Institut des Politiques Publiques

Should employer contributions to unemployment insurance be adjusted?

A bonus-malus system allows employers' unemployment insurance contributions to be adjusted according to the balance between their contributions and the compensation expenses they cause when they part ways with an employee. Such a system makes it possible to stabilize the labor market, both by limiting temporary layoffs and by limiting fluctuations in employment in the event of an aggregate shock. We show that this system, which already exists in the United States, is justified in France by the extent of cross-subsidies that consume 20% of the unemployment insurance budget. To be effective, it ought to be extended to all firms and sectors because, while the average gaps are large, there are persistent differences between firms in the same sector. We show that an adjustment by about one percentage point (two for temporary work) would reduce cross-subsidies by 20%.

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- Transfers between sectors represent 20% of the resources of the unemployment insurance scheme.
- Transfers for temporary work alone account for 12% of resources.
- While the gaps between sectors are significant, there are persistent differences between companies in the same sector.
- Adjustment of employer contributions is an essential tool for limiting cross-subsidies.
- Contrary to the provisions of the 2019 reform, this adjustment must be applied to all sectors and companies.
- Adjustment by about one percentage point for most sectors (two for temporary work) would reduce cross-subsidies by 20%.

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What is the unemployment insurance bonus-malus?

A bonus-malus system for unemployment insurance adjusts employers' contributions to balance them with the compensation expenses they cause when they part ways with employees.[1] The justification for such a mechanism is that, without it, employers have no reason to consider the consequences of their human resources policies for the wider community. Their decisions would therefore deviate from what might be socially desirable, such as greater stability in career trajectories.

There is a wide variety of possible adjustments. The 2019 reform provides for an adjustment based on the calculation of the separation rate at company level, i.e. the ratio between the number of separations giving rise to compensation and the workforce. This adjustment, however, concerns only a very limited number of sectors (seven out of 38),[2] and excludes firms with fewer than 11 employees.

France is not the first country to consider such a system. It was introduced in the United States in the 1930s when unemployment benefits were established with as much as 20% of the population out of work. First adopted in Wisconsin, it gradually spread to all US states. Unlike the system proposed in France, the US system is based directly on a measure, applied at the firm level and over several years, of the balance between contributions paid and benefits received by former employees. In addition, it concerns all companies regardless of their sector and size.[3]

What do we know about the effects of a bonus-malus?

As the system is long-established in the United States, a large number of academic studies have taken an interest in it,[4]. They can help us understand the potential consequences of the introduction of such a system and its properties.

First, despite the fear that the bonus-malus could depress employment, existing studies have shown no negative effects on the level of employment for all skill levels. In the United States, the effect may even be slightly positive. The reason is simple: the malus increases the cost of labor in some firms, but the bonus reduces it in others. Since both effects are present within each sector, adjustment will reallocate employment between sectors but also between firms in the same sector and will not affect the overall level of employment.

The bonus-malus has the effect of stabilizing employment: it limits temporary separations, when employers separate with employees only to hire them back a few weeks later. This is a very serious problem in France, since more than half of all recipients of benefits who return to work are re-hires.[5]

It also reduces the size of adjustments in the event of an economic shock: when activity declines, employers have an incentive to retain their workforce in order to limit future increases in social security contributions. It therefore acts as an automatic stabilizer.

Transfers observed between sectors

In France, the invariability of the contribution rate is a problem if certain companies or sectors are *systematically* debtors or creditors with regard to unemployment insurance. In this situation, unemployment insurance no longer functions as a simple insurance tool for financing a specific and temporary risk, but as a tool for subsidizing between sectors and between companies in the same sector. For those interested in a more detailed discussion of the potential roles of unemployment insurance, we refer readers to our next IPP Policy Brief.[6]

To assess the scale of the problem, we use data from the FH-DADS, an administrative database which allows us to track contributions paid and benefits received at the level of individuals, companies and sectors between 2003 and 2012 (cf. Boxes 1 and 2). We consider both employee and employer contributions, and focus on contribution-based benefits, such as the ARE (*Aide au retour à l'emploi*) allowance.

We begin by asking whether the fact that an individual works or has worked in a given sector has an impact

[1] In reality, this balance is never perfect, but the idea is to reduce the gaps.

[2] The targeted sectors include food production, transport and warehousing, hotels and restaurants, woodworking and printing, plastics and rubber, water and "specialized" activities.

[3] Margolis and Fougère provide an interesting description of this system in the *Revue Française d'Economie*, 2000.

[4] The classic examples are Feldstein, *Journal of Political Economy* 1976, Card and Levine, *Journal of Public Economics*, 1994, and Anderson and Meyer, *Journal of Public Economics*, 2000. For a summary in French, see Margolis and Fougère, *Revue Economique*, 2000.

[5] Benghalem, Eclairage Etudes et Analyses de l'Unédic, 14, 2016.

[6] Fontaine and Vidalenc, "Unemployment insurance: A mirror of labour market segmentation", IPP Policy Brief n°58, 2020.

Box 1: Data and sample

Data. The data used are from the FH-DADS panel, a pairing of two databases. One is the historical file of jobseekers registered at Pôle Emploi (the French job centre), which records periods of unemployment, payment dates of benefits, amount and types of benefits paid. The other is the annual declaration of social data which shows the periods of employment of individuals with the dates of the employment contract, wages received and some information on the type of work and the employer.

Defining the population. The scope of the analysis corresponds to a 1/12th sample of the French working population for the period 2003-2012 with retrospective information for private salaried jobs on employment periods going back to 1976. The data cover *in fine* all types of workers with the exception of extraterritorial activity, or, before 2009, employees of sole proprietors.

Sample. We exclude from the scope of this study all public-sector jobs for which there are no unemployment insurance contributions (mainly civil servants). In turn, periods of unemployment following public-sector employment are omitted in order to avoid artificially negative balances. Employees of sole proprietors are also excluded, since they are only observed from 2009 onwards. Finally, we distinguish between benefits financed by unemployment contributions, such as the ARE (*Aide au retour à l'emploi*) or AREF (*Aide au retour à l'emploi formation*), and other schemes that are not part of the insurance system, such as the ASS (*Allocation de solidarité spécifique*). Our final sample comprises 16,396,751 observations distributed among 3,052,399 individuals.

Box 2: Calculation of annual contributions and benefits

Contributions. Annual contributions for employers and employees are calculated according to the pay period, gross daily salary, social security ceiling, the job, and the employer. The pay period coupled with the gross salary, up to the social security ceiling, is used to calculate the contributions paid by the individual in a given year. The employer's legal category allows for the exclusion of individuals who do not contribute to the unemployment insurance scheme, such as civil servants. The job category makes it possible to take into account special cases such as intermittent workers in arts and entertainment. By applying the contribution rates (employer + employee), and taking into account their variation during the period, we obtain the theoretical contributions paid per year and per individual. They are then adjusted to be presented in 2012 constant euros.

Benefits. Gross annual unemployment benefits are calculated based on the amount received over the compensation period(s) of the year before being adjusted to 2012 constant euros.

Annual balance. The annual balance corresponds, for each individual in our database, to the difference between their contributions paid and benefits received.

on the difference between their contributions and benefits. Figure 1 presents the average individual balances (contributions-benefits) by sector.[7] The results are normalized to the average balance observed. Employees or former employees in a sector with zero on the graph have balances, on average, equal to the average balance of the economy. Sectors below zero have individual balances below the average, and thus an excess of spending, and vice versa for those above zero. Thus, the sectors that appear to be in surplus finance the sectors that are in deficit. It is important to note that temporary work is considered in our data as a sector of activity in its own right[8] and it is impossible for us to reallocate compensation expenditures to user companies.

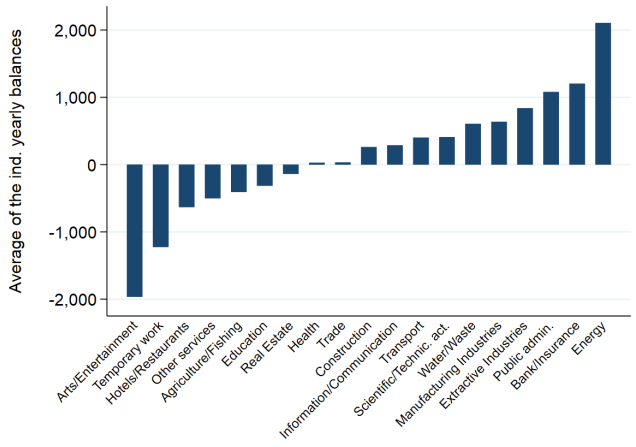
Over the period, the sectors with a negative balance are arts and entertainment, temporary work, hotels and restaurants, "other service activities",[9], the primary sector (agriculture, fish farming, fishing...) education and real estate. It is interesting to note that this classification is fairly stable over the observed period, even if some sectors may

[7] We attribute to the employer, and thus to the sector, the social security expenditures for the last job prior to unemployment. It would have been possible to attribute these costs on a pro-rata basis to the time spent in work, but it is unlikely that the results — which are highly aggregated in this case — would have been any different.

[8] This includes temporary employment contracts and employees of temporary employment agencies.

[9] This is a heterogeneous category that groups together the activities of associative organizations, repairs to personal property, and other personal services.

Figure 1: Average of individual balances by sector, 2003-2012



Source: FH-DADS 2003-2012.
Notes: Average of individual balances per sector. Over the year, an employee's contributions are charged to their main employer. An unemployed person is linked to their last employer. Sectors for which the balance is below zero have *individual* balances below the average balance.
Interpretation: On average, between 2003 and 2012, the balance of employees or former employees in the arts/entertainment sector, defined as contributions less benefits received, is 2,000 euros below the average balance in the economy.

Figure 2: Evolution of sectoral deficits as a share of the resources of the unemployment insurance system

Source: FH-DADS 2003-2012.
Notes: Ratio between the absolute sum of the relative deficits of the sectors in deficit and the sum of the contributions each year.

occasionally go into deficit.

However, the importance of deficit sectors in terms of total employment varies considerably. We see this by looking at the share of resources represented by transfers between deficit and surplus sectors. We calculate the ratio between transfers — i.e. the sum of deficits — and contributions. The sum of the deficits of the seven deficit sectors represents on average 19.2% of the resources of the unemployment insurance system (*régime d'assurance chômage*, RAC), which shows the extent of inter-sectoral redistribution. Between 2003-2012, this figure fluctuates between 15% and 22%, with economic downturns being the periods when transfers are highest (see Figure 2).

One of the limitations of Figure 1 is that it does not take into account the importance of each sector in terms of employment. A sector with few employees but an average balance deficit does not consume a lot of resources. For each sector, we therefore evaluate the share of RAC resources that its transfers represent. In order of importance, temporary work, hotels/restaurants, and arts/entertainment are the sectors in which deficits consume the most resources. Transfers to the temporary sector alone consume 12% of RAC resources. It represents by far the most subsidized sector (Figure 3).

Adjusting employer contributions

Unless one of the roles of unemployment insurance is to subsidize some sectors at the expense of others, the size of these transfers and their systematic nature call for a bonus-malus system in which employers' contribution rates vary according to the cost to unemployment insurance caused by the job losses they create.

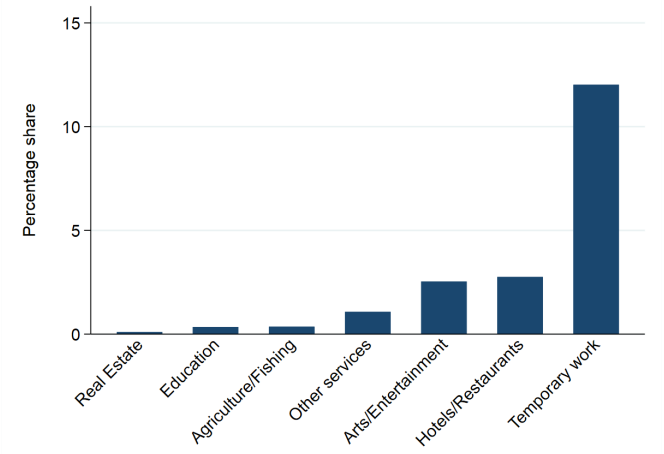
To assess the extent of the necessary adjustment, we simulate a case in which contribution rates vary but remain homogeneous by sector. Figure 4 presents an example in which an attempt is made to reduce transfers for each sector by 20%, without changing the system's resources.

As we can see, for a reduction in transfers of 20%, the adjustment is modest for the vast majority of sectors. The temporary sector sees an increase of about two percentage points in its contributions, hotels and restaurants see an increase of about one percentage point, and many sectors see their contribution rate drop to about one percentage point. It should be noted that the arts and entertainment sector, in which individual balances are heavily in deficit[10], sees a large rise in its contributions. This clearly shows that in this sector, more than any other, the RAC goes far beyond its insurance role.

The results obtained depend on the chosen formula and other formulas are possible. The tool can thus be adapted according to the purpose assigned to it and to the desired level of adjustment.

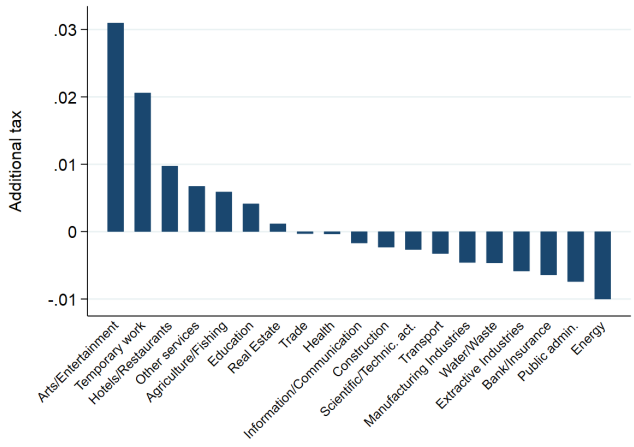
[10] And this despite the fact that, for some of the intermittent employees in this sector, their employer's contribution rate is already higher.

Figure 3: Sectoral deficits as a share of the resources of the unemployment insurance system



Source: FH-DADS 2003-2012.
Notes: Ratio between the absolute sum of the relative deficits of the sectors in deficit and the sum of contributions in the sample.
Interpretation: Between 2003 and 2012, the combined relative deficits of the temporary sector represent 12% of the total resources of the unemployment insurance system over the same period.

Figure 4: Bonus-malus assuming a sectoral tax and a 20% reduction in transfers



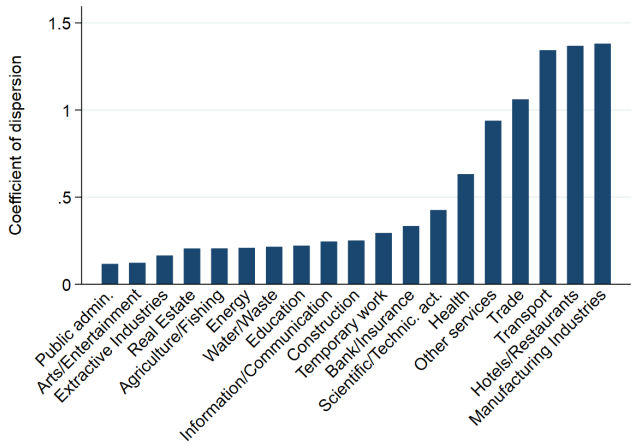
Source: FH-DADS 2003-2012.
Notes: We calculate, sector by sector, the additional tax or bonus (negative tax) on the total payroll subject to contributions that is necessary to reduce its transfer — the average surplus or deficit per employee in relation to the average balance — by 20%. The system's resources remain unchanged.

Inter-sectoral heterogeneity

A sector-based approach does not, of course, take into account the existence of differences between firms in the same sector, which we call intra-sectoral heterogeneity. A sector can benefit from transfers but include firms that make a net contribution to RAC resources. Unfortunately, the analysis of heterogeneity between firms is made difficult by the fact that our sample is only 1/12th of the active population. While this does allow us to analyze a sector as a whole, it makes comparisons difficult between firms for which we observe only a subset of current and former employees.[11] Statistical resources exist but are not yet accessible to researchers.

However, we can get an idea of intra-sectoral heterogeneity by calculating, for all the firms in a given sector, an index in which the heterogeneity of a sector is related to the heterogeneity of the economy as a whole (Figure 5). To do this, within each company, we calculate the ratio between social security expenses and payroll (for the entire sample). From this measure, we calculate the dispersion coefficient[12] of the sector and the dispersion coefficient of the economy. The interpretation of this index is as follows. If, for a sector, our index is equal to zero, then the companies that make up the sector are homogeneous in their use of RAC resources. If the index is equal to one, the heterogeneity of the sector is comparable to the heterogeneity at the national level. If it is greater than one, the heterogeneity is greater.

Figure 5: Heterogeneity of the ratio of social security spending to payroll within each sector (1= heterogeneity across all sectors)



Source: FH-DADS 2003-2012.
Notes: An average annual individual balance is calculated for each company between 2003 and 2012. For each year, we identify the employees of this company and the jobseekers who were its former employees. For each sector, the dispersion coefficient is calculated — standard deviation over the mean — which is related to the dispersion coefficient at the aggregate level.
Interpretation: Between 2003 and 2012, the index of firm heterogeneity within the manufacturing sector and in terms of the ratio between social security expenditure and payroll was equal to 1.4 times the heterogeneity measured across all firms in the economy. This sector therefore experiences greater differences between firms than the differences measured for all firms in the economy as a whole.

A first insight is that no sector is totally homogeneous

[11] In particular, since only a small number of employees are observed, the probability of observing no benefits expenditure for a firm is high, especially if it is small.
[12] That is, the standard deviation — an indicator of mean deviations from the mean — relative to the mean.

in its use of RAC resources. In each sector, firms have highly variable ratios of social security spending to contributions paid, even if for many sectors the level of heterogeneity remains below the average level observed. On the other hand, four sectors stand out: transport, hotels/restaurants, manufacturing, and trade, which include firms that use RAC resources with much greater variability than observed in the other sectors.

A second insight is that sectors that are relatively close to the average can have firms with highly contrasting uses of unemployment insurance resources. Interestingly, this does not reflect the classification that orders sectors by their deficits and surpluses. Trade is a good example. On average, individual balances are balanced. However, the dispersion index is high: in other words, the sector's average neutrality masks large differences between high-debt and high-credit firms. The latter subsidize firms whose contributions are low in relation to the social security costs they generate.

What about the 2019 reform?

The unemployment insurance reform, which was passed in 2019 for implementation in 2021, provides for an adjustment of employers' contributions. This improvement deserves to be maintained, given the transfers we have identified, but it should also be extended in two ways.

First, a bonus-malus system must be generalized to all sectors and all companies. As we have shown, no sector is homogenous and all include companies that make disproportionate use of RAC resources.

Second, it seems preferable to use a variable that directly takes into account the spending and contributions for each firm. There are several possibilities, but the ratio between social security spending and payroll seems a good candidate, since contributions are proportional to payroll. It should be noted here that the planned reform is based on the separation rate for separations that lead to compensation. However, it is quite likely that the link between separation rates and the ratio of spending to resources is quite weak. The reason is that firms often take on and lay off employees at the same time.[13] A growing company with a high turnover rate can be a net contributor to unemployment insurance. It is therefore necessary to use an indicator that is directly related to the spending and contributions involved. The use of such an indicator is feasible, since the Acoss agency (*Agence centrale des organismes de sécurité sociale*, which manages the collection of contributions) and Pôle Emploi already have the data necessary for its calculation.

This kind of adjustment is also a necessary response to the way in which the increasing segmentation of the French labor market has broken the equilibria that supported our unemployment insurance system. We explore this development in the next IPP Policy Brief.

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IPP Policy Brief n°58 is also available to read on the IPP website:

F. Fontaine et B. Vidalenc, **Unemployment insurance: A mirror of labor market segmentation**, IPP Policy Brief n°58, 2020.
https://www.ipp.eu/publications/notes-ipp/

[13] For an overview (in French) for the general public, see Cahuc and Zylberberg, "Le chômage fatalité ou nécessité", *Champs Flammarion*, 2005.