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Recommendations of the Stiglitz-Sen-Fitoussi Report: A few illustrations

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Recommendations of the Stiglitz-Sen-Fitoussi Report: A few illustrations

Abstract

In September 2009 the Stiglitz-Sen-Fitoussi Commission submitted its report on the measurement of economic performance and social progress. The report is based on a large body of applied research work conducted in recent years in various fields of the economic and social sciences. Some of this research work proposes composite well-being indicators more appropriate than GDP. A parallel trend rather favours the construction of dashboards, i.e. sets of indicators designed to provide an understanding of the several facets of economic performance and quality of life. Without neglecting the interest of constructing composite indicators, the commission strongly emphasized the multidimensional nature of well-being. To address this multidimensional nature, it did not propose its own ready-made dashboard. The report must rather be read as providing guidelines to be followed for constructing such a dashboard. This dossier outlines the main lessons to be learned from a comparison between France and a few other countries with the same level of development, as measured against the criteria used by the Stiglitz Commission. The use of alternative standard of living indicators involves a few reclassifications across countries but without really calling into question the apparent advance of the United States. However, living conditions indicators do show far more marked contrasts in the areas of health, education, the risks of unemployment and poverty, and security. Contributions to the problem of climatic sustainability can be up to three times greater from one country to the next. As for economic sustainability, the indicator proposed by the commission suggests that this sustainability remains warranted, although with a fairly small safety margin in several countries.

Keywords: Stiglitz-Sen-Fitoussi report, measurement of well-being, international comparison, quality of life, sustainable development, economic growth

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Les préconisations du rapport Stiglitz-Sen-Fitoussi : quelques illustrations

Résumé

La commission Stiglitz-Sen-Fitoussi a remis en septembre 2009 un rapport sur la mesure de la performance économique et du progrès social. Ce document s'appuie sur les très nombreux travaux de recherche appliquée qui ont été menés dans les divers domaines des sciences économiques et sociales au cours des années récentes. Ces travaux se sont efforcés de proposer des indicateurs synthétiques de bien-être plus appropriés que le PIB, ainsi que des tableaux de bord visant à appréhender performance économique et qualité de la vie à travers leurs différentes facettes. La commission a surtout privilégié dans ses travaux le caractère multidimensionnel du bien-être. Elle n'a pas proposé de tableau de bord tout constitué, mais son rapport peut ainsi se lire comme une esquisse des grandes lignes à suivre lors de la construction d'un tel tableau de bord. Ce dossier présente les principaux enseignements que l'on peut tirer d'une comparaison entre la France et quelques pays de même niveau de développement, à l'aune des critères retenus par la commission Stiglitz. L'utilisation d'indicateurs alternatifs de niveau de vie conduit à quelques reclassements entre pays mais sans véritablement remettre en cause l'avance apparente des États-Unis. Les indicateurs de conditions de vie font apparaître en revanche des contrastes bien plus marqués dans les domaines de la santé, de l'éducation, des risques de chômage et de pauvreté ou de sécurité. Les contributions des différents pays au problème de soutenabilité climatique varient du simple au triple. Quant à la soutenabilité économique, l'indicateur proposé par la commission suggère qu'elle reste tendanciellement assurée, mais avec une marge de sécurité assez faible dans plusieurs pays.

Mots-clés : rapport Stiglitz-Sen-Fitoussi, mesure du bien-être, comparaison internationale, qualité de la vie, développement soutenable, croissance économique

Classification JEL : E01, I31, Q01, D31, N30

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Introduction

In September 2009 the Stiglitz-Sen-Fitoussi Commission submitted its report on the measurement of economic performance and social progress. The report is based on a large body of applied research work conducted in recent years in various fields of the economic and social sciences. Some of this research work proposes composite well-being indicators more appropriate than GDP. A parallel trend rather favours the construction of dashboards, i.e. sets of indicators designed to provide an understanding of the several facets of economic performance and quality of life.

Without neglecting the interest of constructing composite indicators, the commission strongly emphasized the multidimensional nature of well-being. To address this multidimensional nature, it did not propose its own ready-made dashboard. The report must rather be read as providing guidelines to be followed for constructing such a dashboard. Four messages emerge from it:

- The indicators produced by the national accounts should be put to better use. GDP is only one of them; it was designed for the purposes of tracking economic activity and is not the index best suited to the notion of the population's well-being. Other monetary indicators produced in the national accounts may be preferred to GDP.

- Many aspects of well-being remain difficult or impossible to measure in money units, and greater importance should be attached to more quality-oriented indicators. Some of these non-monetary indicators remain objective, for example life expectancy, but the report also recommends the use of subjective indicators.

- The measurement of current well-being and that of its sustainability are two issues that should be clearly separated. With sustainability, the question is whether we are passing sufficient resources on to future generations to assure them a standard of well-being at least equivalent to ours. This question, in turn, has several sub-dimensions: among other things, the commission proposed to distinguish between economic sustainability, which can be appraised using monetary indicators, and environmental sustainability, which is best explored via a set of physical indicators.

- Irrespective of the domain, aggregated indices cannot be used to capture the disparity between individual situations, a factor which can strongly affect well-being. The commission recommends complementing them with indicators of dispersion, where possible.

This dossier outlines the main lessons to be learned from a comparison between France and a few other countries with the same level of development, as measured against the criteria used by the Stiglitz Commission. The use of alternative standard of living indicators involves a few reclassifications across countries but without really calling into question the apparent advance of the United States. However, living conditions indicators do show far more marked contrasts in the areas of health, education, the risks of unemployment and poverty, and security. Contributions to the problem of climatic sustainability can be up to three times greater from one country to the next. As for economic sustainability, the indicator proposed by the commission suggests that this sustainability remains warranted, although with a fairly small safety margin in several countries.

I - Three dimensions to measure well-being

In September 2009 the Stiglitz-Sen-Fitoussi Commission submitted to the French President its report on the measurement of economic performance and social progress. The commission's primary mission was to "identify the limits of gross domestic product (GDP) as an indicator of economic performance and social progress". The debate on the suitability of GDP for this purpose is nothing new (among the French works, see for example Méda, 1999; Gadrey and Jany-Catrice, 2007). The main criticism levelled at GDP is that it does not give information about a country's ability to "convert growth into well-being". This limitation is all the more glaring when the growth level achieved already satisfies basic material needs.

On the basis of this observation, the commission had to identify well-being indicators that could complement GDP. It did so by distinguishing three domains: two relating to the question of current well-being in its monetary aspects ("classical GDP issues") and non-monetary aspects ("quality of life") and a theme focused on the sustainability of well-being, with particular emphasis on the environmental aspect of this sustainability.

With this kind of breakdown, it was obvious that the commission would not end up finding one alternative index that could claim to summarize all the aspects of well-being. The idea was more to draw up a set of indicators, commonly known as a "dashboard". There are already numerous dashboards but they often suffer from their diverse nature and the profusion of indicators that they contain. In this context, the commission's recommendations (*Insert 1*) can mainly be interpreted as a guideline for a rethink of the content of these dashboards, with a dual objective: parsimony – keep a controllable number of indicators – and rationality – produce coherent, ordered dashboards. This approach did not go as far as a proposal of precise, definitive lists of indicators. But the report does give an outline of what the concrete content of a dashboard should be.

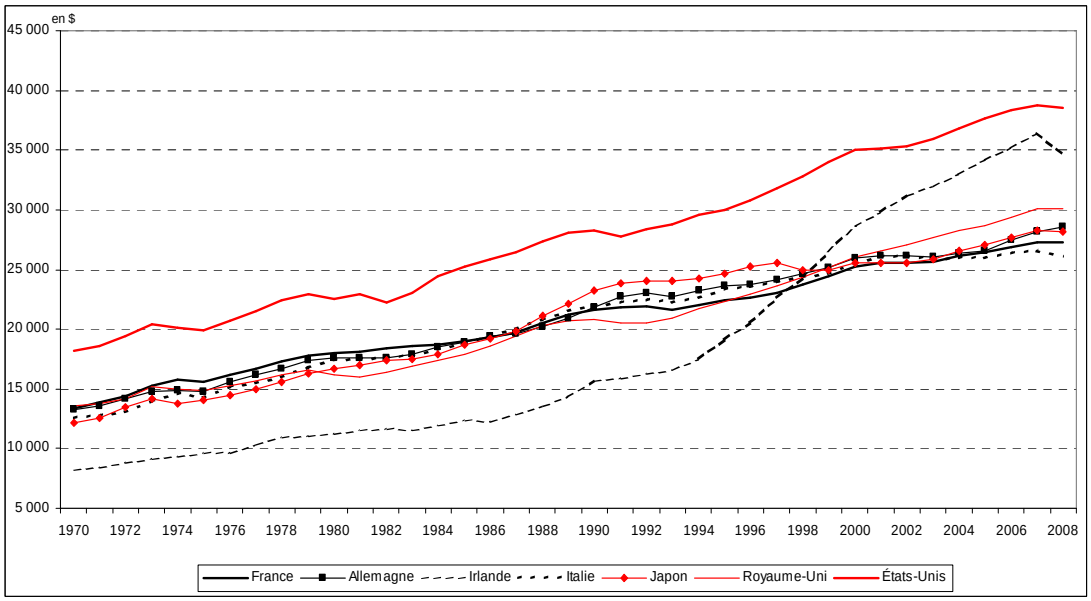
The present dossier fits in with this perspective. It does not propose systematic implementation of the commission's recommendations, some of which are in any case not immediately applicable due to the lack of adequate instruments or sufficiently stabilized statistics. For example, the recommendations encouraging the production of national accounts data disaggregated by household category have led to recent investments in France (Accardo et al, 2009), but they are based on complex comparisons of statistical sources which are not available in long series and do not necessarily have equivalents in other countries. This question will therefore only be mentioned in the margins of this dossier (*Insert 2*). On the other hand, certain suggestions put forward by the report will be explored in a comparative perspective, involving the United Kingdom, Germany, Italy, France, the United States, Japan and Ireland, with the latter country used as an example of an economy with a high level of penetration of foreign capital. Where possible, the results are presented as time series in order to illustrate what these comparisons could produce when made regularly.

II - GDP and its limitations

GDP was the subject of the first chapter of the report. It represents the value of goods and services produced in a country over a given period (usually a year or a quarter). As it is calculated in accordance with international standards, it is both the benchmark instrument for measuring activity and the indicator most commonly used for international comparisons. By inspecting the differences in price levels between countries by means of purchasing power parities (PPP), GDP series can be compared[1] across countries and over time.

The level of American GDP per capita turns out to be the highest over the period as a whole (*Figure 1*). The gap with the other countries was relatively stable between 1970 and 1990, after which it tended to widen. Irish GDP per capita is very different: well below that of the six other countries at the start of the period, it got closer from the mid 1990s, caught up at the end of the 1990s – with the exception of the USA – and then pulled ahead in the 2000s.

1. Levels of GDP per capita in 2000 dollars



Source: OECD Annual National Accounts.

In practice, changes in GDP are most often used to measure growth in economic activity, but their relevance as a measure of standard of living has long since been disputed. Although these limits are well known, it is worth taking a look back on the most important among them.

First, the way GDP is calculated is mainly appropriate for market goods and services that can be valued at their market price. So it is necessary to distinguish between price changes that result only from inflation and those that stem from a rise in quality and thus a possible increase in well-being. The problem arises more specifically with goods whose nature changes rapidly, for example high-tech goods. This problem is also particularly marked with services: the rule usually adopted by statisticians consists in using the volume of sales as a measure of the volumes of commercial services. However, by definition this method cannot take account of all quality aspects of the service (such as how accessible the shop is, or the standard of service provided by staff), and this service may evolve over time or differ from one shop to the next.

[1] The OECD recommends using measures expressed at constant prices and PPP for international time comparisons.

Insert 1 - Recommendations of the Commission

Subgroup 1: Developments as regards Gross Domestic Product

1) When evaluating material well-being, look at income and consumption rather than production.

2) Emphasize the household perspective.

3) Consider income and consumption jointly with wealth.

4) Give more prominence to the distribution of income, consumption and wealth.

5) Broaden income measures to non-market activities.

Subgroup 2: Quality of life

6) Quality of life depends on people's objective conditions and capabilities. Steps should be taken to improve measures of people's health, education, personal activities and environmental conditions. In particular, substantial effort should be devoted to developing and implementing robust, reliable measures of social connections, political voice, and insecurity that can be shown to predict life satisfaction.

7) Quality-of-life indicators in all the dimensions covered should assess inequalities in a comprehensive way.

8) Surveys should be designed to assess the links between various quality-of-life domains for each person, and this information should be used when designing policies.

9) Statistical offices should provide the information needed to aggregate across quality-of-life dimensions, allowing the construction of different indexes.

10) Measures of both objective and subjective well-being provide key information about people's quality of life. Statistical offices should incorporate questions to capture people's life evaluations, experiences and priorities in their own survey.

Subgroup 3: Sustainable development and environment

11) Sustainability assessment requires a well-identified dashboard of indicators. The distinctive feature of the components of this dashboard should be that they are interpretable as variations of some underlying "stocks". A monetary index of sustainability has its place in such a dashboard but, under the current state of the art, it should remain essentially focused on economic aspects of sustainability.

12) The environmental aspects of sustainability deserve a separate follow-up based on a well-chosen set of physical indicators. In particular there is a need for a clear indicator of our proximity to dangerous levels of environmental damage (such as associated with climate change or the depletion of fishing stocks.)

With public services such as health and education, the difficulty is even greater because these services are provided free of charge. They therefore have no price that could be used to value them. To remedy this problem, national accountants use the so-called inputs approach to assess levels. The value of these services is assumed to be equal to the cost of the factors used to produce them.

In value, this method is based on an assumption that can be considered as acceptable: namely, that public services do not generate any profit (more precisely, their net operating surplus is nil). There is, however, still some debate among specialists as to whether or not the evaluation of costs should take into account not only fixed capital consumption (which it does), but also an opportunity cost of the capital immobilized (which it does not).

In volume however, and particularly when changes in the service rendered are to be appraised, the inputs method is unsatisfactory because it disregards productivity gains and improvements to service, among other things.

The approach based on direct measures of output is thus preferable in absolute terms, but it poses many technical problems and comes up against the issue of lack of data. And a proper measurement of the value of these non-market services is particularly important in

the perspective of international comparison. For example, if a country has opted for the public supply of most of its health services and if these services are undervalued by the attribution method used, it will appear to be less rich than a country in which the same services are provided by the market and valued at the price of this market. This will be a pure artifact if we are unable to correct the data for a relative price level of the service rendered. In this respect the commission stresses the need to aim for an *invariance principle*: the measurement of standard of living should remain the same when the provision of a service switches from the public sector to the private sector or vice versa, at least as long as this switch occurs at constant quality. It is on this condition that comparisons between countries that have different “institutional arrangements” may become possible.

Another limit of GDP as a well-being indicator is that it positively values a number of expenditures that do not directly contribute to well-being. Security expenditure is an example of these so-called “defensive expenditures”, as coined by Nordhaus and Tobin (1973). Such expenditures should not be counted as consumer expenditure generating well-being: it is more legitimate to treat them as investments or intermediate products. One of the solutions put forward to address this problem is to subtract at least the defensive expenditures incurred by the State, for example those devoted to prisons. However, this does not resolve the problem of defensive expenditures borne by households, such as home-to-work travel expenses.

Last, GDP disregards domestic activities, be they production or leisure activities. And yet both of them generate well-being, either through the goods and services that are self-consumed in this way or directly, as is the case with leisure. The commission estimates domestic production at 35% of GDP for France, but the national accountants do not always have sufficiently accurate data to include this production in their aggregates. Estimations of domestic production are still fragile since they are based on data on how households use their time. The data currently available still suffer from imprecision and an absence of consensus about the methodology to be used. These data on the way households use their time are indispensable in understanding the importance of domestic production. They would allow us to study the changes in domestic tasks over time, but also the differences between countries. In this respect the report considers that the production of robust, harmonized data on time-use is a priority and emphasizes the fact that their “effectiveness for quality-of-life analyses is potentially very high”. These same data should be used to estimate leisure time and quality.

All these questions are complex and familiar to national accountants. The commission urges these accountants to continue in their efforts to provide a response, although it is aware that it will never be possible to converge on many of these questions in a fully satisfactory manner. For example, all the questions which are answered by means of attribution methods are fragile, since they include at least a share of convention. The report notes that it is difficult to resolve the resulting dilemma between comprehensiveness and intelligibility. For this reason it recommends presenting a number of satellite accounts whilst maintaining a clear distinction between these accounts and the essential accounts.

This having been stated, there are several indicators in the central framework of the national accounts that are not as well-known as GDP but which give a better insight into the well-being of households. The commission recommends giving them greater visibility, and it is this proposal that we will focus on here.

III - From gross to net and from production to income: few changes, except for countries with high levels of direct foreign investment

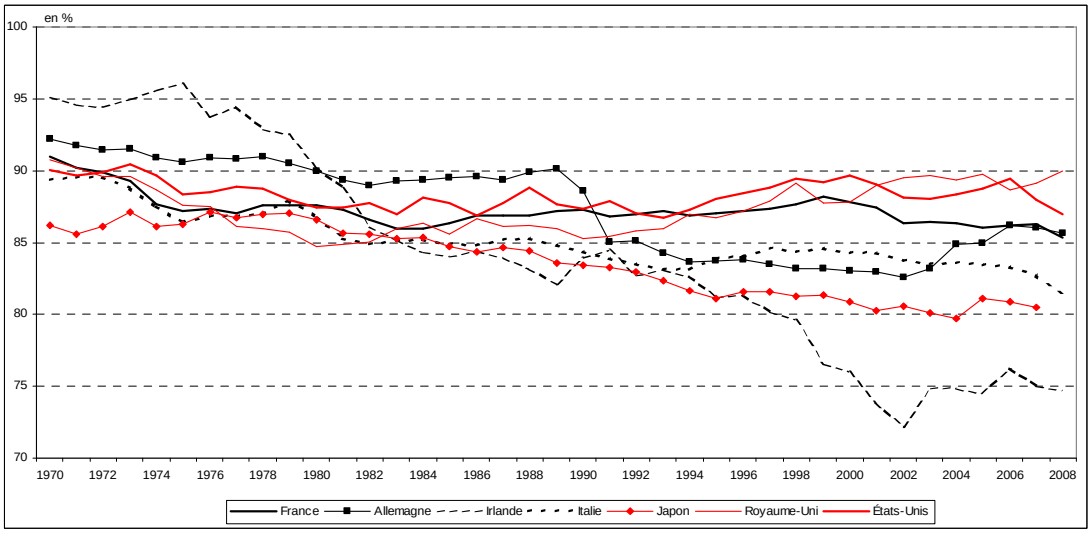
A first alternative to GDP is net domestic product (NDP). It is theoretically always better to think in net than in gross, as net measures include depreciation of capital. Estimating this depreciation is however a very tricky exercise, which is why GDP is still preferred to NDP. It should be specified that the depreciation of capital under consideration here is only that of the fixed capital produced. To be more complete the depreciation of all forms of capital should be counted, notably the environment and natural resources. However, this relates more to the general question of sustainability, which the report recommends considering separately from the measurement of current well-being. For the seven countries in our study, the switch from GDP to NDP mainly has the effect of modifying the orders of magnitude, in a proportion that is more or less equivalent across the various countries.

As regards economic well-being, it also seems more appropriate to take an interest in income rather than product. GDP reflects more the “supply” side of the economy. It is a measure of productive activity in a given country and for this reason it is used to track the economic outlook. But part of this activity serves to remunerate foreign capital and, conversely, part of the resources of residents comes from earnings on foreign investments. This is why the income approach is recommended ahead of the domestic product approach (recommendation n° 1). Unlike GDP or NDP, net national disposable income (NNDI) takes into account the income flows between countries, including those of transfers such as taxes or contributions paid to non-residents or received by residents from the rest of the world.

What does this switch from GDP to NNDI produce? The change in the ratio between the two indicators is highly variable across the seven countries (*Figure 2*). In the United States and in France, the ratio did not vary much over the period as a whole: after a slight drop in the early 1970s, it stabilized at around 87%. The gap between these two countries increased very slightly at the end of the period. In Ireland the shift was more marked. Direct foreign investment and the substantial profits transferred out of the country led to a fall in the share of NNDI in GDP at the end of the period. The share of net national disposable income in GDP also decreased in Italy and Japan, although to a lesser extent. It dropped in Germany during the reunification period, then picked up again in the early 2000s.

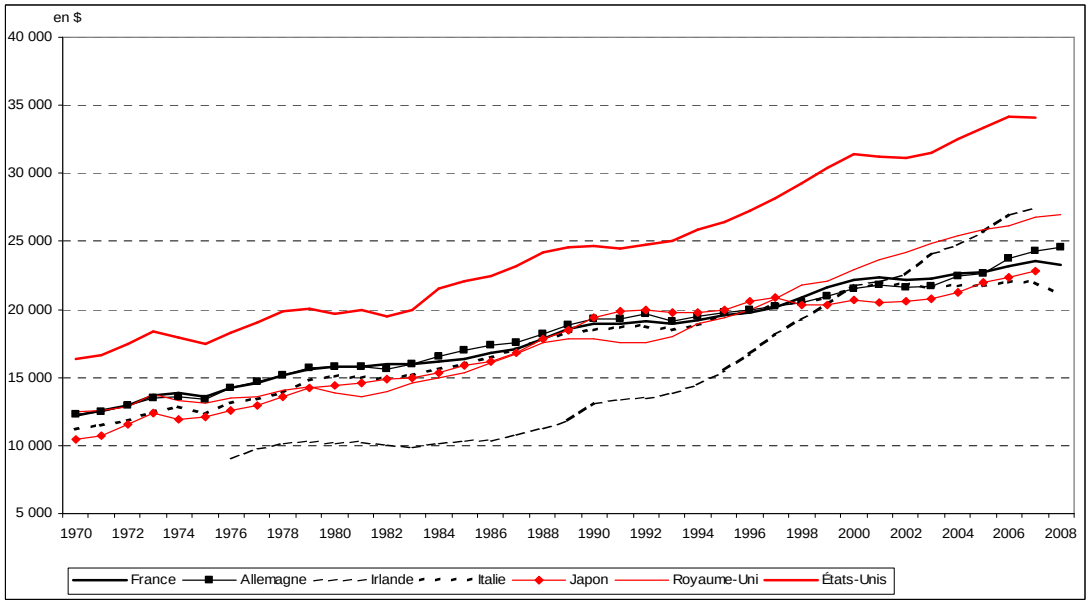
In terms of level (*Figure 3*), net American disposable income remains higher than that of the European countries and Japan, in the same way as GDP. The inclusion of foreign income flows and depreciation of capital, however, tended to reduce the differences between Germany, France, Japan and Italy, particularly in the 1990s. The effect on the Irish trajectory is the most marked, even though Irish net disposable income was still higher at the end of the period than that of the other European countries and Japan.

2. Net national disposable income as a percentage of GDP



How to read it: in 2008, net national disposable income represented 90.0% of GDP in the United Kingdom, 85.3% in France and 74.7% in Ireland.
Source: OECD Annual National Accounts.

3. Levels of net national disposable income in 2000 dollars



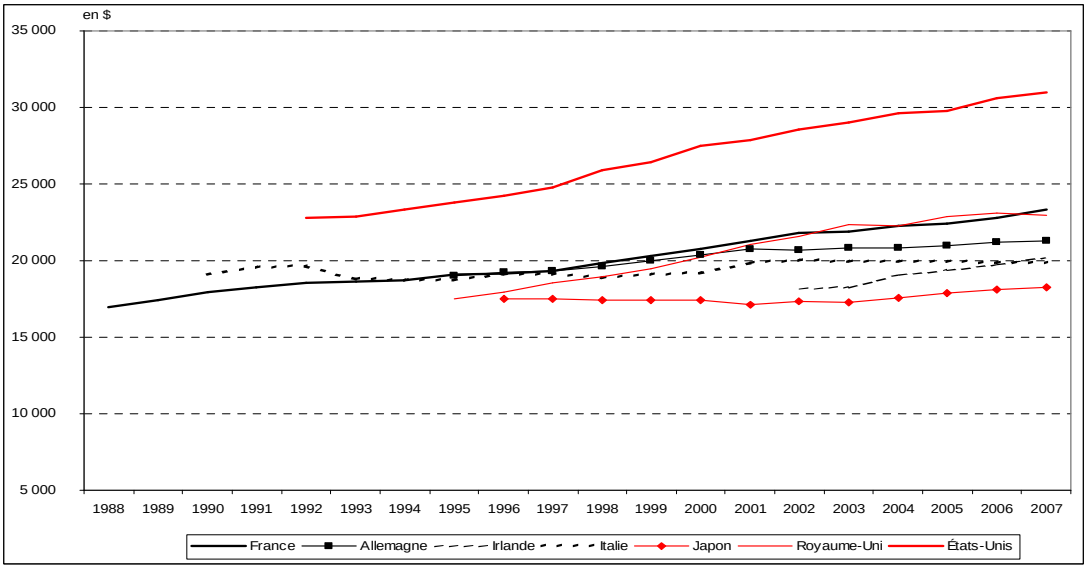
Source: OECD Annual National Accounts.

IV - Switching from the entire country's income to that of households narrows the gap between France and the USA

Within this NNDI, it is possible to focus on the share that actually concerns households. Another of the commission's recommendations was to concentrate not so much on the nation as a whole but rather to place the emphasis on households (recommendation n° 2). GDP, NDP and NNDI give an overview of the performance of economies. However, if we are interested in changes to the living standards of citizens, a better idea can be gained by looking at the income and consumption of households only. We could attempt to do this with a disaggregated approach reflecting the dispersion of individual situations (*Insert 2*), as suggested by recommendation n° 4 of the report, but in this dossier we will limit ourselves as announced to aggregated observations.

For this purpose a broad definition of households is used, grouping together households in the strict sense of the word, but also sole proprietorships and non-profit institutions serving households (*Glossary*). This inclusion is necessary in order to provide series that are comparable across the seven countries. The concept used is not the net disposable income of these households. It is an *adjusted* income, which national accountants define as disposable income plus social transfers in kind, that is, the goods and services that benefit households whilst being financed (and in certain cases produced) by general government. These social transfers include, among other things, the reimbursement of community medical care, hospital services, education services, and housing benefit, all of which are supplementary resources for households. The measurement of disposable income does not include them and gives an imperfect view of the "real" income of households, thus breaking the invariance rule mentioned earlier. Adjusted disposable income respects this principle better: the way an activity is financed does not influence the value of adjusted household income.

4. Levels of adjusted net disposable income of households in 2000 dollars



Scope: households, sole proprietorships and non-profit institutions serving households.
Note: for the United States, the net adjusted disposable income is obtained by adding the government's education and health expenditure to the net disposable income.
Source: OECD Annual National Accounts, National Income and Product Accounts for the United States.

Insert 2 - Escaping the tyranny of averages

The report stresses the need to provide indicators of inequalities. GDP, like all national accounting aggregates, cannot report on resource distribution trends: the national accounts only supply aggregated data for the population as a whole (total income, total consumption, etc.) and do not permit a study of trends differentiated by household category (correction for household size and breakdown by income quantile). The use of microeconomic data completes this macroeconomic approach by the accounts by providing indicators of inequalities.

However, the measures of income may differ depending on the source. Microeconomic sources are based on surveys of individuals or households and are thus subject to the uncertainty inherent to the choice of samples: although survey techniques limit this uncertainty, they will never be able to remove it altogether. Furthermore, these sources provide information about “ordinary” households. They therefore exclude people living in institutions as well as non-profit organizations providing services to households. Lastly, unlike macroeconomic data, these sources rarely include irregular flows such as bonuses. Macroeconomic data include income in kind, several attribution items (for example self-consumption of farm produce) and several types of property income. Because of different definitions and methods, divergences may appear between the results calculated using macroeconomic data and those from microeconomic data.

It is necessary to improve coherence between these two sources in order to ensure consistency between the macroeconomic magnitudes and the measure of their distribution in the population, but this is a very difficult exercise. In 2009, for the very first time the French national accounts presented work on the breakdown of the household account by category for 2003 (*see Accardo et al., 2009*). This gives the disposable income, the consumption expenditure and the savings ratio for the year 2003 for different categories of household (notably, quintiles of disposable income by consumption unit). At present, this breakdown of the household account is only proposed by France, and only for 2003. To compare disparities between countries, the only approach currently possible consists in moving away from the national accounts and making use of survey data.

The data gathered by the OECD in its Growth and Inequalities report provide an initial picture of the distribution of resources in the OECD countries. This work presents the Gini coefficients and the changes in real income by household category for around twenty countries.

The Gini coefficient is one of the indices commonly used to measure income inequality in a country. It varies from 0 (total equality) to 1 (maximal inequality). From the mid-1980s to the mid-2000s, the United States showed the greatest inequalities and France and Germany the least. Regarding the trends, the inequalities measured in this way have only diminished in France, while they have increased in the United Kingdom and the United States.

1. Gini coefficients (after taxes and transfers)

	Milieu des années 70	Milieu des années 80	Aux alentours de 1990	Milieu des années 90	Aux alentours de 2000	Milieu des années 2000
France		0,31	0,30	0,28	0,28	0,28
Allemagne		0,26	0,26	0,27	0,27	0,30
Irlande		0,33		0,32	0,3	0,33
Italie		0,31	0,30	0,35	0,34	0,35
Japon		0,30		0,32	0,34	0,32
Royaume-Uni	0,28	0,33	0,37	0,35	0,37	0,34
États-Unis	0,32	0,34	0,35	0,36	0,36	0,38

Source: OECD 2008, Growth and Inequalities. Income Distribution and Poverty in the OECD Countries.

In the USA, after growth in income that was favourable to both the 20% of households with the lowest income and the 20% with the highest income, the rise in income between the mid-19900s and mid-2000s mainly benefited the high-income households. In Ireland, the economic adjustment was marked by a sharp rise in income for the poorest, followed a rise for those in the middle of the distribution.

In France, over the first sub-period the change in income became less favourable as the income was higher, but the second period saw a U-shaped curve that was less favourable to the intermediate quintiles. Lastly, the OECD indicates that the increase in the share of income earned by the wealthiest 10% of households is mainly attributable to the richest 1% of the population, in all countries.

2. Growth in real household income* by quintile

en %

	Évolution annuelle moyenne du milieu des années 1980 au milieu des années 1990					Évolution annuelle moyenne du milieu des années 1990 au milieu des années 2000				
	Quintile inférieur	Trois quintiles intermédiaires	Quintile supérieur	Médiane	Moyenne	Quintile inférieur	Trois quintiles intermédiaires	Quintile supérieur	Médiane	Moyenne
France	1	0,5	-0,1	0,5	0,3	0,9	0,7	1	0,8	0,8
Allemagne	0,4	1,4	1,6	1,2	1,4	-0,3	0,5	1,3	0,6	0,7
Irlande**	4	3	2,9	3,2	3,1	5,2	7,7	5,4	8,2	6,6
Italie	-1,3	0,5	1,5	0,6	0,8	2,2	1	1,6	1	1,3
Japon	0,8	1,8	2,1	1,8	1,9	-1,4	-1	-1,3	-1	-1,1
Royaume-Uni	0,7	2	4,3	1,9	2,8	2,4	2,1	1,5	2,1	1,9
États-Unis	1,2	0	1,9	1	1,4	-0,2	0,5	1,1	0,4	0,7

* The income featuring in this table is from household surveys and is therefore not comparable to income based on the national accounts.

** Changes over the period from the mid 1990s to around the year 2000.

Source: OECD 2008, Growth and Inequalities. Income Distribution and Poverty in the OECD Countries.

One of the limits of this kind of work is the comparability of sources across countries. The data were collected from the national statistical offices. Although these offices sent figures meeting a very precise definition, full harmonization cannot be totally guaranteed. In particular, certain concepts vary from one country to the next (the notion of households is one example). Vigilance is therefore required as regards international comparisons.

In the sense of this adjusted net disposable income,[2] American households still had the highest standard of living over the period as a whole (*Figure 4*). The relatively stable gap with the other countries during the 1990s actually widened from the end of that period. However, considerable changes took place in the position of the other countries. Throughout the 2000s, French and British households had approximately the same adjusted net disposable income. Although the income of German, Italian and French households were comparable in the 1990s, German and Italian household income grew more slowly than that of the French at the end of the period. It should be noted that over recent years, adjusted net disposable income has grown very little in Italy and Japan. Conversely, in France, the USA and the UK, it increased by more than 12% between 2000 and 2007. The message from Irish household income once again seems to offset the information conveyed by GDP per capita.

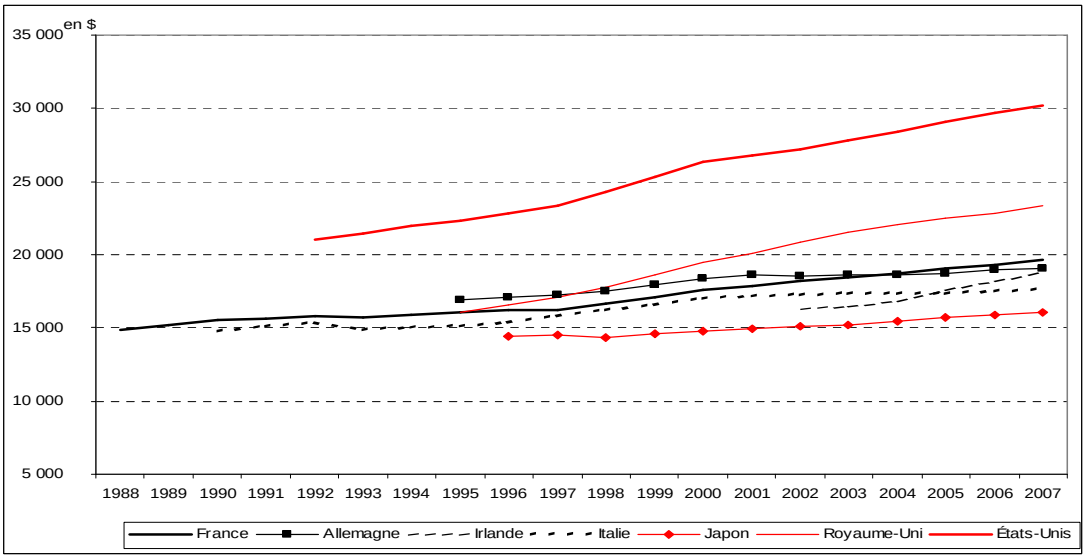
To complete the information given by adjusted income, the commission recommends also considering information on household consumption and wealth (recommendation n° 3). The three items are indeed complementary: current consumption gives information about the level of current well-being, but without indicating whether or not it is sustainable; wealth determines the possibility of future consumption; and, if it is properly calculated, net income corresponds to the maximum consumption that would be achievable for the current period without any drop in wealth. The difference between net income and consumption represents the net savings ratio. As long as consumption is less than net income, savings are positive, wealth increases and the current consumption level should at least be able to stay at the same level in the future. In the opposite case, savings are negative, wealth decreases and future consumption prospects deteriorate. The link between all these concepts relates to the question of the sustainability of standards of living, also addressed by the commission's third subgroup within a wider perspective of wealth to which we shall return later.

At this stage, even if we restrict ourselves to the usual financial view of wealth, it is difficult to give comparable elements about the wealth of households. Although elements already exist in the national accounts, the report considers that this information needs to be completed. However, the national accounts do offer several aggregates related to consumption, in particular the concepts of final consumption expenditure and actual final consumption. The distinction between these two notions is the same as that between disposable income and adjusted disposable income. Actual final consumption includes all goods and services actually used or consumed, irrespective of the way they are financed. Therefore, actual

[2] The PPP used for adjusted net disposable income and actual final consumption differs from that used previously, as recommended by the OECD and with a reminder provided in the report. These changes of PPP may have a minor effect on the aggregates presented hereafter.

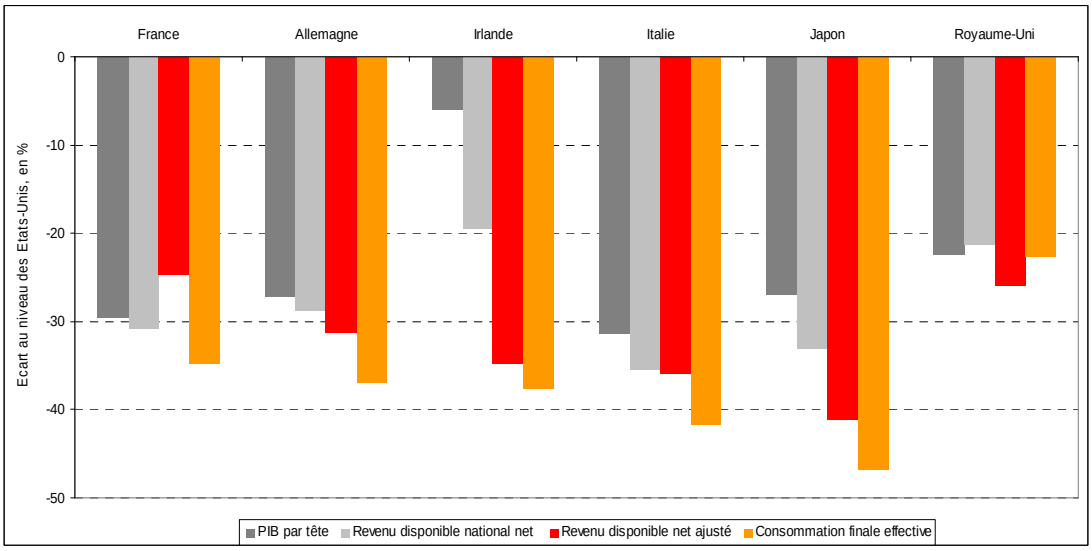
household consumption comprises both final consumption expenditure of households and social transfers in kind.

5. Actual final household consumption in 2000 dollars



Scope: households, sole proprietorships and non-profit institutions serving households.
Source: OECD Annual National Accounts, National Income and Product Accounts.

6. Deviations from the situation of the United States in 2007, according to the different concepts of standard of living



How to read it: each bar represents the deviation from the USA level as a percentage, at an identical concept of standard of living. For example, in 2007, in the sense of adjusted net disposable income, the French standard of living was 25% lower than the American standard of living.

Use of actual consumption as an indicator of standard of living offers a picture that once again differs from those resulting from the previous indicators. In 2007, the Irish now have a lower standard of living than the British, French and Germans. The Japanese have the lowest standard of living of the seven countries (*Figure 5*). Last, the standard of living of the French is higher than that of the Germans and Japanese.

Ultimately, the comparison of these four approaches to monetary living standards for 2007 can be summarized by examining the position of each country against that of the United States, which is ahead of the rest in all four cases (*Figure 6*). Ireland is the country that saw

the biggest changes, not only because of the switch from production to national income, but also under the effect of the switch to the "'household" perspective. The change is also substantial for Japan. It is less so for the other countries. For France, what is gained by considering adjusted disposable income is lost again with the switch to actual final consumption, but this is the consequence of a higher savings ratio for households. It is thus debatable as to whether or not it is the indication of a lower standard of living: once again, the income/savings comparison relates more to the question of future standard of living prospects, and thus the theme of sustainability. Nonetheless, as we shall see later, household savings are only one aspect and this question requires a broader view.

But before we come to the prospective question, an overview of well-being also requires us to think beyond the monetary approach of the national accounts and explore more quality-oriented aspects of quality of life; this was the theme of the commission's second subgroup.

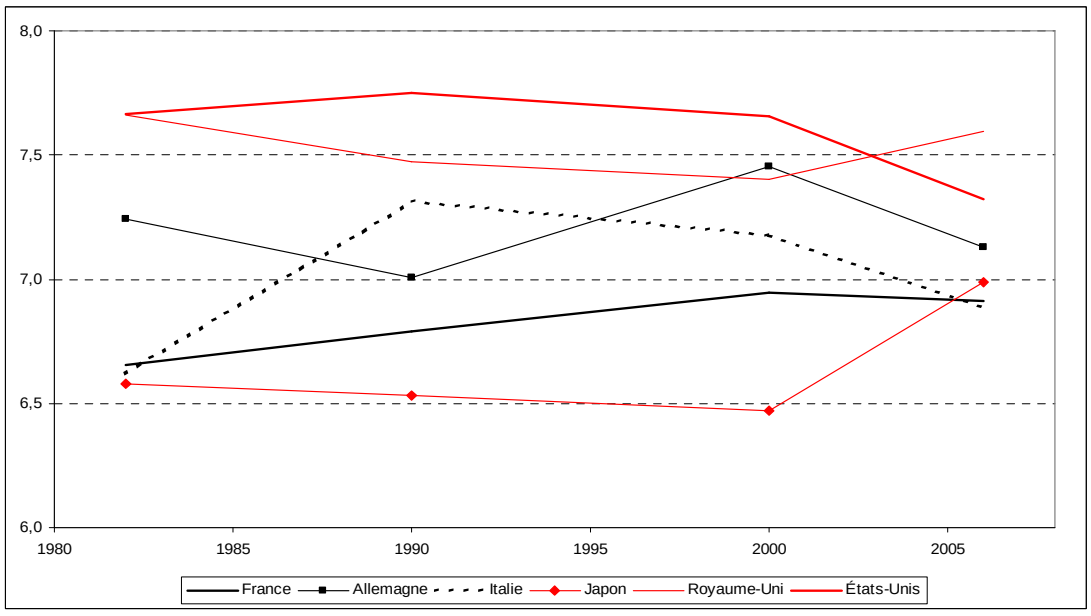
V - A measure of quality of life: subjective well-being

There are two ways of measuring the quality-oriented aspects of living conditions. One consists of gathering together various objective indicators that attempt to capture the different dimensions. The other consists of directly measuring the quality of life as experienced by agents: this is the subjective indicators approach. The report considers these approaches as complementary rather than competing, and proposes numerous suggestions for developing the two types of measure. Some of these are of course experimental: there are few indicators currently available with sufficient comparability for a panel of countries and over a fairly extensive time period. But the report recommends intensifying efforts in this respect.

We will begin by examining the subjective approach, which over the last few years has been addressed in a large number of studies in the economic literature (Clark, Frijters and Shield, 2008) and to which the report devoted particular attention.

This subjective approach is based on answers given by individuals when they are asked whether they are happy or satisfied with the lives they lead. It has the merit of providing simple statistics: proportion of individuals who state that they are very happy or satisfied. Furthermore, since the data come from surveys on individuals, they lend themselves directly to distribution analyses.

7. Index of satisfaction with life



Source: Values Surveys Databank, World Values Surveys waves 1 (1981-1982), 2 (1990), 4 (1999-2000) and 5 (2005-2006). Data available at this address: http://www.worldvaluessurvey.org/, authors' calculations.
Note: the index is the average level of satisfaction stated by individuals (1 to 10).
Note: although the survey is the same for the six countries, cultural differences in understanding the question may skew comparisons between countries. These differences are however less marked for questions relating to satisfaction than those about happiness.

What message do these subjective data give when compared to the monetary income indicators presented earlier? An old, well-known result is what is known as the Easterlin paradox (1974). Easterlin showed that there was no correlation between growth in GDP per capita and the subjective satisfaction trend in the United States over the post-war decades: economic growth was accompanied by virtually stable subjective well-being. The same message appears to emerge from the data on countries in our panel. If we consider the four waves of the World Values Surveys covering the period 1981 to 2006, for the six main countries of this panel the index (calculated as the mean of the levels stated on a scale of 1 to 10) lies between 6.4 and 7.8 (*Figure 7*). These indices have high standard deviations,

around 1.8 to 2 points, and it is therefore difficult to consider these deviations as significant. The indices also do not show any net trend (a maximum rise or drop of 0.4 point), while in these same countries, income and monetary consumption grew significantly over the period.

How should this result be interpreted? It can be read in two ways. On the one hand the presence of indicators which provide a different message to that supplied by per-capita GDP is interesting in itself: in a way, it is even what we are attempting to obtain. But on the other hand some of the explanations given for this paradox suggest that there are fundamental limits to the subjective approach. The Easterlin paradox could be explained by the parallel changes in living conditions and in aspirations. When aspirations adapt very quickly to changes in wealth, it is logical that subjective satisfaction should show no net evolution over time. If such were the case, subjective indicators would only offer limited interest. Regardless of the efforts to improve living conditions, including in very poor countries, these indicators would send a message of stagnation that would be of little use to decision-makers.

However, the report emphasizes that the Easterlin paradox has been called into question in the recent literature. The analysis of data covering a wide range of countries has established that there is a growing relationship between the GDP logarithm and subjective well-being (Deaton, 2008). There is greater consistency between this link observed internationally and the same link measured individually within the countries (Stevenson and Wolfers, 2008). The inter-temporal results, particularly for developing countries or those in transition, seem to point in the same direction. These results thus show that subjective indicators provide meaningful information. This information is not totally disconnected from that provided by monetary measures of changes in material well-being, but is nonetheless different and may potentially capture other factors. The nonlinear nature of the relationship allows us to objectivize the idea that once a certain development threshold has been exceeded, monetary aspects of standard of living become less important than the other dimensions.

The interest of these indicators is reinforced by the fact that progress has been made in order to measure them more reliably. The individual pertinence of the answers to these questions is confirmed by cross checking them with other information: they are often corroborated by close relations and seem to be consistent with neuropsychological studies. New methods can guarantee better comparability of answers between individuals. For example, an increasing number of surveys use the “illustration” method: several situations are described and the respondent is asked to choose the one he feels closest to, so that his answers can be corrected by neutralizing his optimistic/pessimistic nature. This corrects for the fact that the scales proposed for answers (0 to 10 for example) are not used in the same way by respondents.

An additional interest of subjective indicators is that they are obviously not limited to measures of global satisfaction. They can also be used to measure the satisfaction provided by work or state of health, for example. They can thus help select and rank the objective variables of quality of life, or even help weight them better if it is decided to aggregate them into composite indicators (see *Insert 4*). For example, a fairly stable result of subjective surveys is the importance that individuals attach to the risk of unemployment, an importance that goes beyond its effect on income. It is on the basis of such considerations that a list of objective standard-of-living indicators can be drawn up, focusing on the dimensions that are genuinely fundamental to citizens.

Insert - The three quality-of-life approaches selected by the report

The report uses three conceptual approaches to measure quality of life.

The first is that of subjective well-being. According to the Diener scale (1984), this form of well-being includes three dimensions:

- satisfaction with life, that is, a person's overall judgement of his life at a given moment;

- the presence of positive feelings or affects, that is, the flows of positive emotions (such as happiness or joy, or the feeling of vitality and energy) felt over a time period;

- the absence of negative feelings or affects, that is, negative emotions (such as anger, sadness or depression) over a time period.

These three dimensions are complementary, for example a person can state that he is satisfied with his life and still feel many negative affects.

The report recommends that surveys by statistical offices should include questions to find out each person's assessment of their life, experiences and priorities. In 2010 in France, questions about satisfaction with work, leisure, the emotional environment (friends, family) and life were therefore integrated into the SILC/SRCV European household questionnaire and, for a subsample, into that of the Time-Use survey.

It is possible to combine objective data with subjective data, as the U-index (U for "unpleasant") proposed by Krueger and Kahneman (2006) does. This index measures the proportion of time during which the dominant feeling declared is negative. This focus on negative rather than positive feelings is explained by the fact that they are generally less frequent and thus theoretically more meaningful. The outcome is a reverse image of well-being. A survey conducted on women in Rennes, France and Columbus, Ohio in spring 2005 establishes that the U-index is lower for French women (0.16) than American women (0.188). Frenchwomen would thus appear to have a higher degree of well-being, and this result is robust to several tests and specifications (Krueger, Kahneman, Schkade, Schwarz and Stone (2008)). However, this U-index may provide results that deviate from other measures of well-being.

Such quality-of-life indicators will be built in France via the inclusion (for a subsample) of subjective appreciations in the Time-Use Survey 2010. Respondents have to describe the day's various activities and assign a subjective appreciation (on a scale of - 3 to + 3) to each of them.

A second approach to measuring quality of life is that developed by Sen in terms of "capabilities". According to this approach, what really counts are the "capabilities" that people have, in other words all the possibilities open to them and their freedom to choose the type of life to which they attach value from among these possibilities. So this is no longer a measure of well-being but of social progress and of the opportunities given to each person to lead the life to which they aspire. This approach therefore privileges "objective" conditions.

The last approach is based upon the notion of "equitable allocation". This takes account of individual preferences in the weighting of various quality-of-life dimensions. It thus requires information about the current situation of individuals and about their preferences. The equivalent income method developed by Fleurbaey (Fleurbaey and Gaulier (2009)) fits in with this approach. An example of a question posed to respondents would be "in your view, what extra income would be equivalent to an improvement in life expectancy?" The interest of this method is that it can reduce the various combinations of state of health, leisure, working time, etc. to differences in income, using a reference standard for each dimension.

Well-being is multidimensional and to evaluate it we need to determine whether the difficulties of life are concentrated in certain segments of the population. To this end, the report proposes, as a minimum, integrating standard questions into the existing surveys in order to classify respondents according to a limited set of characteristics. The report also recommends (recommendation n° 8) that specific surveys should be devised to evaluate the links between the different aspects of each person's quality of life in order to collect information on the "combined distribution" of these aspects and the cumulative effects of multiple disadvantages.

VI - Quality of life indicators highlight a contrasting international panorama

As regards quality-of-life indicators, the commission highlights eight dimensions. The first corresponds to material living conditions (income, consumption, wealth) which, as we have seen, are measurable using national accounts indicators for the aggregated level. The other seven concern health, education, personal activities (including work), political voice, social connections and relationships, environmental conditions, and lastly, physical and economic security.

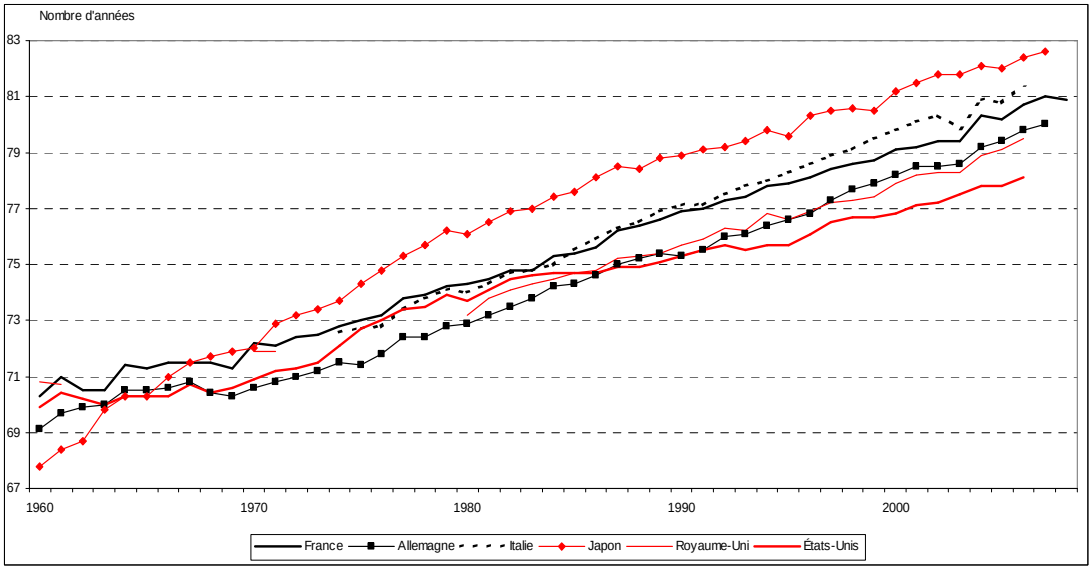
Which indicators should be preferred in a context where the comparability of data remains rather variable? Out of necessity, we will stick here to a few glimpses of what is available for the countries in our panel.

VI.1 *Health: life expectancy dropping off in the USA since the 1990s*

Health influences both the duration and the quality of life, and mortality is today the most reliable measure of health. Life expectancy is probably one of the most accurate indicators, at least in the developed countries.

From 1960 to 2006, life expectancy at birth increased by around 10 years on average in the six countries under consideration. After a period of convergence in the 1960s, the gaps between countries widened over time, especially among women.[3] Of particular note is the deterioration of the relative position of the United States: a rise in life expectancy at birth was followed by a far less sustained pace than the other countries, despite the dynamism of GDP over the period (*Figure 8*): this is a well-documented example of a discrepancy between economic performance and social progress.

8. Life expectancy at birth



Source: Eurostat
How to read it: life expectancy at birth is the notional lifetime expected for a person born in a given year, subject throughout the lifetime to the mortality rate per age calculated by year of birth.

[3] From 2.8 years in 1960 to 3.6 years in 2006 for men, and 3.5 to 5.1 for women.

Insert 4 - The difficulties of aggregation. What democratic measure(s) of quality of life?

Once it is acknowledged that well-being is a multidimensional phenomenon, the question is whether we can attempt to aggregate its various dimensions and whether there is an ideal method to do so.

Jany-Catrice and Kampelmann (2007) distinguish two procedures for building composite measures. The first consists in selecting a common account unit and correcting GDP to take into account the social and environmental aspects of well-being, as Fleurbaey and Gaulier (2009) do. Starting out from assumptions about the average preferences of populations, these authors propose a method to correct GDP by integrating certain complementary aspects of standard of living into it, such as leisure or health. After the corrections, France moves from 17th to 10th place out of 24 countries, Japan from 15th to 4th and Italy from 18th to 12th, while Germany remains stable (19th to 18th), the United Kingdom falls from 12th to 15th and the United States from 3rd to 6th. The Stiglitz-Sen-Fitoussi report prefers this method and the U-index (Krueger and Kahneman, 2006) for building aggregated quality-of-life indicators.

The second procedure involves "using the selected series of dimensions and variables to build a composite indicator taking the form of a weighted mean of non-monetary heterogeneous variables according to various data standardization processes" (Jany-Catrice and Kampelmann, 2007). The best-known example is the human development index which is a composite statistic combining per-capita GDP, life expectancy, and level of education. Another is the economic well-being index by Osberg and Sharpe (2002) which includes four dimensions: adjusted consumption, stocks of wealth, inequalities, and economic security. Applied to France, this indicator has risen less sharply than GDP over the last 20 years. In particular, the inequality and economic security dimensions, which integrate the heterogeneity of situations, show more volatile and globally stagnant trends. The same message emerges from an index such as the BIP40 constructed by the *Réseau d'Alerte sur les Inégalités* (http://www.bip40.org/bip40/RAI).

A question that arises about these composite indices is whether one should aggregate each dimension individually then aggregate each individual index (as per Fleurbaey and Gaulier, 2009), or whether the indices should be built dimension by dimension by aggregating the individual situations, then aggregating the different dimensions (for example the HDI or the economic well-being index). The first option provides information on the distribution of well-being and not only "mean" indices.**1**

More globally, the calculation of a composite indicator raises the question of how to weight the disaggregated indices and the substitutability of the selected dimensions. Indeed, the composite indicator will show the same value with different combinations of levels of disaggregated indices, thereby creating implicit substitutability between the different dimensions.**2** And the choice of weightings is crucial: a combination of increasing or decreasing indices may be globally increasing or decreasing depending on the weight given to these different components. These weightings therefore have to be established as transparently as possible and should be able to translate the reality of individual preferences correctly.

To solve this problem, certain people propose using the estimated coefficients by regressing the subjective well-being index at country level to a series of dimensions quantified at national level, as is the case of the Quality-Of-Life Index calculated in 2005 by means of *The Economist*'s economic intelligence unit. The weightings of the three dimensions of the Canadian personal security index (economic security, health security and physical security) are based on a survey on the dimension that people feel is the most important to them from among the three. The corresponding frequencies are used to calculate the weights of each dimension.

Another proposal is to use dialogue procedures whereby a public debate leads to a consensus on the dimensions to be used and the weightings to be applied. This is the preferred option of the FAIR (*Forum pour d'Autres Indicateurs de Richesse*, http://www.idies.org/index.php?category/FAIR). The contribution of the Economic, Social and Environmental Council to the definition of the key indicators of national development strategy fits in well with the idea that civil society should contribute to the elaboration of the dashboard used to judge the country's economic, social and environmental progress.

However, it is still difficult to imagine a procedure that could result in universally valid weightings. The problem arises in particular for international comparisons. According to the report, "it would theoretically be possible to assign different weightings to the different countries, but this would make the choice of weightings even more difficult and would prevent any comparison across countries."

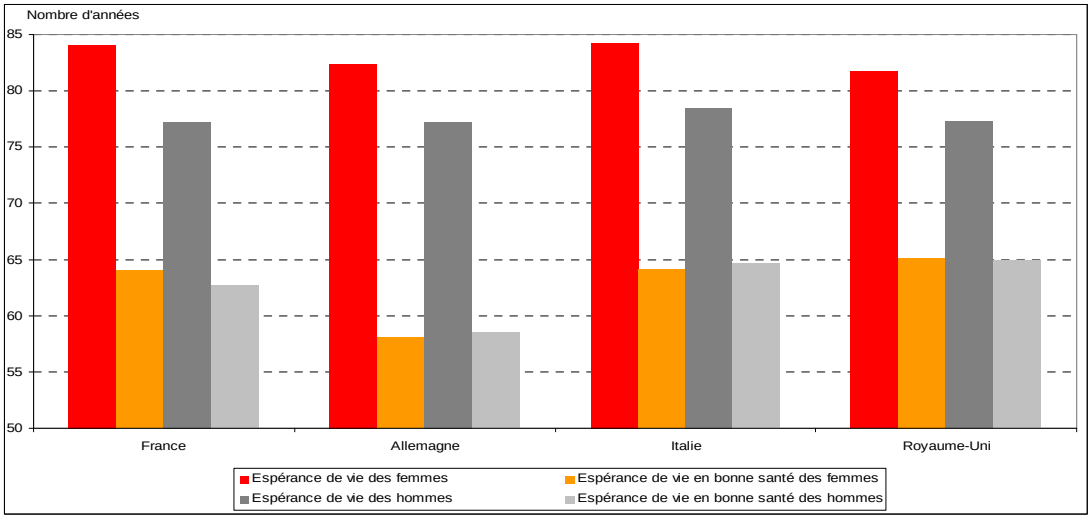
The report on the measurement of economic performance reminds us that different measures of quality of life are possible according to the issues addressed and the approach adopted. Although it considers that the emphasis placed on finding a single indicator is partly unjustified, it notes that there is a big demand for it and judges that statistical offices have a part to play in meeting this demand. It recommends (recommendation n° 9) that statistical offices should supply the information required to aggregate across quality-of-life dimensions, allowing the construction of different indices by users. The report also mentions the possibility of national statistical offices building several composite indicators, or proposing indicators – particularly those that reflect value judgements – whose parameters could be partly modified by users. The statistical offices would thus conserve their neutrality whilst providing sufficient consistent data for political debate.

Lastly, it should be remembered that sets of indicators, dashboards and composite indicators do not have the same function. For Degron (2010), the term “sets of indicators” describes very rich datasets which are used, for example, for fine tracking of the public policies put in place to improve quality of life in different domains. Dashboards serve as a reminder of the multidimensional nature of the notions of well-being and progress whilst providing reference points; they may play an awareness-raising or alerting role, and assist in political decision-making. However, it is important not to have too many of these dashboards so as to ensure that the essential is not drowned in data, and to set the objective of sustainability and comparability of indicators in order to be able to conduct studies and comparisons over the long term and across countries. This is the approach that the report implicitly prefers. Composite indicators have the advantages and drawbacks of condensed information: they are rapidly readable and usable by the public, meet a strong social demand, and can lead to international and inter-temporal comparisons of well-being. Among other things, they have drawn attention to the relativity of the notion of growth, but like any composite statistic, they necessarily simplify reality.

[1] Certain composite indices have measures of inequality as a basic dimension in order to correct for this effect.
[2] These questions about the choice of basic dimensions and weightings arise as soon as an aggregation is required, whether to achieve a single well-being indicator or to obtain composite indicators in each main aspect of well-being (for example economic security, or environment).

But the progress made in terms of longevity is not sufficient to wipe out the contribution of health to quality of life. Indeed, with the development of younger and older senior citizen status, and the increasing importance of dependency issues, a better life assumes not only living relatively longer but also living as long as possible without any major disability. Additionally, state of health influences well-being not only through physical and psychological suffering, but also because poor health may be an obstacle to the development of personal opportunities.

9. Total life expectancy and disability-free life expectancy in 2006



Source: Eurostat
Note: people in institutions are not present in the sample, as the scope of the survey is ordinary households.
Definition: disability-free life expectancy is the number of years that a person of a given age can expect to live without some form of disability. These expectancies are at birth here.

This is why measures of “healthy” life expectancy have been developed. The aim is to offer aggregations between mortality and morbidity which give an account of both lifetime and the quality of this life in terms of health. To achieve this, measures of state of health have to be chosen from among those available: subjective state of health, disabilities, chronic morbidity, for example. In the framework of its sustainable development strategy, the European Union has selected disability-free life expectancy as one of its “key” indicators.

This indicator puts a different slant on the question of life expectancy. In the four European countries presented, the gap between life expectancy at birth and disability-free life expectancy is more than 10 years on average among men and can reach more than 20 years among women (*Figure 9*).

The differences between countries are also far more marked for healthy life expectancy than for life expectancy at birth. They reach 6.5 years for men and more than 7 years for women for healthy life expectancy, while the figures for life expectancy at birth only reach 1.3 years for men and 2.5 years for women. Lastly, a higher life expectancy does not necessarily imply a higher healthy life expectancy. Germany has a life expectancy at birth of almost 80 years, but a healthy life expectancy of less than 60. Conversely, the United Kingdom has the lowest difference between life expectancy at birth and healthy life expectancy, and the latter figure is the highest of the four European countries presented, exceeding 65 years.

The differences between life expectancy and healthy life expectancy have major implications in terms of public policy, in particular regarding the costs of the health system and the objective of high labour force participation rates among the over-50s.

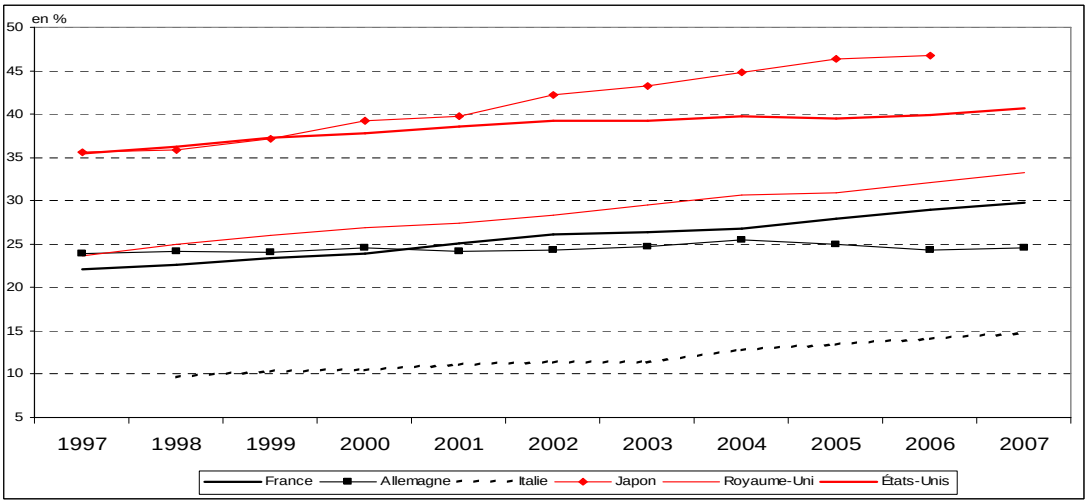
VI.2 Education: a factor in economic performance but also a factor of well-being

Education is another important dimension of quality of life. Education firstly has direct effects on each person’s income and productivity. It also affects their future standard of living prospects: a country with high human capital generally has favourable growth prospects, but this relates to the question of sustainability which will be addressed in depth later. The reason for including education among the non-monetary components of well-being is the fact that it opens up the scope of opportunities and gives greater freedom of life choice (Sen, *Insert 3*). Also, it has been proved that the best-educated people declare greater subjective well-being, are in better health, and have more social connections, although the direction of causality is still the subject of research.

As an illustration, we consider the percentage of graduates in the 25-54 age bracket (*Figure 10*). Three groups of countries can be identified: at the end of the period, Italy reached 15% of graduates, France, Germany and the United Kingdom between 25 and 35%, and there were two countries with more than 40%, Japan and the United States.

In an equal opportunities perspective, it would be interesting to cross-check these results against the social origin of graduates. It is known that the children of management staff or graduates more often have access to higher education, thereby maintaining social inequalities.

10. Higher education graduates in the 25-54 bracket

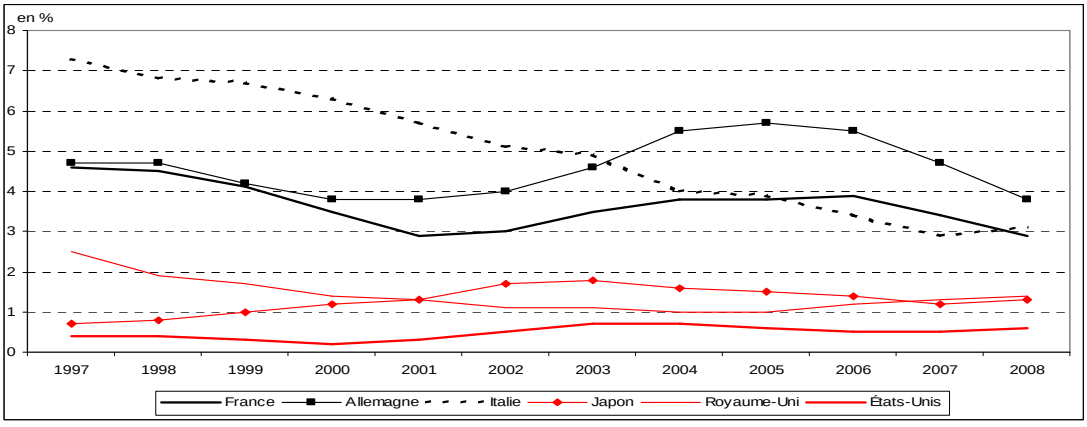


Source: OCDE, authors' calculations.

VI.3 Economic insecurity: a higher risk of long-term unemployment in France than in the USA, but a lower risk of poverty

Quality of life depends on the economic security or insecurity facing individuals, and all the more so if they have a high risk aversion. The effects of economic insecurity are not limited to the monetary dimension of quality of life: unemployment does not only affect individuals by the immediate or longer-term absence or loss of income that it brings about. It also has social and psychological consequences (loss of friends and social status, stigmatization) which are all the greater the further away the individual is from employment. Placing the emphasis on long-term unemployment allows us to concentrate on the individuals for whom finding a job becomes more difficult after a certain time spent unemployed, because of either a loss of human capital or negative signals sent to employers.[4] By contrast, the unemployment rate in the usual sense of the term gives no information about the period of unemployment, as the same rate may be the result of very different dynamics in input and output flows.

11. Share of long-term unemployed in the active population



Source: Eurostat
Note: long-term unemployed are individuals who have been unemployed for at least one year.

[4] It is no easy task to decide between unobserved heterogeneity and loss of human capital as regards the reasons for the duration of unemployment.

These considerations show that particular attention should be paid to the proportion of long-term unemployed in the active population (*figure 11)*.

On the basis of this indicator, the countries are divided into two groups: the United States, United Kingdom and Japan on the one hand, with a rate of under 1.5%; and France, Germany and Italy on the other, with rates exceeding 3%. These differences in the proportion of long-term unemployed in the active population primarily reflect the structure of unemployment itself. For example, in Germany and Italy, there are about five times more long-term unemployed among the unemployed than in the United States (50% against about 10%, according to OECD data).

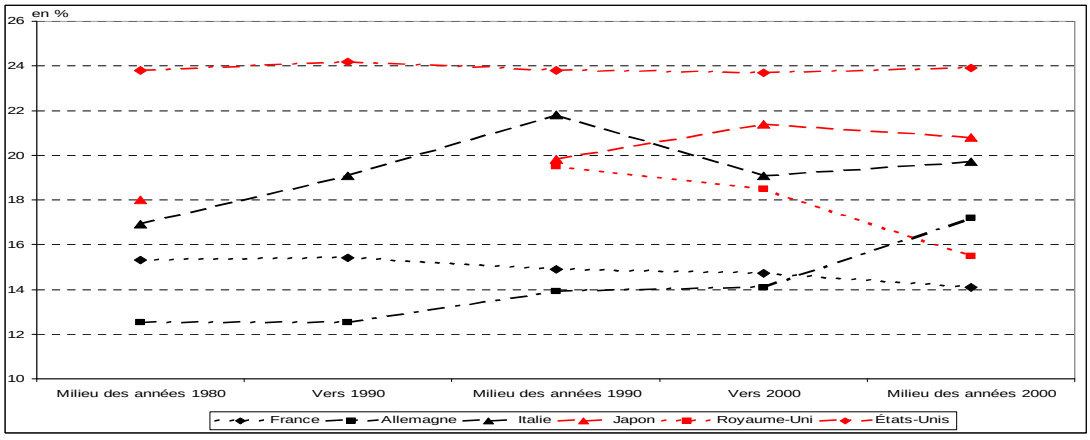
But economic insecurity is not limited to the lack of employment. It is also a question of employment instability, particularly when work time is very short, wages are low or when periods of employment are interrupted by periods of unemployment of varying lengths. Conversely, the unemployment benefit system can play a protective role.

The poverty rate after social transfers and taxes thus appears to be a relevant indicator in that it takes account not only of primary income (from work or capital) but also of secondary income (social transfers) and taxes. It therefore allows a better understanding of disposable income. It is still a monetary indicator, however. Information about the poverty persistence rate, or the rate of health insurance cover would be useful to analyse economic insecurity more closely.

For this indicator, we use a relative definition of poverty: people are considered poor if they have a standard of living 60% below the median standard, which is to say a standard of living exceeded by 50% of the population. It thus affords an insight into the distribution of income within the population. For example, an absolutely equal distribution would result in a relative poverty rate of zero. Taking a relative poverty rate to provide a better understanding of quality of life in a given society can be justified in several ways. First of all, a higher poverty rate represents a higher “risk of poverty” for each individual (and all the more so when incomes are volatile). Then, when society is risk averse, pronounced inequalities will directly affect global well-being for a given economic development level. Lastly, poverty can be linked to exclusion from social life and citizenship, with a number of handicaps being accumulated.

In practice, the countries are distinguished by very different poverty rates (*Figure 12*). For 20 years, almost one-quarter of households in the United States have lived under the poverty threshold. It was one-fifth in Japan and Italy at the end of the period, while the poverty rates in Germany and the United Kingdom are close to 16% and that of France was down at around 15%.

12. Poverty rates after tax and transfers, threshold 60% of median current income



Source: OECD, for further information, see Appendix 1.A1 of the report “Growth and Inequalities” (2008).
NB: the scale of equivalence and the data used are different from those used by Eurostat. For Germany and the United Kingdom, there are noticeable differences in trends and levels between the two sources. In 2005, for example, Eurostat has the poverty rate in the United Kingdom at 19% and that of Germany at 12%.

Lastly, poverty is a multidimensional concept. It cannot be understood as a whole other than by combining several indicators, such as poverty intensity (is the income of poor households very far from the threshold?), poor living conditions or the persistence of poverty over time (are we poor several years in a row?). As an illustration, the United States and Japan have much lower rates of long-term unemployment in the working population that those in France, for instance, but much higher poverty rates. These results underline the need to use several indicators to assess quality of life, even within a single "main theme".

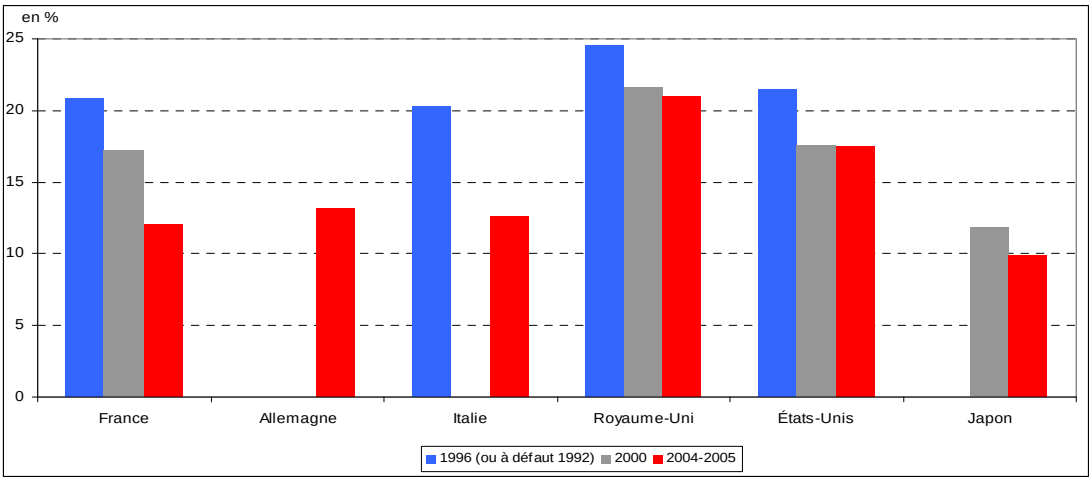
VI.4 Quantifying insecurity: a particularly difficult exercise

Personal insecurity includes crimes, offences and accidents (and all other threats to the physical integrity of individuals). It should be noted that the feeling of insecurity is relatively loosely correlated with the effective degree of security.

Quantifying victimization is a complicated exercise. Compared with administrative sources, survey data has the advantage that it is not affected by changes in behaviour regarding reporting to the police. Survey data should therefore be better suited to tracking "stereotyped" mass delinquency, while having greater difficulty capturing rare events such as homicides.

Although large-scale national surveys do exist in several countries,[5] the issue today is to be able to produce data over a long period that is comparable between countries. These are questions the European Commission is currently working on within the framework of the European Union Action Plan 2006 – 2010 on developing a comprehensive and coherent EU strategy to measure crime and criminal justice.[6]

13. One-year victimization rates



Source: Van Djik Jan & Van Kesteren John & Smit Paul, Criminal Victimisation in International Perspective - key Findings from the 2004-2005 ICVS and EU ICS, WODC Publication n°257, January 2008.
NB: these results should be treated with caution due to the small sample size for each country (2,000 people surveyed in the 2004-2005 campaign, between 1,000 and 2,000 for the other years), differences in dates (first observation for Italy in 1992 and not in 1996) and possible differences in the way the questions are understood. The crimes and offences taken into account (for which a comparison between surveys is possible) are: car theft, car burglary, car vandalism, motorbike theft, bicycle theft, burglary, attempted burglary, hold-up, theft of personal belongings, sexual assault on women, sexual assault on men and assault and threats. The overall downward trend in victimization hides disparities between the trends for the different types of crimes or offences.
NB: the ICVS is a worldwide survey to which the United Nations contributes, and in which the European Commission participates in funding the European part.

[5] See notably for France Miceli, Névanen, Robert, Zauberman (2009).
[6] Specialized studies within this framework (Van Dijk, 2009) conclude that it is necessary to implement standardized victimization surveys in the European Union with questionnaires close to those of the International Crime Victims Survey (ICVS), to be able to continue making inter-temporal international comparisons.

As they stand, the available figures indicate that it is the United States and United Kingdom that had the highest victimization rates in 2004-2005 (over 15%), while Japan seems to have had the lowest rate (below 10%) (*Figure 13*). The trend over the last 15-20 years, observed also in other sources, would seem to be a reduction in the victimization rates for the countries studied here.

VII - From measuring current well-being to measuring sustainability

Sustainability is the third major theme the Commission addressed. We talk of sustainability or of sustainable development when the current standard of living can be maintained in the future, i.e. if our current behavior does not place an excessive burden of debt on that of future generations.

Having stated this principle, how can sustainability be quantified? The Commission made extensive reference to a conceptual framework that it considered to be pertinent and sufficiently flexible to encompass the main dimensions of the problem. It is what the literature has come to call the capital (in the broad sense of the term) or stock approach (UNECE/OECD/Eurostat, 2008). According to this framework, sustainability requires passing sufficient stocks of resources on to the new generations so that they can enjoy a standard of living at least equivalent to the current standard of living. These resources are of very diverse nature: the standard of living of future generations depends on how much physical capital we accumulate for them (production tools, buildings…), on the quantity and quality of natural resources we leave them, and also a certain number of intangible resources, not only knowledge and techniques but also a whole set of institutions that enable society to produce and distribute these goods and services that are produced.

Ideally, if we wanted to produce a single sustainability indicator, it would have to attempt to aggregate all these stocks and would serve to indicate whether the stock can be considered to be growing or declining on the whole. A declining stock would therefore be a sign of over-consumption of resources, thereby preventing future generations from benefiting from living conditions that are at least as good as ours.

The whole question is whether it is reasonable to target a single indicator.

Such an attempt has been underway for several years now by a group of researchers from the World Bank, proposing a sustainability index referred to as adjusted net savings (World Bank, 2006). The idea is to quantify globally, for each country, the trend in its “extended” capital, including both its capital in the usual economic sense of the term (this will therefore be its global savings ratio net of depreciation of fixed capital), its human capital (the variation in which is estimated very imperfectly by education expenditure), and its various natural resources, whether non-renewable (mineral resources) or renewable (forest,…). This indicator is completed by a count of atmospheric emissions of CO2 and other pollutants, considered factors in the degradation of the “capital” formed by the quality of the climate and quality of the air.

The principle of such an approach is perfectly in line with the idea of quantifying net resource “over-consumption”. It does so by an analytical framework organised around concepts from the national accounts and has the advantage of reminding us that sustainability is not only an environmental question: a country that preserves its natural resources but completely neglects material investment or education for the younger generations would not be in a more sustainable position than a country making exactly the opposite choices. The method does pose three problems, however, that the Commission analysed in detail.

The first is that of choosing the relative weights allocated to the different types of capital. For economic capital in the traditional sense of the term, the evaluation is generally made at market prices according to the standard frame of the national accounts: this implies the hypothesis that these market prices reflect the flows of future services that these items of physical or financial capital can render. This hypothesis is open to debate and has no doubt been undermined by the recent economic crisis.

For human capital, there is no explicit market value, and an attempt must therefore be made to evaluate it indirectly on the basis of the remuneration prospects of individuals with different qualifications. A simpler method is based only on the amount of education expenditure. In either case, the methods are approximations and their value is debatable.

Regarding natural resources for which there are markets – fossil resources, for example – we can base ourselves on the prices on these markets, although this approach does once again mean making the hypothesis that these prices actually reveal the importance these resources may have in the long term for future generations. This hypothesis is a fragile one, and it even becomes totally impossible to use market prices for the other forms of damage to the environment: there is no reason why what we today call the price of CO2, as traded on markets of emission permits, should effectively reflect the degree to which current emissions are likely to affect future well-being. The same reasoning can be applied for other forms of damage to the environment, such as damage to water quality or losses of biodiversity.

More fundamentally, we can discuss the pertinence of a simple linear aggregation of variations in the different stocks of capital. Interpreted naively, such an aggregation amounts to supposing that the different types of resources we are passing on to future generations are perfectly substitutable for each other: the indicator will remain very positive, for example, if we leave future generations a highly deteriorated environment while also leaving them, in exchange, large volumes of production capital or a high level of technical knowledge. Such a statement is debatable: there is probably a certain point beyond which we can no longer offset the degradation in natural conditions by a simple accumulation of physical capital or innovation.

More elaborate versions of the notion of adjusted net savings would be better suited to answering this objection, and the Commission also looked into them. Such an approach consists in allocating an increasingly high coefficient to non-substitutable natural assets as their stocks approach critical thresholds beyond which any future decline would become dramatic for living conditions. For example, as a mineral resource runs out, additional use of this resource would be allocated a growing relative weight reflecting its increasing relative scarcity. But as a general rule, this cannot be done by prices revealed by markets. It would be up to the statisticians to allocate these relative weights on the basis of projection models describing the increasing rarity phenomenon as precisely as possible. We can see that this is a highly theoretical solution whose implementation comes up against difficulties that are insurmountable today (Blanchet, Le Cacheux and Marcus, 2009).

One last difficulty associated with the adjusted net savings approach relates to the international dimension of sustainability. A snapshot of present well-being can content itself with national approaches, but it is very different if we are projecting ourselves into the future: the future well-being of each country does not depend only on its own decisions on investment, training or protecting natural resources. It also depends on those of other countries. The most emblematic case of this is climate change: future changes to the climate depend on behaviour in all countries, and it is not necessarily the biggest CO2 emitters who will potentially be hardest hit by the consequences of their own emissions.

Finally, there are studies seeking to address measurement of present activity or well-being and long-term sustainability at the same time. This is the implicit idea in the notion of green GDP, for example: trying to quantify green GDP means calculating a net GDP after deduction of damage to natural heritage. This single index is intended to answer a twofold question about our current standard of living and the way our mode of production reduces prospects for future well-being, by what it implies taking out of natural resources. In a similar spirit, there are also attempts to construct synthetic, non-monetary indices aggregating these two dimensions. The Commission, however, deemed this approach to be too simplistic. The questions of current quality of living and that of our ability to maintain it in the future are separate and complementary at the same time. Aggregating the responses to these two questions in a single figure would tend to blur the messages and is not of great use to the public debate.

As can be seen, the problems posed by the measurement of sustainability are very complex ones: the aim is nothing less than to quantify prospects for the whole of a globalised world in which economic and natural phenomena interact. The Commission was unable to propose a highly rigorous and simple solution to the problems posed by measuring sustainability. No doubt because there is no such thing.

Nor did it wish to return to the approach that currently dominates in sustainable development matters, which consists in combining many viewpoints by proposing very large numbers of complementary indicators. Between the highly aggregated methods of the GDP type and the overabundance of information provided by the large sustainable development indicator dashboards, it sought to construct a mid-way compromise. This approach obviously remains to be clarified and refined, but it does have the advantage that it can be implemented on the basis of current studies.

VII.1 Economic sustainability: often on a downward trend

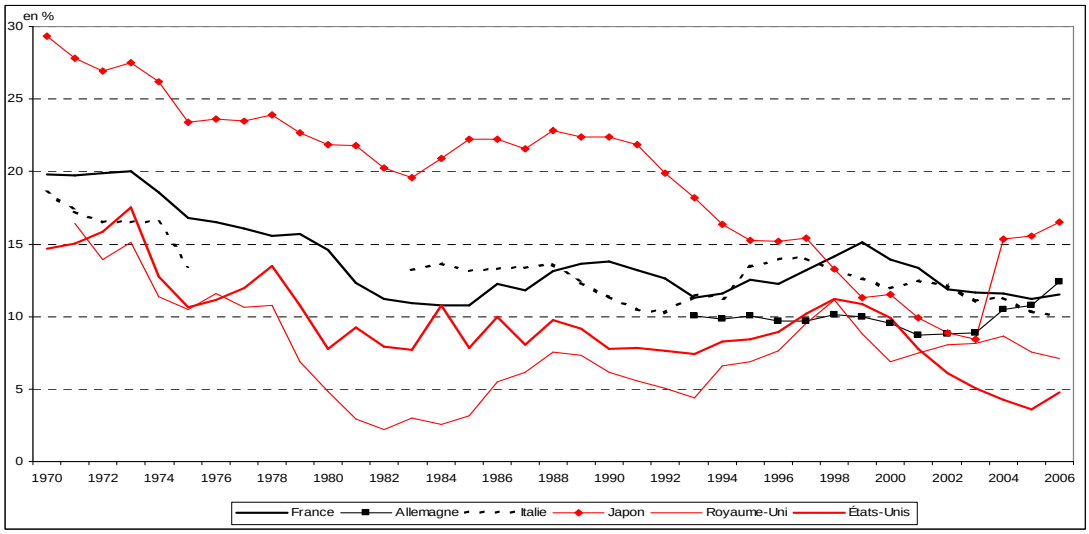
The first recommendation in the report on sustainability consists in separating the two dimensions of economic sustainability and environmental sustainability. The implicit idea is that in the economic domain, the hypothesis of substitutability between production factors is acceptable, at least up to a point. The idea is also that for these factors, direct or indirect reference to market prices remains informative and can provide a starting point. Finally, the idea is that in these fields, the sustainability of each country depends mostly on its own policy choices, whether they be choices on savings, on the country's effort on education or on local fossil resource extraction policy and on the reinvestment of the income it generates.

In such a context, the approach proposed by the World Bank is one that we can attempt to pursue. Initially, it is enough to take its adjusted net savings concept, but without its environmental components which weigh very little, in any case: such an indicator would therefore take account only of net savings, the accumulation of human capital and fossil resource consumption.

The message that can be delivered by this type of indicator for the six main countries in our sample remains that of a situation that is "economically sustainable" (*Figure 14*). This is in fact consistent with the idea that medium and long-term economic growth prospects remain on a upwards trend, although the current crisis makes these prospects less favourable, in principle (Cabannes et al., 2010). We can see the potential of this indicator, however, to warn of any possible reversals in this domain. Although the indicator remains positive, it is on a weakening trend and at particularly low levels for some countries, notably the United States and the United Kingdom. And looking beyond the scope of these six countries, the World Bank shows several countries for which these adjusted net savings are negative and where a problem of economic sustainability would appear to exist already.[7]

[7] Unfortunately, these are quite often countries with relatively low standards of living whose consumption is sustained in the short run only by drawing on their natural resources in a way that compromises their future prospects. This does not necessarily mean that the economic policy recommendation for these countries is to save more – with would lower their current standard of living even further – but it should be at least to reorient their savings strategy in more productive directions.

14. Economic sustainability indicator: adjusted net savings rate excluding the valuation of atmospheric emissions of CO2 and other pollutants



Source: World Bank and authors' calculation.

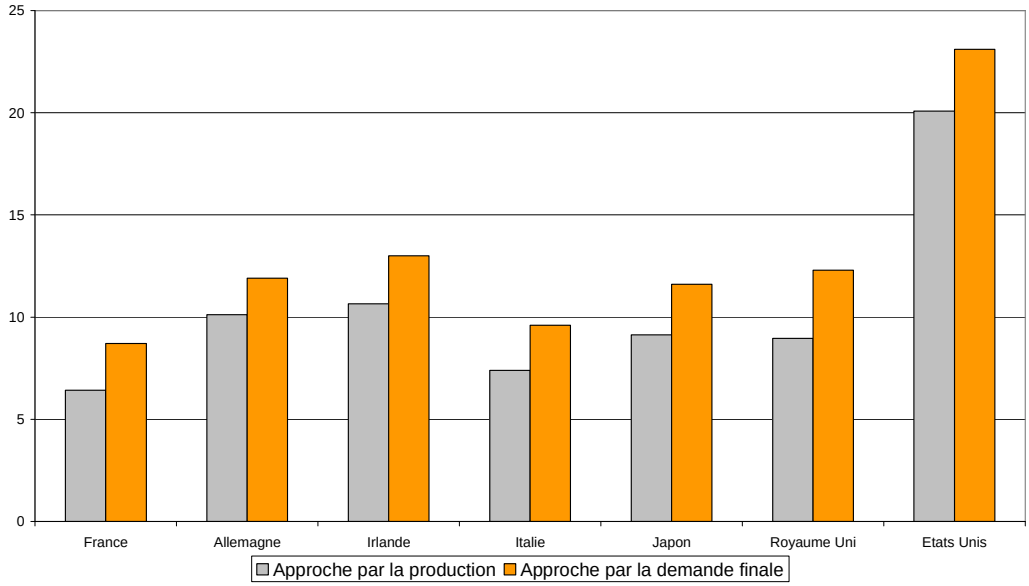
VII.2 Environmental sustainability: example of the carbon footprint

Regarding now the environmental dimension of sustainability, the position of the report is to consider that its specific nature justifies addressing it entirely separately. This is a domain in which it would be imprudent to over-estimate possibilities for substitution by other forms of accumulation. It is also a field in which markets provide only signals that are very poor or quite inexistent. The quality of the environment is also very largely a common heritage of humanity and not divisible between countries, thereby requiring specific measuring instruments. For example, on climate, the question is less one of the sustainability of the situation of each country taken in isolation, but one of the contributions of the different countries to the problem of sustainability on the worldwide scale which can result from the deterioration in the climate.

To capture this dimension of sustainability, one possibility studied by the report is the notion of the ecological footprint (Wackernagel, and Rees, 1995). The report emphasised that this concept also corresponds to an approach of quantifying a behaviour or over-consumption of resources. It is therefore perfectly compatible with the conceptual framework based on stocks which the Commission chose to support. It also has the advantage that it fits the approach of measuring national contributions to world sustainability. The message delivered by this index is well known: since the 1960s, we have moved, on a worldwide level, from a situation of under-consumption to a situation of over-consumption of our natural resources, and developed countries are those mainly responsible for this situation.

More detailed analysis of the concept does however show a certain number of conceptual limits that have also been pinpointed in other recent reports (Le Clézio, 2009; David et al., 2010). The index aims to aggregate the degree of over-consumption of a large number of natural resources, whether forests, cultivated lands or fishery resources. It also captures CO2 emissions exceeding the planet's natural absorption capacities. But it does so using an aggregate index with accounting conventions that are often more conventional than they might appear. Above all, when we examine what it is that explains the rise since the 1960s, we see that it essentially traces the growth in CO2 emission, with the other factors playing only a small role, either by their nature or on account of the way they are taken into account in the index.

15. Carbon footprint in tonnes of CO2 emissions per inhabitant and per year (year 2000)



Source: Nakano et al., 2009

In the light of this, one possible recommendation is to draw inspiration from the ecological footprint approach, but limiting it only to the thing to which it seems best suited, which is to say greenhouse gas emissions (GES). This can be done either by retaining the vocabulary of the footprint, which is to say the calculation of a ratio between emissions and absorption capacity, or by limiting it simply to an emissions count expressed in tonnes of CO2 equivalent per inhabitant and per year, which could then be compared against the levels deemed internationally to be compatible with sustainability.

The most usual data in this domain refers solely to CO2 emissions and according to what is called the “production” approach, consisting in calculating the CO2 content of world production, to which are generally added emissions from the combustion of hydrocarbons purchased by households (petrol for transport, fuel and gas for heating). This method must then be extended to take account of the other greenhouse gas emissions: CH4, NO_2, fluorine-containing gases. But if we wish to adopt the perspective of national contributions to world sustainability, we have to go beyond this production-based approach and look into the greenhouse gas content of all the consumption in each country. We must avoid having countries that are big consumers of products with high greenhouse-gas content appearing only to be small polluters simply by the fact that the bulk of that consumption concerns imported products.

Work is underway on the systematic production of data using this second approach based on final demand (Lenglart, Lesieur and Pasquier, 2010. Such data can also be calculated on a finer level than that of the country, or even on a totally individual or company-by-company level. For an international comparison, data evaluated using both approaches exists at least for CO2 emissions. Such estimations can be found, for example, in Nakano et al. (2009). In 2000, for the seven countries in our sample (*Figure 15*), carbon emission content ranged between 6 and 20 tonnes per inhabitant and per year if we limit the calculation to the sole CO2 content of national production, but between 9 and 23 tonnes per inhabitant and per year if the final demand approach is used.

The proposal of the Commission is to treat the other environmental dimensions of sustainability in the same spirit, without seeking to translate them into monetary indicators. Although such monetisation would admittedly have the advantage of allowing aggregation with adjusted net savings as calculated by the World Bank, the message delivered by this aggregation would not be particularly informative. The importance of the environmental issue

and the difficulty of expressing in terms commensurable with the economic determinants of future well-being justify this separate treatment.

In brief, what is proposed for monitoring sustainability is a quite separate compartment in the global indicator dashboard, itself composed of a single indicator for the economic part of that sustainability, and a set of specialised indicators for the various components of our environmental heritage. However, the Commission abstained from any more precise proposals on this full set of physical indicators of the evolution of the environment, a domain in which it cannot consider itself to be competent.

As for a certain number of the domains addressed in the other sub-groups of the Commission, further studies are therefore necessary to specify not only the content, but also the exact list of indicators that should ultimately be proposed. Nor did the commission wish to pronounce itself on the final list of indicators. It preferred to suggest criteria for selecting and structuring these indicators, and possible routes for developing new ones, some of which have already begun to be explored by Insee and will be pursued. The main idea highlighted in this text has been, above all, that of the three-part dashboard in which monetary indicators have their full place, as long as they are well chosen and are completed by a set of non-monetary indicators. Finally, the report warns against the risk of overabundant information in figures and a lack of selectiveness.

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