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Sustainability Challenge of Eastern Europe - Historical Legacy, Belt and Road Initiative, Population Ageing and Migration

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Abstract / Extract:

Historical legacy of Eastern European and Balkans' health systems was mutually interdependent and shaped by local socioeconomic circumstances. Three distinctive systems of risk sharing and health financing to develop since the late XIX century were the Bismarck, Beveridge, and Semashko systems. Modern day healthcare systems in these countries are challenged by population ageing, accelerated innovation in medical technology, growing purchasing power and rising demand for healthcare services. Supply side changes contribute to demand side efficiency bottlenecks in financing, driving the costs of the already expensive medical care up. All of the nations have a large share of citizens experiencing difficulty with affordability and access to medical care, particularly in rural and remote areas. Network of Health technology assessment agencies have mushroomed over the past three decades. Principles of health economics theory and cost-effective resource allocation are slowly gaining ground in governing authorities' mindset and decision-making process. For many years to come, pharmaceuticals and medical services will remain dependent on out-of-pocket spending. Currently accelerating and spreading 4.0 Industrial Revolution, together with the Belt and Road Initiative, are likely to substantially impact the further economic development of this vast region. Post-Pandemic 'Green' Recovery strategies adopted by many of the Eastern European governments shall also make this transition towards sustainable development more difficult and challenging given the large dependency of all these economies upon traditional carbon fuels.

Key words: Eastern Europe; Balkans; Healthcare; Sustainability; History; Financing; Population Ageing; Migration; Belt and Road Initiative; Sustainable Millennium Development Goals

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Historical Circumstances Preceding the Establishment of Eastern European Health Systems

Eastern Europe and the Balkans, or Helm peninsula as it was named in Antiquity, represent a huge geographic space consisting of vast Eastern European plains and massive mountain chains, such as the Carpathian Mountains, the Alps and the Dinaric Alps. In socio-economical terms, several distinctive cultural patterns traditionally meet here. Throughout centuries, ethno-religious borderlines between Roman Catholicism, Eastern Orthodox Christianity, and Sunni Islam shaped the entire region as the cultural melting pot [1]. The Cold War [2] and subsequent accelerated Globalization Era played a prominent role [3] in the evolution of modern socioeconomic perspective and the health systems of these nations. These factors have shaped the geopolitical setting in which these countries operate at the dawn of the third decade of XXI century [4]. The region now consists of European Union's Eastern European country members, small Balkan nation states, currently non-EU members, that emerged as a result of Yugoslavia's dissolution. To the East, lies the vast Eurasian Union consisting of Russian Federation and its culturally syncretic former USSR republics [5]. Although geographically situated at the southernmost tip of Balkan peninsula, Greece is geopolitically considered to be outside of this region a total of thirteen years before the official establishment of European Union in Maastricht 1992. The Treaty of Accession being signed in 1979 between the European Economic Community and Greece . Turkey belongs to the region only partially with its narrow coastal belt of Istanbul's European side, while the Balkans still hosts centuries old Ottoman cultural legacy. .

Although regional diversity is huge, the national health systems, mostly throughout the XIXth and XXth centuries, share surprisingly many similar features and challenges. In the Russian Empire, the establishment of national health care took place earlier, during the XVIIIth century, with the introduction of Medicine studies at the Imperial Moscow University in 1755 (Императорский Московский Университет) and a network of public hospitals and educational institutes in 1758 [6]. The Ottoman Empire had its health system conceived with the establishment of The Imperial Military School of Medicine (*Mekteb-I Tıbbiye-I Şahane*) in 1827 on orders of Sultan Mahmud II [7]. Austro-Hungarian Empire led by the House of Habzburg was a longlasting statehood that left profound imprint in many Eastern European and Balkan cultures. In the area of its geopolitical outreach, Deutsch language was effectively Lingua Franca of large part of Eastern Europe. Its oldest medical establishments date back to 1784 when Emperor Joseph II established the first state-run general hospital in continental Europe, the Algemeines Krankenhaus (the General Hospital)[1]. Slightly earlier, in midd-1740s began a set of reforms at Vienna Medical School aimed at closing the existing gap in medical technology frontier after the Western European colonial powerhouses[2].

The milestone event for the entire region was the emergence of three contemporary systems of risk sharing. These early health and social insurance and tax collection strategies were created in order to secure financing of a brand-new invention of the late XIXth century, i.e. hierarchical national health system. They are mostly known as the German Bismarck system established in 1884, British Beveridge system established in 1948, and Soviet-Russian Semashko system, grounded in the reforms of 1921, and officially consecrated in the early 1930s. Otto von

[1] https://www.irishtimes.com/life-and-style/health-family/no-washing-our-hands-of-the-austro-hungarian-legacy-1.3194555

[2] Kidd, M., & Modlin, I. M. (2001). Van Swieten and the renaissance of the Vienna Medical School. World journal of surgery, 25(4), 444-450.

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Bismarck, the Chancellor of the German Empire, introduced the "Social Health Insurance Model". It pioneered the first large-scale compulsory insurance coverage to establish universal healthcare in Germany and later in large part of Europe [8]. The Bismarckian system was rooted in the Prussian Industrial Revolution, involving a tripartite relationship between trade unions, employers, and the state. The situation was quite different in the largely agrarian Balkans. Indeed, this is one of the reasons why Greece, sharing the Balkan agrarian traditions, failed to develop comprehensive health insurance. Its core limitation was the fact that it covered only a narrow range of industrial workers families [9], which represented a minority in an agricultural German society [10, 11].

Sir William Beveridge, a British economist has created grounds for the creation of Great Britain's National Health Services (NHS) in 1948 [25]. It has introduced an effective universal health insurance coverage while removing the responsibility from citizens to co-fund medical care via out-of-pocket spending [26]. Its core weakness are long term shortages of physicians and nursing staff [27]. The tendency to over-utilize system benefits of affordable medical care tends to generate the long wait times for patients, particularly in expensive and complex medical procedures [28]. This system still delivers a strong degree of social protection in access to outpatient, hospital medical care and pharmaceuticals for the large layers of lower- and middle-income citizens [29].

Regardless of some negative contemporary perceptions of that era, Soviet Union's First People's Commissar of Health (1918–1930) Nikolai Alexandrovich Semashko (1874–1949) created a unique system well ahead of its time [12]. It pioneered universal health insurance coverage in a socialist state, which guaranteed full free-of-charge access to the existing medical technologies to the entire population [13]. Ideals of social justice and equality played a pivotal role in the social theory of Marxism. Universal health insurance coverage was delivered and funded by a state-owned and centrally-controlled economy. Historically, this was the very first case of universal health coverage (UHC) delivered in a large nation ravaged by WWI and the Civil War [14].
None of the hierarchical traditional European societies guaranteed anything comparable to their citizens back in the 1920s and 1930s.

Eventually, Semashko's theory and practice spread throughout most of Eastern Europe [15] and the Balkans, while taking roots in Central Asia in earlier decades as part of Soviet driven medical reform [16]. Probably, Eastern Germany is the most generous example of communism-delivered social and medical protection among the Warsaw Pact countries during the Cold War. .
The socialist state in DDR sponsored parenthood and early childhood care to such an extent that a young couple could have raised and educated up to three children at the cost of less than one [17]. After the Perestroika and the dissolution of the USSR, many of Eastern European nations embarked on thorough and often difficult sets of health care reforms [18]. Their goal was to reshape Semashko's legacy of health care towards diverse forms of mixed-Bismarckian or Beveridge models [19]. The countries remaining within the Commonwealth of Independent States (CIS) and later Eurasian Union led by the Russian Federation also adopted a set of socioeconomic reforms to increase the efficiency of collecting revenue flows and finance medical care delivery [20]. Nowadays, most of the eastern EU member countries have adopted Bismarck heritage to a diverse extent [21]. The Eurasian Union and CIS nations remain more loyal to a Post-Semashko healthcare system [22] with a strong emphasis on state patronage over social justice and delivery of equitable and affordable medical services and pharmaceuticals [23]. Post-Yugoslav republics share mixed-Bismarck legacies with the strong presence of some Semashko model features inherited from the long decades of socialism [24].

This paper presents a literature review that aims to provide an unbiased critical analysis of existing research on sustainability-related challenge faced by Eastern European and Balkan health

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systems. We focused on the studies, which were published during the last two decades in the major scholarly peer-reviewed journals in the field of public health, health economics, demography and history of medicine.

Influence of the Belt and Road Initiative

Chinese traditional culture has created the ancient Silk Road as the set of major continental and sea routes. Via these routes ancient trade was taking place between capitals of Antiquity, such as Beijing and Rome and across Judaeo-Christian, Muslim, Budhist and Confucian cultures. This pattern of international trade continued across all three continents of the Old World almost continuously in peace and in war for almost two millennia [30] until the imposed Imperial taxes of Ottoman Empire after the Fall of Constantinople and Byzantine Empire under Turks in 1453 A.D. These taxes effectively abolished most of Silk Road trade since these became unaffordable for the merchants of medieval European monarchies and the Republic of Venice. This change in global economic history is believed to directly led to the Age of Discovery of new naval trade routes and the early Colonial Age [31]. The pioneering European trade colonies in close proximity to China and Japan were established in Macau and Dejima islands by the Portuguese and Dutch sailors and merchants.

Mostly downward cycle of weakening civilizations of India and China took place particularly during the XVIII and XIX century. It has resulted in the redistribution of global wealth from the Orient towards Western Europe and its Colonial descendant cultures, essentially unwitnessed in human history as documented by Agnus Madison Project findings [32]. People's Republic of China has re-established itself among the circle of global powerhouses mostly during the late Cold War era and over the past four decades of continuous strong real economy growth [33]. Since the Deng Xiaoping economy reforms adoption in 1974-1978 horizon, Chinese real gross domestic product growth (GDP) remains unparalleled [34]. It continues to be the leading engine within the circle of rapidly developing BRICS (grouping acronym which refers to the five emerging economics: Brasil, Russia, India, China, and South Africa) and Next Eleven Emerging Markets. This trend according to forecasts is likely to remain unchallenged at least until 2025-2030 [35]. Accompanied with the inner transformation of Western post-industrial societies into service-driven economies, China has cemented its global leadership in manufacturing export-based industries. Chinese multinationals now hold majority of innovative patents designated for the 5G mobile network technologies [36]. Due to Chinese breakthroughs in ultra-speed railway tracks build-up and manufacturing of high-speed trains, these are getting approvals in tender bidding procurements even among some of the riches OECD markets [37]. Among other large emerging economies, similar success stories in terms of cutting-edge technology advances are India's leadership in generic pharmaceutical industry and its undisputed central place as the global hub for IT software industry. Convenient further examples are Russian breakthroughs in cosmic industry [38, 39], space [40] and military technologies and her prominence in nuclear power plants architecture [41]. This is coupled with Brazilian advantages in supply of raw materials and South Africa's rich reserves of rare earth minerals, essential for electronics and cosmic technologies [42]. Therefore, it appears to be many mutually useful interlinkages among the BRICS countries' economies.

From this geo-economic landscape came the President Xi's 2013 Kazakhstan and Indonesia announcement of the beginning of the One Belt - One Road (OBOR) initiative, popularly portrayed in

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media as the New Silk Road [43]. It has been explored widely in scholarly literature from the viewpoints of financial economics, socio-cultural developments it may trigger and its consequences in the international politics. There is a vast diversity of perspectives on issues related to the Belt and Road Initiative (BRI). What we can claim for certain based in evidence, is that it appears to be the largest infrastructural project in the history of mankind [44]. The proposed network of roads, fast railway networks, sea ports, transportation hubs for ocean ships, harbour architectural commitments and ultimately expansion of current and new airport terminals, should spread across Asia, Europe, Africa and Latin America [45]. As of March 2020, official memorandums of understanding to become a part of Belt and Road Initiative with China have been signed by governments of a total of 138 countries [46]. Vast majority of countries according to the World Bank, represent Low-and-middle-Income economies and former members of Non-Aligned Movement during the Cold War Era [47]. However, a number of high-income OECD countries with long history of free market economy, such as Italy, Austria, Portugal, Greece in Europe, rich Arabian Gulf GCC countries, Chile and Panama and all of Eastern EU are participating (18 EU members countries in total) [48, 49].

How does the BRI Initiate translate to the issues of sustainability of the national health systems across its many pathways? The United Nations Development Policy and Analysis Division (DPAD) have gave their own designation after careful consideration. UN DESA's claims that: „*The official document which defined the vision and action of the "Belt and Road" affirms that the initiative is in line with the purposes and principles of the UN Charter. The essential spirit of the Belt and Road to promote win-win cooperation, common development and prosperity, peace and cooperation, openness and inclusiveness, and mutual understanding and trust, conforms to the values of the 2030 Agenda for Sustainable Development*" [50].

Typical cases how BRI can be interpreted is „17+1 format" [51] joining China with the total of 17 Eastern European countries [52], excluding Russia. Most of these nations, although EU members being mostly designated as high-economies are suffering from a long-term underinvestment into their national health care establishments. This issue further expands from hospital infrastructure towards chronic deficits in physicians and nursing staff density, pharmaceuticals supply shortages and generally questionable affordability of innovative medical technologies to the ordinary citizens. Being largely funded as an out-of-pocket spending with moderate public reimbursement participation, many high-tech treatment strategies, such as radiation oncology, implantation surgery or monoclonal antibodies to treat cancer [53] and autoimmune disease remain well above willingness to pay threshold in these countries [54]. These are among the reasons why BRI-associated financial instruments are seriously considered as a source for balancing of budgetary needs in „Visegrad Group" countries and Poland and Hungary in particular. There is also some degree of criticism in cases were these funding instruments have proven to lead some small countries of Euro zone into a default risk, such as the Montenegro case [55]. Yet in majority of cases both within the EU and among its Balkan candidate countries and Turkey, enthusiasm for BRI project remains quite high [56]. Outside the EU such perceptions by the regional ruling elites were additionally fuelled by the insufficiencies exposed during Corona Pandemics. This refers to the simple fact that countries alongside BRI major routes were receiving earlier, more massive supplies of Covid-19 vaccines, devices intended for respiratory support and other intensive care unit equipment in far bigger quantities and in far more timely deliveries in comparison to their far richer counterparts among EU15. These issues although hardly likely to affect any of the long-term weaknesses of these national health systems, however changed the public perception in favour of BRI [57]. On another side of the equation many of these countries remain way too small to remain attractive for direct foreign investment, some of them even despite the generous tax policies. Over

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the past decade due to previous large global recession caused by bankruptcy of Lehman Brothers in 2007/2008 Western-born development assistance for health (DAH) was shrinking for nations outside EU for a long time. Thus, the obvious hunger for development opportunity triggers the quest for alternative source of revenue streams. Chinese investment not only into transport and trade infrastructural capacities but also mining industry, energetics and factories in the Balkans, Russia and Central Asian continues to be substantial. It remains the important source of education and employment opportunities and a driving force behind the national prosperity of many of smaller BRI nations. Up to 70 countries lie directly on the main trade routes and transportation hubs whose building and utilization have already taken place since the late-2010s. Nations, such as Turkey and Greece anticipated and now are already harvesting substantial share of their governments' revenue streams and budgetary incomes from the international trade taxes on these routes. Plausible room of opportunity to increase social welfare is to re-invest these resources back into the struggle against the poverty. It remains high at stakes in most BRI countries including Eastern Europe and the Balkans. Typical model of an effective struggle to defeat poverty (Goal 17 of SDGs) comes to us from China itself. WHO has designated Chinese policies as the classical case of overachiever in this area lifting from proximity to poverty line almost 800 million of its citizens [58]. In the stage of targeted poverty alleviation during 2013-2020, ensuring the poor people access to basic medical care was one of the three indispensable guarantees [59]. To achieve this end, China has established the world's largest basic medical security network through quota and full funding which refers to a triple security system including the basic medical insurance, serious illness insurance and medical assistance.

Additionally attractive point of consideration is the introduction of the concept of "Health Silk Road" [60, 61, 62] which combines the health and sustainable development together to improve the global public health governance system. International cooperation in the health sector has been a firm component of China's BRI [63]. This concept was firstly proposed in 2016 to deepen medical and health cooperation, and strengthen mutually beneficial cooperation in infectious disease notification, disease prevention and control, medical rescue and traditional medicine. Before the outbreak of COVID-19, the construction of "Health Silk Road" relied on the development of China's domestic medical system, successful experience in fighting against infectious diseases, and the long history of foreign medical aid. Its highlights include the construction of hospitals and health infrastructure, the dispatch and technical training of medical teams, and the tripartite cooperation with international health organizations like WHO. Then it has been accelerated by the global outbreak of COVID-19. In addition to sending medical resources, medical experts and timely assistance, China currently provides COVID-19 vaccines to all over the world in the form of "public goods". In the face of such global challenges as public health and safety, only all countries work together to prevent and control the epidemic can we build a strong defence line. This epidemic also exposed the weakness of global public health governance. Jointly building the "Health Silk Road" is conductive to promoting international cooperation in the field of health, and accelerating the construction of a global community of a shared destiny.

Population Ageing and Middle-Eastern Migrations to the European Continent

The population ageing or "The Silver Tsunami" presents a unique and new phenomenon in the written demographic history of mankind [65]. It consisted of a set of gradual socioeconomic changes triggered by three consecutive industrial revolutions. Its core underlying drivers were falling

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female fertility, coupled with the improved early childhood survival and extended longevity [66]. Sexual revolution and the process of emancipation of women has effectively created financial incentives to the ladies to give less birth. This evolving process became apparent worldwide from Latin America to the East Asia in most of contemporary societies regardless of their prevailing ethno-religious, cultural pattern or way of life. Today population ageing or the third demographic transition has spread almost universally across the globe. United Nations Department of Economic and Social Affairs, Population Division reports only 18 countries designated as "demographic outliers", almost all of them being located in Sudanese Africa, with the exception of Afghanistan [67].

It appears that early fertility falls were discovered two centuries ago in French demographic archives closely following the Revolution of 1789. In most European nations the process had its early roots up to one century ago [68]. Yet it became visible only in the decades following the second world war WWII. Eastern Europe and the Balkans had experienced their main historical fertility falls throughout post World War II recovery and Cold War era. Marxist's policy-makers' emphasis on social justice and equality have led to massive education of women from all social layers including the poor. The gap between men and women in average education and respective income levels remained for many years. This gap was effectively closed only after 1991. Female fertility levels (average number of children for a lifetime, per woman of a child-bearing age) continued to decrease from historical levels prior to the First World War of up to six or seven children per woman up to contemporary bottom ranging from 1.52 in Serbia (2019) up to 1.73 in Turkey (2020) - https://ourworldindata.org/fertility-rate. Czech Republic, Hungary, Poland, Bulgaria and all other smaller nations followed pretty much the same pattern [69]. Romania is a stereotypical case of the country who was losing its youngest labour productive population rapidly both due to ageing and migration westwards inside the EU. Thus, its population size has shrunk from a historical level of 23.21 million back in 1990 to less than 19,3 million today. Bulgaria was following the same pattern shrinking from 8.97 million in 1986 up to 6.9 million today. - https://ourworldindata.org/fertility-rate

Massive flux of Middle-Eastern and North-African migrations reaching its peak in 2015, triggered by Syrian civil war, did not actually change demographic landscape of Eastern Europe and the Balkans, as much as it did in their richer Western and Northern European counterparts. The point is in the fact that both Balkan route of migration via Turkey, Greece, Serbia towards Hungary was actually a transit route [70]. Serbia only has got million and a half mostly ethnic Arab refugees and internally displaced citizens and economics migrants since 2014 with almost all of them leaving away towards rich Protestant north of Europe. Despite receiving warm local hospitality as witnessed by their own statements, most of migrants were driven by their economic uncertainties [71]. Their journal in most cases ended up somewhere in the EU15 nations, typically Scandinavia or Germany. In addition, many of the countries alongside massive Balkan migrant route have adopted sets of polices that effectively halted further migration of such scale. Although mean age of migrant citizens is much younger that Eastern European average, and fertility rates of their homeland societies significantly higher [72], it still did not have any substantial consequences for the demographic structure of Poland or Hungary.

How all these profound and dynamic changes reflected to the sustainability of the existing Post-Semashko and mixed – Bismarck health systems of Eastern Europe? As we all know the Bismarck system, which is widespread outside CIS nations, relies heavily on mandatory tax contributions for health insurance charged to employers and employees alike. The essence of demographic aging consists of the fact that an average citizen is getting aged approximately 40 or even older. There used to be a strong fertility rebound phenomenon among the post-war WWII baby boomer generations. It has created massive cohorts in the age groups born during the late 1940s,

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1950s and even 1960s [73]. Yet all of these citizens working age has passed away and most of them are now retired citizens. This massive pool of citizens enjoying socially guaranteed pensions is a notable feature of each single Eastern European and Balkan society. In addition, over the past decades fertility rates were constantly falling. This process was particularly worsened and accelerated since the end of Cold War and beginning of economic hardships and poverty in the 1990s. It was associated with the Russian Recession reaching bottom in 1998 [74] effectively involving all of its former Warsaw pact satellite economies (nowadays Eastern EU wing) inherited from Soviet era [75]. The process of economics recovery was rather swift and sudden since 2000. Yet these cohorts of generations born in families with one or two children were much smaller in size [76]. It meant that labour workforce was shrinking rapidly over decades and alongside with it – the tax payer body responsible for budgetary revenues to finance social and health insurance programs. Thus, their demographic pyramids look like an old building whose ground, weight-bearing floors consisting of working-age tax payers are getting thinner and upper floors of supported elderly citizens are getting ever more massive.

Particularly concerning from the health economics point of view is the so called: „last year of life“ phenomenon. It means well known fact that most citizens tend to experience end-of-life severe morbidity involving lengthy intensive care unit admissions and expensive medical care technologies. Usually, this consumption over the last twelve months were proven to be equal or exceeding the lifetime medical consumption of an individual citizen [77]. Given the growing share of elderly, budget impact of this demand for hospital admission and complex home-based care continues to grow. Quite substantial burden for the entire social support system is being created by the senior citizens living alone. Due to extended longevity in Eastern Europe [78], many of them in their late 1970s or 1980s are now suffering from either dementia or non-communicable diseases [79]. This creates additional work load in terms of family care giving. It represents an important bottleneck unmet need across entire region for three reasons. First is that traditionally the network of nursing homes for elderly remains heavily underdeveloped from Baltic states to the south of Balkans and Russia [80]. Second reason is that putting their own parents in such a facility by their grown-up children, is still associated with heavy social stigma even in contemporary social milieu of most of these nations [81]. Last but not least, raising fewer children, on average less than two, simply means less hands capable of providing home based medical care to those in need. Further exploration of these unmet social needs has led to the conclusion that large number of those citizens providing care to their grandmothers and grandfathers actually bears difficult double burden of raising their own children or attending a full or part time job. This has been known to lead to the chronic exhaustion and further deficiencies for the working age citizen wearing the double burden usually for many years [82].

Sustainability challenge was made more complex with the liberalization of the market and arrival of new medical technologies [83]. The living standards of vast layers of citizens were growing rapidly among Eastern EU and the Russian Federation alike. Yet they had to face new relationships unknown in communism, when medical technologies were maybe slightly lagging behind but they were available to all the citizens irrespective of their income and social status. Now in free market economies, there were widening social gaps as measured in terms of Gini indices and diverse affordability thresholds for medical care depending on household income. Probably even bigger challenge was created with accelerated innovation in medicine. Cutting-edge technologies, such as monoclonal antibodies – pharmaceuticals extending survival for cancer for months or even up to a few years, were accessible in the local markets for the first time. Societal demand followed the supply routes since people in the age of internet were well acquainted with best possible treatments they could obtain. This has created a set of new challenges in terms of national resource allocation

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prioritization, risk sharing agreements with Big Pharma multinational manufacturers and ever-growing Eastern European out-of-pocket health expenditure. Although many of these nations are classified as high-income developing ones nowadays, these systemic issues do not appear to be resolved even half-way down the road. Increasing investment into the health economics decision making capacities and a network of Health Technology Assessment agencies in these countries has brought some, but moderate release. A good hint to understand development perspectives of these vast regions is to take a closer look to the real GDP growth perspectives and their health spending dynamics during the last global macroeconomic recession 2007-2016 [84]. These data can be correlated with compound annual market growth rates (CAGR) and long-term investment plans being reported by the leading pharmaceutical manufacturers. Keeping in mind demographic and real economic growth forecasts we see that Big Pharma remains primarily interested only in the largest and most promising among the Emerging Markets, typically the BRIC (Brazil, Russia, India, China) and to a lesser extent Mexico, Indonesia, Turkey and Nigeria. Most of remaining smaller Eastern European and Balkan countries plan to compensate their growing budgetary deficits to finance health care with an array of strategies [85]. These range from reliance on European Commission's funding streams for those within the EU. For the EU candidate countries and some of the Eastern EU members, Chinese investment plans alongside BRI remain among the main possible sources to compensate for existing shortages. Large ones like Russia [86] and Turkey [87] will remain highly reliant on their inner economic capabilities [88] and again Eur-Asian economic integration processes [89, 90]. Some small economies are finding their exist strategies vie restructuring their entire national economies towards IT sector [91] or profitable mining industries and other rooms of opportunity [92]. How all of these different economic transformation pathways will evolve during the upcoming decade, yet remains to be seen.

Policy recommendations and conclusion

Contemporary Eastern European and Balkan countries face common sustainability challenges in terms of health financing and provision. Their historical legacies in healthcare establishments are now converging together to a surprising extent. In years ahead, accelerated population ageing and prohibitively expensive medical technologies will represent the core challenges. Budget impact of life extending interventions in intractable diseases such as blockbuster oncology drugs appears to cross ever-higher societal willingness to pay thresholds. These nations should develop far more advanced Health Technology Assessment capabilities. Administration of cost-effective resource allocation policies satisfies the unmet needs only to a certain extent. This is clearly visible in the case of childhood rare diseases and orphan drugs where moral justification grounds reimbursement of ultimately expensive therapeutic interventions. Furthermore, re-engineered social and pension insurance systems are inevitably necessary to tackle approaching deficiency of labour force and shrinking tax base of employees. Extended work age legislation policies and heavier tax burden have already been imposed in majority of these countries. Yet insufficiencies remain. How successful, timely and adaptive shall the approaching health policy reforms be, remains to be seen in the third decade of XXI century.

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Authors' Contributions Statement:

Corresponding Author MJ has defined the core research questions and synthesized evidence serving as the grounds for this Review. MJ, AC, YL, LG, YT, KK, JF have jointly conceived the manuscript contributing to its multiple revisions for important intellectual content. All authors fulfil ICMJE conditions for full authorship.

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