

## Chapter 9

# Population Aging and Health Expenditures in EU Member States: A Panel Causality Analysis

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### ABSTRACT

*All the countries are faced with the population aging resulting from the rising life expectancy and decreasing fertility rates at the present time and in turn have experienced many social and economic implications. In this research, the authors explore the causal interaction between population aging and health expenditures in a sample of EU member economies during the 2000-2018 period through Dumitrescu and Hurlin causality analysis. The causality analysis revealed a unilateral causality from health expenditures to population aging.*

### INTRODUCTION

The developing health care sector and the improving living standards have raised the life expectancy of the individuals in the world. On the other side, fertility rates have been decreasing the world. The raising life expectancy and decreasing fertility rates have caused the emergence of population aging. In this context, the population aged 60 and over was increased to 962 million in 2017 from 382 million in 1980 and it is expected that the number of older persons would be doubled by 2050 (United Nations Department of Economic and Social Affairs, Population Division, 2017).

The aging population has many economic and social implications for the nations. In this context, population aging affects the production-consumption, income distribution policy, social security policy, family policy and health policy which the government should find the macro and long term solutions. The raising health expenditures, the decreases in economic growth and labor markets, and the recession and occasionally declining course in financial markets reflect the negative impacts of population aging

DOI: 10.4018/978-1-7998-7327-3.ch009

in the EU (European Union) (Vatandaş, 2013). The cost of population aging is one of the most important reasons why the population aging is important for countries and international organizations. There have been many reasons underlying population aging. The raising average life expectancy causes the increases in the retirement period. On the other side, the increases in the number of elderly population are leading the decreases in the number of working people that contribute to the social security system. Furthermore, the increasing healthcare costs with the population aging is another cost item. Lastly, the increases in the number of disabled people and chronic diseases, and the increases in home care and institutional services together with population aging also raise the health expenditures (Gruenberg, 1977; Manton, 1982; Lindgren, 2016).

The scholars have generally focused on the impact of population aging on the economic performance, productivity and labor markets (e.g. see Lee and Shin, 2019; Cristea, et al., 2020). In this paper, we focused the impact of population aging on the health expenditures. The health expenditures per capita has increased to USD 1110.84 in 2018 from USD 479.83 in 2000 (World Bank, 2021a). But the health expenditures exhibit considerable variations among the countries depending on development level of the countries. For example, the health expenditures per capita was USD 10623.85 in the US in 2018, but USD 72.83 in India (World Bank, 2021a). The demand of the elderly population for health services is higher than the demand of the young population. Thus the health services provided to the patients aged 65 and over have increased faster. The increase of ongoing chronic diseases together with population aging and the prevalence of multiple disease structures known as comorbidity raise the health cost, because the treatment of the aforementioned diseases requires the advanced and expensive technological facilities. Furthermore, the continuity and variability of the health care of elderly people compared to other population groups has led the emergence of “the cost of old age” (Economist Intelligence Unit, 2009).

Alemeyehu and Warner (2004) determined that a person makes an average of USD 316,597 health expenditures over their lifetime (USD 268,679 for men, and USD 361,192 for women). The women make 8% more health expenditures than men do, because women live more than men. Furthermore, nearly 60% of lifetime health expenditures are made by the people over 65 years of age. The 80% of health expenditures are made after forties and only 20% of life-long health expenditures are made during the first half of lifetime. (Alemeyehu and Warner, 2004).

The health expenditures are expected to be raised in the world due to increases in the total population and the share of the elderly population in total population, the raising income, development of health awareness, new health technologies, and the increasing demand towards health care services (Tenth Development Plan, 2014). Therefore, determinants of health expenditures are important to design and implement right policies. In this regard, the health expenditures are expected to be raised, because people are disposed to get sick more, in turn benefit from health services more and take more complicated services when get older (Boz et al., 2020). This chapter explored the causality between population aging and health expenditures in sample of 27 EU member states for the period of 2000-2018. The next section summarized the related literature. Then data and method were described and empirical analysis conducted. The paper was finalized with the Conclusion.

## **LITERATURE REVIEW**

The population aging has many social, economic, and cultural effects in the world. In this study, we focused on the impact of population aging on the health expenditures. The relevant literature on the im-

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