

## How is purchasing power measured?

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Purchasing power is of particular concern to French citizens and forms part of the political debate, triggering recurrent controversies, partly due to the lack of a common definition of this term. It is easy to agree on the fact that purchasing power must reflect the simultaneous evolution of incomes and prices: if a household's incomes increase faster than prices, it will gain purchasing power and can consume or save more; otherwise, it will lose purchasing power and must reduce its consumption or savings. The difficulty resides in giving a precise meaning to these different terms. The national accounts use definitions that have the advantage of being consistent with each other and internationally harmonised. However, they lead to evaluations that are often perceived as overly optimistic, even when care is taken to differentiate clearly between the overall purchasing power of all households and purchasing power per consumption unit, which is the most relevant concept from an individual point of view. Several factors can contribute to this discrepancy between measurement and perception. First, there is an inherent limitation to reasoning in terms of the average value. Even if there were complete agreement over the measurement conventions, there would still be a significant proportion of households whose purchasing power varied more slowly than this average rate. There are also perception biases in price measurement, which were documented in detail during the changeover to the euro. In addition, certain misunderstandings need to be clarified about some of the conventions used to measure income or its different uses: the inclusion of "imputed" income or the treatment of loan repayments, etc. Finally, the discrepancy may stem from the fact that households reason in terms of discretionary income, considering certain expenditure to be "unavoidable" and, in practice, deducting it – at least in the short term – from everyday consumer spending trade-offs. Further information about all these subjects can be provided by indicators other than the measurement of average purchasing power.

"Purchasing power" is a widely used term that does not necessarily cover the same concept in everyone's mind. Individuals often struggle to relate their basis of assessment, which varies according to their status or family situation, to the measurement of purchasing power as evaluated from a macroeconomic perspective [Accardo *et al.*, 2007].

### **The purchasing power of gross disposable income is based on the accounting framework of the national accounts**

To provide a precise definition of purchasing power, national accountants rely on a series of standards – the System of National Accounts (SNA). Developed at the international level, this system aims to harmonise the definitions and accounting rules for macroeconomic aggregates in

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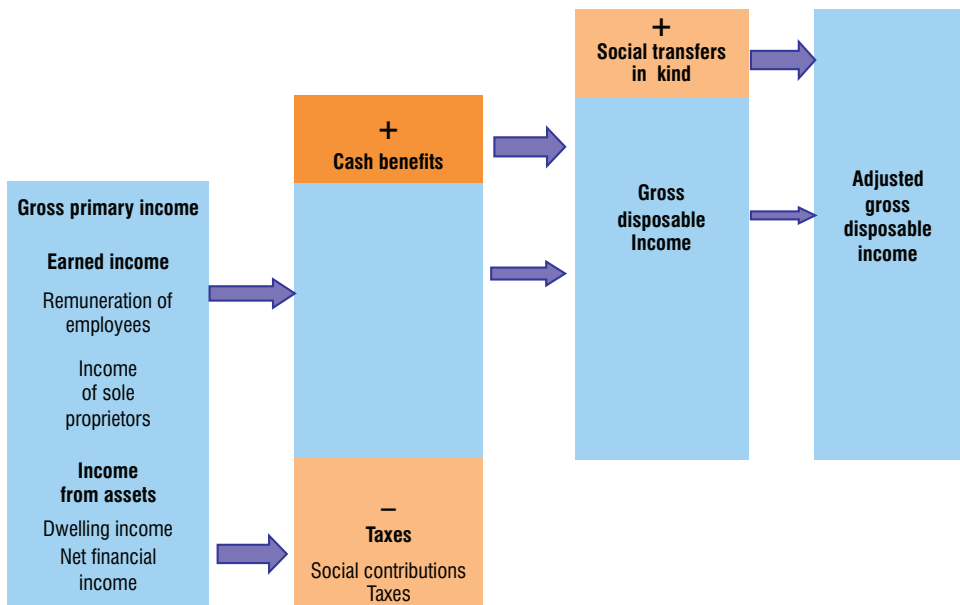
order to facilitate international comparisons. It does not give a precise definition of purchasing power, but it outlines the major aggregates that define it: disposable income, on the one hand, and the household consumption expenditure deflator, on the other.

To measure income in a given year, all types of income and all types of household situations – according to whether household members are employees, self-employed, unemployed or inactive – must be taken into consideration. At the national level, household gross disposable income (GDI) measures the mass of all households’ available resources. This is supplemented by earned income (employee remuneration, sole proprietors’ profits), income from assets (dwelling income, dividends and interest) and social benefits in cash (family allowances, statutory minimum incomes, retirement pensions, unemployment benefits, etc.). Conversely, most of the direct taxes and social contributions paid by households are deducted from gross disposable income (Figure 1).

For international comparisons in particular, national accountants calculate the adjusted gross disposable income (AGDI), which adds social transfers in kind to household income. These transfers correspond either to the financing by general government of a proportion of the goods or services purchased on the market by households (e.g. reimbursements of medical care or housing benefit), or to services produced by general government (especially education or health) and non-profit institutions serving households (NPISHs). Another concept must be added to this AGDI: actual household consumption, which takes account of household consumption expenditure and of the proportion financed by general government and more marginally by NPISHs. Defined in this way, AGDI and actual consumption do not depend on the degree of "socialization" of consumer spending. They also reveal the redistributive dimension of social transfers in kind.

Disposable income therefore has a clearly defined scope but does not in itself summarize all wealth creation. While savings contribute to variations in net household wealth, (i.e. assets less liabilities), they also vary during the year according to the fixed-capital consumption of

### 1. From gross primary income to adjusted gross disposable income



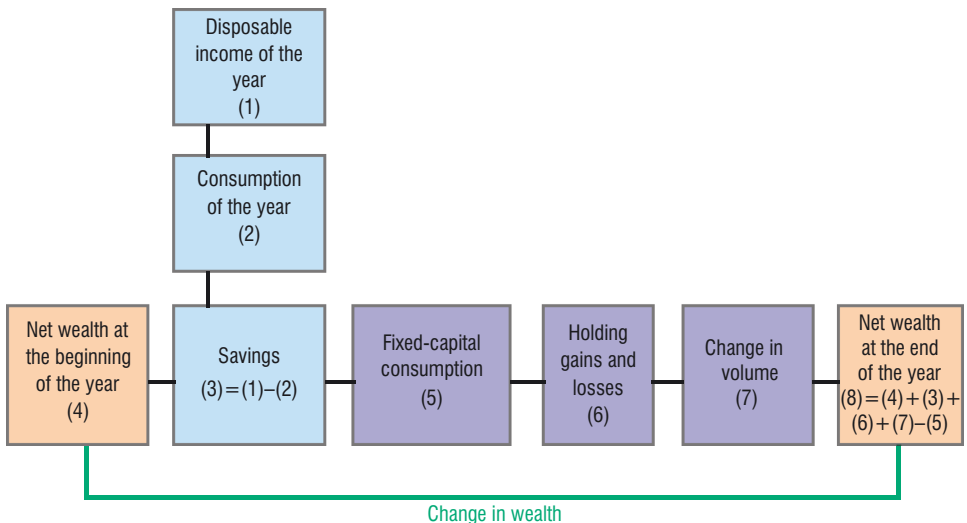
non-financial assets and of elements not resulting from production: holding gains and losses, in addition to other changes in volume (Figure 2).

Consequently, (unrealised) stock-market gains are holding gains that contribute to increasing net wealth without being income, and when the household realises this gain by selling the assets in question, its income and wealth do not change; only its liquidity increases. Of course, this liquidity surplus may enable it to consume or invest in other assets. Loan repayments increase net worth (financial liabilities decrease) without affecting disposable income. Similarly, when the value of its home increases, a household's net wealth also rises (non-financial assets increase) due to a holding gain concerning the land on which the residential building is built. Finally, when undeveloped land or land under cultivation is built upon, the wealth of the household that owns it increases due to a "change in volume" that also leaves its disposable income unchanged. However, the level of a household's net wealth at a given moment is primarily the result of the net savings (excluding fixed-capital consumption) that it has been able to set aside in the past, whereas holding gains (or losses) are of a more uncertain nature. In addition, they are unrealised, *i.e.* they are not obtained until they have actually been realised. That is why the measurement of purchasing power, which is also "saving power", is limited to current income, but the fact that it does not reflect all variations in wealth must be borne in mind.

## GDI in real terms has been slowing since 2007

The change in purchasing power is first calculated as the ratio between the change in the GDI and the change in household consumption expenditure prices to obtain the change in GDI in real terms. This is then adjusted to the inhabitant, household or consumption unit (CU) level in order to take account of demographic changes and thus calculate the average change in purchasing power.

### 2. The links between income, consumption and changes in wealth

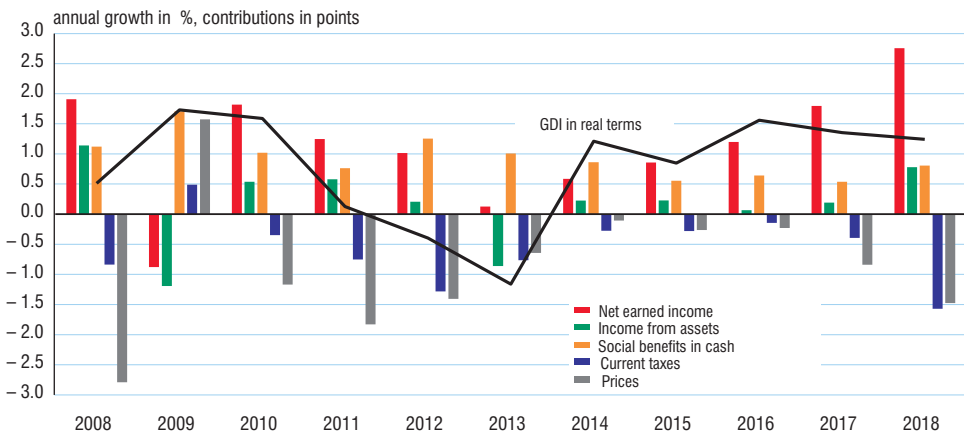


1. This is depreciation sustained by fixed capital during the period in question further to normal wear and foreseeable obsolescence.

Over the long term, GDI in real terms changes at more or less the same rate as GDP growth. Nevertheless, in times of recession, GDP slows down before GDI in real terms. Consequently, GDP fell sharply in 2009 whereas GDI in real terms continued to grow due to the resilience of wages and the role of “automatic stabilisers” (taxes and social benefits) in cushioning the immediate effects of the crisis (Figure 3). However, GDI in real terms fell in 2012 and 2013 due to public finance consolidation measures).

Since 2007, net wages received by households have slowed sharply, but they have continued to rise, in contrast to the incomes of self-employed entrepreneurs, which were severely affected by the crisis (Figure 4). Traditionally, property incomes drop sharply after major recessions. Benefits in cash have held up quite well, helping to limit the decline in income in 2012 and 2013. Social transfers in kind have increased at a slower rate than before the crisis, but faster than GDI, with the result that adjusted GDI has grown faster than GDI since 2007.

### 3. Contributions to change in household power of disposable income



Source: Insee, national accounts, 2014 base.

### 4. Change in household purchasing power of disposable income

	average annual change, in %								
	1996-2007	2007-2018	2012	2013	2014	2015	2016	2017	2018
<b>Net earned income</b>	<b>4.4</b>	<b>1.4</b>	<b>1.5</b>	<b>0.1</b>	<b>0.9</b>	<b>1.4</b>	<b>1.9</b>	<b>2.8</b>	<b>4.4</b>
Net wages	4.6	1.7	1.7	0.8	0.9	1.5	2.1	3.0	4.8
Net income of sole proprietors	3.5	-1.2	-0.6	-5.1	0.7	0.1	0.4	1.7	1.3
<b>Income from assets</b>	<b>5.4</b>	<b>1.6</b>	<b>2.9</b>	<b>0.5</b>	<b>1.8</b>	<b>2.0</b>	<b>2.3</b>	<b>2.6</b>	<b>2.4</b>
Financial income	4.1	-1.7	-1.1	-13.5	0.7	-0.8	-3.8	-2.4	8.3
Dwelling income	5.1	1.6	2.2	0.8	1.4	2.1	2.2	2.5	2.5
<b>Net transfers received</b>	<b>3.8</b>	<b>2.6</b>	<b>3.8</b>	<b>2.9</b>	<b>2.4</b>	<b>1.5</b>	<b>1.8</b>	<b>1.5</b>	<b>2.3</b>
Social benefits	3.8	2.6	3.8	2.9	2.4	1.5	1.8	1.5	2.3
Taxes	6.8	2.8	8.9	4.9	1.7	1.7	0.9	2.4	9.6
<b>Gross disposable income</b>	<b>4.0</b>	<b>1.4</b>	<b>1.0</b>	<b>-0.5</b>	<b>1.3</b>	<b>1.1</b>	<b>1.8</b>	<b>2.2</b>	<b>2.7</b>
<b>Consumption deflator</b>	<b>1.4</b>	<b>0.7</b>	<b>1.4</b>	<b>0.6</b>	<b>0.1</b>	<b>0.3</b>	<b>0.2</b>	<b>0.8</b>	<b>1.5</b>
<b>GDI in real terms</b>	<b>2.6</b>	<b>0.7</b>	<b>-0.4</b>	<b>-1.2</b>	<b>1.2</b>	<b>0.8</b>	<b>1.6</b>	<b>1.4</b>	<b>1.3</b>
<b>Social benefits in kind</b>	<b>4.3</b>	<b>2.2</b>	<b>2.2</b>	<b>2.1</b>	<b>2.4</b>	<b>1.6</b>	<b>1.6</b>	<b>2.4</b>	<b>1.3</b>
<b>Adjusted gross disposable income</b>	<b>4.1</b>	<b>1.6</b>	<b>1.3</b>	<b>0.1</b>	<b>1.6</b>	<b>1.2</b>	<b>1.8</b>	<b>2.3</b>	<b>2.4</b>

Source: Insee, national accounts, 2014 base.

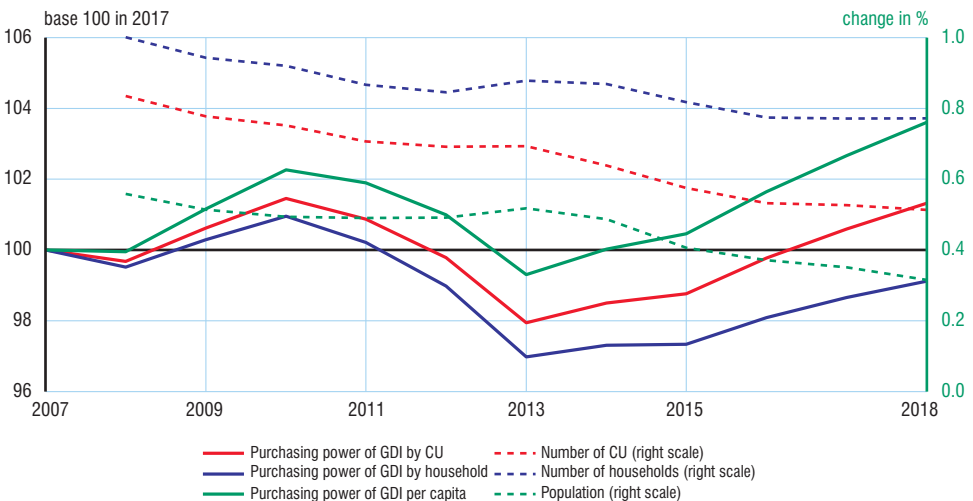
## Consumption units reflect individual situations more accurately

GDI is calculated for all households. However, the change in purchasing power also depends on demographic changes. Indeed, two phenomena must be considered:

- the population is growing steadily, albeit at a slower and slower pace. The number of births is declining, life expectancy has risen extremely slowly in recent years and the migration balance remains relatively stable. To take account of the fact that incomes are distributed among an increasing number of inhabitants, international and temporal comparisons of GDP are often carried out on a GDP per capita basis;
- through economies of scale, living together enables people to reduce certain expenditure items such as housing. The “consumption unit” notion takes account of this practice because it proposes a weighting method that is more representative of the composition of households and ultimately reflects household consumption more realistically: in a household, the first adult counts as one CU, each additional person over 14 years of age counts as 0.5 CU and each child under 14 years of age counts as 0.3 CU. For example, a family of two adults and one 8-year-old child corresponds to 1 CU for the 1st adult + 0.5 CU for the 2nd adult + 0.3 CU for the 8-year-old child, adding up to 1.8 CUs.

Household purchasing power can be calculated as a ratio of the population, the number of households or the number of CUs. The number of households is increasing at a faster rate than the population due to the ageing of the population and the trend towards undoubling, with the result that purchasing power per household is growing at a slower rate than purchasing power per capita. Between 2007 and 2018, purchasing power per inhabitant increased by 3.6% while household purchasing power decreased by 0.9%. Purchasing power per CU falls between the two measures, growing by +1.3% in 12 years (Figure 5). In view of these highly contrasting changes, the choice of the demographic variable is very important. INSEE favours the calculation of purchasing power per consumption unit, which better reflects individual situations. In this way, two people living under the same roof do not need twice the income of a single person to attain the same standard of living; housing-related expenditure, for example, is not twice as high.

### 5. Change in household purchasing power according to demographic criteria



Source: Insee, national accounts, 2014 base..

## Adjusted gross disposable income enables comparisons of purchasing power in different countries

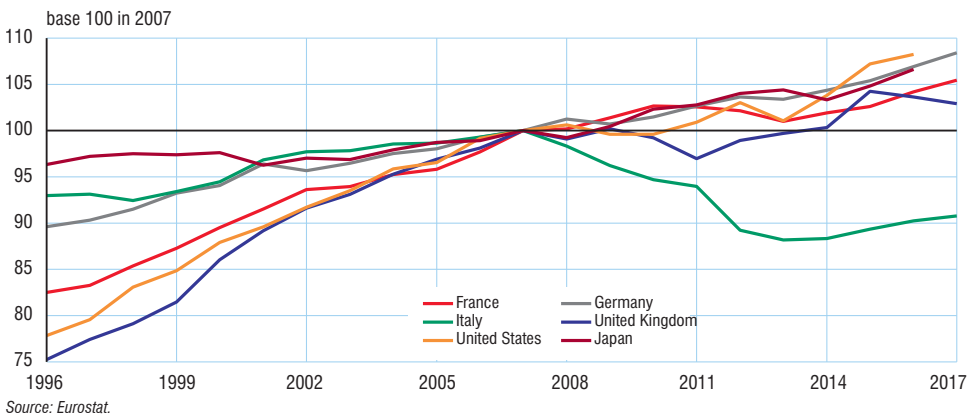
Purchasing power can be compared from one country to another. However, certain institutional specificities may distort international comparisons of incomes. In this way, expenditure on certain items such as education or health may be covered by general government to a greater or less extent, in return for the payment of a tax by households. Adjusted disposable income takes account of these social transfers in kind. This adjustment has a variable impact on GDI, increasing it by 8% in the United States and 25% in France.

In the absence of international data on consumption units, international comparisons are based on the purchasing power of adjusted GDI per inhabitant using the actual household consumption deflator (to take account of changes in the prices of social transfers in kind). Since 2008, changes in purchasing power have followed fairly similar trends in France, Germany, the United Kingdom, Japan and the United States. The impact of the crisis can hardly be detected in Japan and Germany, where purchasing power was growing weakly prior to 2008. Italy stands out: purchasing power was quite sluggish before 2008 but fell constantly between 2008 and 2013 (-12%), before recovering slightly (Figure 6).

## The impact of accounting imputations on purchasing power is relatively weak

Household disposable income, and therefore the resulting changes in purchasing power, include specific national accounting treatments. Income that does not correspond to cash flows is said to be “imputed” to households. Imputed rents constitute the bulk of imputed income. The national accounts consider that home-owning households pay themselves rent whose value is evaluated with reference to market prices. These imputed rents are accounted for as own-account production of owner-occupied housing services, which simultaneously increase their income (less the charges) and their consumption. This convention relates to the idea that the measurement of production must be independent of the occupier’s legal status; otherwise, GDP would decline as the proportion of homeowners increases. In 2018, imputed rents represented 14.6% of household consumption expenditure and, after the deduction of charges, 10.7% of their disposable income

### 6. Purchasing power of adjusted gross disposable income per capita



An imputation mechanism also applies specifically to insurance. Households pay gross premiums and, if applicable, receive benefits. As the insurance service is not explicitly invoiced to policyholders, it must be imputed: this production is calculated as the difference between the gross premiums and expected benefits (income from the investment of premiums is also added). The total value of this production of insurance services for households is added to their disposable income and consumption. It amounts to 4.3% of household consumption and 3.7% of their available income.

Financial Intermediation Services Indirectly Measured (FISIM) are another form of imputed income, corresponding to the margins earned by banks on the interest they pay on deposits and receive on loans in relation to the interbank loan rate. The impact on GDI and on final household consumption is limited to the household consumption of FISIM in terms of their deposits and consumer loans.<sup>2</sup> For a long time, FISIM constituted the majority of banks' resources. Today, in line with the low interest rates, final FISIM consumption represents only 0.49% of total household consumption, or 0.42% of disposable household income.

Therefore, in the national accounts, imputed income constitutes a substantial proportion of the mass of households' income (14.8%). Imputed rents account for 72% of this income, with the consumption of insurance services representing 25% and final consumption of FISIM 3%. Over the long term, purchasing power excluding imputed income increases at a slower rate than the purchasing power of GDI. However, imputed incomes have a relatively weak influence on changes in purchasing power. Since 1978, the cumulative impact on purchasing power has been 8.5%, or 0.1 percentage point per year. Over the 2007-2018 period, the impact of imputed incomes also amounted to +0.1 point per year. This appreciable difference remains very limited, however.

## The household consumption deflator is consistent with GDI

The household consumer price index, within the meaning of the national accounts, is used as the denominator for the calculation of household purchasing power. This consumption deflator and the consumer price index (CPI) differ slightly for three main reasons (*Figure 7*). The first stems from the scope of the products monitored, which is broader in the national accounts. In particular, the consumer expenditure deflator takes account of Financial Intermediation Services Indirectly Measured (FISIM), life insurance and imputed rents. The second relates to the use of an information source other than the CPI to deflate certain products and move closer to national accounting concepts: this is the case for non-life insurance. Lastly, weighting effects come into play: in national accounting, the deflator is a Paasche index, whereas the CPI is a Laspeyres index.<sup>3</sup>

Unlike the CPI, the household consumption deflator is revised three times for each year (excluding the base change period) in each annual accounting campaign. The quantification of consumer expenditure for a given year is evaluated at a very detailed level of classification using a diverse combination of sources: periodic surveys (e.g. Family Budget) or business outlook surveys of households, sector surveys, statistics on foreign trade provided by professional associations, analyses of panels of households or retailers. This combination of sources leads:

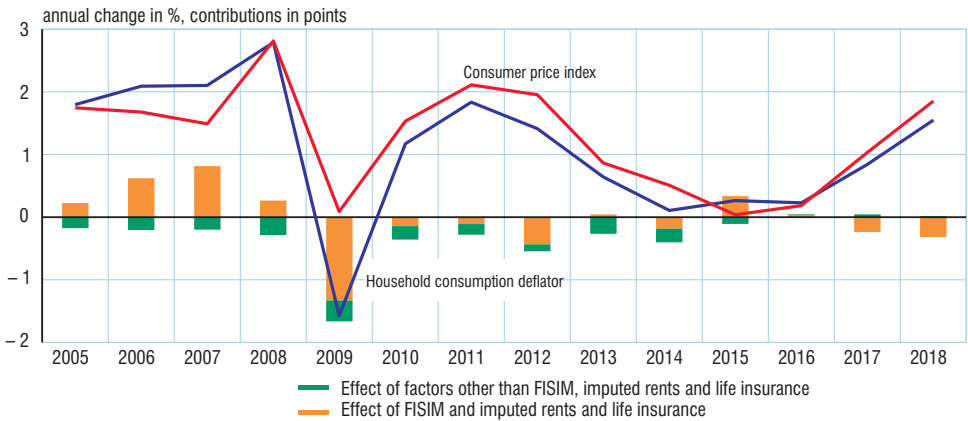
- most often, to the adoption of a change in value index, used to obtain consumption in current value. This is then deflated by the average annual change in a price index (usually the CPI of the corresponding item) to obtain the consumption estimated at the prices for the previous year;

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2. A "FISIM adjustment" corresponding to the total household consumption of FISIM is added to the net interest received by households. Since the national accounts consider FISIM on mortgages to be intermediate consumption (because they allow households to produce a housing service), they are deducted from GDI, with the result that the impact on GDI corresponds to final FISIM consumption.

3. The Laspeyres index is weighted by the masses of the base period. The Paasche index is weighted by the masses of the current period.

## 7. Difference between the deflator of household consumption deflator and the consumer price index



Note: 'Bars' refer to the main contributions to the difference (in points) in the evolution between the household consumption deflator and the consumer price index (CPI).

Source: Insee, national accounts, 2014 base.

- in other cases, to the adoption of a change in volume index, which, when applied to consumption in value terms for the previous year, can be used to obtain consumption estimated at prices for the previous year. The average annual change in consumer prices is applied to the latter in order to obtain consumption according to current values.

The household consumption deflator – based largely on the CPI – may also be subject to disparities between the measurement of inflation and households’ opinions of inflation. Indeed, the structure of the CPI is well known and documented [IPCCMMéthode, 2015], as are the recurrent criticisms of it, on grounds that it underestimates the “real” rise in prices [Accardo *et al.*, 2011]. Past experience of the changeover to the euro has shown that the perception gap between measured inflation and perceived inflation widened following the changeover to the euro in France and in most Eurozone countries [Leclair and Passeron, 2017]. Analysis of this experience has led to the identification of several factors that may explain the discrepancy between public perception and the statistical measurement of inflation: on the one hand, households are more psychologically attentive to the prices of certain products that have increased relatively significantly and are purchased on a frequent basis (Brudieu *et al.*, 2001); on the other hand, periods of sharp rises in property prices influence households’ perceptions. Ultimately, adapting the CPI (via the calculation of the consumption deflator) to make it consistent with the calculation of income does not necessarily reduce the gap that may exist between the perception and measurement of prices [Aeberhardt *et al.*, 2019].

### Discretionary purchasing power: an additional indicator

Disposable income is not entirely disposable since households are committed to a certain amount of “pre-engaged” expenditure, namely that incurred under contracts which are difficult to renegotiate in the short term. As when GDI is calculated in real terms, it is possible to define a “discretionary income”, which relates changes in disposable income after payment of pre-engaged expenditure to changes in non-pre-engaged consumption expenditure. Discretionary purchasing power adjusts the change in discretionary income in real terms according to the change in the number of consumption units.



Over the long term, the changes in GDI and discretionary income in real terms are quite similar. Since 1960, GDI has grown by 6.9% per year on average, compared with 6.5% per year for discretionary income, but the prices of pre-engaged expenditure have been more dynamic than for consumption as a whole (+4.8% per year compared with +4.0%), with the result that discretionary purchasing power has grown at a rate that is, on average, one percentage point higher per year than that of GDI (+2.6% per year against +1.5% per year). In 2018, as in 2017, the difference between the two measurements was not perceptible: the purchasing power per consumption unit of disposable income grew by 0.7% in 2018, the same rate as that of discretionary income. Indeed, pre-engaged consumption expenditure was less vigorous than households' gross disposable income (+2.2% in nominal terms against +2.7%).

Beyond the question of the measurement of inflation, other factors can explain discrepancies between the measurement of actual purchasing power and the perception of it. First of all, the proliferation of new products and services, which do not replace others but add to consumption opportunities, can lead to a change in the consumption standard. Such products may then be considered part of essential consumption (computers and internet subscriptions, smartphones, etc.). This kind of phenomenon can explain feelings of relative impoverishment even in people with rising incomes: consumers will either conform to this new standard, sometimes by reducing their savings ratio, or they will feel frustrated when they fall short of it.

Secondly, the definition of purchasing power used by national accountants, which is based on changes in household gross disposable income, is not shared by everyone. Indeed, in addition to the pre-engaged expenditure used in national accounting, other unavoidable expenditure could also be deducted in order to assess household wealth. In addition to pre-engaged expenditure, certain studies [*Conjoncture in France*, June 2019] identify "not-easily-reducible" expenditure (food, healthcare, education, fuel, transport), i.e. consumption items that are difficult to avoid in the short term, and others that are "reducible" (see below for a breakdown of these types of expenditure for different categories of households).

National accounting has adopted the concept of pre-engaged expenditure because, despite its shortcomings, it constitutes a calculable proxy for unavoidable expenditure. Indeed, according to the Quinet Report [2008], "pre-engaged" and "necessary" expenditure (which added together constitute "unavoidable" expenditure) only partially overlap. It is therefore difficult to obtain a clear and comprehensive picture of unavoidable expenditure. Furthermore, the scope of this expenditure remains highly normative. Generally, it includes expenditure that is considered "inevitable" because it is indispensable and hard to replace with a different product. It very often corresponds to some of the least price-sensitive items, at least in the short term. Housing-related expenditure (rent, water, gas, electricity) is also considered "unavoidable". However, expenditure on food and clothing, which are often deemed to be basic necessities, is generally excluded from the scope of unavoidable expenditure, because in an open and competitive economy, consumers generally retain the discretionary power to choose between many varieties of these types of goods according to their price level, including in the short term. Food expenditure that is deemed to be inevitable (school meals) is the only type to be sometimes considered unavoidable (little or no discretionary power).

With the transformation of modes of consumption, the very notion of pre-engaged expenditure has evolved over the last ten years and the "contractual" link has become more flexible for consumers. The introduction of portability mechanisms (especially by the competition regulators) has increased the degree of competition and limited the pre-engaged nature of such expenditure by making it easier for consumers to change their providers. This includes the portability of mobile telephone numbers, the opportunity to change one's Internet provider whilst retaining the same landline number, bank account portability (to facilitate and automate the

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4. Various observers have defended the idea that the cost of living measured by the INSEE price index is underestimated. For example, a recent study by the IRES (Economic and Social Research Institute) emphasises that the costs in the standard budgets (required for families with children to live decently) calculated by the UNAF (National Union of Family Associations) increased twice as fast as the CPI over the 2010-2018 period [Concialdi, 2019].

process for changing one's main bank), and the transferability clause in home loans. Another example is the opportunity for insurance policyholders to cancel their car, motorcycle or home insurance policy at any time after one year, since the Consumer Law of 17 March 2014 came into force on 1 January 2015. Although pre-engaged expenditure serves as a measurable approximation of unavoidable expenditure, the very concept of this expenditure can be called into question with regard to the actual constraints that it imposes.

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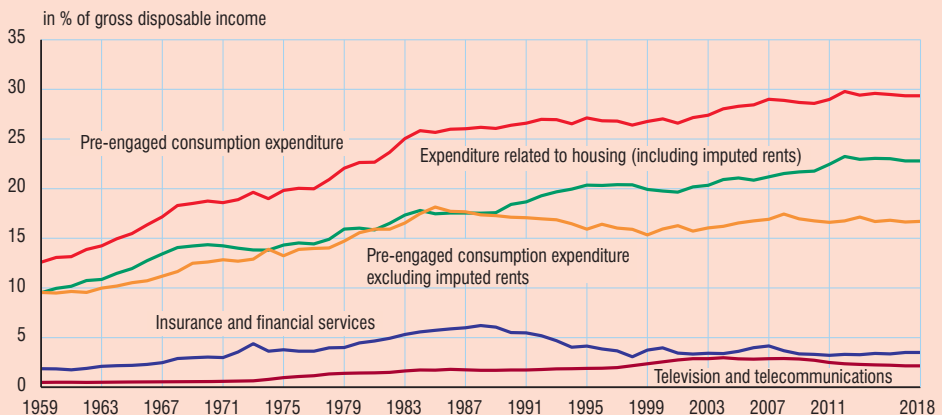
### The weight of housing in pre-engaged expenditure

The share of pre-engaged expenditure in household consumption rose from 15% in 1960 to 34% in 2008 and has stabilised since then. The share of pre-engaged expenditure in GDI rose from 12.6% to 29.2% (i.e. +16.6 percentage points) between 1960 and 2018. Most of this increase occurred in the 1960s and 1970s. In terms of weight, the housing function has made the largest contribution to the rise in pre-engaged expenditure: since 1959, it has accounted for 13.4 points of this increase, having risen from 9.5% to 22.9% of GDI. Within the housing function, imputed rents have contributed 9.4 points to this 13.4-point increase over 45 years (70%). This significant contribution reflects not only the relative increase in real rent prices, which are the basis for the estimation of imputed rents, but also the substantial increase in the proportion of homeowners over this period.

An alternative approach consists in eliminating imputed rents from both pre-engaged expenditure and the total household expenditure to

which this expenditure is compared. Excluding imputed rents, the share of pre-engaged expenditure rises from 9.5% in 1960 to 16.7% in 2017. The housing function excluding imputed rents contributes 3.8 percentage points to this rise, of which 2.2 points correspond to the increase in the weight of real rents. The increase in the weight of real rents is concentrated in the 1960-1970 period and is a sign of the strong relative price rises in this item for households that rent their home (Figure). The virtual stability of the weight of real rents masks a more complex phenomenon, given the relative decline in the number of households renting over this period: in fact, this is a sign that the weight of rents has continued to grow in the budgets of households that have remained tenants. Therefore, the diagnosis of a significant increase in pre-engaged expenditure since the 1960s must be put into perspective if imputed rents – which households do not consider to be expenditure or income – are not taken into account.

### Share of pre-engaged consumption expenditure in GDI



Source: Insee, national accounts, 2014 base.

## Buying a home: a financial investment

In national accounting, although rents are included in the calculation of purchasing power, buying a home is not considered as household consumption expenditure. However, the surge in real estate prices since the beginning of the 2000s has had a lasting effect on household living conditions [Leclair *et al.*, 2019]. When a household buys a home, it is making an investment that will lead it to make intertemporal choices between its future consumption and its future savings required to repay its loan. The increase in housing prices, if it is not the result of a drop in interest rates, causes households that aspire to becoming homeowners to make different choices: increase their savings, borrow over a longer period or buy a cheaper home that is smaller or further away from the workplace or other amenities, etc. Each of these choices will have an impact on the household's living conditions and the effort involved may legitimately be perceived as a decline in the household's purchasing power in the sense that the repayments will have a lasting effect on the amount they have left to live on, or, if they have opted for a cheaper home, the housing service consumed will be of lower quality. From this point of view, it would seem legitimate to include house prices in purchasing power, even though their effect is more appreciable over a life cycle than over a given period.

By including imputed rents in the calculation of purchasing power, the variation in the quality of owner-occupiers' housing is taken into account. However, repayments of loans (such as consumer credit) are considered to be financial transactions affecting the households' assets, but not the purchasing power of household income.

Rents paid by tenants (for main residences and holiday rentals), repair and maintenance expenditure, as well as other household expenditure (water, electricity, gas, caretaker services, etc.) do in fact correspond to the consumption of a housing service, whereas households' expenditure on their home and mortgage repayments is not included in their consumption expenditure. Indeed, homes are not considered to be consumer products, but rather property assets (including the building and the land it occupies). From this perspective, the purchase of a home is, at least partially, an investment: it is an asset. The money spent on purchasing it is not lost but invested in the sense that it increases the household's assets. Purchasing their home enables owners to produce a housing service (imputed rent) which they personally consume by occupying that home. The purchase of a home by a household therefore contributes to increasing its income, as its savings remain unchanged.

The increase in real estate prices does not only affect purchases of homes. The value of a home varies over time, and a household may, once its loan has been repaid, find that it owns assets that are worth much more than the savings they have set aside. Of course, as this is the main residence, this increase in the assets is not translated into a monetary gain, but it may lead to new choices made possible by realising the capital gain. In other words, when real estate prices rise, it is not only the transactions that are concerned, but also a large part of the housing stock. Therefore, when a cycle of real estate price rises begins, it mainly benefits all previous purchasers, whereas people wishing to become homeowners will be required to make greater savings efforts.

Bearing in mind that the peak home-purchasing age for households is around 28 years of age [Chaumeron and Delance, 2015], the increase in real estate prices affects this generation in particular, and all the more so as in a bullish market, they are even more inclined to buy as they expect prices to increase and therefore to have even more difficult choices to make in the future. Therefore, the trend in real estate prices must be assessed over a life cycle whereas the trend in purchasing power provides information over a given period for all households regardless of their age.

## Deflating GDI with an extended expenditure index that includes household investments

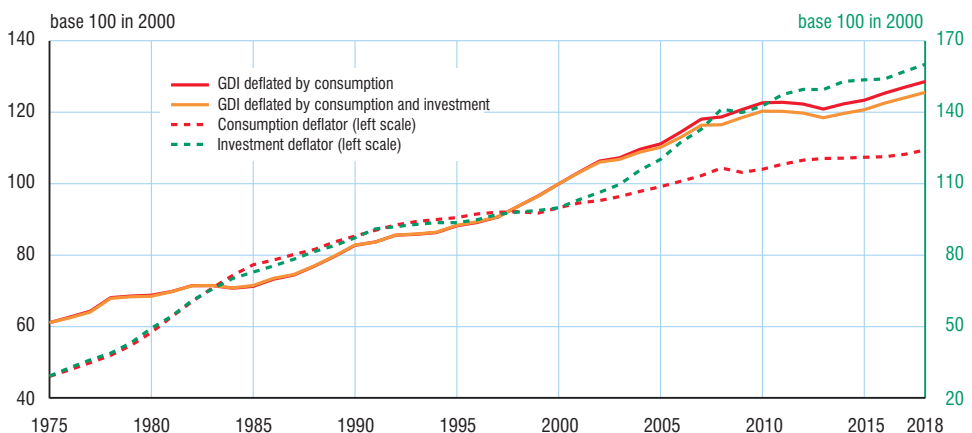
Disposable income corresponds to the resources available to households, for consumption on the one hand, and via savings for investment on the other. It is therefore possible to deflate GDI using an “expenditure” deflator which aggregates consumption and investment. In addition, the principle of homogeneity of the numerator and denominator is recommended by the European System of Accounts, even though this causes certain difficulties in practice. Investment mainly corresponds to a proportion of the acquisition value of new-built housing. Indeed, most transactions concerning existing housing take place between households (the expenditure is therefore consolidated). The price of existing housing is therefore neutral for households overall, even if it has a redistributive effect between buyers and sellers. Furthermore, the purchase of the land is considered as the acquisition of a non-produced asset and not as an investment. Therefore, only the acquisition of the building is recognised as an investment. In the event of sharp rises in real estate prices that are not linked to construction costs, the increase is attributed to the “land” part and is therefore not considered in the investment.

Until 2000, the price of buildings generally followed a similar trend to consumer goods, but they have diverged considerably since then (*Figure 8*). Between 2000 and 2018, the consumption deflator rose by 24% compared with 60% for the investment deflator. This has had a relatively significant impact on the purchasing power of GDI, which increased by 1.4% per year on average between 2000 and 2018 if investment is not included in the deflator (traditional measurement of purchasing power) and by 1.3% if it is included.

This extended indicator nevertheless raises several questions. Indeed, in any given year, acquisitions of new-built homes are concentrated in a small number of households (about 1% each year). Even if GDI is a macroeconomic aggregate that enables it to be included, the proposed extension of the indicator does not take account of the change in the total price of housing (which includes the price of the land).

The problem posed by this extension reveals the cross-cutting nature of the housing issue, which can be perceived in everyday life in terms of consumption expenditure, but also over a life cycle in terms of assets, taking all future and past flows into consideration. In this approach, the purchase or real estate in a given year N can be reflected in loan repayments over several

### 8. Change in GDI according to the deflator



Source: Insee, national accounts, 2014 base..

years. The value of the asset itself may rise or fall over time. To reallocate all the related costs and benefits to a given year N in order to impute an “annual rent equivalent” for home-owners, assumptions (which would be highly fragile and disputable) would have to be made about the expected gains or losses on the different components.

## Purchasing power per household category

The change in household purchasing power measured in the national accounts is an average value, which means that certain households see their purchasing power rise while others see theirs fall. This is why people find it difficult to identify their personal situation with the average measurement of purchasing power. In terms of level, the purchasing power of a low-income household is by definition lower than that of an affluent household, but the change in purchasing power may, depending on the period, be greater or smaller for low-income households than for affluent households. This will depend on the change in each household's income. Category-based approaches can provide further clarification in this respect.

Household surveys provide a more detailed picture of their income and consumption and make it possible to study disparities between different types of households, looking beyond the mean values calculated for the national accounts. As the detailed data for household consumption in 2017 (Family Budget survey) are not yet available, we will limit ourselves here to the breakdown of the components of GDI between 2011 and 2016 and the breakdown of consumption in 2011.

The disposable income of the wealthiest 20% of households is more than four times higher than that of the poorest 20% of households. The weight in disposable income of net transfers received, such as income from assets held, varies from one category of household to another. Income from assets held constitutes more than a quarter of GDI for the wealthiest households whereas it is very low for the first quintile (7% of GDI). Net transfers represent almost 50% of GDI for the first quintile compared with less than 10% for the fifth quintile. Net transfers received can substantially reduce inequalities, since apart from redistribution, the income of the wealthiest 20% of households is 7 times higher than that of the poorest 20% (*Figure 9*).

The changes seen between 2011 and 2016 must be interpreted with some caution, as the composition of the quintiles changes from one year to the next. For example, a drop in wages in one quintile can lead to two phenomena: an average drop in the wages earned by workers and/or a reduction in the number of workers in the quintile. Between 2011 and 2016, only the household income in real terms of the 3<sup>rd</sup> quintile grew, mainly due to the increase in their net wages. The purchasing power of the wealthiest households (5<sup>th</sup> quintile) fell markedly due to the drop in their property income (mainly dividends received) between 2011 and 2013. That of the poorest households also declined due to a drop in net wages, which was only partially offset by an increase in net transfers received. In addition, the structure of consumption varies considerably from one quintile to another. The share of “unavoidable” expenditure in the widest sense of the term (pre-engaged expenditure and “not-easily-reducible” expenditure [Billot *et al.*, 2019]) was substantially higher for the poorest households (67%) than for the wealthiest households (58%) (*Figure 10*). For an identical change in purchasing power, the differences in consumption structure can be explained by a more negative perception of the change in their living standards by the households with the most unavoidable expenditure.

## Using additional indicators to enhance the purchasing power indicator

The consistent and harmonised national accounting framework at the international level provides a precise definition of purchasing power. This must be maintained, but additional indicators can be used to obtain a more accurate idea of households' perceptions.

## 9. Gross disposable income by household category

Average annual amount per household in 2016 in euros	Q1	Q2	Q3	Q4	Q5	All ordinary households
<b>Net earned income</b>	<b>9,293</b>	<b>17,395</b>	<b>23,637</b>	<b>31,942</b>	<b>56,417</b>	<b>27,737</b>
Net wages	7,206	15,440	22,078	30,324	49,707	24,951
Net income of sole proprietors	2,087	1,956	1,559	1,617	6,710	2,786
<b>Income from assets</b>	<b>1,445</b>	<b>2,762</b>	<b>5,446</b>	<b>8,853</b>	<b>24,889</b>	<b>8,679</b>
Financial income	196	206	197	607	8,655	1,972
Dwelling income	1,249	2,555	5,249	8,246	16,234	6,707
<b>Net transfers received</b>	<b>10,167</b>	<b>9,084</b>	<b>8,792</b>	<b>7,269</b>	<b>7,002</b>	<b>8,463</b>
Social benefits	12,327	12,680	14,055	15,298	25,329	15,938
Taxes	-1,575	-3,013	-4,737	-7,678	-20,206	-7,442
Other transfers	-585	-583	-526	-351	1,878	-33
<b>Gross disposable income</b>	<b>20,905</b>	<b>29,241</b>	<b>37,875</b>	<b>48,063</b>	<b>88,307</b>	<b>44,878</b>
Composition of income per household in 2016 in %	Q1	Q2	Q3	Q4	Q5	All ordinary households
<b>Net earned income</b>	<b>44.5</b>	<b>59.5</b>	<b>62.4</b>	<b>66.5</b>	<b>63.9</b>	<b>61.8</b>
Net wages	34.5	52.8	58.3	63.1	56.3	55.6
Net income of sole proprietors	10.0	6.7	4.1	3.4	7.6	6.2
<b>Income from assets</b>	<b>6.9</b>	<b>9.4</b>	<b>14.4</b>	<b>18.4</b>	<b>28.2</b>	<b>19.3</b>
Financial income	0.9	0.7	0.5	1.3	9.8	4.4
Dwelling income	6.0	8.7	13.9	17.2	18.4	14.9
<b>Net transfers received</b>	<b>48.6</b>	<b>31.1</b>	<b>23.2</b>	<b>15.1</b>	<b>7.9</b>	<b>18.9</b>
Social benefits	59.0	43.4	37.1	31.8	28.7	35.5
Taxes	-7.5	-10.3	-12.5	-16.0	-22.9	-16.6
Other transfers	-2.8	-2.0	-1.4	-0.7	2.1	-0.1
2011-2016 changes per household in constant euros in %	Q1	Q2	Q3	Q4	Q5	All ordinary households
<b>Net earned income</b>	<b>-5.8</b>	<b>4.4</b>	<b>2.7</b>	<b>-1.9</b>	<b>-4.1</b>	<b>-1.6</b>
Net wages	-6.2	6.4	3.4	-2.0	-1.8	-0.3
Net income of sole proprietors	-4.4	-8.8	-6.5	-0.7	-18.6	-12.2
<b>Income from assets</b>	<b>-17.7</b>	<b>-14.9</b>	<b>-3.1</b>	<b>3.0</b>	<b>-8.5</b>	<b>-6.5</b>
Financial income	-1 939.2	295.3	162.7	-18.2	-32.4	-27.7
Dwelling income	-29.7	-20.1	-5.3	4.9	12.3	2.2
<b>Net transfers received</b>	<b>5.5</b>	<b>-6.0</b>	<b>0.5</b>	<b>1.8</b>	<b>-5.2</b>	<b>-0.6</b>
Social benefits	9.3	-0.1	5.3	6.7	5.7	5.4
Taxes	42.1	20.2	14.2	11.1	7.6	11.2
Other transfers	8.9	10.9	14.0	18.2	-14.7	-149.9
<b>Gross disposable income</b>	<b>-1.6</b>	<b>-1.1</b>	<b>1.3</b>	<b>-0.5</b>	<b>-5.5</b>	<b>-2.4</b>

Note: Quintiles are the values that divide the distribution of disposable income into 5 equal parts.

Households in Q1 are among the poorest 20% of households while households in Q5 are among the wealthiest 20%

Sources: Insee, enquêtes ERFS 2011 et 2016, national accounts.

## 10. Composition of ordinary household consumption expenditure in 2011 by standard of living quintile

in % of total consumption expenditure

	Q1	Q2	Q3	Q4	Q5	All ordinary households
Pre-engaged expenditure	35.6	35.9	36.0	34.3	32.7	34.6
Not-easily-reducible expenditure	31.3	30.2	29.3	27.7	25.5	28.2
Reducible expenditure	33.1	33.9	34.7	38.0	41.8	37.2

Source: Insee, enquêtes ERFS 2011 et BdF 2011.

Gross disposable income – the numerator in purchasing power – can be modified in at least two ways: either by taking account of pre-engaged expenditure to focus on the purchasing power of discretionary income, or by not taking account of imputed income and expenditure (rents, FISIM, insurance) in order to move towards the concept of “monetary” income, which is more in line with household perceptions; however, the findings in terms of purchasing power are very similar to those obtained with GDI.

The household consumption deflator as defined in national accounting – the denominator in purchasing power – does not take account of the emergence of new needs and new social norms. In addition, it does not include household investment, which constitutes an expense for households taken from their disposable income. Measuring the change in purchasing power using a deflator that includes all possible uses of disposable income, and in particular investment, would be one possibility. However, this indicator by no means accounts for all impacts of changes in real estate prices on households’ assets and on their living conditions in general. ■

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