
Health Expenditure Trends in OECD Countries, 1990-2001

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This article presents data on health care spending for 30 OECD countries from OECD Health Data 2003, the latest edition of OECD's annual data collection on health systems across industrialized countries. OECD data show health care expenditures as a proportion of gross domestic product at an all-time high, due to both increased expenditures and overall economic slowdown. The article discusses similarities and differences across countries in how health care expenditures are funded and how the health care dollar is spent among types of services.

INTRODUCTION

OECD countries are currently spending record amounts on health care. In 2001, they spent an average 8.4 percent of their GDP on health care, up by 0.3 percentage points from 2000. Pressures for further growth arise from rapid advances in medical technologies, population aging, and rising public expectations. OECD data show that health care spending has outpaced economic growth over the past decade, even before the economic downturn of 2001. The latest increase in expenditure ratios, therefore, comes as no surprise. In fact, it was anticipated by several authors for individual countries, e.g., the U.S. (Heffler et al., 2003) and for Canada (Canadian Institute for Health Information, 2003).

Over the 1990s the gap between health spending growth and economic growth rates was roughly 1 percent for OECD countries on average, on a per-capita basis. In 2001, the latest year available for international comparisons, health care spending growth has accelerated in several OECD countries, including the U.S. (Levit et al., 2003) where it was above the unweighted OECD average.

The pressure on public budgets from accelerated health care spending has been a major policy concern in OECD countries during the past two decades (Docteur and Oxley, 2003; Imai, 2002; Mossialos and Le Grand, 1999; Ranade, 1998; Saltman and Figueras, 1997). Recent economic slowdown and a new upsurge in health care spending, especially in the U.S. has prompted a new round of discussions about desirable health policies to influence aggregate health care spending (Altman et al., 2003; Cutler, 2002).

A common approach of public health care policy in OECD countries has been to combine cost-containment strategies with long-term structural change to improve value-for-money in health care (Docteur and Oxley, 2003; Organisation for Economic Co-operation and Development, 1995). In Sweden, for example, one of the major tools for cost containment was downscaling in the hospital sector and decreasing in the number of health care personnel. Sweden is also among the few OECD countries where the number of physicians per 1,000 population did not increase during

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NOTE: This is an update of previous articles on spending trends (Huber 1999; Schieber, Poullier and Greenwald, 1992). It focuses on expenditure trends since 1990 and on comparisons with recent experience in the U.S.

the 1990s.¹ But it is cost-containment measures that are often the more visible part of reforms, and those which, in many cases, directly affect households who pay for higher cost sharing, or for goods and services that are no longer reimbursed under public programs (Ros, Groenewegen, and Delnoij, 2000). Among the most recent examples is the current reform proposal in Germany (*Financial Times*, 2003). A central part of the German reform proposal, recently enacted and due to be implemented at the beginning of next year, is a shift of health care expenditures to private financing; for example, consumers will face higher cost sharing for prescription drugs and dental care.

In several countries, an important feature of the changes of health care financing in recent years has been a reduction in the autonomy granted to social insurance regimes to simply pass through higher costs into higher compulsory contributions. This has been the case in the Czech Republic, France, Germany, and Hungary. Because of the depressive effect on employment that could result from higher employer paid social charges, the control of contribution rates has become an explicit policy target. In order to reconcile this with the financial viability of insurance regimes, three related strategies have been followed by governments: (1) impose budget constraints on providers, (2) require individuals to bear a greater share of expenditures, through increasing copayments, and (3) ensure that access to care remains available to the poor (general taxation has financed a growing proportion of care, particularly by financing copayments for those on low incomes). France has introduced municipal social insurance specifically to address this last point (Imai, Jacobzone, and Lenain, 2000).

¹This ratio stayed the same in 2000 as the OECD average, while in 1990 it was 20 percent higher.

Current problems in many countries, however, show that strong control on public spending on health care might lead to difficulties in terms of other policy goals (Docteur and Oxley, 2003). Canada, Denmark, United Kingdom, and the U.S. are currently experiencing shortages of nurses and even physicians.

In Canada, the declining Federal health transfers put a strain on provincial health care systems (Matteo, 2000). During 4 years in the mid-1990s, real total health care spending in Canada fell. This coincided with a decline in the satisfaction with the health care system. For instance, the proportion of people saying that the health care system needed only minor changes dropped from 56 percent in 1988 to 20 percent in 1998. Concerns about underfunding, system administration, and access to specialty care were among the main public concerns (Donelan et al., 1999). Following this period of restraint, public spending increased by an annual rate of 5.1 percent between 1997 and 2001. Since 1998 public sector spending grew faster than that from private sources, and its share was about 73 percent of the total in 2001.

The growth rate of total health care expenditures abated in the U.S. too, during the period of 1992-1999. While average growth rate of total health care expenditures was 5.5 percent in the 1980s (2.5 times higher than GDP growth), it was only 2.5 percent between 1992 and 1999.² This slow-down is generally seen as due to managed care replacing indemnity insurance as the primary form of private health insurance. Managed care, coupled with robust economic growth, led to an unprecedented stability in the health expenditure share of GDP over this 7-year period (Cowan,

²Calculated at constant, 1995 GDP price level.

et al., 2001). While governments in other countries managed to lower prices for providers unilaterally, a major tool of managed-care insurers was to exclude providers from their network. “As a result, lower prices came along with constrained access to providers in the United States, where it did not in other countries.” (Cutler, 2002).

Consumers in OECD countries are experiencing considerable waiting times for elective surgery (Hurst and Siciliani, 2003) and increasing cost sharing. In a recent survey, shortages of medical personnel, waiting times, and inadequate government funding led the list of concerns in Australia, Canada, New Zealand, and the United Kingdom; high costs and inadequate coverage topped the list for the U.S. (Blendon et al., 2003). Furthermore, a wave of recent medical and technological advances and rising patients’ expectations can be expected to put increased pressure on public expenditure on health in the near future.

TRENDS IN EXPENDITURE GROWTH RELATIVE TO GDP

For OECD countries on average, the share of GDP devoted to health care increased markedly in 2001 after a period of relatively stable health care expenditures ratios (Table 1 and Figure 1). This is partially due to slow economic growth. In 2001, OECD countries spent an additional 1.1 percent of GDP on health care compared to 1990, bringing the average up to 8.4 percent.³

The U.S. devoted the highest share of GDP to health throughout the decade, increasing to 13.7 percent in 2001.

³Data availability influences the number of countries that can be included in calculating OECD averages for different time periods. Comparable data for the last three decades were available only in 18 OECD countries, and in 28 countries for the period of 1990 to 2000. Data of 2001 have been reported to the OECD for 24 OECD countries until August 2003.

Internationally harmonized expenditure ratios for the U.S. differ slightly from those published by CMS. The OECD Secretariat reports internationally harmonized U.S. GDP that is 0.6 percent lower than that published by the U.S. Department of Commerce, Bureau of Economic Analysis. Moreover, the OECD definition for total health care expenditures excludes some small spending items, such as research and development, resulting in total health care spending which, for 2001, is 2.3 percent lower than that reported nationally. Detailed documentation of national data sources and estimation methods used in health accounts is available as part of the OECD information system (Organisation for Economic Co-operation and Development, 2003a). Following the U.S. in 2001 was Switzerland spending 10.9 percent, and Germany spending 10.7 percent of GDP on health care. At the other end of the scale, the Slovak Republic and Korea spent less than 6 percent of GDP on health care (Figure 2).⁴

Studying the growth patterns of health expenditure and GDP separately provides further insight into international variations in the trend in health care expenditures ratios. In Table 2, both components have been expressed in per capita and in real terms, using the same GDP deflator.⁵ The margin by which health care expenditures growth outpaced GDP growth can be read from Figure 3 by the relative distance from the diagonal line. This diagonal delimits the sample of countries with faster growth of per-capita health care spending than GDP growth.

⁴Luxembourg also has a low ratio of health spending to GDP, but data comparability for this small country is limited. This is mainly due to the close integration of its health care system and economy with neighboring countries, which makes cross-border adjustments extremely difficult.

⁵Real growth was calculated using the GDP deflator throughout this article, instead of using health-care specific deflators. The reason for this choice is that countries differ in the construction of national health price indexes to a degree which would distort comparisons of real growth across countries.

Table 1

Total Health Care Expenditures as a Percent of Gross Domestic Product, by Country: 1970-2001

Country	1970	1980	1990	1993	1998	2000	2001
				Percent			
Australia	5.6 (1971)	7.0	7.8	8.2	8.6	8.9	—
Austria	5.3	7.6	7.1	7.9	7.7	7.7	7.7
Belgium	4.0	6.4	7.4	8.1	8.4	8.6	9.0
Canada	7.0	7.1	9.0	9.9	9.1	9.2	9.7
Czech Republic	—	—	5.0	7.2	7.1	7.1	7.3
Denmark	8.0 (1971)	9.1	8.5	8.8	8.4	8.3	8.6
Finland	5.6	6.4	7.8	8.3	6.9	6.7	7.0
France	—	—	8.6	9.4	9.3	9.3	9.5
Germany ¹	6.2	8.7	9.9 (1992)	9.9	10.6	10.6	10.7
Greece	6.1	6.6	7.4	8.8	9.4	9.4	9.4
Hungary	—	—	7.1 (1991)	7.7	6.9	6.7	6.8
Iceland	4.7	6.2	8.0	8.5	8.6	9.3	9.2
Ireland	5.1	8.4	6.1	7.0	6.2	6.4	6.5
Italy	—	—	8.0	8.1	7.7	8.2	8.4
Japan	4.5	6.4	5.9	6.4	7.1	7.6	—
Korea	—	—	4.8	4.7	5.1	5.9	—
Luxembourg	3.6	5.9	6.1	6.2	5.8	5.6	—
Mexico	—	—	4.5	6.1	5.2	5.6	6.6
Netherlands	6.9 (1972)	7.5	8.0	8.5	8.6	8.6	8.9
New Zealand	5.1	5.9	6.9	7.2	8.0	8.0	8.2
Norway	4.4	6.9	7.7	8.0	8.5	7.7	8.3
Poland	—	—	5.3	6.4	6.4	6.0	6.3
Portugal	2.6	5.6	6.2	7.3	8.6	9.0	9.2
Slovak Republic	—	—	—	—	5.8	5.7	5.7
Spain	3.6	5.4	6.7	7.5	7.5	7.5	7.5
Sweden	6.7	8.8	8.2	8.6	8.3	8.4	8.7
Switzerland	5.6	7.6	8.5	9.6	10.6	10.7	10.9
Turkey	2.4	3.3	3.6	3.7	4.8	4.8 (1998)	—
United Kingdom	4.5	5.6	6.0	6.9	6.9	7.3	7.6
United States	6.9	8.7	11.9	13.3	13.0	13.1	13.9
OECD Average Countries (28) ²	NA	NA	7.3	8.0	8.0	8.1	8.4
OECD Average Countries (18) ³	5.3	7.0	7.6	8.3	8.3	8.4	8.6
European Union Average Countries (14) ⁴	NA	NA	7.6	8.2	8.2	8.3	8.5

¹ For all years preceding 1990, data for Germany refer to West Germany.

² The average excludes the Slovak Republic and Turkey. The 2001 average includes 2000 figures for Australia, Japan, Korea, and Luxembourg.

³ The average excludes Belgium, Czech Republic, France, Hungary, Italy, Korea, Mexico, Netherlands, Poland, Slovak Republic, Switzerland, and Turkey.

⁴ The average includes Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

NOTES: OECD is Organisation for Economic Co-operation and Development. NA is not available. Numbers in parentheses are the number of countries for which data are available. Not all countries report data for the years shown in column headers. Where this is the case, closest available year, shown in parentheses, has been used.

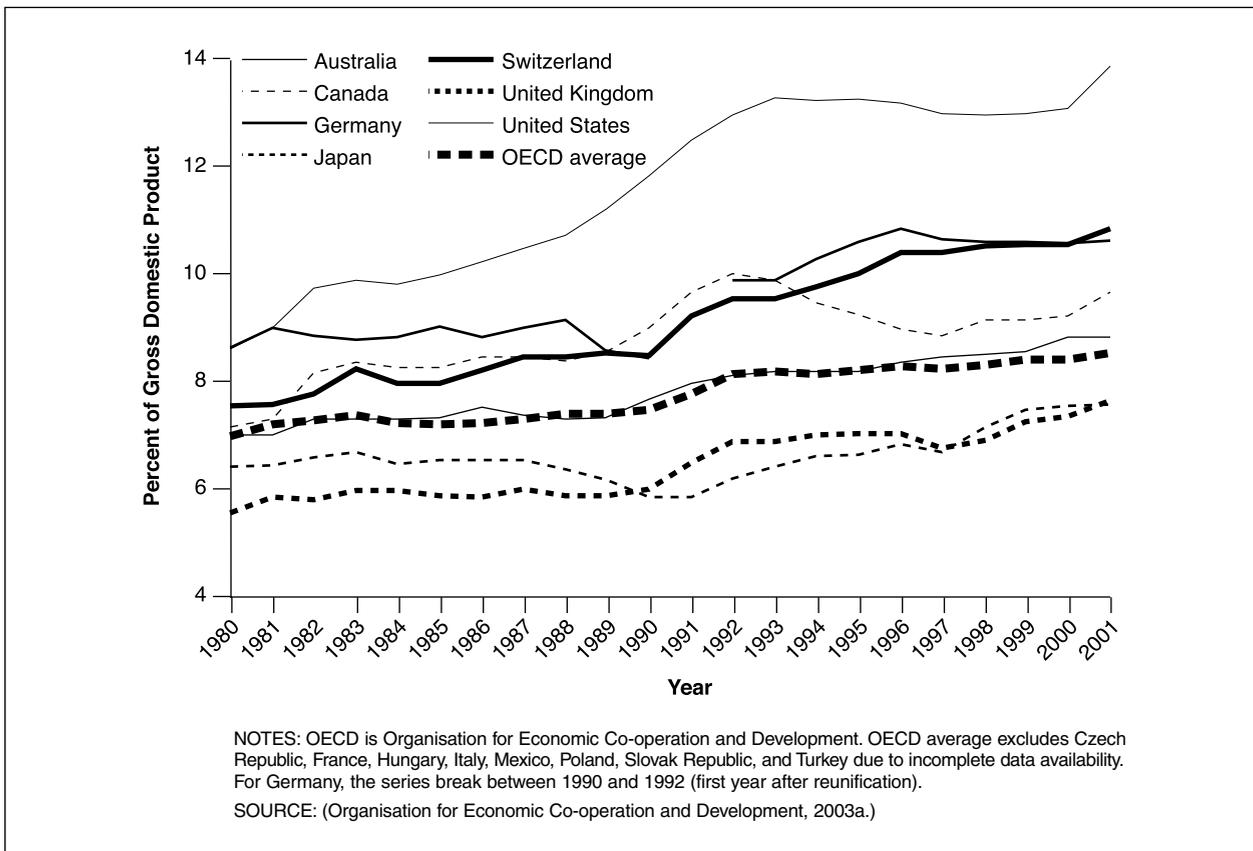
SOURCE: (Organisation for Economic Co-operation and Development, 2003a.)

For an (unweighted) average of 24 countries, there was a gap of 1 percentage point between the average annual growth of per-capita GDP and per-capita health care spending (3.1 versus 2.0 percent). In other words, the annual increase in per capita spending on health care across OECD countries has outpaced overall economic growth per capita by around 50 percent over the past decade.

For health care expenditures trends in OECD countries, the last decade can be roughly divided into three different periods in terms of health care expenditures growth rate and health care expenditures ratio to GDP (Table 3).⁶ The first 3 years of the decade (1990 to 1992) saw considerably

⁶ A decade is a rather arbitrary construct and might hide the most important features of health expenditure trends. Hence, Tables 1 and 3 also present the characteristic subperiods (or their border years) within the 1990s.

Figure 1
Total Health Care Expenditures as a Percent of Gross Domestic Product: 1980-2001



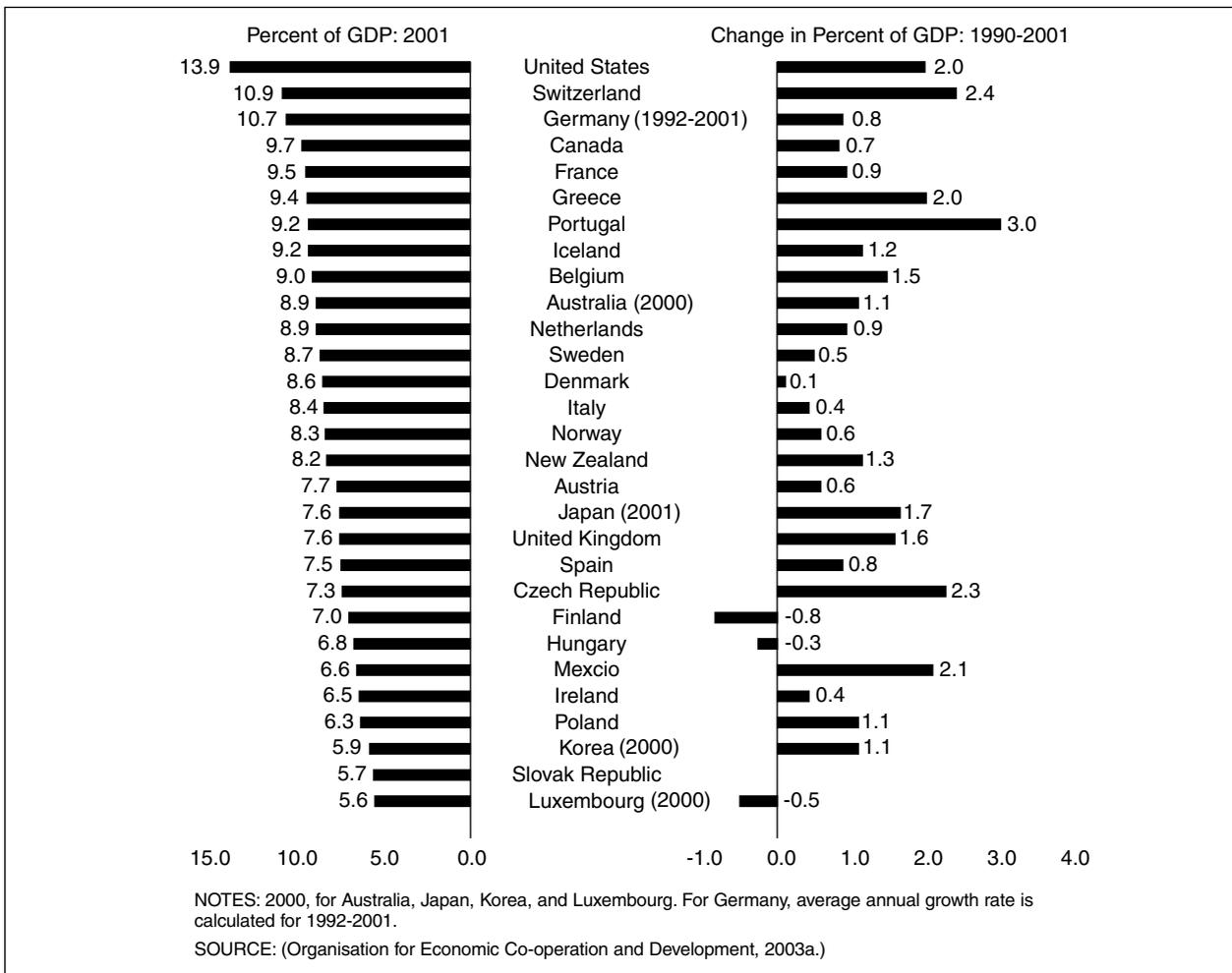
higher growth than the 5-year period from 1993 to 1997, when governments in many countries applied cost-containment measures (Anell and Svarvar, 1999; Häkkinen, 1999; Mossialos and Le Grand, 1999; Orosz and Burns, 2000). This is also reflected in the health care expenditures ratio to GDP. For OECD countries on average, it remained flat between 1993 and 1998 (Table 1).

Health care expenditures started to rise again rapidly at the end of the 1990s and in the beginning of this decade, reflecting deliberate policies in some countries to relieve pressures arising from cost containment in previous years. An example in case is the policy of high real rates of increase over a number of years in the United Kingdom (Towse and Sussex, 2000). It seems that an observation made about the

U.S. health care system might hold true for many other countries: “The wide range and sharp periodic cycles in spending growth produce disproportionate strains that contribute to the perception of a health system in constant crisis” (Altman et al., 2003).

Behind the average OECD growth rate there are wide variations, Table 2 shows the OECD countries in order of their health care expenditures growth rates. Several countries (e.g., Korea, Ireland, and Portugal) with lower income and lower health care expenditures per capita in 1990 experienced high growth in health care expenditures during the 1990s (Colombo and Hurst, 2002). As a result, they narrowed the gap with the OECD average both in terms of per-capita expenditure and health care expenditures share of GDP. At the beginning of this decade, health care

Figure 2
Health Care Expenditures as a Percent of Gross Domestic Product (GDP): 2001



expenditures per capita in these countries was 50-100 percent higher than in 1990 (Table 2). A few high-income countries (Japan, Australia, and United Kingdom) also experienced strong growth in health care expenditures over the past decade.

Ireland experienced high growth in both health care spending and GDP (6.8 and 6.4 percent per year), and consequently the share of health care expenditures in GDP increased only slightly. Despite the high growth in health care spending, there was only a modest increase in services. “It is important to recognize that a significant part of the increase is due to factors driving up the

costs of health care without increasing the level of service provision” (Deloitte & Touche, 2001). The rapid growth of the Irish economy in the 1990s caused labor shortages in a number of sectors. This also put an upward pressure on labor costs in the health care sector, and led to significant real increases in average wages for all categories of health care staff.

The United Kingdom underfunding of the health care system resulted in growing dissatisfaction by the end of the 1980s. In 1991-1992, in order to oil the wheels of major health care reform, the Tory-government considerably increased public expenditure on health care (as an average

Table 2
Growth of Per Capita Expenditures on Health Care Compared to Gross Domestic Product (GDP)
Growth, by Country: 1990-2001

Country	1990-2000 Real Annual Growth Rate		Ratio of Total Health Care Expenditures Growth to GDP	2000-2001 Real Annual Growth Rate		2001 Real Per Capita Health Care Expenditures 1990=100
	GDP	Care Expenditures		GDP	Total Health Care Expenditures	
Korea	5.2	7.4	1.42	2.3	—	—
Ireland	6.4	6.8	1.06	4.2	5.7	203
Portugal	2.5	6.4	2.56	1.0	2.9	191
Poland	3.5	4.8	1.37	1.0	6.6	171
Greece	2.0	4.5	2.25	0.1	-0.7	154
United Kingdom	2.1	4.0	1.90	1.6	5.8	157
Czech Republic	0.2	3.9	19.50	4.1	6.4	156
Australia	2.4	3.8	1.58	2.5	—	—
Japan	1.1	3.8	3.45	0.1	—	—
Mexico	1.7	3.8	2.24	-1.7	16.5	169
Spain	2.4	3.5	1.46	1.8	2.7	145
Belgium	1.9	3.4	1.79	0.4	4.5	146
Iceland	1.6	3.1	1.94	1.7	0.5	136
Luxembourg	3.9	3.0	0.77	0.1	—	—
Netherlands	2.3	3.0	1.30	0.5	4.0	140
United States	2.0	3.0	1.50	-0.7	5.1	141
Norway	3.0	2.9	0.97	0.9	6.3	141
Austria	1.9	2.8	1.47	0.4	0.4	132
New Zealand	1.4	2.8	2.00	2.7	4.5	138
Switzerland	0.2	2.5	12.50	0.2	1.9	130
France	1.5	2.4	1.60	1.3	3.5	131
Germany (1992-2000)	1.2	2.1	1.75	0.4	1.7	130
Canada	1.8	1.9	1.06	0.3	6.2	129
Denmark	1.9	1.8	0.95	1.1	3.8	123
Sweden	1.6	1.8	1.13	0.8	4.7	126
Hungary (1991-2000)	2.5	1.7	0.68	4.1	5.5	—
Italy	1.4	1.6	1.14	1.7	4.6	122
Finland	1.7	0.1	0.06	0.4	4.6	106
Slovak Republic	—	—	—	3.5	3.4	—
OECD Average Countries (28) ¹	2.2	3.3	1.51	—	—	—
OECD Average Countries (24) ²	2.0	3.1	1.53	1.2	4.5	—
European Union Average Countries ³	2.2	3.2	1.44	1.1	3.4	—

¹ The average excludes the Slovak Republic and Turkey.

² The average excludes Australia, Japan, Korea, Luxembourg, Slovak Republic, and Turkey.

³ The average includes Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

NOTES: For Germany, the average annual growth rate is calculated for the period of 1992-2001; for Hungary for 1991-2001. OECD is Organisation for Economic Co-operation and Development.

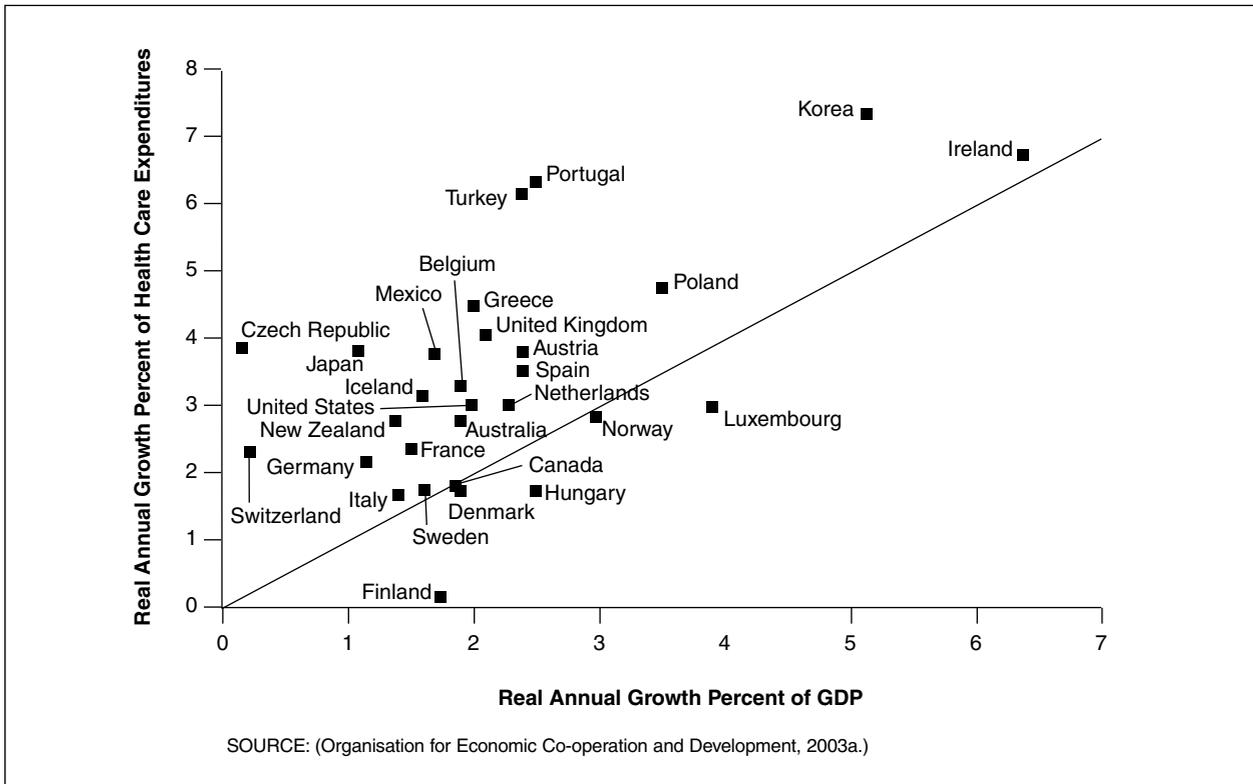
SOURCE: (Organisation for Economic Co-operation and Development, 2003a.)

by 5.2 percent). Total expenditure grew by 6.2 percent per year. Then, between 1992 and 1998, the government exerted a strong cost-containment policy again (Koen, 2000); and the growth rate of total health care expenditures was only 2.6 percent (which is below the OECD average). Since 2000, the Labour-government has given a higher priority to the national health statistics (NHS): In January 2000

Britain's Prime Minister declared there would be an increase in spending on the NHS in order to reach the European Union (EU) average measured by the proportion of GDP spent on health care by 2006 (Department of Health, 2000; Towse and Sussex, 2000; Ferriman, 2000). More recently, in mid-2002 after a review of the long-term trends affecting the NHS (Wanless, 2002) the Chancellor confirmed

Figure 3

Increase in Per Capita Health Care Expenditures and Gross Domestic Product (GDP): 1990-2000



that there would be a 43-percent increase in real terms in health spending over the next 5 years (that is more than 7 percent annual average growth). A public service agreement published by the Department of Health outlined the improvements that patients could expect, including reduced waiting times for hospital outpatient appointments to maximum 3 months and inpatient appointments to 6 months by 2005 (Coomber, 2002).

On the other hand, 12 OECD countries had below-average health care expenditures growth during the past decade (Table 2). Among these countries two groups can be distinguished, taking into consideration GDP growth. In several countries (e.g., Switzerland, France, and Germany) health care expenditures still grew faster than the economy, resulting in a considerable increase in the ratio of

health care spending to GDP (Table 1). In other countries, low health care expenditures growth between 1990 and 2000 went together with a similar or somewhat higher GDP growth, resulting in a decrease in the ratio of health care spending to GDP in Finland and Hungary and a stabilization of the ratio in Canada, Italy, and Sweden.

Table 2 shows the proportional gap in real growth rates of GDP and health care expenditures during the 1990s. In the U.S. it was 50 percent, which is close to the OECD average. It is interesting to note that while the real health care expenditures growth rate was slightly slower in the U.S. than in the EU during the 1990s (3.0 percent compared to 3.2 percent), the gap between health expenditure and GDP growth was somewhat higher in the U.S. (50 percent compared to 40 percent). However, at the beginning of this decade both real health care spending growth and

Table 3
Growth of Per Capita Expenditures on Health Care in Real Terms: 1970-2001

Country	1970-1980	1980-1990	1990-1992	1992-1997	1997-2001	1990-2001
	Percent Change					
Australia	5.2 (1969-1980)	2.6	3.1	3.9	4.0 ^a	3.8
Austria	7.4	1.4	4.6	1.4	3.0	2.6
Belgium	8.1	3.4	4.7	2.7	3.9	3.5
Canada	3.2	4.0	3.5	-0.3	5.1	2.3
Czech Republic	—	—	-2.1	8.0	2.6	4.1
Denmark	2.9 (1971-1980)	0.8	0.3	1.7	3.0	1.9
Finland	4.6	4.8	2.0	-1.4	2.2	0.5
France	—	—	3.6	1.5	3.1	2.5
Germany	6.2	1.8	—	2.2	1.8	2.0(1992-2001)
Greece	4.5	1.3	4.4	5.0	2.5	4.0
Hungary	—	—	—	0.1	4.1	2.1(1991-2001)
Iceland	8.3	4.2	-0.6	1.8	5.9	2.8
Ireland	8.5	0.1	9.5	4.8	7.6	6.7
Italy	—	—	3.3	-0.4	4.0	1.9
Japan	7.1	2.6	4.0	3.4	14.2	3.8
Korea	—	—	5.8	7.1	19.0	7.4
Luxembourg	7.2	4.8	4.1	1.9	14.1	3.0
Mexico	—	—	11.3	0.4	7.4	4.9
Netherlands	—	2.3	3.6	1.5	4.9	3.1
New Zealand	2.1	2.9	1.5	2.6	4.2	3.0
Norway	9.1	3.1	5.6	3.2	2.1	3.2
Poland	—	—	9.1	3.9	4.4	5.0
Portugal	11.5	4.2	8.7	6.2	4.7	6.1
Slovak Republic	—	—	—	—	1.8	—
Spain	6.9	4.7	5.6	2.6	3.4	3.4
Sweden	4.4	1.1	-1.3	1.3	4.8	2.1
Switzerland	4.1	2.7	4.0	1.6	2.6	2.4
Turkey	—	3.6	3.5	5.2	—	6.1(1990-1998)
United Kingdom	4.1	3.2	6.3	2.8	4.9	4.2
United States	4.5	5.5	4.4	2.3	3.7	3.2
OECD Average Countries (28) ²	NA	NA	4.2	2.6	4.2	3.4
OECD Average Countries (18) ³	6.0	3.0	3.9	2.5	4.0	3.3

¹ For those countries not reporting 2001 figures the growth rates cover the period up to 2000.

² The average excludes the Slovak Republic and Turkey.

³ The average excludes Belgium, France, Hungary, Italy, Korea, Mexico, Netherlands, Poland, Slovak Republic, Switzerland, and Turkey.

NOTES: Real expenditures are adjusted for gross domestic product deflator. For Germany, the average annual growth rate is calculated for the period of 1992-2001; for Hungary for 1991-2001; and for Turkey for 1990-1998. OECD is Organisation for Economic Co-operation and Development. NA is not available. Numbers in parentheses are the number of countries that OECD had data for. Not all countries report data for the years shown in column headers. Where this is the case, closest available year, shown in parentheses for which data are available.

SOURCE: (Organisation for Economic Co-operation and Development, 2003a.)

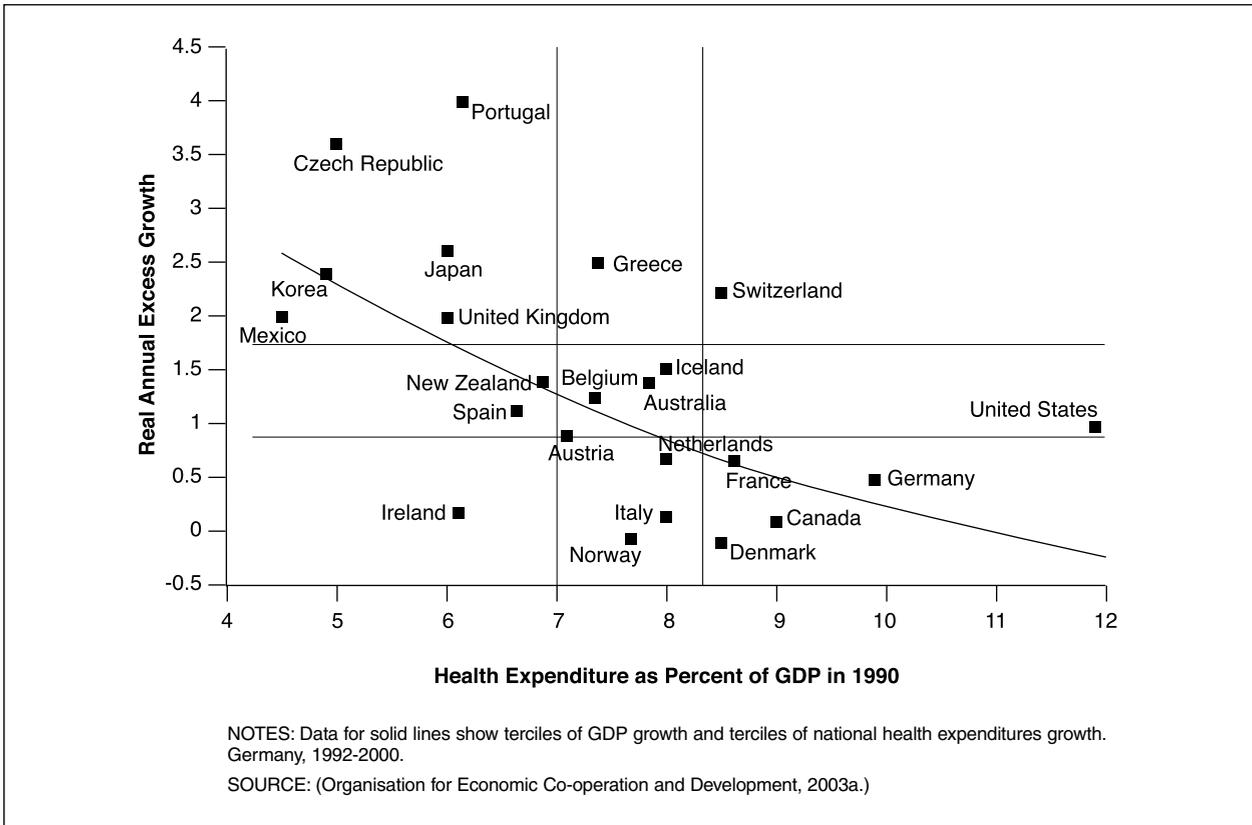
the gap in growth rates in the U.S. has again considerably exceeded the EU average, and even the OECD average (Table 2).

The phenomenon of excess growth prevalent in countries whose health care expenditures ratio was relatively low in 1990 (Figure 4), has led to some convergence of expenditure ratios. This figure plots the excess growth of health over GDP with the share of health care expenditures in 1990, the beginning of the time period studied in this graph. Countries at

the lower end of the health care expenditures ratios tend to have higher excess growth rates, whereas several countries at the higher end of the scale had low or no excess growth in health care spending over the GDP (for example, Denmark and Canada). This pattern is not unambiguous: the three countries with high expenditure ratios in 1990 (Germany, Switzerland, and the U.S.) had relatively high excess growth of health.

Figure 4

Excess Growth in Total Health Care Expenditures Per Capita: 1990-2000



PER CAPITA EXPENDITURE ON HEALTH CARE

Health care expenditures per capita converted to US\$ purchasing power parity (PPP)⁷ is commonly used to compare the overall level of consumption of health care goods and services across countries. According to this measure, the U.S. continues to spend far more on a per capita basis for health care than any other country. It spent over US\$4,880 per capita on health care in 2001—more than twice the average of around US\$2,080 PPP across OECD countries (Figure 5). Next in this ranking for 2001 come Switzerland, Norway, Germany, and Canada; and at the other end of the scale, Mexico, Poland, Slovak Republic, Korea, and Hungary spent less than US\$1,000 on health care.

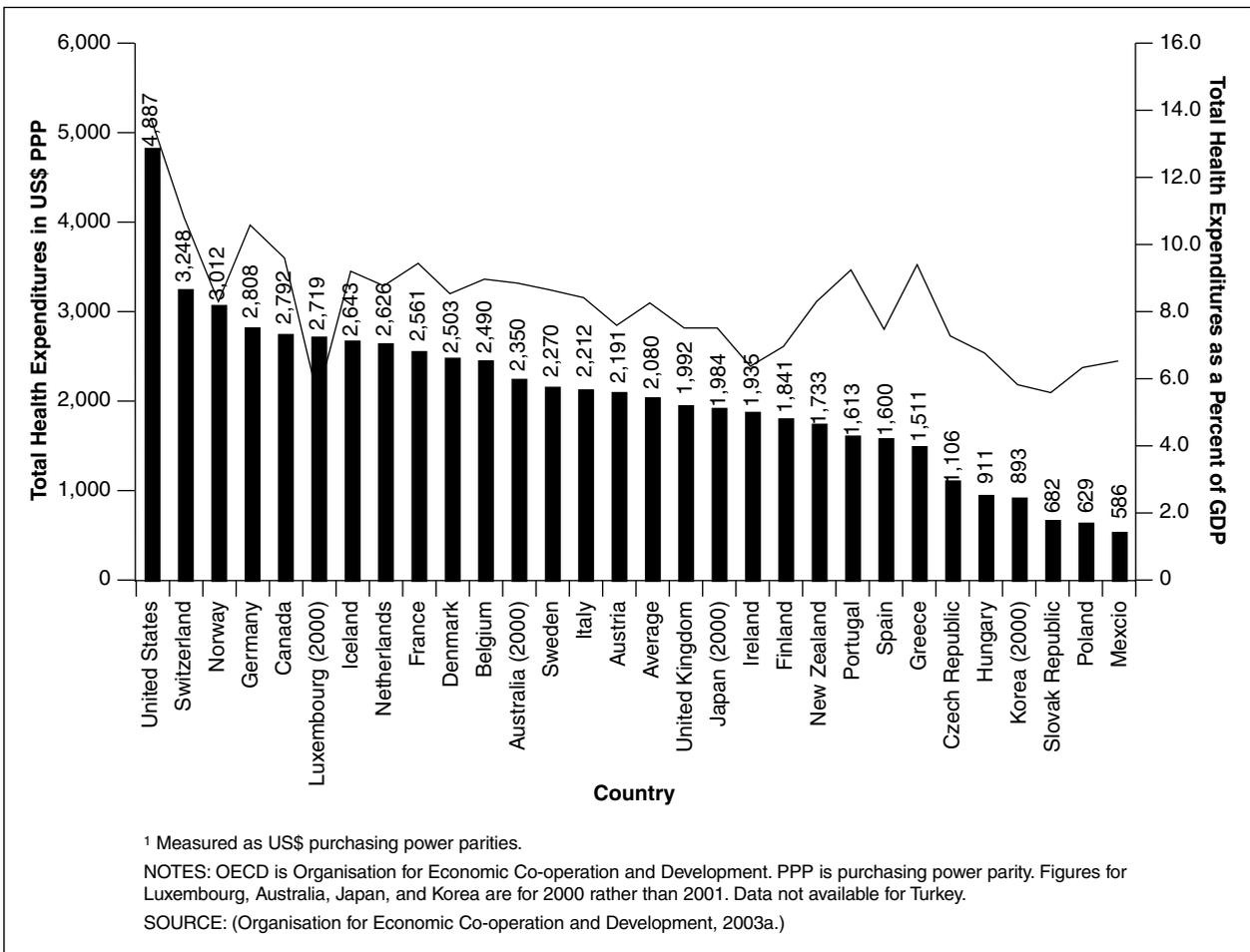
⁷ PPP indexes are used to adjust spending levels to reflect the various countries' price level of a fixed basket of goods and services.

Figure 5 shows per capita expenditure and expenditure as share of GDP together. It is evident that differences in per capita values are far greater than in health care expenditures as percent of GDP. The figure also reflects that, depending on economic development, countries having a high share of health care expenditures to GDP ratio might have low per capita expenditure, and vice versa. For example, Greece and France both spent around 9.5 percent of GDP on health care, but health care expenditures per capita in France was 70 percent higher.

Differences in health care spending across countries are greater than differences in GDP per capita (Table 4). For instance, in 2001, GDP per capita in the U.S. was 40 percent higher than the OECD average, while expenditure on health care was 135 percent greater. Most of the lower

Figure 5

Total Health Care Expenditures Per Capita and as a Percent of Gross Domestic Product (GDP): 2001



income OECD countries (Korea, Czech Republic, Hungary, Slovak Republic, Poland, Mexico, and Turkey) see greater deviations from the OECD average in relation to health care expenditures per capita than for GDP per capita. Over the past decade, however, the lower income OECD countries, with the only exception of Hungary, narrowed their gap from the OECD average, both in terms of total and public expenditure on health.

For OECD countries on average, the statistical significance of a simple regression relationship between growth rates in per capita health care spending and per capita GDP has declined during the 1990s (Huber, 1999). This can be seen with the help of the scatter diagram in Figure 3. If the cluster of

countries that excludes the two outliers of Korea and Ireland (both saw exceptional health care expenditures and GDP growth during the 1990s) is studied separately, the correlation between GDP growth and health care expenditures growth is not significantly different from zero.⁸

Trends in Health Care Funding

In all countries, health care is financed through a mixture of publicly-funded benefits and services, private social provision (largely employer-sponsored social insurance, but also some cooperative mutual

⁸The R^2 equals 0.07 for a linear relationship for the reduced cluster. The R^2 measure is 0.36 if Korea and Ireland are included in the sample.

Table 4

Per Capita Gross Domestic Product (GDP) and Total Health Care Expenditures, by Country: 2001

Country	OECD Average=100 GDP	OECD Average=100 Total Health Expenditure	Per Capita US\$ PPP Total Health Expenditure
OECD Average Countries ¹	100	100	\$2,080
Luxembourg	194	131	2,719
Norway	146	145	3,012
United States	140	235	4,887
Ireland	120	93	1,935
Switzerland	119	156	3,248
Netherlands	117	126	2,626
Denmark	117	120	2,503
Iceland	115	127	2,643
Canada	115	134	2,792
Austria	113	105	2,191
Belgium	111	120	2,490
Australia	109	113	2,350
France	107	123	2,561
Japan	106	95	1,984
Finland	106	88	1,841
Italy	105	106	2,212
United Kingdom	105	96	1,992
Germany	105	135	2,808
Sweden	104	109	2,270
Spain	85	77	1,600
New Zealand	84	83	1,733
Portugal	70	78	1,613
Greece	64	73	1,511
Korea	63	43	893
Czech Republic	60	53	1,106
Hungary	54	44	911
Slovak Republic	48	33	682
Poland	40	30	629
Mexico	36	28	586
Turkey	23	—	—

¹ The average excludes Turkey.

NOTES: OECD is Organisation for Economic Co-operation and Development. PPP is purchasing power parity. Figures for Luxembourg, Australia, Japan, and Korea are for 2000 rather than 2001.

SOURCE: (Organisation for Economic Co-operation and Development, 2003a.)

insurance) and direct private purchase of medical services, pharmaceuticals and appliances, plus private voluntary insurance.

Public third-party payment arrangements are either expenditures from general government revenues or based on social insurance systems. Although the U.S. health care system is thought of as primarily privately funded (only about one-quarter of the U.S. population is insured through public programs), the U.S. ranks fourth in the OECD in terms of spending per-capita from public funds, behind Norway, Luxembourg, and Iceland (Docteur, Suppanz, and Woo, 2003).

Private sources of funding comprise out-of-pocket spending, private health insurance (often funded by employers and subsidies by tax exemption), and other private sources. These include direct health benefits such as occupational health care, or charities.

From the view of private households and individual health care consumers, an important boundary line is between out-of-pocket spending and all other health care funding, i.e., the part of health care provided under a third-party payment arrangement, which can be either a public or a private program. According to this definition, out-of-pocket spending includes both

Table 5
Health Care Expenditures Source of Funding, as a Percent of Total Health Expenditure, by Country: 1990 and 2000

Country	1990			2000		
	Public	Private	Out of Pocket	Public	Private	Out of Pocket
Australia	67	33	17	69	31	18
Austria	74	27	—	70	31	19
Belgium	—	—	—	71	28	—
Canada	75	26	14	71	29	16
Czech Republic	97	3	3	91	9	9
Denmark	83	17	16	83	18	16
Finland	81	19	16	75	25	20
France	77	23	11	76	24	10
Germany	76	24	11	75	25	11
Greece	54	46	—	56	44	—
Hungary (1991)	89	11	11	76	25	21
Iceland	87	13	13	84	16	16
Ireland	72	28	16	73	27	13
Italy	79	21	15	73	27	23
Japan	78	22	—	78	22	17
Korea	37	63	53	44	56	41
Luxembourg	93	7	5	88	11	8
Mexico	43	57	57	48	52	52
Netherlands	67	33	—	63	37	9
New Zealand	82	18	14	78	22	15
Norway	83	17	15	85	15	15
Poland	92	8	—	71	30	—
Portugal	66	35	—	69	32	—
Slovak Republic	—	—	—	89	11	11
Spain (1991)	79	21	19	72	28	24
Sweden	90	10	—	85	15	—
Switzerland	52	48	36	56	44	33
Turkey (1998)	61	39	—	72	28	—
United Kingdom	84	16	11	81	19	—
United States	40	60	20	44	56	15
OECD Average Countries (27) ¹	74	26	NA	72	28	NA
OECD Average Countries (19) ²	73	27	19	72	28	20

¹ Excludes Belgium, Slovak Republic, and Turkey.

² Includes Australia, Canada, Czech Republic, Denmark, Finland, France, Germany, Hungary, Iceland, Ireland, Italy, Korea, Luxembourg, Mexico, New Zealand, Norway, Spain, Switzerland, and the United States.

NOTES: Total private includes private insurance, out-of-pocket and other private sources (companies, non-governmental organisations, etc). OECD is Organisation for Economic Co-operation and Development. NA is not available. Figures for Hungary and Spain are for 1991 rather than 1990; and for Turkey for 1998 rather than 2000.

SOURCE: (Organisation for Economic Co-operation and Development, 2003a.)

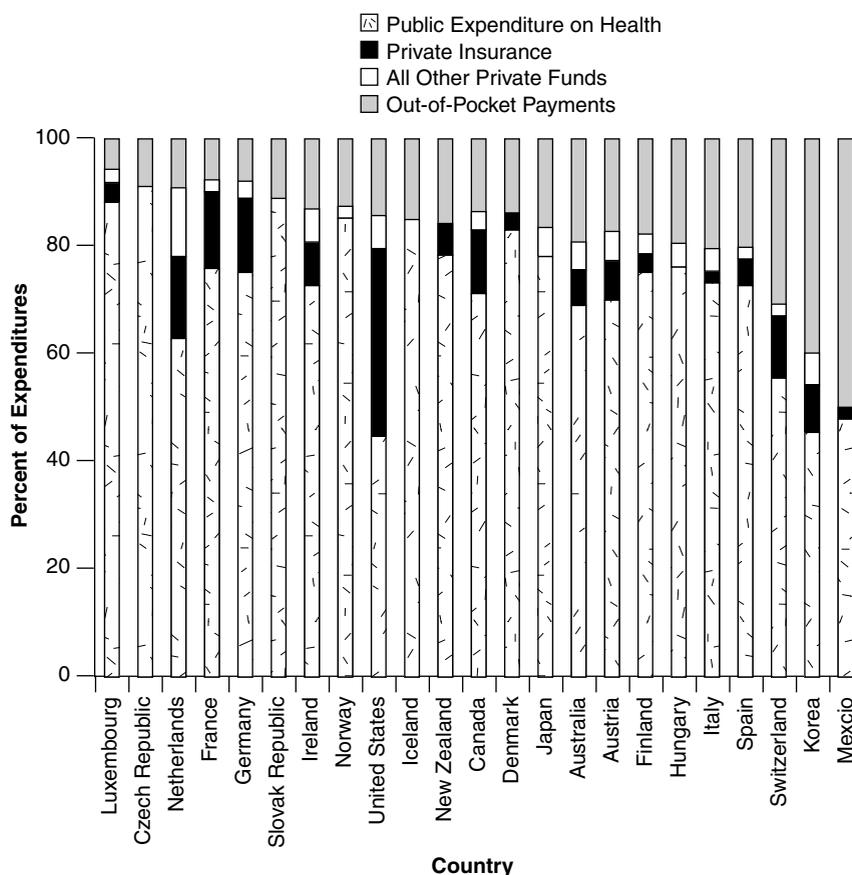
over-the-counter and similar direct payment to providers that are not refundable, plus cost sharing of private households. This includes the funding of services and medical goods that are (at least partially) covered under a third-party payment program.

Figure 6 shows how OECD countries are ranked by their increasing share of out-of-pocket spending and by total health care expenditures. The public sector is the main source of health care funding in all OECD countries, except the U.S., Mexico, and Korea. During the 1970s, the public share

of health care spending increased in OECD countries on average, but since 1980 has stabilized and even slightly declined in the 1990s. On average, the public share of health care funding accounted for 72 percent in 2001. The public share was more than 80 percent in several countries, including the Czech Republic, Denmark, and the United Kingdom (Table 5 and Figure 6).

The share of out-of-pocket payments was above 30 percent of total health care expenditures in Switzerland, Korea, and Mexico. It varies between 10 and 30 percent of total

Figure 6
Health Care Expenditures¹, by Source of Funding: 2000



¹ Countries are ranked by their increasing share of out-of-pocket spending.

NOTE: Not all countries have this data available.

SOURCE: (Organisation for Economic Co-operation and Development, 2003a.)

health care expenditures for most countries with available data (Table 5). With a few exceptions, there is a tendency for the share of out-of-pocket spending to decline as health care expenditures per capita rises.

Out-of-pocket spending on health care continues to be among the most dynamic components of private consumption in a majority of OECD countries. There are substantial differences between countries in the baskets of goods and services that are paid out of pocket. Pharmaceuticals are one of the major components in all countries. However, countries differ markedly in the share of private spending that is devoted to services, such as denture and

long-term care (LTC) in nursing homes and home-help services, also reflecting differences in public coverage of these items.

There is complementarity between public spending and private insurance in several countries. Private insurance can provide both basic coverage for those not covered by public systems or provide complementary insurance for specific services or that part of service cost not covered under public programs. Examples of the first type of private insurance include employer-sponsored private insurance group contracts in the U.S. and private insurance contracts of state employees in Germany. Complementary health care insurance is a

Table 6
Out-of-Pocket Payments for Health Care as a Percent of Total Household Consumption of All Goods and Services, by Country: 1990 and 2000

Country	1990	2000
Australia	2.2	2.7
Austria	—	2.7
Belgium	—	—
Canada	2.4	2.7
Czech Republic	0.3	1.2
Denmark	2.8	2.8
Finland	2.5	2.9
France	1.8	1.8
Germany	1.8	2.0
Greece	—	—
Hungary (1991)	1.5	2.8
Iceland	1.8	2.6
Ireland	1.8	1.9
Italy	2.1	3.1
Japan	—	2.3
Korea	4.9	4.3
Luxembourg	0.7	1.1
Mexico	3.7	4.3
Netherlands	—	1.6
New Zealand	1.7	2.1
Norway	2.4	2.7
Poland	—	—
Portugal	—	—
Slovak Republic	—	1.1
Spain (1991)	2.2	3.0
Sweden	—	—
Switzerland	5.5	6.1
Turkey	—	—
United Kingdom	1.1	—
United States	3.6	2.9
OECD Average Countries (19) ¹	2.4	2.8

¹ Includes Australia, Canada, Czech Republic, Denmark, Finland, France, Germany, Hungary, Iceland, Ireland, Italy, Korea, Luxembourg, Mexico, New Zealand, Norway, Spain, Switzerland, and the United States.

NOTE: Figures for Hungary and Spain are for 1991 rather than 1990.

SOURCE: (Organisation for Economic Co-operation and Development, 2003a.)

common way of financing dental and medical appliances, or privately paid upgrades of hospital accommodation.

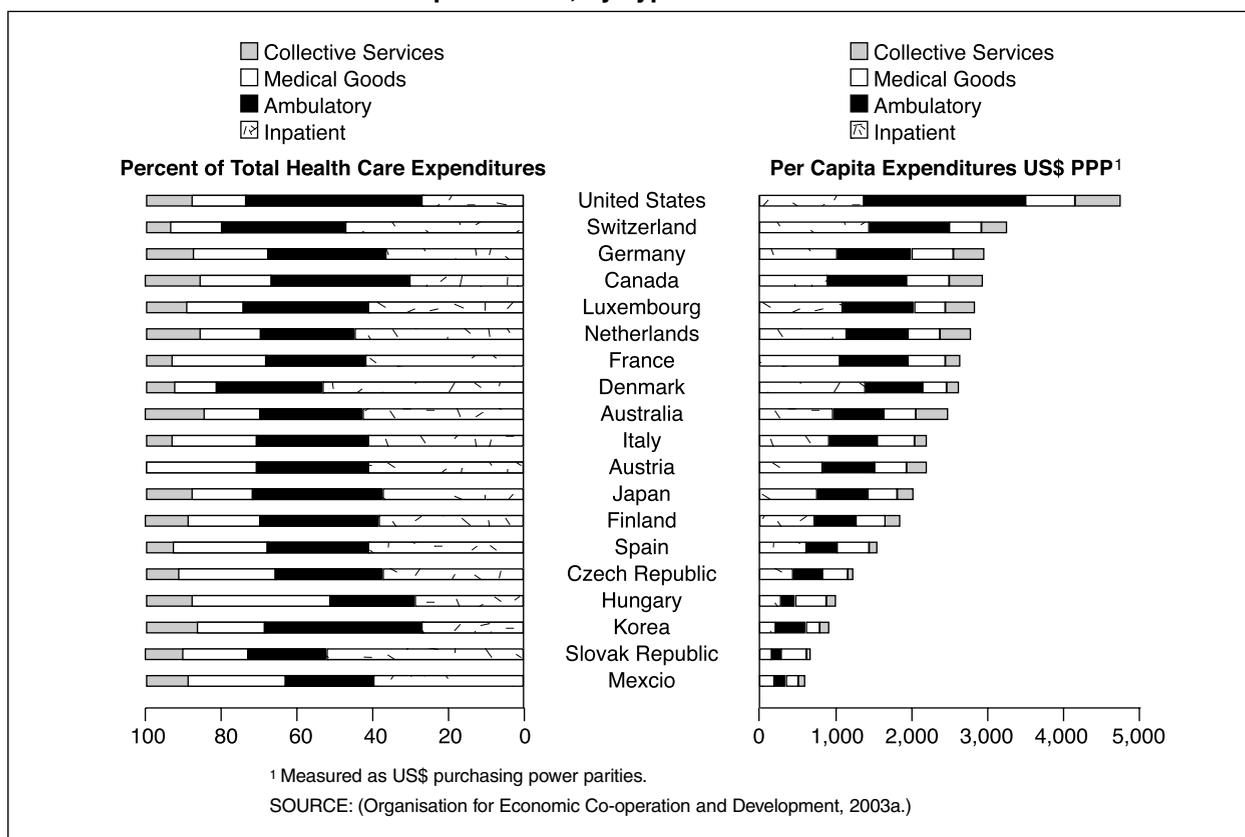
Data for a number of countries suggest that out-of-pocket spending for health care rose as a share of total household consumption during the 1990s (Table 6). Of the 19 OECD countries for which this measure is available, all but 4 experienced such an increase; the share remained constant in Denmark and France, and decreased in Korea and the U.S.

TYPE OF SERVICE EXPENDITURE

OECD countries differ in the ways health care expenditures are allocated according to type of service provided and

medical goods consumed (Figure 7). In 2001, on average across OECD countries, 38 percent of total health care expenditures was allocated to inpatient care, 31 percent for ambulatory services (including ancillary services and home care), 21 percent for medical goods (including pharmaceuticals and medical appliances) and the remaining 10 percent was spent on collective services (administration and general public health prevention programs). But there are significant differences among countries. For example, Denmark, the Netherlands, and Switzerland allocated 45 percent or more of their health care expenditures on inpatient care in 2001, while countries such as the U.S. and Canada

Figure 7
Health Care Expenditures, by Type of Service Provision: 2001



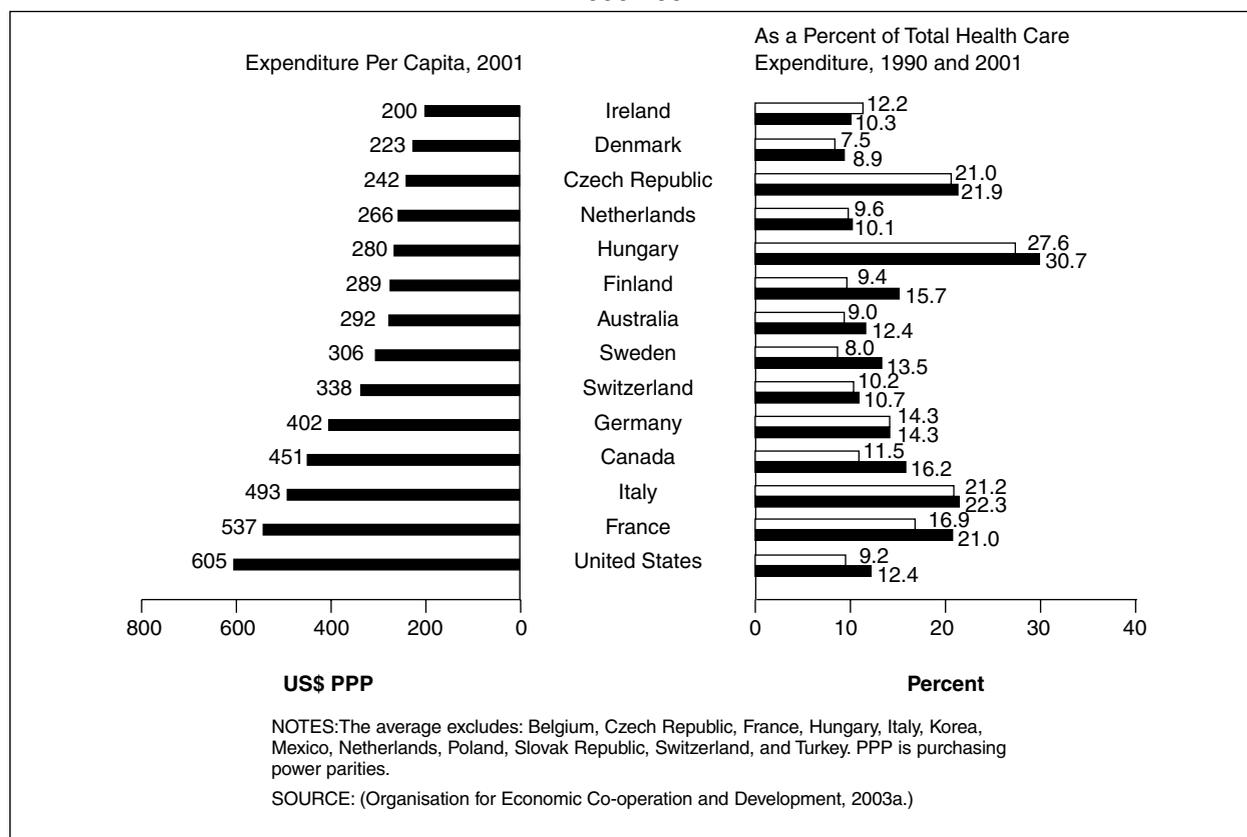
spent less than 30 percent on this component of their health care system (Figure 7). Hungary and the Slovak Republic spent almost 40 percent of their total health care expenditures on medical goods (including pharmaceuticals, such as prescription drugs), while Denmark, Switzerland, and the U.S. spent less than 15 percent on this item.

Figure 7 shows that the relative shares of types of services in overall spending can refer to quite different absolute spending levels in countries. For example, Hungary and the U.S. each spent roughly the same share of their health care expenditures on inpatient care, but in dollar terms the U.S. spent 5.2 times more than Hungary did. Similarly, Hungary devoted 30 percent of its health care expenditures to medical goods, compared to 12 percent in the U.S.,

but dollar spending in the U.S. was 2.1 times that in Hungary (Figure 7). In fact, the relatively small share of pharmaceutical spending in the U.S. corresponds to the highest per-capita spending in the OECD (Figure 8).

Reasons for international differences in the distribution of expenditures among provider types can be traced back to several roots. Constant changes and innovation in medical technology, reforms in payment mechanisms, and the search for more efficient allocation of health care resources all act together over time to modify the division of labor in health care across provider industries. This involves complex trends in specialization and integration, increasing the need for better coordination to bring basic services closer to consumers in the community.

Figure 8
Pharmaceutical Expenditures Per Capita, and as a Percent of Total Health Care Expenditures:
1990-2001



CHANGING ROLE OF PHARMACEUTICAL SPENDING

Pharmaceutical products represent an important and growing share of health care expenditures in most countries. The number of new drugs increased considerably during the past decade, and the movement toward new, more expensive products has been one of the main driving forces in increasing pharmaceutical expenditure, thereby contributing to the increase in overall health care spending. There are considerable differences in pharmaceutical spending across countries, reflecting differences in volume, structure of consumption, and price level. The U.S. spends the most on pharmaceuticals, with expenditure per capita of US\$605 PPP in 2001.

France, Italy, Canada, and Germany followed the U.S., with spending of more than US\$400 PPP per capita (Figure 8).

On average the annual growth rate of pharmaceutical expenditure was 30 percent higher than that of total health care expenditures during the 1990s resulting in increasing shares of pharmaceuticals in total spending (Figure 8) (Organisation for Economic Co-operation and Development, 2003b). OECD countries at the lower end of the income scale tend to spend a greater share of their health care expenditures on pharmaceuticals, partly because pharmaceuticals have international market prices while labor costs are usually based on national wage structures. For example, Hungary and the Slovak Republic spent around 30 percent of total health care

expenditures on pharmaceuticals, while Denmark and the Netherlands spent around 10 percent. The share spent on pharmaceuticals can also be very different in countries having similar health care spending per capita. For example, Denmark spends 9 percent of total health care expenditures on pharmaceuticals while France spends 21 percent (Figure 8), although both have roughly the same total health care spending per capita (Figure 7).

Pharmaceutical expenditure tends to be funded from private sources to a greater extent than inpatient and outpatient services, because copayments tend to be higher on pharmaceuticals and a considerable portion of pharmaceuticals are not covered under public insurance schemes (Organisation for Economic Co-operation and Development, 2003b).

Most OECD countries have been applying a mix of tools to try to control pharmaceutical expenditures over the past two decades. Increased cost sharing for pharmaceuticals has been a common feature (Mossialos, and Le Grand, 1999; Saltman and Figueras, 1997). The number of drugs not reimbursed has increased, mainly comfort drugs or those without proven therapeutic value. The degree of cost sharing has been increased for many others. In a number of cases, flat-rate payments per prescription have been established. Reference price systems have also been introduced in several countries (e.g., Germany, Denmark, and the Netherlands). These arrangements increase cost sharing for individuals using high-cost products while promoting the use of less-costly generic drugs.

REVISIONS OF HEALTH EXPENDITURE ESTIMATES

The reporting on trends in health care spending across countries in a timely, comparable, and policy relevant way needs a con-

stant investment both by the international community and by individual countries to keep national reporting systems up-to-date with rapidly changing health care systems, and to ensure that a core set of expenditure indicators can be reported in an internationally harmonized way for comparative purposes. To facilitate this process, the OECD Secretariat has published an accounting framework which is now used by an increasing number of OECD member and non-member countries (Organisation for Economic Co-operation and Development, 2000).⁹

OECD member countries are currently at different stages of implementing the SHA manual, and/or of harmonizing their reporting on health care expenditures according to main categories and definitions of the International Classification of Health Accounts (ICHA) as proposed by the SHA (Organisation for Economic Co-operation and Development, 2002). In several countries, the reporting on health care accounts according to the SHA framework is now part of national reporting (e.g., Denmark, Germany, Hungary, Japan, Korea, Mexico, Netherlands, and Switzerland).¹⁰ Other countries produce estimates according to the OECD framework, but mainly for purposes of reporting to the OECD health care data collection (e.g., Australia, Canada, France, and the U.S.) and detailed results and comments on estimation methods are made available with the description of the national data sources and estimation methods (Organisation for Economic Co-operation and Development, 2003a). Comparability of data is still restricted for countries

⁹The spread of core concepts and classifications of the System of Health Accounts (SHA) manual in non-OECD countries has recently been boosted by the publication of a *Guide to Producing National Health Accounts with Special Applications for Low-Income and Middle-Income Countries* (World Bank, World Health Organisation, and United States Agency for International Development, 2003).

¹⁰The country lists may not be exhaustive as they only provide a snapshot picture as of summer 2003. The actual status of SHA projects in countries may change quickly, depending on available resources in statistical agencies for work on this task.

where SHA pilots are at an early or experimental stage (e.g., Finland, and the United Kingdom), and where the SHA implementation has not been started (e.g., Austria, Italy, Portugal, and New Zealand).

But even where results of the detailed tables of the SHA framework are not yet available publicly, some experience with the SHA manual has now been gained in at least 25 of the 30 OECD countries. During this process, statisticians have re-examined their overall expenditure estimates and the basic breakdown according to various dimensions (type of services and goods, industries of providers, and sources of financing). They have also conducted an inventory of available sources for more detailed estimates. As these more detailed estimates are being implemented in a growing number of countries, comparability of health care expenditures estimates is expected to constantly improve in the future.

As a result of this work, the main issues of comparability are now well known. Two of the most significant are the boundary between health care and other social services, in particular for older persons in need of LTC, and the structure and amount of spending from a multitude of private sources. For example, a better estimate of LTC increased the estimate for total expenditure in Sweden by 7.7 percent in 2001. (It meant that the new estimate for total expenditure as a percentage of GDP was 8.7 percent, compared to 8.0 percent before adjustment for LTC.¹¹) The OECD Secretariat currently conducts in-house research on both issues in the framework of a project on LTC policies, and a project on private health insurance (Organisation for Economic Co-operation and Development, 2003a).

¹¹ OECD data has been revised for Sweden back to 1993.

CONCLUSIONS

There are initial reports from several countries that the trend of accelerated growth is continuing in 2002, which once again brings the discussion of the limits of health care spending growth to the forefront of public policy debate (e.g. Canada, France, Germany, and the U.S.). Evidence of growing health care expenditures ratios has come from preliminary results of national health accounts for Canada, France, and the U.S. (Canada Institute for Health Information, 2003; Fénina and Geoffroy, 2003; Heffler et al., 2003), or from public spending trends that exceed expected GDP growth (German Federal Ministry of Health and Social Security, 2002).

Despite a general convergence of countries' experience over the past decade, the U.S. remains significantly different. The U.S. started the decade with a substantially higher level than other OECD countries—both in absolute terms in per-capita PPP, and as a percent of GDP. During the 1990s, real annual health care spending growth in the U.S. was compared to that of other OECD countries and to the EU average (Table 2). However, the 2000-2001 real health care spending growth in the U.S. was considerably above the EU average, and even the OECD average. In 2001, the U.S. spent more on health care by 2 percentage points of GDP than in 1990 (13.9 percent of GDP compared to 11.9 percent), while on average the EU spent more on health care by less than 1 percentage point of GDP (8.5 percent of GDP compared to 7.6 percent).

In order to present a more complete story about value-for-money that the health care dollar buys, the data presented in this

article need to be complemented by additional indicators. It is access to quality services and the ability of a health care system to build confidence that these will be provided in efficient and effective ways, that determine a society's willingness to dedicate a growing share of its overall resources to health care.

In order to be able to suggest how close an OECD country comes to its individual ideal in this respect, more and better data are needed on a macro level. In addition, substantially more work is needed on a more disaggregated level, but in ways that lead to internationally comparable results (Cutler, 2002).

On the aggregate level, work is currently undertaken at the OECD Secretariat to complement the currently available spending data by a more detailed breakdown of spending by type of service. This will help answer questions such as: to what extent is a relatively generous coverage—and high spending—of LTC services (for older persons, but also for younger adults) a common feature of several of the highest spending countries (e.g., in Canada, Germany, and Switzerland)?

An important part of the expenditure story is differences in prices, for both input and output of health-service provision (especially pharmaceutical prices and labor costs). Part of this task, such as a basic data set for comparing income of health professions is also currently on the OECD agenda and can be found at <http://www.oecd.org/health>. This will help in the future to be better able to decide to which degree differences in health expenditure are due to price differences (Anderson et al., 2003).

There is some evidence that differences in the availability of resources devoted to health care, which are also behind differences in expenditure, have an effect on outcomes (Or, 2000). Countries operating all

or parts of their health care system with tightly controlled resources (for example, the hospital sector) may experience waiting lists that are increasingly seen as problematic (Hurst and Siciliani, 2003). On a semi-aggregate level, the spread of technology has been linked to expenditure growth (Moise, 2003).

Finally, many questions on the relative efficiency of health care provision across countries can only be answered by detailed analysis using data on a much more disaggregated level, such as comparisons based on how certain health problems are tackled (treatment of diseases). The tentative conclusion from this type of study seems again to be that there is indeed some evidence that patients in the highest spending countries have some benefit from relative high spending (Organisation for Economic Co-operation and Development, 2003c). The main challenge for further work remains to build better data bridges between microdata and macrodata on health care activities, to find out more information about the most effective ways to spend additional health dollars and to understand better how technological progress contributes to both increasing cost and improved outcomes.

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