

The Costs of Being Sustainable: Cross-Country Evidence[†]

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Abstract

We examine whether the adoptions of mandatory CSR disclosure laws – regulations intended to increase transparency and encourage companies to develop a responsible approach to business – increase primarily administrative or productional expenses. Using the staggered adoption of CSR disclosure laws in Europe, we find that the adoption increases administrative, but not productional costs, and the costs as well as cost stickiness vary by country. For a representative firm the average annual increase in SG&A is \$12.22 million subsequent to the adoption. Adoption costs are pronounced in shareholder-oriented countries characterized with common law legal origin, high shareholder litigation risk and lenient employment protection, while the stickiness of adoption costs is highest in stakeholder-oriented countries. Overall, our results imply that the adoption begins primarily as an administrative reform and the adoption is more expensive in shareholder-oriented countries.

Key words: CSR, non-financial reporting, SG&A

JEL Classification: F23, M41, M14, M48

[†] We appreciate the helpful comments provided by Markku Kaustia, Henry Jarva (Discussant) and conference participants at GSF Winter Workshop in Finance 2020, Liechtenstein Workshop of Sustainable Finance 2021 and seminar participants at Hanken School of Economics.

1. Introduction

The sustainability reforms, such as mandatory CSR disclosure encouraging companies to develop a responsible approach to business, appear to contribute to a wealth transfer from shareholders to stakeholders. Accordingly, the stock market reacts negatively to announcements of mandatory CSR disclosure laws (Grewal et al., 2019). Similarly, research on the Chinese 2008 CSR disclosure mandate document that mandatory CSR disclosure decreases profitability and generates positive externalities at the expense of shareholders (Chen et al., 2018). In this paper, using a broad international sample not limited to available ESG data, we analyze which type of expenditure dominates the adoption costs of mandatory CSR disclosure, and whether the adoption costs are transitory or persistent in nature.

Empirical evidence on corporate social responsibility expenditure does not provide a unanimous prediction of the magnitude of the costs of a non-financial disclosure mandate, despite a few single-country studies having examined CSR reporting mandates. For instance, the adoption costs of the Indian Companies Act of 2013 are not likely to be directly generalizable to OECD countries. This is because the law explicitly requires large companies to spend 2% of the three-year average net income on CSR (Manchiraju & Rajgopal, 2017). Similarly, the adoption costs of the CSR disclosure mandate in 2008 by the Chinese government-owned Shanghai and Shenzhen Stock Exchanges' are not likely to be generalizable to market economies since Chinese government has tied access to bank financing to firms' CSR performance (Chen et al., 2018). Likewise, it is difficult to draw accurate inferences of the costs of mandatory CSR disclosure based on (Di Giuli & Kostovetsky, 2014). Their estimates of CSR spending equal to 10% of net income apply to the largest 3000 publicly traded in the U.S. where CSR disclosure is voluntary.

The analysis of the adoption costs of mandatory CSR disclosure is hampered by data limitations. First, data on CSR related costs is primarily available for the largest companies, which are likely to be early adopters. Second, the commensurability problems of subjective ESG data impose limitations on accurate analysis of the real effects, and the persistence of the real effects originating from CSR disclosure laws. Specifically, correlations between ESG ratings provided by major ESG ratings agencies vary between 38 and 71%, which originates from divergence in scope, weights and measurement (Berg et al., 2019). Furthermore, the three major ESG rating data sets, namely ASSET4, Bloomberg and KLD appear to coincide neither in distribution nor in risk (Dorfleitner et al., 2015), which may explain why ESG ratings, used in isolation, are unlikely to make a material contribution to portfolio returns (Dimson et al., 2020). Moreover, the fact that the amount of ESG disclosure generally exacerbates ESG rating disagreement rather than resolves it (Christensen et al., 2021), highlights the subjectivity and commensurability problem of ESG data.

To account for limited availability of data on non-voluntary adopting firms' CSR expenditure and the commensurability problem, this paper focuses on selling general and administrative expenses (SG&A) and on the theory of asymmetric cost behavior in studying companies' commitment to CSR. We quantify the costs of the mandatory CSR disclosure in terms of selling, general and administrative (SG&A) cost changes for two reasons. First, the mandatory CSR disclosure represents primarily an administrative burden – it requires firms to collect and report information, not to change firm behavior. Consequently, the mandate is less likely to have immediate effect on production costs, i.e., cost of goods sold (COGS), which is generally regarded as the as the cost of inventory sold during the period (Bostwick et al., 2016). Second, explicit classifications of all sustainability related costs are not widely available. Moreover, it is unclear how successful such classifications are in capturing all sustainability costs and activities since changes in the organizational discourse and norms can also result in

unconscious actions with cost implications (Maguire & Hardy, 2009). Therefore, we base our identification strategy on SG&A, which represents a broad cost item equal to 27% of total assets for an average firm (Chen et al., 2012). SG&A has the capacity to capture a variety of granular cost items that are likely to comprise the direct and indirect costs of CSR disclosure. Specifically, SG&A represents all commercial expenses incurred in the regular course of business operation except for expenses directly related to production of goods and services (Standard & Poors, 2003).

To isolate the increments and persistence of costs associated with the mandatory adoption of CSR disclosure we apply an SG&A changes model introduced by Anderson et al., (2003) with firm and industry-year effects. The dependent variable of the model is the natural logarithm of the quotient of current and previous year selling general and administrative expense. To test our hypothesis, we augment this model by including the main test variable *CSRLaw*, which is an indicator variable equal to one if the firm is mandated to disclose on non-financial information and zero otherwise. We exclude firms that adopt the non-financial disclosure requirements voluntarily before the enforcement of the law they are later mandated to comply with. We define the voluntary adopting firms as firms which disclose their annual report on the webpages of GRI (Global Reporting Initiative, 2021)¹.

Cost asymmetry encompasses the idea of non-mechanistic relation between activity and costs. As an example of cost asymmetry, costs are considered sticky when they increase more when activity rises than they decrease when activity falls by an equivalent amount (M. C. Anderson et al., 2003). In general, the variation in the degree of cost asymmetry depends on factors such

¹ The GRI is referred to as the gold standard of voluntary non-financial reporting frameworks (Sethi et al., 2017). Recently, it has been used to proxy for committed sustainability reporting (Gonçalves et al., 2020).

as the magnitude of resource adjustment costs, managerial expectations for future sales, slack resources carried over from the prior period, and managerial incentives (Banker & Byzalov, 2014). The cost asymmetry influences the structure of optimal decisions with adjustment costs and is reflected in the impact of prior sales changes on managers' expectations about future sales changes (Banker et al., 2014). Importantly, evidence on employment protection laws illustrate that cost stickiness reflects the deliberate resource commitment decisions of managers in the presence of adjustment costs (Banker et al., 2013). This is why we consider cost stickiness a good proxy for testing commitment to CSR expenditure in the companies subject to the CSR disclosure laws. Analyzing potential changes in cost stickiness is important as in the longer run, increasing stickiness of sustainability costs can have material effects to future cash flows since a natural consequence of cost stickiness is that sales decreases affect earnings more than sales increases (Banker et al., 2016). What is more, stickier cost structure generally results in lower dividends, since knowing investors' aversion to dividend cuts, firms with stickier costs and higher resource adjustment costs need to settle for a lower dividend payout ratio they can maintain in the future (He et al., 2020).

Our test sample comprises 13,836 firm-year observations from Compustat Global and Compustat North America over the fiscal years 2006-2019. The treated sample, 6,918 firm-year observations is derived primarily from the 2017 adoption of the European Union Directive 2014/95/EU of non-financial reporting adopted across 24 EU member states. Our test design also includes the earlier adoptions in Denmark (2009), Norway (2013) and the UK (2013). As a control sample (13,836 firm-year observations) we use nine OECD countries which have not adopted comparable legislation as the treated countries on mandatory disclosure of non-financial information. OECD countries represent advanced economies with democratic governments around the globe (OECD 2020). They have been used as a control group in a recent regulatory study of mandatory IFRS adoption (Kim et al., 2012).

We find that the mandatory adoption of CSR disclosure is costly, the costs stem primarily from additional administrative burden, and the costs and their stickiness vary by country. Specifically, our first test addresses the effect of CSR disclosure mandate on SG&A changes. For a representative firm the average annual change in SG&A associated with the mandatory adoption of CSR disclosure is 2.0% ($t = 2.81$) or approximately \$12.22 million². Our second test addresses changes in components of SG&A and cost of goods sold (COGS). Specifically, using changes in SG&A less research and development expenditure (R&D), R&D separately, or COGS we find a significant association in all items except for COGS. In the non-R&D component of SG&A the cost increase is 1.5% ($t = 1.97$) and 1.6% in the R&D component ($t = 2.14$).

The third analysis tests country characteristics as the economic channel of the cost increases. In sum, we find that shareholder orientation, which is negatively correlated with voluntary CSR (Liang & Renneboog, 2017), is associated with higher adoption costs. The interaction of *CSRLaw* and an indicator variable for below median employment laws index (Botero et al., 2004), trade union density, and collective bargaining are associated with at least 2.8% higher adoption costs. Similarly, the nature of high shareholder litigation risk as a limiting force on voluntary CSR is reflected in 2.7% higher adoption costs. Last, the adoption costs outside Scandinavia are 3.5% higher compared to Scandinavia, which is consistent with (Liang & Renneboog, 2017) finding that the voluntary CSR is generally highest in Scandinavian countries.

² According to Table 5 Column 4, for a representative firm with SG&A costs equal to the mean of the treated sample (\$627.52 Million), the average annual increase in SG&A attributable to mandatory CSR disclosure equals \$12.22 Million (2.0% * \$610.76 million = \$12.22 million). Despite the large changes for an average firm, our estimates are comparable in magnitude to other recent determinants of CSR. For instance, among Russel 3000 (SP500) Democratic-leaning firms spend \$20 (\$80) million more on CSR than Republican-leaning firms (Giuli and Kostovetsky 2014).

We contribute to the financial reporting literature. Specifically, we provide a novel international comparison of costs related to the mandatory adoption of CSR disclosure extending the studies from a single country setting (Chen et al., 2018; Manchiraju & Rajgopal, 2017) to a cross-country sample covering European Union and OECD countries. Several factors undermine the inferences of mandatory CSR costs based on previous single-country studies. First, country-specific factors such as legal origin are strong predictors of CSR (Liang & Renneboog, 2017). The influence of legal origin on financial reporting costs is also documented in the context of IFRS adoption (Kim et al., 2012). The costs of the CSR disclosure can exceed their firm-level benefits in short-term. If this was not the case, all firms would potentially have voluntarily adopted such disclosure policies. Hence, we hypothesize and find that firms headquartered in regimes with low stakeholder-orientation are associated with higher adoption costs. On the contrary, the incremental burden from the CSR disclosure is likely to be less decisive for companies headquartered in countries with developed labor and environment protection laws prior to the reporting mandate. Under such regimes the disclosure mandate is likely to represent a less significant organizational change in short-term, which is plausibly reflected in lower adoption costs.

The rest of the paper is organized as follows. Section 2 discusses related literature and formulates hypotheses. The research design for hypotheses testing is described in section 3 while section 4 presents the results from the empirical analysis. We conclude in section 5.

2. Related literature and hypotheses development

Corporate social responsibility encompasses the idea of corporations contributing to society's welfare by serving other stakeholders' interests beyond profit maximization and their contractually determined obligations (Benabou & Tirole, 2010; Friedman, 1970). The World Bank defines CSR as "the commitment of businesses to behave ethically and to contribute to

sustainable economic development by working with all relevant stakeholders to improve their lives in ways that are good for business, the sustainable development agenda, and society at large” (Mazurkiewicz, 2004).

Previous corporate social responsibility literature has two major streams, the discussion of causality between firm performance and CSR, and the determinants and consequences of both voluntary and mandatory CSR disclosure. The relation between firm performance and CSR is context-dependent: A positive relation can exist in well-governed firms with limited agency concerns, where CSR attenuates the negative relation between managerial entrenchment and value (Ferrell et al., 2016). Negative relation between firm performance and CSR is typically associated with mandatory adoptions (Chen et al., 2018; Grewal et al., 2019; Manchiraju & Rajgopal, 2017). However, legal origin is a stronger explanation for CSR than agency-based or “doing good by doing well” factors or firm and country characteristics: firms from common law countries have lower CSR than companies from civil law countries, with Scandinavian civil law firms having the highest voluntary CSR ratings (Liang & Renneboog, 2017).

Various factors contribute towards voluntary CSR disclosure. Typically, media coverage, firm size and environmentally sensitive industries are positively associated with CSR disclosure (Reverte, 2009). The pressure to engage in CSR can also be associated with left-leaning founders, CEOs, and directors, or headquarter location in a left-leaning region: such firms spend generally 10 % of their net income on CSR (Di Giuli & Kostovetsky, 2014). CSR spending is also associated with institutional ownership (Buchanan et al., 2018; Harjoto et al., 2017; Saleh et al., 2010), state ownership (Chen et al., 2018) and pressure from corporate customers (Dai et al., 2020). Voluntary CSR disclosure is associated with a reduction in the cost of equity capital, subsequent increase in institutional ownership and lower absolute analyst forecast errors and dispersion (Dhaliwal et al., 2011). The effect on analyst forecast accuracy

is strongest in stakeholder-oriented countries and for firms and countries with more opaque financial disclosure, which suggests CSR disclosure having complementary effects to financial reporting (Dhaliwal et al., 2012).

Similarly, mandatory CSR disclosure is associated with improved financial reporting quality. Specifically, CSR induces conservative reporting (Cheng & Kung, 2016) and constrains earnings management (Wang et al., 2018). Due to anticipated costs, mandatory adoption of CSR disclosure has been associated with an overall negative market reaction which is enhanced in industries with poor pre-adoption CSR performance and can be mitigated to some extent with advertisement expenses (Grewal et al., 2019; Manchiraju & Rajgopal, 2017). The mandate can generate positive externalities by reducing emission levels, but this happens at the expense of shareholders: for instance, subsequent to the CSR reporting mandate in China, firms experienced an economically significant 26 % decrease in ROA (Chen et al., 2018). Since the benefits of the CSR disclosure are difficult to quantify in dollar terms both at the firm and economy level, and over time, we focus on the directly observable adoption costs of the mandatory CSR disclosure in terms of SG&A.

Cost structure and SG&A

A firm's cost structure is influenced by several internal and external factors. First, internal strategic cost management represents deliberate decision making with a purpose to align the firm's cost structure with its strategy (Anderson, 2006). The cost stickiness of SG&A expenses is positively associated with organizational capital (Venieris et al., 2015), prior sales increase (Banker et al., 2014), managerial decisions, incentives and psychological biases (Banker et al., 2018). For instance, an increase in the ratio of SG&A costs to sales can be intended by management to enhance future profitability. An increase in a company's SG&A can be regarded as intended, if the company's past SG&A ratio was below its industry average

indicating efficient SG&A cost management: The intended increases significantly enhance future earnings, which can be attributed to lower COGS and investments in operating efficiency (Baumgarten et al., 2010). Further, the earnings forecasts can be significantly enhanced by firm-year-specific proxy measures for upward cost adjustment and cost asymmetry (Kaspereit & Lopatta, 2019).

Hypothesis development

Mandatory adoption of CSR disclosure has been documented to increase costs in emerging economies of India and China (Chen et al., 2018; Manchiraju & Rajgopal, 2017). The European Commission has estimated annual cost of a full mandatory reporting obligation to vary between €33,000 and €604,000 per company depending primarily on firm size (European Commission, 2013). However, the prior literature outside Europe suggests CSR contributions of companies to significantly exceed these estimates. For instance, subsequent to the CSR reporting mandate in China, firms experienced an economically significant 26 % decrease in ROA (Chen et al., 2018). We therefore re-examine these cost estimates in a broad international sample.

The European Union non-financial reporting directive *2014/95/EU* requires companies to disclose relevant and material information on policies, outcomes and risks, including due diligence that they implement. The directive also requires disclosure of relevant non-financial key performance indicators concerning environmental aspects, social and employee-related matters, respect for human rights, anti-corruption and bribery issues, and diversity on the boards of directors. However, companies retain significant flexibility to disclose relevant information in the way that they consider most useful. Since the scope and depth of CSR is likely to vary by business model, measuring CSR contributions can be challenging.

SG&A has the capacity to capture a variety of granular cost items that are likely to comprise the total cost of CSR disclosure. Specifically, SG&A represents all commercial expenses incurred in the regular course of business operation except expenses directly related to production of goods and services (Standard & Poors, 2003). Given the primarily administrative nature of the reporting mandate, and the flexibility in implementing it, we formulate the following hypothesis:

H1a: Mandatory adoption of CSR disclosure is associated with a significant increase in SG&A

Legal origin is the strongest predictor of voluntary CSR and its cross-country differences (Liang & Renneboog, 2017). The economic mechanisms for this result comprise lower shareholder litigation risk, broader regulation concerning stakeholder welfare, prevalence of supermajority rules among shareholders, and stronger state involvement in business as illustrated by employment protection laws. Such stakeholder orientation can potentially make additional CSR efforts redundant in civil law countries compared to common law countries, since the core CSR elements are already in place in the constraints and requirements under the civil law regime. Taken together these stakeholder-oriented measures contribute towards higher CSR scores, which are highest in Scandinavian civil law countries (Liang & Renneboog, 2017). Given that mandatory CSR disclosure is ultimately a step from shareholder-orientation towards stakeholder-orientation, we formulate a following hypothesis with respect to the cross-country differences in the adoption costs:

H1b: Mandatory adoption of CSR disclosure is associated with significantly higher SG&A increases in shareholder-oriented countries.

Compared to common law countries, civil law countries tend to have higher labor regulation (Botero et al., 2004), which by proxying labor adjustment costs, constitute an important determinant of cost stickiness (Banker et al., 2013). Employees are a logical beneficiary of CSR. Specifically, CSR deviates from strict shareholder orientation and potentially profit maximization towards stakeholder orientation, where employees represent a large and important interest group. Civil law countries typically rely on regulation and state intervention, instead of market mechanisms vested in contracts between corporations (Liang & Renneboog, 2017). Therefore, significant labour market differences originating from employment protection laws, collective bargaining and trade union density are likely to contribute towards stickiness in the adoption costs of the mandatory CSR reporting in shareholder-oriented countries.

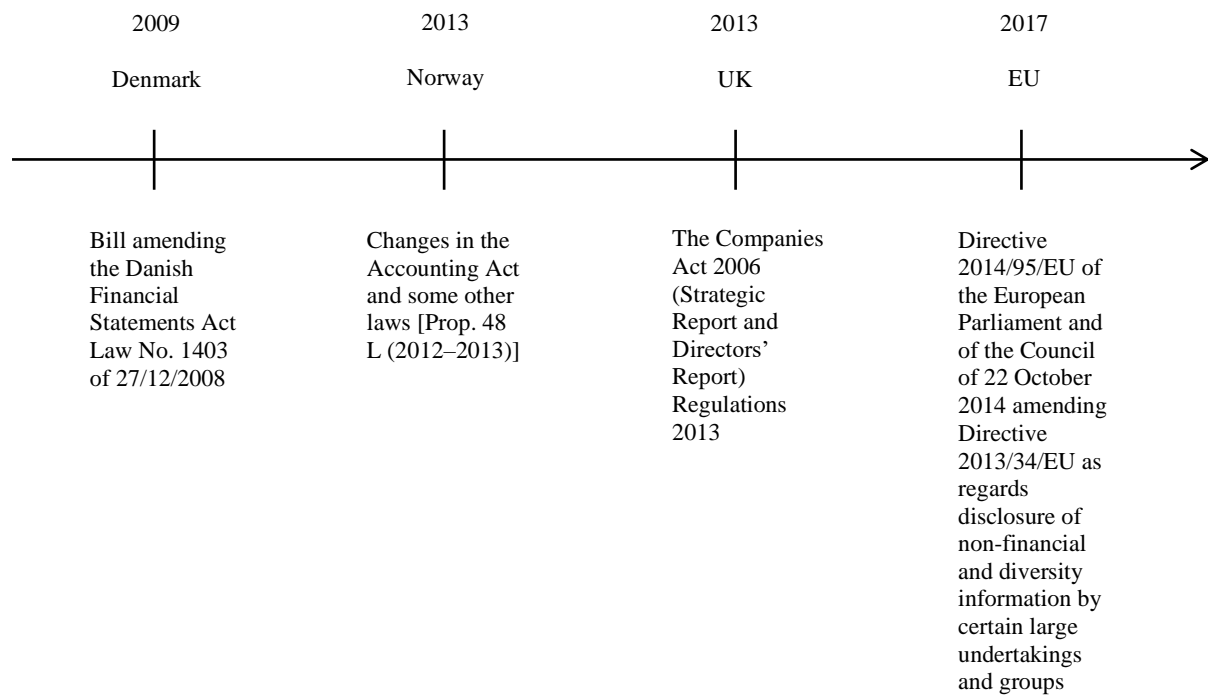
High shareholder litigation risk is likely to limit all activities and spending, such as CSR, benefitting other stakeholders' interests beyond the contractually determined obligations of the focal firm (Benabou & Tirole, 2010; Friedman, 1970). In essence, high shareholder litigation risk on average is not likely to be associated with stakeholder orientation and CSR, but rather with shareholder orientation and profit maximization which are likely to constrain CSR spending to the minimum requirements. Therefore, due to the constraining effects of shareholder litigation risk on CSR expenditure, and weaker government involvement in business in common law countries, we formulate the following hypothesis H1c concerned with the stickiness of the adoption costs of mandatory CSR disclosure:

H1c: The stickiness of the adoption costs of mandatory CSR disclosure is highest in stakeholder-oriented countries.

3. Research design

Our research design exploits the temporal and cross-country variation related to the mandatory adoption of CSR disclosure. Specifically, we assess four events between 2009-2017 which represent mandatory adoption of CSR disclosure in Europe. We identify potential legislation changes across 41 countries which are members of either OECD or the European Union. Specifically, for the identification of the events we examine governmental law repositories, webpages of OECD and EU countries and publications of CSR Europe and GRI (2017). This yields us a list of 30 potential legislation changes, 26 of which belong to the 2017 adoption introduced by the European Union (Table 1). In order to decide on the inclusion of these events we verify their timing, scope and enforcement requiring comprehensive mandatory disclosure of non-financial information coverings at least environmental and social issues. These criteria yield a set of 30 law changes, three of which do not belong to the EU-wide adoption in 2017, but instead occur earlier. Figure 1 below illustrates the timeline of the laws constituting the staggered adoption of mandatory CSR disclosure in Europe.

Figure 1: Timeline of the recent CSR disclosure adoptions in Europe



Denmark

The *Law No. 1403 of 27/12/2008 Amending the Danish Financial Statements Act (Statement on Corporate Social Responsibility in Large Companies)* was adopted by the Danish Parliament on December 16th 2008. Effective for fiscal years beginning on or after January 1, 2009, it applies to large companies which in the Act on the presentation of annual accounts by commercial enterprises (*Law No. 448 of 07/06/2001*) and its amendments (*Law No. 516 of 17/06/2008*) are defined as public companies, public listed companies and private companies that exceed at least two of the following three size limits: 1) a balance sheet total of DKK 143 million (EUR 19.2 million), 2) net sales of DKK 287 million (EUR 38.5 million) or 3) an average of 250 full-time employees. Subsidiaries subject to the CSR reporting mandate due to their size are exempted from the legislation provided that the parent company discloses the required sustainability information covering the whole corporate group. The law mandates disclosure on CSR policies and standards applied, measures taken to translate company's CSR

policies into actions, and the company's assessment of achievements related to the to the CSR initiatives during the fiscal year. The mandate follows comply or explain principle whereby an absence of a CSR policy must be explicitly disclosed and explained. The corporate sustainability report meant by the law shall constitute a part of the management review section of the annual report, although it is allowed to publish the report separately or on the company webpages provided that this is indicated with a reference in the management's report.

According to the survey of the Danish Business Authority (2013), the adoption of the 2009 Danish CSR reporting mandate has progressed gradually. In 2009 only 46% companies reported actual results of CSR activities, while in 2011 already 67% did so. All in all, the Act of 2008 started a sequence of legislation followed by a law facilitating gender equality in corporate boards (*Law No. 1383 of 23/12/2012*) followed by a reporting mandate on target figures and policies and finally the national level adoption (*Law No. 738 of 01/06/2015*) of the European Union non-financial reporting directive *2014/95/EU*.

United Kingdom

The Companies Act 2006 (*Companies Act 2006* c.46) includes a section on the obligation to disclose non-financial information (Chapter 5, sections 415-419: the Directors' report). However, this law does not specify the commencement of the obligation (Companies Act 2006 Part 47, Section 1300). The later implementing act (*The Companies Act 2006 (Strategic Report and Directors' Report) Regulations 2013*) of the disclosure obligation was passed in 2013. It decrees that in respect of financial years ending on or after 30th September 2013 the following regulation have effect: quoted companies are required to report on environmental, employee, social and community matters or explicitly state, if they do not have such information to disclose. Medium-sized companies are exempted. If the reporting entity is a group, all the disclosure are to be read as references to its consolidated subsidiaries. The law further allows

directors to omit trade secrets or other such proprietary information. Section 415 on the duty to prepare directors' report decrees on non-compliance penalties making persons guilty of an offence under the law liable to a fine.

Norway

The Norwegian approach to CSR is closely related to the Nordic welfare model with egalitarian values, low poverty, good health care and education services (Aarhus, 2010). Under the Accounting Act of 1998 (LOV-1998-07-17-56) all companies incorporated in Norway were required to include sustainability-related information in Director's Report covering workplace environment, gender equality and environmental issues among other things. The actual compliance of this mandate remained low until the subsequent CSR disclosure law in 2013 plausibly due to the absence of non-compliance penalties, and the vague definitions and less wide-spread awareness of CSR in the early 2000s (Aarhus, 2010).

In 2013, the Act amending the Accounting Act (*Prop. 48 L (2012–2013)*) was passed. This law required large enterprises to submit CSR reports covering their environmental and social impact especially with respect to considerations of human and labor rights, the environment, and anti-corruption. This law does not specify non-compliance penalties, but it includes direct recommendations of GRI and UN Global Compact compliance. Consequently, on average Norwegian firms report more than EU-based firms within frameworks including the GRI, Global Compact and OECD Guidelines (Knudson, 2016). In our sample, the proportion of Norwegian GRI compliant firms (9.5%) is higher than that of the other early adopting countries of Denmark (6.3%) and the UK (6.8%). For details, see Table 2, Panel A.

EU

The *Directive 2014/95/EU* also known as the non-financial reporting directive (NFRD) requires large companies to disclose information on social, environmental and governance issues. The directive is implemented with national legislation. Unless the countries enact more stringent conditions, the law applies to large companies with more than 500 employees including listed companies, banks, insurance companies and other public-interest entities. According to the directive 2014/95/EU, for fiscal years beginning on or after 1.1.2017, large companies are required to disclose reports on the policies they implement in relation to environmental protection, social responsibility and treatment of employees and respect for human rights, anti-corruption and bribery, diversity on company boards. (European Commission, 2021)

The main model

We quantify the costs of the mandatory CSR disclosure in terms of selling, general and administrative (SG&A) cost changes for two reasons. First, the mandatory CSR disclosure represents primarily an administrative burden, although it can also have several side effects that are also reflected in the operating costs. Such side effects may include for instance adjustments in the corporate strategy that materialize in higher research and development expenditure, and can be communicated to the stakeholders via increased advertising expenditure. Second, explicit classifications of all sustainability related costs are not widely available. Hence, we base our identification strategy on SG&A, which represents a broad cost item equal to 27% of total assets for an average firm (Chen et al., 2012). SG&A represents all commercial expenses incurred in the regular course of business operation except for expenses directly related to production of goods and services (Standard & Poors, 2003). Therefore SG&A has the capacity to capture a variety of granular cost items that are likely to comprise

the direct and indirect costs of mandatory CSR disclosure. To examine whether mandatory CSR disclosure is reflected in selling general and administrative expenses, we employ a generalized difference-in-differences (DiD) design based on the staggered adoption of mandatory CSR disclosure laws across European countries and estimate the following model:

$$\begin{aligned}
 SGA_{i,t} = & \beta_0 + \beta_1 CSRLaw_{i,t} + \beta_2 Sales_{i,t} \\
 & + \beta_3 Decrease_{i,t} * Sales_{i,t} \\
 & + \beta_4 Decrease_{i,t} * Sales_{i,t} * SuccessiveDec_{i,t} \\
 & + \beta_5 Decrease_{i,t} * Sales_{i,t} * GDPGrowth_{i,t} \\
 & + \beta_6 Decrease_{i,t} * Sales_{i,t} * ATtoSales_{i,t} \\
 & + \beta_7 Decrease_{i,t} * Sales_{i,t} * EMPTtoSales_{i,t} \\
 & + Firm\ FE + Industry\ year\ FE + \varepsilon
 \end{aligned} \tag{1}$$

The baseline model is the model III from Anderson et al., (2003) which examines changes in SG&A as a function of business characteristics and operating environment³. We augment this model with the main test variable *CSRLaw*, which is an indicator variable equal to one for fiscal years during which a firm is mandated to disclose on CSR. We fix the industry-year and firm to control for industry shocks and time-invariant firm characteristics. This specification allows us to compare mandatory adopting firms to non-adopting firms whereby the β_1 of the model will capture the average annual change in SG&A attributable to the CSR reporting mandates. Hypothesis *H1a* is tested with the aforementioned equation 1. However, for testing *H1b* and *H1c* concerned with cross-country differences in the adoption costs and their stickiness, we use a two-stage procedure. In the first stage, we repeat the main models of cost increases and cost

³ Following Anderson et al. (2003) we control for several determinants of SG&A (β_2 - β_7) such as changes in sales, GDP growth, asset and employee intensity and for industry-level demand shocks in each year by including industry-year fixed effects. All variables are defined in Appendix 1.

stickiness in order to obtain country-level estimates of the cost increases for each adopting country. In the second stage we regress the country-level coefficients of cost increases and stickiness on various country characteristics.

Our research design accounts for potentially gradually increasing compliance with three approaches. This is important since the CSR disclosure mandates typically give companies considerable freedom in implementation which is illustrated by the comply or explain principle (CSR Europe & GRI, 2017) making it possible for some companies to adopt the mandate gradually over a couple of years. Our first methodological choice accounting for this possibility is incorporated in the baseline model of Anderson et al. (2003) where the dependent variable is changes rather the level of SG&A. Second, we require a 6-year event window for the following two reasons: One on hand, prior studies on financial reporting regulation (Daske et al., 2008; De George et al., 2013) highlight the importance of a long-enough pre-adoption period. On the other hand, the possibility of the adoption to be implemented gradually suggests inclusion of a long-enough post-adoption period. Third, in order to accurately estimate the dollar value changes in SG&A, we match each adopting firm to its closest non-adopting peer company using nearest neighbor-matching and Mahalanobis distance⁴. This approach yields us a balanced sample of treated and control group allowing us to accurately estimate the dollar-value adoption costs of the CSR disclosure mandate in Europe.

⁴ The sample selection and use of matching estimators is detailed in Table 1 and the section Sample and descriptive statistics explaining it.

4. Main empirical analysis

4.1. Sample and descriptive statistics

We examine the costs of mandatory adoption of non-financial reporting. Our identification is based on the adoptions of mandatory, overall and comprehensive corporate social responsibility disclosure in European countries where enforcement is reinforced with non-compliance penalties. Specifically, for a country to be included in the treated sample, we require a passage of a law that mandates all public interest entities to disclose on corporate sustainability covering environmental, social and governance dimensions. Furthermore, we require national level enforcement which is deemed adequate if penalties such as fines can be imposed on non-compliant firms or their managers⁵.

To test our hypotheses, we collect data from various sources. We use Compustat Global and Compustat North America to obtain financial reporting data, websites of the European Union (2021) and OECD (2021) to identify the member countries affected by relevant legislation, website of Global Reporting Initiative (2021) to identify early adopters, and World Bank DataBank (2020_{a,b}) to collect information on GDP and local currency units per U.S. dollar.

The majority of our treated sample represents the 2017 adoption of the European Union *Directive 2014/95/EU* of non-financial reporting. Certain European countries such as France⁶, Denmark, Norway and United Kingdom adopted mandatory disclosure of non-financial

⁵ The CSR disclosure mandates of Estonia, the Netherlands, Norway and Spain do not impose non-compliance penalties with respect to the CSR disclosure mandate. If we exclude these countries, the tenor of our inferences remains unchanged.

⁶ France became the first EU member state to make disclosure of non-financial information compulsory by introducing the New Economic Regulation (Les Nouvelles Régulations Économiques, NRE) in 2001. This legislation mandates reporting on environmental and social issues for all publicly listed French companies for fiscal years beginning on or after January 1, 2002 (*Decree 2002-221 of Feb. 20, 2002; Trade Law 2001 Section 225-102-1*). Since Compustat Global does not provide complete information on the 6-year event window 1999-2004 for French companies, we exclude France from the analysis.

information already before the announcement of the European Union *Directive 2014/95/EU* in 2014. Of these early adopting countries, we include Denmark, Norway and the UK to the treated sample allowing for more lenient enforcement or restricted reporting scope, provided that they still passed a law on mandatory disclosure of non-financial information. These criteria lead to a treated sample representing 24 EU countries and Norway (for details see Table 2 Panel A).

As a control sample we use OECD countries which have not adopted comparable mandatory CSR disclosure legislation as the treated countries (for details see Table 2 Panel B). OECD countries represent advanced economies around the globe (OECD, 2021) and have been used as a control group in a recent regulatory study of mandatory IFRS adoption (Kim et al., 2012). We follow similar sample selection procedures as Kim et al. (2012) both with the treated sample and in obtaining the control sample.

[Insert Table 1 here]

Table 1 presents the sample selection procedure. Our initial treated sample comprises 499,744 firm-year observations from Compustat Global and Compustat North America over the fiscal years 1999-2019. Consistent with the convention in the literature, we exclude (1) firms representing utilities (SIC codes 4900-4942) or financial sector (SIC codes 6000-6999) as the nature of investments is likely to differ in these sectors; (2) firms-years with a non-12-month length; (3) firm-year observations where the country of incorporation and headquarters differ as our research design requires accounting for both legal and economic environment; (4) firm-years before or during which the country where the firm is incorporated enters either the European Union or European Monetary Union (European Union, 2021); (5) firm-year observations where financials are reported in currencies subject to exceptional government interventions, such as the revaluation of 1 000 000:1 of Turkish Lira in 2005 (Central

Intelligence Agency, 2020) and revaluation of 10000:1 of Romanian Leu in 2005 (Central Intelligence Agency, 2007); (6) after performing currency conversions, firm-years with missing SG&A data; (7) firm-year observations with deficient data to compute the necessary control variables; (8) firm-years in the treated sample where national-level size limits of the reporting obligation are not exceeded and 9) firms that adopt the non-financial disclosure requirements voluntarily before the adoption of the law⁷.

Our second last sample selection criterion is concerned with the event window. Specifically, we impose the requirement (10) of the 6-year event window comprising three pre- and post-adoption years. This follows from the line of research focusing on the consequences of regulatory changes such as the mandatory IFRS adoption (Daske et al. 2008; De George et al. 2013). These studies highlight the importance of a long-enough pre-adoption period covering the introduction of the regulation. In our treated sample Denmark and Norway introduce the non-financial reporting laws a year before the adoption, while in the European Union the regulation was introduced three and in the UK six years prior to the adoption. Assuming that potential anticipation which is insufficient to be classified as early adoption is likely to begin after the introduction of the law, we require three pre-adoption years from the treated group. To address the potentially gradual increase in compliance, we include three post-adoption years for each treated firm.

Our last sample selection criterion is concerned with matching between treated and control group. Specifically, in order to accurately estimate the dollar value changes in SG&A, we match each adopting firm to its closest non-adopting peer company using nearest neighbor

⁷ We define the voluntary adopting firms as firms which disclose their annual report on the webpages of Global Reporting Initiative (GRI 2021) and are classified as GRI reporters by the GRI. The GRI is referred to as the gold standard of voluntary non-financial reporting frameworks (Sethi et al., 2017). Recently, it has been used to proxy for committed sustainability reporting (Gonçalves et al., 2020).

matching with replacement. To do so, we require minimum Mahalanobis distance⁸ from the matched companies using one-year-prior-to-adoption information on the following baseline model variables: changes in SG&A, sales, asset intensity and employee intensity, while requiring exact matching on industry and potential voluntary adoption status. Since the initial control sample is approximately ten times as numerous compared to the treated sample and it provides several alternative matches for each treated company, we further require a minimum distance in GDP growth to account for differences of the economic development of the operating environment of the matches. This matching approach yields us a balanced sample of treated and control group allowing us to accurately estimate the dollar-value adoption costs of the CSR disclosure mandate in Europe.

All in all, these sample selection procedures yield the final treatment sample consisting of 5,592 firm-year observations in the treated sample and 5,592 firm-year observations in the control sample excluding early adopters. When early adopters are also included, the final sample comprises 13,836 firm-years⁹ (for details, see Table 1). To mitigate the influence of potential outliers, we winsorize all continuous variables at 1st and 99th percentile.

[Insert Table 2 here]

Table 2 tabulates the sample composition by country and year. Specifically, Panel A presents the mandatory CSR reporting adoption and voluntary adoption by treated countries. The treated

⁸ Mahalanobis distance is a measure of dissimilarity. Its recent applications in corporate finance research include Adhikari et al. (2019) who define the distance between firms j and k as $\sqrt{(x_j - x_k)'W_x^{-1}(x_j - x_k)}$, where x is a vector of covariates and W is the variance-covariance matrix of the covariates. At sample sizes exceeding 2,000 matching by the Mahalanobis distance is preferable over propensity score (Zhao, 2004).

⁹ When early adopters are also included the final sample equals 13,836 firm-years. In a financial reporting regulation study on IFRS, Daske et al.(2008) suggest that the economic consequences of the financial reporting mandate are most pronounced for firms that voluntarily switch to IFRS, both in the year when they switch and again later, when IFRS becomes mandatory. Hence, we keep also the voluntary adopters in the sample and study the effects of the disclosure mandate with and without them.

sample consists of 3012 firm-year observations (43.5%) from the UK, 942 firm-year observations (13.6%) from Germany, while the rest represent the remaining 23 treated countries. Panel B illustrates that the majority of the control observations come from the US (71.7%) and Canada (19,7%). The Panel C conveys that approximately half of the treated firms are subject to the EU-wide adoption of non-financial reporting directive enforced in 2017, while the three early adoptions of Denmark (2009), Norway (2013) and the UK (2013) are less represented in the sample.

[Insert Table 3 here]

Table 3 tabulates descriptive statistics and univariate analysis on the variables used in the main analysis. The mean changes of SG&A within the treated group (0.00 vs. 0.02) are significantly larger for the post-adoption period, while in the control group the mean SG&A changes significantly decrease (0.04 vs. 0.01) over the same period. Table 4 presents matrix of Pearson correlation coefficients between the variables used in the main model (Equation 1). The largest and highly significant, but expected correlation (-0.66, $p < 0.01$), is observed between the continuous variable measuring changes in sales (*Sales*) and the dummy variable indicating the negative changes in sales (*Decrease*). For details of variable definitions, see Appendix 1.

[Insert Table 4 here]

In the adoption of the EU's non-financial reporting directive, the parallel trends assumption is not likely to hold due to the anticipation of the forthcoming major regulatory change. Specifically, Fiechter et al. (2022) find that treated firms anticipate the disclosure mandate and related adverse stakeholder reactions. These firms increase CSR activities already after the 2014 passage of the directive, i.e., three years before the 2017 enforcement of the mandate. Furthermore, the anticipation effects increase with lower pre-directive CSR disclosure levels.

Since the non-financial information disclosure mandate requires firms to collect and report new information, which plausibly includes the development of new reporting systems, it is likely that firms anticipate the adoption to some extent. However, potential anticipation does not postulate that costs could not increase after the adoption, which is the focus of our analysis.

4.2. Tests of hypotheses H1a-c

The *H1a* is concerned with whether the mandatory adoption of CSR disclosure is associated with a significant increase in SG&A. To test H1a we estimate the Equation (1) for which the results are reported in Table 5. The first Column (1) replicates the benchmark model of Anderson et al. (2003) documenting materially similar association between the dependent and independent variables, while Columns 2-6 directly address H1a. The coefficient of *CSRLaw*, the main test variable, captures the incremental SG&A-increasing annual effect associated with the mandatory adoption of CSR reporting in the treatment sample. With the tightest identification in Column (4) including controls and firm and industry-year interacted fixed effects, and excluding voluntary adopters from the full sample, the *CSRLaw* indicator is significantly positive ($\beta_1 = 0.020$; $t = 2.81$). For an average firm in the treated sample this equals approximately a \$12.22 million annual increase in selling general and administrative costs (\$610.76 million * 0.020). Columns (2), (3), (5) and (6) illustrate that these effects do not hinge on the inclusion of control variables or certain large countries, such as the US or Germany. This result leads us to reject the null hypothesis of no impact of mandatory CSR disclosure on SG&A changes and confirm significant cost increases following the mandate.

[Insert Table 5 here]

In Table 6 we test what drives the adoption costs within SG&A and whether the reporting mandate has effects on cost items other than SG&A. Specifically, in Columns (1) – (3) of Table

6 the dependent variable is the natural logarithm of the quotient of current and previous year SG&A, SG&A less research and development expenditure (R&D) and R&D, respectively. Column (1) provides the SG&A estimates of Table 5 for comparison. In Column (2) the coefficient of *CSRLaw* ($\beta_1 = 0.015$; $t = 1.97$) is positive and significant on changes in the non-R&D component of SG&A consistent with the main analysis. This supports the notion that the reporting mandate is an administrative burden in the first place. In Column (3) focusing on R&D changes, the coefficient of *CSRLaw* ($\beta_1 = 0.016$; $t = 2.14$) is positive and significant. This demonstrates that also research and development expenditure increase following the mandatory CSR disclosure adoptions, which may support the legislators' intentions of a transition to a more sustainable economy. In Column (4) the dependent variable is the natural logarithm of the quotient of current and previous year cost of goods sold (*COGS*). The coefficient of *CSRLaw* ($\beta_1 = -0.006$; $t = 1.06$) is insignificant, implying that the reporting mandate is not associated with substantial increases in the direct production costs. All in all, consistent with the H1a, the analysis in Table 6 conveys that SG&A and its administrative and R&D components are the primary cost items affected by the reporting mandate.

[Insert Table 6 here]

SG&A is a broad cost item (Chen et al., 2012). Hence, our main analysis hinges on the underlying assumption that the documented SG&A-increments are induced by CSR-related activities and not by other components of SG&A, some of which may be unrelated to CSR. We next empirically test this assumption with a two-step procedure. The first step tests the important assumption that SG&A has the capacity to capture adoption costs of mandatory CSR disclosure. To validate SG&A as our proxy of the adoption costs of mandatory CSR disclosure, we regress changes in SG&A on changes in actual reported CSR costs, i.e., employee training

costs¹⁰, and firm and industry-year fixed effects. We find that a 1 percent increase in employee training costs is associated with a 0.122 percent increase in SG&A ($t=2.53$)¹¹. The magnitude of this estimate resonates with prior literature. Specifically, while selling general and administrative expense (SG&A) is a broad cost item equal to 27% of total assets for an average firm (Chen et al., 2012), employees are a key factor of production¹² which may necessitate significant additional investments into human capital after the adoption. In other words, employee training costs are likely to increase after the adoption of mandatory CSR disclosure especially, if the firm aims at increasing the sustainability of its business model.

The second step is concerned with whether the actual reported CSR costs increase after mandatory adoption of CSR disclosure. We conduct this step by estimating a variant of Equation 1, whereby we regress changes in reported CSR costs on the baseline model independent variables. The results of these validation tests are reported in Table 7. According to Table 7 Column 2, for a firm with average employee training costs of \$4.12 million in the treated sample, mandatory CSR disclosure increases training costs by 24.3% i.e., \$1.00 million ($\$4.12 \text{ million} * 0.243 = \1.00 million). Similarly, we find that after the adoption the reported training costs per employee in the treated sample increase by 34.3% or \$246.96 for a firm with average training costs per employee ($\$720 * 34.3\% = \246.96). However, changes in reported environmental expenditures (Columns 5-6) and changes in environmental R&D (Columns 7-8) are unrelated to the mandatory adoption of CSR disclosure. Consistent with our hypotheses, these tests on the underlying assumptions provide further support to our conclusion that the adoption of mandatory CSR disclosure begins primarily as an administrative reform.

¹⁰ The reported CSR costs are collected from Eikon ESG data. This data is available only for a subsample.

¹¹ These results are untabulated but available from the authors upon request.

¹² The Annual Survey of Manufacturers finds that the payroll and employee fringe benefits (\$913 billion) were approximately five times as large as capital expenditure (\$178 billion) in the US manufacturing sector in 2019. For further information, the survey is available at <https://data.census.gov/cedsci/table?q=AM1831BASIC&tid=ASMAREA2017.AM1831BASIC01&hidePreview=true>

[Insert Table 7 here]

Table 8 is concerned with the persistence or stickiness of the adoption costs. Specifically, the European Union's non-financial reporting directive (2014/95/EU) aims at encouraging companies to develop a responsible approach to business, which may include changes in the actual business model and cost structure. To test the stickiness of the adoption costs, we employ the cost stickiness model developed by Anderson et al. (2003). Specifically, we augment this model by estimating the effects of sales increases and decreases on SG&A separately for the adopting and non-adopting companies. Columns 1-3 of Table 8 repeat the baseline and main models in full sample including early adopters, for comparison. Anderson et al. (2003) find that SG&A costs increase on average 0.55% per 1% increase in sales, but decrease only 0.35% per 1% decrease in sales. This asymmetric behavior of costs is referred to as cost stickiness in the subsample of sales decreases. In Column 3, our estimates for the control sample (0.537% and -0.371%, respectively) are similar to those reported by Anderson et al. (2003).

Our main results related to stickiness of the adoption costs are reported in Column 4 of Table 8. In this model the coefficient of $CSRlaw*Sales$ ($\beta_2 = 0.012$; $t = 1.92$) suggests that after the adoption SG&A does not increase as closely in proportion to sales, as in the control sample. For example, it is possible that companies with relatively small sales increases overinvest in CSR, which reduces the comparability of the effect to the baseline model. The effect of the mandatory CSR disclosure on the stickiness of SG&A is captured by the coefficient of $CSRlaw*Decrease*Sales$. This coefficient ($\beta_4 = 1.901$; $t = 3.37$) is positive and highly significant suggesting that for a 1% decrease in sales, the SG&A increases by 1.9% in the treated companies after the adoption. The large magnitude of the coefficient highlights the mandatory nature of the adoption: The reporting obligation begins in 2017 irrespective of whether the focal firm was in decline. Collectively, Columns 4-6 illustrate that the

aforementioned effects are robust to exclusion of early adopters and large treated and control countries.

[Insert Table 8 here]

Analyses of cross-sectional and time series variation of compliance costs comprise an important element of cost benefit analyses of regulation (Coates, 2014). Hence, the H1b-c are concerned with the economic channels and cross-country variation of the costs of the mandatory adoption of CSR disclosure. We analyse the cross-country differences in the adoption costs and their stickiness with a two-stage procedure. Specifically, in the first stage, we repeat the main models of cost increases and cost stickiness in order to obtain country-level estimates of the cost increases for each adopting country. Given that the firm fixed effects subsume country-level time-invariant effects in our main specifications, in the second stage we regress the country-level coefficients of cost increases and stickiness on various country characteristics associated with CSR as suggested by Liang and Renneboog (2017).

Table 9 reports the results of the first stage. The coefficients of *CSRLaw* are highest for Cyprus (0.247) and lowest for Denmark (-0.066), which has adopted mandatory CSR disclosure already in 2009. The stickiness coefficients are highest for Croatia (140.668) and lowest for Slovenia (-593.042), which may be attributable to a small number of observations from these countries. To mitigate the effects of outliers we exclude all countries with less than 10 firms from the second stage analysis of country characteristics.

[Insert Table 9 here]

Table 10 reports the results of OLS regressions of coefficients of cost increase and cost stickiness on country characteristics in the treated sample. Given that legal origin is a stronger predictor of CSR than “doing good by doing well” factors or firm and country characteristics

(Liang & Renneboog, 2017), we begin our analysis of economic channels by focusing on legal origin. Liang and Renneboog (2017) find that firms from common law countries have lower CSR than companies from civil law countries, while the highest average CSR ratings are observed among Scandinavian civil law firms. Consistent with Liang and Renneboog (2017) the results in Table 10 Panel A illustrate that the costs estimates are higher in common law countries ($\beta_1 = 0.005$; $t = 7.96$) than in civil law ($\beta_1 = -0.005$; $t = -7.96$) or Scandinavian civil law countries. In other words, the estimates of the cost increases are lower in countries with high average CSR stemming from compliance with other pre-existing regulations and institutions, which is why the mandatory CSR disclosure is not likely to induce large changes to the business models or cost structure in such countries.

Legal origin also proxies for the government's tendency to intervene in business (La Porta et al., 1999) which can take place for instance by enactment of labor or shareholder protection laws. This may explain as to why countries with socialist, French, and Scandinavian legal origins have substantially higher levels of labor regulation than do common law countries (Botero et al., 2004). Given that mandatory CSR disclosure compels companies to report on social matters and treatment of employees, it is likely that firms in countries with high employment protection laws have lower pressure to improve workers' conditions upon adoption of the mandatory CSR disclosure, and hence such firms are likely to incur lower compliance costs. Consistent with the latter we find that employment laws index ($\beta_1 = -0.012$; $t = 7.52$) is negatively associated with adoption cost estimates.

A low level of shareholder litigation risk is associated with higher levels of voluntary CSR (Liang & Renneboog, 2017). Specifically, contributions towards CSR that go beyond those prescribed in the laws are more likely in civil law countries, because in common law countries such expenditure is limited by the ex post shareholder litigation mechanisms empowering

shareholders to sue corporate directors (Cox & Thomas, 2009; Gelter, 2012; R. La Porta et al., 1998). Consistent with Liang and Renneboog (2017) we find that shareholder litigation risk is associated with higher estimates of cost increases ($\beta_1 = 0.003$; $t = 5.04$), which implies that manager's with high shareholder litigation risk increase CSR costs once pressure from the CSR disclosure mandates is likely to mitigate the litigation risk.

Table 10 Panel B reports the results of cost stickiness estimates on country characteristics. The tenor of the Panel B results is that stickiness of the adoption costs behaves conversely to the estimates of the direct adoption costs in Panel A. Specifically, stickiness is lower in common law countries ($\beta_1 = -6.005$; $t = -13.16$) and in countries with high shareholder litigation risk ($\beta_1 = -7.035$; $t = -15.46$), consistent with voluntary CSR being lowest in such environments (Liang & Renneboog, 2017) due to shareholder litigation mechanisms, which enable shareholders to monitor management (Cox & Thomas, 2009; Gelter, 2012; R. La Porta et al., 1998). On the contrary, stickiness of the adoption costs is higher in countries with civil law ($\beta_1 = 6.005$; $t = 13.16$) or Scandinavian civil law legal origin ($\beta_1 = 0.864$; $t = 1.45$), where also voluntary CSR is higher (Liang & Renneboog, 2017). These results resonate with the positive and significant coefficient of employment laws index ($\beta_1 = 13.180$; $t = 11.58$) on cost stickiness. Specifically, compared to common law countries civil law countries tend to have higher labor regulation (Botero et al., 2004), which by proxying labor adjustment costs, constitute an important determinant of cost stickiness (Banker et al., 2013).

In sum, the adoption costs are higher in countries and regimes with lower stakeholder orientation, which is reflective of both lower voluntary CSR and fewer pre-adoption rules-based mechanisms guiding firm behaviour (Liang & Renneboog, 2017). Consistent with our hypotheses H1b-c the cost increment generated by CSR reporting mandate is likely to be more substantial under such regimes. However, the stickiness of adoption costs is highest in countries

with higher stakeholder orientation also known for high levels of CSR (Liang & Renneboog, 2017).

[Insert Table 10 here]

5. Conclusion

In this paper we assess the adoption costs of the mandatory CSR disclosure in Europe. Using a staggered adoption and difference-in-differences design, we find robust evidence of significant cost increases reflected in SG&A subsequent to the adoption of the mandate. We continue to document the cost increases even after controlling for bias originating from underlying firm characteristics by applying matching estimators. In subsample analyses, we reveal several important country-level determinants of the adoption costs. Overall, our results suggest that the cost increases are lower in stakeholder-oriented countries consistent with the notion that firms in such countries are more sustainable.

While our results suggest that an average firm can incur \$12.55 million annual increase in SG&A, there are two main limitations to this estimate. First, while we use SG&A to proxy for CSR costs, we acknowledge that this item may not necessarily capture all CSR related costs, such as those directly related to production. Second, while we control for several determinants of increase in SG&A and apply firm fixed effects, we acknowledge that some omitted variable can influence our estimates.

Nevertheless, we find that mandatory adoption of CSR disclosure is associated with a significant increase in a very broad cost item, the SG&A. The magnitude of increments in SG&A exceed the estimated upper boundary of €604,000 annual cost for producing the CSR disclosures in large companies mentioned in the impact assessment of the European Commission (European Commission, 2013). Therefore, our results suggest the existence of

several implicit or indirect costs stemming from this particular regulation. This finding is consistent with the two aims of mandatory CSR disclosure laws: the mandates reportedly improve information environment (Barth et al., 2021; Krüger et al., 2021), but also increase overall sustainability (Fiechter et al., 2022; Jackson et al., 2020; Krüger et al., 2021). We contribute to this literature by showing that overall, the nature of the adoption costs appears primarily administrative.

References

- Aarhus, I. (2010). Norway. In W. Visser & N. Tolhurst (Eds.), *The world guide to CSR: A country-by-country analysis of corporate sustainability and responsibility*. Routledge.
- Adhikari, B. K., Agrawal, A., & Malm, J. (2019). Do women managers keep firms out of trouble? Evidence from corporate litigation and policies. *Journal of Accounting and Economics*, *67*(1), 202–225. <https://doi.org/10.1016/j.jacceco.2018.09.004>
- Anderson, M. C., Banker, R. D., & Janakiraman, S. N. (2003). Are Selling, General, and Administrative Costs “Sticky”? *Journal of Accounting Research*, *41*(1), 47–63. <https://doi.org/10.1111/1475-679X.00095>
- Anderson, S. W. (2006). Managing Costs and Cost Structure throughout the Value Chain: Research on Strategic Cost Management. In *Handbooks of Management Accounting Research* (Vol. 2, pp. 481–506). Elsevier. [https://doi.org/10.1016/S1751-3243\(06\)02001-3](https://doi.org/10.1016/S1751-3243(06)02001-3)
- Banker, R. D., Basu, S., Byzalov, D., & Chen, J. Y. S. (2016). The confounding effect of cost stickiness on conservatism estimates. *Journal of Accounting and Economics*, *61*(1), 203–220. <https://doi.org/10.1016/j.jacceco.2015.07.001>
- Banker, R. D., & Byzalov, D. (2014). Asymmetric cost behavior. *Journal of Management Accounting Research*, *26*(2), 43–79. <https://doi.org/10.2308/jmar-50846>
- Banker, R. D., Byzalov, D., & Chen, L. T. (2013). Employment protection legislation, adjustment costs and cross-country differences in cost behavior. *Journal of Accounting and Economics*, *55*(1), 111–127. <https://doi.org/10.1016/j.jacceco.2012.08.003>
- Banker, R. D., Byzalov, D., Ciftci, M., & Mashruwala, R. (2014). The moderating effect of prior sales changes on asymmetric cost behavior. *Journal of Management Accounting Research*, *26*(2), 221–242. <https://doi.org/10.2308/jmar-50726>
- Banker, R. D., Byzalov, D., Fang, S., & Liang, Y. (2018). Cost Management Research. *Journal of Management Accounting Research*, *30*(3), 187–209. <https://doi.org/10.2308/jmar-51965>
- Barth, M. E., Cahan, S. F., Chen, L., & Venter, E. R. (2021). Integrated Report Quality: Share Price Informativeness and Proprietary Costs. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3857927>
- Baumgarten, D., Bonenkamp, U., & Homburg, C. (2010). The information content of the SG&A ratio. *Journal of Management Accounting Research*, *22*(1), 1–22. <https://doi.org/10.2308/jmar.2010.22.1.1>
- Benabou, R., & Tirole, J. (2010). Individual and corporate social responsibility. *Economica*, *77*(305), 1–19. <https://doi.org/10.1111/j.1468-0335.2009.00843.x>

- Berg, F., Koelbel, J. F., & Rigobon, R. (2019). *Aggregate Confusion: The Divergence of ESG Ratings*. MIT Sloan School of Management.
- Bostwick, E. D., Lambert, S. L., & Donelan, J. G. (2016). A wrench in the COGS: An analysis of the differences between cost of goods sold as reported in compustat and in the financial statements. *Accounting Horizons*, 30(2), 177–193. <https://doi.org/10.2308/acch-51336>
- Botero, J. C., Djankov, S., La Porta, R., Lopez-De-Silanes, F., & Shleifer, A. (2004). The regulation of labor. *Quarterly Journal of Economics*, 119(4), 1339–1382. <https://doi.org/10.1162/0033553042476215>
- Buchanan, B., Cao, C. X., & Chen, C. (2018). Corporate social responsibility, firm value, and influential institutional ownership. *Journal of Corporate Finance*, 52, 73–95. <https://doi.org/10.1016/j.jcorpfin.2018.07.004>
- Central Intelligence Agency. (2007). Romania. Economy. In *The World Factbook 2007*.
- Central Intelligence Agency. (2020). Exchange Rates. Turkey. In *The World Factbook 2020*. <http://teacherlink.ed.usu.edu/tlresources/reference/factbook/fields/2076.html?countryName=Haiti&countryCode=ha®ionCode=ca&#ha>
- Chen, C. X., Lu, H., & Sougiannis, T. (2012). The Agency Problem, Corporate Governance, and the Asymmetrical Behavior of Selling, General, and Administrative Costs. *Contemporary Accounting Research*, 29(1), 252–282. <https://doi.org/10.1111/j.1911-3846.2011.01094.x>
- Chen, Y. C., Hung, M., & Wang, Y. (2018). The effect of mandatory CSR disclosure on firm profitability and social externalities: Evidence from China. *Journal of Accounting and Economics*, 65(1), 169–190. <https://doi.org/10.1016/j.jacceco.2017.11.009>
- Cheng, C. L., & Kung, F. H. (2016). The effects of mandatory corporate social responsibility policy on accounting conservatism. *Review of Accounting and Finance*, 15(1), 2–20. <https://doi.org/10.1108/RAF-12-2014-0135>
- Christensen, D. M., Serafeim, G., & Sikochi, A. (2021). Why is Corporate Virtue in the Eye of The Beholder? The Case of ESG Ratings. *The Accounting Review (Forthcoming)*. <https://doi.org/10.2308/tar-2019-0506>
- Coates, J. C. I. (2014). Cost-Benefit Analysis of Financial Regulation: Case Studies and Implications. *Yale Law Journal*, 124. <https://heinonline.org/HOL/Page?handle=hein.journals/ylr124&id=916&div=27&collection=journals>
- Companies Act 2006*, (2006). <https://www.legislation.gov.uk/ukpga/2006/46/contents>
- Cox, J. D., & Thomas, R. S. (2009). Common Challenges Facing Shareholder Suits in Europe and the United States. *European Company and Financial Law Review*, 6(2), 348–357. <https://heinonline.org/HOL/Page?handle=hein.journals/ecomflr6&id=376&div=23&collection=journals>

- CSR Europe, & GRI. (2017). *Member State Implementation of Directive 2014/95/EU*. <https://www.globalreporting.org/public-policy-partnerships/policies-and-regulation/>
- Dai, R., Liang, H., & Ng, L. (2020). Socially responsible corporate customers. *Journal of Financial Economics*. <https://doi.org/10.1016/j.jfineco.2020.01.003>
- Danish Business Authority. (2013). *Corporate Social Responsibility and Reporting in Denmark: Impact of the third year subject to the legal requirements for reporting on CSR in the Danish Financial Statements Act*. http://csrgov.dk/file/358879/csr_rapport_2013_eng.pdf
- Daske, H., Hail, L., Leuz, C., & Verdi, R. (2008). Mandatory IFRS Reporting around the World: Early Evidence on the Economic Consequences. *Journal of Accounting Research*, 46(5), 1085–1142. <https://doi.org/10.1111/j.1475-679X.2008.00306.x>
- De George, E. T., Ferguson, C. B., & Spear, N. A. (2013). How much does IFRS cost? IFRS adoption and audit fees. *The Accounting Review*, 88(2), 429–462. <https://doi.org/10.2308/accr-50317>
- Decree 2002-221 of Feb. 20, 2002*, (2002). https://www.legifrance.gouv.fr/loda/id/JORFTEXT000000775209?init=true&page=1&query=2002-221+&searchField=ALL&tab_selection=all
- Dhaliwal, D. S., Li, O. Z., Tsang, A., & Yang, Y. G. (2011). Voluntary nonfinancial disclosure and the cost of equity capital: The initiation of corporate social responsibility reporting. *The Accounting Review*, 86(1), 59–100. <https://doi.org/10.2308/ACCR.00000005>
- Dhaliwal, D. S., Radhakrishnan, S., Tsang, A., & Yang, Y. G. (2012). Nonfinancial disclosure and analyst forecast accuracy: International evidence on corporate social responsibility disclosure. *The Accounting Review*, 87(3), 723–759. <https://doi.org/10.2308/ACCR-10218>
- Di Giuli, A., & Kostovetsky, L. (2014). Are red or blue companies more likely to go green? Politics and corporate social responsibility. *Journal of Financial Economics*, 111(1), 158–180. <https://doi.org/10.1016/j.jfineco.2013.10.002>
- Dimson, E., Marsh, P., & Staunton, M. (2020). Divergent ESG ratings. *Journal of Portfolio Management*, 47(1), 75–86. <https://doi.org/10.3905/JPM.2020.1.175>
- Dorfleitner, G., Halbritter, G., & Nguyen, M. (2015). Measuring the level and risk of corporate responsibility - An empirical comparison of different ESG rating approaches. *Journal of Asset Management*, 16(7), 450–466. <https://doi.org/10.1057/jam.2015.31>
- European Commission. (2013). *COMMISSION STAFF WORKING DOCUMENT IMPACT ASSESSMENT Accompanying the document Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL amending Council Directives 78/660/EEC and 83/349/EEC as regards disclosure of non-financial and diversity*. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52013SC0127>
- European Commission. (2021). *Corporate sustainability reporting*.

https://ec.europa.eu/info/business-economy-euro/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en

- Directive 2014/95/EU, (2014). <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014L0095>
- European Union. (2021). *The 27 member countries of the EU*. https://europa.eu/european-union/about-eu/countries_en#tab-0-1
- Ferrell, A., Liang, H., & Renneboog, L. (2016). Socially responsible firms. *Journal of Financial Economics*, 122(3), 585–606. <https://doi.org/10.1016/J.JFINECO.2015.12.003>
- Fiechter, P., Hitz, J.-M., & Lehmann, N. (2022). Real effects of a widespread CSR reporting mandate: Evidence from the European Union’s CSR Directive*. *Journal of Accounting Research*. <https://doi.org/10.1111/1475-679X.12424>
- Friedman, M. (1970, September 13). A Friedman doctrine - The Social Responsibility of Business Is to Increase Its Profits Profits. *New York Times*, 17. <https://www.nytimes.com/1970/09/13/archives/a-friedman-doctrine-the-social-responsibility-of-business-is-to.htmlhttps://nyti.ms/1LSi5ZD>
- Gelter. (2012). Why Do Shareholder Derivative Suits Remain Rare in Continental Europe. *Brooklyn Journal of International Law*, 37(3), 843–892.
- Global Reporting Initiative. (2021). *Member and commercial partner directory*. <https://www.globalreporting.org/reporting-support/member-and-commercial-partner-directory/>
- Gonçalves, T., Gaio, C., & Costa, E. (2020). Committed vs opportunistic corporate and social responsibility reporting. *Journal of Business Research*, 115, 417–427. <https://doi.org/10.1016/J.JBUSRES.2020.01.008>
- Grewal, J., Riedl, E. J., & Serafeim, G. (2019). Market Reaction to Mandatory Nonfinancial Disclosure. *Management Science*, 65(7), 3061–3084. <https://doi.org/10.1287/MNSC.2018.3099>
- Harjoto, M., Jo, H., & Kim, Y. (2017). Is Institutional Ownership Related to Corporate Social Responsibility? The Nonlinear Relation and Its Implication for Stock Return Volatility. *Journal of Business Ethics*, 146(1), 77–109. <https://doi.org/10.1007/S10551-015-2883-Y>
- He, J., Tian, X., Yang, H., & Zuo, L. (2020). Asymmetric Cost Behavior and Dividend Policy. *Journal of Accounting Research*, 58(4), 989–1021. <https://doi.org/10.1111/1475-679X.12328>
- Jackson, G., Bartosch, J., Avetisyan, E., Kinderman, D., & Knudsen, J. S. (2020). Mandatory Non-financial Disclosure and Its Influence on CSR: An International Comparison. *Journal of Business Ethics*, 162(2), 323–342. <https://doi.org/10.1007/s10551-019-04200-0>
- Kaspereit, T., & Lopatta, K. (2019). Improving predictions of upward cost adjustment and cost

- asymmetry at the firm-year level. *Journal of Management Accounting Research*, 31(3), 99–127. <https://doi.org/10.2308/JMAR-52345>
- Kim, J. B., Liu, X., & Zheng, L. (2012). The impact of mandatory IFRS adoption on audit fees: Theory and evidence. *The Accounting Review*, 87(6), 2061–2094. <https://doi.org/10.2308/accr-50223>
- Knudson, H. (2016). *CSR in Norway*. https://www.interregeurope.eu/fileadmin/user_upload/tx_tevprojects/library/file_1523529564.pdf
- Krüger, P., Sautner, Z., Tang, D. Y., & Zhong, R. (2021). The Effects of Mandatory ESG Disclosure around the World. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3832745>
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (1998). Law and Finance. *Journal of Political Economy*, 106(6), 1113–1155.
- La Porta, Rafael, Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (1999). The quality of government. *Journal of Law, Economics, and Organization*, 15(1), 222–279. <https://doi.org/10.1093/jleo/15.1.222>
- Law LOV-1998-07-17-56 om årsregnskap m.v. regnskapsloven. Accounting Act, (1998). https://lovdata.no/dokument/NL/lov/1998-07-17-56#KAPITTEL_3
- Law No. 1383 of 23/12/2012 amending the Companies Act, the Annual Accounts Act and various other acts (Introduction of rules on target figures and policies for the gender composition of the supreme governing body and for reporting thereon).*, (2012). <https://www.retsinformation.dk/eli/lta/2012/1383>
- Law No. 1403 of 27/12/2008 amending the Danish Financial Statements Act (Statement on corporate social responsibility in large companies).*, (2008). <https://www.retsinformation.dk/eli/lta/2008/1403>
- Law No. 448 of 07/06/2001. Act on the presentation of annual accounts by commercial enterprises, etc. (The Financial Statements Act).*, (2001). <https://www.retsinformation.dk/eli/lta/2001/448>
- Law No. 516 of 17/06/2008 amending the Danish Financial Statements Act.*, (2008). <https://www.retsinformation.dk/eli/lta/2008/516>
- Law No. 738 of 01/06/2015 amending the Annual Accounts Act and various other acts (Reduction of administrative burdens, adaptation to international accounting standards, implementation of the new Accounting Directive and of amendments to the Transparency,* (2015). <https://www.ft.dk/samling/20141/lovforslag/L117/index.htm>
- Law Prop. 48 L (2012–2013) Act amending the Accounting Act and certain other Acts (Social Responsibility Reporting).*, (2012). <https://www.regjeringen.no/no/dokumenter/prop-48-1-20122013/id709311/>

- Liang, H., & Renneboog, L. (2017). On the Foundations of Corporate Social Responsibility. *The Journal of Finance*, 72(2), 853–910. <https://doi.org/10.1111/jofi.12487>
- Maguire, S., & Hardy, C. (2009). Discourse and deinstitutionalization: The decline of DDT. *Academy of Management Journal*, 52(1), 148–178. <https://doi.org/10.5465/AMJ.2009.36461993>
- Manchiraju, H., & Rajgopal, S. (2017). Does Corporate Social Responsibility (CSR) Create Shareholder Value? Evidence from the Indian Companies Act 2013. *Journal of Accounting Research*, 55(5), 1257–1300. <https://doi.org/10.1111/1475-679X.12174>
- Mazurkiewicz, P. (2004). *Corporate environmental responsibility: Is a common CSR framework possible*. <https://documents1.worldbank.org/curated/en/577051468339093024/pdf/421830csrframework01PUBLIC1.pdf>
- OECD. (2021). *List of OECD Member countries - Ratification of the Convention on the OECD*. <https://www.oecd.org/about/document/ratification-oecd-convention.htm>
- Reverte, C. (2009). Determinants of corporate social responsibility disclosure ratings by Spanish listed firms. *Journal of Business Ethics*, 88(2), 351–366. <https://doi.org/10.1007/S10551-008-9968-9>
- Saleh, M., Zulkifli, N., & Muhamad, R. (2010). Corporate social responsibility disclosure and its relation on institutional ownership: Evidence from public listed companies in Malaysia. *Managerial Auditing Journal*, 25(6), 591–613. <https://doi.org/10.1108/02686901011054881>
- Sethi, S. P., Rovenpor, J. L., & Demir, M. (2017). Enhancing the Quality of Reporting in Corporate Social Responsibility Guidance Documents: The Roles of ISO 26000, Global Reporting Initiative and CSR-Sustainability Monitor. *Business and Society Review*, 122(2), 139–163. <https://doi.org/10.1111/basr.12113>
- Standard & Poors. (2003). *Compustat North America User's Guide*. <http://www.compustat.com/support>
- The Companies Act 2006 (Strategic Report and Directors' Report) Regulations 2013*, (2013). <https://www.legislation.gov.uk/ukxi/2013/1970/contents/made>
- Trade Law 2001. France. Section 225-102-1.*, (2001). https://www.legifrance.gouv.fr/codes/article_lc/LEGIARTI000042339777/
- Venieris, G., Naoum, V. C., & Vlismas, O. (2015). Organisation capital and sticky behaviour of selling, general and administrative expenses. *Management Accounting Research*, 26, 54–82. <https://doi.org/10.1016/J.MAR.2014.10.003>
- Wang, X., Cao, F., & Ye, K. (2018). Mandatory Corporate Social Responsibility (CSR) Reporting and Financial Reporting Quality: Evidence from a Quasi-Natural Experiment. *Journal of Business Ethics*, 152(1), 253–274. <https://doi.org/10.1007/S10551-016-3296-2>

World Bank DataBank. (2020). *World Bank national accounts data, and OECD National Accounts data files. GDP (current LCU). [Data file]*.
<https://data.worldbank.org/indicator/NY.GDP.MKTP.CN>

Zhao, Z. (2004). Using matching to estimate treatment effects: Data requirements, matching metrics, and Monte Carlo evidence. *Review of Economics and Statistics*, 86(1), 91–107.
<https://doi.org/10.1162/003465304323023705>

Table 1

Sample selection

The initial sample comprises a treated sample of Norway and 28 EU countries (Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom) and 12 OECD countries (Australia, Canada, Chile, Iceland, Israel, Japan, Korea, Mexico, New Zealand, Switzerland, Turkey and the United States) in the control group. The two selection criteria for control group are: (1) the country is an OECD member and (2) has not mandated comprehensive and overall adoption of non-financial reporting disclosure before 2019. For details of sample selection see the section (Sample and descriptive statistics). [499,744 initial sample, test sample 162,219]

	Treatment Sample	Control Sample
Initial sample (firm-years) from Compustat Global, 1999-2019	116,239	383,505
Subtract:		
(1) Utilities and financial sector (SIC codes 4900-4949 and 6000-6999, respectively)	(6,112)	(89,021)
(2) Firms-years with non-12-month length	(1,844)	(2,823)
(3) Firm-year observations where the country of incorporation and headquarters differ	(1,489)	(7,704)
(4) Firm-years before or during which the country where the firm is incorporated enters either the European Union or European Monetary Union. Firm-years in which financials are reported in the national currency preceding the Euro adoption.	(3,879)	(0)
(5) Firm-year observations where financials are reported in currencies subject to exceptional revaluation; Romanian Leu and Turkish Lira before 2006	(0)	(347)
(6) Firm-years with missing SG&A data after converting currencies into USD	(26,285)	(48,539)
(7) Firm-year observations with deficient data to compute the necessary control variables	(40,316)	(94,345)
(8) Firm-years in the treated sample where national-level size limits of the reporting obligation are not exceeded	(3,271)	(0)
(9) Firms that adopt the non-financial disclosure requirements voluntarily before the mandatory adoption.	(4,176)	(12,527)
(10) Firms with incomplete information on the 6-year event window (3 years prior to adoption, 3 years after the adoption)	(23,275)	(55,449)
(11) Surplus firm-years in the control sample not serving as a match for the treated firms	(0)	(65,832)
Final sample ¹³	5,592	5,592

¹³ When early adopters are also included, the final sample comprises 13,836 firm-years. In a financial reporting regulation study on IFRS, Daske et al. (2008) suggest that the economic consequences of the financial reporting mandate are most pronounced for firms that voluntarily switch to IFRS, both in the year when they switch and again later, when IFRS become mandatory. Hence, we keep also the voluntary adopters in the sample and study the effects of the disclosure mandate with and without them.

Table 2

Sample composition by country and year

Panel A: Mandatory CSR reporting adoption, voluntary adoption by mandatory CSR reporting adoption country (treatment sample)								
CSR reporting adopting countries	Unique firms	Total firm- years	Mandatory adopters		Voluntary adopters		CSR law	Name of the CSR disclosure law
			Firm- years	% (of total firm-years in column 3)	Firm- years	% (of total firm-years in column 3)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Austria	25	150	84	56.0 %	66	44.0 %	2017	Sustainability and Diversity Improvement Act 257/ME
Belgium	37	222	180	81.1 %	42	18.9 %	2017	Amendment to Companies Code 2564/ (2016/2017)
Croatia	12	72	54	75.0 %	18	25.0 %	2017	Amendments to the Law on Accounting PZE No. 51
Cyprus	4	24	24	100.0 %	0	0.0 %	2017	Companies Act Amendment 3
Czech Republic	1	6	6	100.0 %	0	0.0 %	2017	Amending Act No. 563/1991 Coll. On Accounting
Denmark	32	192	180	93.8 %	12	6.3 %	2009	Law No. 1403 of 27/12/2008 amending the Danish Financial Statements Act
Estonia	6	36	30	83.3 %	6	16.7 %	2017	Amendment of the Accounting Act
Finland	52	312	186	59.6 %	126	40.4 %	2017	Amendment 1376/2016 and Amendment 1441/2016 to the Accounting Act
Germany	157	942	672	71.3 %	270	28.7 %	2017	CSR Directive Implementation Act
Greece	22	132	102	77.3 %	30	22.7 %	2017	Law 4403/2016
Hungary	2	12	6	50.0 %	6	50.0 %	2017	Amendments to Act C of 2000 on Accounting
Ireland	16	96	78	81.3 %	18	18.8 %	2017	European Union Regulations 2017
Italy	43	258	186	72.1 %	72	27.9 %	2017	Legislative Decree 30 December 2016, n. 254
Luxembourg	16	96	84	87.5 %	12	12.5 %	2017	Law of 23 July 2016 on the Publication of NFR and Information on Diversity A156
Malta	4	24	24	100.0 %	0	0.0 %	2017	Companies Act and other Laws (Amendment) Act CAP 386
Netherlands	33	198	90	45.5 %	108	54.5 %	2017	Decree Disclosure of NFR PbEU, 2014, L330, PbEU 2014 L330
Norway	42	252	228	90.5 %	24	9.5 %	2013	Changes in the Accounting Act and some other laws [Prop. 48 L (2012–2013)]
Poland	11	66	48	72.7 %	18	27.3 %	2017	Act of 15 December 2016, Amending the Accounting Act 61
Portugal	14	84	54	64.3 %	30	35.7 %	2017	Law No. 148/2015
Romania	6	36	36	100.0 %	0	0.0 %	2017	Order No. 1.938 of 17 August 2016
Slovak Republic	1	6	6	100.0 %	0	0.0 %	2017	Act No. 130/2015 Coll., amending Act No. 431/2002 Coll. on Accounting
Slovenia	4	24	24	100.0 %	0	0.0 %	2017	Act amending the Companies Act ZGD-IJ
Spain	32	192	126	65.6 %	66	34.4 %	2017	Anteproyecto de Ley sobre información no financiera y diversidad
Sweden	79	474	276	58.2 %	198	41.8 %	2017	Corporate Reporting on Sustainability and Diversity Policy CU2
United Kingdom	502	3012	2808	93.2 %	204	6.8 %	2013	The Companies Act 2006 (Strategic Report and Directors' Report) Regulations 2013
Total	1153	6918	5592	80.8 %	1326	19.2 %		

Table 2 (continued)

Panel B: Voluntary CSR reporting adoption by non-mandatory CSR reporting OECD country (benchmark sample)

Non CSR reporting adopting countries	Unique firms	Firm-years	Total per country and cumulative sum		Non-voluntary adopters		Voluntary adopters	
			% (of total firm-years in column 3)	Cum.	% (of total firm- years in column 3)	%	% (of total firm- years in column 3)	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Australia	22	162	2.3 %	2.3 %	102	63.0 %	60	37.0 %
Canada	122	1362	19.7 %	22.0 %	1314	96.5 %	48	3.5 %
Chile	6	60	0.9 %	22.9 %	60	100.0 %	0	0.0 %
Israel	7	54	0.8 %	23.7 %	42	77.8 %	12	22.2 %
Japan	26	168	2.4 %	26.1 %	132	78.6 %	36	21.4 %
Mexico	2	24	0.3 %	26.5 %	24	100.0 %	0	0.0 %
New Zealand	5	36	0.5 %	27.0 %	30	83.3 %	6	16.7 %
Switzerland	13	90	1.3 %	28.3 %	66	73.3 %	24	26.7 %
United States	587	4962	71.7 %	100.0 %	3822	77.0 %	1140	23.0 %
Total	790	6918	100.0 %		5592	80.8 %	1326	19.2 %

Table 2 (continued)

Panel C: Treatment, CSRLaw and voluntary CSR reporting adoption by year (complete sample)

Year	All firms	Benchmark firms	Treatment firms	CSRLaw =0	CSRLaw =1	Non-voluntary adopters		Voluntary adopters	
						Firms	% (of total firms in column 2)	Firms	% (of total firms in column 2)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2006	64	32	32	64	0	60	93.8 %	4	6.3 %
2007	64	32	32	64	0	60	93.8 %	4	6.3 %
2008	64	32	32	64	0	60	93.8 %	4	6.3 %
2009	64	32	32	32	32	60	93.8 %	4	6.3 %
2010	1152	576	576	1120	32	1072	93.1 %	80	6.9 %
2011	1152	576	576	1120	32	1072	93.1 %	80	6.9 %
2012	1088	544	544	1088	0	1012	93.0 %	76	7.0 %
2013	1088	544	544	544	544	1012	93.0 %	76	7.0 %
2014	2242	1121	1121	1698	544	1804	80.5 %	438	19.5 %
2015	2242	1121	1121	1698	544	1804	80.5 %	438	19.5 %
2016	1154	577	577	1154	0	792	68.6 %	362	31.4 %
2017	1154	577	577	577	577	792	68.6 %	362	31.4 %
2018	1154	577	577	577	577	792	68.6 %	362	31.4 %
2019	1154	577	577	577	577	792	68.6 %	362	31.4 %
Total	13836	6918	6918	10377	3459	11184	80.8 %	2652	19.2 %

Table 3

Descriptive statistics for variables used in regression analyses

Panel A: Treatment sample											
Variable	n	Mean	S.D.	Min	0.25	Mdn	0.75	Max	CSRlaw =0	CSRlaw =1	Diff.
									(N=3459)	(N=3459)	
<i>SG&A</i>	6918	0.01	0.21	-0.73	-0.08	0.01	0.11	0.71	0.00	0.02	-0.02***
<i>Sales</i>	6918	0.02	0.20	-0.73	-0.07	0.01	0.12	0.75	0.01	0.03	-0.02***
<i>Decrease</i>	6918	0.46	0.50	0.00	0.00	0.00	1.00	1.00	0.51	0.42	0.09***
<i>SuccessiveDec</i>	6918	0.51	0.50	0.00	0.00	1.00	1.00	1.00	0.51	0.52	-0.01
<i>GDPGrowth</i>	6918	0.04	0.02	-0.04	0.03	0.04	0.04	0.35	0.04	0.04	-0.00
<i>ATtoSALES</i>	6918	0.12	0.66	-1.34	-0.31	0.07	0.49	2.21	0.10	0.14	-0.03**
<i>EMPtoSALES</i>	6918	-5.60	0.78	-7.93	-6.04	-5.54	-5.14	-3.68	-5.59	-5.62	0.03

Panel B: Complete sample											
Variable	n	Mean	S.D.	Min	0.25	Mdn	0.75	Max	Treatment =0	Treatment =1	Diff.
									(N=6918)	(N=6918)	
<i>SG&A</i>	13836	0.02	0.20	-0.73	-0.06	0.02	0.11	0.71	0.04	0.01	0.02***
<i>Sales</i>	13836	0.03	0.20	-0.73	-0.06	0.03	0.11	0.75	0.04	0.02	0.02***
<i>Decrease</i>	13836	0.42	0.49	0.00	0.00	0.00	1.00	1.00	0.38	0.46	-0.09***
<i>SuccessiveDec</i>	13836	0.51	0.50	0.00	0.00	1.00	1.00	1.00	0.51	0.51	-0.01
<i>GDPGrowth</i>	13836	0.04	0.02	-0.06	0.03	0.04	0.04	0.35	0.04	0.04	0.00***
<i>ATtoSALES</i>	13836	0.12	0.64	-1.34	-0.29	0.07	0.49	2.21	0.12	0.12	0.00
<i>EMPtoSALES</i>	13836	-5.61	0.76	-7.93	-6.03	-5.54	-5.16	-3.68	-5.62	-5.60	-0.01

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4

Correlation matrix for variables used in regression analyses

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) CSRlaw	1.00							
(2) SG&A	-0.00	1.00						
(3) Sales	0.01	0.57***	1.00					
(4) Decrease	-0.00	-0.42***	-0.66***	1.00				
(5) SuccessiveDec	0.01	-0.08***	-0.10***	0.10***	1.00			
(6) GDPGrowth	-0.05***	0.09***	0.12***	-0.12***	-0.04***	1.00		
(7) ATtoSales	0.01	-0.02*	-0.04***	0.03***	0.02	-0.00	1.00	
(8) EMPtoSales	-0.01	-0.03***	-0.07***	0.05***	0.02**	0.00	0.06***	1.00
<i>N</i>	13836							

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5

Changes in SG&A

This table reports results from OLS regressions of SG&A changes on mandatory adoption of CSR disclosure. The estimation model extends the model 3 in Anderson et al. (2003). Specifically, we extend the model by including the main test variable *CSRLaw*, which is equal to one for fiscal years during which the focal firm resides in a country where public firms are mandated to disclose on non-financial information (CSR), otherwise zero. The dependent variable is the natural logarithm of the quotient of current and previous year selling general and administrative expense. The sample consists of public firms from EU28 and OECD countries. The treated group is limited to 6-year windows around the adoption (i.e. three years before the adoption, the adoption year and two years after the adoption). The financial data for public firms is retrieved from Compustat. For details of sample selection and variable definitions, see Table 1 and Appendix 1, respectively. The t-statistics reported in parentheses are based on firm cluster robust standard errors. Levels of significance are indicated by *, **, and *** for 10%, 5% and 1%, respectively.

Dependent Sample	SG&A					
	Full sample		Excluding early adopters	Excluding USA	Excluding USA, DEU and early adopters	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>CSRLaw</i>		0.043^{***} (5.72)	0.017^{***} (2.76)	0.020^{***} (2.81)	0.032^{***} (2.73)	0.036^{***} (2.86)
<i>Sales</i>	0.561 ^{***} (20.22)		0.559 ^{***} (20.11)	0.551 ^{***} (18.56)	0.502 ^{***} (14.00)	0.501 ^{***} (13.10)
<i>Decrease*Sales</i>	-0.278 (-1.52)		-0.282 (-1.54)	-0.301 (-1.55)	-0.150 (-0.73)	-0.233 (-1.11)
<i>Decrease*SuccessiveDec*Sales</i>	0.001 (0.02)		0.000 (0.01)	0.010 (0.21)	-0.033 (-0.59)	-0.001 (-0.02)
<i>Decrease*Sales*GDPGrowth</i>	-0.552 (-0.31)		-0.478 (-0.27)	0.204 (0.11)	1.506 (0.79)	1.979 (0.95)
<i>Decrease*Sales*ATtoSales</i>	-0.186 ^{***} (-3.92)		-0.183 ^{***} (-3.87)	-0.193 ^{***} (-3.81)	-0.205 ^{***} (-3.71)	-0.226 ^{***} (-3.69)
<i>Decrease*Sales*EMPtoSales</i>	-0.052* (-1.80)		-0.052* (-1.80)	-0.050 (-1.64)	-0.035 (-1.11)	-0.046 (-1.43)
<i>Constant</i>	0.004 (1.47)	0.013 ^{***} (6.92)	0.000 (0.07)	0.001 (0.23)	-0.009 (-1.52)	-0.008 (-1.24)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
adj. R^2	0.321	0.098	0.321	0.310	0.300	0.284
<i>N</i>	13836	13836	13836	11184	8866	6682

Table 6

SG&A subcomponents and COGS

This table reports results from OLS regressions of SG&A changes on mandatory adoption of CSR disclosure. The estimation model extends the model 3 in Anderson et al. (2003). Specifically, we extend the model by including the main test variable *CSRLaw*, which is equal to one for such fiscal years during which the focal firm resides in a country where public firms are mandated to disclose on non-financial information (CSR), otherwise zero. The dependent variable is the natural logarithm of the quotient of current and previous year selling general and administrative expense. The sample consists of public firms from EU28 and OECD countries. The treated group is limited to 6-year windows around the adoption (i.e., three years before the adoption and two years during which the law is effective). The financial information data is retained from Compustat. Due to the majority of R&D observation being zero and the winsorization of this particular variable is conducted at 5 and 95 percentiles only for the observations different from zero. For details of sample selection and variable definitions, see Table 1 and Appendix 1, respectively. The t-statistics reported in parentheses are based on firm cluster robust standard errors. Levels of significance are indicated by *, **, and *** for 10%, 5% and 1%, respectively.

Dependent variable	SG&A	SG&A	SG&A	SG&A
	Excluding R&D			
Sample	Full sample excluding early adopters			
	(1)	(2)	(3)	(4)
<i>CSRLaw</i>	0.020 *** (2.81)	0.015 ** (1.97)	0.016 ** (2.14)	-0.006 (-1.06)
<i>Sales</i>	0.551*** (18.56)	1.004*** (4.62)	0.472*** (3.62)	1.199*** (5.73)
<i>Decrease*Sales</i>	-0.301 (-1.55)	-0.394 (-1.22)	-0.503** (-2.37)	-0.071 (-0.22)
<i>Decrease*SuccessiveDec*Sales</i>	0.010 (0.21)	-0.025 (-0.47)	0.070* (1.74)	0.075 (1.26)
<i>Decrease*Sales*GDPGrowth</i>	0.204 (0.11)	-0.266 (-0.28)	-0.227 (-0.44)	0.396 (0.58)
<i>Decrease*Sales*ATtoSales</i>	-0.193*** (-3.81)	-0.147*** (-3.34)	-0.024 (-0.98)	-0.126*** (-3.25)
<i>Decrease*Sales*EMPtoSales</i>	-0.050 (-1.64)	0.005 (0.15)	-0.020 (-0.94)	0.035 (0.82)
<i>Constant</i>	0.001 (0.23)	-0.001 (-0.17)	0.010** (2.41)	0.003 (1.15)
Firm FE	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes
adj. R^2	0.310	0.260	0.049	0.591
<i>N</i>	11184	11184	11184	11184

Table 7

Changes in reported CSR expenditure

This table reports results from OLS regressions of changes in reported CSR expenditure on mandatory adoption of CSR disclosure. The dependent variables are the natural logarithms of the ratios of current and previous year's training costs (*TrainingCosts*), training costs per employees (*TrainingCostsPerEmp*), environmental expenditures (*EnvExpenditures*) and environmental R&D (*EnvRD*). The estimation model is the model 3 in Anderson et al. (2003). The main test variable is *CSRLaw*, which is equal to one for fiscal years during which the focal firm resides in a country where public firms are mandated to disclose on non-financial information (CSR), otherwise zero. The data on reported CSR expenditures is collected from Eikon. The t-statistics reported in parentheses are based on firm cluster robust standard errors. Levels of significance are indicated by *, **, and *** for 10%, 5% and 1%, respectively.

Dependent variable	TrainingCosts		TrainingCostsPerEmp		EnvExpenditures		EnvRD	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>CSRLaw</i>	0.264*** (2.69)	0.243*** (2.80)	0.363*** (3.28)	0.343*** (3.48)	0.100 (0.62)	0.071 (0.41)	0.234 (1.11)	0.309 (0.89)
<i>SALES</i>		0.049 (0.13)		-0.499* (-1.69)		0.857 (1.31)		0.830 (0.65)
<i>Dec_Sales</i>		1.323 (0.70)		0.598 (0.34)		-3.259 (-0.79)		2.553 (0.48)
<i>Dec_Sales_Succ</i>		-0.460 (-0.79)		-0.702 (-1.22)		0.433 (0.49)		-0.566 (-0.79)
<i>Dec_Sales_GDP</i>		22.962 (0.82)		27.243 (1.04)		-37.438* (-1.74)		22.980 (0.77)
<i>DS_ATtoSALES</i>		-0.962** (-2.58)		-0.627* (-1.91)		-0.836 (-1.00)		3.561 (1.37)
<i>DS_EMPtoSALES</i>		0.152 (0.72)		-0.024 (-0.10)		-0.712 (-1.17)		0.821 (0.85)
<i>Constant</i>	-0.123** (-2.26)	-0.093 (-1.62)	-0.219*** (-3.53)	-0.160** (-2.46)	-0.036 (-0.43)	-0.031 (-0.28)	-0.155 (-1.24)	-0.242 (-0.97)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>R</i> ²	0.488	0.517	0.505	0.537	0.254	0.281	0.773	0.812
<i>N</i>	305	305	288	288	465	465	59	59

Table 8

SG&A stickiness and mandatory CSR disclosure in Europe

This table reports results from OLS regressions of SG&A changes on mandatory adoption of CSR disclosure, cost stickiness (*CSRLaw* Decrease*Sales*) and controls.

Dependent Sample	SG&A					
	Full sample		Excluding early adopters	Excluding USA	Excluding USA, DEU and early adopters	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>CSRLaw</i>		0.017*** (2.76)	0.010 (1.24)	0.016* (1.73)	0.028** (2.12)	0.035** (2.42)
<i>CSRLaw*Sales</i>			0.147*** (2.62)	0.122* (1.92)	0.132** (2.01)	0.124 (1.62)
<i>Sales</i>	0.561*** (20.22)	0.559*** (20.11)	0.537*** (17.01)	0.535*** (16.05)	0.476*** (11.24)	0.481*** (10.90)
<i>CSRLaw* Decrease*Sales</i>			1.483*** (2.96)	1.901*** (3.37)	1.424*** (2.75)	1.937*** (3.17)
<i>Decrease*Sales</i>	-0.278 (-1.52)	-0.282 (-1.54)	-0.371** (-2.02)	-0.424** (-2.19)	-0.239 (-1.14)	-0.374* (-1.75)
<i>CSRLaw*Decrease*SuccessiveDec*Sales</i>			-0.071 (-0.54)	-0.111 (-0.76)	-0.022 (-0.15)	-0.096 (-0.58)
<i>Decrease*SuccessiveDec*Sales</i>	0.001 (0.02)	0.000 (0.01)	0.002 (0.04)	0.015 (0.28)	-0.038 (-0.59)	0.005 (0.07)
<i>CSRLaw*Decrease*Sales*GDPGrowth</i>			-7.662* (-1.65)	-11.852** (-2.39)	-9.009* (-1.89)	-14.117*** (-2.75)
<i>Decrease*Sales*GDPGrowth</i>	-0.552 (-0.31)	-0.478 (-0.27)	0.076 (0.04)	1.054 (0.54)	1.992 (0.99)	2.708 (1.25)
<i>CSRLaw*Decrease*Sales*ATtoSales</i>			-0.036 (-0.26)	-0.086 (-0.55)	-0.001 (-0.01)	-0.063 (-0.39)
<i>Decrease*Sales*ATtoSales</i>	-0.186*** (-3.92)	-0.183*** (-3.87)	-0.188*** (-3.78)	-0.195*** (-3.66)	-0.213*** (-3.58)	-0.228*** (-3.42)
<i>CSRLaw*Decrease*Sales*EMPtoSales</i>			0.233*** (2.84)	0.274*** (2.90)	0.222*** (2.62)	0.269*** (2.59)
<i>Decrease*Sales*EMPtoSales</i>	-0.052* (-1.80)	-0.052* (-1.80)	-0.065** (-2.30)	-0.066** (-2.20)	-0.050 (-1.57)	-0.065** (-2.00)
<i>Constant</i>	0.004 (1.47)	0.000 (0.07)	0.001 (0.21)	0.001 (0.19)	-0.010 (-1.54)	-0.010 (-1.41)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-year FE	Yes	Yes	Yes	Yes	Yes	Yes
adj. R^2	0.321	0.321	0.324	0.313	0.303	0.288
<i>N</i>	13836	13836	13836	11184	8866	6682

Table 9

Estimates of cost increases and cost stickiness across adopting countries

This table summarizes the estimates of cost increases defined for each adopting country and the dynamic panel structure used in obtaining the estimates. Specifically, we re-estimate the main specifications of the paper in order to examine cross country variation using separately each adopting country together with all control countries as the estimation sample: The column 5 of this table presents the coefficient of *CSRLaw* from the re-estimation of the model in Column 4 of Table 5. Column 6 presents the coefficient of *CSRLaw*Decrease*Sales* (i.e. *CSRLaw_Sticky*) from the re-estimation of the model in Column 4 of Table 8.

Row	Country	Dynamic panel structure		Estimates of cost increases	
		Number of firms	Average number of observations per firm	β (<i>CSRLaw</i>)	β (<i>CSRLaw_Sticky</i>)
(1)	(2)	(3)	(4)	(5)	(6)
1	Austria	25	6	0.044	-10.075
2	Belgium	37	6	0.058	-4.803
3	Cyprus	4	6	0.247	-2.999
4	Czech Republic	1	6	0.184	0.000
5	Germany	157	6	0.037	-4.539
6	Denmark	32	6	-0.066	6.313
7	Spain	32	6	0.047	7.066
8	Estonia	6	6	0.065	-0.271
9	Finland	52	6	-0.017	8.094
10	United Kingdom	502	6	0.024	1.980
11	Greece	22	6	0.074	14.305
12	Croatia	12	6	-0.007	140.668
13	Hungary	2	6	0.010	0.000
14	Ireland	16	6	-0.002	3.109
15	Italy	43	6	-0.011	-1.332
16	Luxembourg	16	6	-0.017	-3.383
17	Malta	4	6	0.028	-5.087
18	Netherlands	33	6	0.026	70.420
19	Norway	42	6	-0.041	4.043
20	Poland	11	6	0.082	-2.083
21	Portugal	14	6	0.072	26.406
22	Romania	6	6	0.091	-19.385
23	Slovak Republic	1	6	-0.036	-1.378
24	Slovenia	4	6	-0.116	-593.042
25	Sweden	79	6	0.020	5.434

Table 10

Country characteristics and mandatory CSR disclosure costs

This table reports results from OLS regressions of country-level coefficients of CSRLaw and cost stickiness (CSRLaw* Decrease*Sales) on country characteristics (for details see Table 8). Countries with less than 10 firms are excluded.

Panel A: Cost increases

Dependent	β (CSRLaw)				
	(1)	(2)	(3)	(4)	(5)
<i>CommonLaw</i>	0.005*** (7.96)				
<i>CivilLaw</i>		-0.005*** (-7.96)			
<i>Scandinavia</i>			-0.044*** (-64.64)		
<i>EmpLawIndex</i>				-0.012*** (-7.52)	
<i>ShareholderLitigation</i>					0.003*** (5.04)
<i>Constant</i>	0.018*** (40.14)	0.023*** (47.93)	0.028*** (98.62)	0.027*** (31.26)	0.019*** (37.73)
adj. R^2	0.009	0.009	0.382	0.008	0.004
N	6750	6750	6750	6654	6750

Panel B: Cost stickiness

Dependent	β (CSRLaw_Sticky)				
	(1)	(2)	(3)	(4)	(5)
<i>CommonLaw</i>	-6.005*** (-13.16)				
<i>CivilLaw</i>		6.005*** (13.16)			
<i>Scandinavia</i>			0.864 (1.45)		
<i>EmpLawIndex</i>				13.180*** (11.58)	
<i>ShareholderLitigation</i>					-7.035*** (-15.46)
<i>Constant</i>	8.020*** (25.90)	2.015*** (6.01)	5.097*** (20.02)	-1.088* (-1.80)	9.126*** (27.04)
adj. R^2	0.025	0.025	0.000	0.020	0.034
N	6750	6750	6750	6654	6750

Appendix 1. Variable definitions and data sources

Variable	Definition	Source
<i>The main models</i>		
$CSRLaw_{i,t}$	An indicator variable equal to one if a firm is mandated to report on non-financial information.	Table 2
$SG\&A_{i,t}$	The natural logarithm of the quotient of current and previous year selling, general and administrative expenses for firm i in year t .	Compustat
$SG\&A_{i,t}$ $R\&D_{i,t}$	<i>Excluding</i> The natural logarithm of the quotient of current and previous year selling, general and administrative expenses less research and development expenditure for firm i in year t .	Compustat
$R\&D_{i,t}$	The natural logarithm of the quotient of current and previous year research and development expenses for firm i in year t .	Compustat
$COGS_{i,t}$	The natural logarithm of the quotient of current and previous year cost of goods sold for firm i in year t .	Compustat
$Sales_{i,t}$	The natural logarithm of the quotient of current and previous year revenue for firm i in year t .	Compustat
$Decrease_{i,t}$	An indicator variable equal to one if revenue in period t is less than revenue in period $t-1$, zero otherwise.	Compustat
$SuccessiveDec_{i,t}$	An indicator variable equal to one if revenue in period $t-1$ is less than revenue in period $t-2$, zero otherwise.	Compustat
$ATtoSales_{i,t}$	The natural logarithm of the quotient of total assets and revenue for firm i in year t .	Compustat
$EMPtoSales_{i,t}$	The natural logarithm of the quotient of the number of employees and revenue for firm i in year t .	Compustat
$GDPGrowth_t$	The country-level percentage growth in nominal GDP in year t .	World Bank
$TrainingCosts_{i,t}$	The natural logarithm of the ratio of current and previous year's training costs.	Eikon
$TrainingCostsPerEmp_{i,t}$	The natural logarithm of the ratio of current and previous year's training costs per employee.	Eikon
$EnvExpenditures_{i,t}$	The natural logarithm of the ratio of current and previous year's environmental expenditures.	Eikon
$EnvRD_{i,t}$	The natural logarithm of the ratio of current and previous year's training costs environmental R&D.	Eikon
<i>Analysis of Economic Channels</i>		
$CivilLaw$	An indicator variable equal to one for French, German and Scandinavian legal origins, otherwise zero.	Schleifer et al. (2008), Spamann (2010)
$CommonLaw$	An indicator variable equal to 1 if the firm resides in a country with English legal origin, otherwise zero.	Schleifer et al. (2008), Spamann (2010)
$Scandinavia$	An indicator variable equal to 1 if the firm resides in a country with Scandinavian civil law as the legal origin.	Schleifer et al. (2008), Spamann (2010)
$EmpLawIndex$	An index developed by Botero et al. (2004) measuring protection of labor and employment laws as the average of cost of alternative employment contracts, increasing hours worked and firing and dismissal procedures.	Botero et al. (2004)
$ShareholderLitigation$	An indicator variable from La Porta, López-de-Silanes and Shleifer (2008) equal to 1 if the shareholders have a judicial venue to challenge oppressive decisions of management or of the assembly, and otherwise zero.	Schleifer et al. (2008)