Corporate margin rate should stabilise below pre-crisis level

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The margin rate of non-financial corporations is a schematic measurement of the proportion of capital in the distribution of value added. Generally stable between 1987 and 2007 at around 32.7%, it slumped during the crisis of 2009 and again in 2012 and 2013. It has picked up again in the meantime, but without quite making up for the drop caused by the crisis. Since early 2016 the rate has hovered at around 31.6%, one percentage point below its pre-crisis level. This decrease can be solely attributed to market services companies. Indeed, the margin rate in industry hit a 30-year high in 2016.

Several factors can explain this misalignment. First of all, the margin rate contains a significant cyclical component, which increases in line with payroll rigidity and the scale of activity shocks. Depending on the degree of substitutability between production factors in the overall production apparatus, the margin rate may be affected by the relative cost of production factors, and thus by fluctuations in commodity prices, taxes on labour and capital, interest rates (which influence the cost of capital) and the bargaining power of employees. Finally, the literature demonstrates the role played by the degree of competition: the greater the market power of a firm, the higher its equilibrium margin rate will be.

By breaking down the accounting elements and modelling the margin rate for each branch at a fine level, it is possible to quantify the contribution of these factors to variations in the margin rates of French businesses and determine whether or not this is a long-term situation, making the distinction between industry and services.

In industry, the margin rate currently stands at an exceptionally high level thanks to a reduction in levies on businesses and the improved terms of trade resulting from the recent fall in oil prices. However, the cyclical component, which was previously strongly negative, has simply returned to its average level in 2017.

For market services, the decline has a fairly strong cyclical component because the rebound in activity in services came later than it did for industry. Nevertheless, there are also more structural factors at work: in the trade and information-communication branches, the substantial decrease seems to be largely a result of the intensity of competition. This has led to a fall in the price of value added in these branches and a dilution of market share, calculated from individual data. In services to businesses, virtually all of the decline seen over the past 17 years can be attributed to the movement towards specialisation in low capital-intensive activities: heavily capital-intensive activities such as equipment hire have shrunk, while a large increase has been observed in administrative support services, which are very labour-intensive and have a very low margin rate. This drop in the margin rate of services is not specific to France: in Germany, the rate declined much more sharply over the same period.

All sectors combined, one-third of the decrease in the margin rate (in relation to the levels seen in the 1990s) can be attributed to short-term factors. In services, the negative effects of the cycle have been partially offset by the positive effects of falling labour costs and the improved terms of trade. The remainder appears to stem from long-term factors linked to a mutation in the structure of French activity towards branches which are less capital-intensive, along with the higher degree of competition in certain service sectors. The margin rate could therefore see a slight increase as activity continues to grow, but without necessarily returning to its pre-crisis level.

Corporate margin rates should stabilise below pre-crisis levels

The corporate margin rate decreased between 2008 and 2013 after remaining stable from 1987 to 2007

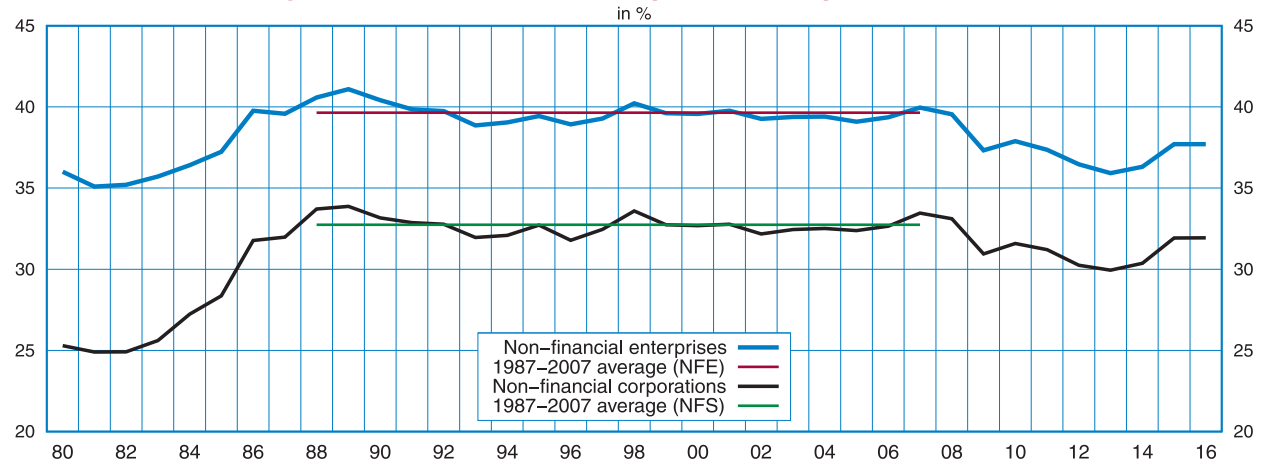
The corporate margin rate remained stable from 1987 to 2007

The margin rate of non-financial corporations (NFCs) is the ratio of their margin, or gross operating surplus, to their gross value added. It measures the profit share of value added, broadly defined: gross operating surplus covers the corporation tax, financial costs and investments costs of NFCs. After increasing sharply between 1982 and 1987 against the backdrop of the policy known as "competitive disinflation," it remained broadly stable between 1987 and 2007, hovering around an average of 32.7% (*Graph 1*). The margin rate of non-financial enterprises - which, by definition, is higher (*Box 1*) - also remained stable over this period, averaging 39.6%.

Margins shrank during the crisis and have not fully recovered since

In 2008 and 2009, the decline in corporate value added had a knock-on effect on corporate margins. The margin rate of NFCs thus dropped by 2.6 points between 2007 and 2009. It began to fall again in 2012 and sank to 29.9% in 2013, its lowest level since 1985. It has since risen slightly and stabilized at 31.9% in 2016, remaining slightly below the pre-crisis average. The margin rate of non-financial enterprises has followed a similar trajectory to NFCs, and in 2016 stood at 37.7%, i.e. nearly 2 points below its pre-crisis average.

1 - Margin rate in non-financial enterprises and corporations since 1980



Source: INSEE, annual national accounts, base 2010

Box 1 - Margin rates of NFCs, NFEs and branches

The margin rate of non-financial corporations measures the portion of value added devoted to the remuneration of capital. It is a corollary of the weight of payroll costs as a proportion of value added.

The category non-financial enterprises (NFEs) includes non-financial corporations (NFCs) and non-financial sole proprietors (NFSPs). As the incomes of these sole proprietors are not counted as wages, but instead as "mixed income" comparable to gross operating surplus, the margin rate for NFEs is structurally higher (37.7% in 2016) than it is for NFCs alone (*Graph 1*). The margin rate is sensitive to short-term fluctuations, but the long-term decline in the contribution of sole proprietors to value added (as a result of the increase in payroll employment) is reflected in the decline in the margin rate of NFEs (Pionnier, 2009). Between 2014 and 2016, the increase in the margin rate of NFEs in general (+1.4 points) was close to the increase recorded for NFCs (+1.6 points).

We can represent the fluctuations in the margin rate for different branches of activity, but in this case we cannot separate the contribution of the institutional sectors (financial and non-financial enterprises, households, general government and non-profit institutions serving households). For the purposes of this study, a specific analysis was performed for the industrial and market service branches, comprised primarily of non-financial enterprises. We thus retained all industrial branches. In the service branches, on the other hand, the breakdown of fluctuations in the margin rate concerns the following branches: trade and repairs, transport and storage, accommodation and food services, information and communication and services to businesses. Financial services and insurance have been excluded, as have property services and "other service activities," a category which contains a significant portion of activities classified as household activities. Aggregating the data for the branches under consideration allows us to obtain a reasonably accurate representation of the general evolution of the margin rate for non-financial enterprises. ■

Corporate margin rates should stabilise below pre-crisis levels

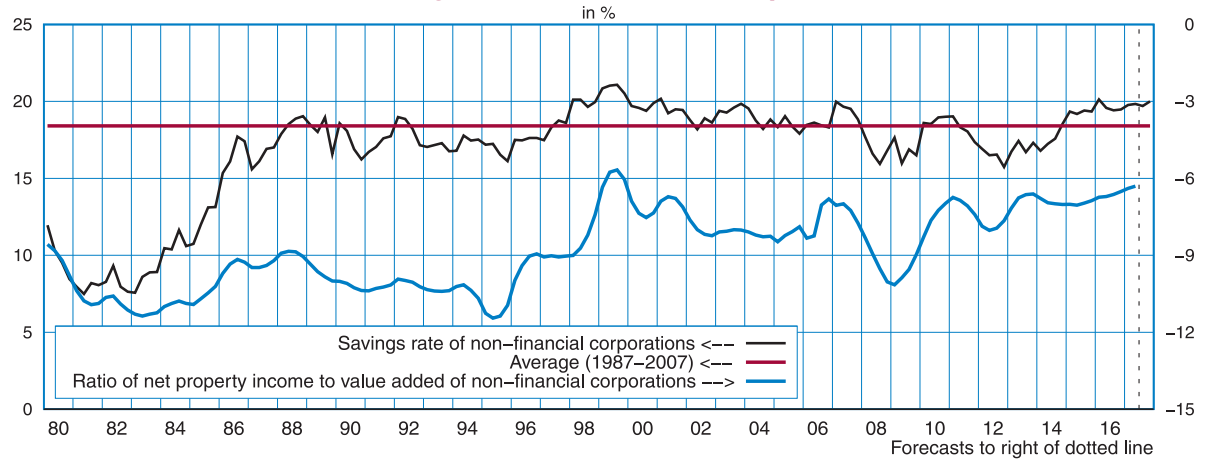
Businesses have maintained their self-financing capacity

Since the onset of the crisis in 2008, the fall in margins has been more than offset by the fall in net interest and dividends, and by the downward trend in corporation tax. The gross savings of enterprises, i.e. the income which remains after payment of wages as well as all taxes and property income (interest, dividends and rents, primarily), now account for a greater portion of value added than they did before the crisis. The savings ratio of non-financial corporations (the ratio of gross savings to value added) was 20% in 2016, its highest level since 2007 (*Graph 2*). Businesses have thus reduced their margins but reconstituted their capacity to self-finance.

Margins in the industrial branches have picked up in the past two years, but the margin rates of service companies remain below their pre-crisis level

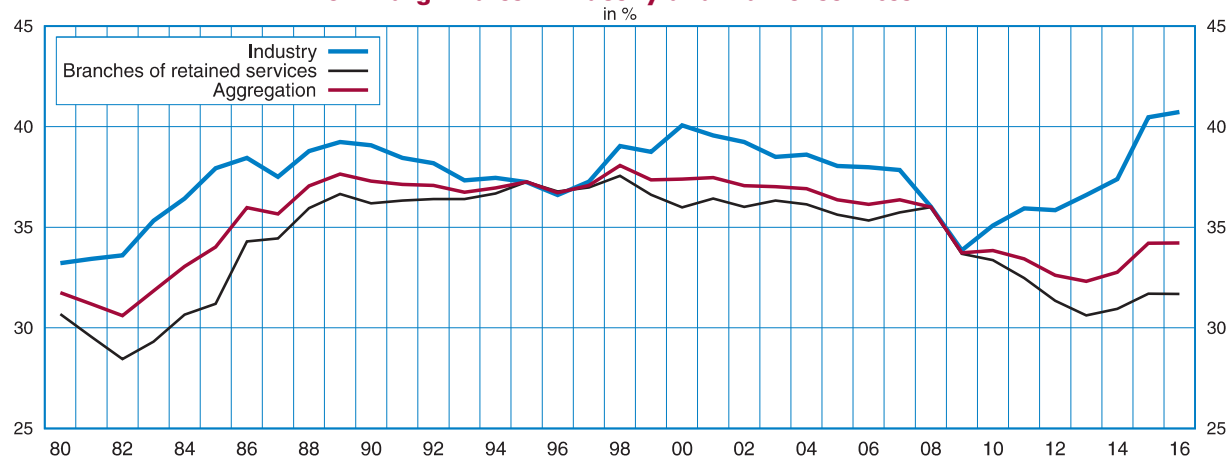
In the industrial branches, margin rates fluctuated between 36% and 40% in the period from 1987 to 2008, then fell during the crisis and hit 33.9% in 2009 (*Graph 3*). The average rate has gradually improved since, and now exceeds its pre-crisis level (40.7% in 2016). In the market service branches (*Box 1*), the average margin rate also fell sharply during the crisis after a long period of stability (hovering between 35.7% and 38.1% from 1987 to 2008). The rate fell to 30.6% in 2013 and has only slightly increased since (31.7% in 2016). Since enterprises of industrial services use various service functions (Ceci-Renaud, 2016), the margin rates in industry and services are not independent of one another. Over the period as a whole, the variation in both rates can be partly attributed to the transfer of activities with low margins from industry towards the service branches, particularly via the growing use of temporary employment in industry (*Box 2*). Beyond this transfer of activities between branches however, corporate margin rates in the industrial branches and service branches have diverged since the crisis.

2 - Savings ratio of non-financial corporations



Source: INSEE, quarterly national accounts, base 2010

3 - Margin rates in industry and market services



Note: the margin rate in services is calculated based on the following branches: trade and repairs, transport and storage, accommodation and food services, information and communication and services to businesses.
Source: INSEE, annual national accounts, base 2010

Box 2 - The effects of temporary work on the distribution of value added in industry and services

In the national accounts, workers are assigned to different branches based on the activities of the companies by whom they are employed. Temporary workers are therefore considered to belong to the branch containing temporary employment agencies, a sub-section of the services to businesses branch.
When a company in the industrial, construction or commerce sectors uses the services of a temporary employment agency to substitute or temporarily augment its own workforce, this expenditure on temporary work services is counted as part of the intermediate consumption of the branch to which the company belongs, while in resource terms it is counted as part of the output of the temporary employment branch.

$$CI_B(Interim) = P_{Interim} = CI_{Interim} + VA_{Interim} = CI_{Interim} + MS_{Interim} + EBE_{Interim}$$

The use of temporary workers therefore generates a significant transfer of value added from businesses towards the branch containing temporary employment agencies. But the value added of this branch is, by definition, very low on capital: the branch has a low margin rate and a very weak ratio of intermediate consumption to output. Temporary employment thus primarily represents a transfer of payroll costs, and pushes up the margin rate of companies using such services.

We can assess the impact of this effect on the margin rate of different branches by recalculating their value added and gross operating surplus based on their intermediate consumption of temporary work services CIB (Interim).

The value added of different branches can thus be corrected for the use of temporary work by adding the intermediate consumption of employment services (Branch 78 in the French classification of activities [NAF], including the activities of temporary employment agencies), weighted based on the intensity of value added in the output of the employment services branch.

$$VA_B^* = VA_B + VA_{Interim}(B) = VA_B + \frac{VA_{Interim}}{P_{Interim}} \times CI_B(Interim)$$

A certain proportion of this extra added value corresponds to the margins of employment services. The gross operating surplus of the branches can thus be corrected by applying the margin rate for the employment services branch.

$$EBE_B^* = EBE_B + TxM_{Interim} \times VA_{Interim}(B)$$

The margin rate corrected for temporary work consumption is deduced from the corrected indicators for value added and gross operating surplus.

$$TxM_B^* = \frac{EBE_B^*}{VA_B^*}$$

The value added and gross operating surplus for the employment services branch are finally corrected by deducting the sums attributed to other branches.

$$VA_{Interim}^* = VA_{Interim} - \sum_i VA_{Interim}(B_i)$$

$$EBE_{Interim}^* = EBE_{Interim} - \sum_i EBE_{Interim}(B_i)$$

Effects of the temporary employment correction on the margin rate in different branches

in %

	Margin rate in 2015	Margin rate corrected	Gap
Total industry, of which:	40.5	38.7	1.8
Extractive industries, energy, water, waste	55.7	54.5	1.2
Agri-food	46.2	44.0	2.2
Coke and refined petroleum products	32.2	31.7	0.4
Capital goods	31.1	29.5	1.6
Transport equipments	43.8	41.1	2.8
Other industrial products	33.4	31.9	1.5
Total services, of which :	31.7	32.9	–1.2
Trade	28.7	28.3	0.4
Transport	32.5	31.4	1.1
Accommodation and food services activities	38.1	37.8	0.3
Information and communication	39.7	39.6	0.1
Business services (including temporary work)	29.2	33.5	–4.2

Source: INSEE, annual national accounts, base 2010, calculations by authors

Compared with the direct recruitment of extra employees by the branches concerned, this correction shows that using temporary employment services clearly increases businesses' margins. The increase was 1.8% for industry. The biggest gain occurred in the transport equipment manufacturing branch. In services, the biggest gain came in the transport and warehousing branch.

According to this calculation method, in 2015 the use of temporary employment services contributed to a three-point gap between industry and the service branches covered by this study. By transferring payroll costs from industry to the service branches, temporary employment reduced the margin rate in services and increased the margin rate in industrial activities. The rate of temporary employment has increased significantly since the late 1980s: between 1990 and 2015 it was multiplied by 1.9 in the market branches (from an average of 1.9% in 1990 to 3.5% in 2015). Over the period in question (1987-2016), the rise of temporary employment services has thus contributed to a structural reduction in the margin rate of services to businesses by 2 points. This reduction occurred primarily in the early 1990s. ■

Economic theory singles out a number of long-term determinants of the margin rate: the cost of production factors, the cost of intermediate goods and regulation of the labour and goods markets

The margin rate incorporates a cyclical component and a long-term trend

Some factors contribute to the long-term margin rate, whereas others theoretically only contribute to its short-term fluctuations. These fluctuations are generally pro-cyclical: in periods of economic expansion the margin rate tends to grow, because productivity tends to increase more rapidly than real wages. Conversely, as the labour force and wages adjust less rapidly and less sharply than prices and production volumes, the return on capital tends to cover most of the adjustment in times of recession. The current level of the margin rate thus contains a cyclical element and a structural element.

An accounting breakdown to track the short-term fluctuations and an econometric model to identify long-term factors and the dynamic contribution of each factor

In order to track the variation in margin rates by branch, an initial approach involves breaking down this variation in accounting form. As the margin rate is linked to the share of wages in total value added, in accounting terms it is directly influenced by the principal determinants of payroll costs. Its variations can thus be broken down according to productivity gains, real wages, employers' contributions and the ratio between the price of value added and consumer prices (*Box 3*). Breaking indicators down into their accounting components serves to identify the different factors at work in each branch, and track the variation in margin rates in the short term.

Box 3 - Accounting breakdown of fluctuations in the margin rate

In the short term, variations in the margin rate can be represented as the sum of the contributions made by payroll employment, the apparent productivity of labour, real wages, contributions, taxes and subsidies paid or received by businesses, as well as the ratio of value-added prices to consumer prices, which reflects changes in the terms of trade (ratio of import prices to export prices). Variations in the margin rate depend on the fluctuations in each of these contributions.

In accounting terms they can be broken down as follows:

- the ratio between payroll employment (ES) and total employment (ET), measured in full-time equivalent, which has a positive effect;
- the development of productivity (Y/ET), where Y is value added, and the ratio of value-added prices to consumer prices (P^{VA}/P_C), or the terms of trade, with a positive effect;
- the development of average wages at full-time equivalent (SM_{ETP}/P_C) and the rate of employers' contributions (W/SM_{ETP}, where W represents the cost of labour at full-time equivalent), with a negative effect;
- other factors: this includes taxes on output minus subsidies such as the CICE (which reduces companies' tax bills but is recorded in the national accounts as a subsidy paid to businesses).

$$TM = \frac{EBE}{VA} = 1 - \frac{W \cdot ES}{Y \cdot P_{VA}} + other\ \ factors$$

$$TM = 1 - \frac{ES}{ET} \times \frac{ET}{Y} \times \frac{W}{SM_{ETP}} \times \frac{SM_{ETP}}{P_C} \times \frac{P_C}{P_{VA}} + other\ \ factors$$

These different contributions are expressed in accounting terms and thus correspond to an *ex ante* effect, without taking into account businesses' adaptive behaviour: *ex post* businesses may decide to allocate their value added differently, by increasing wages or reducing the sale prices of their products in response to a reduction in employers' social security contributions, for example. The long-term effect of these factors may thus be quite different from its *ex ante* accounting effect. ■

Nevertheless, in the longer term these factors alone are insufficient to explain the variations. For example, the gains made thanks to the terms of trade will gradually spread to the rest of the economy in the form of price cuts, wage increases or employment. An econometric approach is therefore required in order to assess the persistence over time of the different factors which influence the margin rate, and to identify which among them only have a short-term impact, particularly the productivity cycle, and which factors modify the equilibrium margin rate for the branch. Based on literature a review, a theoretical framework is put forward (*Box 4*) and tested for each branch in order to distinguish between short-term and long-term effects, and thus to assess the different dynamic contributions of these factors to variations in the margin rate (*Appendix: sources and models*).

The different theoretical analyses of the distribution of value added schematically identify two major sets of factors likely to have an influence in the long term: technical factors, linked to the way in which companies combine intermediate goods, labour and capital in their production processes, and institutional factors, linked to the organisation of the labour and goods markets and the financial markets (Askenazy *et al.*, 2011).

Box 4 - Theoretical framework employed

The factors which determine the equilibrium level of the margin rate may be derived from hypotheses based on the productive function of the economy and the state of competition in the markets in goods and services.

The long-term stability of the margin rate is compatible with a Cobb-Douglas representation of the productive function of the economy, within the theoretical framework of perfect competition. The level of output is the result of a combination of two production factors: capital and labour. In the Cobb-Douglas model, the elasticity of substitution between these production factors is equal to one: any increase in the relative price of a factor is fully offset by a reduction in the quantity of the factor used. As such, the long-term relationship between gross operating surplus, which measures the remuneration of capital, and value added is unitary. In the short term the margin rate is affected by the immediate circumstances, while in the long term it converges towards its equilibrium rate which is supposed to be stable.

Introducing additional variables to the long-term equilibrium ratio requires us to remove certain hypotheses from the schematic model:

- the influence of the prices of factors of production on the long-term equilibrium level of the margin rate corresponds to a non-unitary elasticity of substitution hypothesis regarding the production function. It can be modelled using a CES function (constant elasticity of substitution), where the elasticity of substitution is constant but not necessarily equal to one.

- classical production functions do not represent intermediate consumption in the process of creating value added. Implicitly, they suppose that intermediate consumption corresponds to a constant share of output and thus has no influence. It is possible to add an intermediate consumption variable to the production function: the latter thus appears in the production process and in the transition from output to value added. The function can influence the level of the margin rate depending on the substitutability of capital and labour.

- modelling the influence of competition requires us to abandon the perfect competition hypothesis, particularly the idea that businesses are "price takers." In a context of monopolistic competition, firms seek to optimize their behaviour in terms of both quantity and price, and thus have a degree of market power.

The theoretical production function and behavioural hypotheses posited by Prigent (1999) illustrate these three aspects.

The production function uses three production factors - capital, labour and energy - in the following configuration:

$$F(K,L,E) = \left[a \times (\theta \times L)^{-\rho} + b \times (Min\ \ K, d \times E)^{-\rho}\right]^{\frac{-1}{\rho}}$$

The elasticity of substitution is not fixed at 1: the price of the factors may have an impact on the division of value added. If we suppose that the elasticity of substitution between the factors is less than one, a reduction in the cost of capital will also drive down the margin rate.

Energy is considered to be complementary to capital (with a complementarity coefficient d). It influences the distribution of value added both in terms of choices regarding the quantity of production factors and also as a term subtracted from output when calculating value added.

Finally, the article exists within a context of monopolistic competition: firms apply a mark-up rate to their marginal costs in order to determine their sale price; the margin rate increases in line with the rate of this mark-up.

The long-term equilibrium of the margin rate depends on the mark-up rate, the real cost of capital and the relative price of energy. ■

Corporate margin rates should stabilise below pre-crisis levels

In the long term, the margin rate depends on the sensitivity of enterprises to variations in the cost of production factors

In the short term, the share of labour in value added depends on its cost. When a short-term shock has an impact on wage levels, the share of labour in total value added will mechanically decrease or increase because the demand for labour does not adjust immediately. The cost of production factors thus affects the breakdown of value added, through a price effect. In the long term, a substitution effect is observed: companies may modify their production in response to lasting changes in the relative cost of production factors, developing technologies which are more or less labour and capital intensive. The margin rate thus depends on how sensitive the production techniques used by companies are to the costs of these factors (Baghli *et al.*, 2003).

In the specific example of a Cobb-Douglas production function, the substitution effect will counterbalance the price effect. In the long term, all of the effects of changes in the price of production factors are counterbalanced by the adjustments made by companies. When payroll costs increase, the quantity of labour demanded by companies decreases and the contribution of payroll costs remains stable; by the same token, when the cost of capital increases the quantity of capital falls and the contribution of capital thus remains stable. In this framework, the cost of production factors has no long-term influence on the distribution of value added. Nevertheless, this counterbalancing hypothesis is very restrictive. In practice, the elasticity of substitution between production factors is not necessarily unitary over the long term (*Box 4*). If companies do not fully counterbalance the effect of a relative increase in the cost of one of their production factors by reducing their use of this factor, the increase in this factor proportionally to value added may become a lasting phenomenon.

The equilibrium level of the margin rate increases as real interest rates increase...

In the French context, with an economy which is open to international capital exchanges, fluctuations in the cost of capital are largely determined by external conditions: decisions taken by the central banks and international capital markets. However, labour is less mobile than capital. Companies make choices in relation to the external constraint of financing conditions, adjusting their payroll costs as required. In theory, this link between the price of production factors (known in the economic literature as the "factor price frontier") and the difference in mobility between capital and labour suggests that, if the elasticity of substitution between production factors is not unitary, the cost of capital has more of an influence than the cost of labour on the long-term equilibrium margin rate (Cotis & Rignols, 1998). In other words, prevailing economic theory holds that the effects of variations in the relative prices of production factors are passed on via the cost of capital more than via the cost of labour. In particular, when the cost of capital decreases, if companies do not fully counterbalance this price effect by increasing their use of capital in their production processes, then the return on capital will tend to decrease as a share of value added.

... and falls when the cost of intermediate goods falls

The equilibrium margin rate is also influenced by the cost of intermediate goods because it does not encompass the distribution of turnover from all sales made by businesses, but only that of their value added, i.e. their output less their intermediate consumption. By modelling the weight of intermediate consumption in the production function, it is possible to reveal the long-term relationship between its price and the level of the margin rate (Prigent, 1999). The cost of intermediate consumption (including energy, which has probably had a significant influence on the distribution of value added during oil shocks and countershocks) is therefore also held to be a factor which influences the level of the margin rate in the long term. Its short-term influence is even more substantial, as a result of smoothing behaviour by companies.

Corporate margin rates should stabilise below pre-crisis levels

The margin rate varies with the degree of competition in the goods and services markets...

When companies have market power in a given sector, they have the ability to set sale prices at a level superior to their marginal cost. The lower the degree of competition and thus the more scope there is for mark-up, the higher the margin rate will be. Oligopolistic markets tend to emerge in sectors where there are substantial fixed costs, such as network costs, or technological advances made by a small number of players. In the market for a specific good or service, the degree of competition can be approximated by measuring the concentration of enterprises. During market expansion phases, the margin rate may be pushed downwards by the gradual reduction in mark-up rate applied by the sector's pioneers (Blanchard & Giavazzi, 2003). Conversely, the development of sectors with strong market power can drive the margin rate of the economy as a whole upwards, a hypothesis which has been studied in the American market (Gutiérrez & Philippon, 2016; De Loecker & Eeckhout, 2017). The degree of competition can thus be considered a structural factor capable of influencing the equilibrium margin rate. This would explain why the reduction in the margin rate has been restricted to the service branches, where competition has probably intensified, and has not spread to the industrial branches where international competition has been generally strong and constant since the introduction of the Single European Act in 1987.

... and drops in line with the bargaining power of employees

Finally, the margin rate also depends on the capacity of workers to negotiate their pay. In insider-outsider theoretical models, the bargaining power of employees influences the level of their wages and thus the weight of payroll costs as a proportion of value added. This bargaining power is particularly affected by the unemployment rate: the higher the unemployment rate, the lower the bargaining power of employees and the higher the margin rate will potentially be. An increase in the unemployment rate thus theoretically leads to an increase in the equilibrium margin rate (Blanchard & Giavazzi, 2003). In theory this is primarily a short-term factor, as the unemployment rate should converge towards its structural level in the long term.

Economic recovery, terms of trade and measures to reduce the cost of labour have contributed to the recovery of the margin rate in industry

Industry margins have been helped by the return to growth

During the two crisis years of 2008 and 2009, the margin rate in industry fell by 4 points. The decline in value added by industry was reflected in a substantial decrease in the productivity of labour (*Graph 4*). This contributed –2.5 points to the fall in the industry margin rate (*Table 1*). Since 2010, however, value added has grown more rapidly than payroll. The productivity of labour has contributed an annual average of +1.5 points to the increase in the margin rate, while the effect of wage increases has only been –0.8 points per annum on average. In 2015 in particular, the strong increase in value added in manufacturing of transport equipment (+15%) was reflected in a sharp increase in the margin rate of this branch (+8 points).

The weak Euro and low oil prices have provided breathing space for the goods manufacturing branches

At a detailed level, the increase in the margin rate since 2009 has been particularly strong in the three goods manufacturing branches: capital goods (+9.5 points), transport equipment (+18.3 points) and other manufacturing industries (+5.9 points). The transport equipment manufacturing branch has benefited substantially from the improvement in the terms of trade since 2014. This branch consumes an above-average quantity of petroleum products, and oil prices have fallen. Elsewhere, the transport equipment branch in particular benefited from the fall in the value of the Euro in 2015: the vast majority of export contracts, particularly in the aeronautical sector, are priced in dollars, which

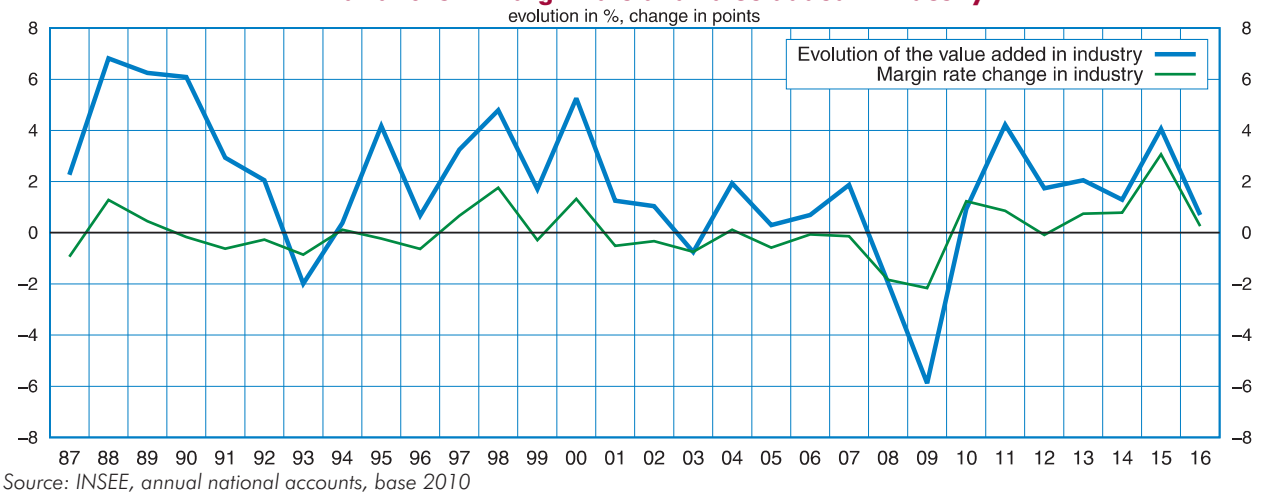
helps to explain the significant rise in export prices. This short-term upturn in the terms of trade follows a long period of decline: the prices of value added in industry had been less dynamic than consumer prices since 1987, and the margin rate only remained stable across that period because productivity grew at a significantly higher rate than wages.

Cuts in levies in 2010 and again since 2014 have contributed to the improvement of margins in the industrial branches

In the first decade of this century, policies designed to reduce employers' contributions helped to increase the margin rate of businesses in industry (which increased by an average of +0.1 points per year between 2000 and 2009). The introduction of the tax credit for encouraging competitiveness and jobs (CICE) followed by the Responsibility and Solidarity Pact (PRS) and the hiring premium for SMEs between 2014 and 2016, and particularly the reform of the Professional Tax in 2010, have all made a clear contribution to the recovery of the margin rate in industry since the crisis. The margin rate grew by an average of one percentage point per year between 2010 and 2016, of which 0.4 points can be attributed to the impact of these measures.

The greatest beneficiaries of the 2010 professional tax reform have been the energy production branches (electricity, gas, steam and air conditioning; manufacture of coke and refined petroleum products). The beneficial effects of the decrease in the cost of labour made possible by the CICE have been more evenly spread across all industrial branches.

4 - Variations in margin rate and value added in industry



Source: INSEE, annual national accounts, base 2010

Table 1 - Accounting breakdown of the variations in the margin rate in industry

in % and in points

	1987-2016	1987-1999	2000-2007	2008-2009	2010-2016
Margin rate at the end of the period	**40.7**	**38.7**	**37.8**	**33.9**	**40.7**
Annual average variation of margin rate	**0.1**	**0.1**	**–0.1**	**–2.0**	**1.0**
Annual average contributions to margin rate variation					
Payroll employment	*0.0*	*0.0*	*0.0*	*0.0*	*0.1*
Productivity gains	*1.7*	*2.2*	*1.7*	*–1.3*	*1.5*
Real wage per FTE	*–0.9*	*–1.2*	*–0.6*	*–1.1*	*–0.8*
Employer contribution rate	*0.0*	*0.0*	*0.1*	*0.1*	*–0.1*
Ratio of the value added price to the consumer price	*–0.7*	*–0.8*	*–1.4*	*0.2*	*0.0*
Other factors (of which taxes on output and subsidies like CICE)	*0.0*	*–0.2*	*0.0*	*0.0*	*0.4*

Source: INSEE, annual national accounts, base 2010

Corporate margin rates should stabilise below pre-crisis levels

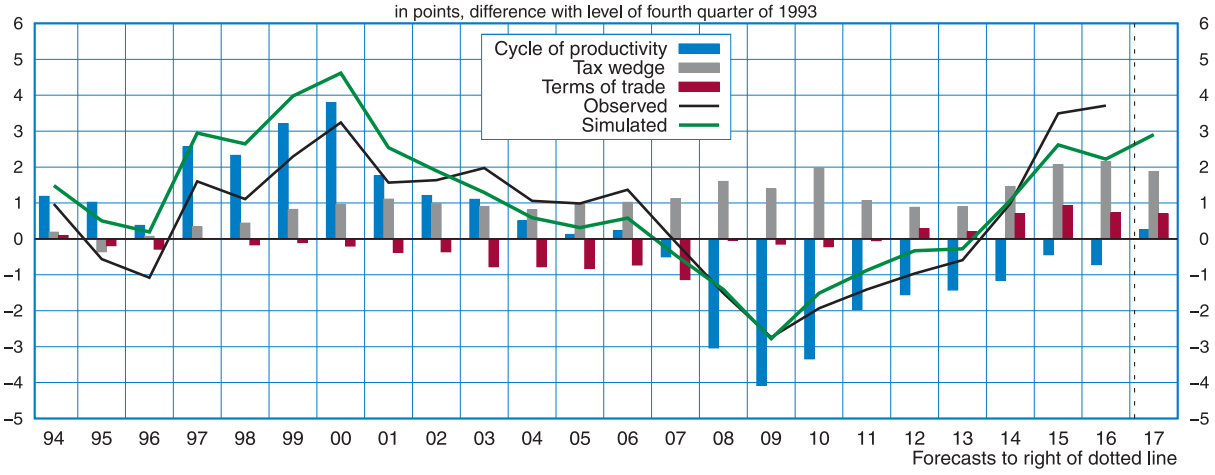
The productivity cycle, taxation and terms of trade can be used to model the variation in the margin rate in industry

Above and beyond this accounting breakdown, econometric modelling of the margin rate in industry serves to reconstruct the influence of the productivity cycle, taxation and the terms of trade over time, taking account of their gradual dissemination throughout the economy. In particular, it can represent the cumulated contributions of different factors (*Graph 5*).

Fluctuations in the margin rate are predominantly determined by the productivity cycle, which bolstered the ratio considerably between 1996 and 2000 before contributing to its deterioration in 2001 and again in 2008. When value added increases, the increase in gross operating surplus is more than proportional. In the longer term, the model does not reject the hypothesis of a unitary relationship between gross operating surplus and value added: the equilibrium margin rate in industry would thus appear to have been stable since 1987, with value added shocks having a purely temporary effect. In 2017, the impact of the 2008 crisis appears to have been dampened by the industrial branches: the contribution of the productivity cycle to the variation in the margin rate observed since 1993 is slightly positive, whereas it was strongly negative in 2009 (–4 points).

The model also tracks the significant short-term influence of the "tax wedge", which includes the effects linked to the rate of employers' contributions as well as business taxes less subsidies. Policies aimed at reducing the cost of labour and taxes on production have made a significant contribution to the industrial margin rate since 2000, according to the model. Measured in 2017, these factors have contributed two points to the increase in the rate compared with its level at the end of 1993. The model also confirms the positive effect of the improved terms of trade since 2008, which have contributed almost one percentage point to the increase seen since 1993. While the model is broadly accurate in its representation of fluctuations in the margin rate, it does not fully represent the scale of the increase in the margin rate observed in 2015. This may be due to the exceptionally favourable conditions created by the depreciation of the Euro in that year, which boosted margins in the aeronautical sector, whose export contracts are priced in dollars.

5 - Dynamic contributions to the evolution of the industrial margin rate



How to read it: the graph shows the difference in the margin rate with reference to its level in Q4 1993. These contributions are cumulative.

Source: INSEE, quarterly national accounts, base 2010, calculations by authors

Corporate margin rates should stabilise below pre-crisis levels

The decline in the margin rate in market services stems primarily from trade, information-communication and services to businesses

Margins in trade, information-communication and services to businesses have been shrinking since 2008

Contrary to the situation in industry, the margins of service companies have not really picked up since 2014, having slumped during the 2008 crisis and again in 2012. Across the whole period under consideration, 1987 to 2016, the margin rate in market services (trade, transport, accommodation and food services, information and communication, services to businesses) fell by 2.7 points. This downturn can be attributed to just three branches: trade, information and communication, and services to businesses (*Table 2*). It reflects two major developments: a decline in the margin rate in certain branches (the rate variation effect) and the fact that branches with weaker margin rates have come to account for a greater share of total value added (structural effect).

Changes in the structure of activity in the service branches have spurred a downward trend in the margin rate

In the three branches identified above, the margin rate began to decline in the recession of 2008-2009 (as in the industrial branches), but the decline has since continued. The margin rate in the service branches has been further driven down by a structural effect which accounts for 1.6 points of the decline observed between 1987 and 2015. This structural effect accounts for virtually all of the decline observed in the margin rate in services to businesses: in this branch, very capital-intensive activities such as equipment hire have declined while other activities such as legal and accounting services, management, architecture, engineering, technical analysis and inspections and other administrative and support services have increased, including temporary employment (*Box 2*). These activities are labour-intensive, with a very low margin rate.

The increase in payroll employment contributed to a structural reduction in the margin rate of service companies up until the early 2000s

In service companies, the rate of payroll employment grew until the early 2000s. By this time payroll employment accounted for 90% of total full-time equivalent employment, a 5-point increase since 1987. The decline in the proportion of sole proprietors was particularly strong in certain branches: trade and repairs, accommodation and food, legal activities, accountancy, management, architecture, engineering, technical analyses and inspections (*Graph 6*). All in all, the increase in payroll employment in service companies drove their margin rate down by an average of 0.1 points per year, equivalent to a cumulative decrease of 3.2 points between 1987 and 2016 (*Table 3*). After stabilising in the 2000s, the rate of payroll employment has shrunk slightly since 2010, which, in accounting terms, has contributed to a slight increase in the margin rate (approx. 0.1 points per year).

Table 2 - Margin rates by branch in market services

margin rate in %, contributions in points

	Margin rate			Contribution of branches to margin rate variation						
				1987-2015			1987-2000	2000-2007	2007-2009	2009-2015
	1987	2015	1987-2015	Contribution	Rate variation effect	Structural effect	Contribution			
Total	**34.4**	**31.7**	**–2.7**	**–2.7**	**–1.1**	**–1.6**	**1.5**	**–0.3**	**–2.1**	**–2.0**
Trade	33.0	28.7	–4.3	–1.2	–1.4	0.2	1.1	–0.9	–0.2	–1.0
Transport	26.8	32.5	5.6	0.8	0.8	0.0	–0.3	0.3	–0.1	0.9
Accommodation and food services activities	38.5	38.1	–0.3	0.0	0.0	0.1	0.4	–0.1	–0.3	0.0
Information and communication	48.1	39.7	–8.4	–1.2	–0.6	–0 .6	–0.3	0.1	–0.3	–0.7
Business services	32.4	29.2	–3.1	–1.2	0.1	–1.3	0.6	0.3	–1.1	–1.1

Note: the contribution of each branch to variations in the margin rate can be broken down into an effect linked to variations in the rate for that branch and a structural effect, linked to the shifting importance of the branch as a proportion of total value added. These contributions have been calculated here using the method proposed by J.-P. Berthier (2002). The rate and structural effects are calculated at level A38, then added to the higher levels.

Source: INSEE, annual national accounts, base 2010, calculations by authors

Corporate margin rates should stabilise below pre-crisis levels

Wages have been more dynamic than productivity in services since 2000

Since 2000, real wages per full-time equivalent have increased by 19 points while the apparent productivity of labour has grown by just 8 points. The gap between wages and productivity has widened further still since the recession of 2008-2009 (*Graph 7*). This gap is particularly pronounced in the accommodation and food services and services to businesses branches.

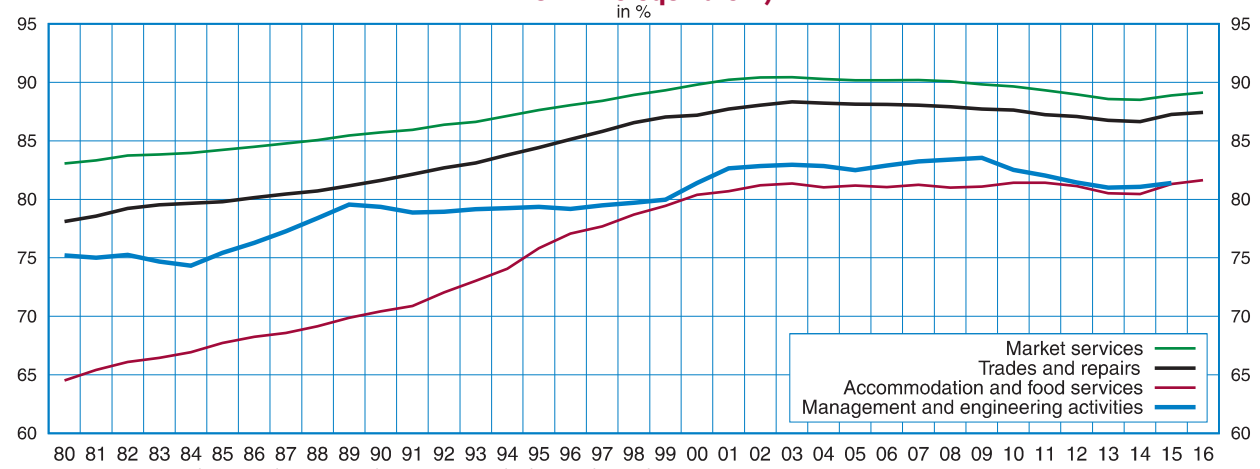
The fall in the cost of labour has not been sufficient to offset this dynamism

In the early 2000s, the dynamic growth of wages was offset by policies designed to reduce employers' contributions. For example, the requirement to maintain salaries at the same level when the reduced working week was introduced was offset by a reduction in employers' contributions. Since the crisis, reductions in contributions, taxes and subsidies have also offset the dynamism of wages, but only partially. Since 2008 they have contributed +1.3 points to the margin rate of companies in the service branches, but over the same period the disparity between the increase in wages and the increase in productivity has weakened the margin rate by 5 points.

Prices of value added have increased much less rapidly than consumer prices since 2010

Companies have not passed on the increase in their production costs to their prices. The value added prices of service companies have actually increased at a slower rate than consumer prices since 2010. But within this average trend, there are some clear contrasts. In energy-intensive branches (particularly transport), margins have clearly benefited from the fall in oil prices since 2014, as companies have not passed on all of the savings made in the form of reduced sale prices. However, prices have come down in the trade (–4% between 2010 and 2016) and information-communication sectors, especially telecommunications (–37% between 2010 and 2016), thanks in part to the arrival of a new mobile operator (Bacheré, 2017).

6 - Payroll employment in service companies (payroll employment/total employment in full-time equivalent)



Source: INSEE, annual national accounts, base 2010, calculations by authors

Table 3 - Breakdown of margin rates in the selected service branches

in % and in points

	1987-2016	1987-1999	2000-2007	2008-2009	2010-2016
Margin rate at the end of the period	**31.7**	**36.6**	**35.7**	**33.7**	**31.7**
Annual average variation of margin rate	**–0.1**	**0.2**	**–0.1**	**–1.0**	**–0.3**
Annual average contributions to margin rate variation					
Payroll employment	*–0.1*	*–0.3*	*–0.1*	*0.2*	*0.1*
Productivity gains	*0.6*	*1.1*	*0.3*	*–0.9*	*0.6*
Real wage per FTE	*–0.6*	*–0.4*	*–0.6*	*–1.2*	*–0.7*
Employer contribution rate	*0.1*	*0.1*	*0.2*	*0.0*	*0.0*
Ratio of the value added price to the consumer price	*–0.1*	*–0.2*	*0.0*	*0.9*	*–0.4*
Other factors (of which taxes on output and subsidies like CICE)	*0.0*	*–0.1*	*0.1*	*0.0*	*0.2*

Source: INSEE, annual national accounts, base 2010

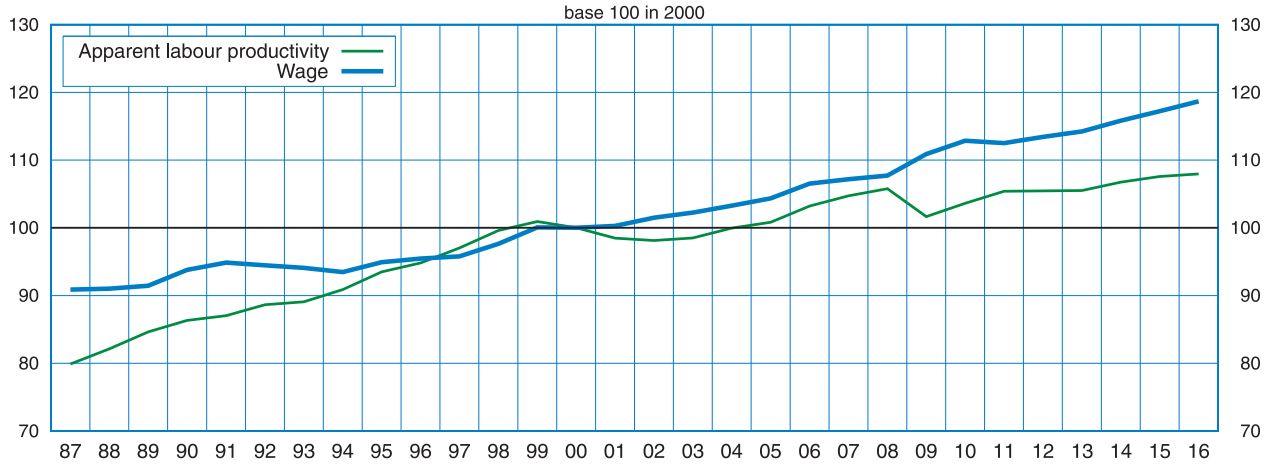
Corporate margin rates should stabilise below pre-crisis levels

Between 2010 and 2016, variations in the ratio of value added prices to consumer prices contributed to an 8-point fall in the margin rate for the trade branch, and a 20-point fall in the telecoms branch. Overall, the variation in the ratio of value added prices to consumer prices in these service branches contributed to the 3-point decrease in the margin rate for all service companies observed since 2010. The variation in value added prices in these two branches accounts for half of the decline in the overall service-sector margin rate in relation to its pre-crisis average level (31.7% in 2016 compared with 36.4% between 1988 and 2007).

Competition has become more intense in the trade and information-communication branches, apparently putting an end to oligopoly "rents"

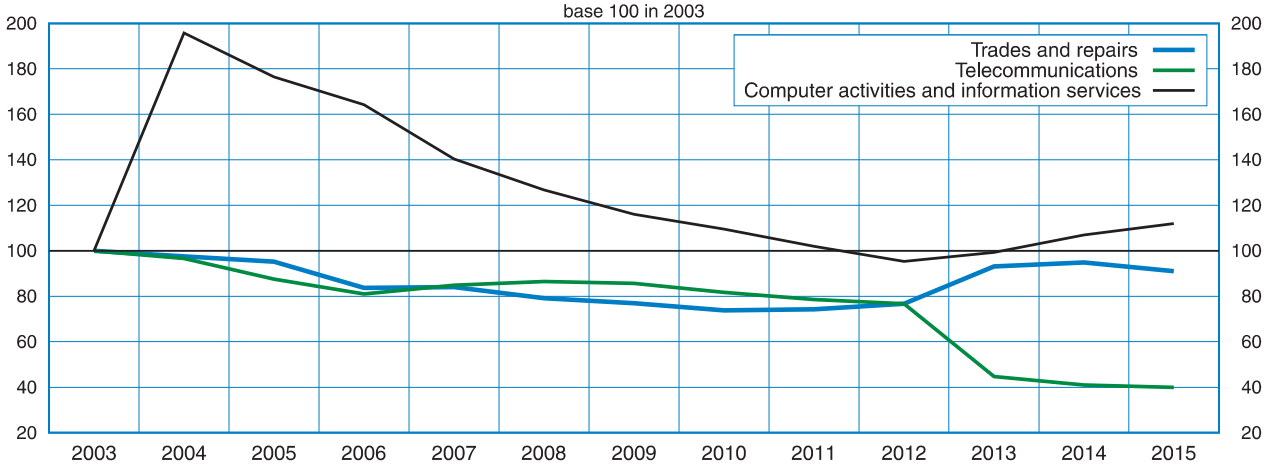
The intensification of competition can be seen in the Herfindahl-Hirschmann concentration indices for each branch, calculated using individual data (*Graph 8* and *Appendix*). The effect of competition is very clear in the information-communication branch, where the margin rate has collapsed since 2011 (–5 points) as a result of the severe decline in the prices of telecommunication services caused by the arrival of a new operator. A reduction in the concentration of turnover can also be seen in trade over the period 2003-2012, followed by a more recent trend towards reconcentration. In this sector, European integration has led to the introduction of policies promoting competition between brands, while the rise of the internet has fuelled the growth of newcomers in the retail sector.

7 - Variations in wages and productivity in market services



Scope: trade, transports, accommodation and food services activities, information and communication and business services.
Source: INSEE, annual national accounts, base 2010, calculations by authors

8 - Sectoral index for concentration of turnover



Sources: Ficus (2003-2007), FARE (2008-2015), LiFi (2003-2015), calculations by authors

In the IT and information services sector, the crisis which erupted in the early 2000s was followed by a large-scale restructuring of the sector including numerous mergers and acquisitions (Mordier, 2009). This is reflected in the clear increase in the concentration index for this sector in 2004. The concentration of the sector has since decreased.

... in both France and Germany

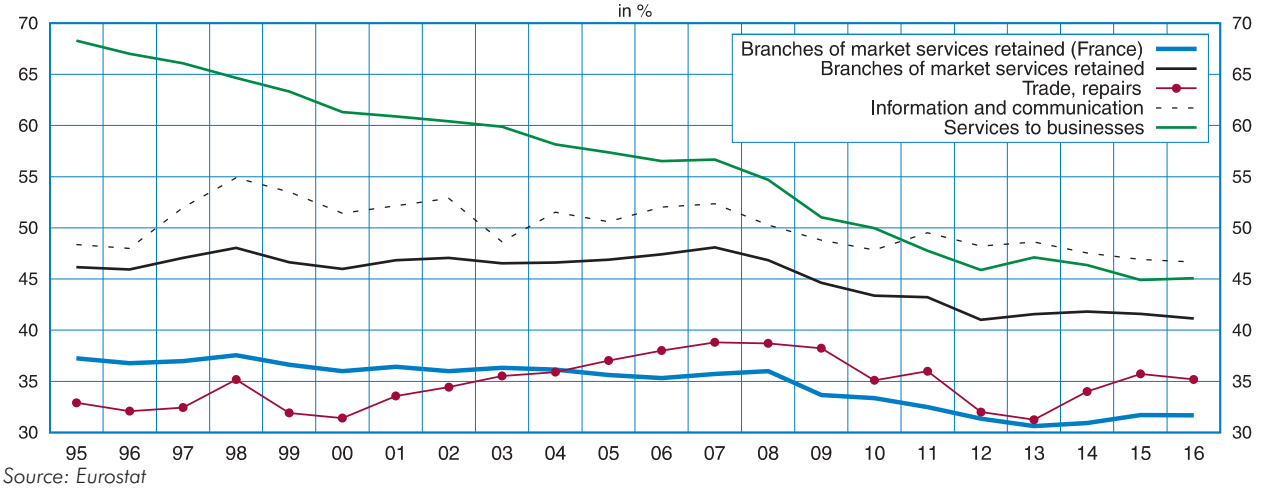
The decline in margin rates in services has not been a specifically French phenomenon: in Germany, the margin rate in services declined a little more sharply over the same period (*Graph 9*). While France saw a more pronounced decline in the information-communication branch, the rate fell less sharply in services to businesses. Even though bargaining power and the labour market situation differ considerably between France and Germany, the scale of the decrease seen in both countries would appear to suggest a general trend towards more intense competition in the service branches across Europe.

The low level of the margin rate in market services appears to be the result of cyclical effects, the development of low capital-intensive activities, and variations in the level of competition

Modelling the margin rates branch-by-branch in market services provides a credible account of their evolution in all branches, with the exception of services to businesses

As in industry, an accounting breakdown alone does not give a picture of the way in which short-term shocks spread to the margin rates of different branches over time. Branch-by-branch econometric modelling is therefore employed (*Appendix: sources and models*) in order to identify the effects of the productivity cycle, short-term shocks and factors affecting the equilibrium level of the margin rate. The modelled equations quite accurately retrace the variations in the margin rates in trade and repairs, transport services, accommodation and food services and information and communication (*Graph 10*). In these four branches, the long-term level of the margin rate is influenced by changes in value added, as well as by factors specific to each branch (competition for trade and information-communication, terms of trade for transport, producer prices and structural effects linked with developments in telecoms for information-communication). The margin rate is also sensitive to short-term variations in value added. In each of these branches, as in industry, value added has a very clear accelerator effect.

9 - Margin rate of market services in Germany



Source: Eurostat

Corporate margin rates should stabilise below pre-crisis levels

However, the econometric variables tested do not retrace the variation in the margin rate for the services of businesses branch. As can be seen from the accounting breakdown, the fall in the margin rate in this branch can be attributed primarily to structural effects, with fluctuations around this trend appearing to be purely cyclical. Variations in the margin rate in services to businesses (excluding structural effects) are included in the modelling residual for all of the service branches considered here.

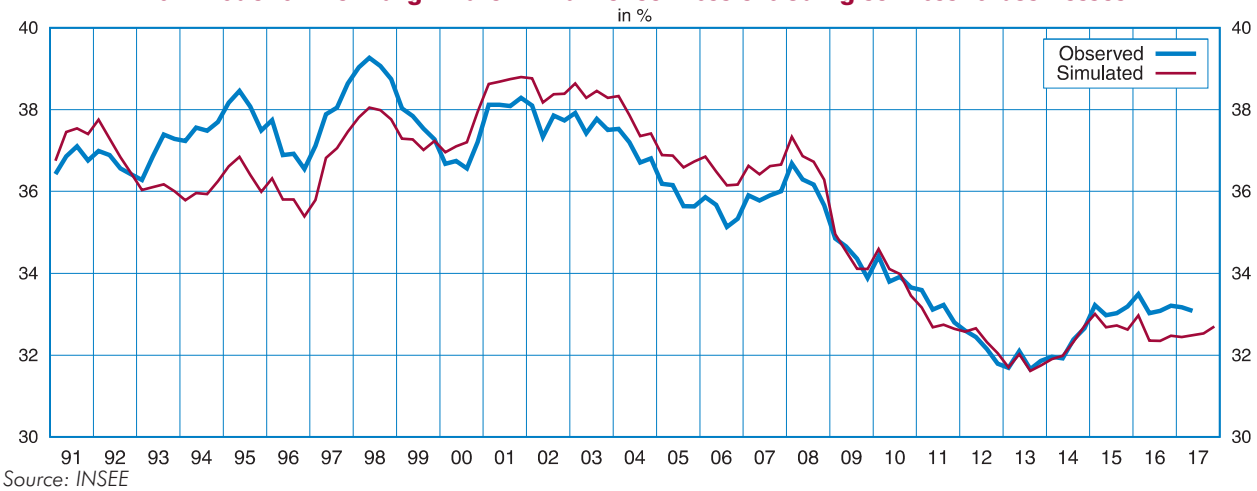
The model used for the market service branches distinguishes between structural effects and other effects

Moreover, in the model used to aggregate the effects in market services, the structural effects connected with the shifting proportional weight in terms of value added of the different service branches are presented in terms of their accounting impact. Thus, the model distinguishes between those factors identified in the equations for each branch, and the structural effects linked to the shifting weight of each branch as a proportion of total value added by market services.

The model can be used to break down the 5-point reduction in the margin rate observed since 1999

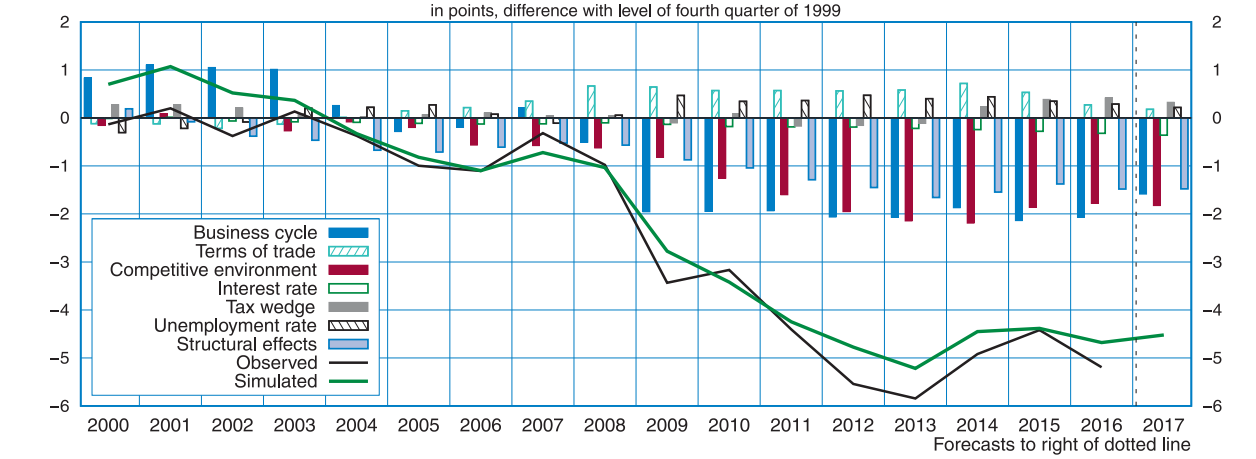
This breakdown enables an analysis of the variation in the margin rate in market services. Since 1999 the margin rate in market services has fallen by around 5 points, of which more than four can be attributed to the different explanatory factors identified (*Graph 11*).

10 - Model of the margin rate in market services excluding services to businesses



Source: INSEE

11 - Variation in the margin rate in market services since 2000



Source: INSEE, quarterly national accounts, base 2010, calculations by authors

Corporate margin rates should stabilise below pre-crisis levels

The increase in competitive pressure has had an impact on the margins of businesses in the trade & repairs and information & communication sectors (accounting for 1.8 points in the decline in the margin rate of services since 1999)

In the trade and repairs branch, the concentration of turnover generated by companies in the trade sector decreased in the 2000s. This trend is associated with the variation in the equilibrium margin rate for the branch in the retained model. In the information and communication branch, the model shows that pressure on prices had an impact on the equilibrium margin rate. Furthermore, the decline in value-added prices has indirectly affected the relative weight of this branch. Since the margin rate in this branch is very high on account of its capital intensiveness, this has also contributed to the reduction in margin rates in services via structural effects. This reduction has been largely connected with the decrease in value-added prices, a structural effect which is here counted as a consequence of the intensification of competition in this sector.

All in all, in the model retained, factors connected with the competitive environment contribute to a 1.8-point reduction in the margin rate of market services since 1999.

The short-term cycle explains a significant portion of the decrease in the margin rate since 1999 (–1.6 points)

According to the model, a significant proportion of the fluctuations observed in the margin rate in market services can be explained as cyclical effects. Although the economic recovery has seen margins begin to pick up again, in 2017 this cyclical component still accounts for 1.6 points of the decline in the market services margin rate since 1999, although margins were at a high point in that period (*Graph 2*).

Branches which are not capital-intensive now account for a greater proportion of the total value added in services, and contribute to the fall in margin rates (–1.5 points)

Since 1999, changes in the respective weights of different market services branches have had a negative impact on the margin rate. The least capital-intensive branches have seen more vigorous development compared to the more capital-intensive branches. In particular, the use of legal services, accountancy, management services, architecture, engineering, technical analysis and inspections and IT services has intensified. All in all, these structural changes (excluding the specific effect from the information-communication branch) have contributed to a 1.5-point decrease in the margin rate since 1999, representing a long-term factor pushing margin rates down in the market services sector.

The fall in the cost of capital should contribute slightly to the decrease in the proportion of capital in total value added in services (–0.4 points)

Across all of the market services considered, the cost of capital has contributed, albeit modestly, to the fall in margin rates since 1999. The substitution effect of labour in favour of capital when the cost of the latter falls does not fully counterbalance the price effect. Nevertheless, interest rates appear to be a significant factor in the long-term development of the margin rate only in the model for the accommodation and food services branch. The influence of interest rates on the long-term equilibrium of the margin rate in market services therefore appears to be limited.

CICE and PRS explain the recent 0.3-point increase in the margin rate in services

Contributions, taxes and subsidies contributed very little to the estimated variation in the margin rate in the service branches between 1999 and 2013, unlike the industrial branches where the reform of the professional tax had a very positive effect in 2010. However, the decrease in the cost of labour made possible by the CICE and the Responsibility and Solidarity Pact has had a positive impact on the margin rate since 2014, an effect which the model suggests is still being felt in 2017. It has contributed +0.3 points to the level of the margin rate in 2017, compared with 1999.

The weakened labour market situation and the terms of trade have both contributed to an increase of approximately 0.2 points in the margin rate in services

Increases in the unemployment rate in 2008 and again in 2012 damaged the bargaining power of employees and, according to the model, contributed to a slight increase in the margin rate. In 2017 this effect has not yet dissipated, and the labour market situation appears to still be affecting the contribution of wages to value added: the unemployment rate has contributed to an increase of around 0.2 points in the margin rate in service companies, from its 1999 level. Recent developments in the terms of trade in transport services also appear to have played a role in increasing the margin rate in the corresponding service branches by 0.2 points.

Corporate margin rates should stabilise below pre-crisis levels

The margin rate has clearly shrunk since 1999, a loss which appears to be two-thirds lasting and one-third temporary

An aggregation of the models for industry and services results in a reconstruction which satisfactorily retraces variations in the margin rate of non-financial corporations. Only the service branches have made a significant contribution to the drop of around two points seen in the margin rate since 1999, as the margin rate in industry remains very close to the level recorded in the late 1990s. Within the service branches, two thirds of the decrease can be attributed to long-term factors (intensification of competition, structural shift of the economy towards branches which are less capital-intensive) while the remainder appears to be linked to more short-term factors (the persistently negative effect of the position in the productivity cycle, partly counterbalanced by the temporary impact of measures to reduce the cost of labour and by the labour market situation). These long-term factors are shared by France and Germany, where the margin rate in the service branches has declined even more seriously since the crisis. The margin rate should therefore pick up slightly over the next few quarters, as activity levels continue to improve and the rate of the CICE credit is increased. However, the rate should remain below the average seen in the period 1987-2007. ■

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Appendix - Sources and models

Data sources

National and quarterly accounts

Accounting breakdowns of variations in the margin rate are based on annual data from the national accounts, whereas econometric models are estimated using quarterly data.

The Herfindahl-Hirschmann concentration index

Concentration indicators measure the distribution of the total turnover generated by a given sector of activity. The Herfindahl-Hirschmann concentration index (HHI) for a sector composed of i companies is equivalent to:

$$IHH = \sum_i \left(\frac{x_i}{\sum_i x_i} \right)^2$$ x_i being turnover for the company i

The more widely-distributed the turnover in a sector, the lower the concentration index will be. The maximum possible value is 1, equivalent to a situation in which a single company accounts for the entire turnover of the sector. The value decreases when new players enter the market, and increases when companies merge. An increase in the index indicates an increase in the oligopolistic nature of the sector, while a decrease suggests that competition has become more intense.

For the period 2003-2007 the concentration index is calculated using the "Unified SUSE accounting files" (FICUS): FICUS files are derived from tax declarations reworked into usable form by INSEE. Each file contains a profit or loss account and balance sheet. For the years 2008-2015 the index is calculated using the Esane result files (FARE), containing accounting information derived from tax declarations and cross-referenced with information from the annual sectoral survey (ESA). The information on businesses contained in these databases is classified using the French classification of activities (version 2). Data from tax forms collected before 2003 are classified using a previous version of the classification system. The concentration index has been calculated for the period 2003-2015 only, in order to avoid the risk of inconsistency caused by changes in the classification system.

The index is calculated at group level, as defined in the database on financial connections. Businesses which are more than 50% controlled by the same parent company are considered to belong to the same entity, and categorised in the sector in which the group generates the majority of its turnover.

Real cost of capital

The cost of capital used in the branch-specific econometric models is calculated as the sum of rates on new loans (excluding overdrafts) granted to non-financial corporations (Source: Banque de France), deflated by the annual shift in production prices for each branch, and the applicable rate of fixed capital consumption.

Cost indicators

The accounting breakdown reveals the short-term influence of the ratio of value-added prices to consumer prices on the margin rate. This terms of trade variable is systematically tested in the econometric models. The influence of the annual price variation in intermediate consumption within the branches is also tested in the modelling process, in order to confirm or discount the effect of intermediate consumption prices on the distribution of value added. Finally, the influence of production prices is tested in the model in order to take account of price shocks unrelated to intermediate consumption, and to ascertain the effect of changes in overpricing behaviour within each branch.

Tax wedge

In this context the tax wedge[1] contains two components: the rate of employers' social security contributions and the taxes and subsidies paid or received by businesses. In the accounting breakdown of changes in the margin rate, the rate of employers' contributions appears explicitly whereas the effect of taxes and subsidies is included under "other factors." In the econometric model, the influence of the rate of contributions is tested along with the overall total of taxes and subsidies. These components are defined per branch.

Estimating the margin rate equations for each branch

The error correction models method enables us to test and identify the dynamic contributions of different explanatory factors within the theoretical framework used here: long-term ratio of gross operating surplus to value added; short-term fluctuations in value added; cost of capital and intermediate products; terms of trade measured as the ration of value-added prices to consumer prices; exchange rate; unemployment rate; indicators connected with intra-branch competition.

Models are estimated for all industrial branches, trade, transport and storage, accommodation and food services and information and communication. The endogenous variable is the gross operating surplus for the branch. The hypothesis of a unitary ratio between gross operating surplus and value added is tested in order to take into account the long-term relationship between these two variables. Other factors liable to influence the margin rate in the long term were also tested.

1. The tax wedge is sometimes calculated as the total sum of income taxes and social security contributions, less the value of subsidies and benefits, as a proportion of total payroll costs. However, the definition has been expanded to include all taxes and subsidies.

The models are estimated in a single stage. In the resulting models (*Table*), the pull-back force is significant with regard to the method proposed by Ericsson and MacKinnon (2002).

Econometric modelling allows us to reconstruct the variations in the margin rate for all branches under examination, with the exception of services to businesses where the long-term equilibria tested were not found to be significant. In all other branches there is a long-term connection between gross operating surplus and value added. However, the pull-back forces are significant but generally low, suggesting that short-term shocks have a relatively long-lasting impact. In the service branches considered here, the long-term equilibrium of the margin rate is also affected by additional variables and thus does not appear to be exclusively determined by developments in value added. In trade, the rate is sensitive to the level of the sectoral concentration index, which suggests that the decline in the market rate for this sector can be attributed to developments in the competitive environment. In the transport services branch the equilibrium margin rate would appear to be influenced by the exchange rate. In accommodation and food services, the model attributes part of the downward trend in the margin rate to the long-term effect of real interest rates. The substitution effect with capital does not appear to fully offset the price effect in this branch of activity. For information and communication activities, the long-term level of the margin rate is sensitive to specific developments in production prices in this branch, which can be attributed to changes in the mark-up rate applied by businesses.

These long-term equilibria relations come with a high level of sensitivity to short-term shocks. In the short term, unexpected fluctuations in value added are absorbed by gross operating surplus: the coefficients associated with value added are well above 1 in the short term. In the short term, business' margins are also highly sensitive to policies affecting the rate of employers' social security contributions and the total sum of taxes paid and subsidies received by by businesses: a reduction in employers' contributions will have a substantial effect on margins in the short term. However, these factors are not decisive in the long term. In the long run, the effects of variations in contributions are shared between employees and employers.

Results of the models for each branch

	Industry	Trade	Transports	Accommodation and food services	Information-communication (except structural effects)
Constant	–0.06 (–4.5)	0.08 (1.4)	–0.16 (–5.4)	+0.06 (0.3)	–0.07 (–5.6)
Long term (lagged variables)					
Gross operating surplus	–0.06 (–4.4)	–0.06 (–4.0)	–0.10 (–4.6)	–0.09 (–4.1)	–0.08 (–5.0)
Value added (in value)	0.06 (4.4)	0.06 (4.0)	0.10 (4.6)	0.09 (4.1)	0.08 (5.0)
Production price of the branch					0.05 (2.4)
Concentration indicator		0.03 (2.3)			
Real interest rate				0.05 (4.3)	
Euro-dollar exchange rate			0.08 (5.7)		
Short term (variables in difference)					
Value added (in value)			3.25 (30.1)		
Value added in volume	2.34 (40.0)	2.67 (21.7)		2.12 (17.3)	1.87 (33.9)
Value added price	1.84 (11.1)	2.80 (19.2)		2.08 (14.8)	2.04 (37.7)
Contribution rate	–0.34 (–4.7)	–0.21 (–2.0)		–0.26 (–2.5)	–0.27 (–5.1)
Taxes and subsidies	–0.11 (–7.2)	–0.11 (–4.6)	–0.07 (–1.7)	–0.03 (–2.4)	–0.02 (–3.3)
Exchange terms	0.51 (3.1)		0.59 (4.9)		
Unemployment rate		0.02 (3.8)			0.01 (5.3)
R^2	0.96	0.91	0.94	0.83	0.95
Beginning	1987 Q1	1991 Q1	1987 Q1	1991 Q1	1987 Q1
End	2013 Q4	2013 Q4	2013 Q4	2013 Q4	2013 Q4

Aggregating the equations for the market services branches considered here

In the market services branches, the econometric results allow us to trace the development of the intra-branch margin rates. In order to aggregate these results, fluctuations in the aggregated margin rate are identified quarter-by-quarter using a rate effect, estimated with a model, and a structural effect which reflects the shifting weight of each branch as a proportion of total value added. These rate and structural effects are calculated using the method developed by Berthier (2002).

In the information and communication branch in particular, the fluctuation in branch's contribution to total value added can be exclusively attributed to the fall in production prices in the telecoms branch. The structural effect for this branch is thus associated with a "competitive environment" component in the breakdown of factors influencing the margin rate of service activities.

Finally, in the business services branch, we were unable to identify a valid model but virtually all of the decline observed can be attributed to a structural effect specific to this branch, connected with the growing significance of administrative and support services with very low margin rates. These effects are thus added to the "structural effects" component in the breakdown of margin rate fluctuations in the market services branch. Variations in the margin rate for the business services sector which cannot be explained by this structural effect are considered to be unexplained residual terms. ■