

Estimating the drivers and projecting long-term public health expenditure in the European Union: Baumol's "cost-disease" revisited

João Medeiros and Christoph Schwierz

During most of the second half of the 20th century, public health expenditure (HE) grew faster than national income. The general upward trend in the HE-to-GDP ratio includes periods of faster and slower growth, showing a staggered increase over time. Public containment policies of HE cannot be sustained for long periods, inter alia, because wages have to attract young and skilled workers for the health sector, while controlling prices is challenging in the presence of rapid technologic progress and the broadening coverage of health systems.

Baumol's "unbalanced growth model", which is characterised by low (or only sporadic) labour productivity growth in "stagnant" sectors (e.g. health services versus rapid productivity growth in "progressive" sectors, e.g. manufacturing), provides a simple but compelling explanation for the observable rise in HE-to-GDP ratios in the last decades.

Costs and prices tend to raise faster in personal services industries, such as health services and education, because of the limited opportunities for productivity gains in these sectors. This combined with an inelastic demand generates a rise in expenditure-to-GDP ratios. Given the great importance for society's welfare of activities such as, health, education, justice, policing, fine-arts, etc., persistent rises in their relative prices tend to strain both household and government budgets, potentially endangering the provision of these goods and services both in terms of quantity and quality, especially for the less-favoured groups in society. This is likely to require a gradual shift of resources to such activities, which in Europe are mostly financed through taxation.

Firstly, we carry out a typical accounting analysis or breakdown of total public HE growth over the last 25 years in its main drivers, disentangling between demographic (age structure of the population), and non-demographic drivers of total public expenditure on health, such as income and relative prices, although leaving unexplained a large residual component, reflecting omitted variables, such as technology and policy regulations.

Secondly, the analysis estimates regressions with total public HE as the dependent variable to obtain income and price elasticities of health expenditure. These elasticities are later used to project future HE-to-GDP ratios. The choice of total public HE as dependent variable reflects the "practical" nature of our problem: we want to build a methodological framework to project (changes in) long term total public HE. Eventually, the regression specification retained fits well with the Economic Policy Committee-European Commission (EPC-EC)

methodology to project age related costs, because the macroeconomic variables needed to project future total public HE are available in the long term EPC-EC age related projections.

Thirdly, the analysis presents another type of regression to explain the drivers of health expenditure in a more theoretical perspective, following Baumol's "unbalanced growth model". Specifically, we test empirically the main implication of Baumol's "unbalanced growth model", namely that health expenditure is driven by wage increases in excess of productivity growth in the whole economy.

Summing up, we should highlight that the estimated regressions, using a proxy for the Baumol effect, together with income and demographic variables, were only partly successful in explaining past trends in HE, as an unexplained large positive drift remained (possibly due to omitted variables and model misspecifications). A few projection scenarios for the HE-to-GDP ratio up to 2060 were presented. Results suggest a minimum increase of 3 p.p. between 2010 and 2060 for the EU27. Overall, projected expenditure rises are in line with OECD's, but are considerably above those obtained using the EPC-EC methodology. As a whole, projections of HE represent an acute reminder of the need to proceed with the efforts to curb expenditure growth and improve the efficiency of health systems. In fact, in the projection scenario that does not assume taking additional control measures, expenditure-to-GDP ratios are projected on average to nearly double in the EU between 2010 and 2060.