

Who Really Benefits from Consumption Tax Cuts? Evidence from a Large VAT Reform in France.

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Online Appendix

APPENDIX

A1. Contrat D'Avenir Details

The Sarkozy government signed the *Contrat D'Avenir* in April 2009, at the time of the restaurant VAT reform we are analyzing. The contract was not binding and only involved unionized restaurants, which represent approximately 50 percent of the restaurant industry.

The goal of the contract was to give directives on how to allocate the surplus created by the reduction in the VAT rate. These directives involved four broad categories: employment; prices; investments and modernization of the restaurant sector; and work conditions and social dialogue.

The price directives depended on the type of restaurant:

- Sit-down restaurants were encouraged to reduce prices by 11.8 percent for 7 out of the 10 following items: appetizer, entree (meat or fish), daily special, dessert, appetizer-entree menu, entree-dessert menu, kid's menu, soda or fruit juice, mineral water, coffee, tea or herbal tea. In case a restaurant did not sell at least seven of these products, it could also reduce prices by 11.8 percent for products that represent more than one third of total turnover, excluding alcoholic drinks.
- Although no tax reduction was enacted in take-out restaurants, the government instructed them to reduce price for their reference menus by 5 percent.
- Cafes and juice bars: a full incidence of the VAT reduction on the price.

The employment directives aimed to create 40,000 jobs over two years in addition to the 15,000 jobs that are created in the restaurant industry every year on average.

The work conditions and social dialogue directives aimed to broadly improve remuneration (for example, faster salary increases over the years), health coverage and training, and to reduce the use of illegal workers.

Finally, the modernization directive aimed at improving employee and customers' safety (including better hygiene), increasing customers' comfort (for example through the purchase of better tables and chairs), the acquisition of environmentally friendly equipment, the renewal of electronic equipment, and increasing the size of the restaurants.

A report by the *Ministere de l'Artisanat, du Commerce et du Tourisme*¹⁹ at-

¹⁹Ministry of Craft, Commerce and Tourism.

tempts to analyze whether these directives were achieved. A significant issue they struggle with is that no clear measures were established ex-ante. For example, the price drops the directives suggest are not given a time frame making it hard to assess.

It is worth re-emphasizing that these measures were not binding and were not enforced by the government.

A2. 2004-2009 Payroll Tax Reductions

This government subsidy program, targeting the *Hotels Cafés et Restaurants* (HCR) industry, was implemented in 2004 as a temporary measure to help restaurants before the introduction of the VAT cut in 2009. The 2004-804 Law established that firms operating in the HCR sector are eligible for an employment subsidy, initially available for one year and a half. In addition, the 2004-1239 Decree approved on November 22, 2004 defined the criteria for the implementation of the subsidy. The subsidy was subsequently extended to the period 2006-2008 by the 2005-1719 Law (December 30, 2005), the 2006-1666 Law (December 21, 2006) and the 2007-1822 Law (December 24, 2007), with small changes relative to the original measures. In July 2009, the 2009-888 Law abolished the subsidy, as the VAT cut from 19.6 to 5.5 percent became effective.

Subsidies under this program could not be claimed for the following categories of workers:

- All young workers below 18 years old, who already receive a subsidy of 10-20 percent.
- Employees hired under one of these contracts: (a) *contrat jeune en entreprise*, (b) *contrat initiative emploi*, (c) *contrat d'apprentissage*, (d) *contrat d'insertion RMA*, (e) *contrat de l'aide dégressive à l'employeur (ADE)*, (f) *contrat d'accès à l'emploi dans les DOM*.
- Employees for which the employer claims the minimum wage (SMIC) in the hotel industry.
- Employees working in the following sub-industries: *hébergements non touristiques* (NAF 55.2 F), *cantines et restaurants d'entreprise* (code NAF 55.5A) and *restauration collective sous contrat* (NAF 55.5 C)

Though these subsidies were industry-specific, restaurants also received government subsidies that applied to all industries, and that were not abolished in 2009. These included subsidies on contributions paid (*allègements de cotisations sociales*) established by the January 2003 Fillon law, which could be received on top of the industry specific subsidies, and subsidies for firms operating in economically depressed geographic areas,²⁰ which a firm could not receive if it claimed

²⁰These include the *Zones Franches Urbaines (ZFU)*, the *Zones de Revitalisation Rurale (ZRR)* and the *Zones de Redynamisation Urbaine (ZRU)*

Table A1—: Maximum Monthly Subsidy per Full-Time Employee in 2008

	Employee Earning Reference Salary	Employee Earning More than Reference Salary	
		Existing Establishments	New Establishments
	(1)	(2)	(3)
Hotels and similar accommodation (55.10Z) ^(a)	114.4	114.4	28.6
Holiday and other short-stay accommodation (55.20Z)	114.4	114.4	57.2
Camping grounds and recreational vehicle parks (55.30Z)	114.4	114.4	28.6
Sit-down restaurants (56.10A)	180	180	180
Cafeterias and other self-service catering (56.10B)	180	180	180
Fast food restaurants (56.10C)	114.4	67.925	67.925
Event catering activities (56.21Z)	114.4	114.4	57.2
Beverage serving activities (56.30Z) ^(b)	114.4	90	90

Note: Reference salary is defined as the minimum wage (SMIC) from 2004 to 2007 and the SMIC plus 3 percent after 2007. Existing establishments have been open for more than a year, while new establishments have operated for a year or less. All amounts are expressed in euros.

(a) Different amounts apply to the sub-category *Hôtels touristiques avec restaurant*. In this case a new firm hiring an employee earning more than the reference salary gets up to 90 euros.

(b) Both existing and new bowling alleys and casinos receive 28.6 euros for each worker earning more than the reference salary, while both existing and new discos receive 71.5 euros for each worker earning more than the reference salary.

the industry specific subsidies. Finally, subsidies received by each firm could not be larger than 200,000 euros over three years, as established by European rules on government subsidies.

A3. Employment Contract types

INDETERMINATE LENGTH CONTRACT. — Indeterminate Length Contracts (*Contrats a Duree Indeterminee*) do not have a specific expiry date. Workers are employed for an undetermined length of time. Termination occurs if workers decide to quit, if they are fired or if they retire. If workers are fired, employers are expected to pay them a severance pay. This type of contract usually starts with a 4-month trial period during which the contract can be terminated at no cost.

DETERMINATE LENGTH CONTRACT. — Determinate Length Contracts (*Contrats a Duree Derterminee*) have a specific expiry date after which the contract is terminated unless it is renewed for an additional period of time or if the contract is transformed into an Indeterminate Length Contract. It is estimated that there were 2,250,002 such contracts in 2009.

A4. Payroll Tax Rates

Table A2—: *Revenue Mixte* Scheme.

Annual Income Threshold	Total Rate
27,459	44.20%
37,546	47.70%
39,228	48.70%
43,150	31.30%
54,919	32.15%
156,912	30.00%
196,140	22.00%
Above 196,140	21.30%

Note: This Table reports the breakdown by income bracket of the *Revenue Mixte* scheme which is the tax restaurant owners have to pay on profits.

Table A3—: Payroll Taxes for Restaurant Wage Earners (Inclusive of Employer Share).

Annual Income Threshold	Total Rate
7,721	71.03%
15,417	75.28%
39,732	80.38%
152,279	69.28%
158,928	75.68%
317,856	73.42%
Above 317,856	32.87%

Note: This Table reports the breakdown by income bracket of the payroll tax burden of restaurant employees, it includes both the employer and the employee share.

Table A4—: Breakdown of the *Revenue Mixte* Scheme

Name of Fund	Income	Rate	Name of Fund	Income	Rate
CSG	All income	7.5%	AGGF tranche B	above 39,732 and below 158928	2.2%
CRDS	All income	0.5%	Arrco tranche 1	below 39,732	7.75%
Contribution solidarite autonomie	All income	3%	Agirc tranche B	above 39,732 and below 158928	20.55%
Assurance maladie	All income	13.59%	Agirc tranche C	above 158,928 and below 317,856	20.55%
Assurance vieillesse plafonne	below 39,732	15.45%	Assurance Dcs	below 39,732	1.5%
Assurance vieillesse dplafonne	All income	2.3%	Apec	Below 158,928	0.06%
Allocations Familiales	All income	5.25%	CET	Below 317,856	0.35%
Aide au Logement	below 39,732	0.1%	Taxe d'apprentissage	All income	0.73%
Cotisation Chomage	below 158,928	6.4%	Taxe sur les salaires	Below 7,721	4.25%
Fond de garantie des salaires	below 158,928	0.3%		From 7,721 to 15,417	8.5%
AGGF tranche A	below 39,732	2%		From 15,417 to 152,279	13.6%
				Above 152,179	20%

Note: This Table reports the breakdown of payroll taxes borne by restaurant employees (both the employer and employee share) by fund and specifies the tax rate for each income bracket.

Table A5—: Breakdown of Payroll Taxes for Restaurant Employers

Name of Fund	Income	Rate
Maladie - Maternite	below 27,459.60	3%
	above 27,459.60	6.5%
Indemnitees journalieres	below 196,140	0.7%
Allocations Familiales	below 43,150.80	0%
	between 43,150.80 and 54,919.20	2.15%
	above 54,919.20	0%
CSG	All income	8%
CRDS	All income	6.2%
Retraite de base	below 39,228	17.75%
	above 39,228	0.6%
Retraite complementaire	below 37,546	7%
	between 37,546 to 156,912	8%
Invalidite - deces	between 0 and 43,150.80	1.3%
Formation professionnelle	below 39,228	0.25%

Note: This Table reports the breakdown of payroll taxes borne by restaurant owners as part of the *revenue mixte* scheme by fund and specifies the tax rate for each income bracket.

ADDITIONAL ROBUSTNESS CHECKS

B1. Weighting

While weighting does slightly change the magnitude of the estimated coefficients in equation (1), reducing the incidence of the tax on employees and sellers of material goods, we believe that un-weighted estimates are preferable for our analysis. First they are more likely to reflect the average response of a firm in the economy. Given that 90 percent of sit-down restaurants have less than ten employees (and a within group average of 4 employees per firm) while the remaining 10 percent hires around 19 employees per firm, weighting by number of employees would increase the weight on the medium-sized and large firms. Second, very small firms are under-represented in AMADEUS, meaning that our estimates already assign higher weight to firms that are larger than the population average. Weighting by number of employees would exacerbate this problem.

B2. Other Restaurants

While other restaurants (which includes both cafes and other self-service catering (56.10B) and take-away restaurants (56.10C)) would also seem at first glance to be an appealing control group because it has similar characteristics to the sit-down restaurants sector and was not affected by the VAT reform, we do not consider it in our analysis. First, from a consumer perspective, it is likely that sit-down restaurants and other restaurant services are highly substitutable. Therefore, when sales increase in one sector, they probably decrease in the other sector as consumers move from one to the other. Second, from a producer perspective, *other restaurants* might react to price changes in sit-down restaurants by adjusting their own prices in the same direction. Finally, there is a large pre-trend in the difference between prices of sit-down restaurant meals and goods consumed in *other restaurants*, which makes it an unappealing control group.

DATA APPENDIX

C1. Definition of Market Services

Following level 1 of the French NAF Rev.2 industry classification and the official definition from the French National Institute of Statistics and Economic Studies (INSEE), this group includes: wholesale and retail trade, repair of motor vehicles and motorcycles (Section G), accommodation service activities (division 55 in Section I), information and communication (Section J), financial and insurance activities (Section K), real estate activities (Section L), professional, scientific and technical activities (Section M) and administrative and support service activities (section N).

Market services does not include services that are either non-marketable or subsidized by the government such as transportation and storage (section H), public administration and defense, compulsory social security (section O), education (section P), human health and social work activities (section Q), arts, entertainment and recreation (section R), and other services (section S).

*C2. Goods Produced in Market Services***Table C1—: Services Included in Price Index for Market Services**

COICOP Code	Description
03.1.4	Cleaning, repair and hire of clothing
04.1.1/2	Actual rentals paid by tenants including other actual rentals
04.3.2	Services for the maintenance and repair of the dwelling
04.4.2	Refuse collection
04.4.3	Sewage collection
04.4.4	Other services relating to the dwelling n.e.c.
05.1.3	Repair of furniture, furnishings and floor coverings
05.3.3	Repair of household appliances
05.6.2	Domestic services and household services
08.1.0	Postal services
08.2/3.0	Telephone and telefax equipment and telephone and telefax services
09.1.5	Repair of audio-visual, photographic and information processing equipment
11.2.0	Accommodation services
12.5.2	Insurance connected with the dwelling
12.5.3	Insurance connected with health
12.5.4	Insurance connected with transport
12.5.5	Other insurance
12.6.2	Other financial services n.e.c.
12.7.0	Other services n.e.c.

Note: This Table reports COICOP codes used by Eurostat to describe price categories included in the service sector and categorized as market services by the INSEE.

Table C2—: Services Excluded from Price Index for Market Services

COICOP Code	Description
06.2.1/3	Medical and paramedical services
06.2.2	Dental services
06.3.0	Hospital services
07.2.3	Maintenance and repair of personal transport equipment
07.2.4	Other services in respect of personal transport equipment
07.3.1	Passenger transport by railway
07.3.2	Passenger transport by road
07.3.3	Passenger transport by air
07.3.4	Passenger transport by sea and inland waterway
07.3.5	Combined passenger transport
07.3.6	Other purchased transport services
09.2.3	Maintenance and repair of other major durables for recreation and culture
09.4.1	Recreational and sporting services
09.4.2	Cultural services
09.6.0	Package holidays
10.X.0	Pre-primary and primary, secondary, post-secondary non-tertiary, tertiary education, and education not definable by level
11.1.1	Restaurants, cafes and the like
11.1.2	Canteens
12.1.1	Hairdressing salons and personal grooming establishments
12.4.0	Social protection

Note: This Table reports COICOP codes used by Eurostat to describe price categories included in the service sector but excluded from the market services definition used by INSEE.

TECHNICAL APPENDIX

In equilibrium, total after-tax firm revenue equals total income, that is:

$$(1 - \tau)(p_x X - c_x M_x) = w_x L_x + r_x K_x$$

By the envelope theorem, we have:

$$(1 - \tau)p_x dX = w_x dL_x + (1 - \tau)c_x dM_x + r_x dK_x$$

In this case the first order effect of the tax is given by:

$$Xd(\tau p_x) - c_x M_x d\tau - \tau M_x dc_x = Xdp_x + L_x(-dw_x) + K_x(-dr_x) + M_x(-dc_x)$$

from which:

$$\frac{X dp_x}{Xd(\tau p_x) - c_x M_x d\tau - \tau M_x dc_x} - \frac{L_x dw_x}{Xd(\tau p_x) - c_x M_x d\tau - \tau M_x dc_x} - \frac{K_x dr_x}{Xd(\tau p_x) - c_x M_x d\tau - \tau M_x dc_x} - \frac{M_x dc_x}{Xd(\tau p_x) - c_x M_x d\tau - \tau M_x dc_x} = 1$$

Given the Cobb-Douglas production function, we have $\gamma = \frac{w_x L_x}{p_x X}$, $\delta = \frac{c_x M_x}{p_x X}$ and $(1 - \gamma - \delta) = \frac{r_x K_x}{p_x X}$. It follows that:

$$\underbrace{\frac{d \ln p_x}{d\tau(1 - \delta) + \tau(d \ln p_x - \delta d \ln c_x)}}_{\text{Share on Consumers}} - \gamma \underbrace{\frac{d \ln w_x}{d\tau(1 - \delta) + \tau(d \ln p_x - \delta d \ln c_x)}}_{\text{Share on Employees}} - (1 - \gamma - \delta) \underbrace{\frac{d \ln r_x}{d\tau(1 - \delta) + \tau(d \ln p_x - \delta d \ln c_x)}}_{\text{Share on Capital Owners}} - \delta \underbrace{\frac{d \ln c_x}{d\tau(1 - \delta) + \tau(d \ln p_x - \delta d \ln c_x)}}_{\text{Share on Sellers of Material Goods}} = 1$$

APPENDIX TABLES AND FIGURES

Table A.1—: Mean Impact Estimates of the VAT Cut: Extensive Margin

	Cost of Employees (1)	Number of Employees (2)	Cost per Employee (3)	Cost of Materials (4)	Before-Tax Profits (5)	Return on Total Assets (6)
<i>A. Main Estimates</i>						
After × Sit-Down Restaurant	0.00019 (0.00021)		0.00019 (0.00021)	-0.00039 (0.00028)	0.091 (0.0043)	0.092 (0.0043)
R ²	0.59		0.59	0.61	0.49	0.49
Observations	1,020,157		1,020,157	1,020,157	1,020,157	1,020,157
<i>B. Controlling for Local Unemployment Rate</i>						
After × Sit-Down Restaurant	0.00019 (0.00021)		0.00019 (0.00021)	-0.00039 (0.00028)	0.091 (0.0042)	0.091 (0.0042)
Urate _{dt}	0.00017 (0.000094)		0.00017 (0.000094)	-0.00011 (0.00031)	-0.0080 (0.0024)	-0.0079 (0.0024)
R ²	0.59		0.59	0.61	0.49	0.49
Observations	1,020,157		1,020,157	1,020,157	1,020,157	1,020,157
<i>C. Using Small Firms as Control Group</i>						
After × Sit-Down Restaurant	0.00027 (0.00021)		0.00027 (0.00021)	-0.00097 (0.00024)	0.11 (0.0038)	0.11 (0.0038)
R ²	0.59		0.59	0.60	0.45	0.45
Observations	1,258,695		1,258,695	1,258,695	1,258,695	1,258,695

Note: Panels A. and B. compare sit-down restaurants to non-restaurant market services around the 2009 VAT cut, while panel B. compares sit-down restaurants to small firms. The panels shows mean effects estimated using: $I_{Y_{idt} > 0} = \eta \cdot \mathbb{1}\{i \in T\} \times After + \lambda_t + \omega_i + \epsilon_{idt}$, where $I_{Y > 0}$ is an indicator function for the outcome of interest being positive, i indexes the individual firm, d indicates the *département* in which the firm is located, t indexes the year in which the outcome is measured, *After* is a dummy variable equal to one in the post-reform period 2009-2011, and λ_t and ω_i are year and firm fixed effects. Additionally, Panel B. includes the unemployment rate of the *département* in which the firm is located as an additional regressor. Standard errors are clustered by *département* and reported in parenthesis.

Table A.2—: Hours Worked: Sit-Down Restaurants vs. Non-Restaurant Market Services

	<i>Panel A: Total Hours</i>			
	(1)	(2)	(3)	(4)
After × Sit-Down Restaurants	-0.012 (0.015)	-0.0084 (0.015)	-0.011 (0.015)	0.0040 (0.016)
After	0.017 (0.0030)	0.048 (0.0055)	0.045 (0.0052)	0.00080 (0.0057)
Sit-Down Restaurants	0.029 (0.0092)	0.025 (0.0094)	0.026** (0.0094)	0.053 (0.0083)
Year FE	No	Yes	Yes	Yes
Region FE	No	No	Yes	Yes
Individual Characteristics	No	No	No	Yes
R ²	0.00031	0.0044	0.012	0.14
Observations	338,331	338,331	338,331	256,464
	<i>Panel B: Days Worked</i>			
	(1)	(2)	(3)	(4)
After × Sit-Down Restaurants	-0.0017 (0.0074)	-0.0010 (0.0075)	-0.0011 (0.0074)	0.0044 (0.0085)
After	0.0074 (0.0017)	0.010 (0.0027)	0.010 (0.0026)	-0.00091 (0.0029)
Sit-Down Restaurants	0.046 (0.0060)	0.046 (0.0060)	0.046 (0.0060)	0.045 (0.0053)
Year FE	No	Yes	Yes	Yes
Region FE	No	No	Yes	Yes
Individual Characteristics	No	No	No	Yes
R ²	0.0016	0.0023	0.0034	0.037
Observations	369,660	369,660	369,660	297,502

Note: The Figure shows dynamic effects of the VAT cut on hours and days worked using the following specification: $\log h_{irt} = \gamma \cdot \mathbb{1}\{i \in T\} + \delta \cdot \mathbb{1}\{i \in T\} \cdot \text{After} + X_{irt} + \lambda_t + \omega_r + \epsilon_{irt}$, for worker i employed in region r in year t . the treatment group T includes all employees of sit-down restaurants, while the control group includes employees of non-restaurant market service sectors. We also include year fixed effects λ_t , region fixed effects ω_r and employees' individual characteristics X_{irt} (age, gender, education, tenure, occupation, marital status, number of employed workers, number of unmarried children living in the household, establishment size, firm size, birth region, and quarter in which the worker was surveyed). Standard errors are clustered by region and reported in parenthesis. Pre-treatment period is 2004-2008, while the post-treatment period includes 2009-2011.

Table A.3—: Approximation Error

	Short-Run: 6 Months after Reform	Medium-Run: 18 Months after Reform	Long-Run: 30 Months after Reform
Ω	0.089	0.089	0.088
Sum of Numerators	0.097	0.149	0.150
Approximation Error	0.008	0.060	0.062

Note: This Table shows the approximation error when implementing this formula empirically: $\frac{d \ln p_x}{\Omega} - \gamma \frac{d \ln w_x}{\Omega} - (1 - \gamma - \delta) \frac{d \ln r_x}{\Omega} - \delta \frac{d \ln c_x}{\Omega} = 1$, where $\Omega = d\tau(1 - \delta) + \tau(d \ln p_x - \delta d \ln c_x)$. The first line is the estimated using the estimated cost of employees to sale share $\delta = 0.32$, the change in VAT rate ($0.196 - 0.055 = 0.141$), the pre-reform VAT rate 0.196 and the reduced form coefficients $d \ln p_x$ and $d \ln c_x$. The sum of numerators sum the estimated weighted reduced form effects estimated in Table 3.

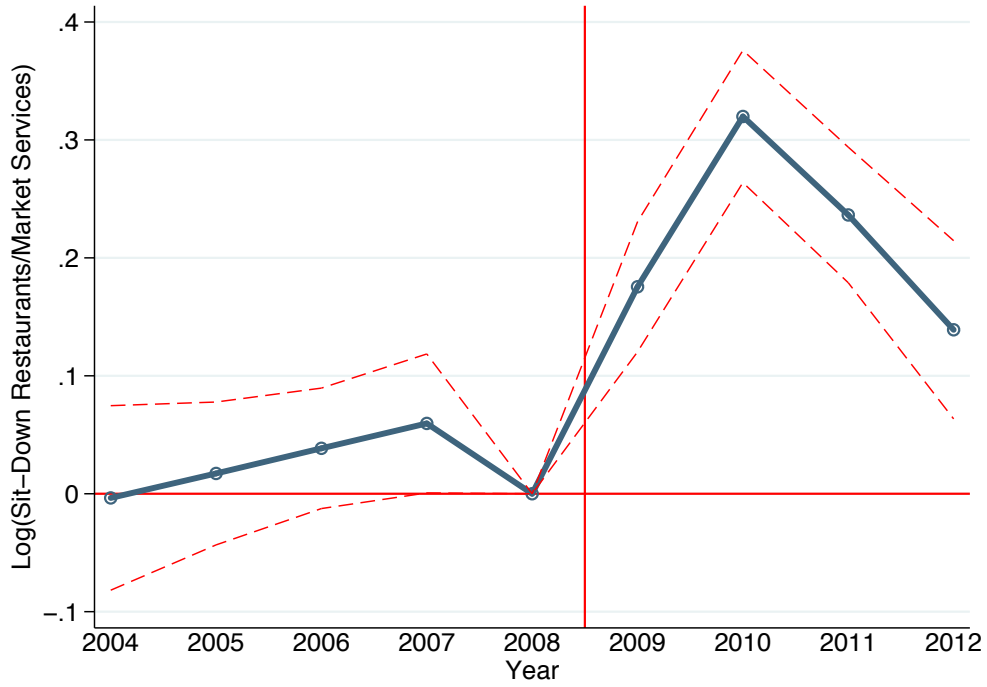


Figure A.1. : Alternative Measure of Return to Capital: Return to Capital Employed

Note: The Figure shows event-time coefficients estimated from: $\log Y_{idt} = \sum_{\nu=-k}^q \eta_{\nu} \cdot \mathbb{1}\{i \in T\} \times \mathbb{1}\{t = \nu\} + \lambda_t + \omega_i + \epsilon_{idt}$, where k are leads and lags, where i indexes the individual firm, d indicates the *département* in which the firm is located, t indexes the year in which the outcome is measured. We include firm and year fixed effects and cluster standard errors by *département*. Return to capital employed is defined as profit before taxes plus interest paid over shareholder funds plus non-current liabilities. The treatment group includes sit-down restaurants, while the control group includes firms in non-restaurant market service sectors. The dashed lines are 95 percent confidence intervals.

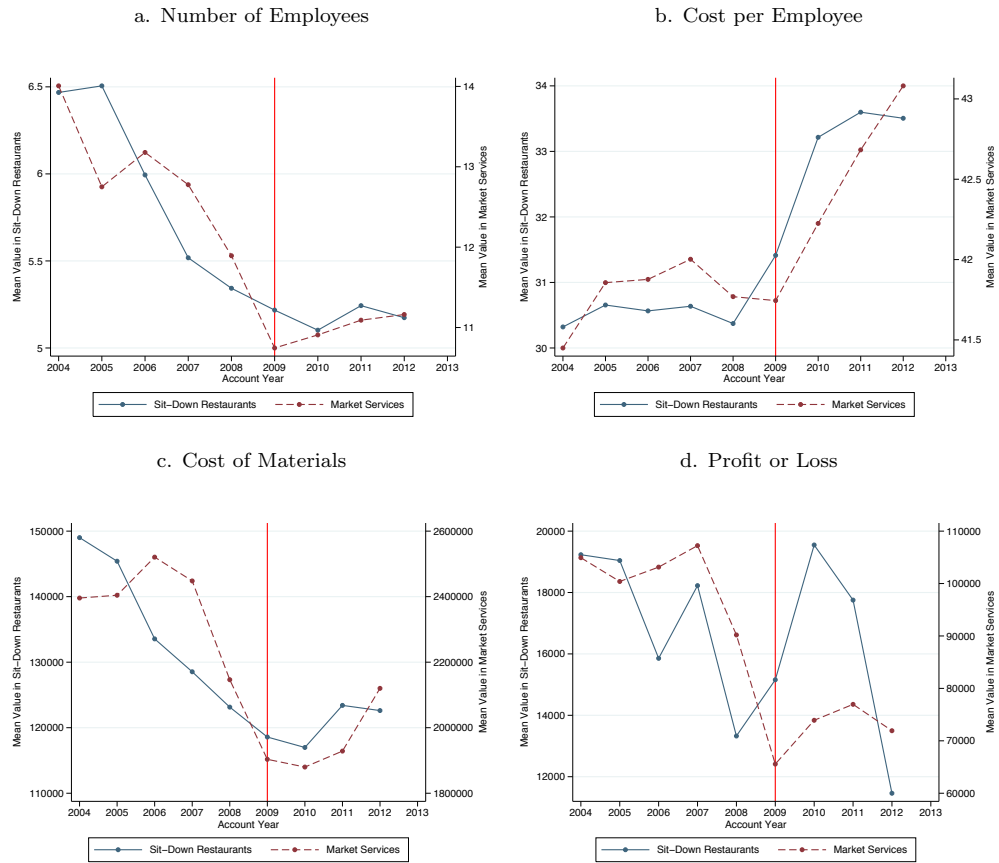


Figure A.2. : Unconditional Means: Sit-Down Restaurants vs. Market Services

Note: Computed using data on French sit-down restaurants from Bureau Van Dijk's AMADEUS data. The sample includes unconsolidated balance sheets of French firms for which information on employment, the cost of employees, turnover, the cost of materials and profits are not missing. All amounts are expressed in 2012 euros. The treatment group includes French sit-down restaurants, while the control group includes all firms in non-restaurant market service sectors.

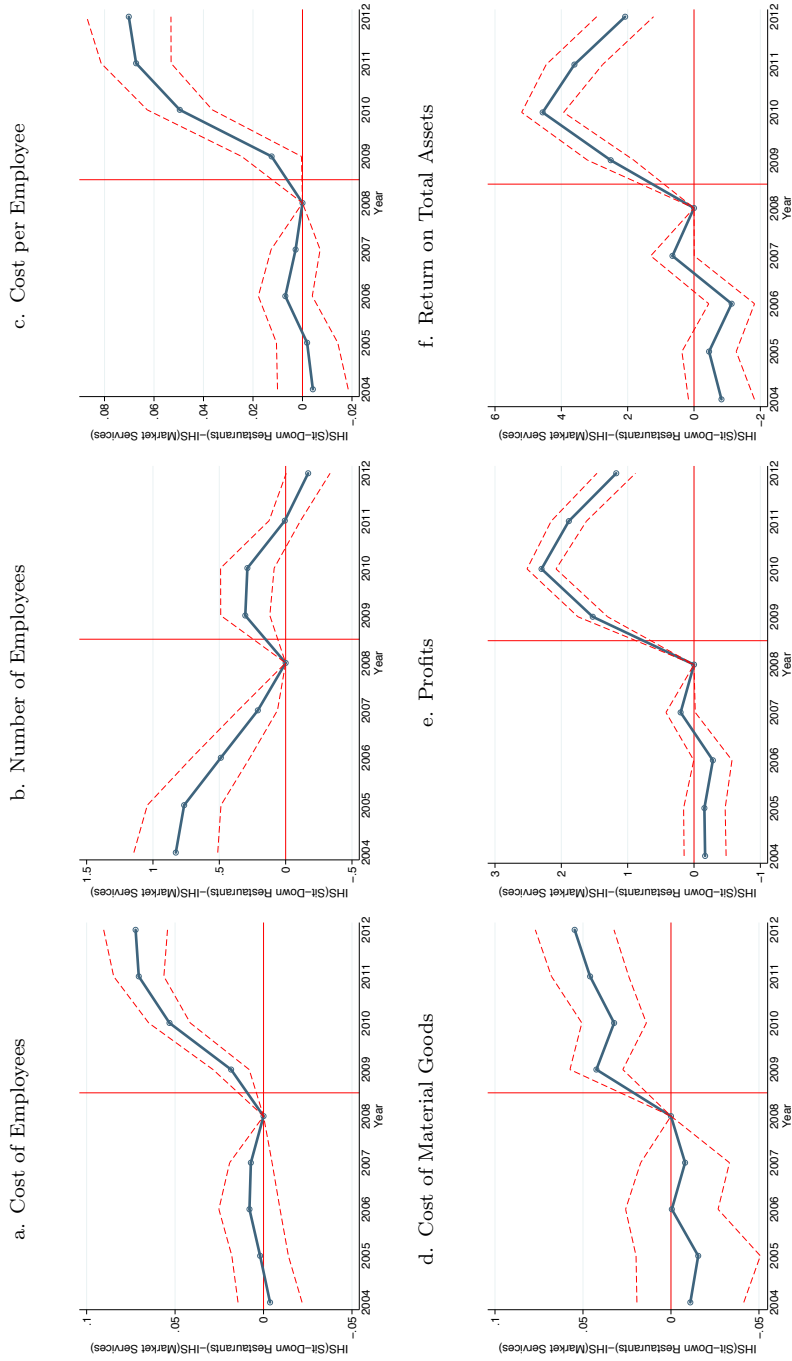


Figure A.3 : Dynamic Effects of the VAT Cut Using Inverse Hyperbolic Sine

Note: The Figure shows event-time coefficients estimated from: $ih_s(Y_{i dt}) = \sum_{\nu=-k}^q \mathbb{1}\{i \in T\} \times \mathbb{1}\{t = \nu\} + \lambda_t + \omega_i + \epsilon_{i dt}$, where $ih_s(Y_{i dt})$ is the inverse hyperbolic sine of $Y_{i dt}$, k are leads and lags, where i indexes the individual firm, d indicates the *département* in which the firm is located, t indexes the year in which the outcome is measured. We include firm and year fixed effects and cluster standard errors by *département*. The treatment group T includes sit-down restaurants, while the control group includes firms in non-restaurant market service sectors. The dashed lines are 95 percent confidence intervals.

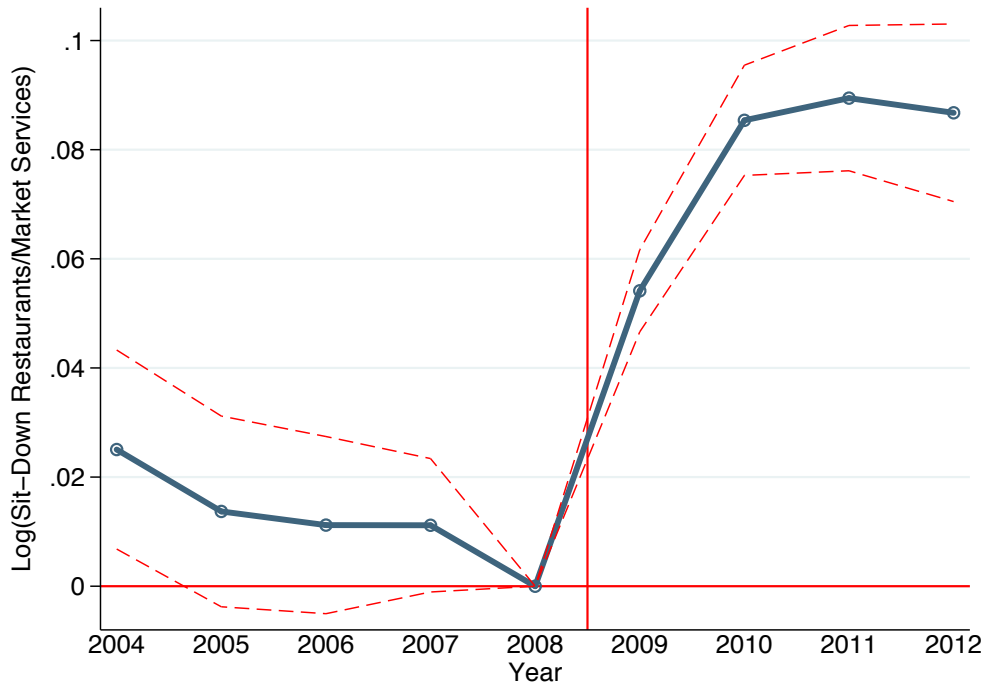


Figure A.4. : Dynamic Effects of the VAT Cut on Turnover (exclusive of VAT): Sit-Down Restaurants vs. Market Services

Note: The Figure shows event-time coefficients estimated from: $\log Y_{idt} = \sum_{\nu=-k}^q \eta_{\nu} \cdot \mathbb{1}\{i \in T\} \times \mathbb{1}\{t = \nu\} + \lambda_t + \omega_i + \epsilon_{idt}$, where k are leads and lags, where i indexes the individual firm, d indicates the *département* in which the firm is located, t indexes the year in which the outcome is measured. We include firm and year fixed effects and cluster standard errors by *département*. The treatment group includes sit-down restaurants, while the control group includes firms in non-restaurant market service sectors. The dashed lines are 95 percent confidence intervals.

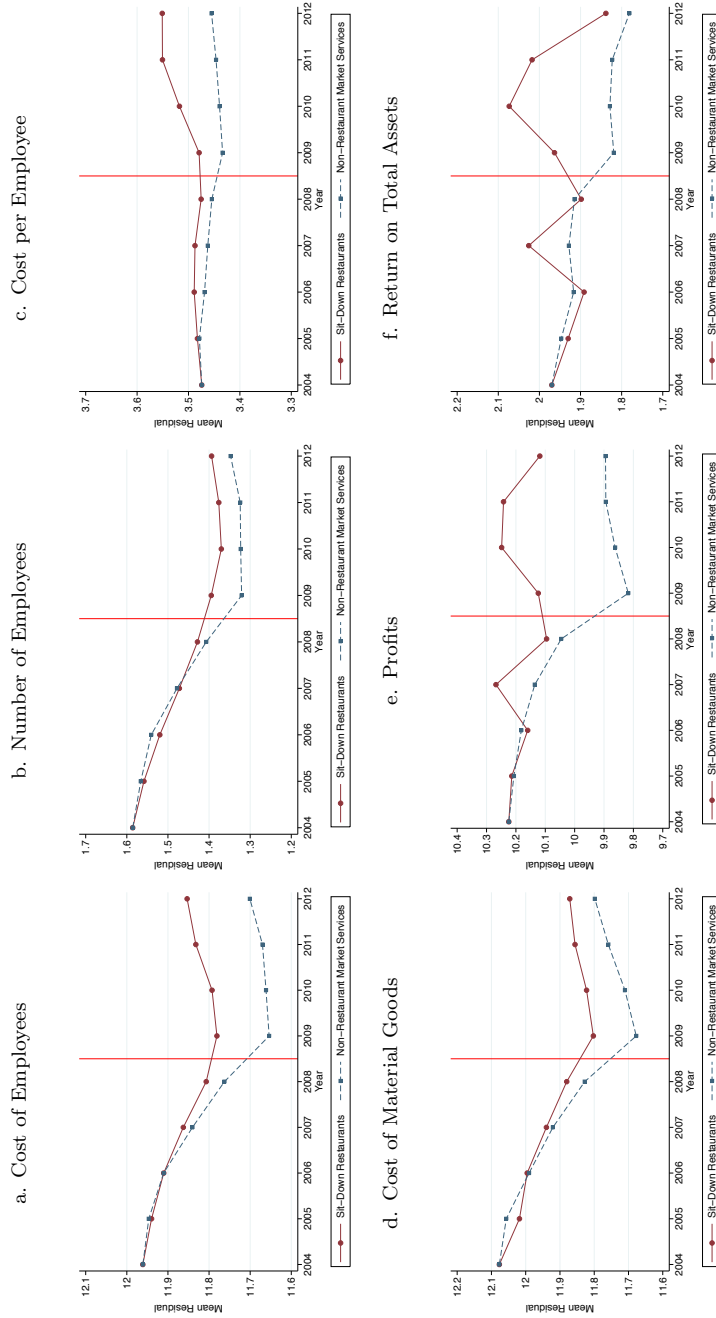


Figure A.5. : Dynamic Effects of the VAT Cut: Difference-in-differences using DFL Re-weighting

Note: The Figure plots standardized residual group-year means after re-weighting the group-by-year distributions to match the distribution of observable characteristics in the treatment group in 2008. First, we re-weight the group-by-year distribution, using the approach from Dinardo, Fortin and Lemieux (1996), within ten size bins based on assets crossed with ten size bins based on firm age and with the *département* of residence. Second, we run count weighted cross-sectional regressions for each year of the outcome variable on an indicator for treatment group, total assets, and indicators for firm age and *département* of residence. The residual group-year means are then standardized by subtracting the 2008 residual group mean and by adding back the 2008 residual pooled mean.



Figure A.6. : Dynamic effects on firm in Full Sample: Sit-Down Restaurants vs. Market Services

Note: The Figure shows event-time coefficients estimated from: $\log Y_{idt} = \sum_{\nu=-k}^q \eta_{\nu} \cdot \mathbb{1}\{i \in T\} \times \mathbb{1}\{t = \nu\} + \lambda_t + \omega_i + \epsilon_{idt}$, where k are leads and lags, where i indexes the individual firm, d indicates the *département* in which the firm is located, t indexes the year in which the outcome is measured. We include firm and year fixed effects and cluster standard errors by *département*. The treatment group includes sit-down restaurants, while the control group includes firms in non-restaurant market service sectors. The dashed lines represent 95 percent confidence intervals. The Figures consider the sample of firms with missing employment information. The dashed lines are 95 percent confidence intervals.

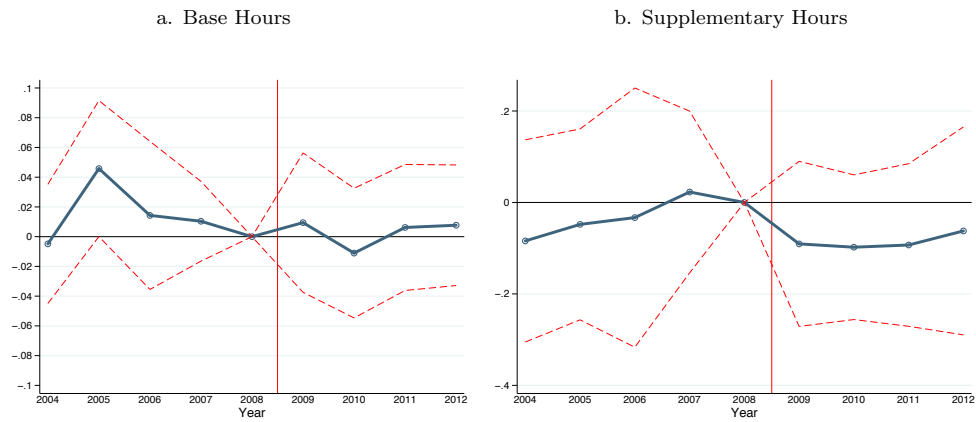


Figure A.7. : Hours Worked during Reference Week: Event-Time Estimates

Note: The Figure shows the dynamic effects of the VAT cut on Hours worked using the following specification: $\log h_{irt} = \gamma \cdot \mathbb{1}\{i \in T\} + \sum_{\nu=-k}^q \delta_{\nu} \cdot \mathbb{1}\{i \in T\} \times \mathbb{1}\{t = \nu\} + X_{irt} + \lambda_t + \omega_r + \epsilon_{irt}$, for worker i employed in region r in year t . the treatment group T includes all employees of sit-down restaurants, while the control group includes employees of non-restaurant market service sectors. We also include year fixed effects λ_t , region fixed effects ω_r , and employees' individual characteristics X_{irt} (age, gender, education, tenure, occupation, marital status, number of employed workers, number of unmarried children living in the household, establishment size, firm size, birth region, and quarter in which the worker was surveyed). Standard errors are clustered by region and 95 percent confidence intervals are displayed.

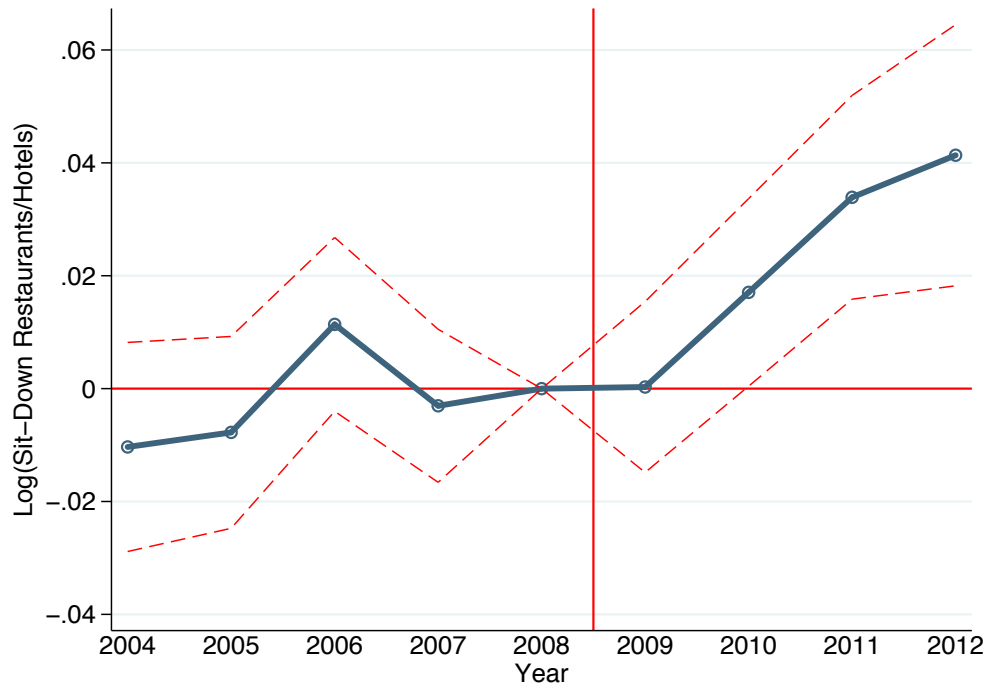


Figure A.8. : Effect of Hiring Subsidy Cuts on the Cost per Employee

Note: The figure shows the dynamic effect of the payroll subsidy cut when comparing sit-down restaurants to hotels using this specification: $\log Y_{idt} = \sum_{\nu=-k}^q \eta_{\nu} \cdot \mathbb{1}\{i \in T\} \times \mathbb{1}\{t = \nu\} + \lambda_t + \omega_i + \epsilon_{idt}$, where k are leads and lags, i indexes the individual firm, d indicates the *département* in which the firm is located, t indexes the year in which the outcome is measured. We include firm and year fixed effects and cluster standard errors by *département*. The dashed lines are 95 percent confidence intervals.