

## **Health, wealth and longevity: a British perspective**

**Presented by**

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### ***Introduction***

Over the past decade, there has been growing interest in the reciprocal relationship between health and wealth. The seminal work of Bloom and Canning from Harvard University has provided strong evidence that richer economies tend to have better levels of population health, and that the latter contribute to productivity and GDP. A further layer to this relationship is that increased longevity also benefits from, and contributes to, economic wealth.

If older people remain healthy late into their lives, this enhances their chances for contributing to society through paid employment, volunteering, sharing their expertise and experience with younger generations, as well as through consumerism – thus yielding strong benefits for the economy. Reciprocally, social participation and productive engagement of older people is shown to lead to healthier ageing and increased longevity. Thus ‘health=wealth’ is equivalent to the notion that healthier older populations are an invaluable resource to societies and, instead of being a financial burden on society, contribute towards the economy and society in multiple ways. In a country like Britain that relies so strongly on civic engagement for many of its community institutions (eg. magistrate courts), the participation of older people in civic duties is particularly important.

Most of this work exploring the relationship between health and wealth pertains to developing nations, where relatively small investments in the economy may have a marked impact on health status and health outcomes. If we try to quantify this relationship in developed economies, we risk witnessing what is called a ‘ceiling effect’ in developed economies like the United Kingdom. Having reached a significantly high level of wealth as well as of life expectancy, differences in health or indeed in life expectancy observed as a result of a change in policy, or economic investment, may appear marginal. What is needed is a more subtle analysis of the interplay between health, wealth and longevity within the British population.

This paper discusses two aspects of such an analysis: First, we look at the macroeconomic level and ask how investments in health care in the UK may manifest themselves in better health outcomes. Secondly, we look at this relationship at the individual level and look at how existing socioeconomic inequalities may manifest

themselves in observed differences in health outcomes and life expectancy within the British population.

**Health, wealth and longevity in Britain**

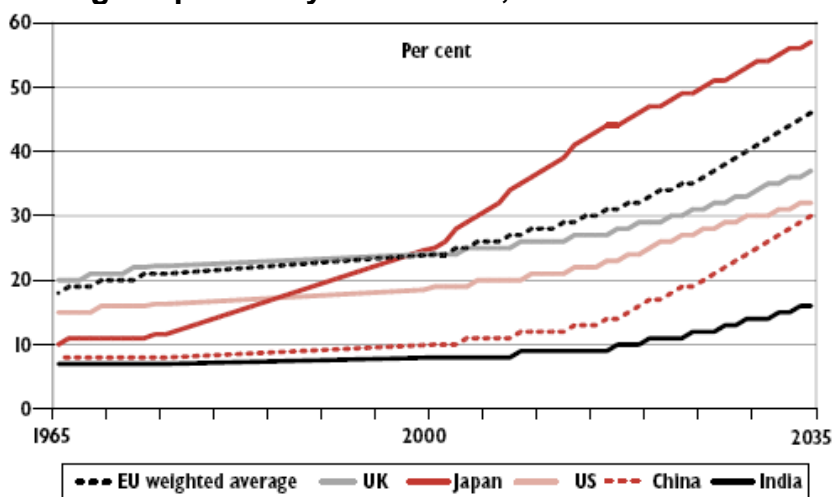
The United Kingdom has relatively high levels of life expectancy for both men and women compared to other countries (*Table 1*). Employment rates of the older segment of the population are relatively high and old-age dependency ratios relatively low compared to the EU average, yet they remain disappointingly low (*Figure 1*).

**Table 1: EU life expectancy, 2003**

	Men	Women
<b>EU-15</b>	<b>76</b>	<b>82</b>
<b>EU-25</b>	<b>75</b>	<b>81</b>
Czech Rep.	72	78
France	76	83
Germany	76*	81*
Hungary	68	77
Italy	77	83
Poland	70	78
Spain	76	83
UK	76**	81**
USA	74	80
Japan	77	84

Source: Eurostat 2004; \*\* ONS 2004

**Figure 1:  
Comparison of age dependency ratios as %, EU and selected countries<sup>1</sup>**



Source: UN World Prospects 2002, taken from HM Treasury Budget 2004

<sup>1</sup> Age dependency ratio defined here as 65+ year olds as percentage of population aged 16 to 64. EU average is EU-15.

## **Investments in health**

An important facet of the relationship between health and wealth is how much investments of the country's wealth in health care may benefit population health. The work of McKeown and others has led many to the sobering conclusion that the role played by the health care system itself in determining population health is minor compared to factors such as poverty, education and other socio-economic parameters. However, work by Or (2001) from the OECD refuted this to some extent (*Table 2*). Or and colleagues tried to determine what had the most impact on mortality rates by means of a multiple regression analysis. They looked at infant mortality and potential years of life lost (excluding suicides). The possible explanatory factors included measures of health system capacity (density of physicians per population), investment in health, economic wealth (GDP), socioeconomic factors (educational level), public health behaviours (smoking, drinking) and environmental health. From these results, one may reach the albeit tentative conclusion that provision of health care services, levels of economic wealth and socioeconomic factors may be the most significant determinants of both infant and overall mortality. Although this analysis has its methodological limitations, it has not, to our knowledge, been replicated and is unique in its ability to show the relative weight of these different factors on influencing mortality (and hence, life expectancy).

**Table 2: Estimated impact of various factors on health outcomes**

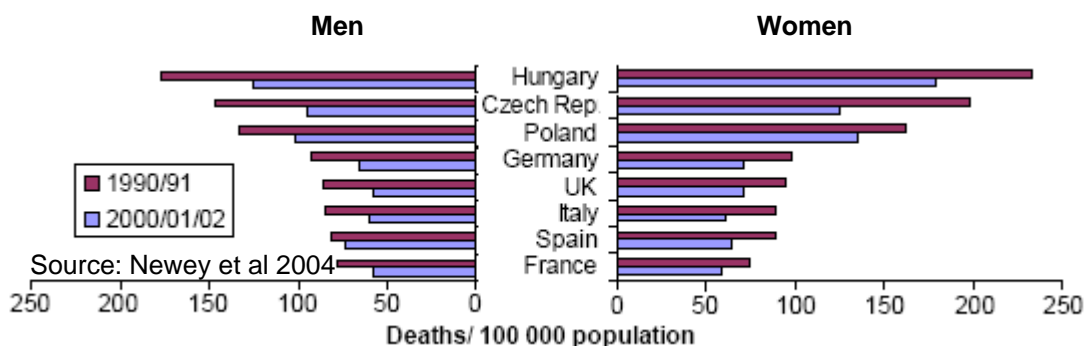
<i>Percentage impact on outcome of a 1 per change in each factor :</i>	Potential years of life lost excluding suicides		Infant mortality
	Females	Males	All
Doctors per 1,000 of population (proxy for health resources)	-0.38	-0.28	-0.64
Share of public spending in total health spending	-0.13	-0.16	-0.23
GDP per capita	-0.24	-0.26	-0.49
Share of white collar workers in workforce	-0.40	-0.43	-0.76
Alcohol consumption	0.11	0.17	0.19
Tobacco consumption	0.09	0.06	0.14
Nitrogen oxide emissions	0.08	0.09	0.10

Sources: Or Z(2001), Exploring the effects of health care on mortality across OECD countries, OECD Labour Market and Social Policy, Occasional Papers No. 46.

The links between health and wealth have become particularly relevant within the context of the expansion of the European Union. Significant differences in GDP, health outcomes and life expectancy exist between the new EU member states (EU-10) and the older member states (EU-15). There is a growing research effort within the European Commission and the European Observatory on Health Care Systems, amongst others, to investigate what policies and strategies may help reduce the gap in health and wealth within the European Union. As such, questions as to where investments should be made – to the health care system or elsewhere – are now high

on the EU agenda with the objective of reducing inter-country disparities. For example, Newey et al (2004) have looked at the concept of 'avoidable mortality', or mortality that may be attributed to the health care system. As can be seen from *Figure 2*, the gap between countries is striking, yet all countries depicted have seen a promising decrease in treatable mortality over the past decade.

**Figure 2:**  
**Age standardised death rates of treatable mortality per country 1990/1 & 2000/1/2/**



How is this relevant to Britain? Interestingly, the recent history of the National Health Service (NHS) also raised the question of how much should be invested in health care to achieve desired health outcomes. In 2002, Derek Wanless, the Chairman of NatWest bank, was asked to chair a commission looking at the future of the NHS towards 2010. The work of the commission was published in a series of reports, the so-called 'Wanless reports', in 2002 and 2004. The first report (2002) gave the very strong message to the government that the NHS was grossly underfunded and that significant investments in health staffing and resources were needed if we wished to achieve our health outcome targets over the next decade. This report led to the decision by the Blair government to make unprecedented increases to the levels of investment in health care, bringing the percentage of GDP allotted to health in the UK up to the European average by 2007. The projections used by the Wanless commission to forecast needs have been subject to criticism; however, the exercise in itself represented a first bold attempt to quantify, in a single model framework, the relationship between demographic projections, epidemiological trends, health service provision, health care needs and desired health outcomes.

### ***Sustainable financing***

The relationship between health, wealth and longevity is often looked at in a pessimistic light, suggesting that the ageing of the population is going to pose unsustainable pressures on our health care systems – and significantly jeopardize the nation's wealth as a result. Experts are divided as to whether the expansion of longevity is associated with a compression or an expansion of morbidity. In other words, are we living longer and healthier lives or just longer lives with increased disability? Results from longitudinal studies such as the Healthy Ageing -- Longitudinal Study Europe (HALE) show that, despite the ageing of the population, the proportion of older

Europeans with disability is decreasing. Studies by the OECD suggest that disability-free life expectancy accounts for 45-80% of life expectancy at age 65, in other words no more than half of life years over this age will be encumbered by some form of disability (OECD). In macroeconomic studies little correlation is found between overall health expenditure for older people and the proportion of the population over the age of 65 (OECD); the ageing of the population plays a very limited role in explaining the rise of health care expenditure, whereas factors such as the uptake of expensive new technologies may be much more significant.<sup>i</sup> The above studies suggest that the catastrophic view of the impact of increased longevity on health expenditure (and hence, national wealth) is likely to be unjustified.

Equally, it is undeniable that ageing populations will put our health care systems under significant pressure – mostly because of the inadequacy of current service models to provide truly patient-centred, continuous care. Thus reforms aimed at improving service delivery models, better training of physicians and clinical staff and more integrated health and social care may have helped encourage more efficient and effective use of resources, and achieve better health outcomes.

The question still remains whether older patients use up more health care resources than younger people. On the aggregate, it is true that the older segment of the population consumes a high share of resources simply because of the higher probability of disease and death with advancing age. But this does not hold true at the individual patient level: for the same condition, older patients tend to use *less* health care than younger patients. The highest costs occur in the 12 to 18 months prior to an individual's death, and this is true at any age. What is expensive is the *cost of dying*, not the *cost of ageing*.

There have been a number of recent UK studies demonstrating the above. Dixon *et al.* conducted a retrospective cohort study of over 250,000 in-hospital deaths to determine age-specific costs of treatment in the last 3 years before death. They found that the median number of days spent in hospital before death did not increase with age. The authors conclude 'the older sector of the population accounts for a higher proportion of acute healthcare resources because they are nearing the end of their lives, not because care is individually more expensive'<sup>ii</sup>. Seshamani and Gray found that health care costs amongst people aged 65 and older in England increased less than those of middle age groups over the period 1985-87 to 1996-99. A parallel shift in social care costs, however, occurred over the same period.<sup>iii</sup> These different studies point to scrutinize assumptions made when projecting future health care costs based on demographic forecasts. Interestingly, the Wanless commission models did take these factors into consideration when making their projections of health care costs.

### ***Socioeconomic inequalities: the link between health, wealth and longevity at an individual level***

The links between health, wealth and longevity become particularly apparent when one looks at individual-level data and examines inequalities across the UK population. Since the publication of the Black report in 1980, there has been a growing concern for

inequalities in health outcomes across the UK population. The Independent Inquiry into Inequalities in Health (the so-called Acheson report), in 1997, demonstrated with sobering clarity that huge disparities exist in life expectancy, morbidity and mortality rates within the UK population by gender, socioeconomic status, educational level, and living conditions.

Interestingly, age has not typically been part of the health inequalities debate, although age inequalities in health have been amply documented in the literature and challenged by ageing lobby groups such as AgeConcern. Yet age barriers may be compounded with other socioeconomic inequalities and should not be viewed in isolation. A prominent example is that of cardiovascular disease in women – where gender and age act in synch to create ‘the double whammy of discrimination’. The relationship here is that between health and wealth – that advancing policy goals is one thing, but without the resources behind these objectives, goals will never be achievable. For example, Beswick et al (2004) found that, to meet revascularisation needs for older people and women, budget allocations would need to increase anywhere from 200-790% (Beswick et al, 2004). Again, this was a core message of the Wanless review which drove further investment on behalf of the UK government into the NHS.

Indeed, until recently there was the belief within the inequalities literature that age had a levelling effect on socioeconomic inequalities, on the basis that, in cross-sectional studies, observed disparities between socioeconomic groups tended to become more attenuated in older age groups. However, longitudinal studies such as the English Longitudinal Study on Ageing (ELSA) have challenged these assumptions, and demonstrated that taking a lifecourse perspective on inequalities is needed to fully understand the complexities of trends. For example, the seminal work of Professor Michael Marmot and colleagues has shown that people in routine or manual occupations reach a state of poor health and disability on average 15 years earlier than professionals or managers. Thus only a longitudinal perspective across populations may allow to make appropriate comparisons.

The impact of individual wealth (or lack thereof) on health status and life expectancy is significantly demonstrated in results of ELSA. The disability gap between social classes is equivalent to the gap between age groups 10 or more years apart. What is interesting is that self-perceived socioeconomic position shows the strongest correlation with health. Another area where socioeconomic inequalities amongst older people are evident is in housing. The United Kingdom has a longstanding problem of ‘excess winter mortality’, which is due to cold room temperatures, dampness and poor ventilation in a lot of existing housing. These conditions put residents, and particularly older residents, at risk for respiratory diseases and cold related cardiovascular problems. This problem is particularly acute in London but across the nation, winter cold is responsible for thousands of avoidable deaths per year (Warnes, 2004).

## **Conclusions**

The fact that richer societies enjoy healthier and longer lives, and that investments in health and increased longevity foster wealthier economies has been demonstrated on a

macroeconomic level. The UK is typical of a wealthy nation which is enjoying unprecedented levels of life expectancy, however where the concept of 'healthy ageing' does not apply equally across the population. In developed economies such as this one, the focus of efforts should be to try to reduce inequalities within society in terms of wealth, health and longevity, and to make further strides to understand the complex interplay between socioeconomic, health and demographic factors. Moreover, improvements to our health and social care systems will continue to be needed to ensure that persons of all ages receive the most appropriate and effective care. Such investments will not necessarily cause the downfall of our existing social security systems. On the contrary, they may contribute towards making healthy ageing a reality for generations to come.

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Anderson GF and Hussey PS. Population aging: a comparison among industrialized countries. *Health Affairs* 2000; Vol 19, Issue 3, 191-203.
  - ii Dixon T, Shaw M, Frankel S, Ebrahim S. Hospital admissions, age, and death: retrospective cohort study. *BMJ* 2004 published online 16 April 2004.
  - iii Seshamani M and Gray A 2002. The impact of ageing on expenditures in the National Health Service, *Age and Ageing*, 31, pp. 287-294.