Impact of a sectoral tax on the working rich on wages, employment and profit

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Résumé

This paper analyses the effect of a progressive tax on gross income targeting very high earners on wages, employment and profit. For that purpose, I study a French tax paid by employers that are not subject to the Value Added Tax, mainly from the financial, educational and health sectors. This is a very specific framework as the tax exists as such only in France. The 2013 reform mainly concerns very high earners (top 0.03% if the annual gross income distribution). Studying this reform is highly relevant in a context of increasing political interest for the impact of taxing the financial sector. That's why this work also build upon the literature on the taxation of the financial sector. It also contributes to the empirical literature on tax incidence. Even if theory is pretty clear about who should bear the tax burden depending on the structure of the labour market, there is little empirical evidence nor a real consensus. Using a full-population of matched employers-employees dataset, I identify employers subject to this tax. I show that incidence falls on employers in the short term. More specifically, the exhaustive nature of the data allows me to study the impact of the increase in tax on incomes and characteristics of newly employed individuals. I take advantage of the difference in treatment intensity among the firms affected by the reform, whose share of employee belonging to the new tax bracket vary, to study the impact of the reform on labour income and on employment.

Keywords : wages, tax incidence, working rich, rent-sharing, profit shifting
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1 Introduction

Some workers earn such high wages that they can reach the top of the wealth distribution without other source of wealth. They have been called the *working rich* (REF : TP & Godechot (2017)).

Working rich & taxation How these wages should be taxed according to the theory depends on why they are so high. On one side, if these workers are paid at their marginal productivity, then the main taxation motive as stated by **?** reach here a limit : the redistributive objective advocate for a tax increase, but increases the tax burden as well, hence a decrease in inefficiency. On the other side, if the working rich are able to extract a rent, then standard economic theory has it that taxing these wages increase efficiency. Yet, the impact of a tax on very high wage earners have in practice many possible impacts on profit distribution depending on the effective bargaining power of these workers. This raises the question of the incidence of a tax on the very high wages. In that context, it becomes even more relevant to study the question of incidence in a general equilibrium context where all possible margins of response and not only labour supply and wages are taken into account.

Incidence : theory + PE vs GE The literature on incidence aims to determine how is allocated the burden of a tax in the economy, that is, who pays the tax in the end. Indeed, an increase in a particular tax can fall on consumers through price increases or one or several factors of production through decreased returns (decrease of the wage rate for example). From the theoretical view point, the incidence of a tax is borne by the side of the market the most sensitive to the price (in a partial equilibrium model with perfect competition). It means that that the one that legally pay the tax are not necessarily the one actually paying it. Fullerton & Metcalf (2002) propose a review the theoretical models in partial and general equilibrium.

Incidence : Empirics Several margins of response to a income taxation have been studied.

Outcome : labour The first and most studied one is the incidence on labour supply and wages. However, empirical evidence are still scarce and there is no consensus. The first papers relied on cross country analysis and time-series evidence. The recent literature uses micro data and exploit social security reforms. But evidence goes from full-incidence on

employers (Saez et al. 2012, Gruber 1997) to full-indicence on employees (Gruber 1997). The tax-and-benefit linkage seems to matter (Bozio et al. 2017, Iturbe-Ormaetxe 2015).

Outcome : net result of the firm

Outcome : Competivness (price) Exportations and (non-price) investments

Taxing the rich   The increase in wage inequality over the lasts 40 years is well documented for many developed countries (cf. KM1992, AKK2008, **?**). Overall inequality as well as inequality at the top are increasing, though to a lesser extent in European continental countries. The "working rich" are studied by Godechot (2007, 2017) using both qualitative and quantitative methodologies. He concentrates on workers of the financial sector. The wages of this population depends more directly on the firm's profit, he shows. Godechot (2011) shows that the finacial sector contributed to the increase in inequality at the top. The presence of rent in this sector is documented by **?** who show that wages are 50-60% higher in the financial sector than in others sectors, for a same educational achievement.

Taxing the financial sector : IMF advocate in 2011 for a "Financial Activity Tax" (FAT) on the financial sector

Piketty et al. (2014) propose an optimal taxation framework for these "working rich", taking into account the consequence of their rent extraction behaviour on top optimal tax rates. The model encompasses three channels of response. The first two are the standard supply-side explanation whereby low tax rates favour entrepreneurship and tax avoidance response. The third one is the compensation-bargaining response, that is limited by a tax reducing rent extraction possibilities. They show that CEOs have a higher bargaining power when top tax rates are lower. They propose two empirical tests of their model : a macro-level using the correlation between marginal tax rates and top 1 percent income shares, and the micro-level using a panel of CEO pay and firm performance.

Departing from Piketty et al. (2014), I take advantage of information I have on the profit distribution among each firm in order to go further in the analysis by analysing the impact that such a tax might have on the other production factors. I focus on the incidence on wages and employment of both the working rich and the other workers of the firm. The underlying question is related to the share of the value added created by the firms between the inputs : is the increase in tax shifted in the form of decrease in capital share (through a higher labour share) or does the share of labour stay constant (with lower net wage) ? This is the empirical question I am tackling.

The objective of this paper is to contribute to the empirical literature on the economic incidence of a tax on wages with no tax-and-benefit linkage. I exploit a matched employer-employee dataset that allows me to study all margins of response. I focus on a tax on wages very specific to France. This *taxe sur les salaires* (TS) or tax on payroll targets employers not subject to the value added tax and is ruled by a progressive schedule on individual gross wages. The tax is due by employers, hence a nominal incidence on employers. The main sectors subject to the tax are the financial, teaching and health sectors. I focus on the 2013 reform of the tax on payroll introducing a new tax bracket above 150 000 € and increasing the top marginal tax rate from 13.6% to 20%. The reform targets the working rich population of the affected firms.

The remainder of the paper is organised as follows. Section 2 describes the institutional setting of the tax and the reform studied . Section 3 presents the administrative data and the microsimulation method used to compute the tax. Section 4 presents the empirical strategy and the results are reported in section 5. Section 6 discusses the results and section 7 concludes.

2 Context and reform

2.1 The tax on wages : legislation

History of the wage tax   A first lump sum tax on wage (namely, the *versement forfaitaire*), created on December 9th, 1948, was at the root of the wage tax. In its first version, the wage tax was a lump sum amount paid by employers. This tax replaced the old proportional *impôt cédulaires* on wage. The main reform of the initial lump sum wage tax happened in 1968[1], The tax schedule enforced in 1968 is still valid, as the tax underwent only minor changes since then. Today, the product of the tax is affected the general state budget and amounts to roughly 2.4% of this budget revenue.

Tax base and tax schedule   All employers not vatable and employers that paid some VAT on less than 90% of their sales revenue are subject to the tax. In 2013, 175 107 firms paid this tax according to aggregated tax return data.

Since 1968, the tax base is constituted by earnings whose concept is close to gross earnings. Yet, it enlarged twice since 2000. Before 2001, the tax base was specific to this

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1. Loi n° 68 -1043 du 29 novembre 1968.

tax. Since 2002 (January, 1st), the tax base has converged with the more general tax base of the social security contributions thanks to the Budget Law for 2001.

2.2 The tax on wages : 2013 reform

The 2013 budget law (LFSS 2013) increased the top marginal tax rate and broadened the tax base. The tax schedule became even more progressive with a marginal tax rate at 20% for annual wages superior to 150 000 euros. The tax base was also aligned to the tax base of the *Cotisation Sociale Généralisée* (CSG), now including remunerations such as profit-sharing and incentives.

The *ex-ante* evaluation of the government forecast that this reform increases by 470 millions euros [2] the tax revenue and weights at 85% on the financial sector (cf. LFSS, Annexe 10 p 63). This reform both reinforced the progressivity of the tax, whose schedule had remained unchanged since 1968, and the width of the tax base.

3 Data

The underlying data comes from two sources.

3.0.1 DADS Postes

The DADS Postes is a matched employer-employee datasets, that contains for every year until 2013 (2014 is to be available in January 2017), the universe of jobs in France. The information can be aggregated at the individual level and at the firm level. The database contains information at the job level, such as the gross wage, the number of hours and days worked during the year, the sector. At the firm level, the number of employee as well as the complete structure of employment are available. The database for one year T contains informations for year T and year $T - 1$. Yet the individual panel cannot be extended to more than two years.

I drop the following categories of jobs :
— individual employers (*particuliers employeurs*) ;
— region or activity unknown ;
— farm sector ;

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2. This estimation was computed using the DADS data « qui permettent de comparer les assiettes des cotisations sociales et de la CSG, notamment pour les redevables de la taxe sur les salaires. » LFSS, Annexe 10 p 62

— trainees, interns, subsidized employment (*emploi aidé*).

3.0.2 FARE

I use a richer dataset to complement the information on firms, FARE (*Fichier Approché des Résultats Esane*). It contains balance sheet and accounting documents that details the production and net profits structure of the firms. Notably, the FARE dataset contains variables on the VAT deductible and paid by the firms, which allows me to identify the firms subject to VAT. Table 1 relates the total amount of VAT according to National Accounts and to the FARE dataset.

TABLE 1 – Total amount of VAT

Source	2011	2012	2013
CN 3.212	1,41E+11	1,43E+11	1,44E+11
FARE			

Since 2012, some big firms (more the 40) underwent a specific treatment by the data provider : they were broken down in several smaller firms. For these firms, I only considered the smaller firms in the matching, the grouped ones being dropped before. Before 2012, the sub-firms of six firms [3] have historically been grouped at the the higher firm level. For these firms, I had to make the matching on the firm identifier "by hand". This operation works well, except for St Gobain Vitrage, a firm that has been dropped from the analysis. Nonetheless, this issue is not a key problem for my identification strategy.

3.0.3 Matching

The two data sources are matched on the firm identifier, *SIREN*. The population of FARE is constituted by all firms, apart from the financial (National Account definition) and the farm sectors. This means that only part of the financial sector is in FARE. A lot of firms from FARE are not in the DADS dataset because they do not have any employees. Conversely, firms from the public sector are in the DADS but are not in FARE. I reduce my sample to the firms present in the DADS, dropping the no-employee firms, by definition not subject to the tax.

The **matching** at the firm level, 78% of the DADS Postes firms are found in FARE

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3. PSA, Renault, ACCOR, SEB and St Gobain Vitrage

in 2013. In 2013, the matched dataset is composed of 1 243 203 firms[4]. I keep the firms from the DADS Postes that are not matched with FARE because they belong to the public sector, which is part of my study.

Importantly, the matching allows me to link the tax to profits of the firms.

3.0.4   Panel

A one twelfth panel version of the exhaustive dataset of jobs is available for 2013 and before. Although it is not (theoretically) possible to build a panel from the exhaustive dataset at the individual level for more than two years, it is possible to do it at the employer level. The four years panel of matched the DADS-FARE database contains 1 151 753 firms.

3.1   Microsimulation of the tax on payroll

My strategy is to compute the tax on payroll by identifying the employers subject to the tax and by applying the legislation. Even though the dataset is an appropriate source for the simulation of the tax, some challenges remain.

3.1.1   Identifying the employers subject to the tax

The first challenge is to identify the employers subject to the tax. Employers not subject to the VAT are identified thanks to the FARE database which contains information on VAT paid. A fine classification of activities allow us to spot most of the employers that are exempted[5] or benefiting from rebates.

A rule that I am not able to identify exactly is the VAT exemption that can benefit to firms from specific sectors based on their sales revenues. Even if these firms don't pay VAT, they are not subject to the tax on payroll either (cf. excel file "Barème IPP - TVA entreprises", onglet "franchise"). I approximation the VAT exemption based on the amount of sales revenues. **??**).

For sure, it would be ideal to get the information on the tax base and the tax paid from the tax administration. Nonetheless, the amount of tax paid resulting from my algorithm is not far from the total tax revenue given by aggregated tax returns data.

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4. Carbonnier and al. (2016) performing a close exercice end up with 495 697 firms because they match on a third dataset that I do not use.

5. collectivités locales, services départementaux de lutte contre l'incendie, centres d'action sociale, centre de formation des personnels communaux, caisses des écoles, établissements d'enseignement supérieur qui organisent des formations conduisant à la délivrance au nom de l'Etat d'un diplôme sanctionnant cinq années d'études après le baccalauréat.

3.1.2 Identifying the tax base (and its evolution)

In the data, the gross wage is based on the *Cotisation Sociale Généralisée* (CSG) tax base, which is also the tax base of the payroll tax after the reform. This raises at least two concerns. First, the CSG tax base changed on January, 1st 2012 (removal of the rebate on profit-sharing and incentive). Second, the difference between the tax base of the CSG and of SSCs has to be identified. This is said to be true in the PLFSS 2013 (cf. footnote in section 2), but the INSEE is not clear about it

4 Empirical approach

4.1 Outcomes and controls

— Competition
  — exportations
  — investment
— Net result
  — net margin
  — profitability
— Labour income
  — total gross income
  — gross income below 150000
  — gross income above 150000
— Employment
  — Hours worked
  — Number of employes

Controls : lags of ln of mean gross wage, productivity, capital.

4.2 Strategy 1 : panel of employer

4.2.1 Sample : Employer paying the taxe on payroll

For this first strategy, I focus on a strongly balanced panel of 38197 employers (5 periods) for which I have fiscal information. I define for each employer i an endogenous treatment in intensity as the log of the net of marginal tax rate : $TI_{it} = \ln(1 - \tau_t \frac{A_{it}}{z_{it}})$ where

— A_{it} is the amount of individual annual income higher than 150000, subject to the increase in top marginal tax rate;
— τ_t is the top marginal tax rate
— z_{it} is the total gross income paid by the firm i in year t

Following the strategy by Auten & Carroll (1999), I instrument this endogenous treatment intensity by a treatment intensity as defined according to the pre-reform structure of employment and labour income.

$$TI_{it}^{endo} = \theta_i + \theta_t + \beta TI_i^{exo} \times Post_t + \epsilon_{it} \qquad (1)$$

$$ln(y_{it}) = \eta_i + \eta_t + \gamma TI_i^{exo} \times Post_t + \epsilon_{it} \qquad (2)$$

4.2.2 Comparison between employers subject and not subject to the tax

Another possibility is take advantage of the sectoral dimension of the tax on payroll. The sample is reduced to employers having at least one employee whose income is above 150000 in the pre-treatment period. In order to find a relevant control group among employers not subject, I select employers that match the best the control group with a 1-to-1 matching based on pre-treatment characteristics [6]. I define here the treatment TS_i by being subject to the tax. Here again, the intensity in the treatment differ among employers. In order to have a variable defined for employers not subject to the tax, the treatment intensity TI_i^{endo} is defined by the share of the gross income above 150000. The exogenous treatment TI_i^{exo} is the lagged treatment intensity.

$$TI_{it}^{endo} = \theta_i + \theta_t + \beta TI_i^{exo} \times Post_t + \epsilon_{it} \qquad (3)$$

$$ln(y_{it}) = \eta_i + \eta_t + \gamma TS_i \times TI_i^{exo} \times Post_t + \epsilon_{it} \qquad (4)$$

4.3 Strategy 2 : panel of employees

In order to look more precisely at the impact of the tax on labour income, I focus on a panel of employees and look at potential deformation of the wage distribution. I develop two different strategies depending on whether or not the employee is new to the firm. First, I look focus on employees who stay in a firm at least two years in a row and look at

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6. LISTE

the distribution of the growth in income around the new top marginal tax rate threshold. Second I concentrate on employees new to a firm and compare the distribution of 2010, 2011 and 2011 incomes to the one of 2013 (treated) to see whether the new threshold led to deformation of the wage structure.

4.3.1 Growth rate of incomes subject to the tax

Graph : scatter plots / binscatter plots

4.3.2 New employees in the firm

Graph : Distributional analysis (histogram or density)

5 Results

5.1 Graphical evidence

5.2 Estimation results

5.3 Robustness checks

6 Interpretation and discussion

7 Conclusion

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