

PART I

# **Indicators Framework and Assessment**



PART I  
*Chapter 1*

**An Interpretative Guide**

## 1. The goals of social indicators

The present report aims to give insights relevant to answering two questions:

- What progress have OECD countries achieved in terms of their social development?
- How effective have been the actions of society in furthering social development?

The first question requires indicators covering a broad range of social issues. As social development requires health, education, economic resources and a stable basis for social interactions, indicators need to inform on all these dimensions. The second question is more challenging. Societies try to influence social outcomes, usually through government policy, and the question is whether such policies are effective in achieving their aims. Indicators help in making that assessment. A first step is to compare the changes in social outcomes that social policies try to influence with the scale of the resources that are used to that effect. While this comparison does not allow a comprehensive evaluation of the effectiveness of a particular programme, indicators can highlight areas where more analysis is needed.

## 2. The framework of OECD social indicators

While the structure applied in this volume falls short of being a full-scale framework for social statistics, it is nevertheless more than a one-dimensional listing. This structure has been informed by experiences in other parts of the OECD on how to assess the policies and the outcomes that they try to influence in a variety of fields. This structure draws, in particular, on the OECD experience with environmental indicators. These indicators are organised in a framework known as “Pressure-State-Response” (PSR).<sup>1</sup> In this framework human activities exert pressures on the environment, which affect natural resources and environmental conditions (*state*), and which prompt society to respond to these changes through various policies (*societal response*). The PSR framework allows highlighting these links, and helps decision-makers and the general public see the interconnection between environmental and other issues. It relates indicators of what government and society do (response indicators) to indicators of what they are trying to influence (state and pressure indicators).

A similar approach is followed in this report for social indicators. Indicators are grouped along two dimensions. The first dimension considers the nature of these indicators, grouping them in three areas:<sup>2</sup>

1. **Social context** refers to variables that, while not usually the direct target of policy, are crucial for understanding the context within which social policy is developed. For example, the proportion of elderly people in the total population is not the direct target of policy but it shapes how specific policies impact on the living standards of the elderly and on their costs. Unlike other indicators, social context indicators cannot be unambiguously interpreted as “good” or “bad”. For example, cross-country differences in

the number of lone-parent families may reflect cultural factors, although in all countries social policy makers are called upon to confront its consequences.

2. **Social status** indicators describe those social outcomes that policies try to influence. Ideally, the indicators chosen are such that they can be easily and unambiguously interpreted – all countries would rather have low poverty rates than high ones, for example. These indicators describe the general social conditions of the population or one particular dimension that social policy tries to influence.
3. **Societal response** indicators provide information about the scale and nature of social policy interventions, i.e. what society is doing to affect social status. They include indicators of the stance of government policies, but also of the activities of the private sector and non-governmental organisations. Indicators of the development of private pensions, and of the actions taken by individuals and families to care for the elderly and children, fall in this category.<sup>3</sup> By comparing indicators of societal response with indicators of social status, one can get a first-order indication of policy effectiveness.

The second dimension of the OECD framework groups indicators according to the broad policy fields that they cover. Four *objectives* of social policy are used to classify indicators of *social status* and *social response*:

- A) Enhancing **self-sufficiency** is an underlying objective of social policy, featuring prominently in, for example, the communiqués of OECD Social and Health Policy Ministers ([www.oecd.org/socmin2005](http://www.oecd.org/socmin2005)). Self-sufficiency of individuals is promoted by ensuring active participation in the economy and society, and autonomy in activities of daily living.
- B) **Equity** in this context refers to social or labour market disadvantage, and equality of opportunity. Equitable outcomes are measured mainly in terms of the access by households to resources.
- C) While improving the **health status** of populations is the fundamental objective of health care systems, attaining it implies a focus that is broader than disease and its cure, and which extends to other social factors that affect mortality and morbidity.
- D) **Social cohesion** is often identified as an over-arching objective of the social policies of countries. While little agreement exists on what precisely it means, a range of pathologies are informative about lack of social cohesion. This is true, for example of crime, imprisonment, suicides, industrial strife, and family instability. Falling under this heading are also measures of the extent to which individuals' participate in the community where they live.

Based on these two dimensions, OECD social indicators can be represented as a “matrix” (Table 1.1).

### 3. The selection and description of indicators

OECD countries differ substantially in their collection of statistics, especially in the social field. In selecting indicators for presentation in this report, the following choices were made.

- A first consideration relates to the degree of comparability of the indicators across countries. While this volume strives to present the best comparative information for each of the areas covered, the indicators presented are not confined to those for which

Table 1.1. Social indicators included in various editions of Society at a Glance

Content		Equity (E0)	Health (HE)	Social cohesion (CO)	
Nature	Social context	<ul style="list-style-type: none"> <li>• <b>National income</b></li> <li>• Age-dependency ratio</li> <li>• Migrants (2006, 2005, 2003)</li> <li>• Fertility rates (2006, 2005, 2001)</li> <li>• Marriage and divorce (2006, 2005, 2001)</li> <li>• Refugees and asylum-seekers (2001)</li> <li>• Lone parents (2001)</li> </ul>			
	Social status	<ul style="list-style-type: none"> <li>• <b>Employment</b></li> <li>• <b>Unemployment</b></li> <li>• <b>Mothers in paid employment</b></li> <li>• Jobless households (2005, 2003, 2001)</li> <li>• Youth inactivity (2005, 2001)</li> <li>• Age at retirement (2005, 2001)</li> <li>• Educational attainment (2005, 2003, 2001)</li> <li>• Childcare costs (2006)</li> </ul>	<ul style="list-style-type: none"> <li>• Income of old people (2005, 2003)</li> <li>• Relative poverty (2005, 2001)</li> <li>• Income inequality (2005, 2001)</li> <li>• Low paid employment (2001)</li> <li>• Gender wage gaps (2006, 2001)</li> <li>• Child poverty (2005, 2003)</li> <li>• Material deprivation (2006)</li> <li>• Poverty persistence (2006)</li> <li>• Intergenerational mobility (2006)</li> <li>• Housing costs (2006)</li> </ul>	<ul style="list-style-type: none"> <li>• Life expectancy (2006, 2005, 2001)</li> <li>• Health adjusted life expectancy (2005, 2003)</li> <li>• Infant mortality (2005, 2001)</li> <li>• Potential years of life lost (2003, 2001)</li> <li>• Disability-free life expectancy (2001)</li> <li>• Accidents (2001)</li> <li>• Low birth weight (2006, 2003)</li> <li>• Sick-related absences from work (2006)</li> <li>• Health inequalities (2006)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Suicides</b></li> <li>• Life satisfaction (2006, 2005)</li> <li>• Social isolation (2005)</li> <li>• Group membership (2005, 2001)</li> <li>• Teenage births (2005, 2003)</li> <li>• Drug use and related deaths (2005, 2001)</li> <li>• Strikes (2006, 2003, 2001)</li> <li>• Crime (2003, 2001)</li> <li>• Voting (2006, 2001)</li> <li>• Juvenile crime (2003)</li> <li>• Trust in political institutions (2006)</li> <li>• Work accidents (2006)</li> </ul>
	Societal responses	<ul style="list-style-type: none"> <li>• <b>Out-of-work benefits</b></li> <li>• Students' performance (2006, 2003)</li> <li>• Activation policies (2001)</li> <li>• Education expenditure (2001)</li> <li>• Early childhood education and care (2001)</li> <li>• Literacy among adults (2001)</li> <li>• Tax wedge on labour (2006, 2001)</li> <li>• Students with impairments (2003)</li> <li>• Resources of disabled adults (2003)</li> <li>• Working disabled persons (2003)</li> <li>• Benefits of last resort (2005)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Public social spending</b></li> <li>• <b>Total social spending</b></li> <li>• Private social spending (2005, 2001)</li> <li>• Benefit reciprocity (2003, 2001)</li> <li>• Earnings inequality (2006)</li> <li>• Minimum wages (2001)</li> <li>• Pension replacement rate (2006, 2005)</li> <li>• Pension promise (2005)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Total health care expenditure</b></li> <li>• Responsibility for financing health care (2003, 2001)</li> <li>• Long-term care (2006, 2005, 2001)</li> <li>• Health care infrastructure (2001)</li> </ul>	<ul style="list-style-type: none"> <li>• Prisoners (2006, 2003, 2001)</li> </ul>

Note: The data refer to the "domains" covered in the various editions of Society at a Glance – OECD Social Indicators. Within each domain, the specific indicators used may differ across the various issues. Indicators in bold have been included in each edition of Society at a Glance (2001, 2003, 2005 and 2006). The table refers only to indicators included in the printed version of Society at a Glance. Names shown for each domain of indicators are those used in the 2006 edition; some of the indicators may also have been moved from one category to another (e.g. prisoners was classified as a "response" indicator in the 2003 edition, and as a "status" indicator in the 2005 edition).

Source: Various editions of Society at a Glance – OECD Social Indicators, Paris.

there is “absolute” comparability; readers are, however, alerted as to the nature of the data used and their pitfalls.

- A second consideration relates to whether to include indicators that are available for all countries or, conversely, how far to depart from this principle. As a general rule, this volume includes only indicators that are available for a majority of OECD countries.
- A third consideration relates to the possible breakdown to use. Social indicators can often be decomposed into sub-categories, such as age of individuals, family type and gender. The breakdown available (e.g. by individual and household characteristics) varies according to the indicator considered, and several ones are used in this report. Also, no attempt is made to record all data in the same units, i.e. the social indicators presented in this volume are a mixture of headcounts, currency units, percentages of GDP, etc.

For each of the selected indicators, Part II of this report describes the key evidence together with general information on definitions and measurement. Most indicators already exist in one form or another, and many are published in other OECD publications on a regular basis (e.g. Labour Force Statistics, Social Expenditure Database, Health Data); others have been collected on an *ad hoc* basis. While some indicators have been included in all issues of *Society at a Glance*, others vary from volume to volume.

Individual indicators can be relevant for multiple areas of social policy, i.e. they can be recorded under more than one category. For example, the ability to undertake activities of daily living without assistance is an indicator of social cohesion, self-sufficiency and health. While this problem is not specific to social policy *per se*, the solution adopted in this volume is to present indicators under the heading to which they are more directly relevant rather than repeating them in different sections. Also, the entries of this report often contain several indicators, which provide information on both social status and societal responses. Throughout this volume, the code in-between brackets associated to each indicator (e.g. GE1) is used to relate it to a policy field (as listed in the tables below), while a numbering of the indicators is used to simplify cross-references. While the name and coding of indicators used in this volume may differ from those in previous issues of *Society at a Glance*, an effort is made to assure continuity in the areas covered.

### **3.1. Context indicators (GE)**

When comparing *social status* and *societal response* indicators, it is easy to make statements that one country is doing badly relative to other countries, or that another is spending a lot of money on a specific policy target compared with others. It is important to put such statements into a broader context. For example, national income levels vary across OECD countries. If there is any link between income and health, richer countries might be expected to have better health conditions than poor ones, irrespectively of societal responses. If the demand for health care services increases with income (as appears to be the case), rich countries might be expected to spend more on health care (as a percentage of national income) than poorer countries. This does not mean that the indicators of health status and health spending are misleading: it does mean, however, that the general context behind the data should be borne in mind when considering the implications of indicators. Another characteristic of most context indicators is that it is not possible to *a priori* say whether a higher value is good or bad.

Many context indicators are of relevance in interpreting several indicators included in this publication. This is true of national income per capita (GE1), which has implications for

the quality, quantity and nature of the social protection that society can afford to provide, but also of age-dependency ratios (GE2), fertility rates (GE3), migration (GE4) and marriage and divorce (GE5). As noted earlier, context indicators are not categorised as falling in any of the four fields of social policy – equity, self-sufficiency, health or cohesion.

### List of general context indicators (GE)

GE1. National income per capita
GE2. Age-dependency ratio
GE3. Fertility rates
GE4. Migration
GE5. Marriage and divorce

### 3.2. Self-sufficiency indicators (SS)

For most people in the population of working age, paid employment (SS1) is the means through which they gain economic resources, identity, social interaction and status. In addition, almost all social security systems rely for their funding on the contributions by people in work. Hence, promoting higher employment is a priority for all OECD countries.

Nevertheless, unemployment (SS2) often implies that providing the means to support oneself and one's dependants through work is sometimes not a reality. Access to paid jobs is often especially difficult for mothers of young children (SS3), often reflecting high costs of formal childcare (SS4). Because labour market disadvantage is often concentrated among low-skilled workers, differences in students' performance at the end of compulsory schooling can have lasting consequences on their chances of a successful transition to working life (SS7).

The societal response to these problems has traditionally combined provision of cash benefits to individuals unable to support themselves and interventions aimed at overcoming obstacles to work and facilitate integration into the labour market. However, when poorly designed, these two set of measures may pull in opposite directions. In particular, benefits provided by the social protection systems to unemployed persons may inadvertently reduce financial incentives to take up work (SS6) as well as firms' demand for labour (SS5).

The table below lists the indicators of social status and societal response that are most relevant for assessing whether OECD countries have been successful in meeting goals for assuring the self-sufficiency of individuals and their families.

### List of self-sufficiency indicators (SS)<sup>1</sup>

Social status	Societal responses
SS1. Employment	SS5. Tax wedge on labour
SS2. Unemployment	SS6. Out-of-work benefits
SS3. Mothers in paid employment	
SS4. Childcare costs	
SS7. Students' performance	
<i>EQ2. Earnings inequality</i>	<i>EQ5. Public social spending</i>
<i>EQ3. Gender wage gaps</i>	<i>EQ6. Total social spending</i>
<i>EQ4. Intergenerational mobility</i>	
<i>EQ7. Poverty persistence</i>	

1. Indicators in italics are those that, while presented in another sub-section, are also relevant for an assessment of self-sufficiency.

### 3.3. Equity indicators (EQ)

Equity has many dimensions, including access to social services, economic opportunities, and outcomes. Opinions as to what exactly entails a *fair* redistribution of resources or what establishes a just distribution of opportunities vary widely within and between countries. As it is hard to obtain information on all aspects of equity, most of the social status indicators that are relevant for assessing equity outcomes are limited to inequality in financial resources and, much more rarely, in consumption patterns.

While poverty is most assessed in terms of financial resources, it can also be measured by looking at the extent of material deprivation in different countries (EQ1). The effects of poverty depend on the extent to which it persists over time (EQ7) and compromises opportunities for intergenerational mobility (EQ4). Poverty has often its roots in wider earnings inequality (EQ2) and gender wage gaps (EQ3), while its financial consequences may be heightened by high housing costs (EQ9).

Social protection systems are the main tool through which policy makers have responded to these equity concerns. All OECD countries have developed (or are developing) social protection systems that, to a varying extent, redistribute resources within societies and insure individuals against various contingencies. These interventions take the form of social benefits provided by the social security system (EQ5) or through a combination of tax expenditures and private spending (EQ6). In most OECD countries, the largest large share of these resources is devoted to providing income following retirement, and indicators of the replacement rate provided by old-age pensions (EQ8) show the long-term impact of existing pension rules and parameters for tomorrow's retirees.

Equity indicators cannot be disentangled easily from self-sufficiency indicators. Taken together, they reveal how national social protection systems grapple with a recurrent policy dilemma: how to balance adequacy of provisions with sustainability of the system and promotion of self-sufficiency of individuals.

#### List of equity indicators (EQ)<sup>1</sup>

Social status	Societal responses
EQ1. Material deprivation	EQ5. Public social spending
EQ2. Earnings inequality	EQ6. Total social spending
EQ3. Gender wage gaps	EQ8. Old-age pensions replacement rates
EQ4. Intergenerational mobility	
EQ7. Poverty persistence	
EQ8. Housing costs	
<i>SS2. Employment</i>	<i>SS6. Out-of-work benefits</i>
<i>SS3. Unemployment</i>	<i>HE2. Health care expenditure</i>
<i>SS4. Mothers in paid employment</i>	

1. Indicators in italics are those that, while presented in another sub-section, are also relevant for an assessment of equity outcomes.

### 3.4. Health indicators (HE)

The links between social and health conditions are strong. Indeed, growth in living standards, accompanied by better access to health care and continuing progress in medical technology, has contributed to significant improvements in health status, as measured, for example, by life expectancy (HE1). To a significant extent, these improvements have

reflected lower infant mortality and improvements in other indicators of child health (such as the prevalence of low birth weight, HE4). However, difficult challenges remain. Disparities in health conditions remain large not only between countries but also within them (HE6), and they often reflect a tendency for people with lower education income and social status to die younger. Poor health conditions have a direct impact on economic outcomes when they lead to high sick-related absences from work (HE4).

Health care expenditure (HE2) is part of the policy response of health care systems to concerns about health conditions in general and for specific groups. Another manifestation of this response has taken the form of the increasing number of frail elderly that are receiving different forms of long-term care either in institutions or, more often, in a home setting (HE5). Nevertheless, health problems have sometimes their root in interrelated social conditions – such as unemployment, poverty, and inadequate housing – that are outside the reach of health policies. Moreover, more than spending levels *per se*, the effectiveness of health interventions often depends on other characteristics of the health care system, such as low coverage of medical insurance or co-payments, which may act as barriers to seeking medical help.<sup>4</sup> A much broader range of indicators on health conditions and interventions is provided in *OECD Health Data* and in the companion volume to this database, *Health at a Glance*, which is also published on a bi-annual basis.

### List of health indicators (HE)<sup>1</sup>

Social status	Societal responses
HE1. Life expectancy	HE2. Health care spending
HE3. Low birth weight	HE5. Long-term care recipients
HE4. Sick-related absences from work	
HE6. Health inequalities	
<i>EQ4. Intergenerational mobility</i>	<i>EQ5. Public social spending</i>
<i>CO4. Suicides</i>	<i>EQ6. Total social spending</i>
<i>CO5. Work accidents</i>	

1. Indicators in italics are those that, while presented in another sub-section, are also relevant for an assessment of health outcomes.

### 3.5. Social cohesion indicators (CO)

Promoting social cohesion is a central goal for social policy in many OECD countries. However, because of the lack of a commonly-accepted definition of the term, identifying suitable indicators is especially difficult. The approach taken in this volume is to assess social cohesion through indicators that describe both the extent to which citizens participate in societal life and derive satisfaction from their daily activities; and those informing about various pathologies and conditions that put affected individuals at risk of exclusion from mainstream society, or that reveal the extent of social strife in a country.

Participation in voting (CO1) and the extent of trust that citizens have in the political institutions of their community (CO6) are two important dimensions of the extent to which individuals are well integrated and taking part in social life.<sup>5</sup> Survey data on subjective life satisfaction (CO7) are also important “direct” measures of the well-being of individuals and of the cohesion in society as a whole.

Conversely, indicators providing evidence not just of personal difficulties but also of a deeper malfunctioning of society as a whole include measures of the prevalence of suicides

(CO3) and prisoners (CO2). Indicators of strikes (CO5) provide information about the consensual nature of the industrial relations system, while high levels of work accidents (CO4) often reflect a malfunctioning of the safeguards that apply to workers.

Beyond these indicators of social status, context indicators may also help to highlight the existence of different groups and households within society that are exposed to special risk of social exclusion (e.g. persons living alone). Finally, it should be noted that it is much more difficult to identify relevant response indicators. Conversely, all of the policies that are relevant to other dimensions of social policy (self-sufficiency, equity and health) also influence social cohesion.

### List of social cohesion indicators (CO)<sup>1</sup>

Social status	Societal responses
CO1. Voting	CO2. Prisoners
CO3. Suicides	
CO4. Work accidents	
CO5. Strikes	
CO6. Trust in political institutions	
CO7. Life satisfaction	
<i>SS2. Unemployment</i>	<i>EO5. Public social spending</i>
<i>EQ1. Material deprivation</i>	<i>EO6. Total social spending</i>
<i>EQ7. Poverty persistence</i>	<i>HE2. Health care spending</i>
<i>HE1. Life expectancy</i>	
<i>HE4. Sick related absences from work</i>	

1. Indicators in italics are those that, while presented in another sub-section, are also relevant for an assessment of social cohesion outcomes.

## 4. What you can find in this publication

For each of the issues covered in Part II of this report, the text provides the definition of the relevant indicator(s) and what measurement problems, if any, exist. Countries differ in too many ways for it to be possible to pretend that some of the indicators are precisely defined: differences in data quality across countries are inevitable. Where this is the case, the text tries to make this explicit. This opening section on “definition and measurement” is then followed by a description of the basic trends and cross-country differences in the various indicators, and by some explanation as to why these may occur. In general, each section contains information for one year and for all OECD countries for which information is available, and presents trends for a selection of countries. Evidence is presented in the form of charts and tables, with selected references for “further reading” and titles of publications from which indicators are derived.

For most indicators, the underlying data can be disaggregated by age of individuals, gender, and family type. Time-series data are nearly always available. But, short of having an extraordinarily long publication, it is not possible to publish all these different dimensions for all the indicators collected. The data underlying each indicator are available on the OECD website ([www.oecd.org/els/social/indicators/sag](http://www.oecd.org/els/social/indicators/sag)), or by typing or clicking for “electronic books” on the “StatLink” at bottom right of each indicator (where data for all countries are also available).

## Notes

1. The PSR framework is in turn a variant of an approach which has also given rise to the “Driving force-State-Response” (DSR) model used by the UN Committee for Sustainable Development; and the “Driving force-Pressure-State-Impact-Response” (DPSIR) model used by the European Environment Agency.
2. This grouping differs somewhat from the PSR model. In the environmental indicators, pressure indicators relate to flows (emissions, waste generation, and resource use) that affect stocks of environmental goods (water or air quality, bio-diversity), while response indicators may refer to either flows or stocks.
3. Whilst social indicators are attributed to one of the three groups described above, the distinction between *context* and *status* is not always straightforward. For example, fertility rates may be an objective of pro-natalist policies in some countries, while they are part of the context of social policy in others. Similarly, family breakdown can be regarded as a failure of public policies in some countries, whereas it may not be an explicit policy concern in others. Inevitably, any dividing line between different indicators is arbitrary.
4. Insufficient medical services in some geographical regions can also lead to implicit rationing to which better regional planning may offer solutions.
5. Hence, these two indicators capture an important dimension of *social capital*, i.e. “the networks of shared norms, values and understanding that facilitate co-operation within and between groups” (OECD, 2001, *The Well-being of Nations: The Role of Human and Social Capital*, Paris).

## 1. Introduction

Social indicators aim to provide information on well-being beyond that conveyed by conventional economic measures.<sup>1</sup> While the level and change in gross domestic product (GDP) per capita have long been used as the main yardstick for measuring and comparing living standards across countries, policy makers and citizens are concerned with much more than just GDP per capita. In particular, they seek to ensure the overall well-being of society, both today and in the future.

But what precisely is “well-being”? Answers differ. Social indicators focus on observable outcomes in a variety of fields (health, literacy, poverty) based on the premise that most people would agree about the value of what is being described and that these social characteristics can be measured reliably and independently of people’s subjective perceptions. On the other hand, the economic literature assumes that individuals derive well-being from the satisfaction of their wants according to their preferences, chiefly as exercised in the marketplace. Satisfaction of wants is a function of what individuals consume, but since their consumption is ultimately determined by their income, this can be used as a proxy for well-being and reliably measured using national accounts income measures.

Up until the recent period, using a monetary measure like GDP per capita as a proxy for the population’s well-being made much sense. GDP per capita provides an accurate measure of a country’s capacity to deal with the material needs of its residents. And so long as the basic necessities of life remain scarce, additions to GDP per capita can be expected to equate closely with improvements in meeting the population’s basic needs, and hence in greater well-being. The consensus on the use of GDP per capita as a good proxy measure of well-being is, however, becoming less obvious as the more developed societies move from a situation of scarcity to a situation of plenty. The intuitive notion that, once a certain level of material needs has been met, further increments in economic growth will not necessarily yield the same improvements in the well-being of the citizens is backed up by numerous studies that indicate that this divergence between added income and added well-being holds true both within and across societies.

So there is a need for indicators that better reflect non-monetary factors – but is there a single indicator that can be measured reliably across countries and used as yardstick for well-being? Unfortunately, the answer is No. This may be seen as providing one argument for sticking with GDP per capita: after all, it can be calculated with a certain degree of reliability to yield a figure that can be readily compared across countries. This should not be viewed historically, however: the current development of comparable economic measures represents a relatively recent achievement. In the post-World War II era great efforts have been made to develop harmonized tools to measure economic growth. These tools have become increasingly sophisticated as economies have shifted from the production of goods like wheat and steel, which are more easily quantified, into the production of services, for which measurement is more elusive. But considerable progress has also been made in developing a comparable set of social indicators, particularly since

the 1980s, when the OECD first presented its social indicators (OECD, 1986). This progress needs to be sustained, *inter alia* through greater co-operation between the statistical offices of member countries and international organisations such as the OECD – whose role in this field can be similar to what it has achieved in respect to conventional economic statistics.

This chapter considers four approaches to measuring well-being.<sup>2</sup> First, it presents evidence on the importance for well-being of the social indicators presented in different issues of *Society at a Glance* and on the extent to which they are correlated with GDP per capita. Second, it reviews monetary measures of economic resources derived from national accounts. Third, it looks at ways in which these monetary measures can be adjusted to take into account other factors that influence well-being, in particular leisure time, household size and aversion to inequality. Finally, it considers subjective measures of happiness and life satisfaction, before concluding.

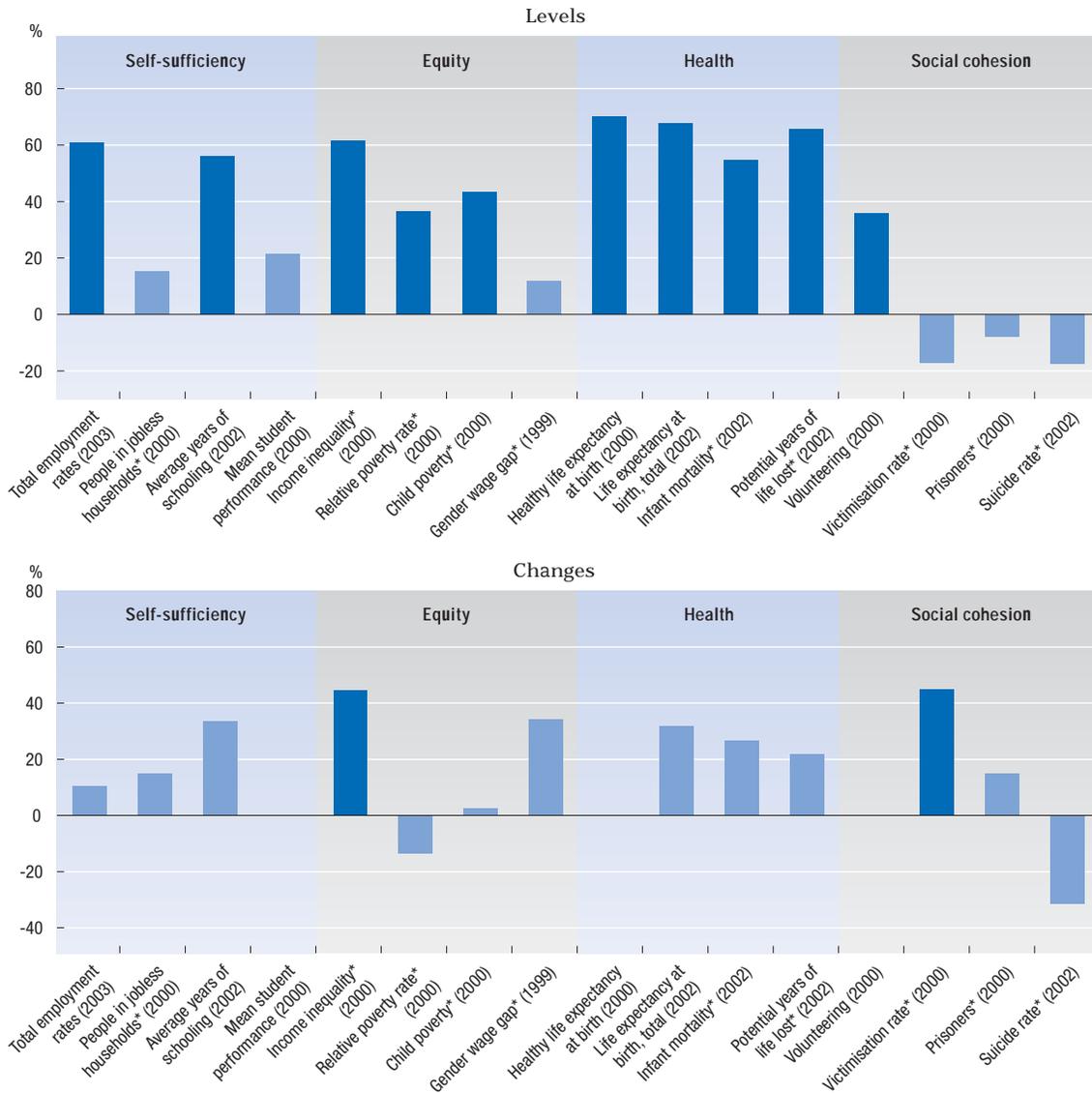
## 2. Social indicators

Social indicators provide a complementary approach to GDP-derived proxies for well-being. In this chapter, four indicators have been chosen for each of the four domains (self-sufficiency, equity, health status and social cohesion) described in Chapter 1.<sup>3</sup> The selection of these indicators, while subjective, is based on both their importance to social well-being and their availability, so as to allow meaningful cross-country comparisons.

Do these indicators provide additional information relative to that conveyed by GDP per capita? To answer this question, the top panel of Figure 2.1 presents the simple correlation between the levels of these 16 social indicators and GDP per capita. The bottom panel of the figure presents the correlation between average annual changes in the two sets of variables. The panel shows varying degrees of correlation between the 16 social indicators and GDP per capita, with the highest degrees of correlation with health indicators and the lowest with social cohesion indicators.

- *Self-sufficiency* reflects the extent of participation in the economy and society and how well individuals are able to get through daily life on their own. It is measured in terms of the overall employment rate, the proportion of the population in households where nobody has a job, the average number of years of schooling, and the average school performance of children at age 15. All these factors affect or will affect the ability of individuals to earn a decent living. GDP per capita correlates significantly with employment rates but not with measures of how employment opportunities (and thus joblessness) are shared within the population. Likewise, in richer countries the average adult has completed more years of education, but the average 15-year-old student does not necessarily perform better. There is only a weak correlation between changes in these self-sufficiency measures and GDP per capita.
- *Equity* reflects the distribution of household incomes and the extent of equality of opportunity and autonomy of individuals. It may be measured in terms of income inequality, relative poverty rates, child poverty and the gender wage gap. Higher levels of GDP per capita correlate to some extent with lower inequity in income distribution. OECD countries with lower GDP per capita also tend to record higher relative poverty and poverty among children, but not necessarily lower earnings inequalities by gender. Increases in GDP per capita go hand-in-hand with reductions in income inequality and gender wage gaps, but this is only very weakly, if at all, related to changes in child poverty and relative poverty.

Figure 2.1. **Cross-country correlations between per capita GDP and different social indicators in OECD countries**



Note: Levels around 2002 and annual percentage change over the longest period available. Pearson coefficient of correlation: bars in a darker colour indicate statistically significant correlations (at a 5% level).

For variables where higher values of the indicator denote worse social outcomes (e.g. infant mortality, prisoners, denoted with an “\*”), correlations with per capita income are shown with the opposite sign (e.g. countries with higher per capita income have lower infant mortality rates – shown with a positive sign – and higher rates of imprisonment – shown with a negative sign). Per capita income is measured as GDP in current prices and purchasing power parity exchange rates, divided by the total population. Correlations are computed between values of GDP per capita and of the social indicators in the same period; the number of countries considered may vary among different pairs of variables depending on data availability.

Source: Various editions of *Society at a Glance – OECD Social Indicators*.

StatLink: <http://dx.doi.org/10.1787/184757611082>

- **Health status** reflects not only disease and its cure, but other social factors that can affect mortality and morbidity. The four key indicators of health status used here are life expectancy at birth, “healthy” life expectancy at birth (i.e. lifespan free of disabling medical problems), infant mortality rates and the potential years of life lost as a result of accidents or preventable disease. These indicators are strongly correlated with GDP per

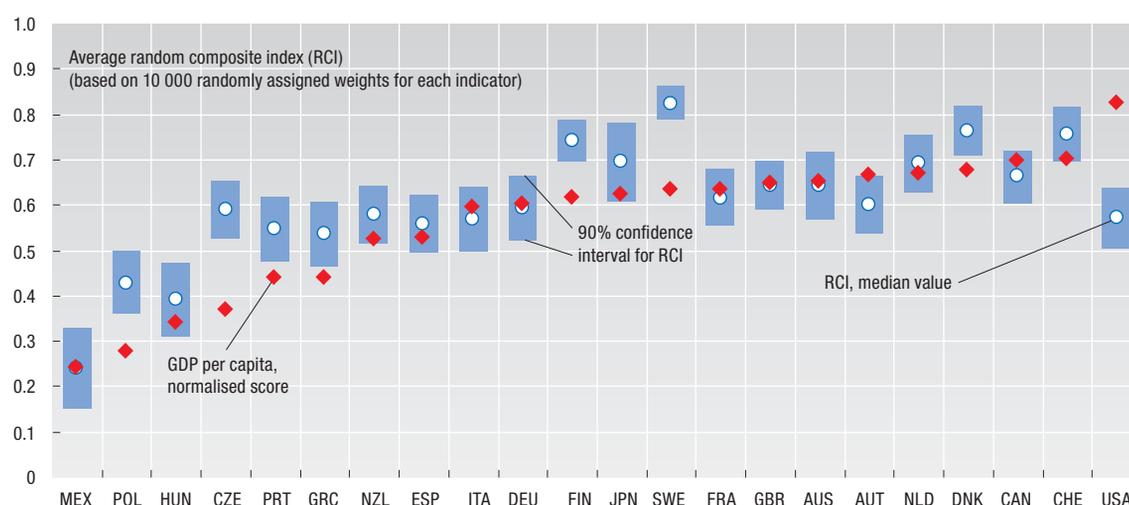
capita, meaning that on average OECD countries with higher incomes enjoy better health. Nevertheless, differences in country performance can still be significant – for example, infant mortality rates differ by a factor of around two between countries with similar GDP per capita. While changes in GDP per capita are positively related to changes in health status, the correlations are weak and not statistically significant.

- A feeling of belonging to a wider community and the satisfaction that derives from participation in the broader society are important to well-being. But social cohesion is measured not only through positive indicators, like the share of people who volunteer in community groups, but also through negative manifestations, such as levels of crime, victimisation and suicide. While people do more volunteering in countries with higher GDP per capita, there is no significant correlation with the negative indicators, although an increase in GDP per capita does seem to go hand-in-hand with a decline in the number of people who have been victims of crime.

Overall, social indicators provide information about a number of dimensions of well-being that seem to go beyond what is conveyed by GDP.<sup>4</sup> The main weakness of social indicators is, however, that they do not allow a parsimonious representation of well-being, because of the lack of agreement on how to aggregate these indicators. A simple synthetic measure can be constructed by normalizing and then aggregating the 16 indicators described above into a composite index that can be compared across countries.<sup>5</sup> This index then needs to be tested to see how robust it is when different weights are used to aggregate the various elementary indicators. The techniques used to perform this operation are described in Boarini et al. (2006).

Figure 2.2 shows the median value and confidence interval for a composite index constructed using the 16 social indicators weighted in a number of ways. The composite

**Figure 2.2. Median value and confidence interval of a composite index based on selected social indicators in OECD countries and GDP per capita**



Note: The composite index is based on the values of the 16 social indicators shown in Figure 2.1. The analysis is limited to OECD countries for which at least 13 of the 16 indicators were available. In order to allow comparisons between the composite index of social indicators and GDP per capita, values of the latter have been rescaled on a range given by the minimum and maximum median values of the composite index. The median value and 90% confidence interval are based on 10 000 trials where weights are assigned randomly to each of the elementary indicators, and the values are then compared to (normalised) GDP per capita in 2001. Luxembourg is excluded from the analysis to avoid the bias that would arise from its “abnormally” high GDP per capita.

Source: Calculations based on data in various editions of *Society at a Glance* – OECD Social Indicators.

StatLink: <http://dx.doi.org/10.1787/275423732624>

index of the social indicators yielded by this operation differs significantly from the relative performance indicated by GDP per capita in slightly more than half the countries.<sup>6</sup> Using different methodologies to construct the composite indices yields similar results. In general, several composite indices developed in individual OECD countries highlight a common pattern of much smaller increases in well-being than in GDP per capita since the early 1970s, and in recent years they even indicate declines (Sharpe, 1999).

### 3. Monetary measures of economic resources

The second approach to the measurement of well-being is to use one or another way of calculating real income from the System of National Accounts. While more established, problems remain in ensuring cross-country comparability. Furthermore, the impact of non-monetary factors on well-being is excluded.

As mentioned above, the monetary measure most commonly used to assess the total value of the economic resources that affect well-being is GDP per capita. GDP measures the value of the goods and services produced within a country during a given period of time. In practice, this means the production of those activities that fall within the boundary of the System of National Accounts. The production of these goods and services is generally valued at market prices, based on the assumption that these prices accurately reflect the value (to individuals and society) of the resources used for their production, since they have alternative uses. Some activities that are included in GDP are, however, particularly difficult to measure. Government services, for example, are often provided free or at a subsidised price to direct users, and their output cannot be valued in terms of market prices. In the past the value of inputs has been used to make estimates, which amounts to equating government output to the cost of its production. Recently some OECD countries, such as the United Kingdom, have modified their approach and begun to measure changes in government production based on direct measures of output. While these adjustments remain controversial, their implications are significant: Atkinson (2005) reckons that methodological differences in accounting for government output explain nearly half of the difference between the GDP growth rates for the United Kingdom and the United States between 1995 and 2003.

Valuing quantities through market prices assumes that the prices are representative of the marginal contributions of the different goods consumed to the utility of individuals. In this approach, however, GDP per capita is only a proxy of well-being, meaning that there are several areas in which it fails to take into account factors that are of importance as well:

- GDP excludes a range of non-market activities that influence well-being, due frequently to practical concerns with measuring them, because their value is not easily defined in market terms. These include not only illegal activities and home activities like housework and do-it-yourself work, but also leisure, which is clearly of value to society and important to well-being.
- Conventional measurements of GDP exclude changes in asset values, although these clearly influence what an individual can consume in the current period without becoming worse off. Therefore, GDP more accurately reflects what a society produces than what it can consume.
- GDP does not take account of externalities, such as pollution or environmental deterioration, nor of depletion of non-renewable resources. This distorts how much market prices actually reflect the marginal contribution of certain items to well-being, including those of future generations.

- GDP does not distinguish inter-country differences in the distribution of income. To most people, a huge increase in national income that goes exclusively to a tiny handful of very wealthy families will not increase general well-being as much as if it were more equitably distributed.

For these and other reasons, various adjustments have been made to SNA-based measures to develop alternative monetary measures of well-being.

### **3.1. Gross national income: adjusting for net transfers from abroad**

GDP takes into account only the production process that occurs within the borders of a country, and ignores that some of the income generated by these activities is paid to non-residents, while residents receive income from production in other countries. The purchasing power of residents may also increase or decrease with respect to foreign goods due to changes in the terms of trade, that is, the price of imported relative to exported goods. Factoring in the “net income from abroad” gives a figure for gross national income (GNI) that is more relevant to the well-being of the country’s residents.

To compare these figures between countries, the production data, which are collected in the local currency, need to be converted to a common currency, using purchasing-power-parity exchange rates (PPPs). In most OECD countries, the difference between GDP and GNI per capita is small, since gross income inflows from abroad tend to be offset by gross outflows, although there are some notable exceptions (e.g. Ireland and Switzerland, Figure 2.3). Changes in GDP and GDI per capita over the past decade are broadly similar, with the exceptions of Ireland and South Korea, countries that are large producers of ICT products and suffered, as a result, relatively large declines in their terms of trade.

### **3.2. Net national income: adjusting for capital consumption**

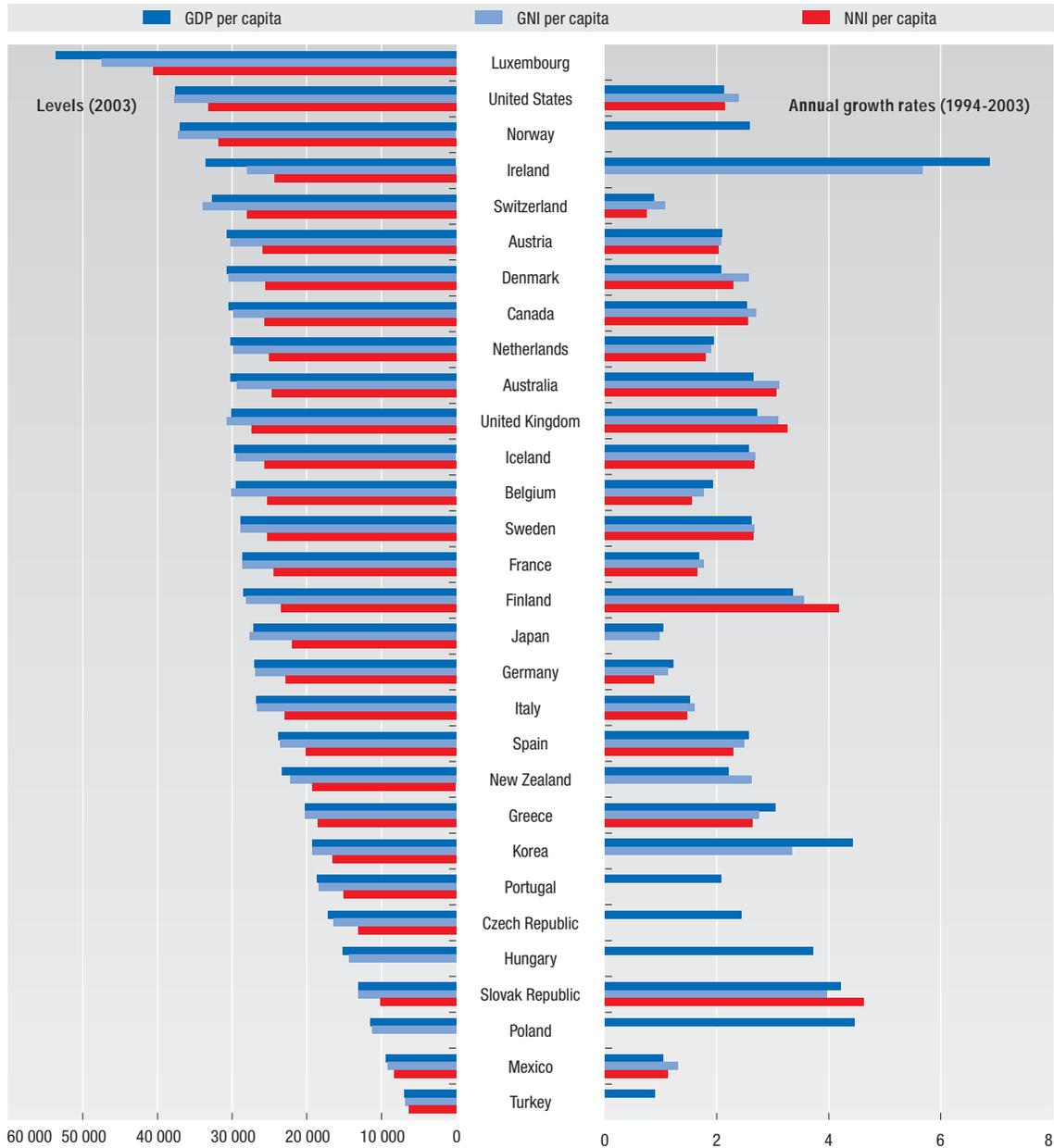
GDP does not reflect the consumption of capital during the production process, and thus overestimates the value of output that actually contributes to well-being without lowering future production. To correct for this, consumption of capital is estimated and then subtracted from GDP to yield the net domestic product (NDP). This is the maximum amount of output that can be spent on consumption while maintaining a country’s productive capacity unchanged. While all countries provide estimates of capital consumption, these are not calculated in the same way, which reduces the international comparability of NDP measures.

Nevertheless, the difference between GDP and NDP per capita does not vary much from one year to another, and neither do country rankings based on the two criteria. NDP per capita in OECD countries is on average 85% of the level of GDP per capita. NDP per capita has, however, grown slightly more slowly than GDP per capita over the past decade, which reflects that capital consumption has grown faster than GDP due to the growing investment in new technologies with a shorter service life.

As with GDP, it is possible to adjust NDP to take into account the affect of “net income from abroad” to obtain net national income (NNI). Keeping in mind the problem with calculating capital consumption, this figure gives, in principle, a more accurate picture of the actual economic resources available to the country as a whole to secure well-being, and shows that GDP per capita does tend to overstate them. Nevertheless, the ranking of countries based on NNI per capita is generally similar to that based on GDP per capita, although the difference is significant for a few countries (Figure 2.3). The growth rates are also broadly similar for the two measures.

Figure 2.3. **Gross domestic product, gross and net national income per capita in OECD countries**

At current prices and current PPPs in USD



Note: Countries are ranked, from top to bottom, in decreasing order of GDP per capita.

Source: OECD annual national accounts.

StatLink: <http://dx.doi.org/10.1787/025143474403>

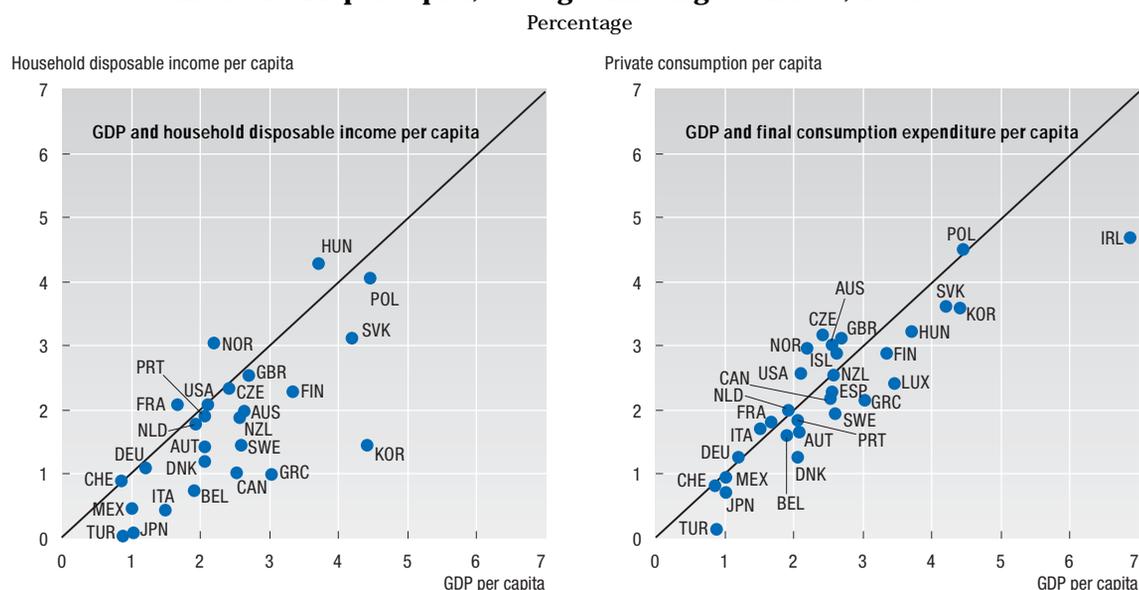
### 3.3. Measures of the economic resources of households

The aggregates described so far provide only an economy-wide measure of production or income. The notion of well-being, however, mainly refers to the situations of individuals and households. Looking at the economic resources of individuals and households, and taking into account the goods and services that people receive free of charge from the government and from non-profit institutions (NPIs), gives a more accurate picture of their

economic well-being. There are three ways to use the national accounts to calculate this: household disposable income per capita; household final consumption per capita; and “actual” household consumption per capita, which includes an estimate of the services provided by government and NPIs.<sup>7</sup>

Not surprisingly, all three of these measures are significantly lower than GDP per capita, especially for final consumption. Nevertheless, all the measures correlate strongly with GDP per capita, even though the gap between disposable income and GDP per capita ranges from 20% in Turkey to 57% in Denmark. Household income and actual consumption have, however, risen less rapidly than GDP per capita in most countries over the past decade (Figure 2.4) – with a gap of as much as one percentage point for a number of countries – reflecting shifts in the allocation of income between households, firms and the public sector.

Figure 2.4. **Real household disposable income, real final consumption expenditure and real GDP per capita, average annual growth rate, 1994-2003**



Source: OECD annual national accounts and OECD (2005), *OECD Economic Outlook*, No. 76, Paris.

StatLink: <http://dx.doi.org/10.1787/602121645683>

### 3.4. Summing-up on monetary indicators

Overall, when we remain confined within the borders of the System of National Accounts, there is a fair degree of convergence in the levels and, to a lower extent, the growth rates of the different measures of country-wide economic resources, whatever the different adjustments made. But the more realistic the picture of the economic resources that households actually have at their disposal to secure their well-being, the less convergence there is with economy-wide measures of resources.

The indicators of economic resources discussed above measure a key factor for securing the well-being of individuals and society. But however important economic resources are, they don't tell the whole story – as the old adage tells us, “money doesn't buy happiness”. This would seem to be particularly true as societies move beyond the point where they are capable of meeting the basic needs of the population for food, shelter and

clothing. Economists have recognised this limit themselves and have endeavoured to develop various other mechanisms for taking into account non-market factors.<sup>8</sup>

## 4. Additional adjustments to national accounts measures

The measures of the economic resources that are derived from the national accounts can be adjusted by attaching a monetary value to various non-monetary factors in order to obtain a better proxy of the well-being of individuals and societies. The main difficulty is how to price different non-market activities, such as leisure, and unrecorded economic activities, such as work in the home. Different estimates generally value the inputs into these activities based on either replacement costs or opportunity costs. Some results suggestive of the impact of some of these non-market factors are presented below.

### 4.1. Well-being and leisure

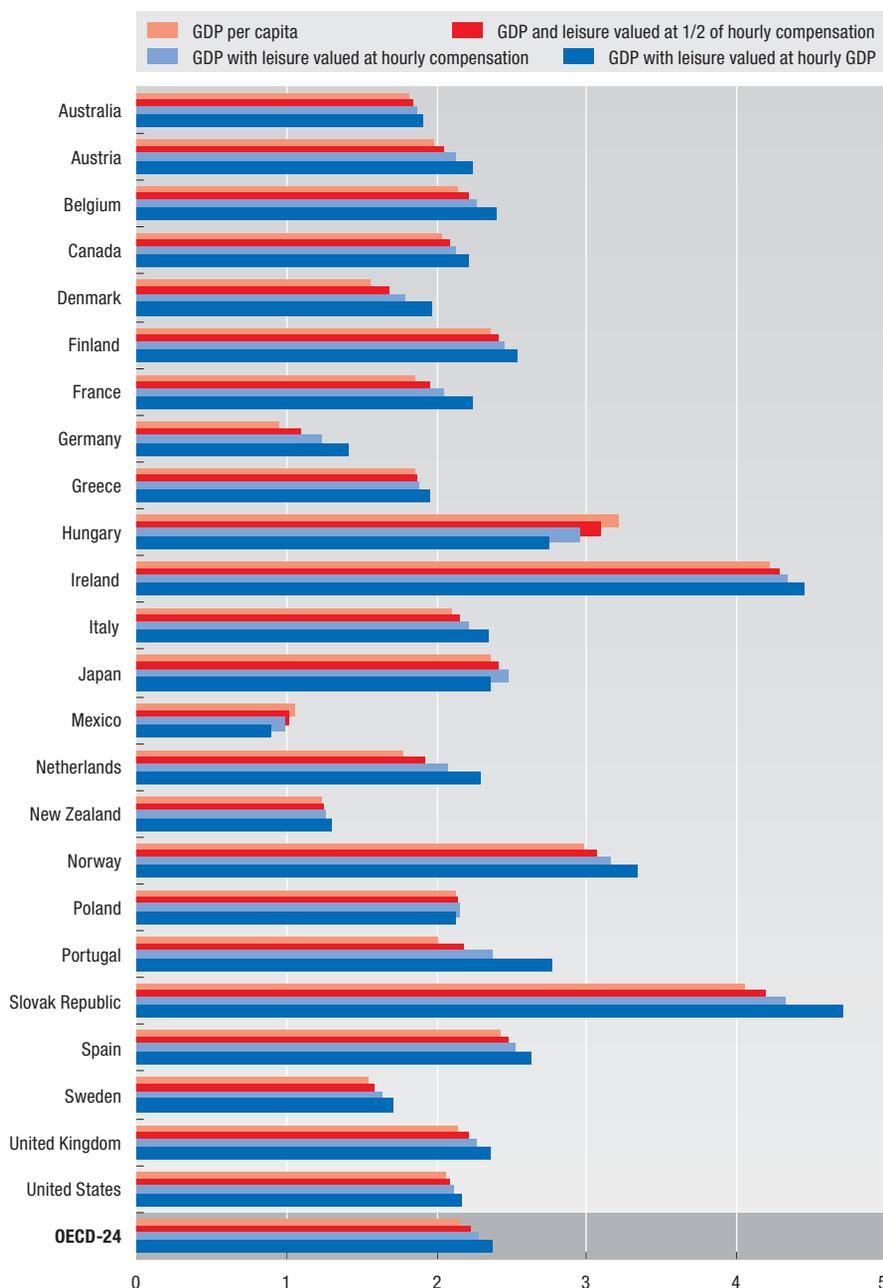
Using GDP-derived measures as proxies for well-being takes no account of leisure time. Yet leisure time is obviously of great importance to almost everyone's well-being. In this sense, it is a "good" that has a certain marginal utility. But how can we measure its quantity? And how should it be valued? We are certainly far from having satisfactory responses to these questions. Still, the large cross-country differences in the annual amount of paid work performed by workers suggest that there are big differences in the amount of leisure time that they enjoy in different countries. Part of the gap in GDP per capita between the United States and most other OECD countries reflects the greater number of hours American workers work each year. How much is this due to differences in culture and/or preferences, and how much to the impact of policies and institutions? While it is impossible to answer these questions precisely, any realistic evaluation of well-being needs to ascribe some monetary value to the leisure time of workers.<sup>9</sup>

This valuation is performed here by adding to GDP per capita an estimate of the quantity of leisure time annually enjoyed by each worker valued in three different ways: at GDP per hour worked, at the hourly compensation of each worker and at half of hourly compensation (to allow for the possibility that lower working hours in some countries reflect the impact of taxes and other policies). Plotting the gaps relative to the United States in "leisure-adjusted" GDP per capita using these three approaches shows that any positive valuation to leisure narrows the gaps relative to those based on GDP per capita (the higher the valuation placed on leisure, the narrower the gap). The average annual growth in "leisure-adjusted" GDP per capita tends to exceed that of GDP, with the difference being especially large in some European countries (Figure 2.5).

### 4.2. Well-being and household size

Estimates of per capita household income in the national accounts are obtained by summing up income across all households and dividing the total among the resident population. This approach does not take into account any variation in household size. In fact, households of different sizes have different abilities to pool resources and do not need the same income to assure the same level of well-being for their members. For instance, a household consisting of a couple with two children does not necessarily need twice the income of a childless couple to achieve the same level of well-being. One way this factor can be taken into account is by applying a common "equivalence scale" to survey data on household income to calculate what is called the "equivalised household disposable income" of each person.

Figure 2.5. **Average annual growth rate of GDP adjusted for leisure time of workers, 1970-2003**



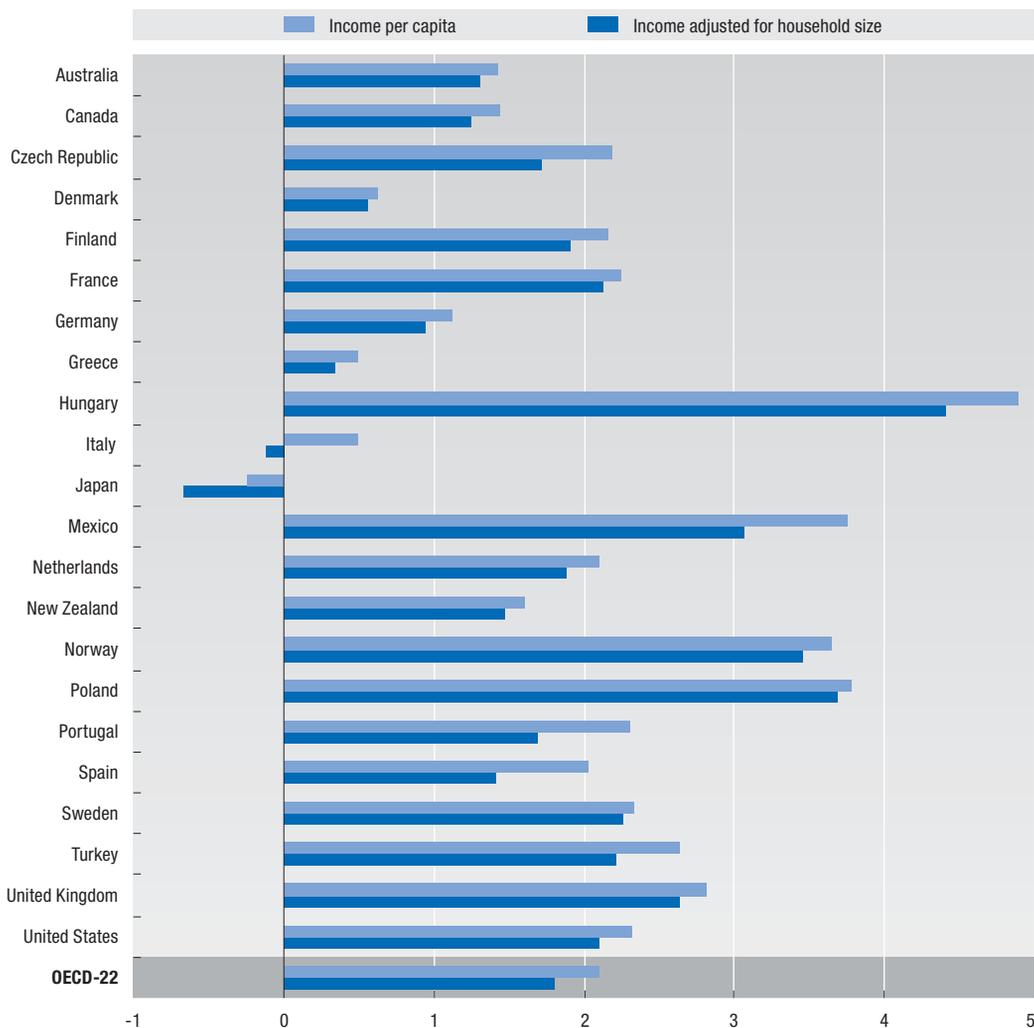
Note: The quantity of leisure time of workers is estimated by deducting from the time-endowment of each worker a (common) estimate of the time devoted to personal care and unpaid activities and (country-specific) estimates of annual working hours per worker. Leisure time is valued using three different prices: hourly compensation of employees; half of hourly compensation; and GDP per hour worked. While the time period considered extends from 1970 to 2003 for most countries, it is shorter for some (Austria, the Czech Republic, Germany, Greece, Hungary, Korea, Luxembourg, Mexico, New Zealand, Portugal and the Slovak Republic). For further details, see Boarini et al. (2006).

Source: OECD Productivity database and annual national accounts.

StatLink: <http://dx.doi.org/10.1787/568566035223>

Equivalence scales are computation devices, and there is little empirical consensus on their “true” value; they may also vary from country to country as well as over time. While the levels of equivalised disposable income are therefore not especially informative – estimates show that, as might be expected, equivalised household disposable income exceeds the non-equivalised measure, which assumes that everyone lives alone, and that the difference is greater in countries where the average household size is larger – changes in equivalised disposable income over time show that the general trend towards smaller family sizes has reduced economies of scale and well-being in all countries, sometimes by a considerable margin (e.g. Italy and Mexico, Figure 2.6).

Figure 2.6. **Real annual change of per capita household disposable income and adjustments for changes in household size, 1995 to early 2000s**



Note: Survey data on household disposable income refer to discrete years (in the mid-1980s, mid-1990s and early 2000s) that may differ across countries. To allow comparisons between the years shown, these data have been interpolated between available observations and (when necessary) extrapolated to 2002. Data on the average size of private households (as available through these surveys) have been applied to the national accounts “aggregate” measure of household disposable income (to avoid the comparability problem of differences in survey- and national account-based measures of household disposable income).

Source: Calculation based on OECD national accounts and OECD questionnaire on income distribution and poverty. StatLink: <http://dx.doi.org/10.1787/534122818370>

### **4.3. Inequality in the distribution of economic resources**

Income is not distributed equally in any OECD country, and OECD-wide trends since the mid-1980s indicate that the degree of inequality has increased, particularly in a few countries (Förster and Mira d'Ercole, 2005). Conventional measures of GDP per capita attach the same weight to each unit of income, regardless of how equally it is distributed. Yet many theories of social justice would argue for giving an added weight to income that goes to the poorest strata, especially in more unequal societies. For example, in a situation where the income of the richest decile of a population rises by amounts equal to the declines in income of the poorest decile, per capita income remains constant, whereas most observers would agree that the general well-being of the society has declined.

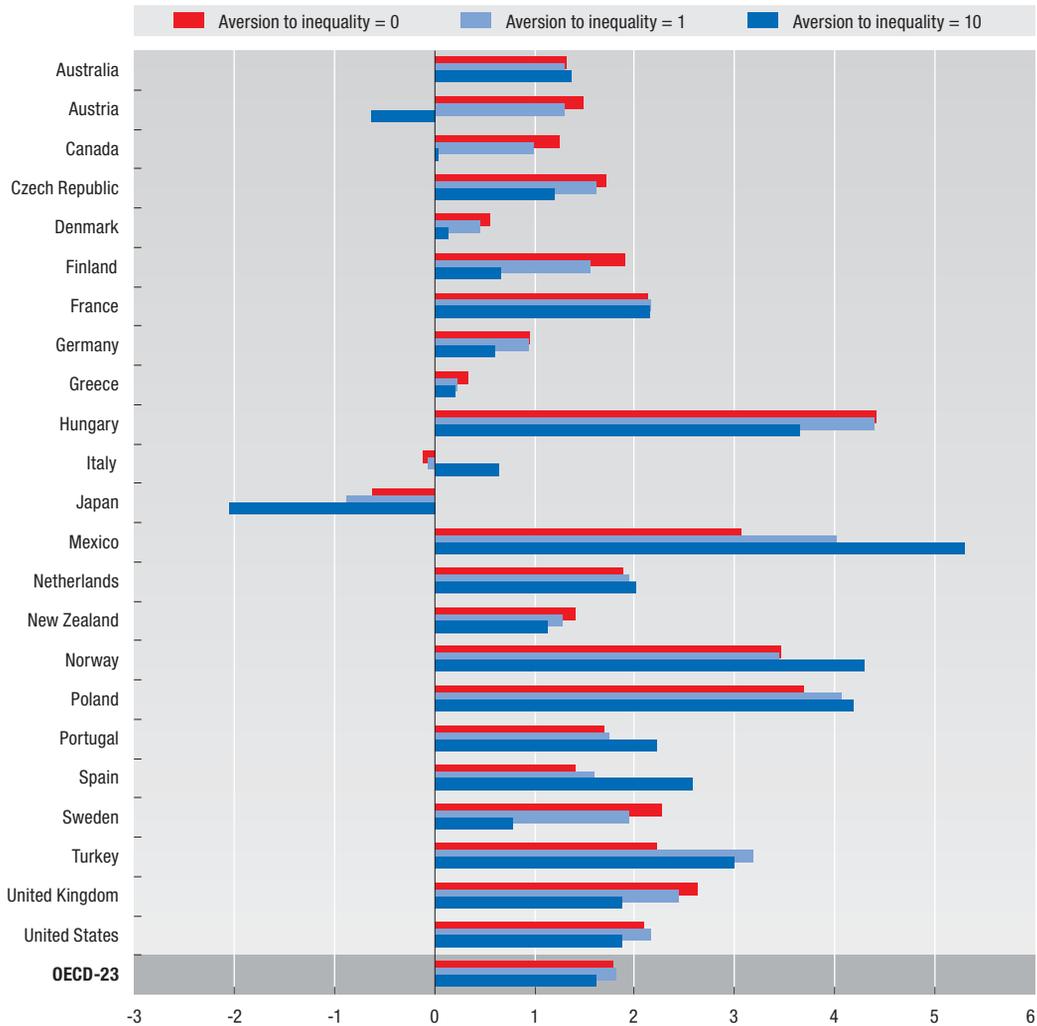
To take the issue of unequal distribution into account, it is possible to adjust GDP and household income by weighting the average income of each decile of the distribution by a coefficient that represents the degree of social aversion to inequality (Kolm, 1969). Figure 2.7 shows the results of calculations performed using three different weightings to adjust household disposable income to reflect the society's aversion to inequality. A higher value for this coefficient implies a higher degree of aversion to inequality, and therefore that less weight is given to higher incomes. So in countries where income growth has been skewed towards the better-off, applying the higher value of the coefficient will reduce the annual change in household income (the United Kingdom, the Czech Republic, the United States) while in those where the poorer deciles have benefited more it will tend to increase the annual change (Mexico, Spain, Norway). While a low or even intermediate degree of aversion to inequality does not change the country rankings much, a higher degree of aversion to inequality leads to significant changes. Using a coefficient to reflect the highest degree of aversion also lowers the adjusted growth rate for disposable income for the period 1985-2002 to 0.6%, as compared with 1.4% for conventional income, with greater declines in some countries (Figure 2.7). In conclusion, while the degree of inequality in income distribution can have a significant impact on the assessment of well-being, as compared with measures using conventional income, the extent of the impact depends crucially on the assumption of the degree of aversion to inequality in the given society.

### **4.4. Well-being and the environment**

Well-being does not depend only on social and economic factors but also on environmental ones. Indeed, historically, much of the research on expanded measures of well-being has been driven by concerns about environmental degradation. Concern about sustainable development emphasises the need to take into account resources and capital stocks that are not included in the production boundary of conventional economic accounts. Although a sustainable development approach has direct implications for the measurement of income – in particular in terms of resources and environmental values that are affected by production but not calculated in market exchanges – there are not yet established mechanisms for integrating these concerns into measurements of economic resources.<sup>10</sup> Further, as in the social area, the relation between environmental quality and economic development is complex. Higher GDP levels generally tend to stress the environment more, but also increase the capacities and resources for dealing with environmental problems.

Figure 2.7. **Real annual change in household disposable income for different values of the coefficient of aversion to inequality**

Average annual growth rate, 1995 to 2002



Note: National values of "equally-distributed" household disposable income are computed as the average of the values for each decile, using coefficients of aversion to inequality of 0, 1 and 10, respectively. Levels of household disposable income for each decile are computed as the product between national-account estimates of household disposable income, adjusted for household size, and survey-based estimates of the ratio between the disposable income of each decile to the mean. Data for household disposable income are converted into a common currency using purchasing power parities (PPPs) for private consumption expenditures; data for GDP per capita are based on PPPs for GDP.

Source: Calculations based on OECD national accounts and OECD questionnaire on income distribution and poverty.  
StatLink: <http://dx.doi.org/10.1787/533254380580>

#### 4.5. Summing up on adjustments to monetary measures

The various approaches described in the above section to take into account some of the factors that affect well-being but are omitted in conventional accounts are rooted in economic theory. But the different methods for valuing these factors inevitably lead to different conclusions. In addition, other factors that are of importance are still ignored, such as production in the home, defensive expenditure (i.e. spending undertaken to remedy some of the damage associated with economic growth) and environmental factors.

While these are difficult to measure, ignoring them may lead to misleading conclusions in so far as they vary over time and between countries.<sup>11</sup> This is particularly the case when these factors are directly affected by economic activities.

## 5. Well-being and happiness

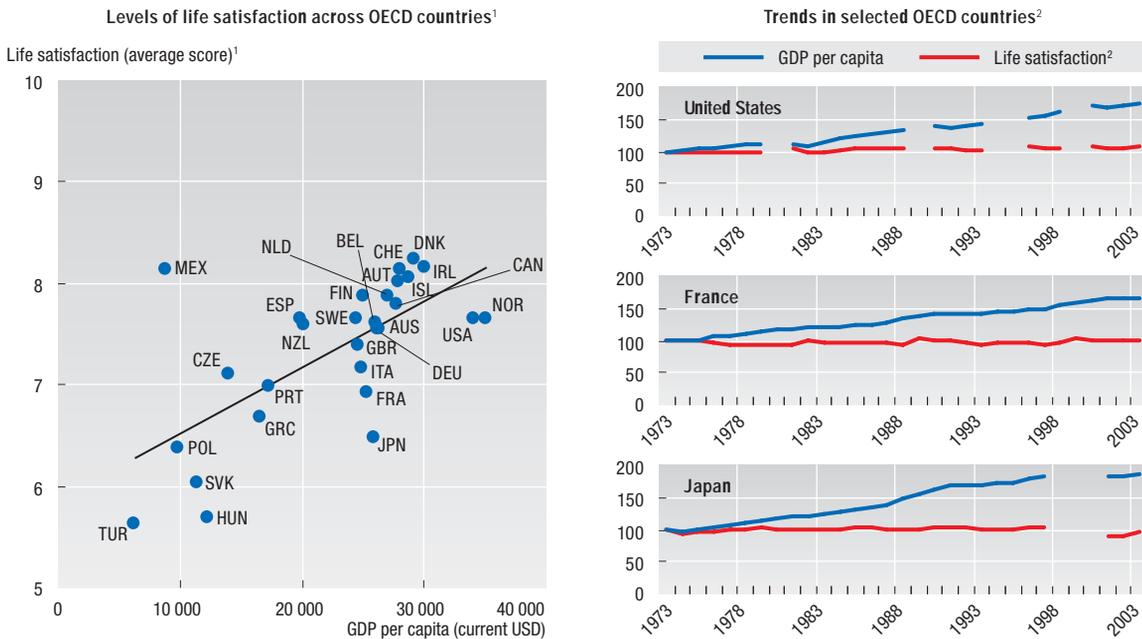
Instead of using objective measures as proxies for well-being, a third approach is simply to ask the individuals themselves how satisfied they are with their lives. Subjective measures of well-being are of course fraught with methodological difficulties. They could reflect different underlying concepts, be influenced by transient factors, or be affected by linguistic or cultural differences. Nevertheless, studies have shown that individuals who report higher levels of satisfaction with their lives are also rated as happier by their relatives and friends, tend to smile more during social interactions, have higher pre-frontal brain activity (the part of the brain associated with positive states), are more likely to recall positive life events, and have a higher resilience to stress (Layard, 2005). Several global surveys exist, such as the World Values Surveys, that utilise comparable criteria and ask a representative sample of people such questions as how satisfied they are with their lives.

Comparisons of subjective measures of life satisfaction with average income at the national level reveal two findings:

- Across countries, people living in countries with a higher GDP per capita tend to report being happier at a given point in time, but the size of the gain in subjective well-being tends to decline once GDP per capita exceeds USD 10 000 (Frey and Stutzer, 2002). This tapering-off is however less clear when referring only to OECD countries (Figure 2.8, left-hand panel), and varies with the measure of national income used (i.e. GDP or NNI per capita).
- Across time, the coexistence of a rapid rise in GDP per capita with stable levels of subjective well-being has been interpreted as evidence that greater material prosperity does not necessarily make people happier (see the right-hand panel of Figure 2.8 for an illustration based on data for selected OECD countries). The stability of the indicator for subjective well-being may however reflect to some extent that it is measured using a bounded variable (i.e. respondents are asked to rank their life satisfaction on a scale – e.g. by 1 to 10 – that is unchanged over time) whereas income is measured with an unbounded variable (GDP per capita).

While the conclusions concerning the link between income and subjective life satisfaction based on aggregate cross-country data remain controversial, there is firmer evidence about the determinants of happiness and life satisfaction at the level of individuals.

- First, while individual data do highlight a relation between income and well-being, they also show that the differences in reported well-being between individuals are not proportional to the differences in their income. Furthermore, changes in individual income do not bring comparable changes in subjective well-being, and depend strongly on the direction of changes in income – a loss has a much bigger effect than a comparable gain. This probably arises because individuals adapt to a certain level of income (“satisfaction treadmill”), and higher income levels lead to expectations that are more difficult to fulfil. Another factor at work here is the desire to “keep up with the Joneses”, although social comparison may sometimes work to increase subjective well-being too.

Figure 2.8. **Subjective well-being and GDP per capita across and within OECD countries**

1. Data on levels of life satisfaction are based on replies to the question: "All things considered, how satisfied are you with your life as a whole these days?" Average life satisfaction is measured as the weighted sum of ten satisfaction levels (from a level of zero, for persons reporting to be fully dissatisfied, to a level of ten, for those reporting to be fully satisfied) each weighted by the share of respondents indicating that level. GDP per capita is measured at USD at current PPP rates in 2000.
2. Data on trends in life satisfaction refer to survey answers to questions about satisfaction with life as a whole (assessed in terms of two categories of replies in the United States and of four categories for the other countries).

Source: Data in the left-hand panel are from the 1999-2001 World Values Surveys and the World Bank (2004), *World Development Indicators*; those in the right-hand panel are from the World Database of Happiness ([www2.eur.nl/fsw/research/happiness/trendnat](http://www2.eur.nl/fsw/research/happiness/trendnat)).

StatLink: <http://dx.doi.org/10.1787/108105853035>

- Second, differences in the personal income of individuals explain less of the difference in reported well-being than a range of other factors, such as employment, family relationships, health and education, and income inequality (Di Tella and MacCulloch, 2005). However, some of these factors are themselves correlated with differences in GDP per capita levels.

## 6. Conclusions

Overall, there is some consistency between the four approaches to measuring well-being (social indicators, money income, money income adjusted for different non-market factors and subjective measures) but also some important differences. While research based on social and subjective measures in particular is still in its infancy, the consideration of non-material factors strongly suggests that money income is not the only relevant factor. Furthermore, they also show that, as the English poet John Donne observed centuries ago, "no man is an island, entire of itself; every man is a piece of the continent": people's happiness depends to a large extent on the circumstances of the broader community they are part of and their relationship to it. Because of these reasons, the social indicators presented in this and subsequent editions of *Society at a Glance* may be expected to play an increasingly important role within any assessment of how individuals and society are faring.

## Notes

1. This is, of course, only one of the goals of OECD social indicators. In addition to measuring the “social status” of OECD countries, the two other goals are describe the “social context” and “societal responses” to various problems (see Chapter 1).
2. This chapter draws on analysis provided in Boarini et al. (2006).
3. A full list of indicators published in all issues of *Society at a Glance* is provided in Table 1.1.
4. This conclusion is further reinforced when the analysis is limited to OECD countries with GDP per capita above a level of USD 25 000; in this case, none of the correlations between levels of social indicators and GDP per capita is statistically significant.
5. Practical guidance on the construction of composite indicators is provided by Hoffman et al. (2005).
6. The correlation coefficient between (normalised) GDP per capita and the median value of the composite index is 0.76.
7. The same adjustment for the services provided by governments and NPIs can also be applied to household disposable income.
8. A comprehensive approach to the construction of non-market accounts in the fields of home production, human capital, the environment, health and education, government and the non-profit sector is described in Abraham and Mackie (2005), which summarises the conclusions of a panel of the National Research Council for the United States.
9. Accounting for the leisure time of non-employed persons would have required controversial assumptions on whether unemployment is voluntary or involuntary, and to distinguish between the home production and the leisure time of housewives. An earlier assessment of the impact of leisure time (and income inequality) on well-being was provided by Beckerman (1978).
10. Practical steps to better integrate physical measures of environmental stress within national accounts are described in the 2003 *Handbook of Integrated Environmental and Economic Accounts* (a co-publication by United Nations, European Commission, IMF, OECD and the World Bank). However, such satellite accounts are not widely used in OECD countries.
11. Nordhaus and Tobin (1973) in their seminal contribution on measures of economic welfare adjust national accounts aggregates for leisure time, defence and other intermediate expenditures, household production and some of the dysfunctions arising from urbanisation. They conclude that their preferred measure of economic welfare per capita increased in the United States at an annual rate of 1% from 1929 to 1965, as compared with 1.7% in personal consumption per capita and 1.6% in net national product per capita.

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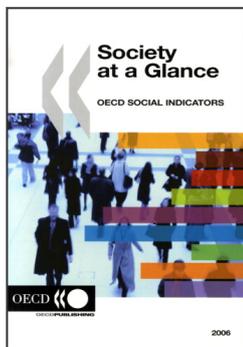
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