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The Timeliness of UK Private Company Financial Reporting: Regulatory and Economic Influences

Abstract

This paper investigates the extent to which the timeliness of UK private companies' accounting information reflects regulatory and economic influences by studying the impact of a one month shortening of the statutory regulatory filing deadline. Using the financial reporting lag and propensity to file late as measures of timeliness, we find that although reporting behaviour is largely driven by regulatory deadlines, companies conjectured to be producing accounting information for reporting to outside investors publish their accounts significantly more quickly, and are substantially less likely to file beyond the statutory deadline (late), than their counterparts lacking similar incentives. However, in terms of this reporting lag differential, the change in regulation had a homogeneous impact. We report a significant reduction in the mean and median filing time, but an increase of 46% in the proportion of firms filing late, in the year following the regulatory change. Our results are robust to the employment of a number of different estimation methods, including matching and Huber and median regression.

Keywords: Private company financial reporting; regulation; voluntary audit; timeliness; late filing

The Timeliness of UK Private Company Financial Reporting: Regulatory and Economic Influences

1. Introduction

This paper studies the timeliness with which UK private companies publish their annual financial statements and examines the influence of regulation and economic factors on financial reporting.[1] Timeliness is a central qualitative characteristic of accounting and is a fundamental element of the relevance of financial reporting information. We study an important regulatory change where the UK Companies Act reduced the time permitted for private firms to file their accounts by one month. We examine the impact of regulation on companies conjectured to be producing accounting information to report to outsiders compared with those without similar incentives. As well as providing an assessment of the impact of an important and substantive change in reporting legislation, the study aims to address the question of the relative roles of regulation and economic demand for information from outsiders in influencing corporate financial reporting (Ball, 2008).

Although prior research documents that private companies have lower accounting quality compared with their public counterparts due to a lack of demand for information (e.g. Ball and Shivakumar, 2005; Burgstahler et al., 2006; Hope et al., 2013), it is unlikely that demand and incentives for financial reporting in the private corporate sector are universally low. Most public companies start life as privately owned and even if they remain private, they often need to attract significant levels of outside capital (e.g. Brav, 2009). Where capital is raised externally, accounting information is useful for reducing information asymmetries between private firms and their investors (Minnis, 2011). The timelier the publication of such information, the higher is its utility to external users (Feltham, 1972). For example, research shows that outsiders rely on the financial statements of private firms for debt contracting purposes (Peek et al., 2010; Niskanen and Niskanen, 2004) and for the provision of trade credit (Collis et al., 2004). Moreover, Collis et al. (2013) find that the timing with which UK private firms file their accounts is an important consideration for trade creditors. Accordingly, private firms have been found to voluntarily employ external auditors where agency costs are high and/or when they plan to raise outside finance (Collis et al.,

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[1] Our focus is on financial reporting timeliness and not on timely loss recognition as in Basu (1997) and Ball and Shivakumar (2005).

2004; Dedman et al., 2014), with private firms appointing auditors facing fewer financing constraints and a lower cost of capital (e.g. Hope et al., 2011; Minnis, 2011).

Notwithstanding these findings, regulation remains an important feature of the financial reporting environment, even in circumstances where demand for accounting information is high (Leuz, 2011). For private companies without strong economic demand for financial statements, preparing and publishing accounts may be viewed largely as a regulatory (compliance) burden. Rather than for economic motives, such firms may prepare financial statements predominantly for corporate taxation purposes (e.g. Garrod et al., 2008; Szczesny and Valentincic, 2013). If this is the case, the relevance of information for financial reporting to banks, trade creditors and outside shareholders is limited (Ball and Shivakumar, 2005). We argue that, for companies using accounting for reporting to investors, the timeliness of their accounting will be an important consideration. In consequence, they are expected to file their accounts more quickly and to be less influenced by regulatory filing deadlines.

We model reporting timeliness for a sample of 31,147 UK private independent companies surrounding the shortening of the statutory filing deadline by one month. After controlling for other factors (such as size, profitability and leverage) found in prior research to be associated with reporting lags for quoted companies, we investigate the impact of two new corporate characteristics which we argue are proxies for the economic demand for accounting information. First, we focus on a sample of firms having the choice of opting out of audit and identify those that still choose to have their accounts audited. Auditors' independent verification of financial reporting information enhances its credibility to outsiders - either directly through the audit process (Clatworthy and Peel, 2013), or via signalling (Chi et al., 2013, Hope et al., 2011). Even though an audit should, *ceteris paribus*, increase the reporting lag (the number of days it takes companies to publish their accounts after their year end), we expect audited firms to file more quickly to meet the demand for higher quality information that originally led to the voluntary auditor appointment.

Second, we examine whether companies report a non-zero deferred tax liability in their balance sheets. This is a novel measure designed to capture the extent of the alignment between the financial reporting and tax roles of accounting. Where there is a perfect alignment between tax and financial reporting, the balance on the deferred tax account is zero by definition. We expect this to be the case where companies are preparing accounts solely for tax purposes, rather than to satisfy outside

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demand by capital providers. However, if companies recognise a liability for deferred tax, we argue that there is a misalignment because companies are using accounting to report to outside investors and therefore have stronger incentives to publish their accounts on a timelier basis.[2]

The lower overall demand for private companies' accounting information reported in previous research (e.g. Ball and Shivakumar, 2005), suggests the effects of regulation on reporting behaviour to be substantial. We hypothesise that companies with stronger economic demand for accounting information, will publish their accounts more quickly, will be less likely to publish their accounts after the statutory deadline (file late) and will be less likely to change their reporting lags in response to the shortening of the statutory deadline.

Our results show that regulation has a significant influence over when UK private companies publish their accounts. The one month reduction in the reporting deadline affects reporting for a substantial proportion of companies, resulting in a mean (median) reduction in the filing time of around one week (two weeks). However, the new filing deadline also led to a substantial (46%) increase in the proportion of firms filing late. Importantly, our empirical models show that companies producing accounting for financial reporting purposes (those with audited accounts and/or with low book/tax tax alignment) exhibit significantly shorter reporting lags and are substantially (28-29%) less likely to file their accounts late. However, no convincing evidence is found to support hypotheses that reporting lags for these companies are less affected by the regulatory change. Our results are robust to the use of a number of different estimation methods, including Huber, median (least absolute deviation) and count (median) regression and matching estimators.

Our paper makes a number of contributions. First, it provides novel evidence on the effects of regulatory and capital market influences in an environment where demand for accounting information is low compared with public companies (Ball and Shivakumar, 2005; Burgstahler et al., 2006; Hope et al., 2013). This evidence helps inform the debate about the relative influence of regulation versus the market over accounting (Ball, 2008). Second, we conduct the first comprehensive study of UK private company financial reporting timeliness. Little is known about accounting in this sector, yet private firms constitute a major share of the UK's production capacity (Brav, 2009). As Hopwood (2000) notes, private companies'

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[2] Note that our measure does not capture disclosure effects of deferred taxation, since we focus only on companies disclosing an income statement along with the mandatory balance sheet. The prevailing accounting standards required firms to disclose components of deferred tax whenever material.

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financial reporting can often differ significantly from their public counterparts due to differences in providers of capital and availability of alternative sources of information. In contrast to quoted firms, where filing times are relatively short and compliance levels are around 100% (e.g. Owusu-Ansah, 2000; Leventis and Weetman, 2004), there is significant variation in reporting lags for private firms. We find that a non-trivial proportion (around 10%) of private firms file after the deadline, thereby incurring statutory penalties.

Overall we conclude that regulation is the primary driver of reporting behaviour, but that accounting still fulfils an important economic role for some private companies, as reflected in timelier publication of their accounts. The next section outlines the UK private company regulatory regime, discusses relevant prior literature and sets out our research questions and hypotheses. Section 3 describes our data and methods, while our empirical results are presented in Section 4. The paper concludes in Section 5 with a discussion of principal findings, limitations and suggestions for further research.

2. Regulatory background, prior literature and hypotheses

2.1 Regulatory background

Since the implementation of the 1978 Fourth Directive, all limited companies of European member states have been required to produce annual accounts and file them at a central registry for public inspection. In the UK, the repository is Companies House (CH), which is also responsible for regulatory compliance, including late filing. All UK companies are required to file their accounts at CH, at which stage they are publicly available. The current legal requirements are contained in the 2006 Companies Act, which represented a major overhaul of UK company law by updating its 1985 predecessor. The main feature of interest to our study is that the updating of the Act resulted in a shortening of the deadline for filing accounts from 10 to 9 months for private companies with financial years beginning on or after 6th April 2008.

The UK regulation creates strong incentives for companies to publish their annual accounts before the statutory deadline by imposing material financial penalties for accounts delivered late. Escalating penalties are levied automatically[3] against companies filing late as follows: ≤ 1 month, £150; > 1 month & ≤ 3 months, £375; > 3 months & ≤ 6 months, £750; and > 6 months, £1,500. Penalties are doubled in cases where the accounts are filed late in two consecutive years. Directors responsible for late filing may

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[3] Companies therefore incur the penalties even if they exceed the deadlines by only one day.

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also be prosecuted and subject to a maximum fine of £5,000, together with a daily £500 fine for continuing non-compliance. They may also be disqualified from being a director, or action may be taken against them by their company, where they fail to adhere to legislation relating to the filing and content of company accounts (Green and Santilale, 2009). Of course, late filing may also lead to a loss of firms' (directors') reputation and may be a signal of financial distress (Impink et al., 2012), potentially affecting credit ratings[4] (e.g., Experian, 2013). The regulations and penalties for late filings are consistent with financial reporting timeliness being viewed (at least by regulators) as an important characteristic in the functioning of private capital markets. In a contemporaneous paper, Luypaert et al. (2015) investigate the factors associated with the timeliness of the filing of the annual accounts by Belgian small firms. They find that audited companies and larger companies are less likely to file late and that financial penalties influence filing behaviour. Unlike the current study, however, they do not study the impact of regulatory changes or financial reporting/tax alignment.

It has long been recognised that accounting information should be timely[5] for it to have utility for decision makers. For instance, the second Concepts Statement of the US Financial Accounting Standards Board (FASB, 1980) includes timeliness as one of the three components of primary decision-specific quality and relevance. It states (para. 56) that 'If information is not available when it is needed or becomes available only so long after the reported events that it has no value for future action, it lacks relevance and is of little or no use.'

Despite its importance, there have been relatively few theoretical analyses of corporate financial reporting timeliness. Feltham (1972) demonstrates analytically that an information system having a shorter reporting delay than another is more informative, as long as both ultimately report the same information. Furthermore, there may be a cost-benefit trade-off in the production of timely information. As Feltham (1972, p. 111) points out, 'Decreases in delay often require additional personnel and equipment, or more expensive equipment. Costs tend to increase as delay is decreased and the objective of

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[4] In particular, every UK company has an electronic record at CH which can be easily accessed at no cost using the CH *WebCHeck* service. Searches can be made against company names or registration numbers. Each company record gives the date of the company's accounting year-end and the maximum permitted ('next accounts due') filing date to comply with the statutory deadline. If a company fails to file on time, CH indicates that the accounts are 'OVERDUE' on the company's record, which is then available for public viewing.
[5] Although timeliness is perceived as important, it is not an overriding objective of financial reporting due to the potential trade-off between the timeliness of information and its quality (FASB, 1980; Suphap, 2004). See also Bryant-Kutcher et al. (2013) for evidence on the trade-off between timeliness and reliability.

obtaining information "as quickly as possible" loses its desirability. The value of decreasing delay and cost of decreasing delay must be balanced'. Our research design and hypotheses are formulated to examine questions regarding the forces acting on firms to incur the incremental costs involved in producing timely accounting information, and whether firms are induced to bear these costs in response to regulation or to meet the demand for the information from outside users.

2.2 Regulatory Influences

Leuz (2010) provides a number of reasons why regulation of corporate financial reporting can be socially beneficial, including the creation of economy-wide cost savings such as enhanced comparability and reduced contracting costs. [6] Leuz (2010) and Leuz and Wysocki (2008) also stress that agency problems, such as the consumption of private benefits by corporate insiders, can lead to social costs because other firms may be limited in their ability to exploit opportunities. Hence, mandating disclosure can help reduce these costs, partially through increasing transparency and making consumption of private benefits harder.

In this context, imposing maximum permitted delays in filing accounts can aid outsiders to assess the extent of this problem and to exercise control rights at the appropriate time. Continued delay may cause information to have lower utility for decision making (Bromwich, 1992) and untimely disclosure may result in misallocation of capital where outside investors face adverse selection and moral hazard problems (Leventis and Weetman, 2004).

In reducing the late filing deadline by one month, the government's Regulatory Impact Assessment (RIA, 2007, p. 35) stated that the reduction was 'in order to reflect improvements in technology and the increased rate at which information becomes out of date'. Although not appearing to give any further explanation/evidence,[7] it is implicit, given the magnitude of the reduction in filing deadline, that the government perceived firstly, that there were significant benefits associated with improving the timeliness of private company reporting for users; and secondly, that the benefits of improved timeliness for users would outweigh the costs to companies, including the potential increase in late filing and the associated statutory penalties and reputation loss. Given these costs, we expect regulatory filing limits to markedly influence the filing behaviour of private firms, leading to our first hypothesis:

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[6] See Hirshleifer (1971) for examples of conditions where information has no social value.
[7] We expended considerable effort in searching for further evidence, including parliamentary documents/Hansard, but we were unable to find further reference to the shortening of the late filing deadline.

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H1: Financial reporting timeliness will be significantly affected by the change in the regulatory filing deadline.

2.3 Economic influences

The primary theoretical argument for economic demand affecting financial reporting timeliness is that accounting information helps to resolve information asymmetries between companies and their investors (e.g. Beyer et al., 2010). By their very nature, private companies are less widely held than public ones, with a large proportion of their finance being in the form of debt and short-term credit facilities (Brav, 2009; Minnis, 2011). Even though private firms may face few (or no) agency problems (e.g. Szczesny and Valentincic, 2013), Peek et al. (2010) find that creditors rely on financial statement data for contracting and to assess the status of their claims.

Where the demand for accounting information from outsiders is strong, we expect regulatory deadlines to have less influence over reporting timeliness. Prior research demonstrates that private companies' financial statements are used by banks both for *ex ante* lending decisions and for monitoring firms' performance *ex post* (Brav, 2009; Niskanen and Niskanen, 2004). In the latter circumstances, a 10 month filing delay (which meets the regulatory deadline for the first year of our study) may well be unsatisfactory, meaning firms' accounting systems will be more responsive to investors' needs, than to statutory deadlines. Accordingly, we examine whether regulatory forces impact upon private companies to a greater or lesser extent, depending on the level of outside demand for their financial reporting information from capital providers. We employ two primary measures to examine reliance on accounting for financial reporting to investors: voluntary audit appointments and financial reporting/tax orientation.

2.3.1 Voluntary auditor appointments

UK firms are more likely to employ an external auditor when agency problems are more pronounced and when they are seeking outside finance (Collis et al. 2004; Dedman et al. 2014). Evidence from the US (Allee and Yohn, 2009), also demonstrates that small private firms who voluntarily appoint auditors are less likely to be denied loan capital and are charged a lower interest rate on debt compared with their unaudited counterparts (Blackwell et al., 1998; Minnis, 2011).[8]

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[8] We are unable to use firms' reliance on outside capital as a direct measure of the demand for financial statement information because debt is the main source of outside capital for UK private firms (Brav, 2009) and the debt (leverage) ratio also captures firm risk and liquidity, which are commonly found to be negatively associated with timeliness (e.g. Impink et al., 2012).

None of the companies in our sample are required to appoint an external auditor and there are no tax advantages associated with having an audit (POBA, 2006), so companies' commitment to improving the reliability of their accounting information by appointing an auditor is likely (as described above) to reflect an economic role for financial reporting (e.g. Van Tendeloo and Vanstraelen, 2008). Although companies may also choose to appoint an auditor to deal with increased organizational complexity (Abdel-Khalik, 1993), we expect higher quality (audited) accounting information voluntarily produced to meet external economic demand for credible information to be published sooner. We also expect the reporting lags of firms having voluntary audits to be less responsive to the regulatory change than their unaudited counterparts. Specifically, firms incurring the cost of appointing auditors to produce higher quality, credible information (Hope et al., 2013; Chi et al. 2013) are expected to publish more quickly and hence should be less affected by a change in filing deadlines. Our hypotheses are therefore:

H2a: Companies with audited accounts will file more quickly than firms with unaudited accounts

H2b: The timeliness of reporting of companies with audited accounts will be less affected by the reduction in the statutory filing deadline than unaudited companies

2.3.2   Financial reporting versus tax orientation

Our second measure of the use of accounting for financial reporting is whether or not a company has a a non-zero deferred tax liability reported in its balance sheet. This is an experimental variable (*FINREP*), which aims to capture the degree of alignment between financial reporting and taxation. We posit that it is especially apposite for private firms, in that if they are not using accounting for financial reporting, taxation is the most likely alternative (Ball and Shivakumar, 2005; Garrod et al., 2008). In particular, Szczesny and Valentincic (2013) find that German private companies' accounting is driven by tax considerations, and that firms have more time to submit accounting information for tax purposes than for filing accounts - as is the case for UK private companies.

The deferred tax balance in a company's balance sheet measures the extent of the alignment between accounting and tax (inversely), because where companies are using accounting solely for tax compliance, tax and financial accounting are identical, there should be no timing/temporary differences and so the deferred taxation balance will be zero. One of the commonest reasons for differences between accounting and taxation figures is the presence of accelerated capital allowances where companies have higher depreciation charges allowable for tax, usually provided as an incentive by governments to invest

(e.g. Polito, 2009). Although suitable for tax purposes, such depreciation policies are inappropriate for financial reporting because they do not represent the 'true' degree of asset utilization. If companies are using accounting for financial reporting, deferred tax accounting requires, as part of the accruals process, a provision to be created that recognizes the additional tax to be paid on the asset in the future.

Where there is low external demand for accounting from investors, an inappropriate depreciation policy is less important, so companies can allow their accounts to be driven by tax considerations and are thus more likely to have a zero deferred tax balance. We therefore treat firms with a deferred tax balance as having an accounting system designed more for financial reporting than those with no deferred tax, which we assume are reporting only for tax and compliance purposes. Compared to the latter, our expectation is that companies preparing accounts for external reporting purposes will be timelier in publishing their accounts. As for audited companies, we also expect these firms to be less affected by the regulatory filing change. UK companies must file their tax returns within 12 months of their account year ends, which is 3 (2) months longer than that permitted for filing their accounts under the old (new) filing regimes. *Ceteris paribus*, firms preparing accounts for tax purposes are more likely to be to be influenced by regulatory compliance than those which have reporting incentives to communicate economic information to external parties on a timelier basis. This leads to the following hypotheses:

H3a: Companies with a financial reporting orientation will file more quickly than companies with a tax orientation

H3b: The timeliness of reporting for companies with financial reporting orientation will be less affected by the reduction in the statutory reporting filing deadline than companies with tax orientation

3. Data and sample

3.1 Data sources

The data sources for our study are the Bureau van Dijk Financial Analysis Made Easy (FAME) April 2010 and April 2011 discs, which contain data for the population of UK private firms (Brav, 2009). We require two separate discs because FAME only records many important variables at a single point in time (including reporting dates, audit status and ownership/directors' information). Collecting data at two points in time allows us to examine companies' reporting behaviour surrounding the change in the statutory deadline, which came into force for companies with financial years beginning on or after 6th April 2008. We obtained our sample of companies filing under the old (10 month) regime from the 2010

disc and then matched this sample to its counterpart in the 2011 disc to obtain data for the new (9 month) regime. Hence our pooled sample comprises the same firms filing their accounts under both regimes.

Our initial sample frame is all active (not failed or dormant) independent small UK private companies on FAME with total assets above £1,000 and with financial reporting timeliness data for year ends on or after 6th April 2009 (new regime) together with data for the preceding year (old regime). Data are therefore collected for each company reporting in the year immediately before and after the regulatory reduction in filing deadline from 10 to 9 months. We removed newly incorporated firms from the sample because they are subject to different reporting requirements in their first reporting year.[9] Independent companies (those not held as a subsidiary) were selected to avoid the confounding influence of the parent.[10] We focus on small companies as statutorily defined,[11] because only these firms are eligible to opt out of an audit. Definitions and labels for the variables collected for the study are shown in Table 1.

Insert Table 1 about here

Two primary measures of financial reporting timeliness are employed in our models: (i) the number of days between a company's year end and the date it filed its annual accounts at CH (*REPLAG*); and (ii) a binary measure capturing whether a company filed its accounts after the statutory deadline (*LATE*).[12] We impose a minimum value of *REPLAG* of 7 days (i.e., accounts are filed at least a week after the year end) and a maximum of one year after the statutory deadline to mitigate the influence of outliers and potential FAME scanning errors (e.g. Brav, 2009). These criteria result in a total sample of 31,147 companies (62,294 firm years), with full data for both the final year of the old (10 month) filing regime and the first year of the new (9 month) one.

It is important to emphasise the impact of our decision to focus only on companies reporting both an income statement and a balance sheet. We require profit data to construct key control variables (such as

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[9] For example, under the 1985 Act, companies have a maximum of 22 months from the date of incorporation to file their first set of accounts.

[10] For instance, the shorter reporting lag of a listed parent may influence the behaviour of its subsidiary.

[11] Under the 1985 (2006) Companies Acts, private firms need not appoint auditors if their turnover does not exceed £5.6m (£6.5m) *and* their total assets does not exceed £2.8m (£3.26m). Companies are therefore only included in the sample if they meet these criteria both for filings under the old (1985 Act) and new (2006 Act) reporting regimes. In addition, some finance/insurance companies, including those dealing in banking, insurance or money-lending services, are required to have audits even when their assets and turnover do not exceed the preceding limits. Such firms were also excluded from our sample.

[12] Determining whether a company is late is complicated by a simultaneous change in the rules under the new Act. Under the 1985 Act, if a company had a year end of (for example) 28th February, its deadline is 28th December, not 31st December. Under the new Act, the same company would have a deadline of 30th November, not 28th November. We take account of these changes in our measurement of *LATE* to ensure accuracy to the specific day.

profit margin and loss-making) because these are known to be strongly associated with timeliness from prior research. We also focus solely on firms reporting an income statement to avoid the potentially confounding effects of this important disclosure choice and its likely correlation with the variables employed to test our hypotheses, particularly the recognition and disclosure of deferred tax balances. While this choice means that our findings do not generalise to small companies filing modified accounts with no profit or sales disclosure, our research is not unusual in this respect (e.g. Dedman and Kausar, 2012; Lennox and Pittman, 2011; Dedman et al., 2014).

The main variables used to test our hypotheses are *NEWREG*, which is a binary variable taking the value of 1 for filings made under the introduction of the new 9 month regime, and zero otherwise; *AUDIT*, which indicates whether or not a firm has voluntarily appointed an auditor in both periods and *FINREP*, which measures the degree of financial reporting/tax alignment, where 1 denotes companies with a non-zero deferred tax balance in both periods.[13]

Insert Table 2 about here

3.2 Descriptive statistics

Table 2 presents descriptive statistics for *REPLAG* and *LATE* for the full sample, together with subsample analysis for *AUDIT* and *FINREP* under both the old and new reporting filing regimes. For the whole sample (last columns), the average *REPLAG* is 229 days (i.e., on average, companies report just under 8 months after their year end), with a median of 256 days (Panel A). On a univariate basis, audited firms are significantly more timely ($p < 0.01$) in filing accounts than unaudited firms, with mean lags of 219 and 229 days for audited and unaudited companies respectively. The median values for audited (unaudited) companies of 232 (257) also differ significantly at $p < 0.01$. Similarly, the mean (median) reporting lags for firms conjectured to be using accounting for financial reporting purposes (*FINREP*) at 224 (248) days are significantly shorter ($p < 0.01$) than for those not disclosing a deferred tax balance, at 229 (257) days.

Panel B of Table 2 reveals that the regulatory change had a significant impact on reporting timeliness, with the mean (median) values of *REPLAG* falling by around 7 (14) days after the introduction of the new regime. However, as shown by the change in *REPLAG* (Δ*REPLAG)*, there is no univariate

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[13] In order to check that we were capturing this variable reliably, we hand collected scanned accounts for a random sample of 200 companies from CH for *FINREP* = 1 and 200 companies for *FINREP* =0 and checked the deferred tax balances in our data set with those in the actual accounts. Our data corresponded entirely to the original documents. The small magnitude of the other provisions in the balance sheet also meant it was unlikely that deferred tax was recorded in other provisions.

evidence that audited firms (*AUDIT*) or those reporting deferred tax *(FINREP)* are less affected than their counterparts without these attributes by the regulatory change, indicating that although these groups differ in cross-section, the responses of firms *(ΔREPLAG)* to the shortening of the filing deadline appears relatively stable across all firms in that the reporting lag disparities persist. Hence the descriptive statistics in Table 2 provide initial support for H1, H2a and H3a, though not for H2b and H3b.

Panel C of Table 2 provides descriptive data for our second measure of timeliness, namely the proportion of companies filing their accounts outside the 10 and 9 month filing deadlines (*LATE*). In contrast to studies of listed companies, where up to 100% are reported as filing within regulatory limits (e.g. Leventis and Weetman, 2004), across both regimes, 9.8% of firms filed late and incurred penalties. As opposed to *REPLAG*, which decreased after the regime change, the proportion of firms filing late increased significantly,[14] from just under 8% to 11.6% (i.e., an increase of 46% in the proportion filing late). Overall, about 88% of companies complied with the reduced (9 month) deadline, compared with around 59% who reported in ≤9 months under the old (10 month) regime. Hence, though in general the reduction in the filing deadline resulted in improved reporting timeliness, a substantial proportion of firms failed to meet the new shorter filing deadline. In addition, both audited firms (*AUDIT*) and those using accounts for financial reporting *(FINREP)* are significantly less likely to file late under either regime.[15]

Although the measures of central tendency in Table 2 provide useful summary information, they conceal interesting patterns in reporting behaviour. Further informative analysis of the distributions (histograms) of reporting lags is provided in the graphical representations. Figure 1 shows histograms of reporting timeliness (in days) relative to the late filing deadlines before and after the regulatory change (note that this distribution is the days relative to companies' particular filing deadline, and not the number of days elapsed since the year end, as measured by *REPLAG*). For both the old and new regimes, it reveals a clear discontinuity around the statutory deadline, with a relatively large proportion of companies filing shortly before the deadline. The histograms clearly illustrate the importance of regulation in influencing private company reporting timeliness. In response to the shortening of the deadline by one month, Figure 1

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[14] In private correspondence, Companies House stated that they write to companies as the deadline approaches warning that financial penalties will be imposed for late filing and that an offence may be committed. Hence it is unlikely that firms merely forgot to file on time.

[15] Unlike the multivariate estimates reported below, note that the univariate statistics reported in Table 2 reveal that there is a 62% (46%) increase in the incidence of late filing for audited (unaudited) firms after the regulatory change.

reveals that, relative to the pre-regulation distribution, post-regulation there is a marked increase in the density of reporting in the days approaching the deadline, together with a more pronounced peak immediately before the deadline.

Figure 2 shows the distribution of the annual change (difference) in reporting lags surrounding the regulatory change. Whilst broadly normal, consistent with a significant proportion of companies changing their reporting behaviour in response to the one month deadline reduction, there is a pronounced 'spike' at around -30 days. In summary, the evidence presented in the figures is highly supportive of substantial regulatory effects on private companies' reporting behaviour.

Insert Figures 1 and 2 about here

4. Empirical model and correlations

4.1 Empirical model

Our full pooled model is specified as follows:

$$TIMELINESS = a_0 + b_1 NEWREG + b_2 AUDIT + b_3 FINREP + b_4 AUDIT * FINREP + b_5 NEW * AUDIT + b_6 NEW * FINREP + b_7 NEW * AUDIT * FINREP + \sum_{k=8}^{K} b_k CONTROLS + e \quad (1)$$

In alternative specifications, *TIMELINESS* is measured by the number of days from the year end (*REPLAG*), as the annual change in *REPLAG* (*ΔREPLAG*), and in binary form to denote late filing (*LATE*). As well as pooled models - for observations pre (time t_{-1}) and post (time t_0) the regulatory change (*NEWREG*) - we also report cross-section models. Specifically, to investigate the 'risk' and potential persistence of late filings, in specifications for $LATE_{t0}$ we include its lagged value ($LATE_{t-1}$), together with a variable ($RISK30_{t-1}$) which indicates whether companies filed their accounts in the 30 day period before the deadline under the old regime (that is, companies publishing their accounts between 9 and 10 months after their year end). *A priori*, after controlling for $LATE_{t-1}$, we expect these firms to be the most likely to be at risk of filing late in the following year ($LATE_{t0}$) under the new 9 month filing regime.

In line with extant research (e.g. Owusu-Ansah, 2000), we control for firm size (*SIZE*) with the natural log of total assets and include a profit margin variable (*RETSAL*), defined as the proportion of profit before tax to sales. Impink et al. (2012, p. 237) report that an important cause of reporting delays is

corporate financial distress,[16] measured by firm leverage and a loss-making indicator variable. We therefore include firm leverage (*LEV*), calculated as the ratio of total debt to total assets, and whether the company is loss-making (*LOSS*), together with a liquidity (*LIQ*) ratio (current assets to current liabilities), which is expected to be negatively related to *REPLAG*.[17] We also employ the number of standard industrial classification codes (*NOSIC*) the firm operates in (additional to its primary SIC code), to control for firm complexity (Impink et al., 2012). The natural logarithm of firm age in years (*AGE*) is used to control for cumulative experience in preparing accounts and/or the maturity (efficiency) of accounting systems (Doyle et al., 2007) and, because, other things equal, firms with larger boards may have more resources available for the production of accounting information, we include the logarithm of the number of directors (*NODIR*).

Higher dispersion of corporate ownership implies higher potential for agency conflicts (Jensen and Meckling, 1976). Although private firms are more closely held than their public counterparts, conflicts between individual shareholders may be greater (Hope et al., 2011) leading to pressure for more timely production of accounting information to alleviate potential information asymmetries. To allow for this, we use the number of firm shareholders (*NOSH*), expressed in log form (see Brav, 2009), which we expect to be negatively related to *REPLAG*. Finally, based on SIC codes, our models include eight industry dummy variables[18] (unreported for brevity) to control for any systematic variability in producing accounting information due to industry differentials.

4.2 Correlations

Table 3 reports Pearson's correlation coefficients for the variables for all observations. Consistent with expectations, *REPLAG* is negatively and significantly correlated with *AUDIT* and *FINREP* and with the intersection between these variables (*FINREP*AUD*). The correlation between *FINREP* and *AUDIT* is

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[16] For *LEV*, an alternative conjecture is that, to the extent that debt is an important source of external finance to private firms, higher gearing may be associated with incentives for timelier reporting (Owusu-Ansah, 2000). Empirically, however, prior research shows that leverage acts more as a proxy for distress and tends to be negatively related to timeliness (e.g. Impink et al., 2012).

[17] Following previous studies (e.g. Dedman and Kausar, 2012), the ratio variables *RETSAL*, *LEV* and *LIQ* are winsorized at the 0.01 level to alleviate the influence of outliers. Initially we did not winsorize the other non-ratio control variables; but doing so (other than for binary variables) did not alter the inferences for the models reported in Table 4, with the coefficients being similar in terms of their magnitude and statistical significance.

[18] Based on primary SIC codes, the 8 dummy variables are employed for agriculture, construction, mining, utilities, manufacturing, retail/wholesale, finance and service sectors.

positive and statistically significant,[19] and both *AUDIT* and *FINREP* are positively and significantly associated with *SIZE* and *AGE*; though only *AUDIT* is positively associated with the number of firm shareholders (*NOSH*). A multivariate analysis of the correlations between the variables in Equation 1 revealed that the highest variance inflation factor was 2.39, suggesting that multicollinearity should not pose a serious problem in our regression models (Firth, 1997).

Insert Tables 3 and 4 about here

5. Multivariate results

5.1 REPLAG regression analysis

Table 4 presents the results for models using *REPLAG* as the dependent variable. For all specifications, the estimated coefficients for all control variables are stable and statistically significant. Consistent with expectations and extant research, younger (*AGE*), more complex (*NOSIC*) companies with lower liquidity (*LIQ*) and profitability (*RETSAL*) - particularly those making a loss (*LOSS*) - are less timely. In addition, the positive coefficient associated with *LEV* is consistent with the financial distress explanation (above) and supporting empirical evidence for quoted markets (Owusu-Ansah, 2000; Impink et al., 2012). Also consistent with expectations, firms with larger boards (*NODIR*) and more dispersed ownership (*NOSH*) publish their accounts more quickly. The finding that larger firms have longer reporting lags (probably reflecting complexity) stands in contrast to studies of quoted companies (e.g. Impink et al. 2012). We investigate the relationship between company size and reporting timeliness in more detail in Section 5.4.

To test hypotheses H1, H2a and H3a, models 1-4 report OLS estimates (with firm-clustered standard errors) which include *NEWREG*, *AUDIT* and *FINREP* individually (models 1-3), as well as their combined influence (Model 4). The results provide evidence (at $p < 0.01$) that the new reporting regulation (*NEWREG*) resulted in a significant reduction in the average filing time by around one week and that both *AUDIT* and *FINREP* are significantly associated (at $p < 0.01$) with timelier financial reporting. The coefficients in Model 4 indicate that, on average, firms with these characteristics filed around 7 days quicker when compared with unaudited firms and those with high tax orientation. The

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[19] As noted by an anonymous reviewer, however, the correlation is comparatively low, with a relatively small number of firms (181) who were audited and who also disclosed deferred tax. This may be because companies without (with) auditors have greater (less) incentives to disclose deferred tax as a signal of the quality of their accounting information.

results therefore provide strong support for hypotheses H1, H2a and H3a.[20],[21]

Model 5 provides OLS estimates for our full specification (Equation 1), including the interaction variables for testing hypotheses H2b and H3b. The coefficients for *NEWREG, AUDIT* and *FINREP* remain similar (as do their significance levels), though the combined influence of the latter two variables (*FINREP*AUD*) is greater, with companies with both attributes filing significantly (14 days) faster. In testing hypotheses H2b and H3b, relative to the coefficient of *NEWREG*, the coefficients of *NEW*AUD, NEW*FINREP* and *NEW*AUD*FINREP* indicate (where *NEWREG* is labelled *NEW*) whether the economic demand for the information militates against the regulation effects reducing reporting lags. If these firms are in equilibrium in terms of their accounts filing times, the coefficients for the interaction terms (*NEW*AUDIT, NEW*FINREP* and *NEW*AUDIT*FINREP*) should offset that for *NEWREG*. Hence we expect positive and significant coefficients for these interaction variables to support our hypotheses. However, the estimates in Model 5 provide no evidence in support of hypotheses H2b and H3b, as all three coefficients are statistically insignificant, indicating that the disparity (quicker reporting) associated with *AUD* and *FINREP* persists.

The dispersion of *REPLAG* shown in Figures 1 and 2 is clearly non-normal. In order to assess the robustness of our results to alternative distributional assumptions, we estimate our full specification (shown in Models 6-8) using Huber robust M-estimator, quantile (median) and quantile count (median) regression methods.[22] As described by Clatworthy and Peel (2007, p.182), the Huber estimator (RREG) employs reweighted least squares. Weights are iteratively assigned on the basis of the size of scaled model residuals, with larger residuals assigned lower weights (influence). Quantile median regression (QREG), which extends OLS analysis to provide conditional median parameters, is robust to skewness, outliers and

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[20] The data for this study was collected with a view to testing the hypotheses developed in the paper and so we only collected data for *AUDIT* and *FINREP* for firms which were audited and disclosed deferred tax in both periods, respectively. Specifically, the original data collected and the research design enable us to examine the impact of *NEWREG* for companies represented by *AUDIT* and *FINREP* which were in equilibrium. However, as a robustness test, employing the variables (other than *NEWREG*) specified Model 4 in Table 4, we estimated OLS (*REPLAG*) and logit late filing (*LATE*) regressions for separate (single year) models pre and post the regulatory change. The results are congruent with our findings for the pooled models. For the pre *NEWREG* models, the OLS coefficients of *AUDIT* (*FINREP*) are -6.2 (-6.6) and both are significant at $p < 0.01$. For the logit model, the coefficients are -0.310 (-0.329) and are significant at $p < 0.05$ ($p<0.01$). For the post *NEWREG* models the OLS coefficients are -5.9 (-7.3) and are both significant at $p < 0.01$; and for the logit models they are -0.259 (-0.365) and are significant at $p < 0.05$ ($p < 0.01$).
[21] We also estimated Model 4 with the natural log of *REPLAG* as the dependent variable. We obtained virtually identical inferences to those reported, with all variables being significant (at $p < 0.05$).
[22] For models estimated using robust regression, the R^2 is computed using the rregfit extension by Ender and Chen at the UCLA statistics consulting group available at http://www.ats.ucla.edu/stat/stata/faq/rregr2.htm.

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non-normal errors[23] (Koenker and Hallock, 2001). Conditional mean count regression is formulated to account for the distribution of non-negative count dependent variables (Greene, 2006). We employ Machado and Santos-Silva's (2005) generalisation of the negative binomial (count) conditional mean regression estimator, to estimate conditional median count parameters (QCOUNT). While count models are usually associated with counting events, they are generally designed to deal with variables with non-negative values, regardless of what the underlying variable represents (e.g. Wooldridge, 2010).

As Models 6-8 reveal, hypotheses H1, H2a and H3a remain fully supported,[24] though the effects are more pronounced, with the QREG median results indicating quicker filing times of 9.6, 16.2 and 9.5 days associated with *NEWREG, AUDIT* and *FINREP* respectively; and with the RREG results being similar. Relative to the median of *REPLAG*, the QCOUNT coefficients of *NEWREG*, *AUDIT* and *FINREP* imply[25] a reduction in filing times of 3.6% (9 days), 6.4% (17 days), and 3.7% (9 days) respectively. However, like the OLS estimates, those for models 6-8 do not support H2b and H3b.

In summary, our results provide strong evidence that the regulatory change had a significant impact on improving the timeliness of private companies' financial reporting and reduced both mean and median reporting lags (H1). Similarly, H2a and H3a are strongly supported in all empirical specifications, with median (typical firm) estimates for *AUDIT* and *FINREP* being more substantive than their mean counterparts. In contrast, for *NEW*AUDIT* and *NEW*FINREP* the empirical evidence does not support H2b or H3b. A potential explanation for this is that audited firms (*AUDIT*), and those that are more financial reporting orientated (*FINREP*), are motivated to maintain their shorter reporting lag differential after the regulatory change as a (continuing) signalling device that they are 'higher quality' companies.

Note also that, though the effects of *AUDIT* and *FINREP* are not enormous (varying between around -7.2 and -17 days), they are greater than the impact of the filing deadline reduction (*NEWREG*), which varies between around -6.8 days and -11 days. Finally, although it is not unusual for accounting

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[23] Unlike OLS, which minimises the sum of the squares of the residuals, the quantile median - also known as Least Absolute Deviation (LAD) regression - minimises the sum of the absolute residuals.
[24] As a final robustness test, we re-estimated Model 4 employing the wild bootstrap method to calculate coefficient standard errors and associated significance levels of the variables (see Clatworthy et al., 2007 for a discussion of this method). As stressed by Clatworthy et al. (2007, p. 3), when estimating OLS models, the wild bootstrap is robust both to heteroskedasticity and non-normality. Inferences (employing 10,000 sample draws) for parameters and significance levels of all the explanatory variables are identical to those reported in Model 4.
[25] Calculated as $100(e^{coefficient} -1)$, where e is the exponential constant.

studies to report low explanatory power for similar model specifications,[26] the model R^2s (4-5%) are relatively low. Given the range of, and motivation for, the explanatory variables described above, and that most of the explanatory (and all of the control) variables are statistically significant determinants of *REPLAG*, this implies substantial random variation in *REPLAG* and/or that reporting timeliness is heavily driven by regulatory deadlines for all private companies. We examine the latter in Section 5.3.

5.2 Analysis of changes in reporting timeliness

 In order to conduct further tests of the effects of the regulatory change and economic demand on financial reporting timeliness, Table 5 presents results for difference models with the change in reporting lags (*ΔREPLAG*) regressed on the changes in variables shown in Table 1. *AGE* is omitted, as by construction the difference is a constant, as is *NOSIC* which does not change for our sample either. Difference models often exhibit much lower explanatory power than those expressed in levels - especially as changes in relationships may be nonlinear and complex - and this is the case for Model 1, where control variables alone explain very little variation in *ΔREPLAG*. Although the model is statistically significant (*F*-statistic: 4.25, p= <0.01), only *ΔSIZE* and *ΔLOSS* have statistically significant coefficients, suggesting that firms moving into a loss situation took longer to file their accounts (see e.g. Impink et al., 2012), with those increasing in size filing more quickly, perhaps to signal potential growth.[27] We investigate the impact of *SIZE* in more detail in Section 5.4.

Model 2 provides further evidence relating to H2b and H3b with the inclusion of *AUDIT* and *FINREP*. Consistent with our prior findings, their coefficients are statistically insignificant (rather than being positive and significant as hypothesised), leading to a rejection of H2b and H3b.[28] Noteworthy is that the significant constant term (-6.7 days), is highly congruent with our finding for Model 4 in Table 4, in that the regulatory change resulted in an average improvement in timeliness of around 7 days. Overall, the results suggest a high degree of persistence (at least in the short run) in *REPLAG*, that the regulatory

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[26] For instance, in examining the determinants of the levels of dependent variables over time (as opposed to differences), Linck et al. (2013) report (p. 2135) models for the determinants of levels of external debt, with R^2s varying between 0.012 and 0.030, despite the models including a number of significant explanatory variables.

[27] To test whether our previous results are influenced by this finding, we re-estimated Model 4 in Table 4 for the post regulation data, and included *ΔSIZE* as an additional explanatory variable. The parameter estimates and significant levels are very similar to those reported, with none of inferences affected, and with *ΔSIZE* having a positive and statistically insignificant ($p > 0.05$) coefficient.

[28] We also re-estimated Model 2 employing the wild bootstrap method with 10,000 sample draws (see note 26 above). The significance levels of the variables remained unchanged.

change is the main driver of changes in reporting lags, and that the negative coefficients attracted by *AUDIT* and *FINREP* are again inconsistent with our hypotheses H2b and H3b.

Insert Table 5 about here

5.3 Late filing regression analysis

As Feltham (1972) observes, the optimal reporting time requires consideration of both the value of timely information (benefits arising from timely provision) and the costs of preparing the information more quickly (usually requiring additional resources). As discussed above, the regulatory regime involves significant financial penalties and the risk of non-financial ones for directors for late filing. When combined with loss of reputation, these may have deleterious effects, including on credit ratings (Experian, 2013). We therefore conduct logistic regression analyses to investigate the factors associated with the likelihood of firms filing late (coded as unity in the dependent variable). In Table 6, we report both logit coefficients and associated odds ratios (OR), calculated as the exponential of the coefficients.

Model 1 shows late filing estimates for the full specification. Other than for *FINREP*AUD,* which exhibits its expected sign but is statistically insignificant,[29] in terms of the coefficient signs and levels of significance, the findings are similar to those for *REPLAG* in Table 4. Specifically, companies with stronger economic demand for their information are less likely to be late (*LATE*) in publishing their accounting information. Even though our prior results show that *average* reporting lags reduced post the change in the filing deadline, the estimates for *NEWREG* reveal that the likelihood of filing late is 55% (1.55–1) higher after the regulatory change. Importantly, with reference to the estimates in Model 1, *FINREP* and *AUD* have significant negative coefficients, with their odds ratios showing that companies with a low book/tax alignment are around 28% (1–0.72) less likely to file late, with the likelihood of audited firms being 29% lower – or equivalently, unaudited firms are 41% more likely to file late than their unaudited counterparts (1/0.71).

Models 2-4 report estimates for late filing in the year after the regulatory change (*LATE*) as the dependent variable to examine the persistence of late filing *(LATE$_{t-1}$)* and the impact of *RISK30$_{t-1}$*. Models 2 and 3 show that the odds ratios associated with *RISK30$_{t-1}$* and *LATE$_{t-1}$* imply the likelihood of filing late

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[29] Indicating that firms with both attributes (*FINREP*AUD*) are no less likely to file late that those with one attribute (*FINREP* or *AUDIT*), so that unlike for *REPLAG*, the relationship for *LATE* is not cumulative.

increases by 55% and 622% respectably.[30] As shown in Model 4, their combined influence is even more pronounced, with the odds ratios indicating that, after controlling for the fact that firms who filed late in the preceding period ($LATE_{t-1}$) are over 10 times more likely to file late in the current period, those filing in the month preceding the deadline in the previous year ($RISK30_{t-1}$) are 2.88 times more likely to file late post the reduction in the filing deadline. However, relative to models 1-3, the magnitude of the coefficients for *FINREP* and *AUD* decline, with the significance of the latter also declining to $p = 0.155$, which is unsurprising given firms represented by $LATE_{t-1}$ and $RISK30_{t-1}$ are controlled (accounted) for.

In summary, the logit estimates show that companies hypothesised to have stronger economic demand for their accounting information (*AUDIT* and *FINREP*) are substantially less likely to file their accounts after the statutory deadline. Moreover, the reduction in the permitted filing time (*NEWREG*) led to a substantial increase in late filing. This is in sharp contrast to the recent study of Impink et al. (2012) who report that, for US listed companies, a reduction in the permitted filing deadlines for 10-K reports did not result in an increase in the incidence of late filing. An explanation for this disparity is that, for quoted companies, the timely release of information is essential for the efficient operation of capital markets.[31] For instance, in the UK and US, quoted companies may be suspended from listing for late publication of annual accounts.[32] Hence, late filing for quoted companies has substantially higher costs than for their private counterparts in terms of loss of reputation, adverse share price reaction and management trust (Impink et al., 2012).

Our results also highlight the importance and persistence of prior reporting status, with companies filing late before the regulatory change, and those identified at being at risk of filing late in the next period ($RISK30_{t-1}$), being much more likely to file late in the following (post regulatory change) period. Taken together with our previous findings, the results in Table 6 suggest that, though mean and median reporting lags reduced significant post regulation, late filing is persistent and that, on average, firms designated by $RISK30_{t-1}$ were substantially more likely to file late.

Insert Table 6 about here

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[30] Note, the impact of $LATE_{t-1}$ is likely to have been amplified by the reduction in the filing deadline.
[31] For instance, in the UK, firms listed on the Stock Exchange must publish their annual financial report no later than four months after their account year end, which is five months shorter than the new filing deadline for private firms.
[32] As commented by an anonymous reviewer of this paper, it may also be the case that shareholders of private firms are more likely to be blockholders with access to management, whereas shareholders of quoted firms are less likely to have private communication channels, and may therefore be more sensitive to 'bad signals' such as late filing.

5.4   Further analysis

This section presents empirical modelling extensions and robustness tests regarding our primary findings. Firstly, we employ matching methods. The descriptive data and regression results provide significant evidence that firms hypothesised to be associated with stronger economic demand for their accounting information are timelier in filing their accounts. Unlike *NEWREG,* which is exogenous, it is important to allow for non-random selection on observable characteristics into the *AUDIT* and *FINREP* categories. Propensity score matching is a semi-parametric estimator which unlike parametric regression requires no model assumptions nor does it require functional form assumptions regarding the relationship between the outcome variable and the explanatory variables. Using the control variables in Equation 1, we computed the impact of *AUDIT* and *FINREP* on *REPLAG* employing kernel matching (KM) and local linear matching (LLM), as described by Heckman et al. (1998) and Leuven and Sianesi (2003).

The results are highly congruent with our previous findings, with the KM and LLM matching estimates being similar and highly significant ($p < 0.01$) in all cases. Pre-regulation, the KM (LLM) mean difference estimates for *AUDIT* show that audited firms published their accounts 7.1 (6.4) days quicker that unaudited ones, with the post- regulation differences being 7.9 (7.8) days. For *FINREP* the findings are similar. The KM (LLM) matching estimates indicate that, pre-regulation, firms with low book-tax alignment filed their accounts 6.6 (7.7) days quicker than their counterparts with high book-tax alignment, with post-regulation matching estimates of 7.1 (7.9) days respectively. These matching results are estimated free from regression model assumptions and confirm the robustness of our prior findings.

Next, we estimated a number of alternative multivariate regression models which contain the full set of variables specified in models 4 (5) in Table 4 for post *NEWREG* (pooled) data specifications. As shown in Tables 7 and 8, thought we estimate full models, for parsimony, we report only the principal results for the new variables, together with those for *AUDIT* and *FINREP*.

Where the prior value of the dependent variable is likely to influence its current value, a lagged dependent variable model may be employed as an alternative to a differenced one (Dougherty, 2012). Model 1 in Table 7 shows OLS results for *REPLAG* where its lagged value (*REPLAG$_{t-1}$*) is included as an additional explanatory variable. On average, its coefficient suggests that 0.57 of the variation in current reporting lag (post *NEWREG*) is explained by *REPLAG$_{t-1}$*, showing that reporting lags are persistent.

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Consistent with the difference model results above, after accounting for $REPLAG_{t-1}$, the negative coefficients attracted by *FINREP* and *AUDIT* are relatively small and statistically insignificant for the latter; though the *AUDIT* coefficient is significant at the 10% level (p=0.099) on the basis of a one-tailed (directional) test. This results from $REPLAG_{t-1}$ partially capturing (subsuming) the effects of *AUDIT* and *FINREP*. Model 2 illustrates this. In place of $REPLAG_{t-1}$, it employs the residual ($RESREPLAG_{t-1}$) from a regression (using pre *NEWREG* data only) of $REPLAG_{t-1}$ on the variables reported for Model 4 in Table 4. Hence $RESREPLAG_{t-1}$ represents that proportion of $REPLAG_{t-1}$ which is unexplained by the t_{-1} explanatory variables (see e.g. Fortin and Pittman, 2007). As shown in Table 7 and as expected, the coefficients of *AUDIT* (*FINREP*) increase to 5.4 (7.5 days) and are both highly significant (at $p \le 0.001$). Furthermore, the highly significant coefficient (0.567) for $RESREPLAG_{t-1}$ confirms the persistence of reporting lags in terms of the unexplained variance of *REPLAG* in the preceding period.

It is likely that reputational losses will be higher for those companies who filed late post *NEWREG*, but who filed on time pre *NEWREG*.[33] Model 3 in Table 7 reports results for a logit late filing model where firms which filed late pre *NEWREG* are excluded from the sample (i.e., observations both pre and post *NEWREG* are omitted). Because there is no covariance between late filing and the explanatory variables pre *NEWREG*, only data post *NEWREG* can be used in this analysis. Model 3 shows that, consistent with our prior findings, *AUDIT* and *FINREP* both exhibit significant negative coefficients.

In contrast to studies of quoted companies, our results for private ones suggest that financial reporting lags and late filings are positively related to company size. Given this, it is possible that larger firms have to reduce their reporting lags by a greater degree to avoid filing late under the new reporting regime. Models 4 (5) in Table 7 include the interaction term *SIZE*NEWREG* as an additional explanatory for *REPLAG* (*LATE*) specifications to examine whether this conjecture holds. As the table shows, the interaction term attracts a negative coefficient in both specifications, but it is only significant for the *REPLAG* regression. On average, these results are consistent with larger firms having to significantly reduce their longer reporting lags pre *NEWREG* to avoid filing late under the new shorter filing deadline. To analyse the impact of firm size in more detail, we adopt an approach recommended in the statistics literature (Tarling, 2009, p. 37), which entails partitioning *SIZE* into deciles to investigate whether the influence of company size on reporting timeliness varies across its distribution. Following Lennox (2005,

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[33] We thank an anonymous reviewer for this point.

p. 215) we create ten dummy variables for each decile of *SIZE* (SIZE1 to SIZE10), with SIZE1 being the base case in the regression models.

For the *REPLAG* regression, Model 1 in Table 8 reveals that reporting lags escalate significantly with increasing size deciles. However, on average, the largest firms in SIZE10 have the most pronounced increase, with SIZE10 reporting lags being 6.2 days longer than SIZE9 ones. Model 2 augments Model 1 by including interaction terms for the size deciles with *NEWREG* (labelled *NEW*). It shows that the largest firms in SIZE10 are associated with significantly quicker reporting (5.2 days) post the new reporting regime, but none of the other decile interaction terms are statistically significant. Models 3(4) replicate models 1(2) with late filing (*LATE*) as the dependent variable. Though, in general, they show that the likelihood of late filing is rising in tandem with the size deciles, relative to SIZE9, the largest companies (SIZE10) are associated with a lower likelihood of filing late. In addition, all the *NEWREG* interaction terms are statistically insignificant. Taken together, and consistent with models 4 and 5 in Table 7, on average, the results in Table 8 suggest that it is the largest companies with the longest reporting lags which make the largest adjustments (reductions) in reporting lags to comply with the new filing deadline.

Insert Tables 7 and 8 about here

6. Conclusions

This paper examines a regulatory change that substantially reduced the permitted deadline for UK private firms to publicly disclose their accounting information. Employing a large sample of UK private independent firms, our empirical findings provide new insights into the relative impact of regulatory and economic influences on reporting timeliness. In most countries, the vast majority of companies are private, and the asset values of private firms often exceed those of their public counterparts (Brav, 2009). Despite this, comparatively little is known about accounting in private firms (Hope et al., 2013). Moreover, in general, the issue of regulating timeliness of accounting has been largely overlooked in prior research (Bryant-Kutcher et al., 2013). As emphasised over decades by the conceptual frameworks of major standard setters, timeliness is an intrinsic characteristic of financial reporting and an essential element of information relevance. It is perceived (not least by regulators) as being essential to facilitate informed stakeholder decision-making.

Extant research suggests that private firms use accounting for tax and compliance purposes more than for financial reporting to outsiders (e.g. Garrod et al., 2008; Szczesny and Valentincic, 2013). If this

is the case, the timing of accounts' publication is likely to be driven by regulatory compliance than by economic demand for the information from outside capital providers. However, we contend that the demand for, and incentives associated with, financial reporting in the private corporate sector are not homogenous. We examine the relative impact of regulation and firm-specific reporting characteristics which are expected to be associated with economic demand for accounting information, and hence with timelier publication of accounts.

Consistent with the literature demonstrating that there is lower economic demand for accounting information for private firms (Ball and Shivakumar, 2005; Burgstahler et al., 2006; Hope et al., 2013), our results show that regulatory late filing deadlines have a substantial influence over UK private firms' financial reporting behaviour. Importantly, though the regulatory change resulted in a significant reduction in mean and median reporting lags, it also led to a substantial increase in the proportion of firms filing late. This contrasts with Impink et al. (2012) who find that a regulatory reduction in filing deadlines for the 10-K reports of US listed companies did not increase late filings.

With reference to previous reporting lags, prior late filing is the principal determinant of current late filing, with firms classified at risk of filing late in the previous period (within one month of the deadline) also being substantially more prone to filing late in the following period. Our analyses control for important firm characteristics and our findings are robust to the use of various methods, including Huber, quantile median, count median and matching estimators.

While we document that regulation has a pivotal role, we also find significant evidence that firms hypothesised to produce accounts for financial reporting purposes are more timely in filing their accounts. First, audited companies (notwithstanding the extra time required to conduct an audit) exhibited significantly shorter reporting lags and were around 28% less likely to file late. Second, companies with a stronger financial reporting emphasis (i.e., those reporting a deferred tax balance) were also more timely. This novel proxy seems worthy of further research. While in principle, it captures the alignment between tax and financial reporting systems, it would be interesting to assess its impact (and determinants) in other accounting settings.

Contrary to expectations, no support was found for the hypothesis that the reporting lags for these firms are less affected by the reduction in the filing deadline, since (as opposed to regulatory compliance) reporting behaviour should be determined by economic fundamentals. Our results reveal that there was no

significant change in the reporting lag disparity (quicker reporting) of these firms before and after the regulatory change, perhaps in consequence of them signalling to the market that they are higher quality firms by maintaining their (timelier reporting) differential post the reduction in the filing deadline.

As well as examining hypotheses relating to important accounting issues, our results may be of interest to regulators wishing to assess the impact of the new legislation on reporting behaviour. In this context, and as discussed above, to the best of our knowledge, the government did not conduct a cost-benefit analysis of the impact of the one month late filing reduction deadline. In this context, though the regime change is associated with a 46% increase in late filing, there was a significant improvement in reporting timeliness, with 88% of companies complying with the reduced (9 month) deadline, compared with 59% who reported in ≤9 months under the old (10 month) filing regime.

Advice given to private firms by credit ratings and accountancy companies (e.g. Experian, 2013; Kilsby and Williams LLP, 2011), together with that provided by Companies House (CH, 2009, p.7), is that late filing of accounts may result in inferior credit ratings. Since credit ratings may influence the cost and availability of debt finance, building on extant research (Lennox and Pittman, 2011; Dedman and Kausar, 2012), a natural extension of the current study would be to examine the effects of late filing on credit ratings. A further research extension would be to examine whether UK SMEs exercising the option (under the Companies Act) of withholding profit and loss data[34] (see Dedman and Lennox, 2009) exhibit differential reporting lag behaviour.

Although our empirical analyses demonstrate that timeliness improved surrounding the regulatory change, we are unable to derive the exact (including adjustment) costs incurred by companies in responding to the reduction in the filing deadline. In addition, relative to quoted companies, the collection of data for private companies is sometimes costly and our main source of data only records key items at one point in time. Nevertheless, it would be interesting to extend the current study to investigate adjustments in reporting lags in more detail, particularly whether the effects of the shortening of the deadline on the increase in late filings persist or dissipate as firms further adjust to the new regime.

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[34] Dedman and Lennox (2009) find that such companies are more likely to perceive that competition is strong. Hence, as noted by an anonymous reviewer of this paper, an interesting research question is whether such firms delay publication of their annual accounts as a form of strategic reporting.

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Table 1: Variable Labels and Definitions

Variables[†]	
REPLAG	Number of days between year-end and date accounts filed at Companies House
ΔREPLAG	The change in *REPLAG*
LATE	1 if company files its accounts after the statutory deadline
AGE	Natural log of the age of the company (in years)
AUDIT	1 if company voluntarily appointed an auditor for its statutory accounts
FINREP	1 if company has non-zero deferred tax liabilities
INDUSTRY	Eight industry dummies (as described in footnote 20 of the paper)
LEV	Ratio of total liabilities to total assets [‡]
LIQ	Ratio of current assets to current liabilities[‡]
LOSS	1 if profit before tax is less than zero
NEWREG	1 if company is subject to filing under new 9 month reporting regime
NODIR	Natural log of the number of directors
NOSH	Natural log of the number of shareholders
NOSIC	Number of additional industrial SIC codes (0 indicating no additional SIC code)
RETSAL	Ratio of profit before tax to sales[‡]
$RISK30_{t-1}$	1 if accounts were filed in the month preceding the deadline in the year before the regulatory change
SIZE	Natural log of total assets (£)

Notes
† For binary variables, zero is coded for remaining observations.
‡ Variable winsorized at the 0.01 level.

Table 2: Descriptive Statistics

Panel A: Summary Statistics

	AUDIT = 1 N = 3,170			AUDIT = 0 N = 59,124			FINREP =1 N = 6,030			FINREP = 0 N = 56,264			Total N = 62,294		
	Mean†	Median‡	SD	Mean	Median	SD	Mean†	Median‡	SD	Mean	Median	SD	Mean	Median	SD
REPLAG	219.4	232.0	75.26	229.2	257.0	79.2	223.7	248.0	78.0	229.2	257.0	79.2	228.7	256.0	79.1
TOTAL ASSETS (£000)	670.2	333.9	761.4	173.0	43.7	354.7	346.4	114.3	538.6	182.5	42.5	380.0	198.3	46.7	401
SIZE	12.32	12.72	1.87	10.78	10.69	1.63	11.68	11.65	1.57	10.77	10.66	1.66	10.86	10.75	1.67
NOSIC	0.19	0.00	0.53	0.11	0.00	0.38	0.13	0.00	0.41	0.11	0.00	0.39	0.11	0.00	0.39
RETSAL	0.05	0.04	0.49	0.17	0.14	0.43	0.22	0.16	0.32	0.16	0.12	0.45	0.16	0.13	0.43
LOSS	0.30	0.00	0.46	0.23	0.00	0.42	0.13	0.00	0.33	0.25	0.00	0.43	0.23	0.00	0.42
LIQ	5.13	2.14	8.10	3.36	1.25	3.36	2.27	1.24	3.96	3.58	1.29	7.09	3.45	1.28	6.86
LEV	0.61	0.43	0.89	0.87	0.69	1.10	0.68	0.65	0.56	0.87	0.68	1.13	0.85	0.68	1.09
AGE	21.86	17.91	17.62	11.76	7.09	11.93	12.71	7.94	12.83	12.22	7.26	12.45	12.27	7.32	12.49
NODIR	4.51	4.00	3.34	2.76	2.00	1.43	2.78	3.00	1.09	2.86	3.00	1.68	2.85	3.00	1.63
NOSH	7.30	4.00	7.95	2.95	2.00	4.07	2.26	2.00	1.92	3.27	2.00	4.64	3.17	2.00	4.46

Panel B: Summary Statistics for REPLAG before and after regulatory change

	REPLAG - Old (10 month) regime		REPLAG - New (9 month) regime		ΔREPLAG	
	Mean	Median	Mean	Median	Mean	Median
AUDIT = 1	222.0	231.0	216.7	233.0	-5.24**	-11.0
AUDIT = 0	232.5	261.0	225.8	254.0	-6.72*	-14.0§§
FINREP = 1	227.2	252.0	220.2	246.0	-7.08**	-14.0
FINREP = 0	232.5	261.0	225.9	254.0	-6.69*	-14.0§§
Total	232.0	261.0	225.4	254.0	-6.64*	-14.0§§

Panel C: Late Filings under Different Regimes

	% Filing Late under Old (10 month) Regime	% Filing Late under New (9 month) Regime	Total % Late Filing
AUDIT = 1	4.79	7.76	6.28ΨΦ
AUDIT = 0	8.13	11.83	9.98Φ
FINREP = 1	5.87	8.42	7.15ΨΦ
FINREP = 0	8.18	11.96	10.07Φ
Total	7.96	11.62	9.79Φ

Notes

All variables are defined in Table 1 except AGE, NODIR and NOSH, which are reported above in untransformed form.

† All means differ significantly between AUDIT = 1 and AUDIT=0 and between FINREP= 1 and FINREP =0 groups at the 0.01 level in t-tests and two-sample proportions tests for LOSS.

‡ All medians differ significantly between AUDIT = 1 and AUDIT=0 and between FINREP= 1 and FINREP =0 groups at the 0.01 level in median tests except for NODIR, which differs at the 0.05 level for FINREP.

**, * indicate significant differences in means before and after regulatory change at the 0.01 and 0.05 levels respectively.

§§ Indicates significant difference between medians before and after regulatory change at the 0.01 level.

Ψ Indicates significant differences between proportions filing late between AUDIT groups and between FINREP groups before and after the regulatory change at the 0.01 level in two-sample proportions tests.

Φ Indicates increase in proportions filing late before and after regulatory change are significant at the 0.01 level in two-sample proportions tests.

Table 3: Correlation Matrix

	REPLAG	AUDIT	FINREP	FINREP* AUD	SIZE	NOSIC	RETSAL	LOSS	LIQ	LEV	AGE	NODIR	NOSH	ΔREPLAG
REPLAG	1													
AUDIT	-0.0273***	1												
FINREP	-0.0206***	0.0136***	1											
*FINREP*AUD*	-0.0163***	0.330***	0.234***	1										
SIZE	0.0535***	0.201***	0.160***	0.136***	1									
NOSIC	0.0308***	0.0442***	0.0109**	0.0296***	0.100***	1								
RETSAL	-0.0935***	-0.0628***	0.0396***	-0.00649	0.0208***	-0.0330***	1							
LOSS	0.0832***	0.0370***	-0.0822***	-0.0143***	-0.0747***	0.0267***	-0.617***	1						
LIQ	-0.0762***	0.0564***	-0.0566***	-0.00654	0.034***	-0.0044	0.00233	0.001	1					
LEV	0.118***	-0.0523***	-0.0527***	-0.0225***	-0.236***	0.0178***	-0.268***	0.267***	-0.239***	1				
AGE	-0.0619***	0.182***	0.0209***	0.0591***	0.200***	0.101***	-0.0887***	0.0867***	0.225***	-0.127***	1			
NODIR	-0.0707***	0.240***	0.001	0.0815***	0.152***	0.0180***	-0.105***	0.0727***	0.197***	-0.105***	0.349***	1		
NOSH	-0.102***	0.214***	-0.0416***	0.0323***	0.0444***	-0.0161***	-0.114***	0.0964***	0.268***	-0.144***	0.405***	0.579***	1	
ΔREPLAG	0.324***	0.005	-0.002	0.008	-0.025***	-0.014**	0.017***	-0.001	0.023***	-0.027***	0.005	0.019***	0.022***	1.000

Notes:
All variables are defined in Table 1 (*N* = 62,294). For *ΔREPLAG* only observations post *NEWREG* are employed.
***, ** Indicates statistical significance at 0.01 and 0.05 levels, respectively.

Table 4: Effects of Regulation and Demand on Financial Reporting Timeliness

	1. OLS	2. OLS	3. OLS	4. OLS	5. OLS	6. RREG	7. QREG	8. QCOUNT
NEWREG	-6.805			-6.803	-6.765	-10.954	-9.550	-0.036
	(17.29)***			(17.29)***	(15.92)***	(16.16)***	(12.00)***	(13.70)***
AUDIT		-7.094		-7.210	-6.456	-11.358	-16.165	-0.064
		(3.89)***		(3.96)***	(2.93)***	(5.19)***	(6.29)***	(5.60)***
FINREP			-7.560	-7.563	-6.362	-7.585	-9.543	-0.037
			(5.50)***	(5.51)***	(3.97)***	(4.88)***	(5.23)***	(3.27)***
FINREP*AUD					-13.807	-14.583	-30.403	-0.138
					(2.23)**	(2.30)**	(4.08)***	(3.70)***
NEW*AUDIT					0.818	1.957	5.256	0.018
					(0.44)	(0.65)	(1.48)	(1.00)
NEW*FINREP					-1.210	-0.944	3.692	0.014
					(0.94)	(0.43)	(1.45)	(1.07)
NEW*FINREP*AUD					6.702	7.220	15.050	0.076
					(1.20)	(0.81)	(1.43)	(1.56)
SIZE	4.403	4.601	4.627	4.756	4.772	4.023	3.683	0.015
	(17.64)***	(18.19)***	(18.35)***	(18.60)***	(18.65)***	(19.59)***	(15.27)***	(14.34)***
RETSAL	-10.938	-10.919	-10.830	-11.117	-11.114	-10.564	-7.848	-0.029
	(10.88)***	(10.86)***	(10.77)***	(11.05)***	(11.05)***	(11.37)***	(7.19)***	(9.85)***
LOSS	7.544	7.471	7.104	7.165	7.156	7.156	6.076	0.024
	(7.65)***	(7.57)***	(7.19)***	(7.26)***	(7.25)***	(7.52)***	(5.43)***	(7.37)***
LIQ	-0.306	-0.313	-0.327	-0.329	-0.330	-0.302	-0.497	-0.002
	(5.07)***	(5.18)***	(5.41)***	(5.45)***	(5.46)***	(6.18)***	(8.65)***	(6.21)***
LEV	6.453	6.416	6.358	6.431	6.439	5.774	3.544	0.014
	(17.86)***	(17.77)***	(17.59)***	(17.80)***	(17.81)***	(17.93)***	(9.37)***	(15.54)***
AGE	-3.364	-3.769	-3.827	-3.187	-3.188	-3.167	-3.238	-0.013
	(6.12)***	(6.92)***	(7.04)***	(5.79)***	(5.79)***	(7.17)***	(6.25)***	(6.45)***
NOSH	-6.842	-6.543	-6.858	-6.737	-6.777	-8.957	-10.038	-0.041
	(10.54)***	(10.08)***	(10.57)***	(10.37)***	(10.42)***	(16.82)***	(16.06)***	(14.21)***
NODIR	-6.371	-5.428	-5.880	-5.797	-5.749	-6.182	-5.495	-0.022
	(5.26)***	(4.45)***	(4.86)***	(4.75)***	(4.71)***	(6.27)***	(4.75)***	(5.01)***
NOSIC	3.821	3.999	3.872	3.866	3.882	4.101	3.450	0.014
	(3.87)***	(4.05)***	(3.93)***	(3.92)***	(3.94)***	(5.11)***	(3.66)***	(6.48)***
Constant	198.813	193.458	194.385	195.244	194.970	216.621	237.599	5.470
	(67.82)***	(64.71)***	(66.25)***	(64.94)***	(64.75)***	(89.48)***	(83.60)***	(474.48)***
R^2/pseudo R^2	0.04	0.04	0.04	0.04	0.04	0.04	0.03	-
N	62,294	62,294	62,294	62,294	62,294	62,294	62,294	62,294
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes

The dependent variable is *REPLAG*. All variables are defined in Table 1.

***, ** Indicate statistical significance at 0.01 and 0.05 levels respectively, based on firm clustered standard errors (except for QREG and QCOUNT).

RREG is robust (Huber) regression; QREG is quantile (median) regression; QCOUNT is quantile (median) count regression of Machado and Santos Silva (2005).

Table 5: Economic and Regulatory Effects on *ΔREPLAG*

	1. OLS	2. OLS
AUDIT		0.730
		(0.39)
FINREP		-1.047
		(0.81)
FINREP*AUD		6.993
		(1.25)
ΔSIZE	-1.805	-1.811
	(2.02)**	(2.03)**
ΔRETSAL	-0.034	-0.037
	(0.03)	(0.03)
ΔLOSS	3.298	3.298
	(3.41)***	(3.41)***
ΔLIQ	-0.186	-0.183
	(0.24)	(0.24)
ΔLEV	0.052	0.052
	(0.64)	(0.64)
ΔNOSH	-1.071	-1.097
	(0.44)	(0.45)
ΔNODIR	2.785	2.780
	(0.93)	(0.92)
Constant	-6.730	-6.706
	(17.60)***	(16.21)***
R^2	0.00	0.00
N	31,147	31,147

Notes
Variable definitions are shown in Table 1.
Δ Indicates one-period lag (note that *ΔAGE* is
constant, as is *ΔNOSIC*, since no companies
changed their number of SIC codes over the period).
Coefficients are reported, with *t*-statistics based on
robust standard errors shown in parentheses.
***, **, * Indicate statistical significance at 0.01
and 0.05 levels respectively.

Table 6: Effects of Regulation and Demand on Late Filings

	Pooled data logit models		Logit models for data post *NEWREG*					
	1. LATE (β)	*1. LATE (OR)*	*2. LATE (β)*	*2. LATE (OR)*	*3. LATE (β)*	*3. LATE (OR)*	*4. LATE (β)*	*4. LATE (OR)*
NEWREG	0.438	1.550						
	(17.15)***	-						
RISK30$_{t-1}$			0.435	1.545			1.053	2.867
			(11.72)***	-			(24.43)***	-
LATE$_{t-1}$					1.827	6.217	2.345	10.432
					(38.99)***	-	(43.98)***	-
AUDIT	-0.341	0.711	-0.235	0.790	-0.209	0.811	-0.152	0.859
	(2.64)***	-	(2.24)**	-	(1.96)*	-	(1.41)	-
FINREP	-0.323	0.724	-0.351	0.704	-0.312	0.732	-0.276	0.759
	(3.90)***	-	(4.95)***	-	(4.40)***	-	(3.84)***	-
*FINREP*AUD*	-0.193	0.824	-0.255	0.775	-0.259	0.772	-0.224	0.799
	(0.44)	-	(0.71)	-	(0.68)	-	(0.59)	-
*NEW*AUDIT*	0.104	1.109						
	(0.73)	-						
*NEW*FINREP*	-0.045	0.956						
	(0.51)	-						
*NEW*FINREP*AUD*	-0.084	0.919						
	(0.15)	-						
SIZE	0.087	1.091	0.063	1.065	0.047	1.048	0.027	1.028
	(8.62)***	-	(5.24)***	-	(3.83)***	-	(2.20)**	-
NOSIC	0.093	1.098	0.065	1.068	0.046	1.047	0.037	1.037
	(2.42)**	-	(1.43)	-	(0.97)	-	(0.78)	-
RETSAL	-0.261	0.770	-0.224	0.799	-0.187	0.829	-0.128	0.880
	(7.41)***	-	(4.98)***	-	(3.89)***	-	(2.62)***	-
LOSS	0.210	1.234	0.214	1.238	0.206	1.229	0.182	1.199
	(5.06)***	-	(4.12)***	-	(3.85)***	-	(3.39)***	-
LIQ	-0.001	0.999	0.001	1.001	0.002	1.002	0.004	1.004
	(0.40)	-	(0.23)	-	(0.60)	-	(1.42)	-
LEV	0.110	1.117	0.092	1.097	0.084	1.088	0.060	1.062
	(9.03)***	-	(6.38)***	-	(5.53)***	-	(3.89)***	-
AGE	-0.198	0.820	-0.156	0.856	-0.099	0.906	-0.100	0.905
	(8.82)***	-	(5.57)***	-	(3.42)***	-	(3.43)***	-
NODIR	-0.278	0.757	-0.220	0.803	-0.157	0.855	-0.133	0.876
	(5.71)***	-	(3.79)***	-	(2.64)***	-	(2.19)**	-
NOSH	-0.176	0.838	-0.166	0.847	-0.163	0.849	-0.134	0.874
	(6.39)***	-	(5.21)***	-	(5.02)***	-	(4.07)***	-
Constant	-2.696	-	-2.306	-	-2.421	-	-2.737	-
	(23.25)***	-	(16.91)***	-	(17.04)***	-	(18.97)***	-
Chi-squared	1,194.5***		658.3***		1975.9***		2,432.1***	
N	62,294	-	31,147	-	31,147	-	31,147	-
Industry dummies	Yes		Yes		Yes		Yes	

Notes All variables are defined in Table 1.

β Indicates logistic regression coefficients and *OR* indicates the associated odds ratios (exp*β*). Models 2-4 include lagged values, so are only based on data in the second year.

***, **, * Indicates statistical significance at 0.01, 0.05 and 0.10 levels respectively, with *z* statistics (shown in parentheses) based on robust standard errors.

Table 7: Alternative Model Specifications

Variables[2]	Data post NEWREG[1]			Pooled data[1]	
	1. OLS	2. OLS	3. Logit	4. OLS	5. Logit
AUDIT	-2.149	-5.387***	-0.230**	-6.913***	-0.360***
FINREP	-3.093***	-7.504***	-0.420***	-6.636***	-0.333***
REPLAG$_{t-1}$	0.570 ***				
RESREPLAG$_{t-1}$		0.567***			
SIZE				5.097***	0.099***
*SIZE*NEWREG*				-0.643***	-0.021
R^2 or chi-squared	0.416	0.412	292.57***	0.044	1152.20***
N	31,147	31,147	28,653	62,294	62,294

Notes

[1] Dependent variable for OLS models is *REPLAG* and for logit models is late filing (*LATE*).

[2] For data post *NEWREG,* the variables reported for model 4 in Table 4 are included in models 1 to 3. For the pooled data, the variables reported for model 5 in Table 4 are included in models 4 and 5. For model 3, 15 companies in the utility sector are naturally excluded since none filed late. *RESREPLAG*$_{t-1}$ is the residual from a regression, using pre *NEWREG* data only, of *REPLAG* $_{t-1}$ on the variables reported for model 4 in Table 4.

***, **, Indicates coefficients are statistically significant at 0.01 and 0.05 levels respectively.

Table 8: Size Decile Specifications

Variables[1]	1. OLS[2]	2. OLS[2]	3. Logit[2]	4. Logit[2]
AUDIT	-6.005***	-6.721***	-0.301**	-0.322**
FINREP	-6.276***	-6.500***	-0.324***	-0.330***
SIZE2	3.879**	4.432**	0.061	0.076
SIZE3	6.091***	5.090**	0.144**	0.079
SIZE4	9.873***	9.678***	0.202***	0.192**
SIZE5	13.000***	12.450***	0.222***	0.211***
SIZE6	13.920***	13.465***	0.371***	0.393***
SIZE7	14.688***	13.155***	0.350***	0.334***
SIZE8	19.837***	20.755***	0.381***	0.419***
SIZE9	20.602***	21.267***	0.490***	0.486***
SIZE10	26.752***	28.838***	0.390***	0.446***
SIZE2*NEW		-1.128		-0.025
SIZE3*NEW		1.457		0.107
SIZE4*NEW		-1.020		0.017
SIZE5*NEW		0.700		0.020
SIZE6*NEW		0.762		-0.040
SIZE7*NEW		1.915		0.028
SIZE8*NEW		-2.779		-0.066
SIZE9*NEW		-2.537		0.006
SIZE10*NEW		-5.199**		-0.097
R^2 or chi-squared	0.043	0.043	1170.2***	1172.80***
N	62,294	62,294	62,294	62,294

Notes
[1] Excluding *SIZE*, the variables reported for model 5 in Table 4 are included in all models. SIZE1 is omitted as the base case.
[2] Dependent variable for OLS models is *REPLAG* and for logit models is late filing (*LATE*).
***, **, Indicates coefficients are statistically significant at 0.01 and 0.05 levels respectively.

Figure 1: Reporting Timeliness before and after the Regulatory Change
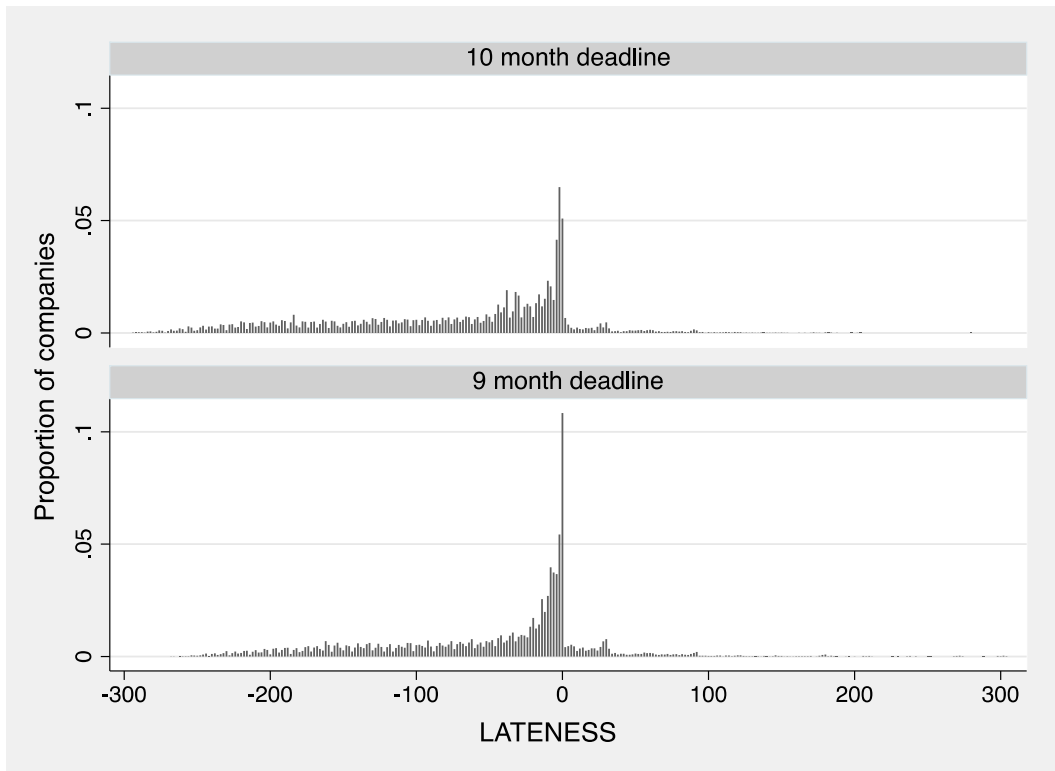
This figure presents the distribution of LATENESS under the old (10 month deadline) and new (9 month deadline) regimes. LATENESS is derived from *REPLAG* and is the number of days companies took to file their annual accounts at Companies House relative to their statutory filing deadline, which is shown as zero on the horizontal axis.

Figure 2: Change in Reporting Timeliness around Regulatory change
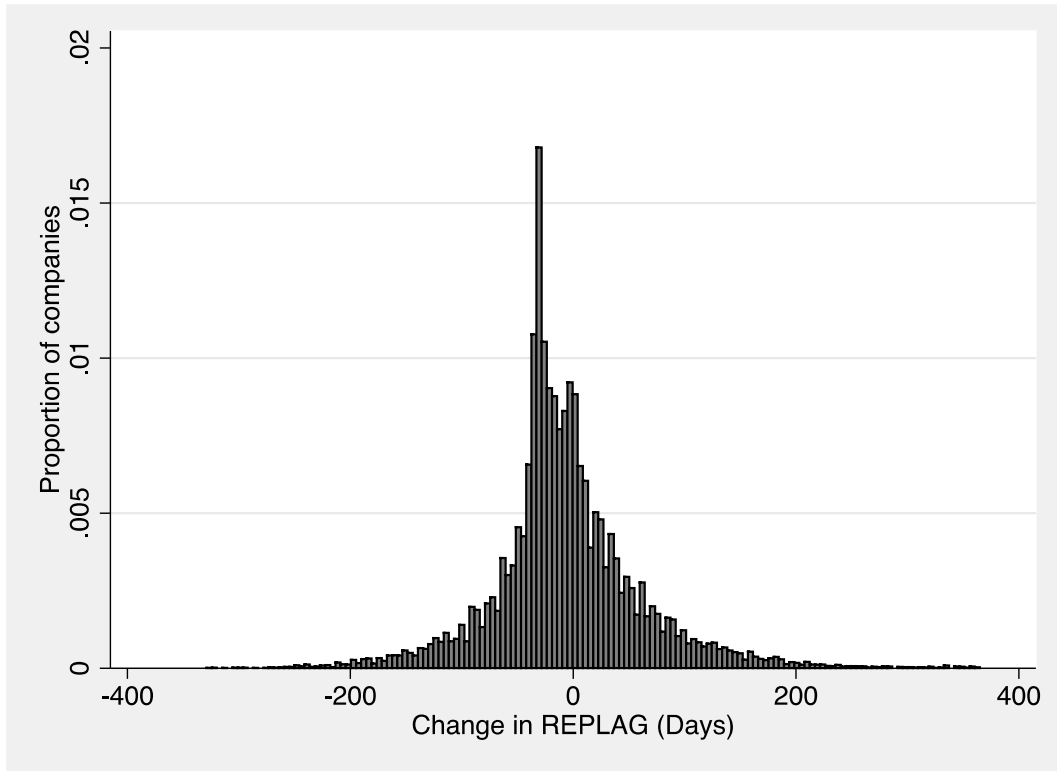
This figure presents the distribution of the annual change in *REPLAG* (i.e., *ΔREPLAG*) around the one-month shortening of the statutory deadline for filing accounts.