

Recent trends in margin rates: wide disparities between branches in a context of general price increases

Margin rate, the ratio of gross operating surplus (GOS) to value added, can be used to analyse the profitability of the French economy. In Q3 2022, after the strong trends observed during the health crisis, its level was close to its 2018 average. However, changes in margin rate differ according to branch of activity, with recent gains being concentrated in the energy and transport services branches.

By breaking down changes in margin rates and gross operating surpluses in the branches according to the main economic and accounting factors the role of the different changes in prices can be highlighted in a context of rising input costs and the return of inflation. Thus, the increase in gross operating surpluses of the energy and transport services branches is because the rise in their selling prices more than offset the rise in their intermediate consumption prices and their hourly wages paid. For other branches, however, these increases were not offset and the gross operating surplus fell in industry, excluding energy, while remaining stable in services excluding transport. In addition to the wide disparities between branches, there is also sometimes a considerable variety within the branches themselves, especially in transport services.

In 2022, the margin rate of the French economy was close to its 2018 level

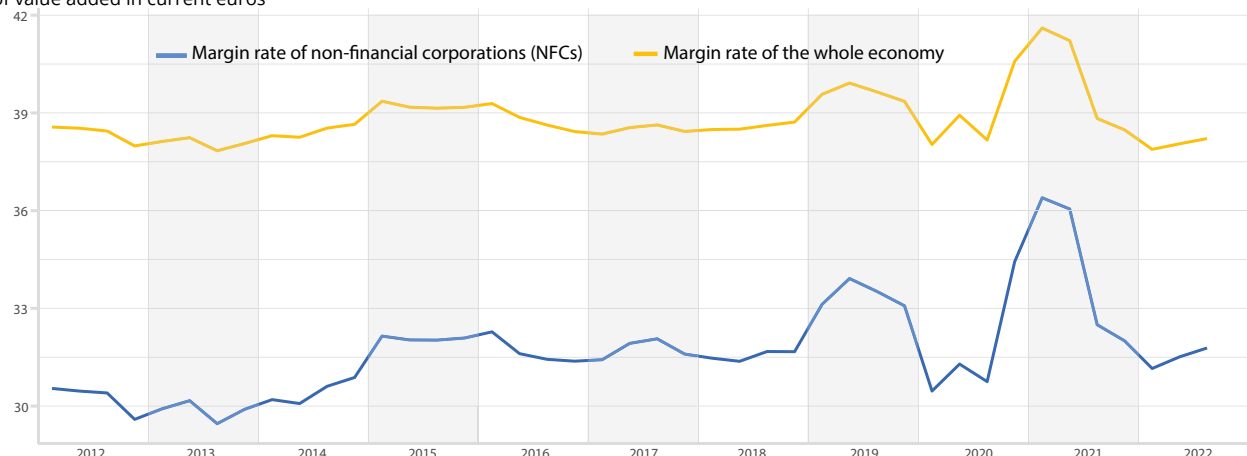
In Q3 2022, the margin rate of non-financial corporations (NFC), which is the ratio of their gross operating surplus (GOS) to their value added, stood at 31.8%, a level close to its 2018 average (31.5%, ► **Figure 1**). Between 2019 and 2021, it experienced some irregular fluctuations, first in 2019 when the simultaneous accounting of the tax credit for competitiveness and employment (CICE) and the reduction in social contributions that replaced it resulted in a one-off increase, then again in 2020 and 2021 during the health crisis.

The current climate, characterised by large-scale movements in production prices and companies' intermediate consumptions, is likely to influence changes in the margin rate, both at the aggregated level and that of each branch of activity separately. In this context of considerable shocks, it is likely that the estimates presented here will be revised as new information is incorporated into successive versions of the quarterly and annual national accounts. In particular, microeconomic business statistics (ESANE), based on company tax returns, are only partially integrated into the 2019 and 2020 accounts, and are not available for 2021 and of course not for 2022. Estimates of the national accounts for these years are not based on direct observation of businesses' results but are deduced from the available macroeconomic short-term indicators, which mainly cover output and wages in the different branches of activity, production prices, foreign trade and consumption of different products, also the taxes and contributions paid by companies and households and the subsidies they receive, all summarized in the quarterly and annual national accounts. These estimates are therefore likely to be revised with the publication of the definitive national accounts for 2019 to 2022 (May 2023 to May 2025).

The aim of this Focus is to study whether the change in margin rate at the aggregated level is matched within the different branches of the economy or whether, on the contrary, it masks disparities between branches. To do this, our analysis must move away from the scope of NFCs only and consider all institutional sectors combined (NFCs, financial corporations, sole proprietors, general government, home-owning households, etc.). Although this choice is dictated by

► 1. Quarterly margin rate of the French economy and non-financial corporations

in % of value added in current euros



Source: quarterly national accounts

French economic outlook

the absence of any breakdown by branch of the figures for NFCs alone, movements in the aggregated margin rate and the margin rate of NFCs do appear to be similar in recent years. Data from the quarterly accounts can therefore be used to calculate a margin rate at the level of all branches of the economy but also at the level of each branch of activity.

In Q3 2022, the margin rate for all branches combined stood at 38.2% of the value added of the economy. This is higher than that of NFCs alone, mainly because sole proprietors are taken into account, whose GOS makes up the majority of added value. However, in Q3 2022, the aggregated margin rate was close to its 2018 average (38.6%), like the margin rate of NFCs.

For the economy as a whole, the effect of the drop in hourly productivity on margin rate is offset by the drop in net taxes on production

In national accounting, the generation of income account enables value added to be divided into three parts: employee compensation, taxes net of subsidies on production, which go back to general government, and lastly gross operating surplus, which goes to producers to remunerate capital and finance investment. The part that goes to employees increases if wages change more quickly than the value added produced, which depends on relative changes in productivity and wages per capita, and on the relative prices of value added and consumption.

The usual breakdown of variations in margin rate isolates the contributions of per capita productivity gains and relative prices, which have a positive effect, and the real average wage per capita¹, the employer contribution rate and taxes net of subsidies, which have a negative effect.

This is the breakdown used here to analyse margin rates (aggregated and by branch) but with a few adjustments, in particular an argument for hourly rather than per capita productivity and taking into account the increase in the number of sole proprietors over the period (► **Box 1**):

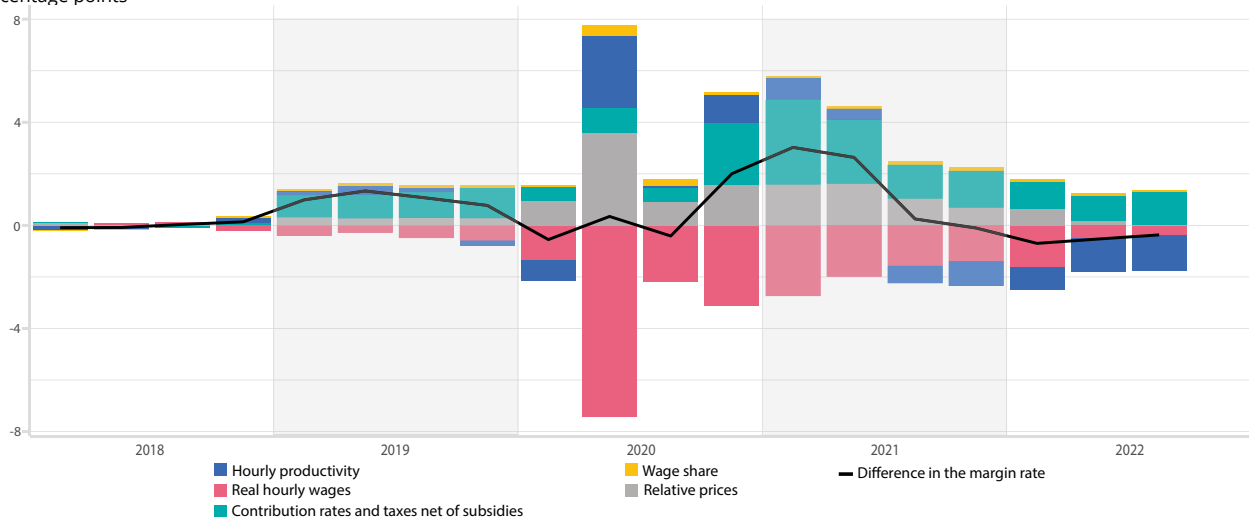
Between 2018 and Q3 2022, the relative stability of the aggregated margin rate resulted from two main factors, which act in opposite directions and offset each other overall (► **Figure 2**):

- the drop in hourly productivity (-1.9% in Q3 2022 compared to the 2018 average), which affects the margin rate (contribution of -1.4 points to this change)
- taxes on production net of subsidies, where the aggregated amounts were less dynamic than the value added over the period, which supported the margin rate (contribution of +1.3 points). This is mainly due to the reduction in production taxes in 2021 and the payment of aid for hiring and for paying apprentices.

The real average hourly wage and relative prices contribute little to this change. Average wages, consumer prices and value added prices therefore evolved in a similar way across the whole of this period, although some differences may have emerged during the health crisis before being reduced.

► 2. Margin rate for the whole of the economy, compared to its 2018 average, and contributions to this difference

in percentage points



Source: quarterly national accounts, INSEE calculations

For the economy as a whole, the rise in selling prices made it possible to offset the rise in input prices, to increase the payroll paid and to increase the gross operating surplus

The fact that the aggregate margin rate is close to its 2018 average does not mean that the GOS for the economy as a whole remained stable across the period. Compared to its average for 2018, it increased by almost €24 billion in Q3 2022, an increase in value added of €67 billion (in current euros).

The change in value added in current euros and in the GOS, between 2018 and Q3 2022, can be understood in accounting terms from the production accounts and generation of income accounts within the national accounting (► **Box 2**). By expressing contributions to change in GOS in billions of euros, this breakdown makes it easier to measure them within a branch but also between branches.

In Q3 2022 and compared to its 2018 average, production in the whole of the economy increased by €206 billion in current euros, the majority of which (€161 billion) stemmed from the buoyancy in production prices (i.e. for example “factory-gate” prices in the case of industry), the rest originated from the increase in volumes produced at constant prices (► **Figure 3**). At the same time, the intermediate consumption needed for this production increased by €139 billion, again mainly due to their increased prices (€108 billion).

Thus the increase in the value of total production attributable to prices (€161 billion) remains greater than that of intermediate consumption (€108 billion). This means that overall and on average, producers have indeed been able to pass on the increase in their input prices through their selling prices, thus allowing an increase in value added in current euros through the effect of price alone (€52 billion). All in all, the €67 billion increase in total value added results from the increase in volume of activity but also, and above all, from the fact that overall, the rise in production prices more than offset the rise in input prices. This finding is established for the economy as a whole, but masks some very contrasting situations according to the branches, with some having benefited from selling prices that rose more than their input prices and the wages they paid, whereas others, conversely, were penalised.

The increase in value added in current euros (€67 billion) is then divided between taxes on production and employers’ contributions net of subsidies, at €8 billion; gross wages at €36 billion, and gross operating surplus at €24 billion.

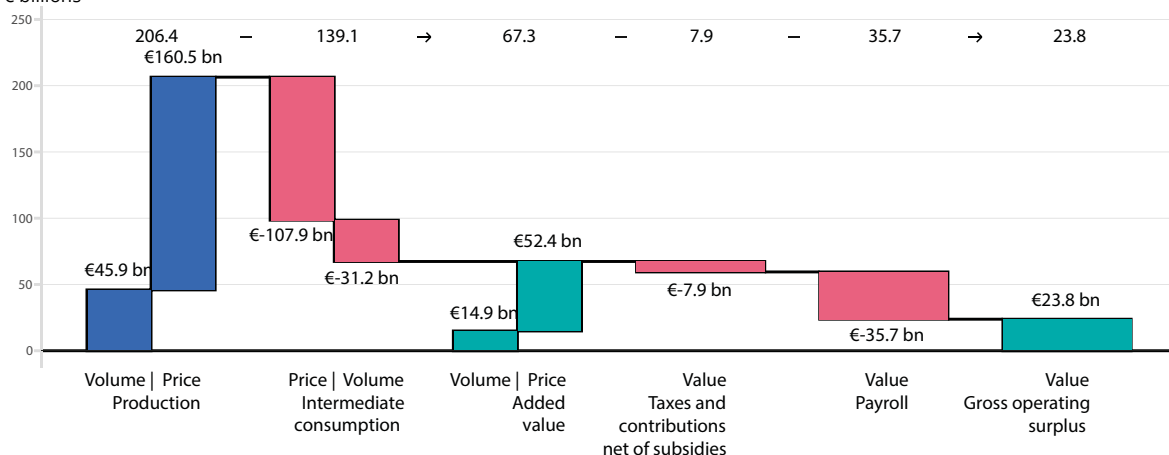
The fact that the share of additional value added attributable to the GOS (35.4%) is slightly less than the 2018 margin rate is reflected in a small decline in the margin rate over the period. Overall, however, the rise in prices was not accompanied by any significant distortion in the distribution of value added.

Some very strong disparities between branches

The relative stability of the aggregated margin rate, between its average level for 2018 and that of Q3 2022, nevertheless masks some major disparities between branches (► **Figure 4**). In particular, the margin rate increased significantly in the energy branches² (where it reached 63.8% in Q3 2022 after 55.3% in 2018 and more than 70% in H1 2022) and transport services (54.1% after 30.4%). In fact it is at a historically high level in both these branches.

► 3. From production in the whole economy to gross operating surplus: situation in Q3 2022, compared to 2018

in current € billions



Source: quarterly national accounts, INSEE calculations

French economic outlook

The margin rate, on the other hand, declined sharply in industry excluding energy³ (34.6% in Q3 2022 after 36.4% in 2018), building construction (31.1% after 35.9%) and market services excluding transport (41.0% after 43.8%).

The margin rates of the different branches also show significant differences in level, which are largely due to structural factors specific to each branch, especially the capital intensity of production processes, which involves devoting a larger share of value added to renewing the productive capital. This analysis focuses on short-term aspects, however, which account for differences in changes in margin rate but not differences in level.

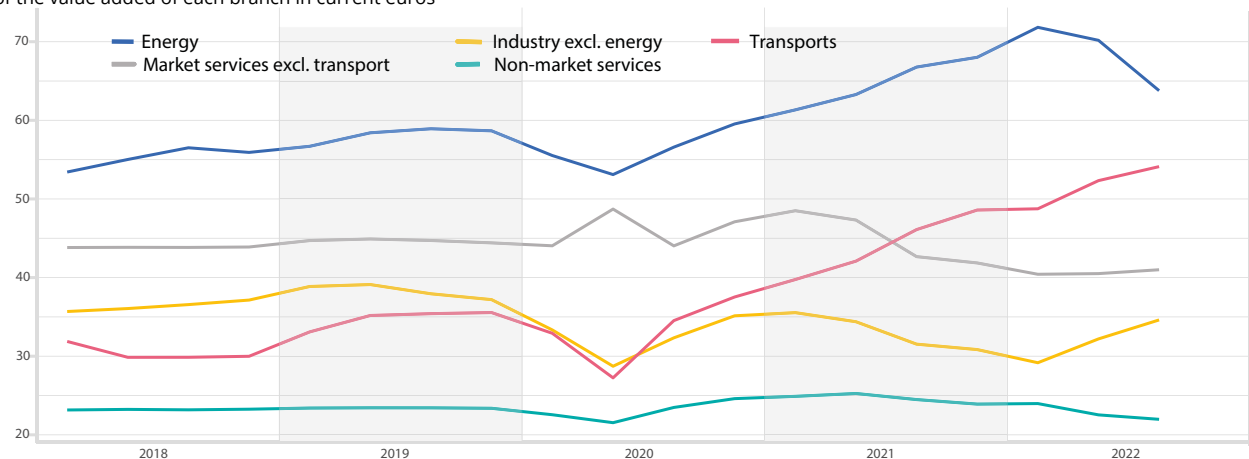
Changes in the margin rate therefore differ considerably from branch to branch. The same is true for factors contributing to these changes. Relative prices in particular have made a major contribution to the rise in margin rate in the energy branches and transport services and are the main factor for change; conversely, they hold back change in margin rate in the industrial branches excluding energy and in market services excluding transport (► **Figure 5**). These opposite contributions reflect the fact that in the energy branches and transport services in particular, the price of value added (i.e. the resultant of selling price and price of inputs) increased much faster than the average household consumer price, whereas this was not the case in other branches. Overall, these changes offset each other in the total economy.

In the same way, the contribution of the real hourly wage differs according to the branch: it supports the margin rate in industry excluding energy and transport services, whereas it hampers margin rate in services excluding transport. Lastly, although it is present in most branches (excluding transport services), the decline in productivity per hour weighs most heavily on the margin rate in industry (including the energy branches) and in construction.

Next we consider change in the margin rate in branches where it has increased substantially (energy and transport services) and in those where it has decreased (industry excluding energy and market services excluding transport).

► 4. Margin rate by branch (all institutional sectors combined)

in % of the value added of each branch in current euros



Source: quarterly national accounts, INSEE calculations

► 5. Breakdown of change in margin rates by branch

	Productivity per hour	Share of employees	Real hourly wage	Relative price	Contribution rate and taxes net of subsidies	Difference in margin rate
All	-1.4	0.1	-0.4	0.0	1.3	-0.4
Agriculture	-0.1	-0.6	-0.3	1.7	-2.0	-1.2
Energy	-9.5	-0.2	0.4	16.4	1.5	8.5
Industry excluding energy	-4.7	0.0	2.9	-2.0	1.9	-1.8
Construction	-6.9	0.2	1.4	0.3	0.3	-4.8
Transport	1.7	2.4	1.8	16.5	1.3	23.7
Market services excluding transport	-0.4	0.1	-0.8	-3.0	1.2	-2.9
Non-market services	-0.9	0.1	-1.7	-0.3	1.5	-1.2

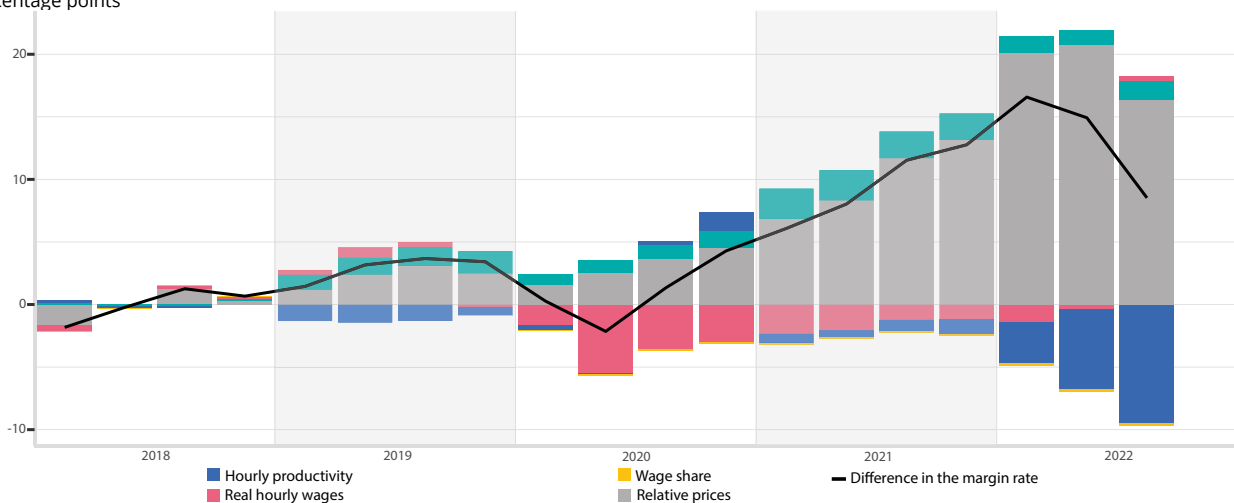
Source: quarterly national accounts, INSEE calculations

Margin rate in the energy and transport services branches increased sharply from the effect of the rise in their value added price

In the energy branches and transport services, margin rate has increased substantially since the end of 2020. In Q3 2022, it stood at 63.8% in the energy branches and at 54.1% in the transport services branch, or 9 and 24 points above their respective 2018 levels (► **Figures 6 and 7**). This strong increase is mainly the result of the rise in relative prices in these two branches, due to their soaring value added price (+57% in the energy branches and +38% in transport services). These increases are due in particular to the very substantial rise in sea freight rates coming out of the health crisis, and the rise in selling prices of electricity, driven by gas prices which were well above the increase in the average costs of production for power producers. For these producers, the introduction of the tariff shield meant that selling prices could follow their usual determinants without this increase being passed on fully to final and intermediate consumer prices for electricity, whereas the State mechanism to recover charges for the public energy service (CSPE) tends to limit the increase in the power providers' selling prices.

► 6. Margin rate in the energy branches, compared to its 2018 average, and contributions to this difference

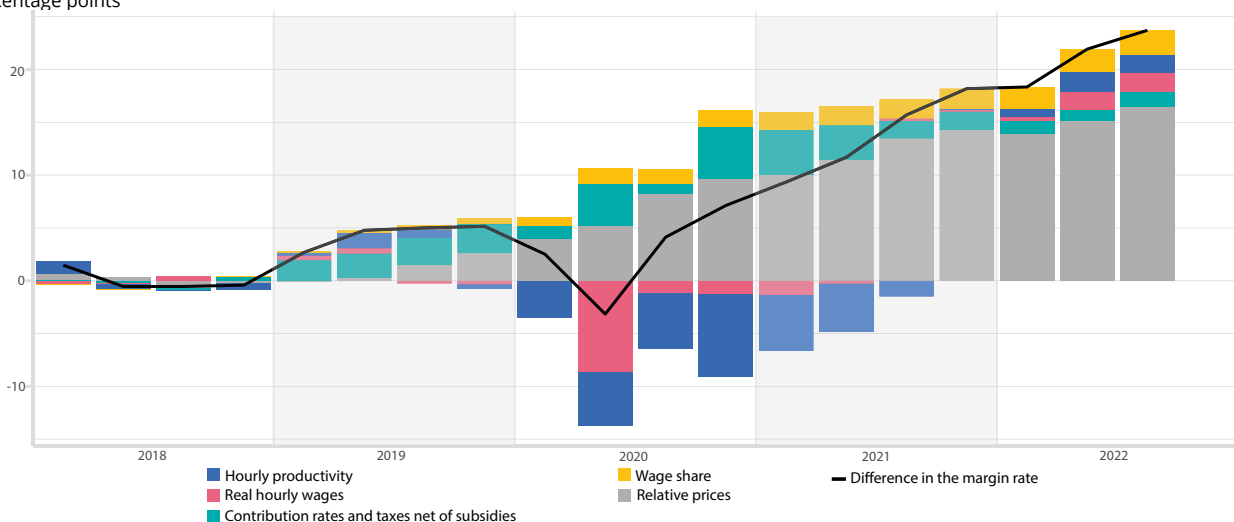
in percentage points



Source: quarterly national accounts, INSEE calculations

► 7. Margin rate in transport services, compared to its 2018 average, and contributions to this difference

in percentage points



Source: quarterly national accounts, INSEE calculations

French economic outlook

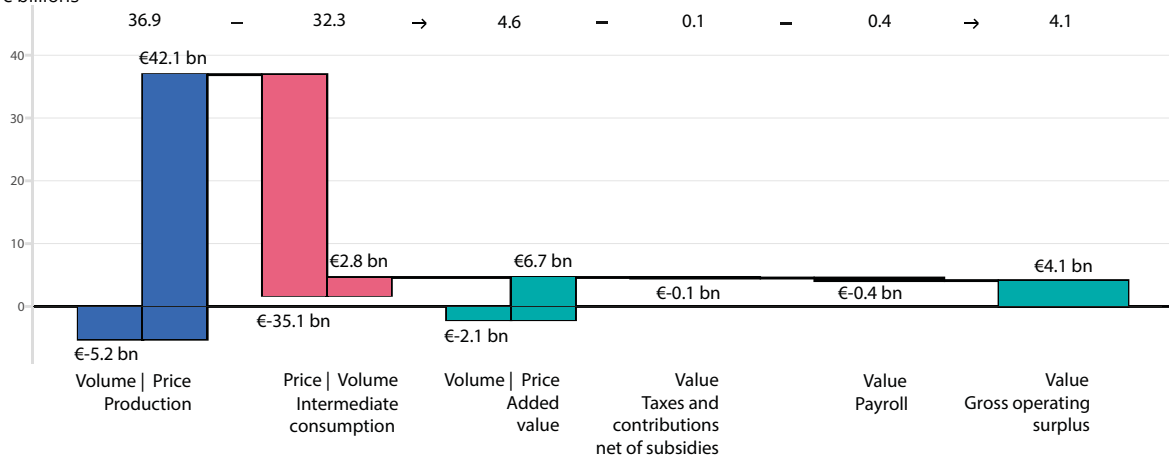
In the energy branches, the contribution of the real hourly wage to change in margin rate was very slightly positive, which reflects an increase in the hourly wage overall in line with the increase in the consumer price of all goods and services. In transport services, the contribution of the real hourly wage to change in margin rate was much more positive: the nominal hourly wage increased less quickly than the consumer price. Payroll rose by €1.1 billion, i.e. significantly less than value added.

In the energy branches, the decline in productivity per hour at the start of 2022 held the margin rate back, in a context of falling electricity production, with several nuclear reactors being closed for maintenance.

In transport services, the contribution of the share of employees was fairly significantly positive. Self-employment has certainly been very dynamic in this branch since 2018, with the very large increase in home delivery jobs, taxis and chauffeur-driven vehicles. All other things being equal, this momentum in self-employment contributed positively to the increase in margin rate, since the self-employed do not pay wages, their work is remunerated *via* their mixed income, which supports the gross operating surplus of the branch. However, this positive contribution by self-employment is cancelled out in part by a smaller contribution in productivity gains: the jobs concerned, especially home deliveries, in fact have lower productivity than those in the rest of the branch.

► 8. From production in the energy branches to their gross operating surplus: situation in Q3 2022, compared to 2018

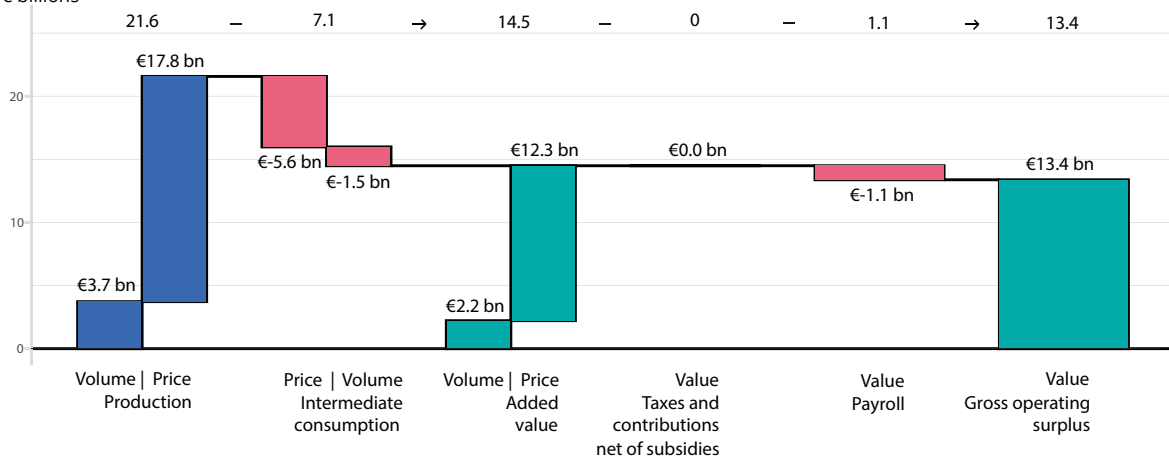
in current € billions



Source: quarterly national accounts, INSEE calculations

► 9. From production in the transport services to their gross operating surplus: situation in Q3 2022, compared to 2018

in current € billions



Source: quarterly national accounts, INSEE calculations

In line with these increases in margin rate there have been correspondingly significant gains in gross operating surplus since 2018: GOS increased by €4 billion in the energy branches between 2018 and Q3 2022, and by €13 billion in transport services (► **Figures 8 and 9**). In both branches, the rise in GOS almost entirely reflects the increase in value added in current euros, which is itself driven by the surge in its price.

In fact, in both the energy and transport services branches, the production price rose sharply between 2018 and Q3 2022, generating a production gain of €42 billion in constant volumes in the energy branches, and €18 billion in transport services (especially due to the increase in the selling price of sea freight). These gains exceed the increase in costs generated by the increasing price of inputs (€35 billion in the case of the energy branches and €6 billion for transport services). Ultimately, this results in a gain in value added, from €5 billion in the energy branches and €15 billion in transport services, most of which is attributable to the rise in prices (€7 billion and €12 billion respectively).

In the energy branches, payroll has increased by 12.4% since 2018, with an increase in the hourly wage, as we have seen, similar to that of consumer prices. However, the share of payroll in value added is, structurally, fairly weak in this branch (24% in 2018), so that the effect of the rise in payroll is at a relatively limited level (+€0.4 billion), compared to that of value added. Thus the increase in value added is almost entirely reflected in the gross operating surplus.

To these significant disparities between branches can be added disparities within a branch. This is certainly the case in transport services, where the increase in value added and GOS is probably concentrated in one or more sub-branches. However, the precision and level of publication of the quarterly accounts mean that it is not possible to extend the analysis within the branches.

In industry (excluding energy), the drop in productivity and the deterioration in relative prices have hampered change in the margin rate

Unlike the energy branches, the margin rate in the industrial branches, excluding energy, fell by 1.8 points between 2018 and Q3 2022 (► **Figure 10**). One of the main reasons for this decline is the fall in hourly productivity (-6.1% in Q3 2022 compared to its 2018 average) especially in the manufacture of transport equipment. This decline caused a drop of 4.7 points in margin rate in the industrial branches excluding energy.

The second factor to cause a fall in margin rate in these branches is the deterioration in relative prices (contribution of -2.0 points), reflecting a weaker momentum in the price of value added compared to the consumer price. The deterioration in relative prices is offset by the decline in real hourly wages paid, which supports the margin rate (+2.9 points).

However, taxes on production net of subsidies contributed positively to change in margin rate in these branches, by 1.9 points in Q3 2022 compared to 2018, mainly due to the lasting downturn in production taxes in 2021.

In accounting terms, value added in current euros was stable between 2018 and Q3 2022, whereas GOS fell by €1 billion (► **Figure 11**). The volume of activity declined but this was offset by the increase in the price of value added. In fact, the increase in selling prices (€34 billion in production gains at constant volumes) was just above that of input prices (additional cost of €30 billion at constant volumes). As elsewhere, the payroll of the branch increased over the period, while GOS was down slightly, by €1 billion.

In services (excluding transport), in addition to the deterioration in relative prices, the rise in wages affected change in margin rate

Margin rate in market services excluding transport also fell in Q3 2022, compared to its 2018 average (-2.9 points, ► **Figure 12**). Here, the main factor was the decline in relative prices, which caused around 3.0 points of change in margin rate between 2018 and Q3 2022. Real hourly wages also affected change in margin rate (-0.8 points), although to a lesser extent, particularly in financial and insurance services where nominal hourly wages were more buoyant than consumer prices.

In contrast to industry, productivity had only a very moderate effect on change in margin rate in market services excluding transport. Productivity fell back in some branches, especially trade, but conversely it improved in financial and insurance services, also in information-communication services.

In accounting terms, GOS increased by €4 billion between 2018 and Q3 2022, while value added in current euros increased by €29 billion (► **Figure 13**). The increase in value added in current euros was the result of the momentum in activity (for €17 billion) and, to a lesser extent, the increase in the price of value added (for €12 billion). In fact, the rise in production prices (gains of €31 billion at constant volumes) more than offset the rise in input prices (costs of €19 billion

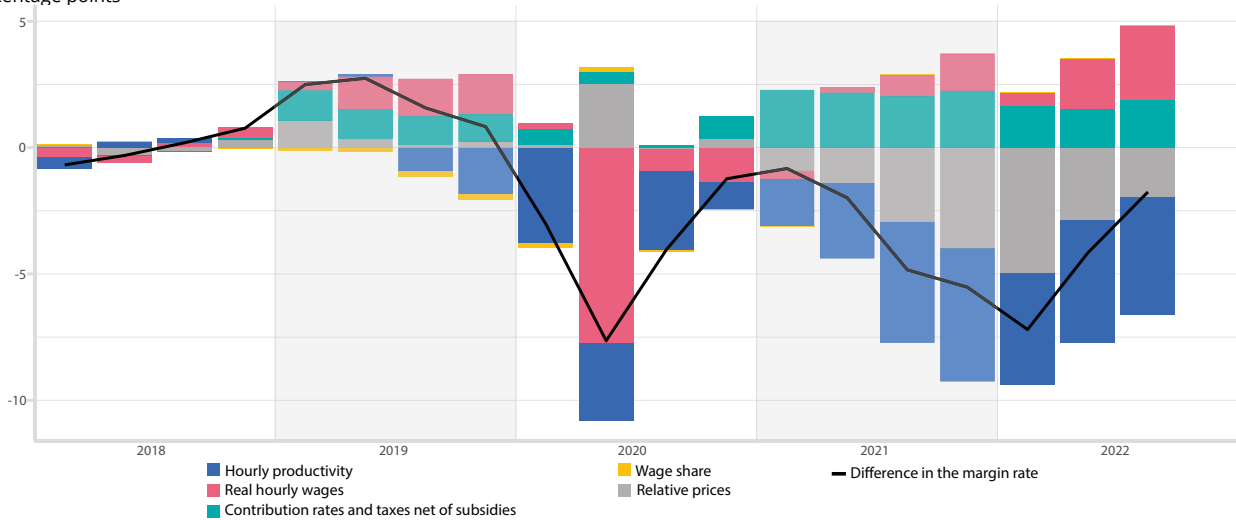
French economic outlook

at constant volumes). However, payroll increased by €20 billion over the period, with two-thirds of this rise resulting from the rise in hourly wages. Thus the increase in value added in current euros was largely absorbed by the rise in payroll, and also by taxes and contributions based on this payroll, with the result that GOS increased little over the period. ●

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► 10. Margin rate in industry excluding energy, compared to its 2018 average, and contributions to this difference

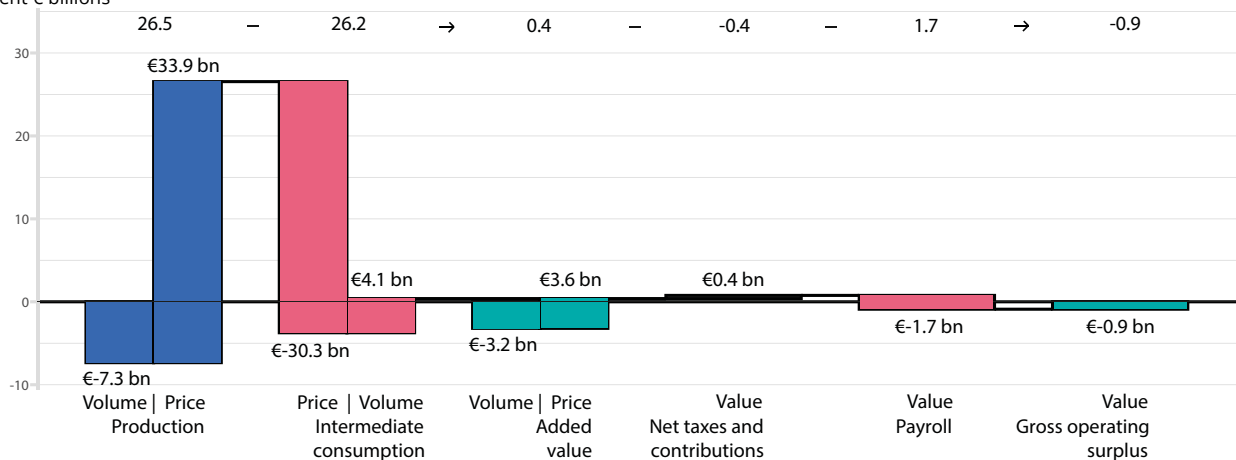
in percentage points



Source : quarterly national accounts, INSEE calculations

► 11. From production in the industrial branches (excluding energy) to their gross operating surplus: situation in Q3 2022, compared to 2018

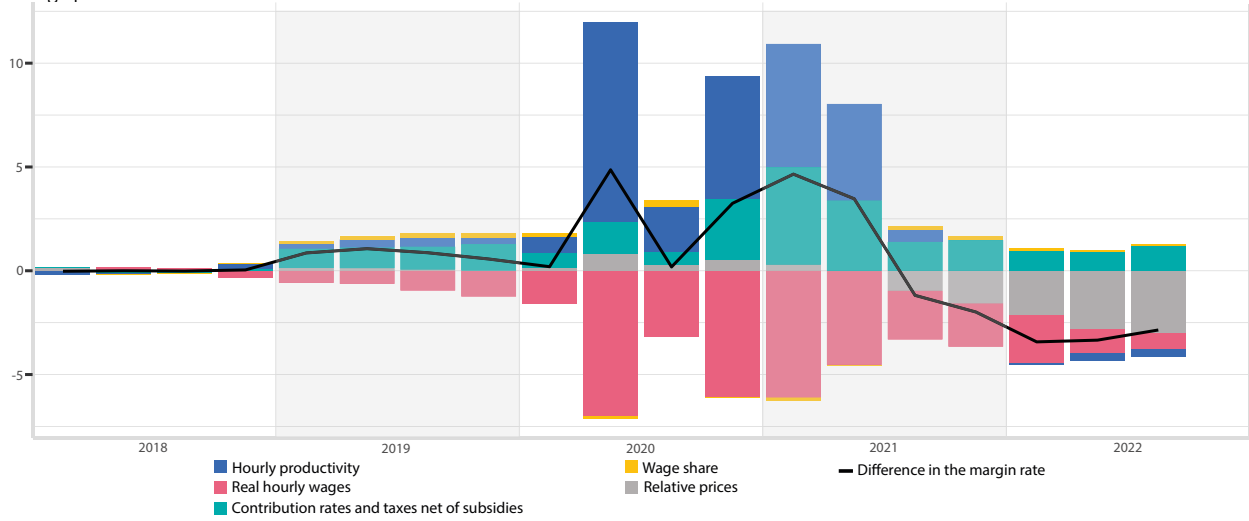
in current € billions



Source : quarterly national accounts, INSEE calculations

► 12. Margin rate in market services excluding transport, compared to its 2018 average, and contributions to this difference

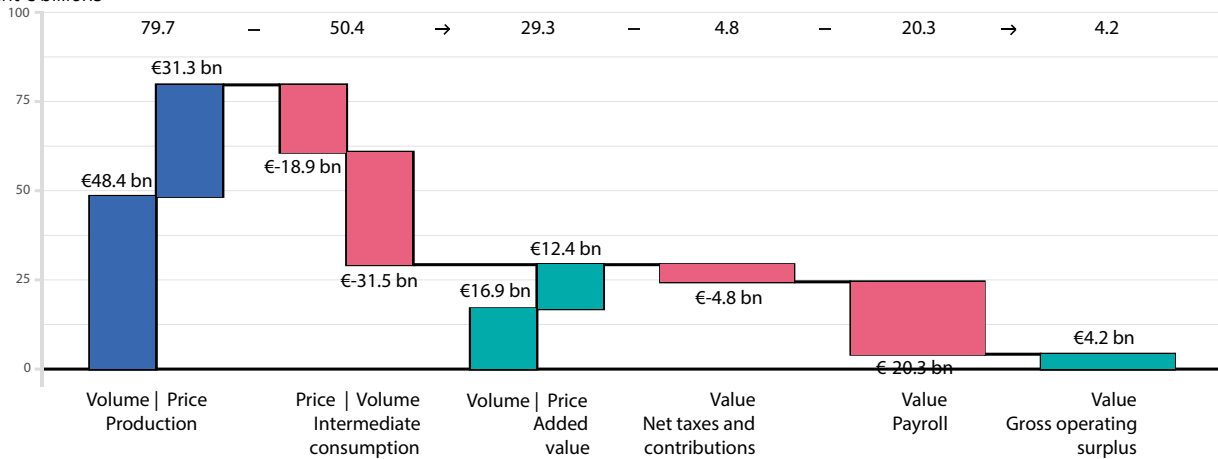
in percentage points



Source: quarterly national accounts, INSEE calculations

► 13. From production in market services (excluding transport) to their gross operating surplus: situation in Q3 2022, compared to 2018

in current € billions



Source: quarterly national accounts, INSEE calculations

Notes

- 1 This is the average per capita wage deflated by the consumer price, which can also be seen as the purchasing power of the average wage.
- 2 Here the energy branches are the coke and refined petroleum production branch and the energy, water and waste management branch.
- 3 Industry excluding energy includes the agri-food industry, the manufacture of transport equipment, the manufacture of capital goods and "other industrial branches" (chemical industry, metallurgy, wood and paper, textiles, etc.).

Box 1: accounting breakdown of changes in margin rate

The margin rate is the ratio of the gross operating surplus to gross value added by value. It is written thus:

$$MR = \frac{GOS}{VA} = 1 - \frac{D1}{VA} - \frac{\text{taxes} - \text{subs.}}{VA}$$

where the term $\frac{D1}{VA}$, which designates the share of value added paid as remuneration can be rewritten:

$$\frac{D1}{VA} = (1+t) * \frac{VHT}{VA_{vol}} * \frac{W}{VHE} * \frac{VHE}{VHT} * \frac{P_c}{P_{VA}}$$

In this equation, t is the rate of employer contributions, VA_{vol} is value added by volume, VHE the number of hours worked by employees, VHT the total number of hours worked, P_c consumer price, P_{VA} the price of value added and $\frac{W}{VHE} = \frac{D1}{P_c * VHE}$ the real average hourly wage, as deflated by the household consumer price.

Thus, change in margin rate can be broken down into:

- change in hourly productivity $\frac{VA_{vol}}{VHT}$ that has a positive effect: all other things being equal, the rise in productivity from one hour worked increases the margin rate;
- changes in the real average hourly wage $\frac{W}{VHE}$ and in the employer contribution rate t which have a negative effect (a rise in hourly wage or contribution rate, with productivity remaining unchanged, results in a drop in margin rate);
- the share of paid hours worked by employees in the hourly volume worked, ratio $\frac{VHE}{VHT}$ of the number of hours worked by employees to the total number of hours worked, which has a negative effect: when the share of employees in a branch decreases, more workers are non-wage-earning sole proprietors, whose work is remunerated *via* "mixed income" which they pay themselves, and which is counted in the gross operating surplus, which supports it;
- change in relative prices, i.e. the ratio $\frac{P_{VA}}{P_c}$ of the price of value added to the consumer price, which has a positive effect. When the price of value added increases faster than the consumer price, the margin rate improves because, in order to maintain a real average constant wage, companies must increase their employees' wages by less than the increase in their value added prices. For the economy as a whole, these relative prices can in turn be broken down into three factors: (i) the ratio of the deflator of final domestic demand to the deflator of GDP (terms of domestic trade), which depends on the ratio of the imports deflator to the exports deflator, i.e. the terms of foreign trade ([► note on INSEE blog](#) terms of trade), (ii) the ratio of the price of GDP to the price of value added, which depends on taxes on products (VAT, TICPE – domestic duty on consumption of energy products, etc.) minus subsidies on products. Note that this ratio was applied in 2022 with the introduction of different tariff shields on energy, which helped to bring down the deflators of GDP and consumption against that of value added. Finally, more marginally, (iii) the ratio of the price of final domestic demand to consumer prices, which depends on the deflators of the other final demand items (investment and consumption by general government in particular);
- taxes paid on production minus production subsidies received.

In 2019, the CICE (tax credit for encouraging competitiveness and jobs), treated in the national accounts as a subsidy on production, was abolished and replaced by a uniform reduction in the rate of employers' contributions. Thus, in the breakdown above, the CICE effect on the margin rate, which appeared under the heading "Taxes net of subsidies", switched in 2019 to the heading "Contribution rate". In addition, recording in the national accounts involved a time lag: the CICE was recorded under subsidies until the end of 2019, however, the reduction in the contribution is recorded from the beginning of 2019, which thus implies a double payment in 2019, and this, exceptionally, boosted the margin rate. In the following breakdowns of margin rate and GOS, these two components are therefore grouped together (as the employers' contribution rate has not undergone any significant change, apart from the switch of the CICE). This deviates from the practice common in this type of analysis of sharing value added, of counting social contributions with payroll in the share attributable to employees.

This breakdown can be performed for the economy as a whole or for each branch taken separately. In this case, it is the aggregates specific to the branch (productivity, price of value added, hourly wage, taxes, subsidies and contributions, employee ratio) that are used for the breakdown. Only the deflator for household consumption, which is used to calculate real wages and relative prices, is always considered for all goods and services consumed by households: since employees use their wages to consume a set of goods and services, it is indeed the change in the prices of this set of goods that must be considered to calculate their real wages. ●

Box 2: additive breakdown of change in gross operating surplus

The production account links production ($P1$), intermediate consumption ($P2$) and value added (VA):

$$VA = P1 - P2$$

Similarly, the generation of income account links gross operating surplus (GOS), value added, taxes on production ($D29$), subsidies on production ($D39$), employers' social contributions ($D12$) and gross payroll ($D11$):

$$GOS = VA - D29 + D39 - D11 - D12$$

The difference in relation to the reference period (2018) is defined simply:

$$\Delta X_t = X_t - \frac{X_{2018}}{4}$$

And we obtain the following breakdowns:

$$\Delta VA_t = \Delta P1_t - \Delta P2_t$$

$$\Delta GOS_t = \Delta VA_t - \Delta(D29_t - D39_t + D12_t) - \Delta D11_t$$

For measuring the production account, we can also divide according to volume-price of the change::

$$\Delta X_t = \Delta X_t^{vol} \frac{X_{2018}}{X_{2018}^{vol}} + \left(\Delta X_t - \Delta X_t^{vol} \frac{X_{2018}}{X_{2018}^{vol}} \right)$$

where the first term corresponds to the volume effect, i.e. the increase that would have been observed if prices had remained constant since 2018 and the second term to the difference between the increase in value and the volume effect, hence the price effect.

It should be remembered that production is valued at basic prices, i.e. at the prices at which the producer sells it, from the point of view of the producer (hence excluding taxes on products, trade and transport margins and including subsidies on products), and that intermediate consumption is valued at market prices, i.e. the prices actually paid by the producers as users of the goods and services consumed intermediately, including taxes on products and margins and excluding subsidies on products.

Thus the price effect on value added is equal to the difference between the price effect on production and that on intermediate consumption, and measures the passing-on of input prices to production prices, sometimes called cost "pass-through": a positive value shows that the rise in intermediate consumption prices has been more than fully passed through to the production prices. A negative value indicates only a partial pass-through of this increase. ●

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