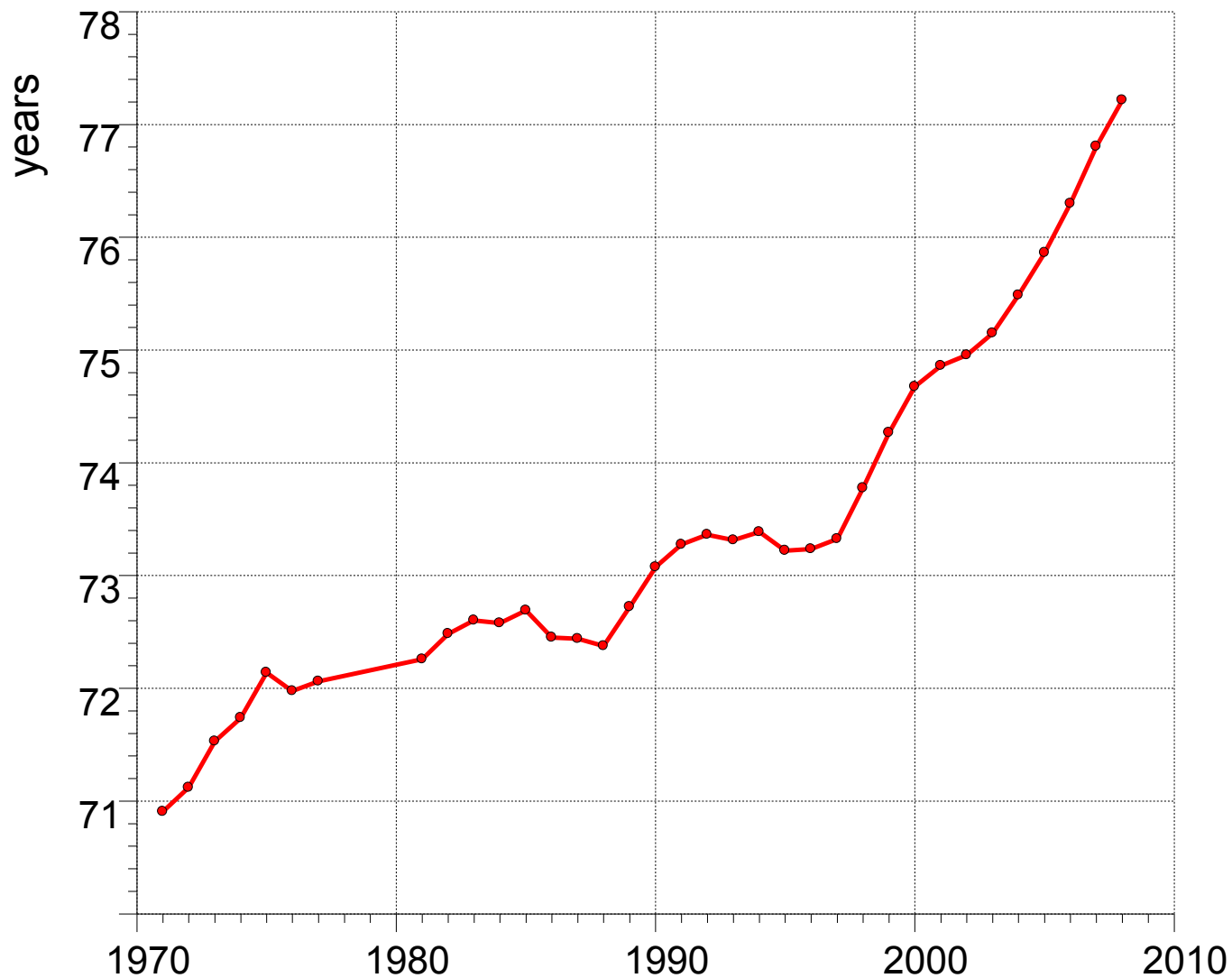




Fig.3 Male life expectancy in Ukraine and Russia

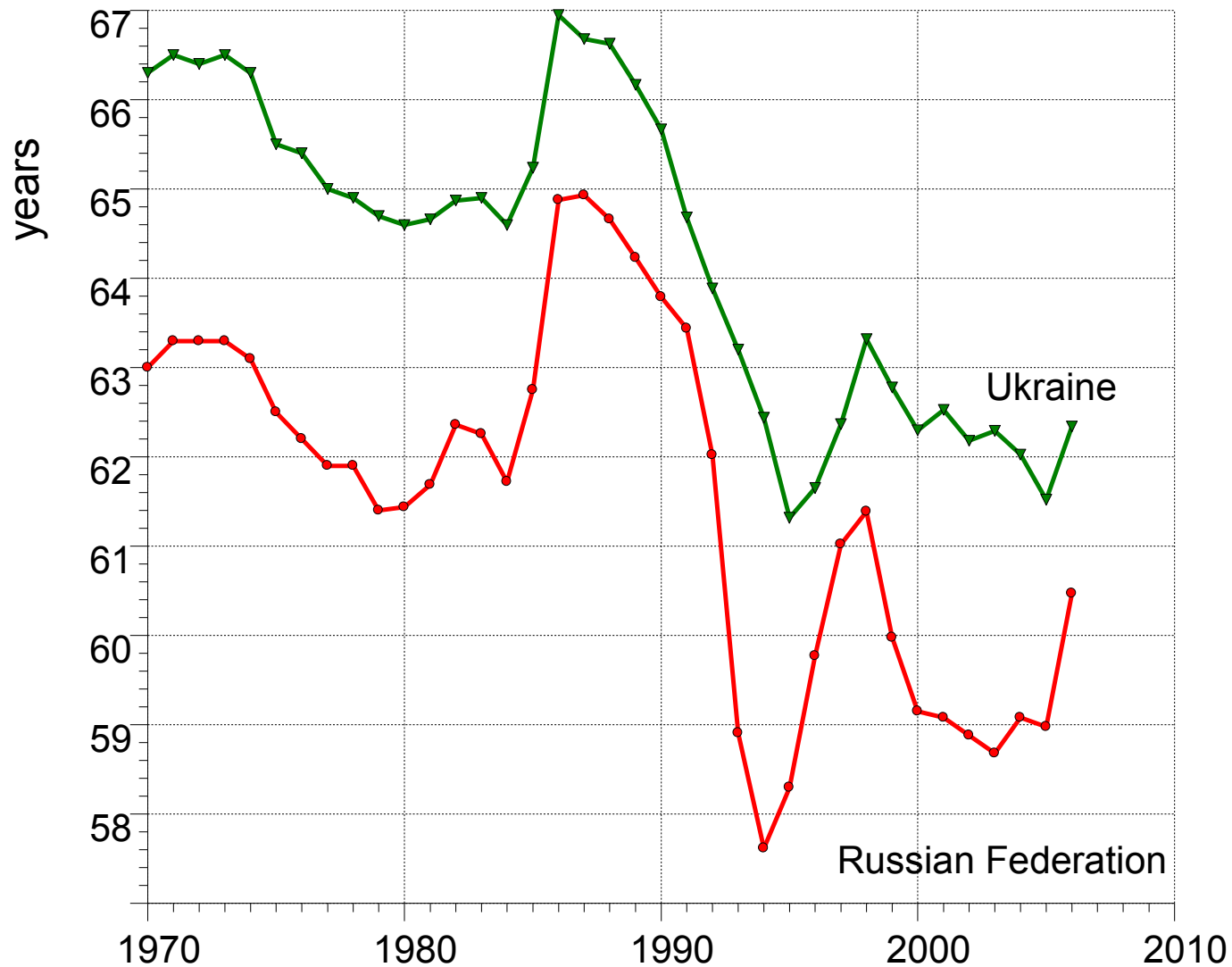


Fig. 4

# Premature male cardiovascular mortality

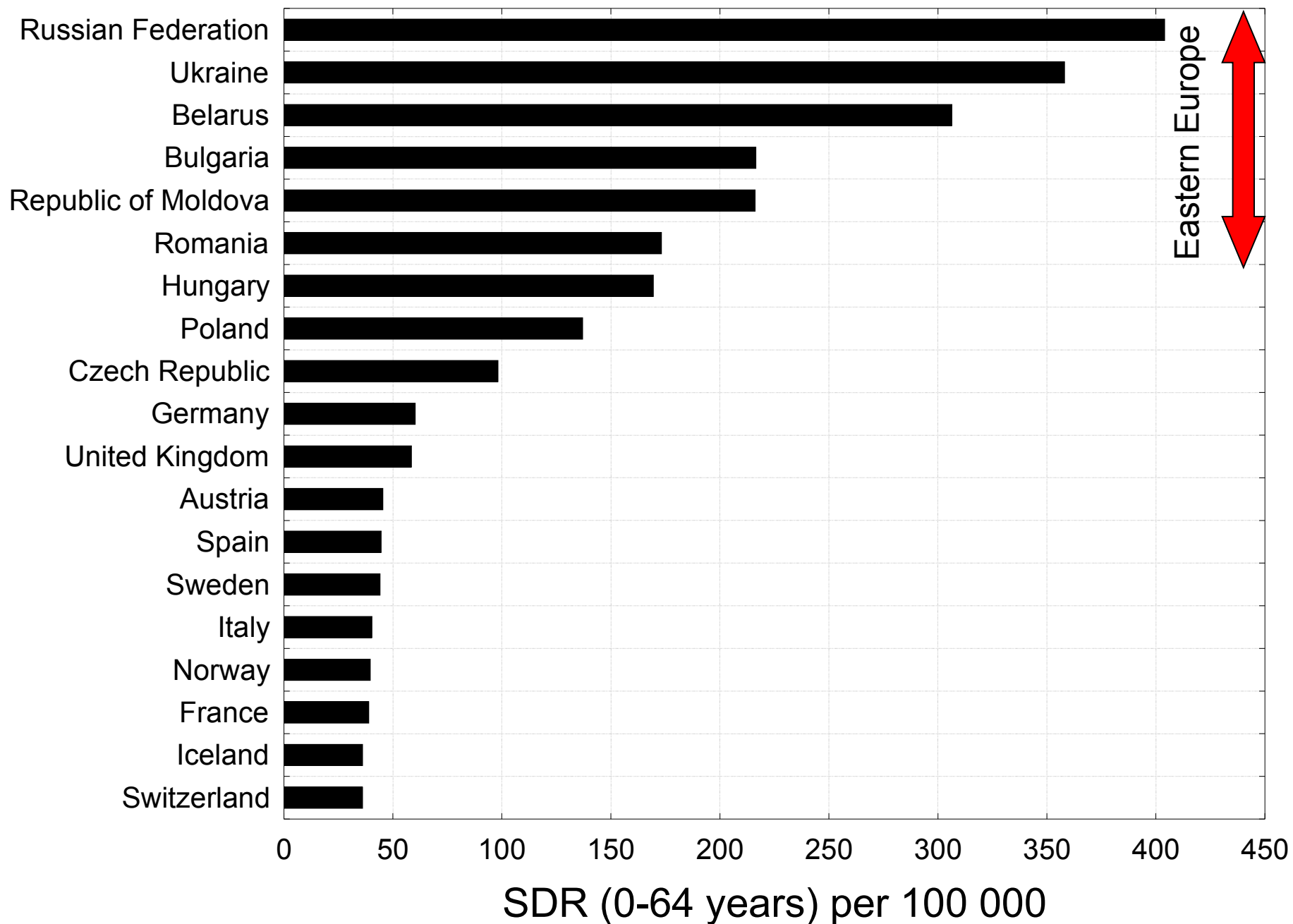
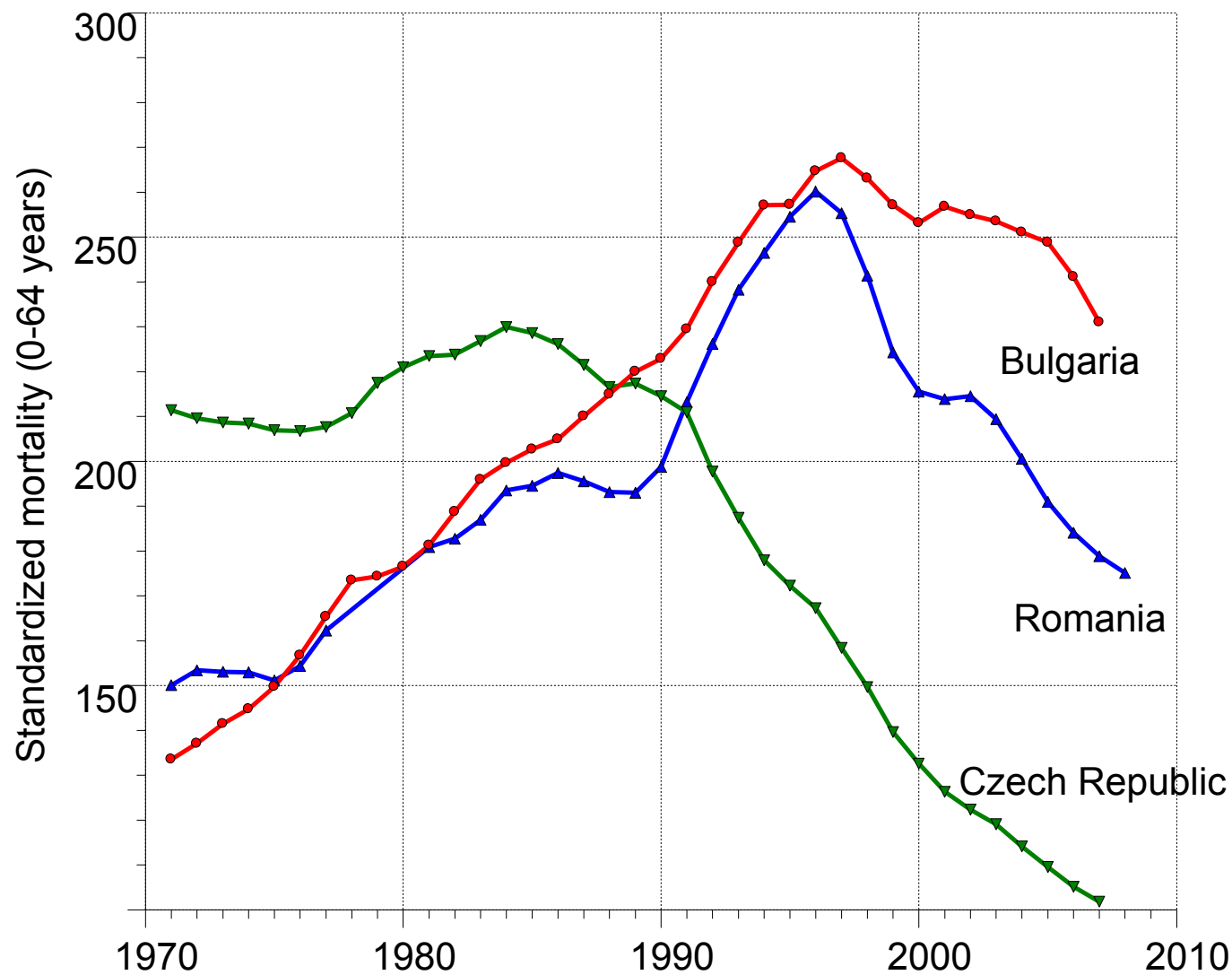


Fig 5

# Male premature cardiovascular mortality in Romania, Bulgaria and Czech Republic.



# Premature male cancer mortality

Fig. 6

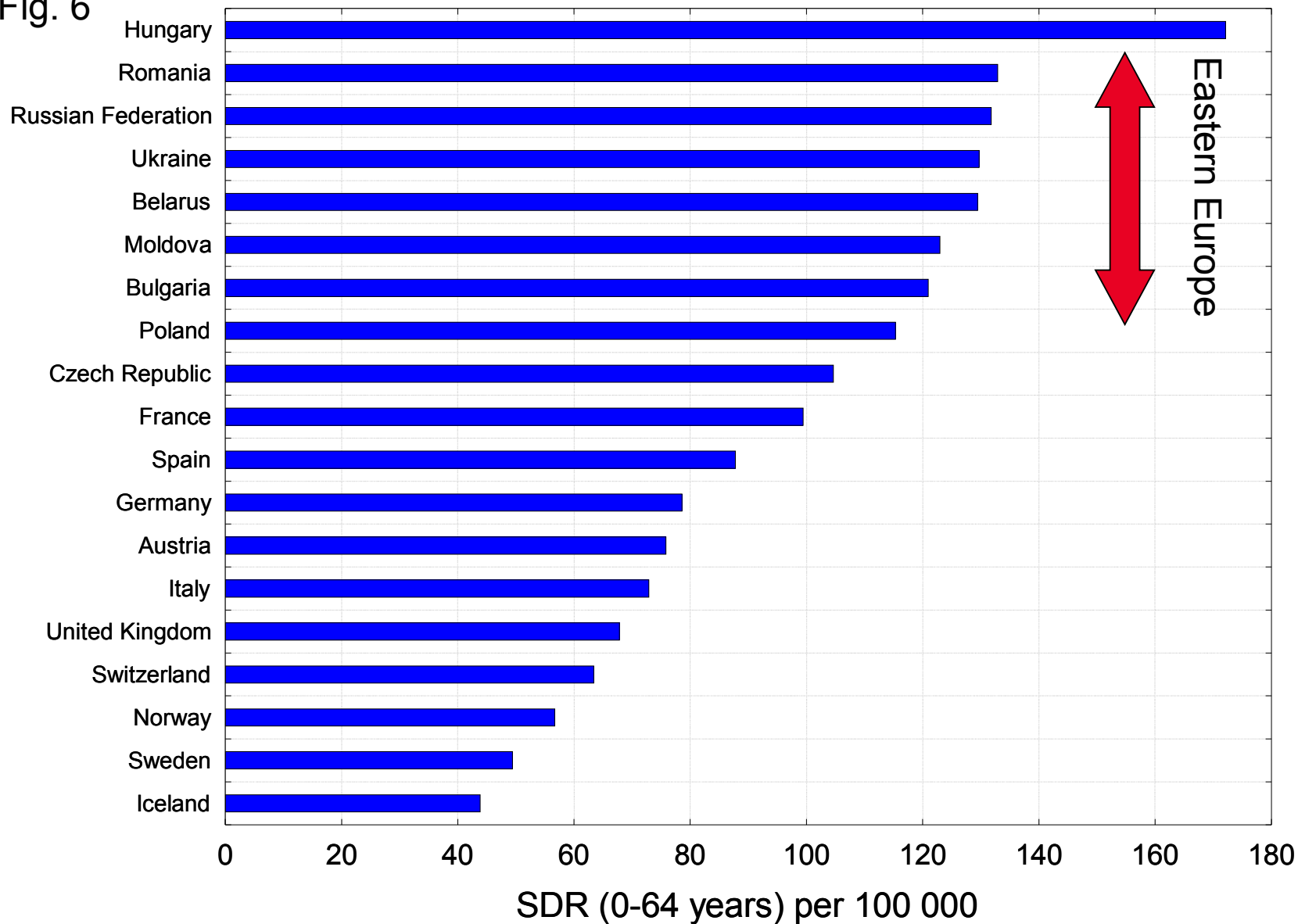


Fig.7

## Male cancer mortality in Romania, Bulgaria and Czech Rep.

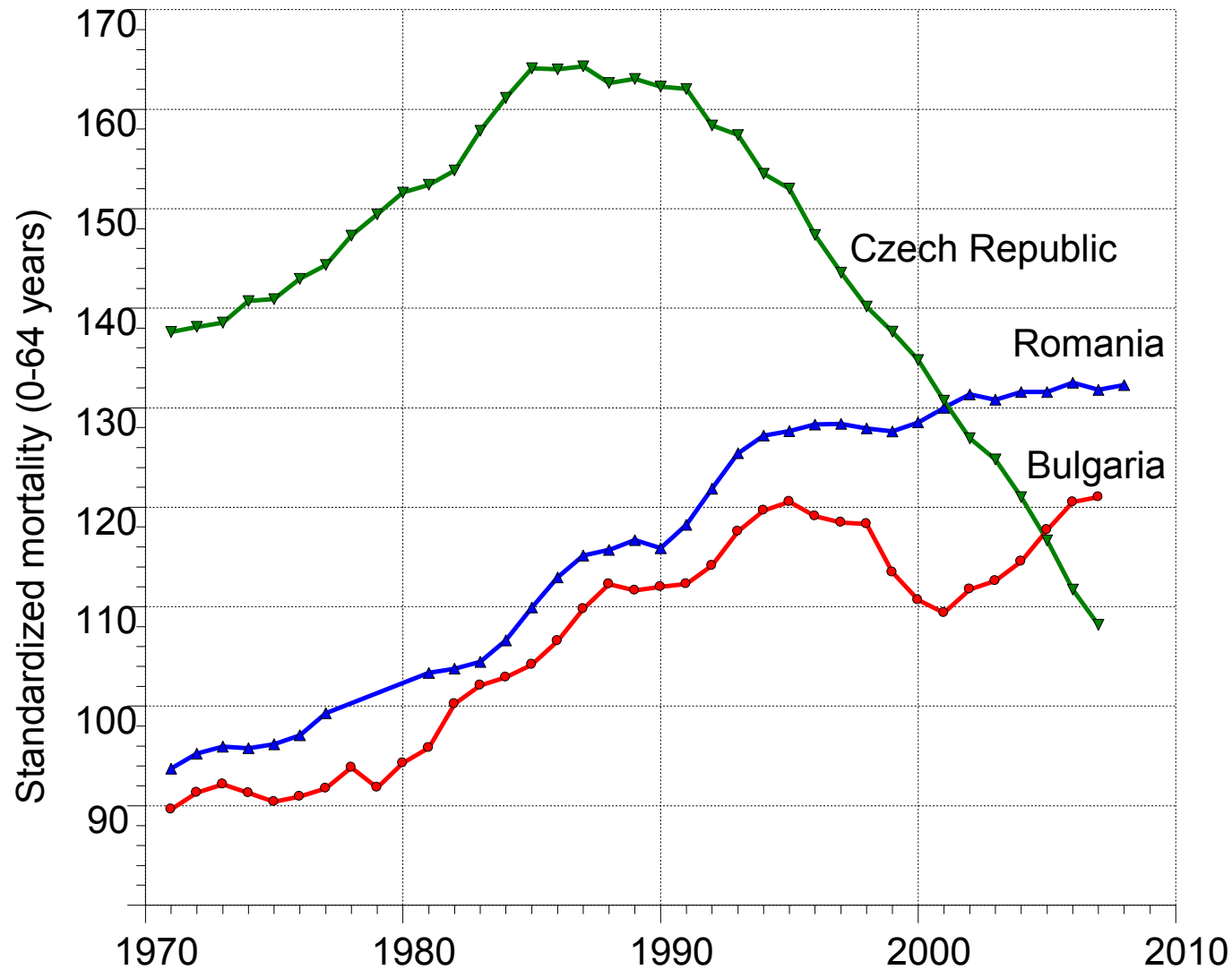


Fig 8 **Mortality on chronic liver disease and cirrhosis**

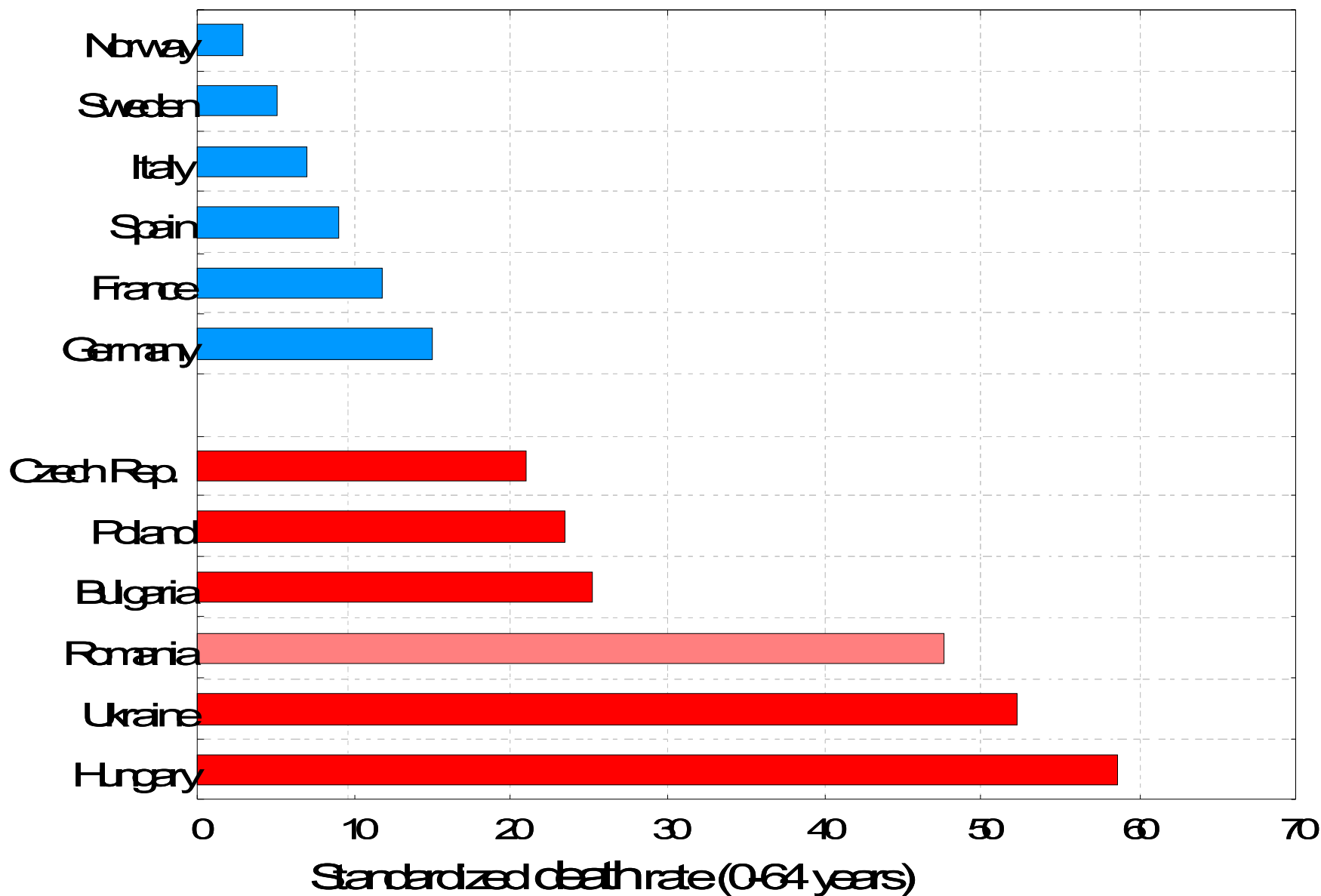


Fig 9

## Premature mortality caused by 5 most important factors

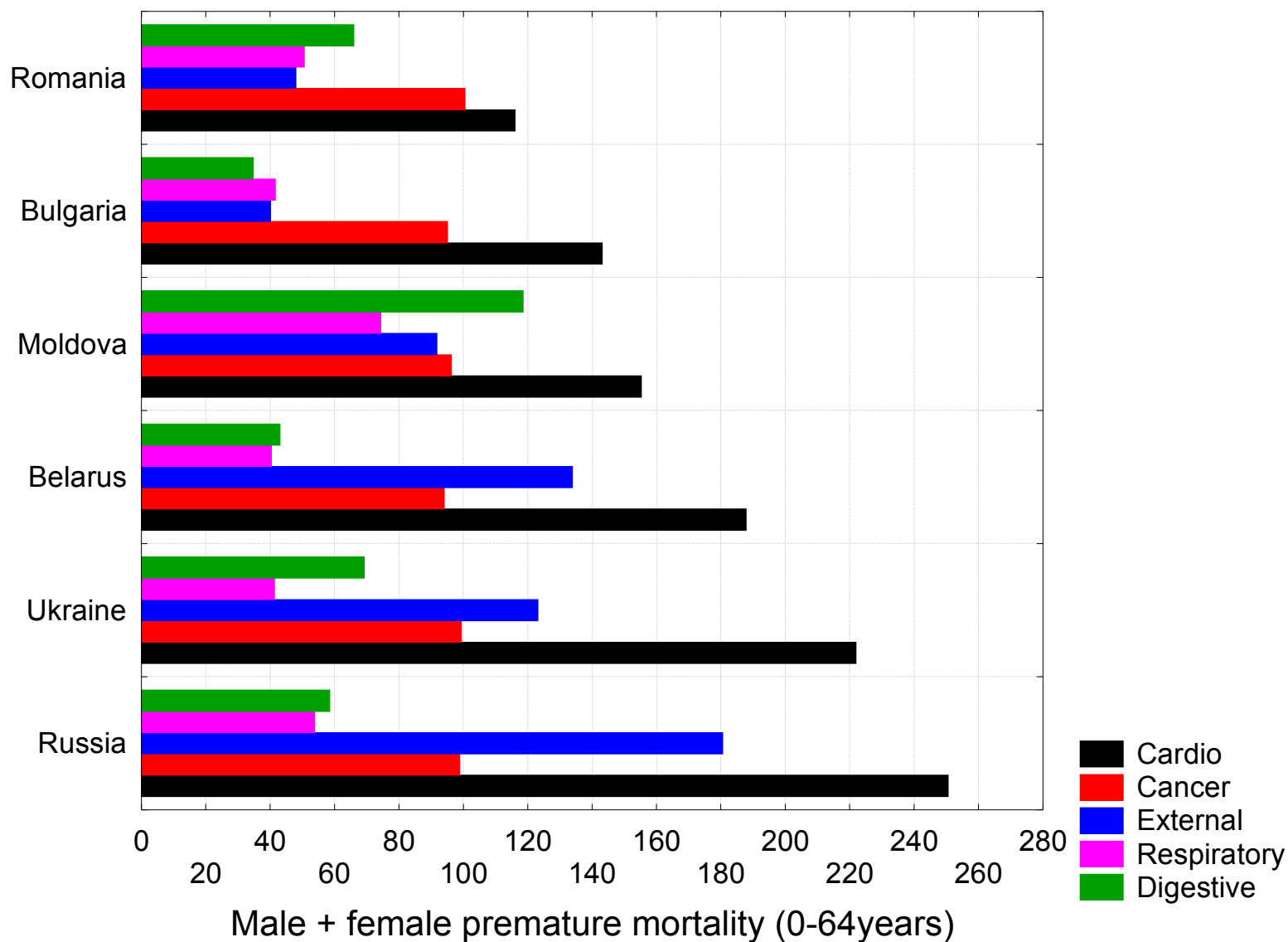


Fig 10

## Total health expenditure

