

## **Beveridge, Bismarck and Southern European Health Care Systems: Can we decide which the Best in EU-15 is? A Statistical Analysis**

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### **Abstract**

A statistical analysis has been conducted with the aim to elucidate the effect of health care systems (HSs) on health inequalities assessed in terms of (a) differential access to health care services and (b) varying health outcomes among different models of HSs in EU-15 [(Beveridge: UK, IE, SE, FI, DK), (Bismarck: DE, FR, BE, LU, AT, NL), (Southern European model: GR, IT, ES, PT)]. In the effort to interpret the results of the empirical analysis, we have ascertained systematic differences among the HSs in EU-15. Specifically, it is concluded that countries with Beveridge HS can be characterized more efficient (than average) in the most examined correlations, showing particularly high performance in the health sector. Similarly, countries with Bismarck HS record fairly satisfactory performance, but simultaneously they display more structural weaknesses compared with the Beveridge model. In addition, our empirical analysis has shown that adopting Bismarck model requires higher economic cost, compared with the Beveridge model, which is directly financed by taxation. On the contrary, in the countries with Southern European HS, the lowest performances are generally identified, which can be attributed to the residual social protection that characterizes these countries. The paper concludes with a synthesis of the empirical findings of our research. It proposes some directions for further research and presents a set of implications for policymakers regarding the planning and implementation of appropriate policies in order to tackle health inequality within HSs.

**Keywords:** social policy, health care systems, health inequalities.

### **Introduction**

The positive or negative impact of the health care systems (HSs) on health inequalities has not been adequately studied, in an empirical and comparative way, by scholars. This remark highlights the originality of this paper, the purpose of which is to explore, at an empirical level, how the HSs in EU-15 affect health inequalities. The latter are assessed in terms of (a) access to health care services and (b) health outcomes. This means that the HSs can possibly (re)produce, mitigate or even deepen health inequalities. Therefore, our main research question is to what extent and under what conditions the different HSs produce a positive or negative effect on health inequalities.

### **Methodology**

In the macro-level survey, the methodological units of analysis are the EU-15 countries, grouped into three categories and based on the type of HSs:

Beveridge: UK, IE, SE, FI, DK

Bismarck: DE, FR, BE, LU, AT, NL

Southern European model: GR, IT, ES, PT

This macroscopic framework allows us to observe convergences and divergences between countries, based on the type of the HSs. The use of the latest available secondary empirical data has allowed us (after a sufficient number of empirical experiments, by using the statistical data analysis package-SPSS/Statistical Package for the Social Sciences) to provide useful empirical findings, in order to determine the effect of HSs on health inequalities.

Particularly, independent variables comprise of quantitative indicators which provide a sufficient framework of describing the operation of the HSs (tritych "financing, provision, regulation"). These are: "public health expenditure (% of current health expenditure)", "public health expenditure for long-term care (% of current health expenditure)", "private health expenditure (% of current health expenditure)", "private health expenditure for rehabilitative care (% of current health expenditure)", "private health expenditure for in-patient care (% of current health expenditure)", "private health expenditure for prevention and public health (% of current health expenditure)", "cervical cancer screening tests (% of women aged 20-69)" and "MRI scanning examinations, in hospitals / per 1,000 inhabitants").

Respectively, the dependent variables, which have been selected, can contribute significantly to the assessment of health inequalities. These are classified into two groups:

a. quantitative variables regarding the measurement of inequalities in terms of access to health care services ["self-reported unmet needs for medical examination due to high costs (% of the population)", "self-reported unmet need for medical examination due to high costs, over 65 years (%)", "self-reported unmet need for medical examination due to high costs, based on quintiles of equivalent income (% of population)"].

b. quantitative variables regarding the measurement of inequalities in terms of health outcomes ["people with long-term illness or health problem (% of population)", "people with long-term illness or health problem, over 65 years (%)", "people with long-term illness or health problem, based on quintiles of equivalent income" over 65 years (%)", "self-reported health status as good / very good, over 65 years (%)"].

Additionally, it is highlighted that the empirical analysis is based on:

a. time periods that have been selected aiming the representative presentation of trends over time, pinpointing the milestones of the period before and during the economic crisis (1995, 1998, 2001, 2004, 2007, 2010, 2013)

b. different income groups of the population, which reflect the changes between lower (1st) and upper (5th) quintile of the equivalent income

c. age groups, with an emphasis on elderly (in combination with the sex)

It should be noted that several restrictions have been identified with respect to the above data as well as shortcomings of chronological time series for all the examined countries.

## Findings

In the effort to interpret the results of the empirical analysis, we have ascertained systematic differences among the HSs in EU-15. Specifically, it is concluded that countries with Beveridge HSs can be characterized more efficient (than average) in the most examined correlations, showing particularly high performance in the health sector. This finding is attributed to the distinct features of the Beveridge model, which include the approach of the "health" as a public good, the redistributive character of the HS and the state supervision of funding and provision.

Similarly, countries with Bismarck HSs record fairly satisfactory performance, but simultaneously they display more structural weaknesses compared with the Beveridge model. In addition, our empirical analysis has shown that adopting Bismarck model requires higher economic cost, compared with the Beveridge model, which is directly financed by taxation. In addition, the difficulty in restraining costs in conjunction with the increasing insurance contributions are the main drawbacks of the Bismarck model, which highlight the need to reconsider and reinforce the role of the state control.

On the contrary, in the countries with Southern European HSs, the lowest performances are generally identified, which can be attributed to the residual social protection that characterizes these countries. However, it is observed that Spain and Portugal show low rates of "self-reported unmet needs for medical examination due to high costs" in relation to the independent variables that have been tested. This fact can be attributed to the successful adoption of a universal HS, including long-term care, where citizens' satisfaction is sufficiently high, compared to Greece and Italy. These conditions often classify the Spanish and Portuguese HSs closer to the Beveridge model.

Paradoxically, in "inequalities in terms of health outcomes" it is verified that Greece has very low levels of "people with long-term illness or health problem, over 65 years" and simultaneously significantly high rates of "self-reported health status as good / very good, over 65 years" in relation to the independent variables. Despite the economic recession and austerity

policies in health policy, it is clear that citizens have an inherent optimism, which is a key feature in their culture and it contributes remarkably to these levels. After all, the effects of the crisis are not directly apparent and often enough time has to be passed in order to pinpoint them.

Moreover, it is noticed that in periods of development of the welfare state, the total financing of the health sector is increasing in all three types of HSs. However, during the times of economic crisis and austerity it has been found that the Beveridge model generally (a) responds better to control expenditure growth and (b) displays better health indicators. Nevertheless, we should not forget that in a resource-containment environment, major insufficiencies predominate such as lack of staff and materials, long waiting lists, low rate of patient satisfaction, shift to the private sector and hence extensive health inequalities within the HSs.

It is also reminded that traditionally the Scandinavian model of care promotes the protection and welfare of citizens, defending with special concern the vulnerable groups of the population, such as the elderly and the poor. At the same time, the development of a statutory long-term care system in these countries (Beveridge) has a positive effect on health indicators. Conversely, as it has been ascertained, in the Southern European model the presence of an extensive network of informal carers derives from the weakness of the public funding in the long-term sector. These conditions do not often allow the fulfillment of health needs, leading citizens to private payments. Specifically, it is found that amid crisis Greece shows the highest rate of "self-reported unmet needs for medical examination due to high costs" in relation to the independent variables that were examined. This confirms the effect of the economic recession on (re)production of extensive health inequalities, which are likely to be caused by the constraint of health costs. In general, the observed variations in the size of public spending in long-term care sector reflect differences in both the demographic profile of the population and the development of the HSs.

Theoretically the Beveridge model promotes universal coverage ensuring that citizens have access to health care. However, the level of private health expenditure can not be characterised as inconsiderable. Thus, policy measures have been implemented in order to protect people (especially low-income groups or people suffering from chronic disease/long-term illness) from the incidence of illness. These measures include partial or total financial exemption as well as the establishment of a ceiling on the users' fees for in-hospital services. In this context, low levels have been achieved in the variables regarding inequalities in access and mainly in health outcomes. However, the above practices are not quite sufficient as they are unable to modify the Beveridge HSs to a protector of household incomes or a guarantor of the socio-economic development/prosperity of all citizens. Therefore, access to care can not be characterised equal and fair, despite the presence of good health performance.

At the same time, this study has confirmed that the risk of "catastrophic" private spending is higher in the Southern European model, especially in Greece. Conversely, richer countries have the opportunity to invest and give priority to social policy areas such as health, to keep private payments relatively low and to limit the risk of catastrophic spending for households.

Theoretically, adequate public health care services and insurance cover protect citizens from private health costs. However, it has been found that low-income households or households with elderly people or people with a long-term illness are at greater risk of catastrophic health expenditure. For this purpose, private spending introduces a set of market criteria in the operation of the public HSs, which are subject to the informal rule "if you pay, you are served". Despite the constant efforts for structural and organizational changes within the HSs, health inequalities continue to exist. Simultaneously, the surge in private payments calls into question the effectiveness of the HSs in protecting the citizen from poverty and the incidence of long-term illness or poor health.

In addition, the empirical analysis has confirmed that private expenditure for inpatient care and rehabilitative care has negative impact on the poorest socio-economic groups of the population (1st quintile) that state "self-reported unmet needs for medical examination due to high costs" to a great extent. These groups of the population often delay or refrain from health care, which is needed to improve their health status. Consequently, these conditions do not allow the consolidation of health equality within HSs.

Regarding the effect of cervical cancer screening, it is concluded that screening programs can play a decisive role both in controlling the burden of morbidity and mortality and in reducing public health expenditure. In addition, the cervical cancer screening constitutes an excellent tool for evaluating the performance of HSs in EU-15.

## Conclusion

Based on all the above findings, this study has concluded that despite the apparent diversity of the examined HSs and their health policies, modern European HSs have been forced to implement common solutions to common problems and weaknesses, leading to a convergence-path between them.

In this context, the implementation of the "Third Generation of Health Reforms" aims to achieve the utopian dipole "ensuring universal access - ensuring adequate financial resources for HSs". Additionally, it is observed that the "compulsive" state intervention in the economy sector has gradually been devalued. This has led to (a) divestiture of the state monopolies, (b) promotion of market competition and (c) wider reliance on market mechanisms. On individual level, these conditions place greater emphasis on individual choice and responsibility. On political level, the citizens' expectations about the government outputs are limited. Although there is a convergence framework between European HSs, significant differences still exist in terms of funding, provision and regulation, which are still a challenge for researchers. As health care resources are limited, it is obvious that optimal effectiveness and efficiency criteria need to be implemented in the distribution of the existing inputs, especially under the conditions of the current economic recession.

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