

The Effect of the Swedish Payroll Tax Cut for Youths on Firm Profitability

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Abstract

Payroll taxes in Sweden were reduced substantially for people ages 26 years or younger on July 1, 2007. The objective of this tax cut was to lower youth unemployment. The question of how gains from payroll taxes are distributed between workers and owners of firms has been the focus of considerable theoretical and empirical attention. This paper examines the impact of the Swedish reform on firm profits

using individual-level and firm-level microdata. Previous investigations into the effects of this particular reform have focused entirely on the effects on employment and wages, or have been limited to the retail sector. This paper finds that the reform was not associated with a general increase in firm profitability, but that there is some evidence of a positive effect on profits in the retail and wholesale sector.

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The Effect of the Swedish Payroll Tax Cut for Youths on Firm Profitability

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Introduction

In a partial equilibrium model, the incidence of payroll tax is shown to depend on the elasticity of labor supply relative to the elasticity of labor demand. Hiring workers is a costly prospect for firms: employees must be recruited, trained, and monitored, each bearing a cost for employers. Moreover, with finite costs, employers may choose to simply increase the wages of currently employed workers, hoping to reap benefits such as increased morale, improved productivity, or lowered risk of losing experienced employees (Yellen 1984).

The prospect of hiring young workers—who may lack experience and the accumulation of on-the-job know-how—may be particularly costly. Informational asymmetries between hiring firms and young workers just entering the job market exacerbate these problems: young workers are often unproven and represent a risk to employers. As new entrants to the labor market, young workers may also lack sufficient bargaining power through channels such as trade unions. It is unsurprising then that youth unemployment tends to be the most sensitive to the business cycle as employers can more easily shed the jobs of the newly hired or forego hiring young employees altogether (Scarpetta et al 2010).

The persistence of youth unemployment has caused several analysts and policy makers to turn to reductions in payroll taxes as a targeted policy to address these high levels of joblessness and entice firms to demand more young workers. This was the given motivation for a payroll tax reduction for Sweden's young workers. This reform, enacted in 2007, has since drawn considerable attention (such as Egebark and Kaunitz, 2014; Skedinger, 2013). While the employment effects have been somewhat positive (discussed below), they have been small, perhaps a sign of the cuts not being passed on to workers, but more directly affecting firms' bottom line. The current paper builds on these efforts, investigating if the policy is related to increases in firm profitability, an output that has been largely unexplored beyond input-cost channels. The degree to which Swedish payroll tax cuts are passed on to employers in the form of higher profits can be useful information for policy makers, particularly in countries with a similar institutional environment.

Program description

Unemployment for the young in Sweden has been high both in absolute terms and relative to older workers since the severe recession of 1991-93, although much of youth unemployment is attributable to students looking to enter the labor market. In the mid-2000s, high youth unemployment became a central political issue, prompting the first Reinfeldt government to introduce a payroll tax cut for youths. Payroll taxes in Sweden were hence reduced substantially for young people on July 1, 2007.

Employers in Sweden must pay payroll taxes (“arbetsgivaravgifter”) for every employee. These taxes are proportional to the wage, with the standard rate being 31.42%. The standard rate was cut by 1 percentage point on January 1, 2009, hence the standard rate at the time of the payroll tax cut for youths was 32.42%. Payroll taxes can further be decomposed into a number of subcomponents (see table 3).

On July 1, 2007, the payroll tax rate was reduced from 32.42 percent to 21.32 percent for all individuals who at the start of the year were at least 18 years old but had not yet turned 25. The reform was intended to lower the cost to employers of hiring young workers.

On January 1, 2009, the payroll tax for young workers was cut further, from 21.32 to 15.49 percent (taking into account the general payroll tax cut that was enacted at the same time). Furthermore, the maximum age of eligibility was increased from 25 to 26 years and the lower eligibility limit was removed completely.

From May 2015 the payroll tax cut for workers born in 1989 was abolished. From August 2015 payroll taxes for all other youths (born in 1990 onwards) were increased to 25.46 percent, i.e. close to their pre-reform level.

Payroll taxes are a substantial source of revenue for the Swedish central government as well as for the public sector overall. In 2013, payroll taxes are estimated to have provided the Swedish public sector with 409 billion SEK, equivalent to 10.6 percent of GDP or a quarter of public sector tax revenues (Swedish Tax Authority, 2014).

Hence, reducing payroll taxes has substantial implications for tax revenue. In 2014, the long term budgetary impact of the payroll tax reduction for young people was estimated at approximately 19 billion SEK (2.4 billion USD) (Government budget statement for 2015, 2014).

Theoretical background & previous research

The Swedish use of general but age-targeted payroll tax cuts to increase employment among youths in particular is novel. However, using targeted payroll tax cuts as a means of impacting the employment of other groups, such as inhabitants in a certain area, is not new. Therefore, there exists a research literature on the topic.

Many policy makers have long argued in favor of using labor subsidies and targeted tax policy to increase employment opportunities for specific groups of workers. In theory, a reduction in payroll taxes can lower wage costs and thus boost the demand for labor. However, observed employment effects have been limited, with most resulting changes coming through wage cost channels or in offsetting rising input costs (see, for example, Bohm and Lind 1993). Thus, employment effects are largely reliant on underlying factors—such the incidence of the tax (Korkeamäki 2011), the substitution effect between labor and capital (Bohm and Lind 1993), and the elasticities of employment supply and demand—requiring careful analysis of underlying, heterogeneous characteristics.

Early studies approached such tax policy implications using cross-sectional evidence, and were hence unable to analyze heterogeneous effects on subgroups of workers and firms—as in Bohm and Lind (1993). The literature has since consolidated around quasi-experimental and differences-in-differences approaches to isolate employment and input-cost effects. In the United States, Anderson and Meyer (1997) (2000) find differentiated employment effects by the type of firms, even in the absence of a general employment effect. Similarly, Murphy (2007) studies the varied effects of tax changes, finding little overall employment effect but rather wage effects over heterogeneous employment groups. Huttunen, Pirttilä, Uusitalo (2013) study the Finnish payroll tax subsidy scheme targeted at employers for low-wage workers, finding no overall impact on employment among the targeted group, but rather a small effect on hours worked. Crépon and Desplatz (2002) provide a notable exception, finding a large employment effect of subsidies for low-wage workers in France. Cahuc et al. (2014) also find significant

positive employment effects from temporary hiring credits for small firms targeted at low-wage workers in France.

Recent efforts in Sweden to utilize targeted tax reductions have also received attention. Bennmarker, Mellander, and Ockert (2009), for instance, note that a large 2002 cut in the payroll tax in northern Sweden resulted in small employment effects, but rather instead increased the size of the average wage bill. Månsson and Quoreshi (2012) find that regional payroll tax cuts in Sweden initially increase firm profitability, but that this effect dissipates over time as wage increases absorb the profit increase.

As discussed in the previous section, in recent years several studies have directly estimated the impact on employment of the Swedish payroll tax cuts for youths. Egebark and Kaunitz (2014) find that the effect of the cut was an increase in employment among the young of “around 2.7 percent.”

This estimate is considered to be on the high end by the authors, as it does not take into account possible crowding out effects on workers who are not eligible for a payroll tax cut. Given the revenue loss induced by the program, the estimates of Egebark and Kaunitz imply that the government forgoes roughly 150,000 to 240,000 USD in revenue per additional job created. Skedinger (2013) examines the impact of the reform on the retail sector, a significant employer of young people. He finds small positive effects on job creation, although he estimates that the effect is somewhat larger for workers with very low wages. Both Skedinger and Egebark and Kaunitz use a difference-in-differences methodology to arrive at their conclusions, comparing adjacent “treated” and “non-treated” age groups.

A key issue besides employment effects is whether the payroll tax cut has increased wages and/or profits. If the cut in payroll taxes is passed on to employees through higher wages, this can in turn dampen the impact on employment as the cost of labor is increased. Alternatively, the gains from the tax cut can benefit firms directly through higher profits. A profit increase also leaves open the possibility that unemployed workers indirectly benefit through higher demand for labor. In the longer term, it is also possible that the profit increase leads to intensified competition through new entry into the sectors that particularly benefit from the payroll tax cut.

Egebark and Kaunitz find some (albeit weak) evidence for a positive effect on wages. Skedinger also finds evidence for a limited positive wage effect. With regard to the effect on firm profits, Skedinger estimates a small positive effect on the profitability of larger firms in the retail sector. This, however, leaves the question of the general impact of the reform on firm profitability unanswered. This is the knowledge gap that this paper will attempt to address.

Method & model design

While previous research on the Swedish payroll tax cuts for youth makes use of a difference-in-differences approach for estimating the impact of the reform on employment and wages, this methodology is not applicable to the examination of the effect on firm profits. As discussed in Skedinger (2013), there are few or no “untreated” large or even medium-sized firms in terms of their employment of young workers.

However, there exists a difference in “treatment intensity”, in the sense that different firms employ different numbers of young workers in relation to their total workforce. Skedinger (2013) uses this variation in the employment of youths to examine the impact of the Swedish payroll tax cut on firm profits in the retail sector using a linear panel model with controls, while using pre-reform employment of youths as an instrument. This instrument-based linear model is not as strong as the difference-in-differences approach in terms of our ability to interpret results causally. Still, it can answer the question of whether there exists a statistical relationship between firm profitability and the interaction of the reform period and the pre-reform share of young employees in firms or not.

This paper takes a similar approach to Skedinger (2013) with some modifications. In designing the primary model, these were our primary considerations:

Relevant population

The first problem that needs to be managed is the choice of which firms to examine. For our purposes (examining the reform effects on profits) there are two primary firm characteristic requirements that need to be met:

1: Data availability and reliability

We limit our attention to private sector firms with available accounting data with at least a turnover of 100,000 SEK per year (approx. 12,000 USD). This threshold is used to ensure that we examine only active firms, as well as to improve the reliability of our profitability measure (operating margin). Furthermore, data must be available for these firms regarding the share of young employees and profitability.

2: Reform coverage

The firm must be present in the data before the reform was implemented, and should continue for at least one year after the reform was introduced. This requirement is necessary to enable the use of firm-level pre-reform characteristics in our model.

Measure of profitability

Our profit measure is the operating margin, i.e., profits before corporate taxes (note here that payroll taxes are accounted for as wage-related expenses) and financial items, measured as a share of turnover. This measure is used as it has good data availability and is commonly used in research. Note that if the reform alters firm behavior, it is entirely possible that this will increase aggregate profits, but not the operating margin (as net turnover might increase as much or more as profit as a result of expansion). Previously cited research indicates limited effects on hiring, however, and we thus assume that behavioral effects are likely to be limited (Egebark and Kaunitz, 2014 & Skedinger, 2013).

Measure of treatment

We use the share of young employees in each firm before the reform interacted with a reform period dummy as our measure of treatment, i.e. pre-reform youth employment is used as an instrument for actual youth employment. This is an intention-to-treat (ITT) approach. The alternative approach would be to examine the actual share of young employees in each firm each year.

Both approaches have pros and cons, with intention-to-treat having lower precision in measuring actual treatment intensity, while using the actual year-to-year share of young employees entails potential problems with endogeneity. For instance, firms that experience success during the examined period can potentially increase their youth share with the causality going from increased profitability to increased youth share with increased new hiring as the

causal mechanism, and merely controlling for the pre-reform youth share would not solve this problem.

As we believe that the ITT approach is the more conservative of the two, we apply this measure of treatment intensity in our main model. However, we also estimate a model using actual youth shares during the reform period as our treatment variable. This alternate approach is partly motivated by the fact that our firm population differs significantly in its properties from that used by Skedinger (2013), where the firm population examined consisted primarily of larger firms. As our ITT measure only correlates moderately with actual firm youth shares during the reform period for smaller firms (corr=0.46 for small firms, corr=0.90 for large firms) there is a risk that the reduced precision of our treatment measure impacts the results. It is hence useful to know to which degree the results of the two treatment measurements differ.

Choice of controls

As our random effects model will take into account between-firm variation there is a need to explicitly include differing firm characteristics in our model. We have settled on the following control variables, using Skedinger (2013) as a starting point and adding a pre-reform firm size variable on account of our more heterogeneous firm population:

- The pre-reform share of young employees.
- Pre-reform firm size.
- Pre-reform average educational level of firm employees (a measure of human capital intensity).
- Sectoral dummies according to the SNI 2002 sectoral classification system.
- Regional dummies for Sweden's 21 major regions ("län").
- Year dummies for each year.
- A dummy for the reform period.

This gives us the following main panel model specification, with δ denoting the vector of control and dummy variables and Y_{jt} is our firm profitability measure at time t for firm j:

$$Y_{jt} = \alpha_1(PRYouthshare) + \alpha_2 Post_t + \alpha_3(PRYouthshare * Post) + z_{jt}\delta + \varepsilon_{jt}$$

As well as the following alternate model specification using actual youth shares as a treatment variable:

$$Y_{jt} = \alpha_1(PRYouthshare) + \alpha_2Post_t + \alpha_3(Youthshare * Post) + z_{jt}\delta + \varepsilon_{jt}$$

Note that $t=to_i \dots T_i$ as the panel is unbalanced and firms may enter or leave the panel at arbitrary dates.

We employ both a GLS random effects approach as well as a fixed effects approach to estimate this panel model, hence examining a combined measure of within and between-firm variation as well as within-firm variation over time separately. We use Hausman tests for each of the main three model specifications with regards to the choice of deciding if the random effects or fixed effects model is more appropriate.

The estimated correlation between treatment intensity and profitability is captured by α_3 in our model, i.e., the interaction of the “reform period” (Post) and the pre-reform share of young workers.

Choice of level of aggregation

The theoretical effect of a payroll tax cut on profitability can potentially be heterogeneous across various groups of firms. Depending on market conditions, a zero- profitability (above some set rate of return) assumption might hold, but under conditions of imperfect competition a profit increase is possible. As market conditions can differ across sectors as well as across broad size-based categories of firms, we examine effects both on a sector level, as well as for broad firm size classes.

Choice of time period

Which time period is to be designated as “the reform period” is not obvious, as we use full-year data and the reform was implemented halfway through 2007. Thus, we provide results both for a model setup where 2007 is considered as a “reform year” and one where 2007 is considered a “non-reform year”. We also provide estimates for a shortened reform period (of 2007-2010) to test if the impact of the reform on profits is attenuated over time, something that our main model specification might miss.

Potential data quality issues

Finally, our data contain firms that report their results at different times of the year. This can potentially impact the results, as we examine changes in profitability over time. To ensure that this does not distort our results, we have as a precaution estimated an additional regression setup for only those firms that declare results on a calendar-year basis (approximately 70% of our total firm population).

Data

Data with regard to the characteristics of employees are based on SCB/RAMS, which covers virtually all employed Swedes (roughly four million observations per year) for the period 2004-2012. We make use of information regarding place of work, annual wage income as well as age and educational attainment in order to:

- Estimate the share of young workers per firm in the pre-reform period.
- Exclude marginal workers from the sample (the bottom 10 percentiles in terms of wage income). This exclusion is due to our use of the share of young employees as a treatment intensity variable. Marginal workers with very low incomes will hence be overweighed in the treatment variable relative to their wage sum. This exclusion mitigates this problem.
- Estimate our firm skill intensity control variable based on the average level of SUN2000-standard educational attainment among firm employees pre-reform (a higher value indicates more education).

This information is then matched with SCB/Structural business statistics, which provide firm-level accounting information to create our final panel data set.

In the creation of this data set, we exclude the following categories of firms and organizations:

- All public sector institutions.
- Firms that are deemed inactive (net turnover of less than 100,000 SEK per year). This exclusion is primarily motivated by very low turnover (often due to missing or erroneous data) severely distorting our profitability measure.
- Firms that lack basic accounting information regarding operating income and net turnover.
- Firms that lack matched RAMS information regarding employee characteristics (age and education).

- Firms that did not exist at any time before the reform.
- Firms that did not exist at any time after the reform.

These exclusions and their impact on the data set are detailed in tables 23 and 24 in terms of both the number of firms and the number of employees covered. Overall, the panel covers on average 37 percent of all private firms and 75 percent of all private sector employees during the period 2004-2012.

Sectoral categorization is performed using the SNI 2002 standard on the highest available classification level, dividing the economy into a total of 17 broad sectors. Due to the introduction of the SNI 2007 sectoral categorization and the subsequent phasing out of SNI 2002 in 2010, we have first imputed the sectoral category of the firm from previous years. If the firm is new, we have then used (lossy) conversion from SNI 2007 to SNI 2002.

Results

Model results

Our main model specification indicates that the introduction of the payroll tax reduction for youths is not associated with a significant increase in firm profitability when applied to all firms if 2007 is considered a reform year. This result does not change if 2007 is considered a non-reform year. These results hold both using random- and fixed effects approaches as well as for all examined model specifications. To check for the potential impact of differing reporting periods we have estimated our base model separately for only firms using calendar year reporting. No significant correlation between profitability and treatment intensity is found using this approach (see table 1 for an overview of all results using our ITT measure of treatment).

For all three regression approaches a Hausman test indicates that a fixed effects approach is more appropriate (Table 1-2), but in no regression setup do the fixed effects and random effects estimates of the relation between treatment intensity and profitability differ substantially (applying a customary 0.05 significance level test). Nor does the shortened regression setup that only covers reform impact during 2007-2010 show any significant results (Tables 1-2).

However, it is worth noting that our alternate model using actual firm youth shares during the reform period as a treatment variable shows a significant correlation between treatment intensity and profitability using a random effects approach as well as using a fixed effects

approach when not considering 2007 as a reform year (see table 2 for an overview of our results when using actual youth shares as a treatment variable). The fixed effects result however indicates that there is no overall profitability effect in all other regression setups. A Hausman test rejects the null hypothesis that there is no systematic difference between the estimated coefficients for all estimated models.

Causality

How should the results discussed above be interpreted? The model specifications that handle potential causality problems best (i.e. models using pre-reform youth shares as an instrument for actual youth employment) show no significant relationship between profitability and treatment intensity. Yet, we know that this model setup has a measurement precision problem, as particularly in smaller firms our intention-to-treat (ITT) treatment variable is only moderately correlated to the actual share of young employees.

Using actual youth shares as our treatment variable does produce significant correlations between the share of employed youths during the reform period and profitability in the random effects model setups, but we know that this correlation can be the result of reverse causality (i.e. higher profitability leading to hiring leading to a younger workforce).

An analogous argument can be made with regard to random vs. fixed effects estimation. Examining the relationship between profitability and the employment of youths within firms over time (i.e., fixed effects estimation) lessens the risk of confounding variables creating spurious correlations. On the other hand, this in practice means that we are in our fixed effects intention-to-treat (ITT) model merely examining a one-off “jump” in the treatment variable (i.e., when the reform is introduced). The amount of variation in profitability and the hiring of youths that we can study is therefore very limited when using fixed effects estimation.

Hence, it is important to interpret our results with caution with regard to causality. Differences in sectoral outcomes in the actual youth share models are somewhat suggestive, however (see tables 22-23). The significance of positive profit effects using actual youth shares is not a general phenomenon. Rather, significant effects are seen only in construction and retail & wholesale (random effects) and retail & wholesale (fixed effects). This is particularly interesting as previous research (Skedinger 2013) has found a small positive profitability effect in a different sample of larger retail firms.

Conclusions

In none of our main modeling approaches is there an overall statistical relationship between treatment intensity and firm profitability. However, our alternative modeling approach gives some limited support for a positive profit effect, particularly in retail- and wholesale firms.

This overall result could potentially have a number of explanations:

1. Incidence

There are several categories of economic actors that can potentially capture the economic gains from a payroll tax reduction, primarily workers (including older workers), consumers and firm owners. The exact flow of both direct and indirect benefits that follow from the reform hence depends on the relative market power of economic actors.

One potential explanation for the absence of an overall significant profit increase is therefore that workers or consumers have simply captured all the gains from the reform. It should be noted, however, that Egebark & Kaunitz (2014) do not find any significant wage effects from the reform. Their finding may indicate that potential gains may have been passed to consumers; but to our knowledge, no estimate of the impact on consumers from the tax cut exists. Potentially, the effect of the reform on competition could be studied, as intensified competition may have contributed to driving down prices (and thus increasing consumer surplus). This could potentially be one explanation for the observed result.

2. Data quality, sample size, measurability limitations and choice of treatment measure

Our model attempts to capture the impact of a reform that, while significant, is still small in purely monetary terms relative to overall private sector profits. This in turn implies that there is significant potential for data quality limitations to impact the results. If this is the case, the availability of data from a longer time period might shift the results, particularly if there are lagged or medium-term effects from the cuts. Given our emphasis on firm profit, though, such lagged effects are likely to be limited, as opposed to employment effects. On the contrary, there are theoretical reasons (i.e., increased competition in labor and goods markets) that imply that any detected profit effects may be transitory. We can note here that our alternate regression setup examining only the initial phase of the reform also fails to detect any general profit

increase. Finally, the fact that our main model is based on an intention-to-treat treatment variable that correlates only moderately with actual treatment intensity is another potential explanation for our main result. It should be noted however, that we obtain no significant result even for larger firms where the correlation between the ITT variable and actual treatment intensity is strong.

3. Model specification

The model employed in this paper is strictly correlational and cannot account for several potential endogeneity problems. While we attempt to lessen the risk of this potential problem impacting the results through the use of dummy variables and the use of a “within firm” (i.e., fixed effects) model approach, it is still possible that there has in fact been a general increase in profitability and that our model is simply misspecified in a fashion that renders it incapable of detecting this. This is particularly a concern given that one of our alternate random effects approaches as well as the fixed effects model when not considering 2007 a reform year does show a significant link between profitability and firm youth share during the reform period.

References

Anderson, Patricia M., and Bruce D. Meyer. "Unemployment insurance takeup rates and the after-tax value of benefits." *The Quarterly Journal of Economics* (1997): 913-937.

Anderson, Patricia M., and Bruce D. Meyer. 'The Effects of Firm Specific Taxes and Government Mandates with an Application to the U.S. Unemployment Insurance Program'. *Journal of Public Economics* 65.2 (1997): 119-145.

Anderson, Patricia M., and Bruce D. Meyer. "The effects of the unemployment insurance payroll tax on wages, employment, claims and denials." *Journal of Public Economics* 78.1 (2000): 81-106.

Bennmarker, Helge, Erik Mellander, and Björn Öckert. "Do regional payroll tax reductions boost employment?." *Labour Economics* 16.5 (2009): 480-489.

Bohm, Peter, and Hans Lind. "Policy evaluation quality: A quasi-experimental study of regional employment subsidies in Sweden." *Regional Science and Urban Economics* 23.1 (1993): 51-65.

Cahuc, Pierre, Stéphane Carcillo, and Thomas Le Barbanchon. "Do Hiring Credits Work in Recessions? Evidence from France." Discussion paper, available from: <http://ftp.iza.org/dp8330.pdf> (2014).

Crépon, Bruno, and Rozenn Desplatz. "Evaluation of the effects of payroll tax subsidies for low wage workers." CREST-INSEE, available from www.crest.fr/pageperso/dr/crepon/payrolltax.pdf. A simplified version was published in French in (2002).

Egebark, Johan, and Niklas Kaunitz. "Do payroll tax cuts raise youth employment?." No. 1001. IFN Working Paper, 2014.

Gruber, Jonathan. "The incidence of mandated maternity benefits." *The American Economic Review* (1994): 622-641.

Gruber, Jonathan. "The Incidence of Payroll Taxation: Evidence from Chile." *Journal of Labor Economics* 15.S3 (1997): 72-101.

Huttunen, Kristiina, Jukka Pirttilä, and Roope Uusitalo. "The employment effects of low-wage subsidies." *Journal of Public Economics* 97 (2013): 49-60.

Korkeamäki, Ossi, and Roope Uusitalo. "Employment and wage effects of a payroll-tax cut—evidence from a regional experiment." *International Tax and Public Finance* 16.6 (2009): 753-772.

Korkeamäki, Ossi. "The Finnish payroll tax cut experiment revisited." *Government Institute for Economic Research Working Papers* 22 (2011).

Kramarz, Francis, and Thomas Philippon. "The impact of differential payroll tax subsidies on minimum wage employment." *Journal of Public Economics* 82.1 (2001): 115-146.

Murphy, Kevin J. "The impact of unemployment insurance taxes on wages." *Labour Economics* 14.3 (2007): 457-484.

Månsson, Jonas, and AMM Shahiduzzaman Quoreshi. "Evaluating regional cuts in the payroll tax from a firm perspective." *The Annals of Regional Science* (2012): 1-25.

Scarpetta, S., A. Sonnet and T. Manfredi (2010), "Rising Youth Unemployment During The Crisis: How to Prevent Negative Long-term Consequences on a Generation?", *OECD Social, Employment and Migration Working Papers*, No. 106, OECD Publishing, Paris.

Skedinger, Per. "Effects of payroll tax cuts for young workers". *Nordic Economic Policy* (2013): 125.

Statistics Sweden. "Labour Force Surveys (LFS)" (2015)

Swedish Government, "Government budget statement for 2015" (2014), p. 238

Yellen, J. (1984) "Efficiency Wage Models of Unemployment," *American Economic*

Review, 74: 200-05.

Table 1: Model overview—Intention to Treat (ITT) youth share as treatment variable—regression on firm profitability as dependent variable

	Base model (FE) (I)	2007 not a reform year (FE) (II)	Only calendar year reporting (FE) (III)	Reduced period (FE) (IV)	Base model (RE) (V)	2007 not a reform year (RE) (VI)	Only calendar year reporting (RE) (VII)	Reduced period (RE) (VIII)
Treatment (ITT)	-0.00307 (-0.28)	0.00619 (0.59)	0.00181 (0.13)	-0.0119 (-1.11)	-0.000363 (-0.03)	0.00702 (0.69)	0.0115 (0.83)	-0.00813 (-0.81)
Reform Period	-0.0318*** (-3.40)	-0.0328*** (-3.44)	-0.0450*** (-3.02)	-0.00833 (-1.36)	-0.0318*** (-3.37)	-0.0326*** (-3.41)	-0.0472*** (-3.17)	0.0464*** (5.67)
Pre-reform youth share	N/A (.)	N/A (.)	N/A (.)	N/A (.)	0.0439*** (5.23)	0.0398*** (5.63)	0.0562*** (5.46)	-0.00894 (-1.49)
Pre-reform firm education level	N/A (.)	N/A (.)	N/A (.)	N/A (.)	-0.0570*** (-6.15)	-0.0570*** (-6.15)	-0.0858*** (-6.39)	-0.0511*** (-7.20)
Pre-reform firm size	N/A (.)	N/A (.)	N/A (.)	N/A (.)	-0.0000192** (-2.20)	-0.0000192** (-2.20)	-0.0000176** (-1.98)	-0.0000202** (-2.31)
Constant	-0.0183 (-0.23)	-0.0184 (-0.23)	-0.000932 (-0.01)	0.0978 (0.67)	0.198*** (9.90)	0.199*** (9.89)	0.275*** (9.70)	0.181*** (11.28)
Year Dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region Dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector Dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2	0.0001	0.0001	0.0001	0.0001	0.0007	0.0007	0.0013	0.0009
Observations	1 363 022	1 363 022	840 610	1 099 578	1 363 022	1 363 022	840 610	1 099 578
Hausman test statistic	0.0000	0.0000	0.0001	0.0000				

t-statistics are shown in parentheses, treatment variable bolded

* p < 0.10 ** p < 0.05 *** p < 0.01

Table 2: Model overview—Actual per-year youth share during reform period as treatment variable—regression on firm profitability as dependent variable

	Base model (FE) (I)	2007 not a reform year (FE) (II)	Only calendar year reporting (FE) (III)	Reduced period (FE) (IV)	Base model (RE) (V)	2007 not a reform year (RE) (VI)	Only calendar year reporting (RE) (VII)	Reduced period (RE) (VIII)
Treatment (Actual)	0.0110 (1.62)	0.0207*** (2.76)	0.00619 (0.67)	-0.00833 (-1.36)	0.0199*** (3.31)	0.0274*** (3.96)	0.0244*** (3.13)	0.0118* (1.77)
Reform Period	-0.0332*** (-3.67)	-0.0343*** (-3.70)	-0.0454*** (-3.14)	-0.0119 (-1.11)	-0.0340*** (-3.70)	-0.0347*** (-3.73)	-0.0485*** (-3.36)	-0.0110* (-1.90)
Pre-reform youth share	N/A (.)	N/A (.)	N/A (.)	N/A (.)	0.0379*** (5.49)	0.0380*** (5.74)	0.0569*** (6.64)	0.0381*** (5.95)
Pre-reform firm education level	N/A (.)	N/A (.)	N/A (.)	N/A (.)	-0.0568*** (-6.14)	-0.0568*** (-6.14)	-0.0856*** (-6.38)	-0.0510*** (-7.20)
Pre-reform firm size	N/A (.)	N/A (.)	N/A (.)	N/A (.)	-0.0000193** (-2.21)	-0.0000193** (-2.21)	-0.0000177** (-1.99)	-0.0000202** (-2.31)
Constant	-0.0182 (-0.23)	-0.0184 (-0.23)	-0.000715 (-0.01)	0.0978 (0.67)	0.198*** (9.97)	0.198*** (9.97)	0.274*** (9.74)	0.182*** (11.32)
Year Dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region Dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector Dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2	0.0001	0.0001	0.0001	0.0001	0.0007	0.0007	0.013	0.0009
Observations	1 363 022	1 363 022	840 610	1 099 578	1 363 022	1 363 022	840 610	1 099 578
Hausman test statistic	0.0000	0.0000	0.0000	0.0000				

t-statistics are shown in parentheses, treatment variable bolded

* p < 0.10 ** p < 0.05 *** p < 0.01

Table 3: Payroll taxes in Sweden (“Arbetsgivaravgifter”)

Fee	2007	2014
Old-age Pension fee	10.21 %	10.21%
Survivor’s pension fee	1.70 %	1.17 %
Sickness insurance fee	8.78 %	4.35 %
Work injury fee	0.68 %	0.30 %
Parental insurance fee	2.20 %	2.60 %
Labor market fee	4.45 %	2.91 %
Employer’s fee	4.40 %	9.88 %
Sum	32.42 %	31.42 %

Source: Skedinger (2013), Swedish Tax Authority

Table 4: Base model—By model design—Random effects—regression on firm profitability as dependent variable

	No Dummies	Year Dum.	+Reg. Dum.	+Sect. Dum.	Frm. Skill	Frm. Size	Full Model
Treatment (ITT)	-0.00184	-0.00133	-0.000978	-0.000347	-0.000353	-0.000357	-0.000363
	(-0.17)	(-0.13)	(-0.09)	(-0.03)	(-0.03)	(-0.03)	(-0.03)
Pre-reform youth share	0.0564***	0.0558***	0.0487***	0.0332***	0.0437***	0.0334***	0.0439***
	(6.41)	(6.42)	(5.67)	(4.18)	(5.23)	(4.20)	(5.23)
Reform Period	-0.00962**	-0.0310***	-0.0310***	-0.0316***	-0.0319***	-0.0315***	-0.0318***
	(-2.24)	(-3.28)	(-3.29)	(-3.35)	(-3.37)	(-3.34)	(-3.37)
Pre-reform Education level					-0.0570***		-0.0570***
					(-6.15)		(-6.15)
Pre-reform firm size						-0.0000202**	-0.0000192**
						(-2.33)	(-2.20)
Constant	0.0418***	0.0481***	0.0756***	0.104***	0.198***	0.104***	0.198***
	(11.13)	(11.71)	(13.26)	(10.55)	(9.90)	(10.55)	(9.90)
Year Dum.	No	Yes	Yes	Yes	Yes	Yes	Yes
Region Dum.	No	No	Yes	Yes	Yes	Yes	Yes
Sector Dum.	No	No	No	Yes	Yes	Yes	Yes
Observations	1 363 022	1 363 022	1 363 022	1 363 022	1 363 022	1 363 022	1 363 022

t-statistics shown in parentheses, treatment variable bolded

*p<0.1 **p<0.05 ***p<0.01

Table 5: Base model—By model design—Fixed effects—regression on firm profitability as dependent variable

	No Dummies	Year Dum.	+Reg. Dum.	Full Model
Treatment (ITT)	-0.00395	-0.00338	-0.00327	-0.00307
	(-0.36)	(-0.31)	(-0.30)	(-0.28)
Reform Period	-0.00852**	-0.0322***	-0.0323***	-0.0318***
	(-2.00)	(-3.44)	(-3.45)	(-3.40)
Constant	0.0462***	0.0534***	0.0639	-0.0183
	(20.68)	(14.61)	(0.87)	(-0.23)
Year Dum.	No	Yes	Yes	Yes
Region Dum.	No	No	Yes	Yes
Sector Dum.	No	No	No	Yes
Observations	1 363 022	1 363 022	1 363 022	1 363 022

t-statistics shown in parentheses, treatment variable bolded

*p<0.1 **p<0.05 ***p<0.01

Table 6: Base model—By size—Random effects—regression on firm profitability as dependent variable

	All firms	Small	Medium	Large
Treatment (ITT)	-0.000363	0.00309	-0.445	-0.0417
	(-0.03)	(0.32)	(-0.90)	(-0.51)
Pre-reform youth share	0.0439***	0.0571***	0.439	-0.0586
	(5.23)	(7.25)	(1.04)	(-0.89)
Reform Period	-0.0318***	-0.0321***	0.0407	-0.000234
	(-3.37)	(-3.31)	(0.78)	(-0.01)
Pre-reform Education level	-0.0570***	-0.0539***	-0.670*	0.0497
	(-6.15)	(-5.99)	(-1.77)	(1.58)
Pre-reform firm size	-0.0000192**	-0.00398***	0.000211	0.00000337
	(-2.20)	(-7.57)	(0.58)	(1.03)
Constant	0.198***	0.207***	1.051	-0.0809
	(9.90)	(10.42)	(1.63)	(-0.60)
Year Dum.	Yes	Yes	Yes	Yes
Region Dum.	Yes	Yes	Yes	Yes
Sector Dum.	Yes	Yes	Yes	Yes
Observations	1 363 022	1 321 871	34 695	7 160

t-statistics shown in parentheses, treatment variable bolded

*p<0.1 **p<0.05 ***p<0.01

Table 7: Base model—By size—Fixed effects—regression on firm profitability as dependent variable

	All firms	Small	Medium	Large
Treatment (ITT)	-0.00307	0.00117	-0.410	-0.0422
	(-0.28)	(0.12)	(-0.88)	(-0.53)
Reform Period	-0.0318***	-0.0325***	0.0273	-0.000568
	(-3.40)	(-3.39)	(0.68)	(-0.02)
Constant	-0.0183	-0.0150	-1.301	-0.0388
	(-0.23)	(-0.18)	(-1.17)	(-0.31)
Year Dum.	Yes	Yes	Yes	Yes
Region Dum.	Yes	Yes	Yes	Yes
Sector Dum.	Yes	Yes	Yes	Yes
Observations	1 363 022	1 321 871	34 695	7 160

t-statistics shown in parentheses, treatment variable bolded
 *p<0.1 **p<0.05 ***p<0.01

Table 8: 2007 as non-reform year—By model design—Random effects—regression on firm profitability as dependent variable

	No Dummies	Year Dum.	+Reg. Dum.	+Sect. Dum.	Frm. Skill	Frm. Size	Full Model
Treatment (ITT)	-0.0112	0.00638	0.00668	0.00705	0.00703	0.00704	0.00702
	(-1.49)	(0.63)	(0.66)	(0.69)	(0.69)	(0.69)	(0.69)
Pre-reform youth share	0.0612***	0.0515***	0.0444***	0.0291***	0.0397***	0.0293***	0.0398***
	(7.97)	(6.95)	(6.05)	(4.30)	(5.62)	(4.32)	(5.63)
Reform Period	-0.00887**	-0.0318***	-0.0319***	-0.0323***	-0.0326***	-0.0323***	-0.0326***
	(-2.30)	(-3.32)	(-3.33)	(-3.39)	(-3.41)	(-3.39)	(-3.41)
Pre-reform Education level					-0.0570***		-0.0570***
					(-6.15)		(-6.15)
Pre-reform firm size						-0.0000202**	-0.0000192**
						(-2.33)	(-2.20)
Constant	0.0413***	0.0486***	0.0761***	0.104***	0.199***	0.104***	0.199***
	(11.51)	(12.12)	(13.41)	(10.60)	(9.89)	(10.60)	(9.89)
Year Dum.	No	Yes	Yes	Yes	Yes	Yes	Yes
Region Dum.	No	No	Yes	Yes	Yes	Yes	Yes
Sector Dum.	No	No	No	Yes	Yes	Yes	Yes
Observations	1 363 022	1 363 022	1 363 022	1 363 022	1 363 022	1 363022	1 363 022

t-statistics shown in parentheses, treatment variable bolded
 *p<0.1 **p<0.05 ***p<0.01

Table 9: 2007 as non-reform year—By model design—Fixed effects—regression on firm profitability as dependent variable

	No Dummies	Year Dum.	+Reg. Dum.	Full Model
Treatment (ITT)	-0.0146*	0.00581	0.00593	0.00619
	(-1.92)	(0.55)	(0.56)	(0.59)
Reform Period	-0.00770**	-0.0331***	-0.0332***	-0.0328***
	(-2.00)	(-3.48)	(-3.49)	(-3.44)
Constant	0.0463***	0.0534***	0.0639	-0.0184
	(20.66)	(14.61)	(0.87)	(-0.23)
Year Dum.	No	Yes	Yes	Yes
Region Dum.	No	No	Yes	Yes
Sector Dum.	No	No	No	Yes
Observations	1 363 022	1 363 022	1 363 022	1 363 022

t-statistics shown in parentheses, treatment variable bolded

*p<0.1 **p<0.05 ***p<0.01

Table 10: 2007 as non-reform year—By firm size—Random effects—regression on firm profitability as dependent variable

	All firms	Small	Medium	Large
Treatment (ITT)	0.00702	0.00845	-0.195	-0.0481
	(0.69)	(0.87)	(-0.53)	(-0.52)
Pre-reform youth share	0.0398***	0.0546***	0.250	-0.0599
	(5.63)	(7.74)	(0.86)	(-1.02)
Reform Period	-0.0326***	-0.0327***	0.00661	0.000525
	(-3.41)	(-3.32)	(0.18)	(0.02)
Pre-reform Education level	-0.0570***	-0.0539***	-0.670*	0.0497
	(-6.15)	(-5.99)	(-1.77)	(1.58)
Pre-reform firm size	-0.0000192**	-0.00398***	0.000213	0.00000337
	(-2.20)	(-7.57)	(0.58)	(1.03)
Constant	0.199***	0.207***	1.078	-0.0808
	(9.89)	(10.41)	(1.63)	(-0.60)
Year Dum.	Yes	Yes	Yes	Yes
Region Dum.	Yes	Yes	Yes	Yes
Sector Dum.	Yes	Yes	Yes	Yes
Observations	1 363 022	1 321 871	34 695	7 160

t-statistics shown in parentheses, treatment variable bolded

*p<0.1 **p<0.05 ***p<0.01

Table 11: 2007 as non-reform year—By firm size—Fixed effects—regression on firm profitability as dependent variable

	All firms	Small	Medium	Large
Treatment (ITT)	0.00619	0.00808	-0.152	-0.0514
	(0.59)	(0.80)	(-0.45)	(-0.56)
Reform Period	-0.0328***	-0.0333***	-0.00801	0.000533
	(-3.44)	(-3.40)	(-0.28)	(0.02)
Constant	-0.0184	-0.0151	-1.292	-0.0409
	(-0.23)	(-0.18)	(-1.15)	(-0.32)
Year Dum.	Yes	Yes	Yes	Yes
Region Dum.	Yes	Yes	Yes	Yes
Sector Dum.	Yes	Yes	Yes	Yes
Observations	1 363 022	1 321 871	34 695	7 160

t-statistics shown in parentheses, treatment variable bolded
 *p<0.1 **p<0.05 ***p<0.01

Table 12: Only firms with calendar year reporting—By model design size—Random effects—regression on firm profitability as dependent variable

	No Dummies	Year Dum.	+Reg. Dum.	+Sect. Dum.	Frm. Skill	Frm. Size	Full Model
Treatment (ITT)	0.00969	0.0103	0.0108	0.0114	0.0115	0.0114	0.0115
	(0.69)	(0.75)	(0.78)	(0.82)	(0.83)	(0.82)	(0.83)
Pre-reform youth share	0.0753***	0.0745***	0.0661***	0.0401***	0.0560***	0.0403***	0.0562***
	(6.86)	(6.93)	(6.22)	(4.20)	(5.45)	(4.21)	(5.46)
Reform Period	-0.0145**	-0.0459***	-0.0461***	-0.0467***	-0.0472***	-0.0467***	-0.0472***
	(-2.27)	(-3.09)	(-3.10)	(-3.15)	(-3.18)	(-3.15)	(-3.17)
Pre-reform Education level					-0.0858***		-0.0858***
					(-6.39)		(-6.39)
Pre-reform firm size						-0.0000190**	-0.0000176**
						(-2.16)	(-1.98)
Constant	0.0426***	0.0505***	0.0897***	0.134***	0.275***	0.134***	0.275***
	(8.03)	(10.30)	(11.58)	(10.33)	(9.71)	(10.33)	(9.70)
Year Dum.	No	Yes	Yes	Yes	Yes	Yes	Yes
Region Dum.	No	No	Yes	Yes	Yes	Yes	Yes
Sector Dum.	No	No	No	Yes	Yes	Yes	Yes
Observations	840 610	840 610	840 610	840 610	840 610	840 610	840 610

t-statistics shown in parentheses, treatment variable bolded
 *p<0.1 **p<0.05 ***p<0.01

Table 13: Only firms with calendar year reporting—By model design size—Fixed effects—regression on firm profitability as dependent variable

	No Dummies	Year Dum.	+Reg. Dum.	Full Model
Treatment (ITT)	0.000970	0.00174	0.00171	0.00181
	(0.07)	(0.12)	(0.12)	(0.13)
Reform Period	-0.0106*	-0.0448***	-0.0450***	-0.0450***
	(-1.65)	(-3.01)	(-3.03)	(-3.02)
Constant	0.0474***	0.0569***	0.0998	-0.000932
	(14.36)	(11.91)	(0.93)	(-0.01)
Year Dum.	No	Yes	Yes	Yes
Region Dum.	No	No	Yes	Yes
Sector Dum.	No	No	No	Yes
Observations	840 610	840 610	840 610	840 610

t-statistics shown in parentheses, treatment variable bolded
 *p<0.1 **p<0.05 ***p<0.01

Table 14: Short reform period (2007-2010)—By model design size—Random effects—regression on firm profitability as dependent variable

	All firms	Small	Medium	Large
Treatment (ITT)	0.0115	0.0155	-0.551	-0.0673
	(0.83)	(1.26)	(-0.83)	(-0.62)
Pre-reform youth share	0.0562***	0.0640***	0.568	-0.0426
	(5.46)	(7.45)	(1.03)	(-0.60)
Reform Period	-0.0472***	-0.0475***	0.0619	-0.0257
	(-3.17)	(-3.07)	(0.91)	(-1.03)
Pre-reform Education level	-0.0858***	-0.0801***	-0.801*	0.0407
	(-6.39)	(-6.19)	(-1.76)	(1.13)
Pre-reform firm size	-0.0000176**	-0.00500***	0.000475	0.00000152
	(-1.98)	(-9.76)	(1.18)	(0.49)
Constant	0.275***	0.284***	1.246	-0.0850
	(9.70)	(10.28)	(1.62)	(-0.57)
Year Dum.	Yes	Yes	Yes	Yes
Region Dum.	Yes	Yes	Yes	Yes
Sector Dum.	Yes	Yes	Yes	Yes
Observations	1 099 578	1 066 831	27 665	5 643

t-statistics shown in parentheses, treatment variable bolded
 *p<0.1 **p<0.05 ***p<0.01

**Table 15: Short reform period (2007-2010)—By model design size—Random effects—
regression on firm profitability as dependent variable**

	All firms	Small	Medium	Large
Treatment (ITT)	0.00181	0.00738	-0.504	-0.0663
	(0.13)	(0.57)	(-0.79)	(-0.61)
Reform Period	-0.0450***	-0.0464***	0.0362	-0.0265
	(-3.02)	(-3.00)	(0.70)	(-1.05)
Constant	-0.000932	0.00263	-1.171	-0.177
	(-0.01)	(0.02)	(-1.07)	(-1.14)
Year Dum.	Yes	Yes	Yes	Yes
Region Dum.	Yes	Yes	Yes	Yes
Sector Dum.	Yes	Yes	Yes	Yes
Observations	1 099 578	1 066 831	27 665	5 643

t-statistics shown in parentheses, treatment variable bolded

*p<0.1 **p<0.05 ***p<0.01

Table 16: Base model—By sector—Random effects—regression on firm profitability as dependent variable

	A (Agriculture)	B (Fisheries)	C (Mining)	D (Manufacturing)	E (Electricity)	F (Construction)	G (Retail & wholesale)	H (Hotels & restaurants)	I (Transport & communication)	J (Finance)	K (Real est. & serv.)	M (Education)	N (Health care)	O (Other services)
Treatment (ITT)	-0.0175 (-1.16)	-0.0570 (-0.27)	0.111 (0.94)	-0.0154 (-0.73)	0.249 (0.67)	-0.00474 (-0.57)	0.0126 (0.78)	0.000270 (0.03)	-0.0139 (-1.31)	0.0214 (0.04)	-0.0491 (-1.12)	0.00746 (0.21)	-0.00566 (-0.11)	0.0359 (1.61)
Pre-reform youth share	-0.0180 (-0.63)	-0.220* (-1.66)	0.0657 (0.85)	0.133*** (5.50)	-0.317 (-0.85)	0.0867*** (8.36)	0.0379*** (3.16)	0.00622 (0.65)	0.0442*** (3.58)	0.476 (1.36)	0.0523 (1.44)	-0.0670* (-1.81)	-0.0661 (-1.56)	-0.0111 (-0.62)
Reform Period	-0.0465*** (-4.35)	-0.246* (-1.67)	-0.0422** (-2.01)	-0.00542 (-0.59)	-0.194 (-1.02)	-0.0172*** (-5.53)	-0.0314*** (-2.94)	0.0234*** (3.48)	-0.0256*** (-3.66)	-0.0886 (-0.26)	-0.0720** (-1.99)	0.00522 (0.30)	-0.00259 (-0.18)	-0.00631 (-0.44)
Pre-reform Education level	0.0352 (1.53)	-0.0588 (-0.69)	0.00712 (0.11)	-0.112*** (-3.58)	-0.274 (-1.27)	-0.0157*** (-2.98)	-0.0918*** (-3.74)	-0.0407*** (-8.65)	-0.0210** (-2.25)	-0.00323 (-0.03)	-0.0796*** (-4.39)	0.0437*** (2.93)	-0.00379 (-0.19)	0.0273* (1.95)
Pre-reform firm size	- 0.00100*** (-3.50)	-0.00253 (-0.49)	0.000157* ** (3.66)	0.0000128 ** (2.05)	0.000133 (1.25)	- 0.0000219 *** (-2.68)	0.0000046 3 (0.55)	-0.0000352 (-1.57)	-0.0000153 (-0.59)	-0.000744 (-0.26)	- 0.000138* * (-2.16)	-0.000420 (-1.53)	- 0.0000473 * (-1.85)	- 0.000460* * (-2.37)
Constant	0.0965*** (4.01)	0.247 (1.47)	0.0519 (0.59)	0.206*** (4.40)	0.399 (1.38)	0.0922*** (9.74)	0.198*** (5.33)	0.122*** (10.57)	0.125*** (9.82)	0.110 (0.43)	0.231*** (5.07)	-0.0178 (-0.50)	0.141*** (2.70)	0.0176 (0.60)
Year Dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region Dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	53 344	809	1 613	131 568	1 045	143 892	254 475	54 109	83 873	1 996	263 588	22 033	38 996	48 237

t-statistics shown in parentheses, treatment variable bolded

*p<0.1 **p<0.05 ***p<0.01

Table 17: Base model—By sector—Fixed effects—regression on firm profitability as dependent variable

	A (Agriculture)	B (Fisheries)	C (Mining)	D (Manufacturing)	E (Electricity)	F (Construction)	G (Retail & wholesale)	H (Hotels & restaurants)	I (Transport & communication)	J (Finance)	K (Real est. & serv.)	M (Education)	N (Health care)	O (Other services)
Treatment (ITT)	-0.0229	-0.0901	0.129	-0.0208	0.243	-0.00134	0.0117	-0.00118	-0.0158	0.425	-0.0553	-0.00232	-0.00513	0.0349
	(-1.53)	(-0.42)	(0.97)	(-0.96)	(0.65)	(-0.17)	(0.68)	(-0.10)	(-1.42)	(0.77)	(-1.17)	(-0.06)	(-0.11)	(1.47)
Reform Period	-0.0443***	-0.225*	-0.0454**	-0.00841	-0.250	-0.0167***	-0.0347***	0.0255***	-0.0245***	0.280	-0.0709**	0.00937	-0.00295	0.000867
	(-4.76)	(-1.75)	(-2.23)	(-0.82)	(-1.38)	(-5.37)	(-3.27)	(3.55)	(-3.49)	(0.70)	(-1.97)	(0.52)	(-0.18)	(0.06)
Constant	-0.822	0.264***	0.0764	0.276	0.112	0.0801***	0.0846	0.0774	0.00167	-1.116***	-0.0379	0.0733	0.211***	-0.0654
	(-0.92)	(3.44)	(1.06)	(0.71)	(0.96)	(4.71)	(1.50)	(0.36)	(0.04)	(-4.30)	(-0.52)	(1.48)	(3.27)	(-0.81)
Year Dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region Dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	53 344	809	1 613	131 568	1 045	143 892	254 475	54 109	83 873	1 996	263 588	22 033	38 996	48 237

t-statistics shown in parentheses, treatment variable bolded

*p<0.1 **p<0.05 ***p<0.01

Table 18: 2007 as non-reform year—By sector—Random effects—regression on firm profitability as dependent variable

	A	B	C	D	E	F	G	H	I	J	K	M	N	O
	(Agriculture)	(Fisheries)	(Mining)	(Manufacturing)	(Electricity)	(Construction)	(Retail & wholesale)	(Hotels & restaurants)	(Transport & communication)	(Finance)	(Real est. & serv.)	(Education)	(Health care)	(Other services)
Treatment (TT)	-0.0206	0.166	0.131	-0.0254	0.0570	-0.000517	0.0305**	-0.00142	-0.00850	-0.0208	-0.0445	-0.00797	-0.0237	0.0547**
	(-1.59)	(0.63)	(0.94)	(-1.08)	(0.17)	(-0.07)	(2.30)	(-0.15)	(-0.87)	(-0.04)	(-1.03)	(-0.24)	(-0.53)	(2.20)
Pre-reform youth share	-0.0183	-0.331*	0.0705	0.136***	-0.174	0.0838***	0.0300**	0.00718	0.0395***	0.498	0.0435	-0.0574*	-0.0571	-0.0169
	(-0.69)	(-1.75)	(0.98)	(5.27)	(-0.54)	(9.34)	(2.56)	(0.90)	(3.51)	(1.43)	(1.42)	(-1.75)	(-1.50)	(-1.11)
Reform Period	-0.0460***	-0.256*	-0.0441**	-0.00453	-0.182	-0.0177***	-0.0336***	0.0238***	-0.0261***	-0.0869	-0.0723**	0.00643	-0.00160	-0.00915
	(-4.38)	(-1.74)	(-2.11)	(-0.48)	(-0.96)	(-5.80)	(-3.09)	(3.69)	(-3.71)	(-0.26)	(-1.98)	(0.37)	(-0.11)	(-0.64)
Pre-reform Education level	0.0352	-0.0588	0.00774	-0.112***	-0.274	-0.0157***	-0.0918***	-0.0407***	-0.0209**	-0.00325	-0.0796***	0.0437***	-0.00377	0.0273*
	(1.53)	(-0.69)	(0.12)	(-3.58)	(-1.27)	(-2.98)	(-3.74)	(-8.65)	(-2.25)	(-0.03)	(-4.39)	(2.93)	(-0.19)	(1.96)
Pre-reform firm size	-0.00100***	-0.00275	0.000157**	0.0000128**	0.000132	0.0000219***	0.00000464	-0.0000352	-0.0000153	-0.000740	0.000138*	-0.000420	0.0000473*	0.000460*
	(-3.50)	(-0.54)	(3.66)	(2.05)	(1.24)	(-2.68)	(0.55)	(-1.57)	(-0.59)	(-0.26)	(-2.16)	(-1.53)	(-1.85)	(-2.37)
Constant	0.0966***	0.253	0.0503	0.206***	0.393	0.0926***	0.199***	0.121***	0.125***	0.111	0.232***	-0.0185	0.141***	0.0184
	(4.01)	(1.53)	(0.58)	(4.41)	(1.36)	(9.82)	(5.28)	(10.69)	(9.82)	(0.43)	(5.07)	(-0.53)	(2.69)	(0.63)
Year Dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region Dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	53 344	809	1 613	131 568	1 045	143 892	254 475	54 109	83 873	1 996	263 588	22 033	38 996	48 237

t-statistics shown in parentheses, treatment variable bolded

*p<0.1 **p<0.05 ***p<0.01

Table 19: 2007 as non-reform year—By sector—Fixed effects—regression on firm profitability as dependent variable

	A (Agriculture)	B (Fisheries)	C (Mining)	D (Manufacturing)	E (Electricity)	F (Construction)	G (Retail & wholesale)	H (Hotels & restaurants)	I (Transport & communication)	J (Finance)	K (Real est. & serv.)	M (Education)	N (Health care)	O (Other services)
Treatment (ITT)	-0.0251*	0.169	0.149	-0.0235	-0.0565	0.00315	0.0285**	-0.00432	-0.0103	0.375	-0.0432	-0.00892	-0.0216	0.0562**
	(-1.96)	(0.60)	(0.96)	(-0.95)	(-0.16)	(0.44)	(2.03)	(-0.42)	(-1.04)	(0.69)	(-0.94)	(-0.25)	(-0.51)	(2.14)
Reform Period	-0.0440***	-0.235*	-0.0473**	-0.00817	-0.232	-0.0172***	-0.0368***	0.0263***	-0.0250***	0.282	-0.0716**	0.00989	-0.00204	-0.00236
	(-4.78)	(-1.84)	(-2.34)	(-0.78)	(-1.27)	(-5.63)	(-3.40)	(3.80)	(-3.54)	(0.71)	(-1.97)	(0.56)	(-0.13)	(-0.17)
Constant	-0.823	0.260***	0.0763	0.276	0.121	0.0801***	0.0851	0.0775	0.00153	-1.121***	-0.0380	0.0737	0.211***	-0.0674
	(-0.92)	(3.33)	(1.06)	(0.71)	(1.07)	(4.69)	(1.51)	(0.36)	(0.04)	(-4.32)	(-0.52)	(1.48)	(3.27)	(-0.83)
Year Dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region Dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	53 344	809	1 613	131 568	1 045	143 892	254 475	54 109	83 873	1 996	263 588	22 033	38 996	48 237

t-statistics shown in parentheses, treatment variable bolded

*p<0.1 **p<0.05 ***p<0.01

Table 20: Only firms with calendar year reporting—By sector—Random effects—regression on firm profitability as dependent variable

	A (Agriculture)	B (Fisheries)	C (Mining)	D (Manufacturing)	E (Electricity)	F (Construction)	G (Retail & wholesale)	H (Hotels & restaurants)	I (Transport & communication)	J (Finance)	K (Real est. & serv.)	M (Education)	N (Health care)	O (Other services)
Treatment (ITT)	-0.0126 (-0.76)	-0.248 (-1.09)	0.0785 (0.46)	0.0148 (0.76)	0.438 (1.01)	0.00448 (0.44)	0.0124 (0.53)	-0.00265 (-0.22)	-0.0109 (-0.94)	-0.226 (-0.37)	0.00892 (0.16)	0.0319 (0.92)	0.0559 (0.98)	0.0226 (1.07)
Pre-reform youth share	-0.0201 (-1.04)	-0.0263 (-0.15)	0.106 (1.10)	0.178*** (4.62)	-0.517 (-0.96)	0.0892*** (6.80)	0.0555*** (3.54)	0.0108 (0.95)	0.0473*** (3.31)	0.511 (1.17)	0.0740* (1.78)	-0.0952** (-2.26)	-0.0772 (-1.52)	-0.0150 (-0.72)
Reform Period	-0.0449*** (-5.41)	-0.214 (-1.29)	-0.0340 (-1.21)	-0.0221* (-1.72)	-0.187 (-0.93)	-0.0299*** (-6.37)	-0.0433** (-2.41)	0.0251*** (2.85)	-0.0234** (-2.19)	-0.0847 (-0.17)	-0.117** (-2.01)	0.00749 (0.33)	-0.0185 (-0.79)	-0.0139 (-0.72)
Pre-reform Education level	0.0197* (1.94)	-0.121 (-0.88)	0.0227 (0.27)	-0.187*** (-3.76)	-0.257 (-1.23)	-0.0264*** (-3.60)	-0.123*** (-3.57)	-0.0462*** (-8.17)	-0.0322** (-2.57)	-0.0337 (-0.23)	-0.126*** (-4.35)	0.0744*** (5.01)	-0.0124 (-0.42)	0.0392** (2.20)
Pre-reform firm size	- 0.000965** * (-3.69)	-0.00516 (-0.98)	0.000142* ** (4.41)	0.0000165 ** (2.16)	0.000140 (1.17)	- 0.0000250 *** (-2.81)	0.0000019 2 (0.21)	- 0.0000472 * (-1.70)	- 0.0000513 *** (-3.55)	0.000863 (0.42)	-0.000119* (-1.77)	-0.000511 (-1.45)	- 0.0000482 * (-1.69)	- 0.000517* * (-2.41)
Constant	0.155*** (8.06)	0.258 (1.48)	0.0722 (0.54)	0.326*** (3.94)	0.360* (1.71)	0.126*** (8.52)	0.258*** (4.90)	0.150*** (9.68)	0.161*** (9.15)	0.179 (0.46)	0.326*** (4.73)	-0.0715* (-1.76)	0.175** (2.33)	0.0138 (0.36)
Year Dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region Dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	37 758	551	903	80 885	850	80 379	151 403	39 295	52 938	1 454	160 325	15 840	24 084	34 152

t-statistics shown in parentheses, treatment variable bolded

*p<0.1 **p<0.05 ***p<0.01

Table 21: Only firms with calendar year reporting—By sector—Random effects—regression on firm profitability as dependent variable

	A (Agriculture)	B (Fisheries)	C (Mining)	D (Manufacturing)	E (Electricity)	F (Construction)	G (Retail & wholesale)	H (Hotels & restaurants)	I (Transport & communication)	J (Finance)	K (Real est. & serv.)	M (Education)	N (Health care)	O (Other services)
Treatment (ITT)	-0.0172	-0.195	0.101	0.0117	0.484	0.00602	0.00709	-0.00367	-0.0118	0.219	-0.0152	0.0184	0.0490	0.0137
	(-1.01)	(-0.82)	(0.49)	(0.59)	(1.12)	(0.59)	(0.27)	(-0.28)	(-0.95)	(0.37)	(-0.25)	(0.49)	(0.86)	(0.63)
Reform Period	-0.0441***	-0.260	-0.0323	-0.0242*	-0.185	-0.0292***	-0.0479***	0.0281***	-0.0226**	0.553	-0.106*	0.0128	-0.0186	-0.00729
	(-5.06)	(-1.47)	(-1.19)	(-1.84)	(-0.95)	(-6.09)	(-2.64)	(2.91)	(-2.09)	(0.94)	(-1.81)	(0.56)	(-0.71)	(-0.38)
Constant	-1.505	0.252***	0.0496**	0.363	-0.000704	0.0892**	0.0307	0.349**	-0.0552	-0.966***	-0.0256	0.0511	0.165*	-0.165
	(-1.05)	(3.08)	(2.20)	(0.74)	(-0.00)	(2.27)	(0.36)	(2.14)	(-1.39)	(-3.57)	(-0.25)	(1.02)	(1.87)	(-0.99)
Year Dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region Dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	37 758	551	903	80 885	850	80 379	151 403	39 295	52 938	1 454	160 325	15 840	24 084	34 152

t-statistics shown in parentheses, treatment variable bolded

*p<0.1 **p<0.05 ***p<0.01

Table 22: Alternate model setup (actual youth share as treatment)—By sector—Random effects—regression on firm profitability as dependent variable

	A (Agriculture)	B (Fisheries)	C (Mining)	D (Manufacturing)	E (Electricity)	F (Construction)	G (Retail & wholesale)	H (Hotels & restaurants)	I (Transport & communication)	J (Finance)	K (Real est. & serv.)	M (Education)	N (Health care)	O (Other services)
Treatment (Actual)	-0.00819	-0.148	-0.0140	0.0190	-0.0628	0.0256***	0.0222**	0.0111	0.00609	-0.789	0.0441*	0.0114	0.0162	-0.0251
	(-1.19)	(-1.10)	(-0.22)	(0.82)	(-0.24)	(6.97)	(2.44)	(1.19)	(1.01)	(-0.54)	(1.90)	(0.47)	(0.72)	(-1.04)
Pre-reform youth share	-0.0272	-0.222	0.137	0.118***	-0.122	0.0760***	0.0392***	0.00355	0.0335***	0.548	0.00783	-0.0646**	-0.0744	0.0218
	(-1.11)	(-1.63)	(1.62)	(4.45)	(-0.43)	(10.29)	(2.65)	(0.47)	(3.09)	(1.46)	(0.30)	(-2.30)	(-1.58)	(1.00)
Reform Period	-0.0483***	-0.237	-0.0299	-0.00847	-0.177	-0.0214***	-0.0325***	0.0209***	-0.0274***	-0.0222	-0.0773**	0.00491	-0.00371	0.00254
	(-4.84)	(-1.64)	(-1.49)	(-0.89)	(-0.90)	(-7.39)	(-3.10)	(3.44)	(-3.99)	(-0.06)	(-2.17)	(0.29)	(-0.26)	(0.18)
Pre-reform Education level	0.0352	-0.0596	0.00799	-0.112***	-0.273	-0.0157***	-0.0917***	-0.0411***	-0.0210**	-0.00342	-0.0790***	0.0439***	-0.00361	0.0269*
	(1.53)	(-0.70)	(0.13)	(-3.58)	(-1.27)	(-2.99)	(-3.74)	(-8.66)	(-2.25)	(-0.03)	(-4.37)	(2.97)	(-0.18)	(1.92)
Pre-reform firm size	-0.00100***	-0.00245	0.000156**	0.0000129**	0.000132	0.0000220***	0.00000411	-0.0000357	-0.0000153	-0.000583	0.000138*	-0.000421	0.0000475*	0.000460**
	(-3.50)	(-0.48)	(3.65)	(2.06)	(1.24)	(-2.67)	(0.49)	(-1.58)	(-0.59)	(-0.20)	(-2.17)	(-1.53)	(-1.86)	(-2.37)
Constant	0.0981***	0.258	0.0442	0.207***	0.392	0.0936***	0.198***	0.123***	0.126***	0.113	0.232***	-0.0181	0.141***	0.0138
	(4.06)	(1.59)	(0.51)	(4.48)	(1.36)	(9.93)	(5.25)	(10.93)	(9.87)	(0.44)	(5.13)	(-0.51)	(2.73)	(0.48)
Year Dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region Dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	66 388	1 008	1 972	162 448	1 321	178 827	315 097	66 640	103 701	2 088	327 331	27 619	48 326	60 256

t-statistics shown in parentheses, treatment variable bolded

*p<0.1 **p<0.05 ***p<0.01

Table 23: Alternate model setup (actual youth share as treatment)—By sector—Fixed effects—regression on firm profitability as dependent variable

	A (Agriculture)	B (Fisheries)	C (Mining)	D (Manufacturing)	E (Electricity)	F (Construction)	G (Retail & wholesale)	H (Hotels & restaurants)	I (Transport & communication)	J (Finance)	K (Real est. & serv.)	M (Education)	N (Health care)	O (Other services)
Treatment (Actual)	-0.0133*	-0.0225	-0.00796	0.00564	-0.192	0.00543	0.0171**	0.0100	0.00788	-0.129	0.0172	0.0318	0.0129	-0.0177
	(-1.71)	(-0.17)	(-0.12)	(0.24)	(-0.60)	(1.34)	(2.06)	(0.95)	(1.23)	(-0.07)	(0.51)	(1.25)	(0.55)	(-0.71)
Reform Period	-0.0463***	-0.227*	-0.0319	-0.0108	-0.228	-0.0176***	-0.0354***	0.0229***	-0.0266***	0.303	-0.0750**	0.00670	-0.00388	0.00859
	(-5.22)	(-1.75)	(-1.53)	(-1.03)	(-1.21)	(-6.12)	(-3.36)	(3.64)	(-3.87)	(0.74)	(-2.13)	(0.39)	(-0.25)	(0.60)
Constant	-0.821	0.262***	0.0722	0.276	0.120	0.0797***	0.0856	0.0771	0.000809	-1.158***	-0.0380	0.0783	0.210***	-0.0621
	(-0.92)	(3.29)	(0.99)	(0.71)	(1.10)	(4.69)	(1.52)	(0.36)	(0.02)	(-4.41)	(-0.52)	(1.48)	(3.27)	(-0.78)
Year Dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region Dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	66388	1008	1972	162448	1321	178827	315097	66640	103701	2088	327331	27619	48326	60256

t-statistics shown in parentheses, treatment variable bolded

*p<0.1 **p<0.05 ***p<0.01

Table 24: Key to the SNI 2002 sectorial classification system

A	Agriculture, forestry, hunting
B	Fisheries
C	Mining
D	Manufacturing
E	Electricity, gas, heating and water supply
F	Construction
G	Retail and wholesale
H	Hotels and restaurants
I	Transportation and communication
J	Finance
K	Real estate & corporate services
L	Public services and defence*
M	Education
N	Health care & social services
O	Other personal services
P	Household activities*
Q	Foreign organizations*
*	Excluded from regressions due to insufficient number of observations

Table 25: Loss analysis—number of firms covered

	Full data (firms)	Data on ownership form	Private sector	Net turnover > 100 000	Profit data present	Employee info present & matched	Present before & after reform	Only calendar reporting
2004	426 141	371 632	369 703	335 276	314 001	192 918	143 358	88 234
2005	429 287	378 047	376 146	341 911	335 038	204 969	155 288	99 244
2006	437 960	387 290	385 286	350 523	346 596	210 817	170 100	107 377
2007	444 987	394 362	392 320	366 976	361 871	216 154	165 795	102 288
2008	457 788	403 508	401 462	373 944	370 431	219 820	167 416	103 675
2009	463 133	407 062	404 963	371 724	366 789	217 278	152 780	92 235
2010	476 458	425 439	423 341	391 842	385 070	228 897	144 841	87 764
2011	527 983	469 719	467 641	413 851	407 317	237 887	136 001	82 458
2012	535 130	475 433	473 352	415 777	411 027	243 621	127 443	77 335
Percent of all firms & organizations	100 %	88 %	88 %	80 %	79 %	47 %	32 %	20 %
Percent of private sector firms			100 %	91 %	89 %	53 %	37 %	23 %

Table 26: Loss analysis—number of employees covered

	Full data (employee s)	Data on ownership form	Private sector	Net turnover > 100 000	Profit data present	Employee info present & matched	Present before and after reform	Only calendar reporting
2004	4 173 085	4 031 251	2 548 217	2 465 660	2 272 661	2 144 314	1 851 433	1 390 606
2005	4 184 556	4 041 994	2 572 007	2 499 949	2 361 935	2 224 101	1 954 006	1 477 681
2006	4 290 877	4 166 436	2 649 385	2 576 747	2 436 994	2 293 307	2 103 546	1 568 935
2007	4 401 126	4 276 355	2 760 842	2 704 245	2 552 284	2 398 451	2 202 378	1 634 995
2008	4 417 583	4 291 195	2 811 804	2 744 855	2 601 868	2 443 069	2 233 457	1 665 405
2009	4 291 088	4 157 063	2 700 389	2 628 536	2 494 731	2 337 658	2 056 147	1 532 600
2010	4 402 789	4 273 288	2 816 383	2 743 287	2 600 025	2 436 456	2 057 962	1 531 999
2011	4 515 371	4 376 197	2 924 899	2 829 853	2 686 811	2 509 633	2 044 618	1 541 344
2012	4 576 947	4 430 798	2 964 260	2 864 090	2 719 322	2 544 638	1 995 376	1 501 184
Percent of all employees	100 %	97 %	63 %	61 %	58 %	54 %	47 %	35 %
Percent of private sector employees			100 %	97 %	92 %	86 %	75 %	56 %

Table 27: Variable descriptions and sources

Variable name	Description	Source
Firm profitability	Operating margin defined as profits before corporate taxes and financial items, measured as a share of turnover.	Statistics Sweden, FEK
Treatment (ITT)	Average share of employees 18-25 years old pre-2007 * Reform period dummy	Statistics Sweden, RAMS
Treatment (Actual)	Share of employees 18-25 years old	Statistics Sweden, RAMS
Reform Period	Dummy variable signifying reform period (0 if pre-2007, 1 otherwise)	N/A
Pre-reform youth share	Pre-reform youth share	Statistics Sweden, RAMS
Pre-reform firm education level	Average education level of firm employees pre-2007 based on SCB/SUN2000 educational level classification system.	Statistics Sweden, RAMS/UREG
Pre-reform firm size	Pre-2007 firm size in terms of number of employees.	Statistics Sweden, RAMS
Year Dum.	Time dummies for the years 2004-2012	N/A
Region Dum.	Regional dummies for firm location based on Swedish counties.	Statistics Sweden, FDB
Sector Dum.	Sectoral dummies based on SNI2002 sectoral classification system	Statistics Sweden, FDB