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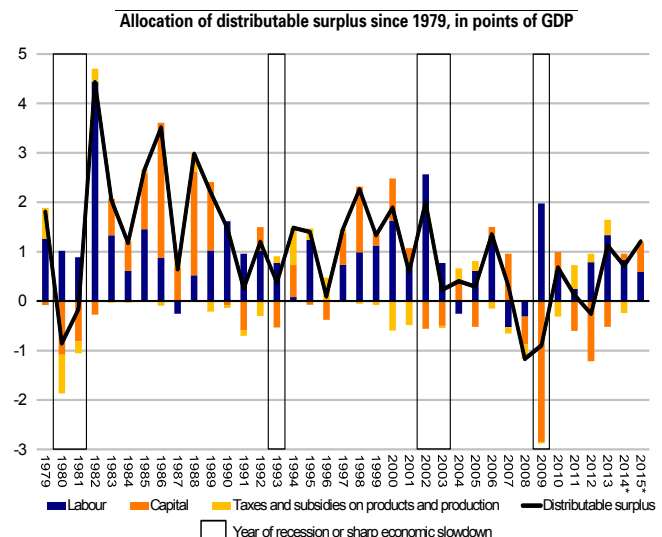
Composition and allocation of the distributable surplus in France since the crisis

■ The analysis of the distributable surplus examines how the benefits of growth are shared. The distributable surplus is the share of GDP growth available for improving the real remuneration of the factors of production. It is therefore the share of growth not used to remunerate the increase in the volume of factors of production. The surplus is composed of productivity gains and the change in the amount appropriated by the rest of the world through variations in the terms of trade.

■ The distributable surplus is allocated between (i) employees and the self-employed through changes in hourly compensation and (ii) holders of capital via changes in the return on capital.

■ Over the long run, France's average distributable surplus has fallen sharply, mainly owing to slower productivity growth. In annual average terms, the distributable surplus fell from nearly two points of GDP in the 1980s to less than one point of GDP from the early 1990s on, with a further decrease since the 2008-2009 financial crisis.

■ The distributable surplus varies from year to year depending on economic factors-above all, energy prices but also the productivity cycle. In France, such shocks are mainly absorbed by the short-to-medium-term return on capital. This phenomenon was particularly significant in the 2008-2009 recession, and up to 2013.

Allocation of distributable surplus since 1979, in points of GDP

Legend: ■ Labour ■ Capital ■ Taxes and subsidies on products and production — Distributable surplus
□ Year of recession or sharp economic slowdown

Source: INSEE; DG Trésor calculations.
*Semi-final national accounts for 2014, provisional for 2015.

1. The distributable surplus is not significantly influenced in the long run by changes in the terms of trade, but it has registered a structural decline with the productivity slowdown since the early 1990s

The distributable surplus[1] is the share of GDP growth available to improve the real remuneration of labour and capital[2]. It comprises total factor productivity gains (TFP)[3] and the domestic terms of trade[4]. It is assessed on the basis of the annual national accounts (see Box).

The contribution of the terms of trade can be broken down into an effect linked to energy import prices and a balancing item reflecting the exchange rate and other external factors. Accordingly, a sharp rise in import prices, particularly for energy, can be viewed as a levy by the rest of the world that reduces the available surplus.

Box: Breakdown of distributable surplus

Simplified version with a single labour factor, the capital factor, and no taxation

Nominal GDP comprises the remuneration of hours worked and the return on the stock of capital:

$$Y_t^{val} = w_t \times L_t + r_t \times K_t$$

Where L is the number of hours worked, K the stock of capital, w the hourly wage and r the unit return on capital, i.e., the ratio of gross operating surplus to capital. Let:

$$\frac{w_{t-1} L_{t-1}}{Y_{t-1}^{val}} = \alpha_L ; \frac{r_{t-1} K_{t-1}}{Y_{t-1}^{val}} = \alpha_K \quad \text{and, by approximation :} \quad \frac{w_t L_{t-1}}{Y_{t-1}^{val}} \sim \alpha_L ; \frac{r_t K_{t-1}}{Y_{t-1}^{val}} \sim \alpha_K \quad \text{and } \dot{x} \text{ the growth rate of } x$$

We can show that: $\dot{Y}^{val} = \alpha_L \dot{L} + \alpha_L \dot{w} + \alpha_K \dot{K} + \alpha_K \dot{r}$

To examine the real unit remunerations of labour and capital, we display the domestic demand prices p_{di} [a]

$$\dot{Y} + \dot{p} - \alpha_L \dot{L} - \alpha_K \dot{K} = \alpha_L \left(\left(\frac{\dot{w}}{p_{di}} \right) + \dot{p}_{di} \right) + \alpha_K \left(\left(\frac{\dot{r}}{p_{di}} \right) + \dot{p}_{di} \right)$$

where Y is real GDP and p the value added price (GDP deflator). With $\alpha_L + \alpha_K = 1$, we obtain:

| Total factor productivity $\dot{Y} - \alpha_L \dot{L} - \alpha_K \dot{K}$ | + | Domestic terms of trade $\dot{p} - \dot{p}_{di}$ | = | Increase in real remuneration of labour $\alpha_L * \left(\frac{\dot{w}}{p_{di}} \right)$ | + | Increase in real return on capital $\alpha_K * \left(\frac{\dot{r}}{p_{di}} \right)$ |

a. This modelling choice enables us to examine the changes in real remuneration. The advantage of domestic demand prices is that they are perceived by workers (unlike value added prices) and firms (unlike consumer prices), as they take domestic value added prices and import prices into account.

The annual national accounts provide the real and nominal data needed to calculate the surplus: GDP, domestic demand, (super-gross) remuneration of employees, gross operating surplus (GOS) and gross mixed income (remunerating capital and business owners)[5], total gross fixed capital, hours worked by employees and the self-employed, taxes and subsidies.

Since the 1980s, the French surplus has fallen sharply from almost 2 points of GDP a year to approximately 1 point of GDP and even less since the early 2000s (see Table 1). The main cause is the slowdown in productivity. By contrast, and on average, the terms of trade have had little impact. While the rise in energy prices has had a broadly negative effect on the distributable surplus, particularly in the 2000s, the exchange rate and other external factors have, if anything, helped to sustain the surplus (see Chart 1).

Table 1: Sources of distributable surplus, in average terms, by sub-period since 1979 (in points of GDP)

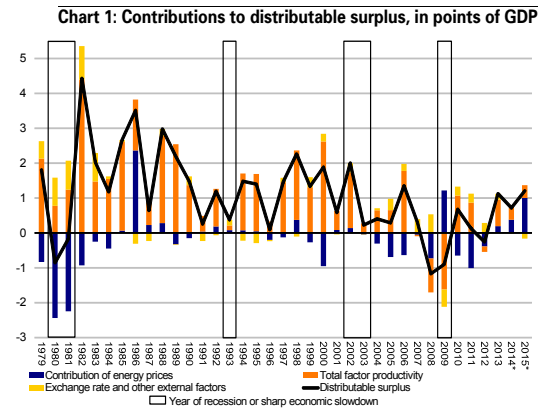| Periods	Distributable surplus	Productivity gains	Change in terms of trade
1980-1992	1.7	1.7	0.0
1993-2001	1.2	1.3	−0.1
2002-2008	0.5	0.6	−0.1
2009-2015	0.4	0.2	0.1

Interpretation: In 2002-2008, the average distributable surplus was equal to 0.5 points of GDP per year, of which 0.6 was due to TFP growth and -0.1 points to the change in the terms of trade.

Source: INSEE (semi-final national accounts for 2014, provisional for 2015); DG Trésor calculations.

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(1) See Cahu, P. (2009), "Distributable surplus and share-out of value added in France", *Trésor-Economics*, No. 59.
(2) These consist of the hourly remuneration of labour and the unit return on capital, i.e., without including the volume increase in the factors of production relative to the domestic demand price.
(3) The increase in wealth produced that is not explained by the increase in the factors of production, i.e., capital and labour.
(4) The domestic terms of trade are defined as the ratio of the value added price index to the domestic demand index for a particular product or set of products.
(5) Assuming that, in each industry, the hourly remuneration for the self-employed is equal to the hourly remuneration for employees, we can calculate the total remuneration for the self-employed and subtract it from the sum of the GOS and mixed income to obtain the return on capital.

During the 2008-2009 crisis, the distributable surplus was negative, mainly owing to the negative contribution of total factor productivity (TFP). In 2009, the latter was offset, but only in part, by the easing of energy prices.

In 2010 and 2011, the TFP rebound contributed positively to the distributable surplus, undermined by higher energy prices. In 2012, the distributable surplus turned negative again because of a negative contribution of energy prices and, to a lesser degree, productivity. Since 2013, softer energy prices coupled with productivity gains have generated a positive distributable surplus.

Chart 1: Contributions to distributable surplus, in points of GDP

Legend: Contribution of energy prices; Exchange rate and other external factors; Total factor productivity; Distributable surplus; Year of recession or sharp economic slowdown

Source: INSEE, DG Trésor calculations.
* Semi-final national accounts for 2014, provisional for 2015.

2. Since the 1990s, most of the distributable surplus has been allocated to an increase in the remuneration of labour, while shocks on productivity and on the terms of trade have generally been absorbed by the return on capital

A portion of the surplus is captured by changes in taxes and subsidies on products and production[6]. The balance is distributed among factors of production, allowing an increase in either the real hourly remuneration of employees and the self-employed, or the real unit return on capital (see Box).

Since the 1990s, most of the distributable surplus has been allocated to an increase in the real hourly remuneration of labour (see Table 2). This is consistent with a theoretical framework in which the return on capital adjusts to the cost of capital[7], while wages adjust to labour productivity shocks and prices. On the balanced growth path[8], the real return on capital accordingly remains stable in the long run and the entire surplus goes to raising the remuneration of labour. This pattern is indeed observed, on average, over the long term, but the allocation of the surplus displays a cyclical profile. In particular, after a negative shock on the economy, the surplus diminishes in the short term since employment adjusts only gradually. Because wages and prices remain rigid, the shock is absorbed by the return on capital. As employment, unemployment and–later–wages adjust, the surplus recovers and its allocation between labour and capital is rebalanced. The distribution of the surplus may also be impacted temporarily when the real interest rate declines, as the return on capital will adjust to the decrease in order to reflect the lower cost of capital.

Table 2: Allocation of distributable surplus by sub-period

Periods	GDP growth	Distributable surplus (in points of GDP)	Share of surplus (in points of GDP) allocated to:		
			labour	capital	taxes and subsidies on products and production
1980-1992	2.2	1.7	1.2	0.5	−0.1
1993-2001	2.3	1.2	0.8	0.3	0.1
2002-2008	1.6	0.5	0.6	−0.1	0.0
2009-2015	0.5	0.4	0.9	−0.6	0.1

Source: INSEE (semi-final national accounts for 2014, provisional for 2015); DG Trésor calculations.

For instance, after the second oil shock, which triggered a sharp deterioration in the terms of trade, the return on capital largely absorbed the negative shock on the distributable surplus. After the reverse oil shock of the early 1980s, the surplus was rebalanced: capital captured the largest share of the distributable surplus, as a result of measures to promote wage restraint. Businesses were thus able to make up for some of the losses in profit margins caused by the first two oil shocks (see Chart on front page).

3. The sharp decline in the share of the surplus distributed to capital since the 2008-2009 crisis needs to be viewed in the context of the lower cost of capital

In 2008-2013, despite a negative distributable surplus in certain years, the increase in real hourly wages outpaced the rise in the distributable surplus. This led to an increase in the share of the surplus distributed to labour, offset by a decrease in the share distributed to capital. The latter decrease was very steep in 2009: while nominal hourly wages continued on a brisk growth path, accelerating from 2.0% in 2008 to 2.8%, prices–particularly energy prices–declined. The share distributed to capital continued to weaken from 2011 to 2013. The absorption of shocks via the return on capital is relatively

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(6) Changes in rates or bases of taxes on production, including taxes on products; changes in subsidies on products and operating subsidies, including the tax credit to promote competitiveness and employment (*Crédit d'Impôt pour la Compétitivité et l'Emploi*: CICE) since 2014.
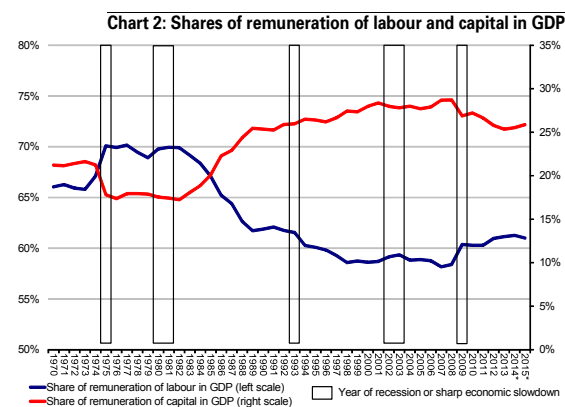
(7) The cost of capital is equal to the price of the investment multiplied by a real interest rate variable incorporating the amortisation rate and the capital tax rate.

(8) When the economy is growing at an equilibrium growth path, the unemployment rate is stabilised, all GDP components grow at the same pace and all prices as well.

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consistent with the pattern observed in past crises and the theoretical framework set out earlier, but this time it appears to be quite substantial. The share of the surplus distributed to capital observed since the latest crisis decreased by an average 0.9 points of GDP a year between 2008 and 2013. This is clearly steeper than the declines observed in previous cyclical troughs, i.e., 0.5 points in 2002-2003, 0.5 points in 1993 and 0.7 points in 1980-1982. Such a sharp contraction in the share of the surplus distributed to capital is not necessarily problematic, particularly given the downtrend in interest rates that has gathered considerable momentum since the crisis and has helped to lower the cost of capital. As noted earlier, in a situation where the return on capital eventually adjusts to its cost, a decline in real interest rates justifies a reduction in the surplus distributed to capital. As it happens, interest rates have decreased sharply since 2008: nominal yields on French government bonds have fallen from 4.2% to 0.5%, while rates on corporate debt have slipped from 5.2% to 1.8%[9].

The measures aimed at restoring business competitiveness (the CICE[10] and the Responsibility Pact[11]), in addition to enhancing the job content of growth, can also initially contribute to maintaining the share of the surplus allocated to the remuneration of capital if the measures are factored into corporate profit margins. Later, after adjustments, the measures are passed on in lower prices and thus help to improve the real remuneration of both capital and labour. Although the data are still provisional, such a catch-up appears to have occurred in 2015, for the distributable surplus was evenly shared between labour and capital.

By analysing the distributable surplus, we can identify the relative changes in the real remuneration of the factors of production in "constant volume" terms. The basic allocation of value added between capital and labour additionally reflects the change in the volume of capital relative to the volume of labour. Since the 2008-2009 crisis, the share of the remuneration of labour (for employees and the self-employed) in GDP has risen by approximately 2.5 percentage points (from 58.4% in 2008 to 61.0% in 2015: see Chart 2) and the share of the remuneration of capital in value added has fallen (from 28.7% to 25.9%)[12]. As the stock of capital has risen (by an average 1.4% between 2008 and 2015), the unit return on capital is indeed the factor that has absorbed the shock of the financial crisis.

Chart 2: Shares of remuneration of labour and capital in GDP

— Share of remuneration of labour in GDP (left scale)
— Share of remuneration of capital in GDP (right scale)
☐ Year of recession or sharp economic slowdown

Source: INSEE, DG Trésor calculations.
* Semi-final national accounts for 2014, provisional for 2015.

Anne-Sophie DUFERNEZ, Laura LE SAUX

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(9)   On an annual average basis, according to *Banque de France* data.
(10) The CICE (see note 6 above) is a tax credit booked as a subsidy in the national accounts. As a result, all other things being equal, the CICE (i) lowers the share of the distributable surplus captured by changes in taxes and subsidies on products and production, and (ii) increases the surplus to be allocated between the remuneration of labour and that of capital.
(11) Reductions in social contributions are included in the remuneration of employees in the national accounts. Consequently, all other things being equal, the easing of social contributions under the Responsibility Pact decreases the share of the surplus distributed to the remuneration of labour and increases the share allocated to the remuneration of capital.
(12) The figures do not sum to unity, since value added also includes taxes and subsidies.

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