# Levelling the Debt-Equity Playing Field: Evidence from Belgium

*Appendix for Online Publication*

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# Appendix

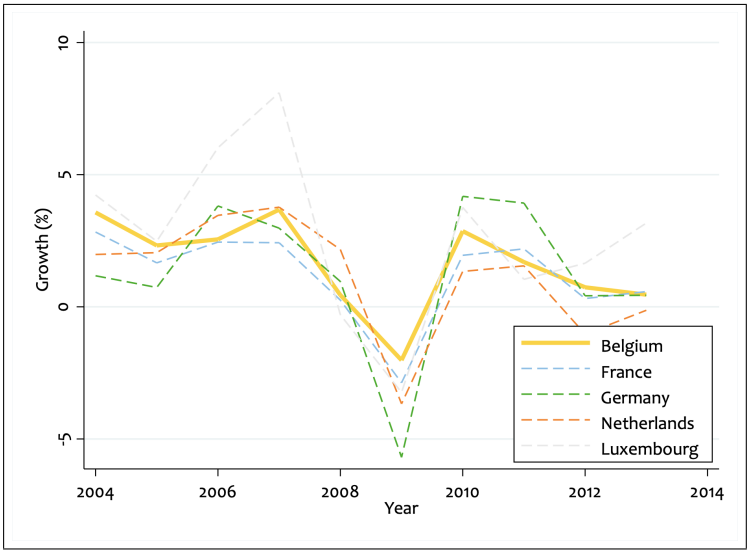


Figure A.1: GDP GROWTH

The above graph illustrates the similarity in the growth rate of GDP for Belgium and surrounding countries between 2004 and 2013. The correlation coefficient between Belgium and France is 0.95, and it is 0.80, 0.85, and 0.87 between Belgium and Germany, the Netherlands, and Luxembourg, respectively. Data source: World Development Indicators, World Bank.

## A.1 Testing for parallel trends

Table A.1: PARALLEL TRENDS TEST

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| Large * 2005 | 1.02*** | 1.02*** | 1.34*** | 1.27*** | 1.34*** | 1.35*** | 1.05*** | 1.04*** |
| | (0.257) | (0.257) | (0.191) | (0.193) | (0.191) | (0.191) | (0.214) | (0.215) |
| Small * 2005 | 0.76*** | 0.76*** | 1.27*** | 1.27*** | 1.27*** | 1.27*** | 0.87*** | 0.87*** |
| | (0.075) | (0.075) | (0.055) | (0.056) | (0.055) | (0.055) | (0.067) | (0.068) |
| Large | -3.10*** | -2.66*** | -3.08*** | -1.87** | -3.08*** | -3.21*** | -3.07*** | -3.09*** |
| | (0.899) | (0.885) | (0.668) | (0.767) | (0.668) | (0.665) | (0.814) | (0.804) |
| Sample | BEL | BEL | FRA | FRA | ALL | ALL | MATCH | MATCH |
| Sector fixed effects | | ✓ | | ✓ | | ✓ | | ✓ |
| Test: equal trend | 0.320 | 0.340 | 0.725 | 0.996 | 0.725 | 0.710 | 0.420 | 0.436 |
| Observations | 40,950 | 40,900 | 55,006 | 52,556 | 55,006 | 55,000 | 51,210 | 51,164 |

This table presents regressions that formally test the parallel trends assumption, the p-value for which is displayed in the penultimate row of the table. Columns 1 and 2 present regressions using only Belgian firms, in columns 3 and 4 it is French firms, in columns 5 and 6 it is all non-Belgian firms (from France, Germany, Luxembourg and the Netherlands), and in columns 7 and 8 it is the sample of matched firms. Standard errors, clustered at the firm level, are reported in parentheses below each coefficient estimate. *** p<0.001, ** p<0.05, * p<0.10.

Table A.2: PARALLEL TRENDS, EXCLUDING SMALL FIRMS

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Belgium * 2005 | 1.02*** | 1.02*** | 1.02*** | 1.02*** | 1.03*** | 1.03*** |
| | (0.257) | (0.259) | (0.257) | (0.259) | (0.259) | (0.262) |
| Control * 2005 | 1.27*** | 1.27*** | 1.34*** | 1.35*** | 1.09*** | 1.09*** |
| | (0.193) | (0.194) | (0.191) | (0.192) | (0.381) | (0.384) |
| Belgium | -3.65*** | -0.80 | -2.05* | 0.50 | -2.25 | -1.02 |
| | (1.166) | (1.163) | (1.098) | (1.085) | (1.901) | (1.821) |
| Non-Belgian sample | FRA | FRA | ALL | ALL | MATCH | MATCH |
| Sector fixed effects | | ✓ | | ✓ | | ✓ |
| Test: equal trend | 0.447 | 0.436 | 0.319 | 0.305 | 0.909 | 0.897 |
| Observations | 3,854 | 3,852 | 4,562 | 4,556 | 2,508 | 2,506 |

This table presents regressions that formally test the parallel trends assumption, the p-value for which is displayed in the penultimate row of the table, and excluding all small firms (i.e. just including large firms in Belgium and control countries). Columns 1 and 2 present regressions using French firms as control firms, in columns 3 and 4 firms from all countries surrounding Belgium are included (France, Germany, Luxembourg and the Netherlands), and in columns 5 and 6 it is the sample of matched firms. Standard errors, clustered at the firm level, are reported in parentheses below each coefficient estimate. *** p<0.001, ** p<0.05, * p<0.10.

## A.2 Summary statistics

Table A.3: BASELINE SUMMARY STATISTICS

| | (1) Belgium | (2) France | (3) Germany | (4) Netherlands | (5) Luxembourg | (6) Matched |
|---|---|---|---|---|---|---|
| Equity ratio | 38.48 | 39.15 | 30.01 | 37.42 | 36.81 | 40.87 |
| | (24.66) | (21.25) | (21.45) | (22.82) | (22.25) | (21.74) |
| Short-term debt ratio | 42.03 | 50.99 | 26.06 | 50.60 | 48.42 | 46.00 |
| | (24.05) | (21.31) | (27.54) | (23.78) | (24.48) | (21.16) |
| Profitability ratio | 6.73 | 9.87 | 8.51 | 11.62 | 8.32 | 8.58 |
| | (9.88) | (10.91) | (11.19) | (12.72) | (11.48) | (10.45) |
| Log assets | 7.28 | 7.31 | 8.24 | 9.07 | 8.79 | 7.35 |
| | (1.14) | (1.17) | (1.62) | (1.62) | (1.87) | (1.16) |
| Tangibility ratio | 30.93 | 13.31 | 22.99 | 17.79 | 15.52 | 25.81 |
| | (25.59) | (15.54) | (21.79) | (20.27) | (17.34) | (24.22) |
| Firm age | 26.43 | 26.71 | 34.01 | 39.17 | 25.36 | 27.93 |
| | (13.34) | (12.96) | (30.05) | (27.36) | (18.17) | (13.47) |
| Sector: Services | 0.22 | 0.24 | 0.21 | 0.18 | 0.16 | 0.24 |
| | (0.41) | (0.43) | (0.40) | (0.39) | (0.37) | (0.43) |
| Sector: Wholesale trade | 0.29 | 0.22 | 0.21 | 0.36 | 0.27 | 0.30 |
| | (0.45) | (0.42) | (0.41) | (0.48) | (0.45) | (0.46) |
| Sector: Retail trade | 0.13 | 0.15 | 0.08 | 0.04 | 0.10 | 0.12 |
| | (0.34) | (0.36) | (0.27) | (0.19) | (0.29) | (0.33) |
| Sector: Construction | 0.17 | 0.17 | 0.15 | 0.14 | 0.16 | 0.16 |
| | (0.37) | (0.37) | (0.36) | (0.35) | (0.37) | (0.37) |
| Sector: Maufacturing | 0.19 | 0.21 | 0.35 | 0.27 | 0.20 | 0.18 |
| | (0.39) | (0.40) | (0.48) | (0.44) | (0.40) | (0.38) |
| Number of firms | 35,406 | 71,803 | 5,596 | 2,532 | 209 | 10,626 |

*Note*: This table presents baseline summary statistics (using the first available year in the dataset, 2004). Log assets are based on total assets in €thousands. All ratios are expressed as a percentage of total assets. Equity is calculated as the sum of shareholder capital and retained earnings, while the short-term debt ratio uses the firm's current liabilities. The profitability ratio uses firm profits before taxes and the tangibility ratio uses net fixed assets. Columns 1 to 5 summarise data from all firms in Belgium, France, Germany, the Netherlands, and Luxembourg, respectively, while column 6 summarises the matched sample of firms obtained using the matching method described in the paper.

## A.3 Estimation with a two-period panel

Table A.4: TWO-PERIOD PANEL

| | (1) Equity | (2) Equity | (3) S/T debt | (4) S/T debt | (5) L/T debt | (6) L/T debt |
|---|---|---|---|---|---|---|
| Belgium * Post * Large | 3.65*** | 3.70*** | -5.31*** | -5.09*** | 2.59*** | 2.58*** |
| | (0.611) | (0.622) | (0.654) | (0.658) | (0.469) | (0.459) |
| Belgium * Post | -0.67*** | -0.68*** | 1.53*** | 1.55*** | -4.39*** | -4.41*** |
| | (0.128) | (0.130) | (0.125) | (0.126) | (0.104) | (0.105) |
| Belgium * Large | 0.08 | -0.45 | 13.11*** | 7.96*** | -10.57*** | -5.64*** |
| | (1.114) | (0.982) | (1.165) | (0.974) | (0.695) | (0.612) |
| Post * Large | -1.36*** | -1.44*** | 1.85*** | 1.77*** | -1.12*** | -1.22*** |
| | (0.348) | (0.353) | (0.405) | (0.409) | (0.335) | (0.319) |
| Belgium | -2.29*** | 2.19*** | -7.40*** | -4.49*** | 12.76*** | 6.30*** |
| | (0.217) | (0.226) | (0.208) | (0.222) | (0.157) | (0.143) |
| Large | -3.05*** | -1.37* | -2.86*** | -2.51*** | 2.77*** | 3.18*** |
| | (0.662) | (0.711) | (0.719) | (0.719) | (0.451) | (0.474) |
| Post | 7.04*** | 6.99*** | -4.58*** | -4.54*** | 0.79*** | 0.83*** |
| | (0.081) | (0.082) | (0.078) | (0.078) | (0.057) | (0.057) |
| Depdendent variable mean | 39.52 | 39.52 | 44.14 | 44.14 | 11.67 | 11.67 |
| Sector fixed effects | | ✓ | | ✓ | | ✓ |
| Baseline controls | | ✓ | | ✓ | | ✓ |
| Observations | 95,956 | 92,770 | 95,955 | 92,768 | 95,692 | 92,485 |

*Note*: This table presents a replication of the analysis from Tables 1 and 2, using a two-period panel (collapsing the pre- and post-NID periods). The dependent variable in columns 1 and 2 is the equity to total assets ratio, in columns 3 and 4 it is the short-term debt ratio, and in columns 5 and 6 it is the long-term debt ratio. Each specification also contains the same set of baseline control variables as in Tables 1 and 2. Standard errors, clustered at the firm level, are reported in parentheses below each coefficient estimate. *** p<0.001, ** p<0.05, * p<0.10.

## A.4 Unbalanced panel

Table A.5: EFFECT OF THE NID ON EQUITY RATIOS

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| Belgium * Post * Large | 5.24*** | 5.21*** | 3.27*** | 2.28*** | | | | |
| | (0.509) | (0.553) | (0.241) | (0.236) | | | | |
| Belgium * Post | -1.42*** | -0.82*** | -0.19** | 0.11 | 3.82*** | 4.38*** | 3.09*** | 1.85*** |
| | (0.105) | (0.114) | (0.090) | (0.093) | (0.498) | (0.541) | (0.223) | (0.217) |
| Belgium * Large | | -2.14** | -0.28 | -2.32*** | | | | |
| | | (0.918) | (0.363) | (0.362) | | | | |
| Post * Large | -2.81*** | -2.63*** | -2.33*** | -1.52*** | | | | |
| | (0.208) | (0.285) | (0.086) | (0.099) | | | | |
| Belgium | | -0.44*** | 0.93*** | 1.79*** | | -2.58*** | 0.65* | -0.13 |
| | | (0.166) | (0.132) | (0.149) | | (0.903) | (0.338) | (0.346) |
| Large | | -1.23*** | -0.99*** | 0.61*** | | | | |
| | | (0.388) | (0.127) | (0.220) | | | | |
| Post | 7.57*** | 6.84*** | 5.95*** | -0.70*** | 4.77*** | 4.21*** | 3.62*** | -1.56*** |
| | (0.053) | (0.062) | (0.040) | (0.053) | (0.201) | (0.278) | (0.076) | (0.103) |
| Depdendent variable mean | 38.03 | 38.03 | 37.56 | 37.56 | 36.42 | 38.03 | 37.56 | 36.69 |
| Small firms | ✓ | ✓ | ✓ | ✓ | | | | |
| Group / subsidiary firms | | | ✓ | ✓ | | | ✓ | ✓ |
| Firm fixed effects | ✓ | | | | ✓ | | | |
| Sector-year fixed effects | | | | ✓ | | | | ✓ |
| Baseline controls | | | | ✓ | | | | ✓ |
| Observations | 1,050,120 | 1,050,120 | 2,290,078 | 1,514,871 | 45,478 | 45,478 | 402,771 | 271,232 |

*Note*: This table presents a replication of the analysis from Table 1, using the larger unbalanced sample. The dependent variable in all columns is the equity to total assets ratio. Standard errors, clustered at the firm level, are reported in parentheses below each coefficient estimate. *** p<0.001, ** p<0.05, * p<0.10.

Table A.6: EFFECT OF THE NID ON DEBT RATIOS

| | (1) S/T debt | (2) S/T debt | (3) S/T debt | (4) S/T debt | (5) S/T debt | (6) S/T debt | (7) L/T debt | (8) L/T debt |
|---|---|---|---|---|---|---|---|---|
| Belgium * Post * Large | -6.64*** | -6.50*** | -7.20*** | | | | 5.40*** | |
| | (0.599) | (0.243) | (0.249) | | | | (0.181) | |
| Belgium * Post | 1.46*** | 1.16*** | 0.98*** | -5.18*** | -5.34*** | -3.91*** | -4.02*** | 0.63*** |
| | (0.111) | (0.089) | (0.092) | (0.589) | (0.226) | (0.230) | (0.074) | (0.163) |
| Belgium * Large | 17.87*** | 14.61*** | 8.23*** | | | | -4.96*** | |
| | (0.960) | (0.375) | (0.368) | | | | (0.231) | |
| Post * Large | 3.36*** | 4.73*** | 5.46*** | | | | -3.64*** | |
| | (0.343) | (0.107) | (0.125) | | | | (0.099) | |
| Belgium | -6.98*** | -6.96*** | -6.58*** | 10.89*** | 7.64*** | 1.26*** | 7.86*** | 2.78*** |
| | (0.158) | (0.128) | (0.146) | (0.947) | (0.353) | (0.351) | (0.095) | (0.213) |
| Large | -7.82*** | -6.93*** | -3.44*** | | | | 2.75*** | |
| | (0.433) | (0.147) | (0.222) | | | | (0.132) | |
| Post | -4.72*** | -4.37*** | -2.99*** | -1.36*** | 0.36*** | -2.82*** | 0.92*** | 1.68*** |
| | (0.061) | (0.042) | (0.075) | (0.338) | (0.098) | (0.164) | (0.062) | (0.134) |
| Depdendent variable mean | 45.87 | 45.46 | 45.46 | 45.87 | 45.46 | 40.28 | 11.41 | 14.10 |
| Small firms | ✓ | ✓ | ✓ | | | | ✓ | |
| Group / subsidiary firms | | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ |
| Sector-year fixed effects | | | ✓ | | | ✓ | ✓ | ✓ |
| Baseline controls | | | ✓ | | | ✓ | ✓ | ✓ |
| Observations | 1,049,433 | 2,288,652 | 1,514,519 | 45,394 | 402,489 | 271,161 | 1,514,233 | 271,071 |

*Note*: This table presents a replication of the analysis from Table 2, using the larger unbalanced sample. The dependent variable in columns 1 to 6 is the short-term debt to total assets ratio and in columns 7 and 8 it is the long-term debt to total assets ratio. Standard errors, clustered at the firm level, are reported in parentheses below each coefficient estimate. *** p<0.001, ** p<0.05, * p<0.10.

## A.5 Systematically adding control countries

Table A.7: SYSTEMATICALLY ADDING COUNTRIES

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| Belgium * Post * Large | 3.24*** | 3.12*** | 3.00*** | 3.00*** | | | | |
| | (0.265) | (0.261) | (0.259) | (0.259) | | | | |
| Belgium * Post | 0.22** | 0.15 | 0.16 | 0.16 | 3.46*** | 3.27*** | 3.16*** | 3.16*** |
| | (0.100) | (0.099) | (0.099) | (0.099) | (0.245) | (0.241) | (0.240) | (0.240) |
| Belgium * Large | 0.71* | 0.95** | 0.84** | 0.82** | | | | |
| | (0.425) | (0.417) | (0.412) | (0.411) | | | | |
| Post * Large | -2.55*** | -2.43*** | -2.31*** | -2.31*** | | | | |
| | (0.125) | (0.116) | (0.113) | (0.113) | | | | |
| Belgium | -0.85*** | -0.28* | -0.26 | -0.25 | -0.14 | 0.67* | 0.58 | 0.57 |
| | (0.161) | (0.160) | (0.160) | (0.160) | (0.393) | (0.385) | (0.379) | (0.379) |
| Large | -2.02*** | -2.27*** | -2.15*** | -2.13*** | | | | |
| | (0.221) | (0.204) | (0.193) | (0.193) | | | | |
| Post | 5.87*** | 5.94*** | 5.94*** | 5.93*** | 3.32*** | 3.51*** | 3.62*** | 3.62*** |
| | (0.053) | (0.051) | (0.051) | (0.051) | (0.113) | (0.104) | (0.100) | (0.100) |
| Sample | Fra | Fra,Ger | Fra,Ger,Neth | All | Fra | Fra,Ger | Fra,Ger,Neth | All |
| Small firms | ✓ | ✓ | ✓ | ✓ | | | | |
| Group / subsidiary firms | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Observations | 1,071,315 | 1,127,275 | 1,152,594 | 1,154,684 | 164,776 | 187,286 | 204,826 | 205,966 |

*Note*: This table presents results that replicate the analysis from Table 1 of the paper, systematically adding France, Germany, the Netherlands, and Luxembourg as the control group (compared to Table 1, where all countries are included). The dependent variable in all columns is the equity to total assets ratio for the firm. Standard errors, clustered at the firm level, are reported in parentheses below each coefficient estimate. *** p<0.001, ** p<0.05, * p<0.10.

## A.6 Heterogeneous impacts: revenue volatility

In this section, I explore whether the NID had heterogeneous impacts on firms in sectors with the greatest revenue volatility (for whom the performance-continent nature of equity payments may be particularly beneficial), using the following two specifications:

$$y_{it} = \beta_1 + \beta_2 Post_t + \beta_3 Risky_i + \beta_4 Post_t * Risky_i + \boldsymbol{\beta}_5 \boldsymbol{X}_{i0} + \varepsilon_{it} \tag{1}$$

$$y_{it} = \beta_1 + \beta_2 Post_t + \beta_3 Large_i + \beta_4 Risky_i + \beta_5 Large_i * Risky_i + \beta_6 Large_i * Post_t + \beta_7 Post_t * Risky_i + \beta_8 Large_i * Post_t * Risky_i + \boldsymbol{\beta}_9 \boldsymbol{X}_{i0} + \varepsilon_{it} \tag{2}$$

where equation 1 applies to the specification that only includes firms with total assets greater than €4 million, and equation 2 is for the triple-difference specification that includes small firms. $Risky$ is a dummy for firms that operate in sectors with above-median volatility of revenues. Specifically, I calculate the pre-NID sector-level coefficient of variation of revenue for all firms, based on their two-digit standard industrial classification (SIC) sector code. Since my dataset contains only two pre-NID years, I construct a sector-level risk measure using Compustat data on US firms using the same two-digit SIC sector code and 13 years of pre-NID data.[1] $\boldsymbol{X}_{i0}$ is a matrix of the previously used baseline controls. The main coefficient of interest is $\beta_4$ in equation 1 and $\beta_8$ in equation 2, which represent the change in leverage in the post-NID period for treatment firms (larger Belgian firms) in sectors with above-median revenue volatility.

Results are presented in Table A.8. Beginning with column 1, the coefficient on $Post * Large * Risky$ of +2.35 indicates that treatment firms in Belgium in sectors with above-median revenue volatility differentially increased their equity ratio post-NID. Column 2 presents results from the same specification as column 1, but replacing the Belgian sample with the French sample. A stark difference is observed; the equivalent French firms (those with assets above €4 million

[1] The coefficient of variation is a commonly used measure of risk exposure in finance, insurance and related fields (Brief & Owen, 1969; Fisher, 1959; Hirshleifer, 1988; Kasperski & Holland, 2013; Mahmoudvand & Oliveira, 2018; Osteryoung, Scott, & Roberts, 1977; Rajgopal & Shevlin, 2002; Roberts & Roberts, 1970; Scheel, 1978; Weber, Shafir, & Blais, 2004). The approach of using US data to create a sector-level measure shares similarities with that of Barbiero, Popov, and Wolski (2020), who use US sector-level price-to-earnings ratios to proxy for European firms' investment opportunities, and to the approach of Fisman and Love (2007), who argue that the growth rate of US industries is a good proxy for worldwide growth opportunities in countries with developed financial markets. Finally, there are also similarities with Rajan and Zingales (1998), who construct an industry-specific measure of external financial dependence.

and in sectors with above-median revenue volatility) actually *decreased* their equity ratios in the post-NID period relative to all other firms, with a coefficient on $Post * Large * Risky$ of -1.85. Column 3 expands the non-Belgian sample to all surrounding countries, and similarly identifies a negative coefficient on $Post * Large * Risky$ of -0.69. At the bottom of the table, $p$-values are reported from a cross-equation test for whether the coefficient on $Post * Large * Risky$ differs for Belgian firms compared to the equivalent non-Belgian firms. Unsurprisingly, the null of coefficient equality on $Post * Large * Risky$ across the Belgian and non-Belgian specifications is strongly rejected ($p$-values of 0.001 and 0.015 respectively for the test of column 1 compared to columns 2 and 3 respectively). Similar results are observed when using the short-term debt ratio in columns 4 to 6, as well as when restricting the sample by dropping all small firms in columns 7 to 12. The results are also robust to dropping all firms that are part of a larger group / subsidiaries, presented in Table A.9. In Tables A.10 and A.11 I repeat the analysis using the sector-level standard deviation of sales (rather than the coefficient of variation), and results are robust to this alternative specification.

Table A.8: HETEROGENEOUS EFFECTS: RISK EXPOSURE, STAND-ALONE FIRMS

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Equity | Equity | Equity | S/T debt | S/T debt | S/T debt | Equity | Equity | Equity | S/T debt | S/T debt | S/T debt |
| Post * Large * Risky | 2.35* | -1.85* | -0.69 | -2.06* | 1.02 | 0.50 | | | | | | |
| | (1.227) | (1.023) | (0.904) | (1.118) | (1.011) | (0.905) | | | | | | |
| Post * Risky | 0.25 | 0.08 | 0.10 | -1.56*** | -0.74*** | -0.68*** | 2.60** | -1.76 | -0.59 | -3.61*** | 0.29 | -0.18 |
| | (0.258) | (0.213) | (0.211) | (0.235) | (0.210) | (0.211) | (1.182) | (1.088) | (0.963) | (1.131) | (1.086) | (0.986) |
| Post * Large | 0.90 | -0.23 | -1.12* | -1.87** | -0.54 | 1.66*** | | | | | | |
| | (0.911) | (0.695) | (0.620) | (0.830) | (0.688) | (0.621) | | | | | | |
| Large * Risky | -6.30*** | 0.60 | 0.20 | 5.64*** | 1.74* | 1.55* | | | | | | |
| | (1.099) | (0.915) | (0.808) | (1.001) | (0.905) | (0.810) | | | | | | |
| Large | 2.65*** | -1.31** | -1.75*** | -2.16*** | 1.20* | -0.30 | | | | | | |
| | (0.838) | (0.643) | (0.577) | (0.763) | (0.635) | (0.577) | | | | | | |
| Risky | -2.18*** | -1.51*** | -1.66*** | 2.63*** | 2.86*** | 2.42*** | -7.99*** | 1.31 | 0.16 | 5.13*** | 0.22 | -0.41 |
| | (0.268) | (0.205) | (0.203) | (0.244) | (0.203) | (0.204) | (1.253) | (1.079) | (0.952) | (1.198) | (1.078) | (0.974) |
| Post | 8.32*** | 10.68*** | 10.74*** | -1.97*** | -7.07*** | -6.97*** | 9.98*** | 10.11*** | 9.54*** | -5.46*** | -7.37*** | -5.09*** |
| | (0.246) | (0.194) | (0.192) | (0.224) | (0.192) | (0.193) | (1.240) | (1.098) | (0.977) | (1.186) | (1.098) | (1.001) |
| Sample | BEL | FRA | All | BEL | FRA | All | BEL | FRA | All | BEL | FRA | All |
| Depdendent variable mean | 38.24 | 42.07 | 41.57 | 40.12 | 44.18 | 43.19 | 38.24 | 42.07 | 41.57 | 40.12 | 44.18 | 43.19 |
| Small firms | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| Sector fixed effects | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Year fixed effects | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Baseline controls | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Test: Medium*Post*Risky | | 0.001 | 0.015 | | 0.017 | 0.052 | | | | | | |
| Test: Post*Risky | | | | | | | | 0.001 | 0.009 | | 0.002 | 0.008 |
| Observations | 195,420 | 253,383 | 263,293 | 195,419 | 253,260 | 263,140 | 8,440 | 10,049 | 13,179 | 8,440 | 10,035 | 13,148 |

*Note*: This table presents an analysis of heterogeneous impacts of the NID on firms (both stand-alone and those that part of a larger group / subsidiaries) in sectors with the greatest revenue volatility, measured using a sector-level coefficient of variation of sales (averaged over 13 pre-NID years, based on Compustat data for US firms in the same sector). The variable 'Risky' represents an indicator for a firm being in a sector with an above-median value of the coefficient of variation of sales. The coefficients on Post * Large * Risky (in columns 1 and 4) or Post * Risky (in columns 7 and 10) represent the differential effect of the NID on leverage ratios for the most risk-exposed firms in the treatment group (Belgian large firms). The penultimate two rows of the table display p-values for a test whether those coefficients differ for comparably sized firms in control countries (for example, the p-values in columns 2 and 3 represent a cross-coefficient test for equality of the coefficient on Post * Large * Risky from those two columns against the coefficient on Post * Large * Risky in row 1). Standard errors, clustered at the firm level, are reported in parentheses below each coefficient estimate. *** p<0.001, ** p<0.05, * p<0.10.

## Table A.9: HETEROGENEOUS EFFECTS: RISK EXPOSURE, ALL FIRMS

| | (1) Equity | (2) Equity | (3) Equity | (4) S/T debt | (5) S/T debt | (6) S/T debt | (7) Equity | (8) Equity | (9) Equity | (10) S/T debt | (11) S/T debt | (12) S/T debt |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Post * Large * Risky | 1.29** | 0.37 | 0.36 | -0.71 | 0.18 | 0.13 | | | | | | |
| | (0.558) | (0.326) | (0.293) | (0.521) | (0.323) | (0.299) | | | | | | |
| Post * Risky | 0.12 | -0.07 | -0.02 | -1.40*** | -0.65*** | -0.62*** | 1.41*** | 0.30 | 0.34 | -2.10*** | -0.47 | -0.49* |
| | (0.216) | (0.133) | (0.131) | (0.201) | (0.132) | (0.134) | (0.524) | (0.306) | (0.272) | (0.512) | (0.306) | (0.283) |
| Post * Large | -0.01 | -2.69*** | -2.47*** | -1.38*** | 1.00*** | 2.43*** | | | | | | |
| | (0.392) | (0.234) | (0.210) | (0.366) | (0.233) | (0.215) | | | | | | |
| Large * Risky | -2.32*** | 0.79*** | 1.13*** | 2.12*** | -1.13*** | -0.91*** | | | | | | |
| | (0.499) | (0.291) | (0.262) | (0.466) | (0.289) | (0.268) | | | | | | |
| Large | 0.35 | -0.03 | -0.33 | 1.00*** | 1.34*** | 0.22 | | | | | | |
| | (0.379) | (0.226) | (0.203) | (0.354) | (0.224) | (0.208) | | | | | | |
| Risky | -2.94*** | -1.48*** | -1.73*** | 4.44*** | 3.07*** | 2.25*** | -4.82*** | -0.43 | -0.63** | 6.59*** | 1.32*** | 0.45 |
| | (0.217) | (0.129) | (0.126) | (0.203) | (0.128) | (0.129) | (0.521) | (0.299) | (0.265) | (0.509) | (0.300) | (0.275) |
| Post | 8.16*** | 8.83*** | 8.94*** | -2.43*** | -6.76*** | -6.45*** | 9.01*** | 5.28*** | 5.76*** | -5.37*** | -5.68*** | -3.63*** |
| | (0.200) | (0.120) | (0.117) | (0.187) | (0.119) | (0.120) | (0.539) | (0.320) | (0.285) | (0.527) | (0.321) | (0.296) |
| Sample | BEL | FRA | All | BEL | FRA | All | BEL | FRA | All | BEL | FRA | All |
| Depdendent variable mean | 38.91 | 41.14 | 40.39 | 41.59 | 47.18 | 44.88 | 38.91 | 41.14 | 40.39 | 41.59 | 47.18 | 44.88 |
| Small firms | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| Sector fixed effects | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Year fixed effects | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Baseline controls | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Test: Medium*Post*Risky | | 0.087 | 0.077 | | 0.089 | 0.113 | | | | | | |
| Test: Post*Risky | | | | | | | | 0.025 | 0.026 | | 0.001 | 0.001 |
| Observations | 337,010 | 691,898 | 759,718 | 337,008 | 691,711 | 759,428 | 48,970 | 110,367 | 146,777 | 48,970 | 110,332 | 146,695 |

*Note*: This table presents an analysis of heterogeneous impacts of the NID on stand-alone firms in sectors with the greatest revenue volatility, measured using a sector-level coefficient of variation of sales (averaged over 13 pre-NID years, based on Compustat data for US firms in the same sector). The variable 'Risky' represents an indicator for a firm being in a sector with an above-median value of the coefficient of variation of sales. The coefficients on Post * Large * Risky (in columns 1 and 4) or Post * Risky (in columns 7 and 10) represent the differential effect of the NID on leverage ratios for the most risk-exposed firms in the treatment group (Belgian large firms). The penultimate two rows of the table display p-values for a test whether those coefficients differ for comparably sized firms in control countries (for example, the p-values in columns 2 and 3 represent a cross-coefficient test for equality of the coefficient on Post * Large * Risky from those two columns against the coefficient on Post * Large * Risky in row 1). Standard errors, clustered at the firm level, are reported in parentheses below each coefficient estimate. *** p<0.001, ** p<0.05, * p<0.10.

## Table A.10: RISK EXPOSURE: STANDARD DEVIATION OF REVENUES, STAND-ALONE FIRMS

| | (1) Equity | (2) Equity | (3) Equity | (4) S/T debt | (5) S/T debt | (6) S/T debt | (7) Equity | (8) Equity | (9) Equity | (10) S/T debt | (11) S/T debt | (12) S/T debt |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Post * Large * Risky | 2.28* | -1.82* | -0.45 | -2.76** | 1.01 | 0.05 | | | | | | |
| | (1.231) | (1.018) | (0.901) | (1.122) | (1.007) | (0.902) | | | | | | |
| Post * Risky | 0.32 | -0.89*** | -0.87*** | -1.13*** | -0.59*** | -0.51** | 2.60** | -2.70** | -1.32 | -3.89*** | 0.43 | -0.45 |
| | (0.255) | (0.206) | (0.204) | (0.233) | (0.203) | (0.204) | (1.218) | (1.087) | (0.963) | (1.163) | (1.087) | (0.986) |
| Post * Large | 0.90 | 0.01 | -1.09* | -1.61* | -0.63 | 1.82*** | | | | | | |
| | (0.927) | (0.742) | (0.656) | (0.846) | (0.733) | (0.657) | | | | | | |
| Large * Risky | -4.71*** | 0.20 | -0.11 | 5.04*** | 0.42 | 1.07 | | | | | | |
| | (1.102) | (0.911) | (0.806) | (1.005) | (0.900) | (0.807) | | | | | | |
| Large | 1.70** | -1.20* | -1.64*** | -1.65** | 1.79*** | -0.14 | | | | | | |
| | (0.852) | (0.682) | (0.607) | (0.777) | (0.674) | (0.608) | | | | | | |
| Risky | 3.25*** | 0.21 | -0.07 | -1.69*** | 3.63*** | 2.69*** | -0.13 | 2.32** | 0.14 | -0.76 | -2.45** | -2.22** |
| | (0.283) | (0.213) | (0.210) | (0.258) | (0.210) | (0.210) | (1.335) | (1.113) | (0.979) | (1.275) | (1.113) | (1.002) |
| Post | 8.30*** | 11.07*** | 11.12*** | -2.11*** | -7.06*** | -6.98*** | 9.98*** | 10.77*** | 9.98*** | -5.39*** | -7.49*** | -4.97*** |
| | (0.252) | (0.198) | (0.196) | (0.230) | (0.196) | (0.197) | (1.284) | (1.133) | (1.003) | (1.226) | (1.135) | (1.028) |
| Sample | BEL | FRA | All | BEL | FRA | All | BEL | FRA | All | BEL | FRA | All |
| Depdendent variable mean | 38.24 | 42.07 | 41.57 | 40.12 | 44.18 | 43.19 | 38.24 | 42.07 | 41.57 | 40.12 | 44.18 | 43.19 |
| Small firms | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| Sector fixed effects | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Year fixed effects | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Baseline controls | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Test: Medium*Post*Risky | | 0.002 | 0.030 | | 0.003 | 0.033 | | | | | | |
| Test: Post*Risky | | | | | | | | 0.000 | 0.001 | | 0.001 | 0.008 |
| Observations | 196,460 | 255,042 | 264,962 | 196,459 | 254,919 | 264,809 | 8,540 | 10,159 | 13,289 | 8,540 | 10,145 | 13,258 |

*Note*: This table presents an analysis of heterogeneous impacts of the NID on firms (both stand-alone and those that part of a larger group / subsidiaries) in sectors with the greatest revenue volatility, measured using the sector-level standard deviation of sales (averaged over 13 pre-NID years, based on Compustat data for US firms in the same sector). The variable 'Risky' represents an indicator for a firm being in a sector with an above-median value of the standard deviation of sales. The coefficients on Post * Large * Risky (in columns 1 and 4) or Post * Risky (in columns 7 and 10) represent the differential effect of the NID on leverage ratios for the most risk-exposed firms in the treatment group (Belgian large firms). The penultimate two rows of the table display p-values for a test whether those coefficients differ for comparably sized firms in control countries (for example, the p-values in columns 2 and 3 represent a cross-coefficient test for equality of the coefficient on Post * Large * Risky from those two columns against the coefficient on Post * Large * Risky in row 1). Standard errors, clustered at the firm level, are reported in parentheses below each coefficient estimate. *** p<0.001, ** p<0.05, * p<0.10.

Table A.11: RISK EXPOSURE: STANDARD DEVIATION OF REVENUES, ALL FIRMS

| | (1) Equity | (2) Equity | (3) Equity | (4) S/T debt | (5) S/T debt | (6) S/T debt | (7) Equity | (8) Equity | (9) Equity | (10) S/T debt | (11) S/T debt | (12) S/T debt |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Post * Large * Risky | 1.02* | 0.47 | 0.55* | -0.77 | 0.42 | 0.13 | | | | | | |
| | (0.558) | (0.326) | (0.293) | (0.522) | (0.324) | (0.299) | | | | | | |
| Post * Risky | 0.55*** | -0.37*** | -0.33** | -1.01*** | -0.64*** | -0.59*** | 1.57*** | 0.10 | 0.27 | -1.78*** | -0.21 | -0.48 |
| | (0.213) | (0.131) | (0.129) | (0.199) | (0.130) | (0.132) | (0.527) | (0.307) | (0.290) | (0.516) | (0.308) | (0.310) |
| Post * Large | 0.08 | -2.72*** | -2.55*** | -1.40*** | 0.84*** | 2.41*** | | | | | | |
| | (0.407) | (0.241) | (0.216) | (0.380) | (0.240) | (0.221) | | | | | | |
| Large * Risky | -1.38*** | -0.18 | 0.30 | 1.80*** | -1.28*** | -0.90*** | | | | | | |
| | (0.501) | (0.292) | (0.262) | (0.468) | (0.290) | (0.268) | | | | | | |
| Large | -0.01 | 0.43* | 0.04 | 1.20*** | 1.52*** | 0.28 | | | | | | |
| | (0.392) | (0.231) | (0.208) | (0.367) | (0.230) | (0.213) | | | | | | |
| Risky | 2.80*** | -0.17 | -0.74*** | -1.94*** | 3.06*** | 1.64*** | 0.31 | -0.48 | -0.47* | 1.56*** | 0.81** | 3.09*** |
| | (0.228) | (0.134) | (0.131) | (0.213) | (0.133) | (0.134) | (0.543) | (0.314) | (0.260) | (0.532) | (0.315) | (0.277) |
| Post | 7.98*** | 8.96*** | 9.07*** | -2.53*** | -6.73*** | -6.43*** | 8.91*** | 5.39*** | 3.47*** | -5.48*** | -5.82*** | -1.53*** |
| | (0.207) | (0.122) | (0.119) | (0.194) | (0.121) | (0.122) | (0.549) | (0.325) | (0.221) | (0.538) | (0.326) | (0.235) |
| Sample | BEL | FRA | All | BEL | FRA | All | BEL | FRA | All | BEL | FRA | All |
| Depdendent variable mean | 38.91 | 41.14 | 40.39 | 41.59 | 47.18 | 44.88 | 38.91 | 41.14 | 40.39 | 41.59 | 47.18 | 44.88 |
| Small firms | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| Sector fixed effects | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Year fixed effects | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Baseline controls | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Test: Medium*Post*Risky | | 0.303 | 0.369 | | 0.021 | 0.085 | | | | | | |
| Test: Post*Risky | | | | | | | | 0.003 | 0.005 | | 0.001 | 0.006 |
| Observations | 338,640 | 694,057 | 762,137 | 338,638 | 693,870 | 761,847 | 49,290 | 110,697 | 153,646 | 49,290 | 110,662 | 153,581 |

*Note*: This table presents an analysis of heterogeneous impacts of the NID on stand-alone firms in sectors with the greatest revenue volatility, measured using the sector-level standard deviation of sales (averaged over 13 pre-NID years, based on Compustat data for US firms in the same sector). The variable 'Risky' represents an indicator for a firm being in a sector with an above-median value of the standard deviation of sales. The coefficients on Post * Large * Risky (in columns 1 and 4) or Post * Risky (in columns 7 and 10) represent the differential effect of the NID on leverage ratios for the most risk-exposed firms in the treatment group (Belgian large firms). The penultimate two rows of the table display p-values for a test whether those coefficients differ for comparably sized firms in control countries (for example, the p-values in columns 2 and 3 represent a cross-coefficient test for equality of the coefficient on Post * Large * Risky from those two columns against the coefficient on Post * Large * Risky in row 1). Standard errors, clustered at the firm level, are reported in parentheses below each coefficient estimate. *** p<0.001, ** p<0.05, * p<0.10.

Finally, Table A.12 provides further details for the 25 sectors that account for 91.5% of firms in the sample, including their value for the coefficient of variation of revenue and the employment growth rate in those sectors between 2000 and 2014 (across the European Union). The data reveal that sectors with above-median revenue volatility are also those that created more jobs (an average increase in employment of 26.8% over the period, compared to 5.0% in the below-median revenue-volatility group). The above-median revenue-volatility group includes sectors in advertising and market research, management consulting and other business services, scientific research and development, as well as information technology and computer programming. In contrast, the below-median revenue-volatility group includes more traditional sectors with slower employment growth (for example, retail trade sectors, printing and publishing, and manufacturing of basic products).

## Table A.12: EMPLOYMENT GROWTH RATE BY SECTOR

| SECTORS WITH ABOVE-MEDIAN REVENUE VOLATILITY | | | | |
|---|---|---|---|---|
| SIC CODE | DESCRIPTION | COEFFICIENT OF VARIATION | SAMPLE PROPORTION | EMPLOYMENT GROWTH |
| 50 | Wholesale Trade - Durable Goods | 5.64 | 14.2% | 12.7% |
| 87 | Engineering & Management Services | 2.62 | 10.1% | 51.3% |
| 51 | Wholesale Trade - Nondurable Goods | 2.64 | 7.2% | 12.7% |
| 73 | Business Services | 7.30 | 5.6% | 37.9% |
| 58 | Eating & Drinking Places | 2.75 | 2.7% | 39.8% |
| 80 | Health Services | 3.32 | 2.3% | 28.6% |
| 35 | Industrial Machinery & Equipment | 4.42 | 1.7% | 1.2% |
| | | | SIMPLE AVERAGE GROWTH RATE | 26.3% |
| | | | WEIGHTED AVERAGE GROWTH RATE | 26.8% |

| SECTORS WITH BELOW-MEDIAN REVENUE VOLATILITY | | | | |
|---|---|---|---|---|
| SIC CODE | DESCRIPTION | COEFFICIENT OF VARIATION | SAMPLE PROPORTION | EMPLOYMENT GROWTH |
| 17 | Special Trade Contractors | 1.95 | 10.9% | −7.4% |
| 59 | Miscellaneous Retail | 2.58 | 8.0% | 14.1% |
| 15 | General Building Contractors | 1.48 | 4.2% | −7.4% |
| 70 | Hotels & Other Lodging Places | 2.56 | 3.3% | 39.8% |
| 34 | Fabricated Metal Products | 2.09 | 3.1% | −5.7% |
| 20 | Food & Kindred Products | 2.55 | 2.3% | 6.1% |
| 56 | Apparel & Accessory Stores | 1.85 | 2.1% | 14.1% |
| 27 | Printing & Publishing | 1.75 | 2.0% | −16.4% |
| 75 | Auto Repair, Services, & Parking | 1.75 | 1.9% | 11.4% |
| 54 | Food Stores | 1.51 | 1.8% | 14.1% |
| 57 | Furniture & Home furnishings Stores | 1.85 | 1.7% | 14.1% |
| 24 | Lumber & Wood Products | 2.40 | 1.3% | −19.9% |
| 72 | Personal Services | 1.43 | 1.2% | 36.0% |
| 79 | Amusement & Recreation Services | 2.00 | 1.0% | 35.9% |
| 52 | Building Materials & Gardening Supplies | 2.02 | 0.9% | 12.7% |
| 32 | Stone, Clay, & Glass Products | 1.74 | 0.8% | −26.2% |
| 55 | Automative Dealers & Service Stations | 1.99 | 0.8% | 9.5% |
| 16 | Heavy Construction, Except Building | 2.05 | 0.8% | −7.4% |
| | | | SIMPLE AVERAGE GROWTH RATE | 6.5% |
| | | | WEIGHTED AVERAGE GROWTH RATE | 5.0% |

*Note*: The source of employment data is Eurostat (), which uses Nomenclature of Economic Activities (NACE) codes; these were then mapped onto Standard industrial classification of economic activities (SIC) codes using correspondence tables (https:/ec.europa.eu/eurostat/ramon/relations/). In cases where a two-digit SIC code mapped onto multiple NACE categories, a further sub-division using three-digit SIC codes was used to map more accurately. For example, SIC code 50 maps onto four NACE categories: (i) advertising and market research; (ii) legal and accounting activities; activities of head offices; management consultancy activities; (iii) architectural and engineering activities; technical testing and analysis, and (iv) scientific research and development. In such cases, a weighted average was used, based on three-digit SIC codes that mapped more directly onto NACE categories. The source for the coefficient of variation of revenues is Compustat, via Wharton Research Data Services (WRDS).

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