

MEASURING WELL-BEING AND SOCIETAL PROGRESS

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Introduction

For many years, using a monetary measure like GDP per capita as a proxy for the population's well-being made much sense, at least for developed countries. 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 also for economists, 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 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. At the same time, concerns have emerged on how economic growth led in many countries to environmental depletion, an element that is not included at all in GDP.

Several studies have been published over the last two decades on alternative measures of well-being/ quality of life/ sustainable development/ societal progress, all terms closely related to each other. Academic researchers, official statisticians and international organisations have proposed alternative measures, which can be classified according to different criteria. A consensus has not emerged yet on the best way to go, but with the "Istanbul Declaration" – signed in June 2007, at the end of the II OECD World Forum on "Statistics, Knowledge and Policy" by the European Commission, the OECD, the Organisation of the Islamic Conference, the United Nations, the United Nations development Programme and the World Bank – one can say that the need to go "beyond GDP" is now fully recognised at political level.

This paper presents a synthetic review of different approaches to the measurement of well-being. The review does not quote all initiatives and proposals, but provides an overview of what alternative approaches propose and some empirical evidence, as well as some information about research projects currently underway in the international statistical community. The first part of this paper considers four approaches to measuring well-being, especially looking at the social side of it.¹ First, it presents evidence on the importance for well-being of social indicators 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

¹ This paper draws on analysis provided in Boarini *et al.* (2006) and in OECD (2006a).

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.

The second part of the paper deals with more recent initiatives undertaken at international level to measure sustainable development, especially to incorporate environmental concerns and phenomena. Finally, the third part describes recent OECD initiatives: the main conclusions of the recent Istanbul Forum and the content of the Global Project launched by the OECD to measure the “Progress of Societies”.

1. ALTERNATIVE MEASURE OF WELL-BEING

1.1 Social indicators

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. Social indicators aim to provide information on well-being beyond that conveyed by conventional economic measures.²

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.

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* though 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.

Social indicators provide a complementary approach to GDP-derived proxies for well-being. In this section, four indicators have been chosen for each of the four domains – self-sufficiency, equity, health status and social cohesion – used by the OECD to classify its own social indicators.³ 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 Chart 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

² 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.

³ A full list of indicators published in all issues of *Society at a Glance* is provided in Table 1.1 of OECD (2006).

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 among 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.
- *Health status* reflects not only disease and its cure, but other social factors that can affect mortality and morbidity. The four 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 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.

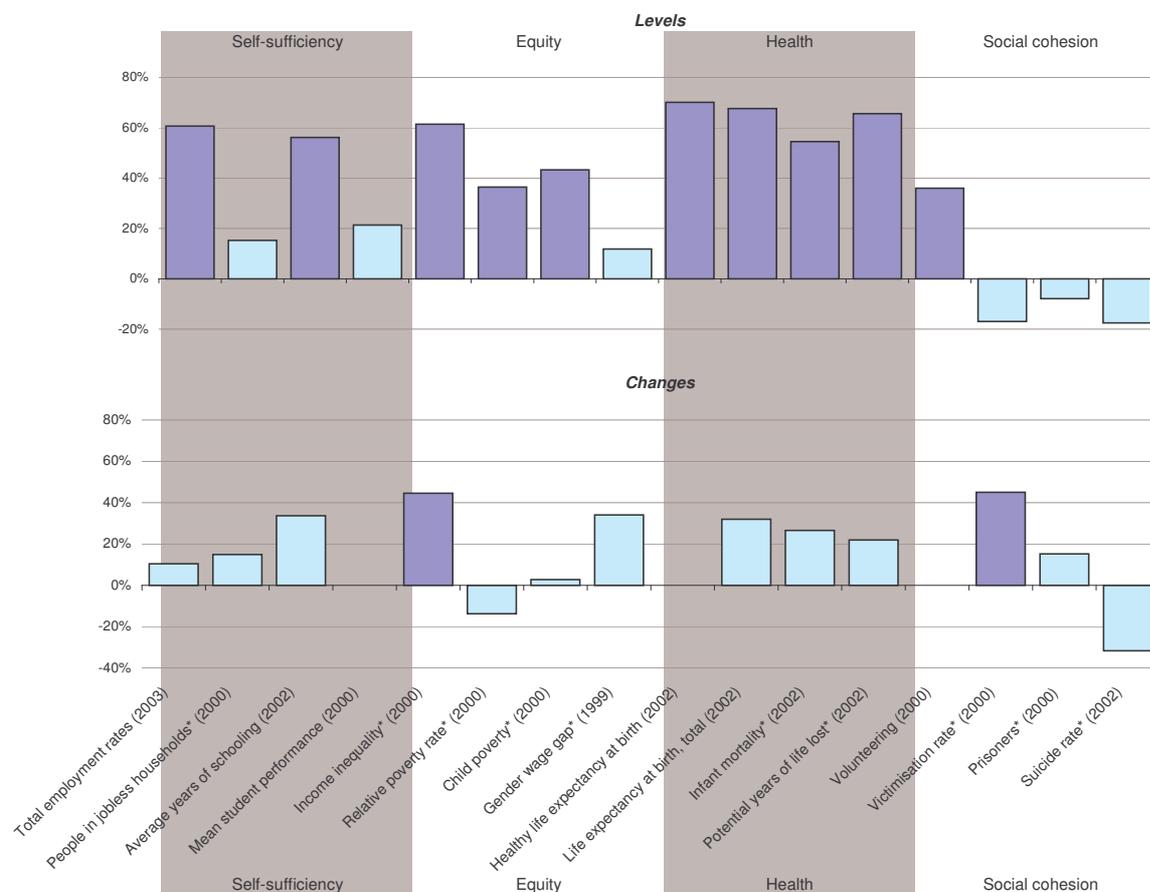
Overall, social indicators provide information about a number of dimensions of well-being that seem to go beyond what is conveyed by GDP.⁴ The main weakness of social indicators is, however, that they do not allow a parsimonious representation of well-being, because of the lack of agreement on how to aggregate these indicators. A simple synthetic measure can be constructed by normalizing and then aggregating the

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.

16 indicators described above into a composite index that can be compared across countries.⁵ 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).

⁵ Practical guidance on the construction of composite indicators is provided by Hoffman *et al.* (2005).

Chart 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).

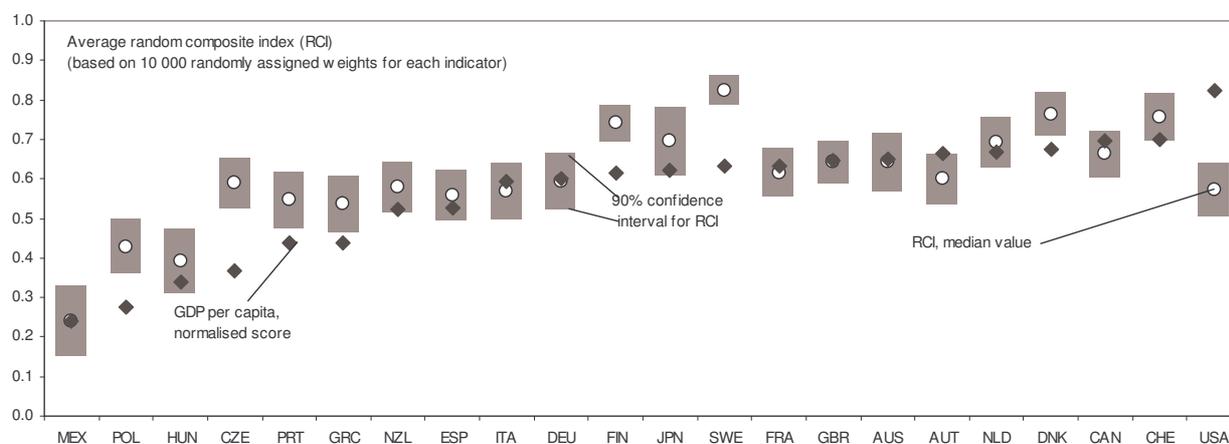
For variables where higher values of the indicator denote worse social outcomes (e.g. infant mortality, prisoners, denoted with an “*”), correlations with per capita income are shown with the opposite sign (e.g. countries with higher per capita income have lower infant mortality rates – shown with a 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*.

Chart 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 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.⁶ 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).

⁶ The correlation coefficient between (normalized) GDP per capita and the median value of the composite index is 0.76.

Chart 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 Chart 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*.

1.2. 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.

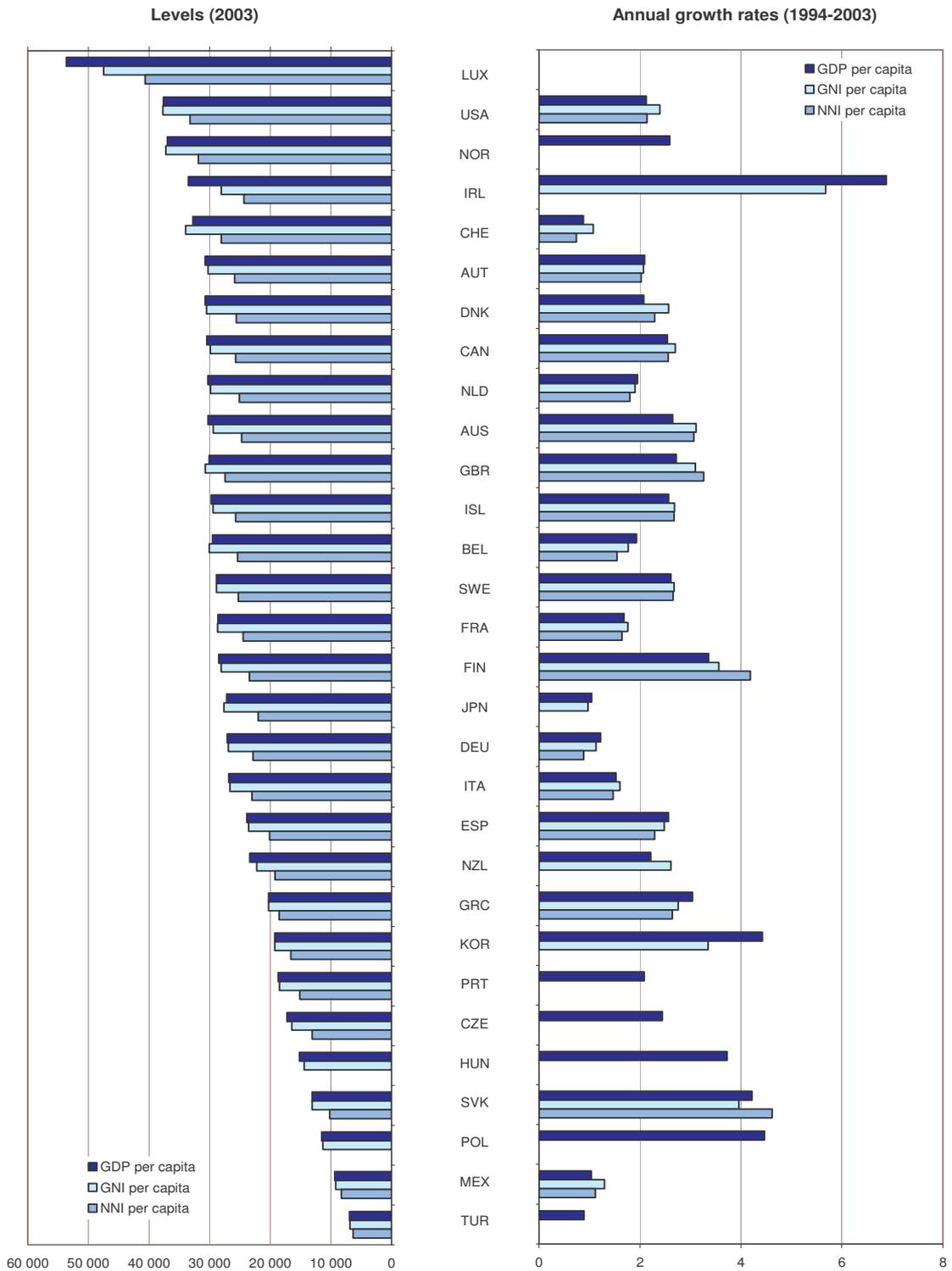
1.2.1. Gross national income: adjusting for net transfers from abroad

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, Chart 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.

Chart 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.

1.2.2. 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 (Chart 3). The growth rates are also broadly similar for the two measures.

1.2.3. Measures of the economic resources of households

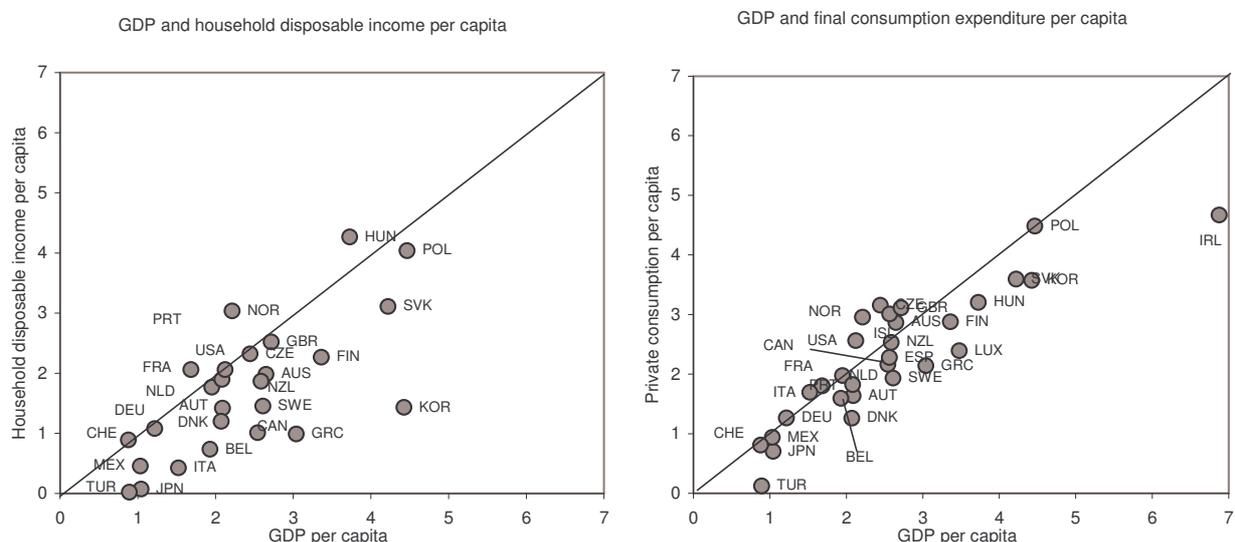
The aggregates described so far provide only an economy-wide measure of production or income. The notion of well-being, however, mainly refers to the situations of individuals and households. Looking at the economic resources of individuals and households, and taking into account the goods and services 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 to households by government and NPIs.⁷

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 (Chart 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.

⁷ The same adjustment for the services provided by governments and NPIs can also be applied to household disposable income.

Chart 4. Real household disposable income, real final consumption expenditure and real GDP per capita, average annual growth rate, 1994-2003

Percentage



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

1.2.4. 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 country-wide measures of economic 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.⁸

1.3. 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-

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.

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.

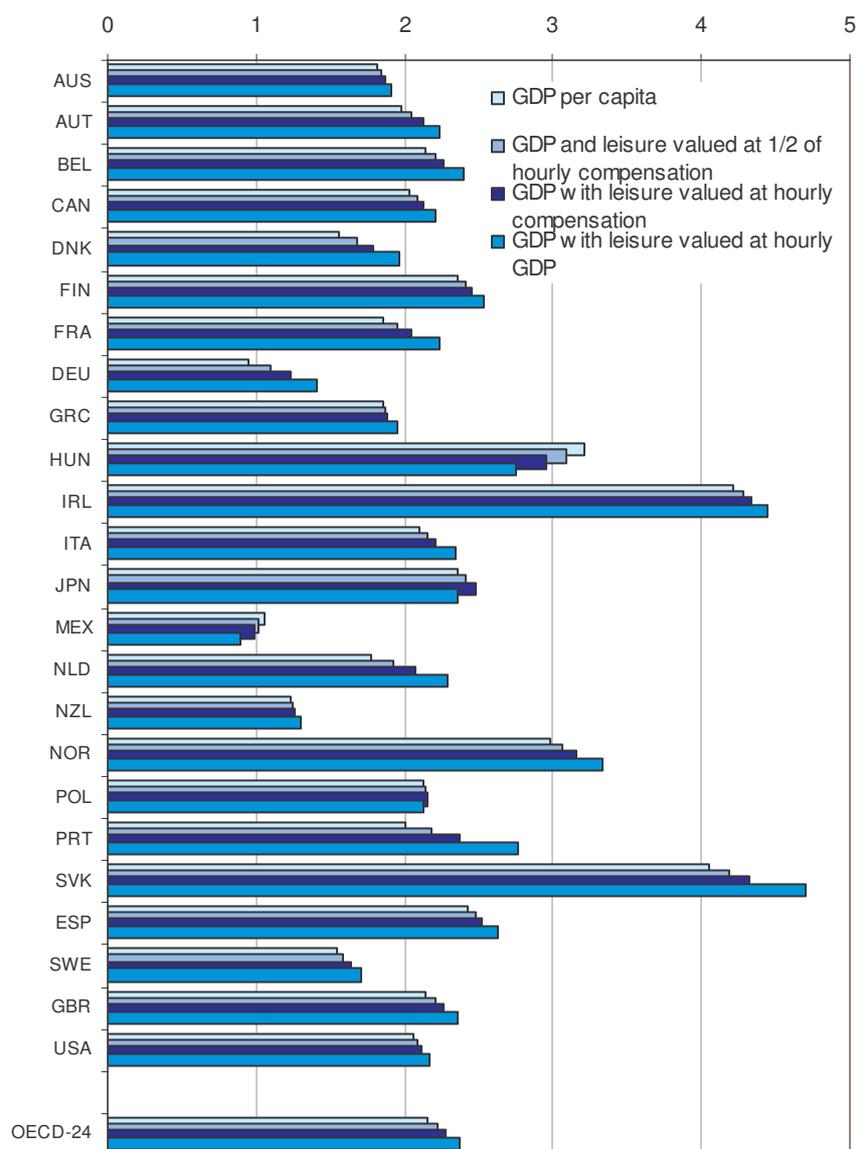
1.3.1. Well-being and leisure

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.⁹

This valuation is performed here by adding to GDP per capita an estimate of the quantity of leisure time annually enjoyed by each worker. This quantity of leisure time is 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 may 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 (Chart 5).

⁹ Accounting for the leisure time of non-employed persons would require 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).

Chart 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, Czech Republic, Germany, Greece, Hungary, Korea, Luxembourg, Mexico, New Zealand, Portugal and Slovak Republic). For further details, see Boarini *et al.* (2006).

Source: OECD Productivity database and annual national accounts.

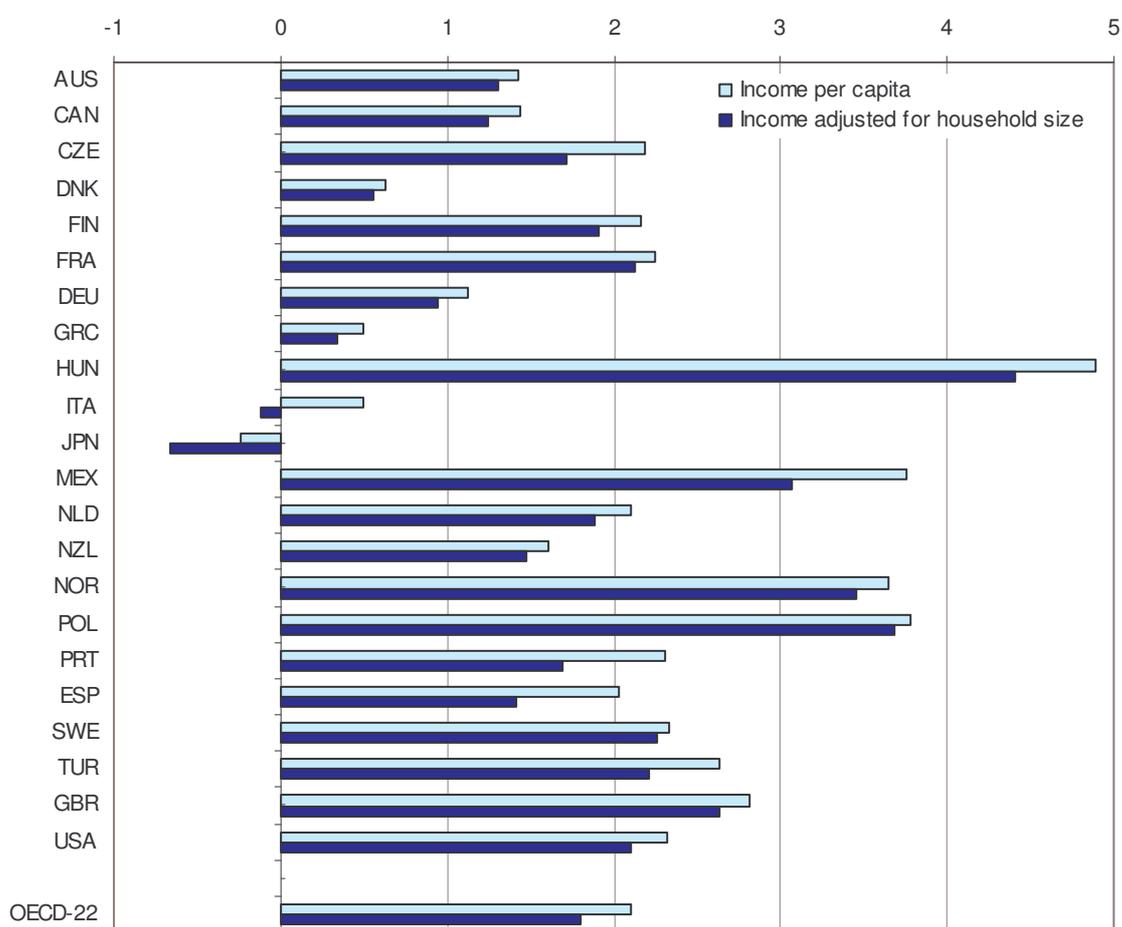
1.3.2. Well-being and household size

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.

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, Chart 6).

Chart 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.

1.3.3. 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, when the income of the richest decile of a population rises by amounts equal to the declines in income of the poorest decile, average per capita income remains constant – whereas most observers would agree that the general well-being of the society has declined.

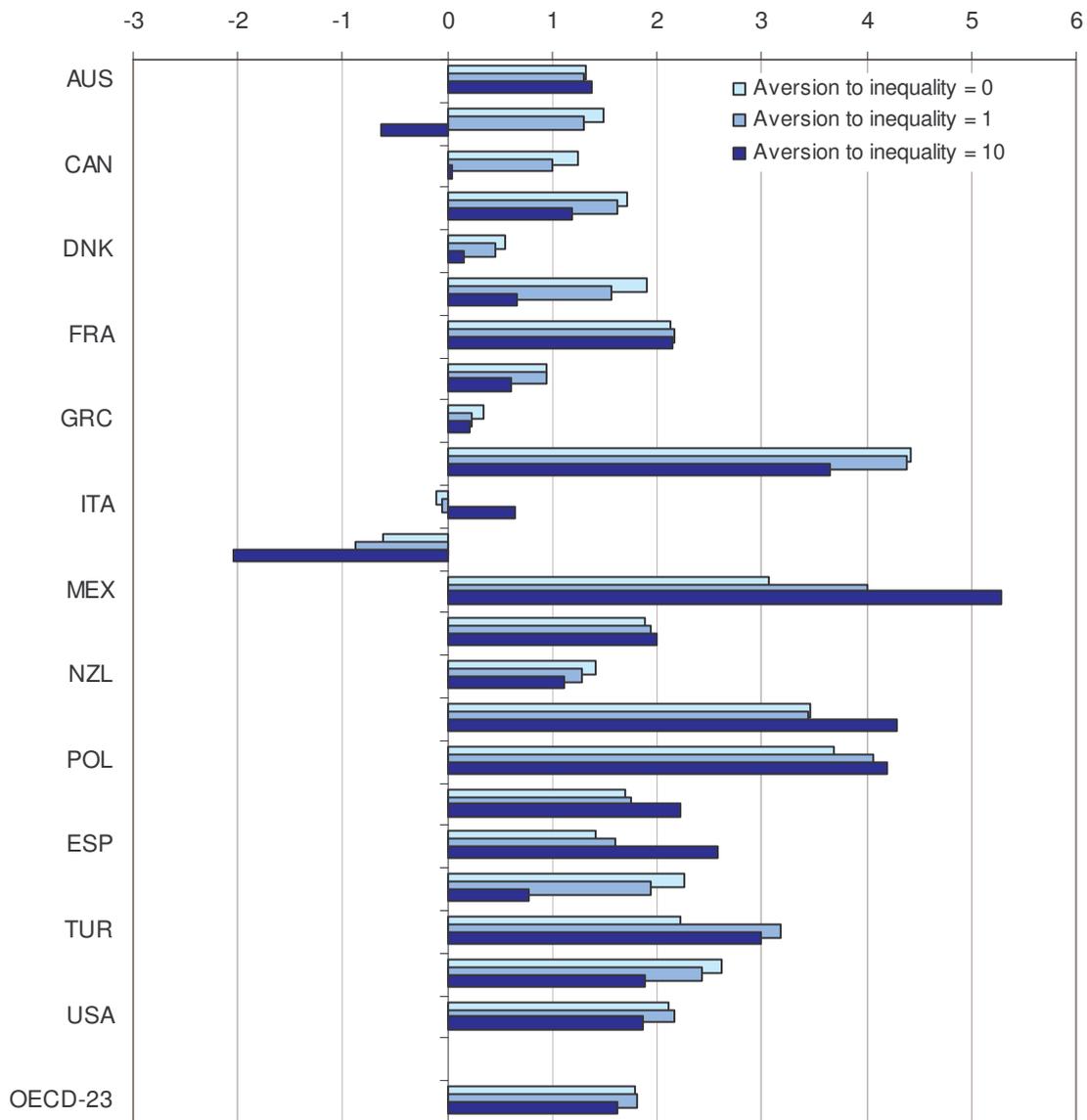
To take the issue of unequal distribution into account, it is possible to adjust GDP and household income by weighting the average income of each decile of the distribution by a coefficient that represents the degree of social aversion to inequality (Kolm, 1969). Chart 7 shows the results of calculations 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 (Chart 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.

1.3.4. 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. 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 (see below).

Chart 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.

Over the last 10-15 years, international statisticians have extended the boundaries of national accounts to include environmental phenomena. Particularly important has been the publication in 2003 of the System of Economic and Environmental Accounts (SEEA) by the European Commission, the International Monetary Fund, the OECD, the United Nations and the World Bank. More recently, the work of the “London Group” (on environmental accounts – water, etc.) and of the OECD (on material flows accounts)

and Eurostat, as well as the establishment of the UN Committee on Integrated Economic and Environmental Accounts, confirms that statisticians are paying a lot of attention to these aspects, although the concrete implementation of internationally agreed frameworks (far from being satisfactory) largely depends on the decisions taken by individual countries and on the available resources for statistics. Other ongoing initiatives aimed at improving the measurement of "sustainable development" are described in a later section of this paper.

1.3.5. 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 and defensive expenditure (*i.e.* spending undertaken to remedy some of the damage associated with economic growth). While these are difficult to measure, ignoring them may lead to misleading conclusions in so far as they vary over time and between countries.¹⁰ This is particularly the case when these factors are directly affected by economic activities.

1.4. 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.

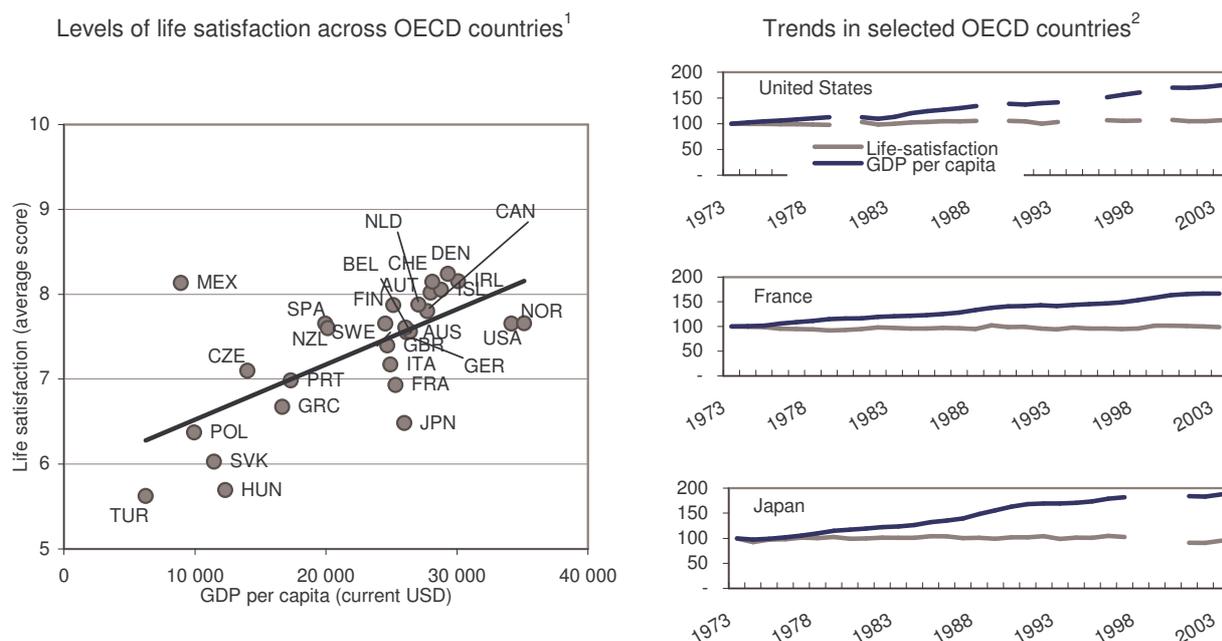
Comparisons of subjective measures of life satisfaction with average income at the national level reveal two findings:

- 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 (Chart 8, left-hand panel), and varies with the measure of national income used (*i.e.* GDP or NNI per capita).

¹⁰ 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.

- 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 Chart 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).

Chart 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/trendna1).

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 income changes – a loss has a much bigger effect than a comparable gain. This 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.

- 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.

2. Measuring Sustainable Development

According to the definition of the World Commission on Environment and Development (WECD) *Sustainable Development is a development path that meets the needs of the present without compromising the ability of future generations to meet their own needs.* Therefore, it implies a broad view of human welfare, a long term perspective about the consequences of today's activities, and global co-operation to reach viable solutions.

Over the last 15 years several OECD countries have developed indicators for measuring progress towards sustainable development. Much of the impetus behind these efforts is a consequence of the 1992 World Summit on the Environment and Development (Rio de Janeiro), where a specific agency (the United Nation's Commission on Sustainable Development, UNCSD) was established to monitor countries' efforts in developing and using sustainable development indicators. On the need for new indicators the Agenda 21 states that (cf. paragraph 40.4):

“Commonly used indicators such as the gross national product (GNP) and measurements of individual resource or pollution flows do not provide adequate indications of sustainability. Methods for assessing interactions between different sectoral environmental, demographic, social and developmental parameters are not sufficiently developed or applied. Indicators of sustainable development need to be developed to provide solid bases for decision-making at all levels and to contribute to a self-regulating sustainability of integrated environment and development systems.”

The full implementation of Agenda 21 was strongly reaffirmed at the World Summit on Sustainable Development held in 2002, ten years after the Rio de Janeiro meeting.

UNCSD first published in 1996 a set of sustainable development indicators and corresponding methodology sheets. This set was subsequently tested by 22 “official” test countries and by a number of other countries outside the official test-group. Based on these tests, the original set of indicators and methodologies were revised: the number of indicators was reduced (from 132 to 58), and the groupings of indicators restructured. Since 1999 the OECD has devoted a lot of attention to SD indicators and measures (see OECD, 2000), OECD (2001) and OECD (2004). More recently the European Commission has developed its own set of SD indicators.

Furthermore, international statisticians are working to develop more comprehensive and solid measures of SD, using national accounts based frameworks (such as the System of Economic and Environmental Accounts – SEEA). An important initiative in the field of measuring sustainable development is the OECD/UNECE/Eurostat Working Group on Statistics for Sustainable Development (WGSSD). This Working Group has its origins in a workshop on accounting frameworks for sustainable development hosted by the OECD in 2003 and in two events that refocused attention on the subject in 2004 and 2005: an international conference on the measurement of sustainable development hosted by the

Norwegian Ministry of Finance and the OECD; and a seminar on the same topic organised by the Conference of European Statisticians (CES) within the United Nations Economic Commission for Europe (UNECE).

Two conclusions were clear in the results of all of these events: one is that there is a role for statistical agencies in the measurement of sustainable development; the other is that this measurement must proceed on the basis of a conceptually rigorous framework. The CES agreed to set up a working group to explore the issue of conceptual frameworks for measuring sustainable development, and in particular the capital approach. More specifically, the group was given the mandate to identify good concepts and practices in order to assist national governments and international organizations in the design of supporting official statistics in the area under the framework of the SD indicators. The final report is expected to be published in 2008.

3. Recent OECD initiatives

3.1. *Milan Conference on Measuring Wellbeing and Societal Progress*

In June 2006 the OECD, the Centre for Research on Lifelong Learning (CRELL) and the Joint Research Centre of the European Commission (JRC) organised an international conference on "Measuring Well-Being and Societal Progress". Some 120 people from more than 20 countries attended. Broadly speaking, the workshop demonstrated:

- There is a large – a significantly large – and growing body of interest in measuring wellbeing and progress. This interest is no longer solely the domain of social researchers. Policy makers and politicians, NGOs and official statistical offices are getting more and more involved.
- The international community is, to borrow from Robert Prescott-Allen's presentation, "at the kindergarten stage... [we are] running around and bumping into one another". Some leadership would be useful.
- Although expanding the system of national accounts to better measure well-being will not address every issue, it has the advantage of beginning from an agreed and well understood conceptual framework. Some refinements – such as producing alternative measures of GDP with adjustments for different levels of income distribution – could quite easily be introduced in the short term.
- No similar framework exists for 'indicator-based' attempts to measure wellbeing. There is no agreed foundation: for example no consensus around what the term 'wellbeing' encompasses – with several researchers at the workshop espousing different sets of 'pillars of wellbeing'. Some international work in this area might be beneficial.
- The international community remains a very long way from the goal of having a single set of indicators of wellbeing suitable for every country. But some guidelines could be useful. There is a good deal of resistance to composite indicators of wellbeing, particularly where they seek to combine indicators from different domains (that is, some people supported a composite indicator of economic wellbeing, but not the idea of combining measures of economic and social wellbeing in one number, for example).

- There is a growing interest in measuring subjective and psychological wellbeing (an important aspect of which is happiness). But it remains a quite controversial area: some think it is vital to assessing wellbeing; others dismiss it entirely.

Sir Tony Atkinson, the distinguished economist who chaired the first day of the conference, suggested introducing more flexibility in the National Accounts framework in order to take into consideration other aspects affecting well-being, like distributional effects and income inequality. He also emphasised the need for “developments outside the national accounts, with particular reference to non-monetary indicators of well-being”. An important statistical implication underlined by Atkinson is that considering different domains and approaches “leads naturally to calls to construct a *composite* indicator, combining the different dimensions”. He stressed the approach of building composite indicators based on microdata at a household level (*i.e.* composite measures of material deprivation), because, he explained, “this alternative has clear policy relevance and taps into political concerns”.

In conclusion the eminent economist raised a very challenging question: “I referred earlier to national accounts being a success story of social science in the twentieth century. What is required to make social well-being statistics a success story of the twenty first century?” His answer was the following: “I suggest that progress should be sought through “flexible geometry”. It is over-optimistic to suppose that all countries will be persuaded from the outset of the desirability of developing indicators of social progress. It is however possible to work with the subsets of countries who are keen to explore the social dimension of well-being”.

3.2. *Rome Conference on measuring happiness*

In preparation of the June 2007 Istanbul OECD World Forum on measuring societal progress, the JRC, the OECD, the Bank of Italy and the Centre for Economic and International Studies (CEIS) of the University of Rome “Tor Vergata” organised an international conference on subjective wellbeing measures. Presentations and papers followed three broad topics:

1. **Methodological issues in the measurement of happiness and life satisfaction:** Can we construct meaningful statistical indicators of happiness and life satisfaction? Is it useful to think of life happiness as some overarching uni-dimensional concept; or is it better to think separately about how happy people are with their work, their relationships, and so on?
2. **The determinants of happiness:** What do we know about the factors determining happiness and what don't we know? How do education and other areas of government policy contribute to happiness?
3. **Measures of happiness and policy:** Can subjective well-being indicators help shape policy? And what does satisfaction with different domains of life imply for policy-making?

The main conclusions of the conference were as follows:

- Happiness measures cannot replace existing quantitative measures of wellbeing/ progress/ quality of life, but they should be used to integrate more traditional indicator sets. Available evidence also shows that some policies can have different impacts depending on the subjective conditions of people interested by the policy measures.

- The use of subjective measures of happiness/ quality of life is more interesting and useful in the context of micro-econometric analysis (or policy impact models) than for country rankings based on national averages.
- The research on happiness is a serious stream of work and therefore requires good quality data. Therefore, statistical offices have to look into the issue of subjective measures more than in the past, also to allow researchers to conduct applied research based on micro-data sets that include subjective and objective measures of individuals' conditions.
- The policy attention to subjective measures of happiness/life satisfaction will increase in the near future. Therefore, it is important to develop a taxonomy of measures, as well as recommendations on how to statistically measure these aspects, based on good practices.

3.3. The II OECD World Forum and the Global Project on Measuring the Progress of Societies

The *Global Project on Measuring the Progress of Societies* exists to foster the development of sets of key economic, social and environmental indicators and their use to inform and promote evidence-based decision-making, within and across the public, private and citizen sectors. These indicator sets can be at the sub-national, national and international levels. The project is open to all sectors of society, building both on good practice and innovative research work, organised by the OECD in co-operation with national and international organisations.

In November 2004 the OECD launched the first of a series of global fora in Palermo, Italy. The success of this initial world forum stimulated the organization of the second World Forum, held in Istanbul in June 2007. Although the events leading up to it signalled to the OECD the importance of this work and the global interest in it (both geographically and among the public, private and civil sector, academia and the media), the success of the Forum exceeded expectations. Some 1200 participants from around 130 countries met to discuss "Measuring and fostering the progress of societies". Hundreds of people followed the Forum via Internet (all plenary sessions were webcasted in seven languages). More than 200 world class speakers presented their views in 10 plenary sessions and 39 parallel sessions. 35 institutions participated in the first international exhibition on "Innovative tools to transform statistics into knowledge".

According to the feedback received, the level of interaction and quality of debate was rated extremely highly. Many people expressed the sentiment that the Forum was, in a sense, a catalyst for a global movement - bringing together experts who have for too long been working in isolation and creating a place to foster the kind of collaborative action that can bring about great change. Participants especially valued the opportunity to network with experts from all over the globe, each bringing her/his own professional and cultural experiences, but all with the common goal to better measure the progress of our societies. Many Forum attendees were positively surprised by the convergence already emerging all over the world towards common concepts and practices, much in thanks to globalisation and the Internet.

Participants left Istanbul with the impression that they are not alone in the effort of making their communities and the entire world better through the development of measures of societal progress that can be used to improve decision making at all levels. And they want to participate not just in periodic events, but in an on-going co-operative global effort.

At the end of the Forum the European Commission, the Organisation for Economic Cooperation and Development, the Organisation of the Islamic Conference, the United Nations, the United Nations

Development Programme and the World Bank agreed in signing a common declaration¹¹ encompassing the “commitment to measuring and fostering the progress of societies in all their dimensions”, the support of “initiatives at the country level” and the formation of “a shared view of societal well-being and its evolution over time” through the following points:

- encourage communities to consider for themselves what “progress” means in the 21st century;
- share best practices on the measurement of societal progress and increase the awareness of the need to do so using sound and reliable methodologies;
- stimulate international debate, based on solid statistical data and indicators, on both global issues of societal progress and comparisons of such progress;
- produce a broader, shared, public understanding of changing conditions, while highlighting areas of significant change or inadequate knowledge;
- advocate appropriate investment in building statistical capacity, especially in developing countries, to improve the availability of data and indicators needed to guide development programs and report on progress toward international goals, such as the Millennium Development Goals.

To respond to the mandate received from the Istanbul Forum the OECD proposed to launch a “Global Project on Measuring the Progress of Societies” (www.oecd.org/oecdworldforum). To achieve its goals, the Global Project will carry out activities in the following areas:

A) Statistical research on the measurement of societal progress in all its dimensions

The international statistical system is extremely active in the development of methodological recommendations on how to measure particular phenomena, but it has not created any focal point to address the issue of measuring societal progress. Therefore, building on the work done by the OECD and other international and national organisations in specific subject matter domains, the Global Project aims to become the worldwide focal point on the measurement of societal progress. It should establish an international network of initiatives carried out by statistical offices, research institutes, NGOs, international organisations, etc. concerning the measurement of progress (wellbeing, quality of life, etc.).

B) Design, develop and promote the use of innovative ICT tools to facilitate the transformation of statistics into knowledge

Indicators, no matter how accurate, are only useful if they are used by the audience for which they were produced. But statistical information is not widely read and understood, often because it is presented quite poorly for a general audience. Much more can be done, particularly with the rapid development of ICT. Several software houses and large ICT companies are developing new tools to manage and disseminate statistics (especially indicators) to both specialised users and the public. Statistical offices and other research institutes are improving their dissemination and communication. And there are initiatives aimed at measuring societal progress through indicators that have developed innovative solutions to present statistical evidence, for example, linking quantifiable policy goals and targets to actual measures of policy outcomes. Indeed, some Internet experts envisage the possibility that in the near future politicians

¹¹ The Istanbul Declaration has been posted on the Global Project website (www.oecd.org/oecdworldforum). Other organisations have since signed up to it including: Environment Europe, Gallup Organization Europe, International Statistical Institute, The Lisbon Council, UNESCO and United Nations Office for Partnerships.

will be assessed by individual citizens using tools able to link electoral promises (plans) and results (much like television rating systems). Finally, civil society organisations have developed interesting tools (videos, web sites, blogs, etc.) to advocate their activities; to statistically monitor the implementation of official commitments by policy authorities; and to foster fact-based democratic dialogue among citizens starting from statistical measures of societal progress. The Global Project aims to contribute to the design, development and use of innovative solutions to help citizens to transform statistics into knowledge.

C) Establishment of a global network to foster the measurement and assessment of progress in every country

Hundreds of initiatives have already been launched around the world to measure progress. They use different methodologies, languages, indicators and institutional solutions. And there is little recognition among them and the public of the existence of a “world movement” in this field. The Global Project will represent the catalyst and the driver of this movement, helping individual initiatives identify best practices and learn from each other’s experiences and helping them not to reinvent the wheel each time a new project begins.

The existing experiences of policy processes based on indicator systems clearly demonstrate the importance of building trust among all the participants, especially around the choice of indicators used to monitor policy outcomes. As “public choice” models indicate, the process works only if the information is trusted by, and shared among all, participants. Of course, institutional arrangements, historical background, technical, legal and organisational capabilities and constraints are extremely important to building successful initiatives. The Global Project aims to help each and every country in the world build its national initiative to measure progress.

It will also develop a global infrastructure to facilitate the assessment of societal progress at national and global levels. The Global Project aims to develop “Wikiprogress”, a global tool to serve all people in the world to understand and debate, using statistical indicators, whether the world itself, or a particular country or region, is making progress.

To organise the Global Project contacts have been established with several potential “global” and “regional” partners. Regional working groups are being established in Latin America, Africa, Middle-East in co-operation with the Inter-American Development Bank (IDB), the African Development Bank (AfDB), the UN Economic Commissions for Africa and for West Asia. The World Bank, the UNDP, UNESCO and UNICEF have expressed their intention to participate in the Global Project. The Korean government proposed to host the 3rd OECD World Forum in 2009.

The Global Project is just beginning and much remains to be decided. The initial focus (until the end of 2007) will be on establishing a governance structure and securing funds. The positive developments above mentioned have confirmed the original OECD proposal to structure the Global Project as a network based on both global and regional organisations. The participation of other organisations in the Global Project could be as follows:

- *Partner* (global, regional or task-oriented): organisations who play a key role in the overall Project, investing substantial resources – financial or in-kind – on a multiyear base, assuming full responsibility for the management of the Project or for specific tasks/subprojects, etc.
- *Associated*: this category includes organisations who are interested in contributing to specific activities of the Project and implementing the actions envisaged by the Istanbul declaration, etc.
- *Sponsor*: organisations who provide financial or in-kind resources for the overall Project or specific tasks.

ISTANBUL DECLARATION

We, the representatives of the European Commission, the Organisation for Economic Cooperation and Development, the Organisation of the Islamic Conference, the United Nations, the United Nations Development Programme and the World Bank,

recognise that while our societies have become more complex, they are more closely linked than ever. Yet they retain differences in history, culture, and in economic and social development.

We are encouraged that initiatives to measure societal progress through statistical indicators have been launched in several countries and on all continents. Although these initiatives are based on different methodologies, cultural and intellectual paradigms, and degrees of involvement of key stakeholders, they reveal an emerging consensus on the need to undertake the measurement of societal progress in every country, going beyond conventional economic measures such as GDP per capita. Indeed, the United Nation's system of indicators to measure progress towards the Millennium Development Goals (MDGs) is a step in that direction.

A culture of evidence-based decision making has to be promoted at all levels, to increase the welfare of societies. And in the "information age," welfare depends in part on transparent and accountable public policy making. The availability of statistical indicators of economic, social, and environmental outcomes and their dissemination to citizens can contribute to promoting good governance and the improvement of democratic processes. It can strengthen citizens' capacity to influence the goals of the societies they live in through debate and consensus building, and increase the accountability of public policies.

We affirm our commitment to measuring and fostering the progress of societies in all their dimensions and to supporting initiatives at the country level. We urge statistical offices, public and private organisations, and academic experts to work alongside representatives of their communities to produce high-quality, facts-based information that can be used by all of society to form a shared view of societal well-being and its evolution over time.

Official statistics are a key "public good" that foster the progress of societies. The development of indicators of societal progress offers an opportunity to reinforce the role of national statistical authorities as key providers of relevant, reliable, timely and comparable data and the indicators required for national and international reporting. We encourage governments to invest resources to develop reliable data and indicators according to the "Fundamental Principles of Official Statistics" adopted by the United Nations in 1994.

To take this work forward we need to:

- encourage communities to consider for themselves what "progress" means in the 21st century;
- share best practices on the measurement of societal progress and increase the awareness of the need to do so using sound and reliable methodologies;
- stimulate international debate, based on solid statistical data and indicators, on both global issues of societal progress and comparisons of such progress;
- produce a broader, shared, public understanding of changing conditions, while highlighting areas of significant change or inadequate knowledge;
- advocate appropriate investment in building statistical capacity, especially in developing countries, to improve the availability of data and indicators needed to guide development programs and report on progress toward international goals, such as the Millennium Development Goals.

Much work remains to be done, and the commitment of all partners is essential if we are to meet the demand that is emerging from our societies. We recognise that efforts will be commensurate with the capacity of countries at different levels of development. We invite both public and private organisations to contribute to this ambitious effort to foster the world's progress and we welcome initiatives at the local, regional, national and international levels.

We would like to thank the Government of Turkey for hosting this second OECD World Forum on "Statistics, Knowledge and Policy." We also wish to thank all those from around the world who have contributed to, or attended, this World Forum, or followed the discussions over the Internet.

Istanbul, 30 June 2007

REFERENCES

- Abraham, K.G. and C. Mackie (2005), *Beyond the Market – Designing Nonmarket Accounts for the United States*, National Research Council of the National Academies, Washington D.C.
- Atkinson, A.B. (2005), *Measurement of Government Output and Productivity for the National Accounts*, Atkinson Review: Final Report, Palgrave-MacMillan, United Kingdom.
- Beckerman, W. (1978), *Measures of Leisure, Equality and Welfare*, OECD, Paris.
- Boarini, R., A. Johansson and M. Mira d'Ercole (2006), "Alternative Measures of Well-being", OECD Economics Department Working Paper, No. 476 and OECD Social, Employment and Migration Working Paper, No. 33, OECD, Paris.
- Di Tella, R. and R. MacCulloch (2005), "Gross National Happiness as an Answer to the Easterlin Paradox?", *Economic Working Paper Archive at WUSTLE*, April.
- Förster, M. and M. Mira d'Ercole (2005), "Income Distribution and Poverty in OECD Countries in the Second Half of the 1990s", OECD Social, Employment and Migration Working Paper, No. 22, OECD, Paris.
- Frey, B.S. and A. Stutzer (2002), *Happiness & Economics*, Princeton University Press, Princeton and Oxford.
- Hoffman, A.E. Giovannini, M. Nardo, M. Saisana, A. Saltelli and S. Tarantola (2005), "Handbook on Constructing Composite Indicators: Methodology and User Guide", *OECD Statistics Working Paper*, Paris.
- Kolm, S.C. (1969), "The Optimal Production of Social Justice", in J. Margolis and H. Guitton (eds.), *Public Economics*, MacMillan, London.
- Layard, R. (2005), *Happiness – Lessons from a New Science*, Penguin Press, New York.
- Nordhaus, W.D. and J. Tobin (1973), "Is Growth Obsolete?", in M. Moss (ed.), *The Measurement of Economic and Social Performance*, Studies in Income and Wealth, Vol. 38, National Bureau of Economic Research, Cambridge.
- OECD (1986), *Living Conditions in OECD Countries – A Compendium of Social Indicators*, OECD, Paris.
- OECD (2005), "Measuring Sustainable Development", *Statistics Brief*, OECD, Paris.
- OECD (2006a), "Measuring Well-Being: What Role for Social Indicators", Chapter 2 in *Society at a Glance – OECD Social Indicators*, OECD, Paris.

OECD (2006b), OECD Work on Sustainable Development: Additional Views from Committee Chairs, OECD, Paris.

OECD (2006c), Working Group on Statistics for Sustainable Development: Progress Report, OECD, Paris.

OECD (2007a), Is happiness measurable and what do those measures mean for policy? Conference Summary, Rome, 2-3 April 2007.

OECD (2007b), Summary Record of the 2007 Annual Meeting of Sustainable Development Experts, OECD, Paris.

Sharpe, A. (1999), "A Survey of Indicators of Economic and Social Well-being", paper prepared for the Canadian Policy Research Networks, July.