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**French Labour Cost Lab:
An Open-Source Dashboard for Simulating
Labour Costs, Contribution Reliefs and
Socio-Fiscal Marginal Returns in France**

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Keywords: labour costs, social contributions, payroll taxes, contribution reliefs, RGDU, social wedge, income tax, prime d'activité, socio-fiscal marginal return, simulation, open-source, France

This working paper documents an open-source research tool. It does not represent the official position of any institution. All errors remain the author's own.

Abstract

This working paper presents the *French Labour Cost Lab*, an open-source interactive dashboard designed to simulate and visualize the structure of labour costs and socio-fiscal marginal returns in France. The tool queries the public Mon-entreprise/URSSAF calculation engine over a fine-grained wage grid ranging from 0.8 to 3.5 times the statutory minimum wage (SMIC), with a step of 0.01 SMIC, for a gross monthly SMIC reference of 1,801.80 euros. It produces a comprehensive set of indicators, including gross wage, net wage, total employer cost, employer and employee social contributions, the RGDU 2026 contribution relief amount, the social wedge, effective employer contribution rates, marginal employer-cost indicators, and a reference socio-fiscal return measure incorporating estimated personal income tax and an estimated prime d'activité for a stylized reference household.

The dashboard is built around a combinatorial profile architecture defined by employee status, territorial regime and occupational injury risk scenario. Its primary contribution is threefold. First, it enhances the reproducibility of labour cost analysis by relying on a documented, open-source pipeline and a public calculation engine. Second, it provides fine-grained wage-scale granularity, making it possible to detect non-linearities and threshold effects that are not visible in aggregate indicators or isolated case-type calculations. Third, it renders visible the interaction between employer contribution reliefs, employee social contributions, personal income taxation and in-work benefits in shaping the marginal return to gross wage increases.

The paper situates the tool within the broader literature on labour cost incidence, distinguishes institutional accounting incidence from economic incidence, documents the construction of the main indicators, and presents internal consistency checks validating the simulated dataset. The *French Labour Cost Lab* is intended as an open infrastructure for applied economic analysis, policy discussion, pedagogical use and reproducible research. It should not be interpreted as an official payroll calculator or as a full socio-fiscal microsimulation model.

Keywords: labour costs, social contributions, payroll taxes, contribution reliefs, RGDU, social wedge, income tax, prime d'activité, socio-fiscal marginal return, simulation, open-source, France.

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1. Introduction

The structure of labour costs in France is a subject of considerable economic interest, both for research and for policy. France maintains one of the most complex social contribution systems among OECD countries, combining statutory employer and employee contribution schedules with an extensive set of degressive contribution reliefs targeted at wages near the statutory minimum. The interactions among gross wages, contribution rates, territorial regimes, executive status and occupational injury risk classifications produce a labour cost schedule that is highly non-linear along the wage distribution.

Despite this complexity, most public discussions of labour costs in France rely on one of two types of evidence: aggregate macroeconomic indicators, which mask within-distribution heterogeneity, or isolated case-type calculations, which are rarely reproducible and often fail to capture marginal effects along the wage scale. Academic contributions have long documented the importance of considering the full schedule of effective contribution rates when analysing the employment effects of payroll taxes and the incidence of reliefs (Gruber, 1997; Kramarz and Philippon, 2001; Cahuc et al., 2019). Yet practitioners, students and policy analysts often lack access to a transparent, granular and reproducible tool for visualizing these mechanisms in the French context.

The *French Labour Cost Lab* addresses this gap. It is an open-source research dashboard that simulates gross wages, net wages, total employer costs, social contributions and contribution relief amounts across a fine-grained wage grid, for a set of employee profiles defined by a combinatorial architecture. The project does not claim to measure the economic incidence of social contributions, which would require causal identification and elasticity estimation. Its contribution is instead methodological, descriptive and pedagogical: it renders the institutional and accounting structure of French labour costs transparent, reproducible and visually accessible.

The current version also introduces a reference socio-fiscal module. This module does not attempt to reproduce the complete French tax-benefit system. Rather, it estimates, for a stylized reference household, the extent to which an additional euro of gross wage translates into additional disposable income after employee social contributions, estimated personal income tax and estimated prime d'activité. This extension is useful because, around low and middle earnings, the effective return to work depends not only on payroll contributions and income tax but also on the withdrawal profile of in-work benefits.

The contribution of the *French Labour Cost Lab* is therefore triple. First, it en-

hances **reproducibility**: all simulations are generated from a public calculation engine, with documented code and configuration files. Second, it provides **wage-scale granularity**: the wage grid covers 0.8 to 3.5 SMIC with a step of 0.01 SMIC, enabling the detection of non-linearities and discontinuities that case-type calculations cannot reveal. Third, it makes **marginal incentives visible**: the dashboard shows how contribution reliefs, employee contributions, income taxation and in-work benefits jointly shape the marginal return to gross wage increases.

The remainder of the paper is organized as follows. Section 2 reviews the conceptual foundations of labour cost analysis and the distinction between accounting and economic incidence. Section 3 describes the methodology, data, calculation engine and internal consistency checks. Section 4 presents the indicators constructed in the dashboard. Section 5 discusses the descriptive results. Section 6 describes the dashboard architecture. Section 7 discusses the intended uses of the tool. Section 8 enumerates the methodological limitations. Section 9 concludes.

2. Conceptual Background

2.1. Decomposition of the labour cost

In the French institutional framework, the total cost of labour borne by the employer decomposes as follows:

$$C_{\text{emp}} = w_{\text{brut}} + \text{Cot}_{\text{emp}}^{\text{gross}} - \text{RGDU} \quad (1)$$

where C_{emp} denotes the total employer cost, w_{brut} the gross wage, $\text{Cot}_{\text{emp}}^{\text{gross}}$ the statutory employer social contributions before relief, and RGDU the contribution relief received by the employer under the degressive unified relief scheme. Defining net employer contributions as

$$\text{Cot}_{\text{emp}}^{\text{net}} = \text{Cot}_{\text{emp}}^{\text{gross}} - \text{RGDU}, \quad (2)$$

equation (1) is equivalently:

$$C_{\text{emp}} = w_{\text{brut}} + \text{Cot}_{\text{emp}}^{\text{net}}. \quad (3)$$

The net wage received by the employee is:

$$w_{\text{net}} = w_{\text{brut}} - \text{Cot}_{\text{sal}}, \quad (4)$$

where Cot_{sal} represents employee social contributions deducted from the gross wage.

These accounting identities define the *institutional incidence* of social contributions: they describe who formally pays what, as determined by the legal and regulatory framework. This is the primary object of analysis in the dashboard.

2.2. Social wedge

The social wedge, or *coin social*, is the total contribution burden extracted from the employment relationship, expressed as the gap between employer cost and employee net wage:

$$\text{Coin social} = C_{\text{emp}} - w_{\text{net}} = \text{Cot}_{\text{emp}}^{\text{net}} + \text{Cot}_{\text{sal}}. \quad (5)$$

The social wedge therefore aggregates both sides of the contribution system, net of reliefs.

2.3. Economic incidence versus accounting incidence

A fundamental principle of public finance is that the formal legal incidence of a tax does not necessarily coincide with its economic incidence, that is, who ultimately bears the burden in terms of purchasing power (Kotlikoff and Summers, 1987; Gruber, 1997). In labour markets, economic incidence depends on the relative elasticities of labour supply and labour demand, the role of minimum wage regulations, collective bargaining institutions and market structure (Kugler and Kugler, 2009; Saez et al., 2012).

In France, the SMIC creates a wage floor that constrains downward adjustment of gross wages. This may affect the distribution of the incidence burden at the bottom of the wage distribution (Kramarz and Philippon, 2001). Moreover, degressive contribution reliefs targeted at low wages imply that the effective labour cost schedule is not proportional to gross wages, which can generate complex employment incentive effects (Cahuc et al., 2019).

The *French Labour Cost Lab* does not attempt to estimate economic incidence. It simulates accounting incidence and institutional schedules. It provides an open computational infrastructure that can support further empirical work, but it does not estimate behavioural responses or causal employment effects.

2.4. Contribution reliefs and marginal cost

France has implemented employer contribution relief systems since the mid-1990s, progressively consolidated into the current Reduction Generale Degressive Unique (RGDU). The RGDU is maximal at wages equal to the SMIC and decreases as the ratio of gross wage to SMIC increases, reaching zero at a regulatory threshold. This degressive profile implies that the effective employer contribution rate is substantially lower than the statutory rate at low wages and converges toward the statutory rate at higher wages.

The RGDU introduces a non-linear structure in the effective labour cost schedule. Within the phase-out zone, the marginal employer cost of a wage increase can exceed the average effective cost, because a wage increase simultaneously raises statutory contributions and reduces the relief received. This mechanism is central to the dashboard.

2.5. From labour cost to socio-fiscal return

For employees, the return to an increase in gross wage is not determined by employee social contributions alone. Disposable income may also be affected by personal income tax and by the withdrawal of income-tested transfers. In France, the prime d'activité is particularly relevant around low and middle earnings, because it directly supplements labour income and is progressively reduced as resources increase.

This creates a second layer of marginal effects. The employer faces a marginal labour cost schedule shaped by employer contributions and reliefs. The employee faces a marginal disposable income schedule shaped by employee contributions, income taxation and benefit withdrawal. The dashboard therefore reports a *socio-fiscal return* measure, designed to show how much of an additional euro of gross wage is transformed into additional disposable income for a reference profile.

3. Methodology

3.1. The Mon-entreprise/URSSAF calculation engine

The simulations are generated by querying the public API of *Mon-entreprise*, the official URSSAF simulator (<https://mon-entreprise.urssaf.fr>). This API exposes a calculation engine implementing current French social contribution rules, including statutory contribution rates, exemption thresholds, degressive relief formulas and territorial specificities.

The choice to rely on this external engine, rather than reproducing contribution rules

manually, reflects a methodological decision. Manual reproduction of the French social contribution system is error-prone given the complexity of the regulatory framework. By delegating the core payroll contribution calculation to the public engine, the project concentrates its own contribution on wage grid design, profile combinations, indicator construction and visualization.

3.2. Wage grid

Simulations are run over a fine-grained grid of gross monthly wages expressed as multiples of the SMIC. The configuration used for the current dataset is:

- Gross monthly SMIC reference: **1,801.80 euros**;
- Minimum wage point: **0.8 SMIC**;
- Maximum wage point: **3.5 SMIC**;
- Step: **0.01 SMIC**.

This produces a grid of 271 wage points, providing sufficient resolution to identify non-linearities, kinks and marginal effects. In absolute terms, the grid spans from approximately 1,441 to 6,306 euros of gross monthly wage.

3.3. Combinatorial profile system

Each simulated observation corresponds to a profile defined along three dimensions.

1. Employee status.

- *Non-executive* (non-cadre);
- *Executive* (cadre).

2. Territorial regime.

- *Standard* (outside Alsace-Moselle);
- *Alsace-Moselle*.

3. Occupational injury risk (AT/MP).

- Standard AT/MP;
- AT/MP 1%;
- AT/MP 4%;
- Support functions scenario.

The full combinatorial system yields 16 distinct profiles ($2 \times 2 \times 4$), each simulated over the 271-point wage grid, producing a dataset of $16 \times 271 = 4,336$ observations.

3.4. Reference socio-fiscal profile

The socio-fiscal module is not a general microsimulation model. It is a reference calculation designed to illustrate how personal income tax and the prime d'activité can affect the marginal disposable return to wage increases. The default reference profile is:

- single individual;
- one tax unit;
- no children;
- no other income;
- no housing benefit;
- no tax credits or reductions;
- standard 10% professional-expense allowance;
- 2026 personal income tax schedule applied to 2025 income;
- decote and low-tax recovery threshold included;
- prime d'activité estimated using a simplified formula for a single person.

The calculation is indicative and should not be interpreted as an official tax or CAF assessment. It is included because, for low and middle earnings, the withdrawal of in-work benefits is central to the effective marginal return to work.

3.5. Internal consistency checks

To verify that the simulated dataset is internally coherent, the dashboard reports a set of consistency checks across all observations. These checks are not intended as an external validation against payroll records. Rather, they verify that the main accounting identities used to construct the indicators are internally consistent within the simulated dataset.

Table 1: Internal consistency checks

Check	Accounting identity
Net wage identity	$w_{\text{net}} = w_{\text{brut}} - \text{Cot}_{\text{sal}}$
Employer cost identity	$C_{\text{emp}} = w_{\text{brut}} + \text{Cot}_{\text{emp}}^{\text{net}}$
Social wedge identity	$C_{\text{emp}} - w_{\text{net}} = \text{Cot}_{\text{emp}}^{\text{net}} + \text{Cot}_{\text{sal}}$
Cost-to-net ratio identity	$\rho = C_{\text{emp}}/w_{\text{net}}$
RGDU rate identity	$\tau_{\text{RGDU}} = \text{RGDU}/w_{\text{brut}}$

These checks are computed over the full set of simulated observations. In the current version of the dataset, the dashboard reports the maximum and mean absolute

deviations associated with each identity. This provides a direct diagnostic of whether the derived indicators are coherent with the underlying simulation outputs before any economic interpretation is proposed.

3.6. Data output

The complete dataset is stored in a structured CSV file and made available for download directly from the dashboard interface. All scripts used to query the API, process the data and build the dashboard are hosted on the project repository (<https://github.com/HugoSRagain/french-labour-cost-lab>), ensuring reproducibility.

4. Indicators

This section defines each indicator produced by the dashboard. All indicators are defined at the level of a given wage point and profile.

4.1. Level indicators

Gross monthly wage (w_{brut}) is the contractual gross wage before any employee social contribution is deducted.

Net monthly wage is defined as:

$$w_{\text{net}} = w_{\text{brut}} - \text{Cot}_{\text{sal}}. \quad (6)$$

Total employer cost is defined as:

$$C_{\text{emp}} = w_{\text{brut}} + \text{Cot}_{\text{emp}}^{\text{net}}. \quad (7)$$

Employee contributions (Cot_{sal}) are all social contributions legally assigned to the employee and deducted from gross wage.

Employer contributions net of relief ($\text{Cot}_{\text{emp}}^{\text{net}}$) are all contributions legally assigned to the employer after deduction of the RGDU.

RGDU 2026 amount is the monthly or annual employer contribution relief, also expressed as a share of gross wage.

4.2. Rate indicators

The effective employer contribution rate is:

$$\tau_{\text{emp}}^{\text{eff}} = \frac{\text{Cot}_{\text{emp}}^{\text{net}}}{w_{\text{brut}}}. \quad (8)$$

This is an apparent rate after reliefs. It is substantially lower than the statutory rate at wages near the SMIC and converges toward the statutory rate as the RGDU phases out.

The total social levy rate is:

$$\tau_{\text{total}}^{\text{brut}} = \frac{\text{Cot}_{\text{emp}}^{\text{net}} + \text{Cot}_{\text{sal}}}{w_{\text{brut}}}. \quad (9)$$

This rate measures the total contribution pressure relative to gross wage. It differs from the social wedge, which is expressed in levels and uses employer cost and net wage as reference points.

4.3. Social wedge and cost-to-net ratio

The social wedge is:

$$W = C_{\text{emp}} - w_{\text{net}}. \quad (10)$$

The employer cost-to-net-wage ratio is:

$$\rho = \frac{C_{\text{emp}}}{w_{\text{net}}}. \quad (11)$$

This indicator answers a practical question: how many euros does the employer pay for one euro of net wage received by the employee?

4.4. Marginal employer cost

Marginal indicators are computed by finite difference between adjacent wage points i and $i + 1$. Let Δ denote this discrete difference operator.

The marginal employer cost rate is:

$$\tau_{\text{emp}}^{\text{marg}} = \frac{\Delta C_{\text{emp}}}{\Delta w_{\text{brut}}}. \quad (12)$$

In the RGDU phase-out zone, this rate can exceed the average effective contribution rate because a wage increase both raises statutory contributions and reduces the

relief received.

4.5. Socio-fiscal return on a gross wage increase

The dashboard reports the socio-fiscal return of a gross wage increase. The baseline pre-tax and pre-benefit return is:

$$R^{\text{net}} = \frac{\Delta w_{\text{net}}}{\Delta w_{\text{brut}}}. \quad (13)$$

The reference socio-fiscal disposable income is:

$$Y^{\text{sf}} = 12w_{\text{net}} - \text{IR}^{\text{est}} + \text{PA}^{\text{est}}, \quad (14)$$

where IR^{est} is estimated annual personal income tax and PA^{est} is the estimated annual prime d'activité for the reference profile.

The socio-fiscal return is then:

$$R^{\text{sf}} = \frac{\Delta Y^{\text{sf}}/12}{\Delta w_{\text{brut}}}. \quad (15)$$

The difference between R^{net} and R^{sf} captures the marginal effect of the tax-benefit system on top of employee social contributions:

$$E^{\text{sf}} = R^{\text{net}} - R^{\text{sf}}. \quad (16)$$

A positive value means that income tax and benefit withdrawal reduce the return to a gross wage increase. A negative value may arise locally if the benefit formula or threshold effects increase disposable income more than the net wage alone would suggest. Because the calculation is based on finite differences over a fine wage grid, visible kinks should be interpreted as institutional threshold effects rather than as smooth behavioural responses.

4.6. Employer cost decomposition

The employer cost decomposition breaks total employer cost into four components:

$$C_{\text{emp}} = \underbrace{w_{\text{net}}}_{\text{net wage}} + \underbrace{\text{Cot}_{\text{sal}}}_{\text{employee contributions}} + \underbrace{\text{Cot}_{\text{emp}}^{\text{net}}}_{\text{employer contributions after relief}}. \quad (17)$$

The dashboard also displays the relief amount explicitly by showing the gap between theoretical employer contributions before relief and effective employer contributions after relief:

$$\text{Cot}_{\text{emp}}^{\text{gross}} = \text{Cot}_{\text{emp}}^{\text{net}} + \text{RGDU}. \quad (18)$$

This representation makes the mechanical role of contribution reliefs immediately visible.

5. Descriptive Results

This section provides a descriptive commentary of the main graphs produced by the dashboard. All patterns described below are descriptive and institutional. They should not be interpreted as causal estimates.

5.1. From gross wage to employer cost

The first graph plots gross wage, net wage and total employer cost as a function of the SMIC multiple. The gap between net wage and employer cost is not proportional to gross wage. At wages near the SMIC, contribution reliefs compress this gap: the employer cost is only moderately above the gross wage because the RGDU reduces net employer contributions. As wages increase and the RGDU phases out, the gap between employer cost and net wage widens progressively.



Figure 1: From gross wage to total employer cost

5.2. Effective employer contribution rate

The effective employer contribution rate displays a non-linear profile. At the SMIC level, the rate is substantially below the statutory rate due to the full RGDU relief. As wages increase above the SMIC, the effective rate rises. Above the relief extinction zone, it stabilizes closer to the statutory employer contribution schedule.

5.3. RGDU 2026

The RGDU graph plots the monthly or annual relief amount and its share of gross wage. The relief is maximal at 1 SMIC and decreases thereafter. In the current dashboard configuration, the displayed RGDU reaches zero around the upper part of the degressive zone, close to 3 SMIC for the profiles simulated. This result reflects the current output of the Mon-entreprise engine and should be updated if regulatory parameters change.



Figure 2: RGDU 2026 relief along the wage scale

5.4. Social wedge

The social wedge increases in absolute terms with gross wage. As a share of employer cost or gross wage, it is compressed at low wages by the RGDU and rises as the

relief phases out. This non-constant relative wedge is one of the key features of the French contribution architecture.

5.5. Marginal employer cost

The marginal employer cost indicator reveals that the phase-out of the RGDU can raise the local cost of wage increases. In the degressive zone, employers may face a marginal cost of gross wage increases that exceeds the average effective rate and can diverge from what a simple statutory schedule would suggest.

5.6. Socio-fiscal return on a gross wage increase

The socio-fiscal return graph shows how much of an additional euro of gross wage is converted into disposable income for the reference profile. The pre-tax and pre-benefit return reflects employee social contributions. The socio-fiscal return adds estimated personal income tax and estimated prime d'activité.

This graph is especially informative around low and middle wages. Near the SMIC, the prime d'activité can significantly alter the marginal return to work. As earnings increase, the benefit is progressively withdrawn, which may reduce the marginal disposable return of wage increases. At higher levels of income, the income tax schedule becomes more important. The graph therefore visualizes the interaction between payroll contributions, income taxation and benefit withdrawal along the earnings scale.

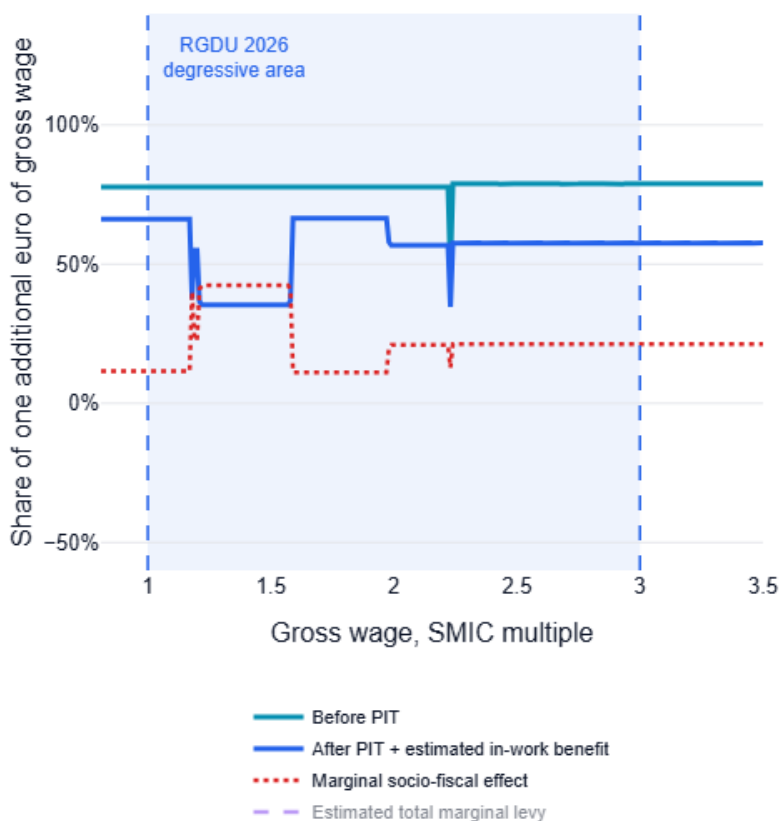


Figure 3: Socio-fiscal return of a gross wage increase

5.7. Employer cost decomposition

The decomposition graph displays the components of the employer cost at selected wage points. It shows the net wage, employee contributions, employer contributions after relief and the relief amount. This graph is useful pedagogically because it makes the distinction between gross wage, net wage and employer cost immediately visible.

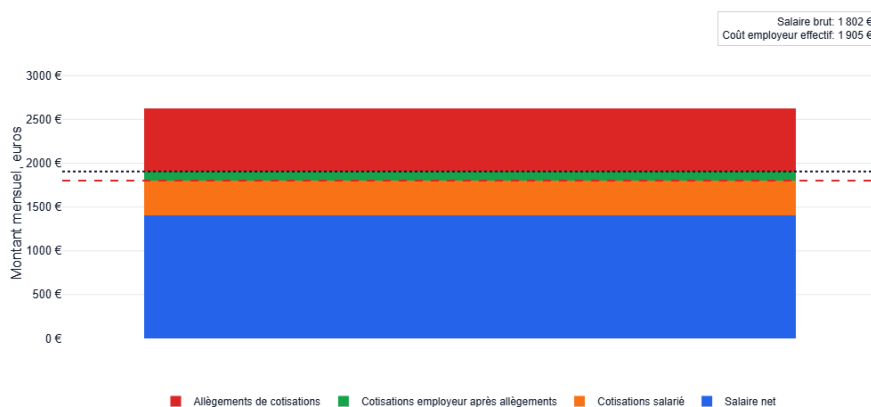


Figure 4: Employer cost decomposition at one SMIC

5.8. Comparative graphs

The comparison tab allows direct comparison of profiles. The most instructive comparisons are:

- **Executive versus non-executive employees:** the two profiles follow broadly similar patterns but may diverge at mid-range wages due to differences in contribution structures.
- **AT/MP scenarios:** varying the occupational injury risk rate shifts the employer cost schedule while preserving the general shape of the contribution relief profile.
- **Territorial regime:** the Alsace-Moselle regime modifies the employee-side and employer-side contribution structure, producing a distinct wedge decomposition at equal gross wage.

6. Dashboard Architecture

The dashboard is deployed as a static interactive HTML page, accessible at:

<https://hugosragain.github.io/french-labour-cost-lab/>

It is organized into five tabs.

Simulation tab. The user selects a profile by employee status, territorial regime and AT/MP scenario. The tab displays the full set of indicators over the wage grid.

Comparisons tab. The user can compare profiles by AT/MP scenario and employee status. In the current optimized implementation, comparison charts are rendered dynamically when the tab is opened, reducing the initial weight of the page.

Data tab. The user can download the complete CSV dataset and inspect a dynamically rendered table for the selected profile.

Methodology tab. The methodology tab documents the source, assumptions, limitations and internal consistency checks. It also reports whether the main accounting identities hold over the simulated dataset.

Working Paper tab. The dashboard embeds this working paper as a PDF and provides a direct download button. This allows the public tool and the methodological documentation to remain integrated.

7. Intended Uses

Applied economics research. The tool provides a reproducible dataset of labour cost indicators at fine-grained wage resolution, suitable for descriptive studies of contribution reliefs and marginal cost schedules.

Policy analysis. Analysts can use the dashboard to identify wage ranges where marginal costs, effective rates or socio-fiscal marginal effects are particularly high or low.

Pedagogy. The tool is well suited to courses in labour economics, social policy or public finance, where the decomposition graph and the socio-fiscal return graph make complex institutional mechanisms legible.

Threshold and non-linearity analysis. The wage grid enables identification of kinks and non-linearities generated by contribution reliefs, income tax thresholds and benefit withdrawal.

Profile comparison. Practitioners can compare how the cost structure differs across executive and non-executive employees, territorial regimes and AT/MP scenarios.

8. Methodological Limitations

Reference simulations, not official payroll calculations. Actual payroll values may differ depending on collective bargaining agreements, firm size, sector, precise AT/MP classification, exemptions and specific contribution regimes not covered by the general simulation framework.

Dependence on the Mon-entreprise/URSSAF engine. If the public calculation engine is updated due to regulatory changes, the dataset must be regenerated. Users relying on the dataset for time-sensitive analysis should verify the regulatory reference period.

AT/MP scenarios as parametric risk rates. The AT/MP scenarios are parametric variations in the occupational injury risk rate, not representations of precise occupations or sectors. The support-functions scenario should be interpreted with particular caution.

No behavioural responses or economic incidence. The tool models accounting and institutional schedules only. It does not estimate employment effects, wage bargaining responses, labour supply responses or the economic incidence of contributions and benefits.

No complete socio-fiscal microsimulation. The socio-fiscal module is deliberately restricted to a reference profile. It does not model the full diversity of household configurations, housing benefits, family benefits, local benefits, wealth effects, tax credits, tax reductions or real-expense deductions. The prime d'activité is estimated for a single person without children, other income or housing benefit. The result should be interpreted as an indicative reference-case simulation, not as an official CAF or tax assessment.

Static framework. The tool provides a cross-sectional picture at a given point in time, defined by the current SMIC value, the current contribution rules and the current parameters used in the reference socio-fiscal module. It does not simulate dynamic effects of parameter changes, although the pipeline can be regenerated when parameters evolve.

9. Conclusion

The *French Labour Cost Lab* transforms a complex institutional system into a transparent and reproducible object of economic analysis. By querying the public Mon-entreprise/URSSAF calculation engine over a fine-grained wage grid and a combinatorial set of employee profiles, the project produces a comprehensive dataset of labour cost indicators and renders them accessible through an interactive open-source dashboard.

The tool makes three categories of results visible. First, it shows how total employer cost, net employee wage and the social wedge diverge along the wage scale in ways not apparent from aggregate indicators or isolated case-type calculations. Second, it reveals the non-linear structure of effective employer contribution rates introduced by the RGDU degressive relief mechanism. Third, it documents how income taxation and the prime d'activité can modify the marginal disposable return to gross wage increases for a reference employee profile.

By design, the tool does not claim to estimate the economic incidence of contributions or the employment effects of relief policies. It provides the institutional and computational infrastructure on which such analyses could subsequently be built. The *French Labour Cost Lab* is open-source, documented and designed for reproducibility. It is intended as a living tool, to be updated as regulatory parameters evolve.

A. Notation Summary

Table 2: Summary of notation

Symbol	Definition
w_{brut}	Gross monthly wage
w_{net}	Net monthly wage
C_{emp}	Total employer cost
Cot_{sal}	Employee social contributions
$\text{Cot}_{\text{emp}}^{\text{gross}}$	Employer contributions before relief
$\text{Cot}_{\text{emp}}^{\text{net}}$	Employer contributions after RGDU
RGDU	Reduction Generale Degressive Unique relief
IR^{est}	Estimated annual personal income tax
PA^{est}	Estimated annual prime d'activité
Y^{sf}	Estimated annual socio-fiscal disposable income
$\tau_{\text{emp}}^{\text{eff}}$	Effective employer contribution rate
$\tau_{\text{emp}}^{\text{marg}}$	Marginal employer cost rate
$\tau_{\text{total}}^{\text{brut}}$	Total social levy rate as a share of gross wage
ρ	Employer cost-to-net-wage ratio
R^{net}	Net wage return on a gross wage increase
R^{sf}	Socio-fiscal return on a gross wage increase

B. Profile Configuration

Table 3: Combinatorial profile dimensions

Dimension	Modalities	Count
Employee status	Non-executive / Executive	2
Territorial regime	Standard / Alsace-Moselle	2
AT/MP risk scenario	Standard / 1% / 4% / Support functions	4
Total profiles		16

C. Wage Grid Parameters

Table 4: Wage grid configuration

Parameter	Value
Gross monthly SMIC reference	1,801.80 euros
Minimum point	0.8 SMIC
Maximum point	3.5 SMIC
Step	0.01 SMIC
Number of wage points	271
Total observations	4,336

D. Reference Socio-Fiscal Module

The reference socio-fiscal module is computed for a single individual with one tax unit, no children, no other income and no housing benefit.

Let w_{net} be the net monthly wage. Annual net wage is:

$$w_{\text{net}}^{\text{ann}} = 12 \cdot w_{\text{net}}.$$

The taxable employment income is approximated by applying the standard 10% professional-expense allowance:

$$R_{\text{taxable}} = 0.90 \times w_{\text{net}}^{\text{ann}}.$$

Estimated personal income tax is computed by applying the 2026 progressive income tax schedule to R_{taxable} for one tax unit, including the decote and the low-tax recovery threshold:

$$\text{IR}^{\text{est}} = f_{\text{IR}}(R_{\text{taxable}}).$$

The estimated monthly prime d'activité is approximated as:

$$\text{PA}_{\text{month}}^{\text{est}} = \max[0, F + \alpha w_{\text{net}} + B(w_{\text{net}}) - w_{\text{net}}],$$

where F is the monthly forfait for a single person, α is the earned-income coefficient

and $B(w_{\text{net}})$ is the individual bonus as a function of monthly earned income. In the reference scenario, no housing forfait, no other resources and no family benefits are included.

Annual socio-fiscal disposable income is then:

$$Y^{\text{sf}} = w_{\text{net}}^{\text{ann}} - \text{IR}^{\text{est}} + 12 \cdot \text{PA}_{\text{month}}^{\text{est}}.$$

This module is indicative. It is designed to illustrate marginal interactions between income taxation and in-work benefits, not to replace the official tax administration or CAF simulators.

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