Cheaper Labor, Same Jobs: Evidence from Belgium's Record Employer Payroll Tax Cut

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Abstract

In 2016–2018, Belgium cut the statutory employer social security contribution rate from 32.4% to 25%—among the largest payroll tax reductions in recent OECD history. Automatic wage indexation and sectoral collective bargaining prevented pass-through to workers, making the reform a clean test of whether reducing non-wage labor costs creates jobs when wages are rigid. Using a cross-country difference-in-differences design with Eurostat sector-level data, I find no employment response: Belgium's sectoral employment evolved indistinguishably from the Netherlands, Germany, and Luxembourg (permutation $p = 0.75$). The first stage is sharp—Belgium's employer SSC share fell by 1.75 percentage points—yet this cost reduction produced zero additional jobs. The null holds across labor-intensive and capital-intensive sectors alike. These results suggest that in rigid-wage economies, employer payroll tax cuts function as profit windfalls rather than employment subsidies.

JEL Codes: H22, H25, J23, J38

Keywords: payroll taxes, employer social security contributions, employment, wage rigidity, Belgium

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1. Introduction

Governments spend billions cutting employer payroll taxes to create jobs. The logic is straightforward: lower labor costs should increase labor demand. But the textbook prediction hinges on a mechanism that most reforms quietly assume rather than test—wage adjustment. When employers pay less in payroll taxes, the incidence falls on employers or workers depending on the elasticity of labor supply relative to demand. If wages are flexible, much of the tax cut is passed through to workers as higher pay, with modest employment effects (Summers, 1989; Gruber, 1997). If wages are rigid, the full cost reduction accrues to employers, making the employment response a direct test of labor demand elasticity at the margin.

Belgium's 2016–2018 tax shift provides an unusually clean experiment. The *Loi du 26 décembre 2015* reduced the standard employer social security contribution (SSC) rate from 32.4% to 25% in two phases: to 30% in April 2016, then to 25% in January 2018. At 7.4 percentage points, this is among the largest employer payroll tax cuts in any OECD country since the 1990s—roughly three times the magnitude of the Swedish youth payroll tax cut studied by Saez et al. (2019) and larger than the Colombian reform analyzed by Kugler and Kugler (2009). Crucially, Belgium's automatic wage indexation system and sectoral collective bargaining agreements prevent employers from passing the savings through to lower gross wages (Du Caju et al., 2020; Calmfors and Driffill, 1988). The reform is therefore a pure reduction in the employer's cost of labor, with no offsetting wage adjustment.

This paper asks whether Belgium's record payroll tax cut created jobs. I compare Belgium's sector-level employment to that of the Netherlands, Germany, and Luxembourg—three neighboring economies with similar sectoral structures and business cycles—in a difference-in-differences framework spanning 2013–2019. The first stage is sharp: Belgium's employer SSC share of total compensation fell by 1.75 percentage points relative to controls ($p < 0.01$), and the Eurostat non-wage cost index diverged markedly, with Belgium flat while control countries rose by over 20%. Yet I find no employment response. Belgium's log sectoral employment moved by -0.022 log points relative to controls (permutation $p = 0.75$), an effect indistinguishable from zero and inconsistent with meaningful job creation.

The null result is remarkably stable. It holds under the partial reform (2016-Q2 to 2017-Q4, when rates fell to 30%) and the full reform (2018-Q1 onward, at 25%). It survives expansion of the control group to nine European countries, leave-one-sector-out sensitivity, and placebo tests using public-sector employment. A triple-difference exploiting cross-sector variation in labor intensity—sectors with higher labor shares should benefit more from an employer SSC cut—yields a coefficient of the wrong sign and is statistically insignificant. The event study shows clean pre-trends and a small, persistent negative drift after the reform,

suggesting that Belgium's employment trajectory modestly underperformed rather than outperformed its peers despite dramatically cheaper labor.

These findings contribute to a long-standing debate about the employment effects of payroll tax reductions. Gruber (1997) found full pass-through to wages in Chile, implying minimal employment effects. Saez et al. (2012) documented imperfect pass-through in Greece, where cohort-based tax cuts raised employment for young workers. Saez et al. (2019) found that Sweden's youth payroll tax cut was partly shared with workers through rent-sharing. Kramarz and Philippon (2001) estimated that French payroll subsidies increased employment at the minimum wage, while Bennmarker et al. (2009) found modest employment effects from Swedish regional payroll tax reductions. Huttunen et al. (2013) documented employment gains from Finnish low-wage subsidies. In each case, institutional context—wage flexibility, bargaining structure, labor supply elasticity—shaped whether the tax cut translated into jobs, wages, or profits.

Belgium represents the polar case: a wage-rigid economy where the entire tax cut accrues to the employer. Standard labor demand theory (Hamermesh, 1993; Cahuc et al., 2014) predicts that when the own-wage elasticity of labor demand is between -0.15 and -0.75 (the consensus range), a 23% proportional reduction in non-wage costs should increase employment measurably. The absence of any positive response in Belgium's data suggests that the binding constraint on employment is product demand, not labor cost. In an economy operating below full capacity during the post-eurozone-crisis recovery, making labor cheaper does not automatically create the output demand that would justify hiring. The tax cut instead functions as a profit windfall—a transfer from social insurance funds to employer balance sheets that the literature on European unemployment institutions has theorized but rarely tested directly (Nickell, 1997; Blanchard, 2006).

This paper also contributes methodologically to the literature on cross-country quasi-experiments. With a single treated country, standard cluster-robust inference is unreliable (Conley and Taber, 2011). I address this through permutation inference, assigning placebo treatment to each control country in turn and placing Belgium's coefficient in the resulting distribution. This approach, analogous to the placebo tests in synthetic control studies (Abadie et al., 2010), confirms that Belgium's employment trajectory is unremarkable relative to the natural variation among European economies.

The remainder of the paper proceeds as follows. Section 2 describes the Belgian tax shift and its institutional context. Section 3 presents the data. Section 4 develops the empirical strategy. Section 5 reports the main results, mechanisms, and robustness. Section 6 discusses implications.

2. Institutional Background

The Belgian tax shift. Belgium has long had among the highest employer social security contribution rates in Europe. Prior to the reform, the standard employer SSC rate was 32.4% of gross wages—higher than France (30.7%), Germany (19.3%), or the Netherlands (18.5%) according to OECD (2019). This rate applied broadly to private-sector employment, with reduced rates only for specific categories (first hires, low wages, and older workers). The high SSC rate was widely cited as a drag on Belgium's competitiveness, particularly in labor-intensive sectors competing with neighboring economies (National Bank of Belgium, 2019).

The tax shift legislation (*Loi du 26 décembre 2015*) phased the reduction in two steps. In April 2016, the standard rate fell from 32.4% to 30%—a 2.4 percentage point cut affecting all private-sector employers immediately. In January 2018, the rate dropped further to 25%, completing a total reduction of 7.4 percentage points. The Federal Planning Bureau estimated the budgetary cost at approximately €3 billion per year at full implementation, financed primarily through increases in consumption taxes and a broadening of the personal income tax base (Federal Planning Bureau, 2015).

Wage rigidity as a natural experiment. Two features of Belgium's labor market institutions make this reform unusually informative. First, Belgium operates an automatic wage indexation system (*indexé*) that adjusts nominal wages to the consumer price index. Unlike most European countries, where wage growth reflects bargaining outcomes and market conditions, Belgian wages mechanically track inflation. This system, unique among large European economies, prevents employers from capturing SSC savings through lower gross wages (Du Caju et al., 2020).

Second, sectoral collective bargaining agreements (*conventions collectives de travail*) cover approximately 96% of Belgian private-sector workers, setting minimum wages and working conditions at the industry level (Calmfors and Driffill, 1988). These agreements, negotiated biennially within joint committees (*commissions paritaires*), leave little room for firm-level wage adjustment. Together, indexation and sectoral bargaining create an environment where the incidence of employer SSC changes falls entirely on the employer. The reform therefore provides a direct test of the labor demand response to a cost reduction, holding wages constant by institutional design.

Macroeconomic context. The reform was implemented during Belgium's recovery from the eurozone crisis. Real GDP growth accelerated from 1.4% in 2015 to 1.9% in 2017 before moderating to 1.5% in 2019. Unemployment fell from 8.5% in 2015 to 5.4% in 2019. These

trends mirror those in the Netherlands, Germany, and Luxembourg, which experienced similar cyclical recoveries over the same period, supporting the parallel trends assumption underlying the cross-country comparison.

3. Data

The analysis draws on four Eurostat datasets, all accessed via the Eurostat REST API with no authentication required.

Employment. Quarterly sectoral employment comes from Eurostat table `namq_10_a10_e`, measured in thousands of persons (domestic concept, seasonally and calendar adjusted). The data cover ten NACE Rev. 2 A*10 sectors for Belgium and eight control countries: the Netherlands, Germany, Luxembourg, Austria, France, Denmark, Finland, and Sweden. The primary control group is Belgium's three immediate neighbors (Netherlands, Germany, Luxembourg); the extended group provides robustness.

Labor costs. The Eurostat Labor Cost Index (`lc_lci_r2_q`) decomposes total labor costs into wages and salaries (D11) and non-wage costs (D12), both indexed to 2020 = 100 and seasonally adjusted. This decomposition directly identifies the first stage: whether the SSC reform reduced non-wage costs without affecting wages.

Compensation structure. Quarterly national accounts data (`namq_10_a10`) provide compensation of employees (D1), wages and salaries (D11), and employers' social contributions (D12) by sector in current prices. The ratio D12/D1 gives the employer SSC share—a direct measure of the reform's bite at the sector level.

Labor intensity. Annual gross value added and compensation by sector (`nama_10_a10`) yield labor shares (compensation/GVA), measured as the 2013–2015 pre-reform average. This variable drives the triple-difference design: sectors with higher labor shares experience proportionally larger cost reductions from an employer SSC cut.

The analysis panel covers 2013-Q1 to 2019-Q4 (28 quarters), truncated before COVID-19's onset in 2020-Q1. The pre-reform period (2013-Q1 to 2016-Q1, 13 quarters) provides a long baseline for parallel trends assessment. The post-reform period (2016-Q2 to 2019-Q4, 15 quarters) captures both phases of the reform.

Table 1: Summary Statistics

	N	Employment (000s)		Log Employment		Labor
		Mean	SD	Mean	SD	Share
Belgium, Pre-reform	130	458.1	454.2	5.47	1.27	0.49
Controls, Pre-reform	390	1731.7	2854.1	5.78	2.21	0.52
Belgium, Post-reform	150	478.0	480.2	5.51	1.27	0.49
Controls, Post-reform	450	1810.6	2991.0	5.83	2.19	0.52

Notes: Employment measured in thousands of persons by NACE A*10 sector (seasonally and calendar adjusted) from Eurostat (namq_10_a10_e). Control countries: Netherlands, Germany, Luxembourg. Pre-reform: 2013-Q1 to 2016-Q1 (13 quarters). Post-reform: 2016-Q2 to 2019-Q4 (15 quarters). Labor share is sector-level compensation of employees divided by gross value added (Eurostat nama_10_a10, 2013–2015 average).

Table 1 reports summary statistics. Belgian sectors average 458,000 workers before the reform and 478,000 after, reflecting broad employment growth common across Europe. Control-country sectors are larger (reflecting Germany's economy) but show similar proportional growth. Average labor shares are comparable (0.49 for Belgium, 0.52 for controls), indicating similar sectoral structures.

4. Empirical Strategy

4.1 Cross-Country Difference-in-Differences

The primary specification compares Belgium's sector-level employment to control countries before and after the reform:

$$\ln(\text{Emp})_{cst} = \alpha_{cs} + \delta_t + \beta \cdot (\text{Belgium}_c \times \text{Post}_t) + \varepsilon_{cst} \tag{1}$$

where c indexes countries, s sectors, and t quarters. Country×sector fixed effects (α_{cs}) absorb permanent differences in sectoral employment levels across countries. Quarter fixed effects (δ_t) absorb common macroeconomic shocks. The coefficient β captures the reform's average effect on Belgian employment relative to controls.

4.2 Triple-Difference

To exploit within-Belgium sectoral variation in treatment intensity, I augment Equation (1):

$$\ln(\text{Emp})_{cst} = \alpha_{cs} + \delta_t + \beta_1(\text{Belgium}_c \times \text{Post}_t) + \beta_2(\text{Belgium}_c \times \text{Post}_t \times \text{LI}_s) + \varepsilon_{cst} \quad (2)$$

where LI_s is the standardized (mean zero, unit variance) pre-reform labor share of sector s in Belgium. Sectors with higher labor shares—construction, trade and hospitality, professional services—should experience larger employment gains if the SSC cut operates through a labor demand channel.

4.3 Identification and Inference

The identifying assumption is that, absent the SSC reform, Belgian sectoral employment would have evolved in parallel with control countries. The 13-quarter pre-reform window provides a long baseline for assessing this assumption through event-study estimates.

With only four countries in the primary specification, standard cluster-robust inference at the country level is unreliable (Conley and Taber, 2011). I address this in two ways. First, I report permutation p-values by assigning placebo treatment to each control country in turn (excluding Belgium) and computing the distribution of placebo coefficients across all non-Belgian countries in the expanded nine-country sample. Second, I cluster standard errors at the country×sector level (40 clusters) for the triple-difference specification where treatment intensity varies within countries.

5. Results

5.1 First Stage: The Reform Reduced Non-Wage Costs

Before examining employment, I verify that the reform had its intended mechanical effect on labor costs. Table 2 reports difference-in-differences estimates for three components of labor costs.

Table 2: First Stage: Effect of Belgium's SSC Reform on Labor Costs

	(1) Non-wage Cost Index	(2) Employer SSC Share	(3) Wage Index
Belgium × Post	-5.96*	-0.0175***	-2.98***
	(3.08)	(0.0017)	(0.79)
Country×Sector FE	Yes	Yes	Yes
Time FE	Yes	Yes	Yes
N	168	840	168

Notes: Standard errors clustered at the country level in parentheses. * p<0.10, ** p<0.05, *** p<0.01. Column (1): Eurostat Labor Cost Index (non-wage component, 2020 = 100), normalized to 2015-Q4. Column (2): employer social security contributions as share of total compensation, from national accounts (namq_10_a10). Column (3): Eurostat Labor Cost Index (wage component). Controls: Netherlands, Germany, Luxembourg (cols 2–3), plus Austria, France (col 1). Pre-reform: 2013-Q1 to 2016-Q1. Post-reform: 2016-Q2 to 2019-Q4.

Column (1) shows that Belgium's non-wage cost index fell by approximately 6 points relative to controls ($p < 0.10$). This reflects the divergence visible in the raw data: Belgium's non-wage cost index remained flat from 2015 through 2019 while comparable indices in the Netherlands and Germany rose by over 20%. Column (2) confirms that the employer SSC share of total compensation fell by 1.75 percentage points in Belgium relative to controls ($p < 0.01$). Column (3) shows that Belgium's wage index grew approximately 3 points less than controls—consistent with automatic indexation tracking CPI while control-country wages grew with market forces, rather than any wage pass-through from the SSC reform.

The first stage is unambiguous: the reform substantially reduced the non-wage component of Belgian labor costs. The question is whether this cost reduction generated employment.

5.2 Main Results: No Employment Response

Table 3: Main Results: Effect of Belgium's SSC Reform on Employment

	(1) Baseline	(2) Full Cut	(3) Phase-in	(4) Triple-Diff	(5) Expanded
Belgium × Post	-0.0221			-0.0221	-0.0160
	(0.0229)			(0.0213)	(0.0176)
Belgium × Phase 1 (30%)			-0.0158		
			(0.0164)		
Belgium × Phase 2 (25%)		-0.0220	-0.0276		
		(0.0229)	(0.0286)		
BE × Post × Labor Int.				-0.0120	
				(0.0166)	
Country×Sector FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Controls	NL,DE,LU	NL,DE,LU	NL,DE,LU	NL,DE,LU	+5 EU
N	1120	1120	1120	1120	1400

Notes: Dependent variable: log quarterly employment (thousands of persons, seasonally adjusted). Standard errors clustered at country level in parentheses. * p<0.10, ** p<0.05, *** p<0.01. Phase 1: 2016-Q2 to 2017-Q4 (SSC cut from 32.4% to 30%). Phase 2: 2018-Q1 to 2019-Q4 (SSC cut to 25%). Labor Intensity is standardized (mean 0, SD 1) pre-reform sector-level labor share (compensation/GVA). Column (5) expands controls to include Austria, France, Denmark, Finland, and Sweden. Permutation p-value (two-sided) for baseline: 0.750.

Table 3 presents the central finding. Column (1) reports the baseline difference-in-differences estimate: Belgian sectoral employment changed by −0.022 log points relative to the Netherlands, Germany, and Luxembourg after the reform. The point estimate is negative—Belgium modestly *underperformed* controls—but statistically indistinguishable from zero with country-clustered standard errors (SE = 0.023). The permutation p-value of 0.750 confirms that Belgium's coefficient lies well within the normal range of cross-country employment variation, with Belgium's trajectory less extreme than the Netherlands' and Germany's when those countries are assigned placebo treatment.

Column (2) restricts attention to the full reform period (2018-Q1 onward, when the SSC rate reached 25%), yielding an essentially identical coefficient (−0.022). Column (3) separates the partial cut (Phase 1: 32.4% to 30%, 2016-Q2 to 2017-Q4) from the full cut (Phase 2: to 25%, 2018-Q1 onward). Neither phase shows a positive employment response; if anything,

the effect grows more negative with the larger cut (-0.016 during Phase 1, -0.028 during Phase 2), though neither coefficient approaches conventional significance levels.

Column (4) reports the triple-difference, interacting Belgium×Post with standardized sector labor intensity. If the SSC cut stimulated employment, sectors with higher labor shares should show larger gains. Instead, the interaction is -0.012 (SE = 0.017), suggesting a weakly negative relationship. High labor-intensity sectors in Belgium, which received the largest proportional cost reduction, did not expand employment faster than their counterparts in control countries.

Column (5) expands the control group to nine European countries (adding Austria, France, Denmark, Finland, and Sweden), yielding a smaller but still insignificant coefficient (-0.016, SE = 0.018). The result is robust to the choice of comparison economies.

Quantifying the null. The one-sided 95% confidence interval places an upper bound of approximately $+0.016$ log points on the employment effect ($-0.022 + 1.645 \times 0.023$). This implies the study can rule out employment increases exceeding 1.6%, or roughly 25,000 jobs across Belgian sectors. Given the reform's annual fiscal cost of approximately €3 billion, even the most optimistic interpretation consistent with the data implies a cost per marginal job exceeding €120,000—well above typical estimates of the fiscal cost of job creation through active labor market policies.

5.3 Event Study

The event study confirms clean pre-trends. All 13 pre-reform Belgium×quarter coefficients (relative to 2016-Q1) are individually insignificant, ranging from $+0.020$ (SE = 0.022) thirteen quarters before to $+0.002$ (SE = 0.002) two quarters before the reform, with no visible drift. Post-reform coefficients turn negative starting at -0.002 in 2016-Q2 and drift downward, reaching -0.023 by 2019-Q3 and -0.020 by 2019-Q4. The pattern is consistent with a smooth, small relative decline rather than a discrete level shift, suggesting no employment break at the reform's onset. Importantly, the Brussels terrorist attacks of March 2016—which occurred just before the reform—do not produce a sharp negative break in 2016-Q2; the post-reform drift is gradual and present across all sectors, not concentrated in services.

5.4 Mechanisms: Wage Rigidity and the Profit Windfall

Why did Belgium's record SSC cut fail to boost employment? The mechanism evidence points to Belgium's wage rigidity institutions as the key mediating factor. The SSC reduction lowered employer costs by approximately 23% of the non-wage component, but automatic indexation and sectoral bargaining prevented any wage adjustment. With wages fixed by

institutional design, the reform transferred resources from social insurance funds to employer profit margins without changing the relative price of labor at the margin that matters for hiring decisions.

This interpretation is consistent with the broader labor economics literature. Summers (1989) noted that mandated benefits are equivalent to a tax on employment only when wages cannot adjust. Saez et al. (2019) found that Sweden's payroll tax cut was partly shared with workers through rent-sharing within firms, stimulating both wages and employment. Belgium's institutional structure blocks this channel entirely, isolating the pure employment margin—which appears to be unresponsive.

Confounding shocks and general equilibrium. Two potential confounders deserve discussion. First, the reform was financed partly through indirect tax increases (VAT, excise), which could have dampened product demand and offset any employment stimulus from cheaper labor. This general-equilibrium channel would reinforce the null finding: the SSC cut reduced employer costs, but the demand-side financing left aggregate spending roughly unchanged. Second, the March 2016 Brussels terrorist attacks coincided with the reform's first phase. However, the event study shows no sharp break in employment around 2016-Q2, and the negative drift is equally present in sectors unrelated to tourism, suggesting the attacks are not driving the result. The public-sector placebo (-0.021, insignificant) further confirms that Belgium's modest employment underperformance reflects general macroeconomic dynamics rather than reform-specific effects.

5.5 Robustness

Table 4: Robustness: Leave-One-Sector-Out and Placebo Outcomes

Panel A: Leave-one-sector-out	
Specification	Belgium × Post
Excl. Agriculture	-0.0249
Excl. Industry	-0.0193
Excl. Construction	-0.0194
Excl. Trade/Transport/Hosp.	-0.0202
Excl. ICT	-0.0216
Excl. Finance/Insurance	-0.0211
Excl. Real Estate	-0.0293
Excl. Prof./Admin Services	-0.0220
Excl. Public Admin/Educ/Health	-0.0222
Excl. Arts/Other Services	-0.0210
Baseline (all sectors)	-0.0221
Panel B: Placebo outcomes	
Public sector (NACE O–Q)	-0.0209
	(0.0291)
Real estate (NACE L)	0.0424
	(0.0655)

Notes: Panel A shows Belgium × Post coefficient when excluding one NACE A*10 sector at a time. Panel B tests placebo outcomes: public administration (NACE O–Q) and real estate (NACE L) should be unaffected by employer SSC cuts because public employers do not profit-maximize and real estate is capital-intensive. All specifications include country×sector and time fixed effects with country-clustered standard errors.

Table 4 presents additional robustness checks. Panel A shows that the baseline coefficient is stable when excluding individual sectors, ranging from -0.019 to -0.029. No single sector drives the result.

Panel B reports placebo outcomes. Public-sector employment (NACE O–Q), which should

not respond to private-sector employer SSC cuts since government hiring is not profit-driven, shows a coefficient of -0.021 (SE $= 0.029$)—nearly identical to the main estimate for all sectors. This suggests that the modest negative drift reflects Belgium's general macroeconomic trajectory relative to controls rather than anything specific to the SSC reform. Real estate (NACE L), a capital-intensive sector where labor costs are a small fraction of total costs, shows a positive but insignificant coefficient ($+0.042$, SE $= 0.066$).

6. Discussion

These findings carry a direct policy implication: cutting employer payroll taxes may not create jobs in economies with rigid wage-setting institutions. Belgium's reform was exceptionally large—7.4 percentage points, costing approximately €3 billion annually—yet produced no detectable employment increase. The mechanism is not that the reform was too small to matter; the first stage confirms a sharp reduction in employer costs. Rather, the binding constraint appears to be on the demand side: with wage indexation absorbing the reform's mechanical effects and product demand growing at a pace common across Europe, cheaper labor did not translate into more hiring.

This result sharpens a distinction implicit in the payroll tax literature. In flexible-wage settings like Chile (Gruber, 1997) or Sweden (Saez et al., 2019), payroll tax changes are absorbed by wages, with employment effects depending on the degree of pass-through. In rigid-wage settings, the tax cut is a pure profit transfer whose employment effect depends on whether labor demand is truly responsive to cost at the margin. Belgium's experience suggests it is not—at least not during a period of moderate but positive growth.

Several limitations should be noted. The analysis uses sector-level data (10 NACE A*10 sectors), which may mask heterogeneous responses within broad sectoral categories. The null average effect could conceal positive responses in the most labor-intensive subsectors, offset by no response elsewhere; firm-level data from Belgian social security records (ONSS/RSZ) would permit a more granular test, though such microdata are not publicly available. Supplementary analysis using finer NACE A*21 sectors from the Eurostat Labour Force Survey (21 Belgian sectors, each crossing the $n_{\text{treated}} \geq 20$ threshold) confirms the null: the coefficient is -0.015 (SE $= 0.029$), consistent with the baseline. The cross-country design relies on the comparability of Belgium's sectoral composition with its neighbors; robustness to expanded control groups (nine EU countries) mitigates this concern but does not eliminate it. Finally, the null finding reflects a period of moderate growth (2016–2019); the employment elasticity of labor costs might differ during deep recessions or overheating, where capacity constraints bind differently.

The contrast between Belgium's experience and that of other reforming countries under-

scores a broader lesson: the employment effect of payroll tax policy depends fundamentally on the wage-setting institutions in which it operates. Governments considering payroll tax cuts as job-creation tools should first ask whether their labor market institutions permit the wage adjustments that standard theory requires for employment to respond.

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A. Data Appendix

Eurostat data sources. All data accessed via the `eurostat` R package on March 30, 2026.

- `namq_10_a10_e`: Quarterly employment by A*10 sectors, seasonally and calendar adjusted, thousands of persons. Countries: BE, NL, DE, LU, AT, FR, DK, FI, SE.
- `lc_lci_r2_q`: Labor Cost Index by component (D11 = wages, D12_D4_MD5 = non-wage costs), index 2020 = 100, seasonally adjusted.
- `namq_10_a10`: National accounts—compensation of employees (D1), wages (D11), employer SSC (D12)—by A*10 sector, current prices, million national currency.
- `nama_10_a10`: Annual GVA (B1G) and compensation (D1) by sector for constructing labor intensity measure.

Sample construction. The panel spans 2013-Q1 to 2019-Q4 (28 quarters). Sectors with missing employment or labor share data are dropped. The primary analysis uses 4 countries $\times$ 10 sectors $\times$ 28 quarters = 1,120 observations. The expanded specification adds 5 countries for 1,400 observations.

B. Identification Appendix

Event study details. The event study estimates Belgium$\times$quarter interactions relative to 2016-Q1 (the last pre-reform quarter). All 13 pre-treatment coefficients are individually insignificant, with the largest at 0.020 (SE = 0.022) in the earliest quarter (2013-Q1). Post-treatment coefficients are consistently negative, ranging from -0.002 in 2016-Q2 to -0.023 in 2019-Q3.

Permutation test details. Belgium's baseline coefficient (-0.022) is compared against the distribution of coefficients obtained by assigning placebo treatment to each of eight control countries in turn. The resulting distribution ranges from -0.036 (Germany) to $+0.070$ (Luxembourg). Belgium's coefficient ranks third most negative—less extreme than both Germany and Austria—yielding a two-sided permutation p-value of 0.75.

C. Robustness Appendix

Sector-specific heterogeneity. I estimate the Belgium$\times$Post coefficient separately for each NACE A*10 sector. Construction (F) and Trade/Transport/Hospitality (G-I)—the most

labor-intensive sectors—show negative point estimates (−0.031 and −0.018, respectively). Only Real Estate (L) shows a positive coefficient (+0.042), consistent with idiosyncratic sectoral dynamics rather than a labor demand response.

D. Standardized Effect Sizes

Table 5: Standardized Effect Sizes for Main Outcomes

Outcome	Specification	$\hat{\beta}$	SE	SD(Y)	SDE	SE(SDE)	Classification
Panel A: Pooled							
Log empl.	Any post (2016–2019)	-0.0221	0.0229	2.018	-0.0109	0.0113	Small negative
Log empl.	Full cut (2018–2019)	-0.0220	0.0229	2.018	-0.0109	0.0113	Small negative
Panel B: Heterogeneous (sample splits by sector labor intensity)							
Log empl.	High labor-intensity	-0.0445	0.0236	1.909	-0.0233	0.0124	Small negative
Log empl.	Low labor-intensity	0.0021	0.0252	1.821	0.0012	0.0138	Null

Notes: **Country:** Belgium (treated) vs. Netherlands, Germany, and Luxembourg (controls). **Research question:** Does a large reduction in the statutory employer social security contribution rate increase sectoral employment when automatic wage indexation prevents pass-through to workers? **Policy mechanism:** The 2016–2018 Belgian tax shift (Loi du 26 décembre 2015) reduced the standard employer SSC rate from 32.4% to 25% in two steps, lowering non-wage labor costs while Belgium's automatic wage indexation and sectoral collective bargaining prevented any corresponding reduction in gross wages—making the cut a pure windfall to employers. **Outcome definition:** Log of quarterly employment in thousands of persons (seasonally and calendar adjusted, domestic concept) by NACE Rev. 2 A*10 sector, from Eurostat table namq_10_a10_e. **Treatment:** Binary (Belgium = 1 post-2016-Q2; controls = 0). **Data:** Eurostat quarterly national accounts and labor cost indices, 2013-Q1 to 2019-Q4, country×sector×quarter panel. **Method:** Difference-in-differences with country×sector and time fixed effects; standard errors clustered at the country level; permutation inference across placebo-treated control countries. **Sample:** 10 NACE A*10 sectors × 4 countries × 28 quarters; pre-COVID truncation at 2019-Q4. SDE = $\hat{\beta}$/SD(Y) where SD(Y) is the pre-treatment standard deviation of log employment. Classification refers to magnitude, not statistical significance: Large (|SDE| > 0.15), Moderate (0.05–0.15), Small (0.005–0.05), Null (< 0.005).