THE CHANGING BORDERS OF THE EUROPEAN EAST-WEST HEALTH DIVIDE: BLURRING, SHIFTING OR MULTIPLYING?

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EXTENDED ABSTRACT

Introduction and Background

Numerous studies suggest that that the European East-West health divide exists (Andreev, McKee, and Shkolnikov, 2003; Bobak and Marmot, 1996; Carlson, 1998; Carlson, 2004). The "classic" or "traditional" East-West border has been based on the Cold War divide. Hence, all the previously Communist and Soviet states of Europe are defaulted to the "East" side, even if some of their geography is in fact more "Western" compared to some of the European Union (EU) member states.

The diversity, which existed within the Eastern block only increased with the fall of the Berlin Wall and the start of transition (Brainerd, 1998; Chawla, Betcherman, and Banerji, 2007; Cornia and Paniccià, 2000; Figueras *et al.*, 2004). During the transition years most of the former *Communist* republics strived for economic and political modernisation and liberalisation, and many became part of the EU. The former *Soviet* states – with the exception of the Baltic countries – started their transitions with economic and political shocks, and many of them have not completely recovered up to now. Similar situation have happened with the health of the populations: some have managed to improve and somewhat reverse the worsening health, while the others are still struggling.

Germany presents an interesting case, as the country itself was divided during the Cold War. Recent study of Vogt (2013) presents a new way of looking at the East-West health differences through the case of Germany. He investigates how life expectancy would have been different in Eastern Germany had unification never happened. He states, that while Eastern Germany would have improved its life expectancy, it would have done it to a lower degree: 4 years less for women and 5.7 years less for men, with the primary effect coming from the difference of mortality change in adults of 60 and older. This is a great example of a Communist-block country filling the gap more quickly by joining with its Western counterpart.

Another simple illustration of the diversity and the health gap could be the life expectancy at birth (LEB) average trajectories for three European groups of countries (Figure 1): Western EU countries, the new EU member states of Central and Eastern Europe (CEE) and the Commonwealth of Independent States (CIS) – former Soviet Union (SU) republics. It is clear that the gap in LEB levels between EU-15 and the rest of the European continent already existed at the beginning of the 1980's. Moreover, while LEB in the EU-15 has been steadily increasing over the last three decades (and longer), the CEE and CIS countries had a slightly divergent fate. Starting with 1990's the CEE states have indeed stepped onto the road of health improvement, almost similar to the EU-15, but only at a lower level; hence, they are developing somewhat in parallel. At the same time the CIS countries on average have been experiencing unprecedented shocks – one after another.

FIGURE 1 AROUND HERE

Therefore, it is evident that the traditional East-West health divide has been transforming, if it ever was clear-cut to start with. Nowadays, the traditionally "Eastern" countries are extremely diverse in their health outcomes and, perhaps, it is now important to better understand the extent of this diversity and to establish the borders of this divide.

There is a relatively large pool of literature addressing the uniqueness of Eastern Europe and the traditional East-West health divide on the European continent. There are, however, only a few studies, which address the changes and transformation of this divide systematically. Vågerö (2010) argues that the divide has indeed been *shifting* eastwards, and questions whether it will persist or not. *Shifting* of the East-West health border further East is one of the possibilities of the health-related change on the European continent. This implies the post-Communist countries levelling out with their Western

neighbours, with the rest of the Eastern states lagging behind. The second possibility could be the *multiplying* of the divide in Europe, as for instance, Marmot and colleagues (Marmot *et al.*, 2010) argue. They note that there are three distinct groups within the European continent in terms of health by now, which results in a 'double-divide'. However, many of the post-Communist countries have turned towards the Western states for guidance, and indeed in the political and economic spheres have moved closer to the West evidenced by the 2004 and 2007 EU accessions, but at the same time retaining some of their Eastern characteristics. Could the new EU-member states be a somewhat 'blurred boundary' between West and East? This paper will concentrate on the East-West divide in terms of health and try to disentangle this health divide puzzle.

It is important to note that most studies on the East-West divide usually analyse exclusively life expectancy and mortality indicators (Andreev, McKee, and Shkolnikov, 2003; Bobak and Marmot, 1996; Hertzman, Kelly, and Bobak, 1996; Marmot *et al.*, 2010; Vågerö, 2010), with some focus on subjective individual health (Carlson, 1998; Carlson, 2004; Sungurova, Johansson, and Sundquist, 2006). All of the mentioned indicators are usually assumed to be proxies for *overall health*. While LEB can be a reasonable proxy for health, at the same time it reflects mortality rather than health per se. The definitions of health often refer to health beyond physical health, for instance, according to World Health Organisation (WHO), health is "... not merely the absence of disease or infirmity" (WHO, 1976: 2). While it is difficult to measure all the non-life-threatening sides of health in quantitative research, relying only on one mortality statistic might be a too-narrow measurement and reflection of health, as the different illnesses and diseases combine in producing the overall result. *This paper tries to arrive at a more encompassing so-called 'health profile'* — a range of health indicators, reflecting if possible different components of the concept of health at the macro-level.

Therefore, the aims of this paper are two-fold. *First*, macro-level health as a concept is assessed. Various macro-level public health indicators are analysed in order to understand whether all of them reflect the *overall* concept of 'health' or whether they describe *different aspects or sides of health*? After this being established, I move to the *second aim* of this article, which is to summarise health trajectories in Europe and to analyse the development and change of the East-West health divide in detail. I try to establish whether the boundary of the European health divide has *shifted*, become *fuzzier* or perhaps *multiplied* forming several divides? It is also crucial to understand whether the original classical health divide existed to begin with or perhaps it was mislabelled from the beginning. Understanding the health divide in Europe better would

enable many researchers to analyse health and its determinants in a more efficient and reliable way by taking the divide changes into account.

Methods and data

The analysis is structured into three parts and methods are selected according to the questions and aims at hand in each part. First, *exploratory factor analysis (EFA)* is conducted on a big set of diverse macro-level health indicators using a sample of most of the European countries. This is done to identify the different sides and components of the overall concept of health.

Within the identified factors several indicators are selected for the second step of the analysis of trying to empirically establish the boundaries of the European health divide using diverse health indicators through conducting *cluster analysis*. I first cluster the trajectories of health changes over time using *longitudinal cluster analysis*, which is still not a very common technique (Genolini and Falissard, 2010; Warren Liao, 2005). Finally, cross-sectional cluster analyses are carried out at the start of transition and then in one of the recent years in order to better understand the nature of the European health divide during the transition period. Due to data limitations, the years prior to 1990 could not be selected, hence 1991 is chosen, as the closest year to the start of transition. The final year is 2008, in which statistics are not available for all countries on the European continent, but the later years have even more missing data.

All of the health indicators are selected from the World Health Organisation (WHO) "Health for All" database (HfA DB) (WHO, 2012). I focus on the years 1982-2010, as the possible health divide change has been happening in the transition years and the years closely preceding the collapse of Communist and Soviet regimes. Hence, a dataset was created for 45 countries over 29 years.

TABLE 1 AROUND HERE

Findings[1]

In the ***first part***, the factor analysis indeed identified several factors among the health indicators. I find that on the one hand, it is justified to use traditional variables like LEB, LE65 and SDR as the most encompassing proxies for health, when only one indicator is

[1] Detailed analysis and results are available on request. Full paper will be submitted to a selected journal for publication.

required. On the other hand, the multi-factor structure indeed implies that when a more comprehensive measurement of the concept of health is sought, other aspects of health should be taken into account as well.

The ***second part*** of the analysis provided food for interpretation and discussion. *First,* when clustering of all indicators is summarised, *three groups* emerge on the European continent: "West Europe" (group A), "Post-Communist/Central East Europe" (group B) and "Post-Soviet" (group C). *Second*, the traditional East-West divide existed prior to and in the start of transition, as evidenced by the cross-country analysis in 1991. The traditional East-West divide separated Europe into two parts: East and West with the border roughly between the EU-15 and the rest post-Communist states. This, however, slowly changed throughout transition. However, the divide found in this paper is not so clear cut in geographical terms: some of the Post-Soviet countries, traditionally associated with the rest of the CIS states (Armenia, Azerbaijan, Georgia) end up together with the more economically-developed Central European countries.

The nature of the new divide is quite interesting. One group could appear to be a somewhat "fuzzy border" between the East and West. In fact it is not so fuzzy: there is a very clear double-divide with three separate groups. But even when one considers a two-group solution (which does not fit the data best), the border would rather move East of the traditional divide. The new members of the EU and some other post-Communist states have moved closer to the EU in their health trajectories and could join them and not their Eastern neighbours for a two-cluster divide. At the same time, the border has definitely ***not*** *shifted* yet: there are still considerable differences between groups A and B (i.e. traditional West and partially East). What is nevertheless clear: group B countries share some characteristics with group A and few with group C (the rest of the 'traditional' East). Hence, it is ***not*** *the fuzzy border* case of the merger between East and West, where both characteristics from the West and East are present in group B countries. Group B is a somewhat independent group in terms of the countries' health profiles and it strives for similarity with the West. Group C countries seem to have fallen further apart and contributed to widening the health gap within the transition region. Hence, the European health divide has changed throughout transition: from the traditional two-group separation it *multiplied* into those catching the traditional West and those following unclear and potentially dissimilar paths.

All in all, the diversity within the *transition region* should no longer be questioned. What is more, there are clear similarities and differences between the countries, which makes it possible to distinguish at least two groups in terms of health profiles among the

transitional countries. The East-West divide – as a singular divide – can no longer be supported, as a *double divide* has emerged in the past twenty years. Indeed, the start of transition brought many of the transition countries apart by widening health gaps, and doubling the European health divide. Technically, the divide can potentially be referred to as the "East-Central-West" divide. This finding systematically and consistently supports the idea of the strong diversity within the transition region; hence, using it as a whole should be done by researchers with caution and clear understanding of the pitfalls of doing so. It is, however, advised to take this diversity into consideration and use the appropriate methods, data and country selection when health in the Central East European countries is analysed.

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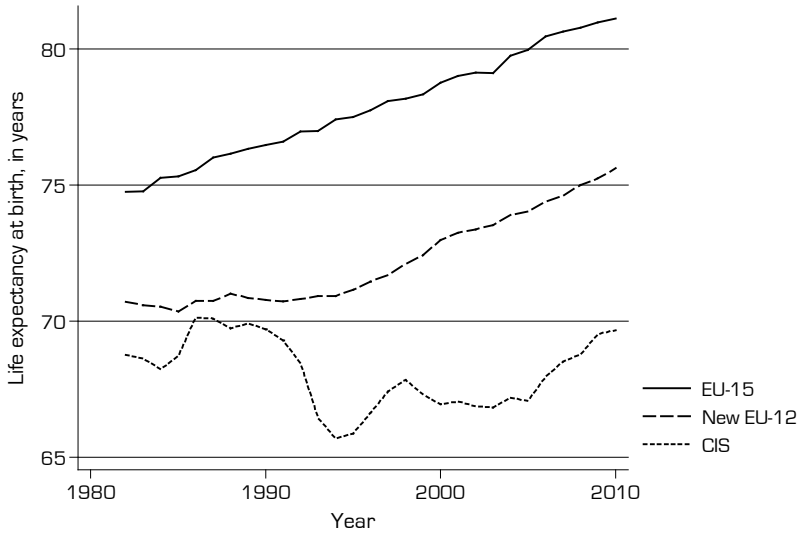
Tables and Figures

Figure 1. Life expectancy at birth for EU-15, new CEE EU-12 and CIS.



SOURCE: (WHO, 2012)

Table 1. Countries included in the analysis.

1	Albania	16	Greece	31	Portugal
2	Armenia	17	Hungary	32	Republic of Moldova
3	Austria	18	Iceland	33	Romania
4	Azerbaijan	19	Ireland	34	Russian Federation
5	Belarus	20	Italy	35	Slovakia
6	Belgium	21	Kazakhstan	36	Slovenia
7	Bulgaria	22	Kyrgyzstan	37	Spain
8	Croatia	23	Latvia	38	Sweden
9	Czech Republic	24	Lithuania	39	Switzerland
10	Denmark	25	Luxembourg	40	Tajikistan
11	Estonia	26	Malta	41	TFYR Macedonia
12	Finland	27	Montenegro	42	Turkmenistan
13	France	28	Netherlands	43	Ukraine
14	Georgia	29	Norway	44	United Kingdom
15	Germany	30	Poland	45	Uzbekistan

NOTE: Andorra, Bosnia and Herzegovina, Cyprus, Monaco, San Marino and Serbia were excluded due to data unavailability. Turkey and Israel were excluded from the dataset on purpose, as neither of them belongs to the post-Communist transition or West European countries.