

ESTIMATING THE ABILITY-TO-PAY FOR HEALTH CARE EXPENDITURES RISING FASTER THAN GDP: AN INTERNATIONAL PERSPECTIVE COMPARING THE USA AND GERMANY

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Discussion

Our findings indicate that the proposition of future "affordability" of health care spending growing faster than GDP is highly sensitive to low economic growth rates (particularly those below 1 percent per year). Our analysis also demonstrates that this sensitivity is much less pronounced at higher real per-capita growth rates.

The dependency of "affordability" of rapidly increasing health expenditures on minimum economic growth rates as a phenomenon is not peculiar to the United States.

Our observations thus delineate a principle relationship between GDP growth and affordable health care spending in high-income economies, despite the evident limitations of our approach: we use a simplified model, neglecting interactions between health care and GDP growth, as well as ignoring efficiency changes in the provision of health care and the economic consequences of improved health outcomes; further we look at the economy as a whole, abstracting from actual flows of funds and resulting fiscal and distributional aspects.

Nevertheless, the implications for health care policy-makers are obvious. They need to be aware that the upper limits of potentially acceptable (affordable) health care spending growth rates will be critically dependent on overall economic growth. At low real GDP growth rates, conceivably those below one percent per year, this effect is most pronounced.

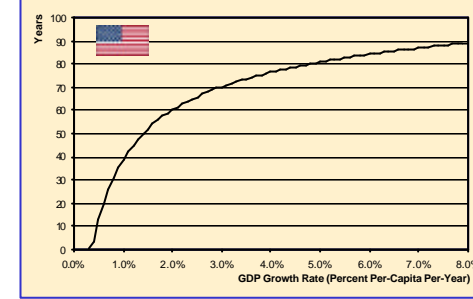
If and when sufficient real economic growth can be achieved, however, the issue more relevant than "affordability" becomes actual "willingness-to-pay". In light of the necessary trade-offs, it is a safe prediction that the providers of medical care will have to come up with harder evidence than ever, demonstrating that they deliver value for money. In case they fail to accomplish that, they may find little comfort in the numbers presented, even in the presence of real GDP growth rates exceeding one percent per year.

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Table 2: Sensitivity analysis for Germany: number of years of rising non-health expenditures under alternative combinations of health expenditure and GDP growth rates

Health Expenditure growth rate	GDP growth rate									
	0.5%	1.0%	1.5%	2.0%	2.5%	3.0%	3.5%	4.0%	4.5%	5.0%
1.0%	279									
1.5%	99	338								
2.0%	47	141	364							
2.5%	24	79	160	379						
3.0%	12	51	95	172	389					
3.5%	5	34	64	105	180	397				
4.0%	1	24	46	72	111	186	403			
4.5%	-	18	34	53	78	116	190	408		
5.0%	-	13	27	41	58	82	120	194	413	
5.5%	-	9	21	32	45	62	86	123	197	417
6.0%	-	7	17	26	37	49	65	88	126	200
6.5%	-	5	14	22	30	40	52	68	91	128
7.0%	-	3	11	18	25	33	42	54	70	93
7.5%	-	2	9	15	21	28	36	45	56	72
8.0%	-	1	7	13	18	24	30	38	46	58

Figure 3: Sensitivity analysis: number of years of rising non-health expenditures as a function of the assumed GDP growth rate



NOTES: Assuming a two-percentage point gap between the growth rates of health expenditure and GDP growth. GDP is gross domestic product

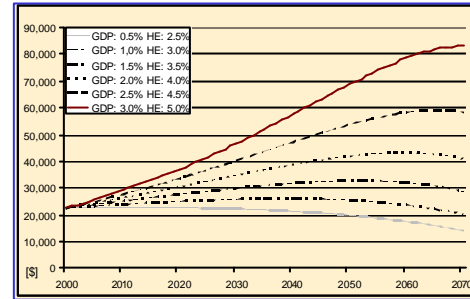
end of the conceivable range, going down to zero if very low non-existent real GDP growth rates (economic stagnation) are assumed (Figure 3). With a real per-capita GDP growth rate of 0.5 percent, it increases to 9 years, reaching 35 years at a GDP growth rate of 1.0 percent and exceeding 56 years at assumed real per-capita GDP growth rates above 2.0 percent. A more complete sensitivity analysis for different combinations of growth rates for real per-capita health spending and GDP is provided in Table 1. It confirms the observation of a high sensitivity of affordable health expenditures at low economic growth rates. This sensitivity is rapidly declining with increasing economic growth.

Table 2 shows the results of a similar calculation for Germany. Theoretically, the baseline effect of a relatively lower GDP share of health spending (compared to the U.S.) puts Germany in more favorable position; however, our analysis reveals that long-term "affordability" will be determined by real economic growth rates.

Table 1: Sensitivity analysis for USA: number of years of rising non-health expenditures under alternative combinations of health expenditure and GDP growth rates

Health Expenditure growth rate	GDP growth rate									
	0.5%	1.0%	1.5%	2.0%	2.5%	3.0%	3.5%	4.0%	4.5%	5.0%
1.0%	233									
1.5%	76	292								
2.0%	32	118	317							
2.5%	13	64	137	332						
3.0%	3	39	79	148	342					
3.5%	-	25	52	89	156	350				
4.0%	-	17	36	60	95	162	356			
4.5%	-	11	27	44	66	100	167	361		
5.0%	-	7	20	33	49	70	104	170	365	
5.5%	-	4	15	26	38	53	74	107	173	369
6.0%	-	2	12	20	30	41	56	76	110	176
6.5%	-	-	9	16	24	33	44	58	79	112
7.0%	-	-	7	13	20	27	36	46	60	81
7.5%	-	-	5	11	17	23	29	38	48	62
8.0%	-	-	4	9	14	19	25	31	39	50

Figure 2: Non-health spending as an indicator of "affordable" health spending: Sensitivity to different real per capita GDP growth rates



NOTES: Calculations based upon a two-percentage point gap between real per-capita GDP and HE growth rates. GDP is gross domestic product. HE is health expenditure (per-capita, deflated in 1995 Dollars).

At the level of the economy as a whole, we calculate the time period of future "affordable" health care cost growth, as a function of the combined effects of health care cost and real GDP growth rates on non-health care spending. Under the same assumptions, we simulate the proportion of total income devoted to health care and to non-health care goods and services over time. We define non-health care spending as the difference between GDP and health care spending.

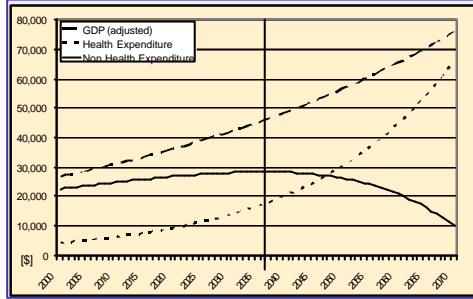
We further assume an investment share of 18 percent of GDP required to support rising GDP. We do not single out a separate demographic adjustment; rather, we include demographically driven changes in the assumed health care spending growth rate. Then real non-health expenditures start to decrease after t years if the rise of health expenditure exceeds the rise of investment adjusted GDP. Thus, total non-health expenditures start to decrease after t years. This corresponds to the time when the slope of the curve of health care spending equals the slope of the curve of gross domestic product (Figure 1).

On this basis we can calculate the time until rising health spending will completely consume the increase of GDP under different scenarios, i.e., different combinations of assumed growth rates of health spending and GDP (per capita in real terms). The resulting number of years is believed to represent the upper limit of the future "affordability" of escalating health care expenditures, according to the definition adopted by the Technical Review Panel (2000).

We begin our formal analysis by examining under an assumed two-percentage point differential between real per capita health care spending and GDP growth, the impact of varying GDP growth rates on the time period of "affordable" health care spending growth (Figure 2).

The time period of "affordability" by our definition ends at the point when a downward trend in non-health spending would commence. Our analysis demonstrates high sensitivity of this time period to GDP growth rates at the lower

Figure 1: Increasing Non-Health Expenditures as an Indicator of Affordability



NOTES: GDP is Gross Domestic Product. Illustration Applying Assumed Annual Growth Rates of 1.5 Percent for GDP and 4.0 Percent for Health Expenditures, 2001 - 2070
SOURCE: OECD Health Data (2003), Baseline Values for Year 2001: Adjusted GDP Per-Capita \$ 25,648, Health Expenditure Per-Capita \$ 4,378 (Both Deflated to 1995 Using GDP Price Index)

Introduction

Without exception, OECD countries have experienced dramatic increases of their health care expenditure. For several decades now this has been a cause of growing concern, primarily owing to the fact that a significant portion of the funding of health care spending is public. In recent years, in the United States this concern has been fueled by double-digit increases in premium costs of health plans, as well as by current and projected expansion of Medicare and Medicaid expenditures, and by widespread disillusionment about "managed care". Likewise, German statutory health insurance contributions have been predicted to double within the next 30 years.

Against this background, analysts have portrayed the health care system as being characterized by spiraling costs running out-of-control. However, threatening pictures of imminent rationing of health services have been painted for long; and yet, thus far the United States, like other economies, have absorbed health care spending outstripping economic growth rates. In other words, the escalating costs of health care have proven affordable. How could that be?

Obviously in the past economic growth was sufficient to allow both health care spending as well as non-health care spending to increase. Despite its substantial growth rates health care spending consumed only a fraction of real income growth, leaving the lion's share of GDP increase available for spending on goods and services other than health care. Apparently the notion of affordability as related to growing nationwide health care expenditures, while reflecting public perceptions created by its rising share of GDP, does represent an ill-defined concept. A recent Medicare Technical Review panel (2000) defined affordable growth of health care spending in terms of non-health spending, postulating that maximum affordability be reached at a level of spending when non-health expenditures would no longer rise - i.e., when the increase of GDP would be consumed entirely by growing health expenditures. One advantage of this approach is that its definition of minimum acceptable non-health spending relies on observed consumption patterns instead of some more theoretical construct. This idea implies that, with increasing GDP, a society can afford to spend a greater share of income on health care.

This explanation does not answer the questions of (1) whether, and to what extent, these findings may be extrapolated into the foreseeable future, and, importantly, (2) how sensitive such projections will be on key assumptions, especially with regard to the assumed growth rates for health care spending and GDP.

Methods

Results