

The Fiscal Implications of Demographic Change on Public Health Spending: An Update

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Outline

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Introducing the Projection Model

- **This model projects current public health expenditures as a function of:**
 - Demographics drivers
 - I. Age Composition
 - II. Death Related Costs
 - III. Morbidity
 - An Income component
 - Residual Factors
- $$\Delta \ln \left(\frac{H}{N} \right)_t = \Delta \ln D_t + \varepsilon \Delta \ln \left(\frac{Y}{N} \right)_t + \Delta \ln \gamma_t$$

Demographic Drivers

- **Age Composition**
 - Literature states less important than other factors (Anderson and Hussey, 2002)
- **Death Related Costs**
 - Majority of costs accrue immediately preceding death. Gray (2005) argues this has greater predictive validity than age per se.
- **Morbidity**
 - Relates to whether increases in longevity are associated with more or less time spent in ill-health. Morbidity Expansion and Compression represent the basic divide.

Income and Residual Cost Growth Components

- **Income**
 - Demand for health care responsive to changes in income. Measured via an income elasticity of health demand.

- **Residual Cost Growth**
 - Expenditure growth left unexplained by demographic of income related factors

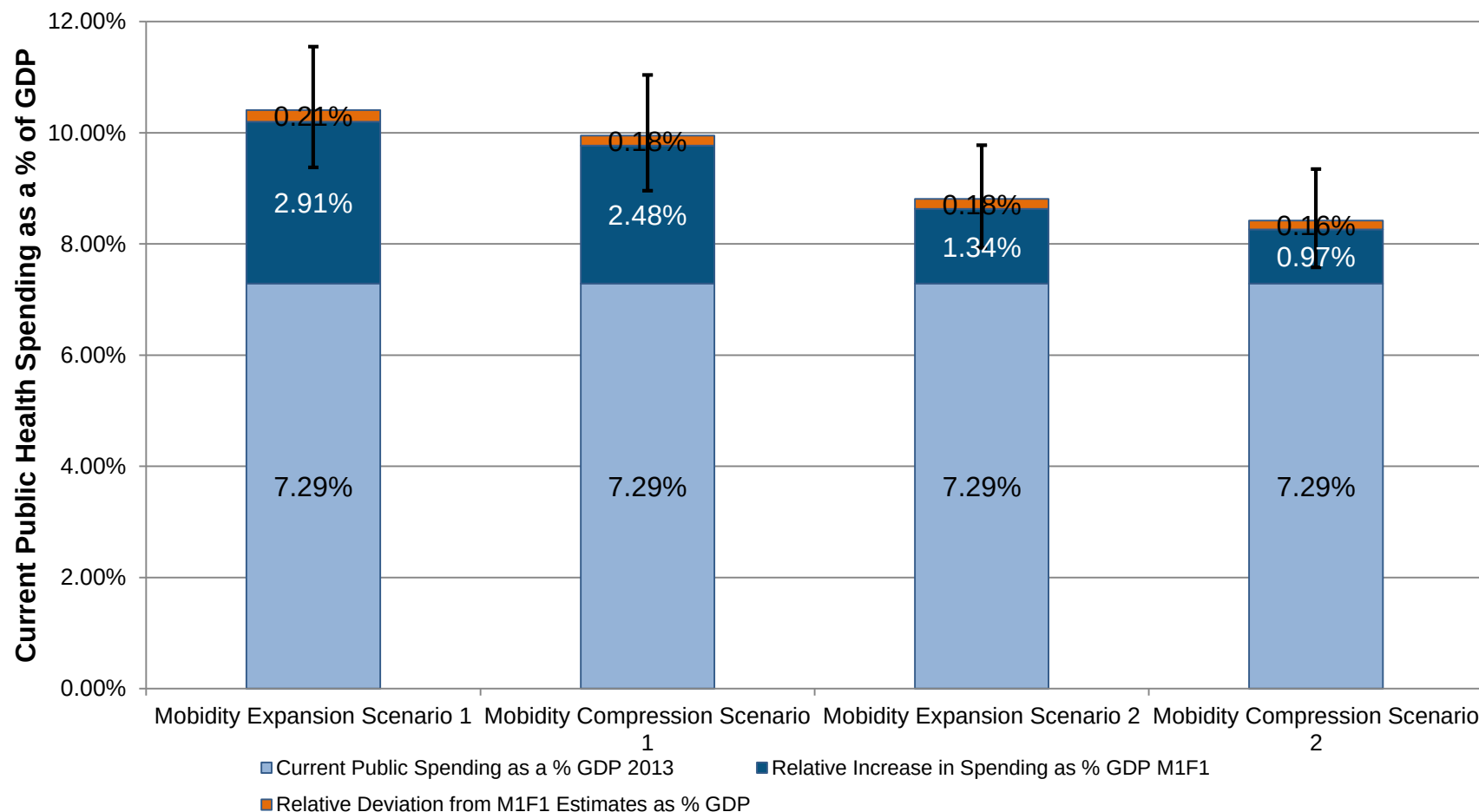
 - Thought to include factors such as:
 - I. Technology
 - II. Relative Prices
 - III. Institutions and Health Policy

Paper Results

**Table 1: Average Annual Direct
Demographic Cost Pressure (pg. 14)**

Years (Inclusive)	Million € Spending Pressure (at 2013 prices)				% Overall Annual Expenditure Growth due to demographics			
	Morbidity Expansion		Morbidity Compression		Morbidity Expansion		Morbidity Compression	
<i>Population Projection</i>	<i>M1F1</i>	<i>M2F2</i>	<i>M1F1</i>	<i>M2F2</i>	<i>M1F1</i>	<i>M2F2</i>	<i>M1F1</i>	<i>M2F2</i>
2013-2015	€152.37	€142.42	€121.35	€111.40	1.16%	1.08%	0.92%	0.85%
2016-2018	€195.91	€167.46	€162.53	€134.16	1.44%	1.24%	1.21%	1.00%
2019-2021	€237.49	€189.23	€202.03	€154.01	1.67%	1.35%	1.44%	1.11%
2022-2024	€265.95	€202.07	€228.21	€164.80	1.78%	1.38%	1.56%	1.15%
2025-2027	€281.94	€210.23	€243.00	€171.96	1.79%	1.38%	1.58%	1.16%
2028-2030	€295.92	€220.25	€256.14	€181.40	1.78%	1.39%	1.59%	1.18%
2031-2033	€303.43	€223.18	€264.15	€185.17	1.73%	1.35%	1.57%	1.16%
2034-2035	€306.85	€222.16	€267.87	€184.82	1.68%	1.30%	1.53%	1.13%

Figure 8: M2F2 Projections 2035
Sensitivity Analysis according in
Income Elasticity (pg.21)



Paper Results

- **Significant demographic cost pressures exist in the forecast model.**
 - Annual cost pressure exceeds €100 million in all cases.
 - Doesn't attain €200 for MC M2F2. In all other cases, exceeds €200 million from 2019. Reaches €300 million in 2034 in ME M1F1.
 - Cost growth $\approx$ 1% annually
 - Cumulative demographic costs exceed €1 billion between 2019 and 2021. Range from €3.57 billion to €5.66 billion in 2035.

Paper Results

- **Current Public Health Spending will increase to 2035.**
 - Range of central estimates between 8.3 and 10.2% of forecast GDP in 2035, Though this is higher under the most pessimistic assumption set (maximum $\approx$ 11.6%).
- **Changes in composition of public health spending.**
 - Over 65s go from 30% to over 40% of spend 2013 to 2035.

Adjustment for revised 2013 data

- **Model updated to account for:**
 - Revised Demographic data (Population and deaths) for 2013 and 2014.
 - Modest revision in current public expenditure in 2013, €13,082 to €13,096 million.
 - Revisions entail rescaling per capita costs for survivors and decedents.

Comparison with observed ex-post data

- **Real Growth significantly less than forecast:**
 - €13,096 to €13,265 million from 2013 to 2014.
 - Compares to a forecast at lowest income elasticity of €13,522 million (and morbidity compression).
 - Observed annual growth c.1.3% vs minimum projection of 3.3%.
 - Costs attributable to demographic change (related to ageing and population growth) between €88 and €119 million according to the model. This doesn't exceed the observed change in expenditure.

Some Thoughts

- **Complicating factors pertaining to the model itself to consider include:**
 - Possible inefficiency within the current system upwardly biasing forecast estimates.
 - Absence of Irish Specific cost profiles.
 - Residual cost growth accuracy given its lack of explanatory power.
 - European and domestic rules restraining expenditure growth.
 - Likely endogeneity between components.
 - Political Choices.

Some Thoughts

- **In relation to it's ex-post validity:**
 - The factors cited before are salient with respect the general forecasts.
 - Over a single year time frame, some factors that are implicitly included might be thought of as fixed, whereas the forecasts incorporates an “average” of sorts. Technology and continued restrained wage growth may effectively eliminate the residual factor.
 - There is a possible question posed by the use of GDP per capita as a reflection of income influencing demand.



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