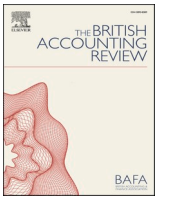
The British Accounting Review 56 (2024) 101327

Contents lists available at ScienceDirect

The British Accounting Review

journal homepage: www.elsevier.com/locate/bar



Do conformity and bailouts affect misreporting? The case of public health-care organisations

Eugenio Anessi-Pessina [a], Ileana Steccolini [b,c,*]

[a] Università Cattolica del Sacro Cuore, 1 Largo Gemelli, 20123, Milano, Italy
[b] Essex Business School, University of Essex, Wivenhoe Park, Colchester, CO4 3SQ, UK
[c] Dipartimento di Scienze Aziendali, Alma Mater Studiorum-Università di Bologna, Via Capo di Lucca, 34, 40126, Bologna, Italy

ARTICLE INFO

Keywords:
Earnings management
Public sector
Healthcare organisations
Conformity
Bailout
Misreporting

ABSTRACT

Most literature on the antecedents of misreporting in the public sector focuses on the propensity to report financial breakeven, with limited attention to the regulatory and normative incentives that may alter such propensity. This study provides novel explanations for public sector organisations' deviation from breakeven. Its underlying assumption is that misreporting may be shaped by mimetic pressures encouraging conformity as well as regulatory pressures conveyed through soft budget constraints. The empirical analysis includes all Italian public healthcare organisations over 17 years. The findings suggest that public healthcare organisations may manipulate accruals not only to achieve financial breakeven, but also to conform with peers' financial performance or to worsen reported financial performance in anticipation of a bailout.

1. Introduction

Public sector organisations increasingly focus on "balancing the books" and ensuring financial efficiency (e.g., Bracci, Humphrey, Moll, & Steccolini, 2015). As part of this focus, there has been a commensurate increase in misreporting of financial performance towards breakeven (e.g., Ballantine, Forker, & Greenwood, 2007; Boterenbrood, 2014; Ferreira, Carvalho, & Pinho, 2013; Ibrahim, Begkos, Arnaboldi, & Graham, 2019; Pina, Arcas, & Martí, 2012). Yet, institutional theories highlight that organisational behaviours are affected not only by financial pressures, but also by a plurality of institutional pressures (Meyer & Rowan, 1977; Scott, 2008). Institutional pressures can be coercive (e.g., laws and regulations), normative (e.g., professional ethics), or mimetic (e.g., conformity with peers in the field) (DiMaggio & Powell, 1983). In public sector organisations, institutional pressures are found to significantly affect organisational behaviours and performance expectations (e.g., Marcuccio & Steccolini, 2005; Scott, 2008; Waeraas & Sataoen, 2015) because of the public nature of these organisations' governance, the context where they operate, and the services they provide (Steccolini, 2019).

In response to institutional pressures (e.g., Bracci, Saliterer, Sicilia, & Steccolini, 2021; Steccolini, 2019), public sector organisations are expected to pursue a plurality of targets (Hodges, 2018, p. 7) alongside breakeven. Surprisingly, the literature appears to have paid limited attention to this plurality of targets and to the resulting incentives for misreporting. To fill this gap, this study explores possible institutional forces that may affect misreporting. In particular, it investigates both mimetic and regulatory forces.

For the purposes of this study, the Italian National Health Service provides a particularly suitable empirical context as it is subject to

* Corresponding author. Essex Business School, University of Essex, Wivenhoe Park, Colchester, CO4 3SQ, UK.
E-mail addresses: eugenio.anessi@unicatt.it (E. Anessi-Pessina), ileana.steccolini@essex.ac.uk (I. Steccolini).

https://doi.org/10.1016/j.bar.2024.101327
Received 3 December 2021; Received in revised form 8 January 2024; Accepted 13 January 2024
Available online 21 January 2024

Table 1
Summary of bailout measures since 2001.

	Enabling legislation	Amount (*)	Beneficiary Regional Health Services	Nature (loan or non-repayable transfer)	Declared purpose and allocation criteria
1	2005 Budget Law (L. 311/2004)	€2.0 bn	All Regions	Non-repayable transfer	Cover the deficits cumulated between 2001 and 2003.
2	2006 Budget Law (L. 266/2005)	€2.0 bn	All Regions	Non-repayable transfer	Cover the deficits cumulated between 2002 and 2004.
3	2006 Budget Law (L. 266/2005)	€1.0 bn	Lazio, Abruzzo, Molise, Campania, Sicily, and Sardinia	Non-repayable transfer	Not explicitly tied to covering the deficits incurred in the past and already documented in approved and published financial statements. Allocation across the regions was delegated to the Treasury and the National Department of Health, in concert with the Conference of regions.
4	2007 Budget Law (L. 296/2006)	€3.0 bn over three years (2007–09)	Regions subjected to deficit reduction plans (Lazio, Abruzzo, Molise, Campania, Sicily, and Liguria)	Non-repayable transfer	Not explicitly tied to covering the deficits incurred in the past and already documented in approved and published financial statements. Allocation across the regions was delegated to the Treasury and the National Department of Health, in concert with the Conference of regions.
5	Law 64/2007 (April 2007)	€3.0 bn	Lazio, Abruzzo, Molise, Campania, and Sicily	Non-repayable transfer	Reduce the volume of payables arisen before December 31, 2005 and still outstanding. Allocation across the regions was delegated to the Treasury and the National Department of Health. The law stated that such allocation should reflect the volume of payables, the regions' fiscal capacity, and the extent to which the regions had raised local taxes to reduce their deficits.
6	2008 Budget Law (L. 244/2007, December 2007)	€9.1 bn	Lazio, Molise, Campania, and Sicily	Loan	Reduce the volume of payables arisen before December 31, 2005 and still outstanding. The law stated that the allocation across the regions should reflect the volume of payables, "as determined according to the procedures described in [each region's] deficit-reduction plan".
7	Executive Decrees 35/2013, 102/2013, and 66/2014	€15.8 bn	Lazio	Loan	Drastically reduce healthcare organisations' payment delays, which were making it difficult for many suppliers to survive. The criteria for the allocation of funds were largely defined *ex ante*. They made reference to payables supported by adequate source documents and included in approved and published financial statements as at Dec 31, 2011. They were also supported by extensive oversight by the Treasury. Only a relatively small portion, totalling €0.8 bn and earmarked for the regions subjected to deficit reduction plans, was added in April 2014 (Decree 66/2004) with the intent of covering the remaining outstanding liabilities as at December 31, 2013. Two regions (Lazio and Liguria) applied for this additional funding and only the former received it, for a total of €0.67 bn.

The Table presents the seven pieces of national legislation that have been passed since 2001 to grant exceptional bailout funding to the Regional Health Services. The seven bailout measures varied in terms of amounts and beneficiary regions. Five granted non-repayable transfers from the central to the regional governments, while the remaining two were structured as loans to be repaid in instalments within 30 years. In some cases, the allocation criteria left room for negotiation and manoeuvre. In other instances, they were better defined *ex ante*. A table detailing the amounts granted to each region under each of these bailout measures (except the two which were structured as loans) is provided by the *Relazione Generale sulla Situazione Economica del Paese* (General Report on the Country's Economic Situation) for 2012, as presented to Parliament by the Treasury Minister (p. 209).
(*) For context, current public healthcare funding nation-wide for 2004 was €85 bn (*Relazione Generale sulla Situazione Economica del Paese* for 2004); current public healthcare funding for 2005 in the six most critical Regions (Lazio, Abruzzo, Molise, Campania, Sicily, and Sardinia) was €32 bn (*Relazione Generale sulla Situazione Economica del Paese* for 2005).

multiple financial and institutional pressures and expectations.

Italy's healthcare system is publicly funded and is characterised by tensions between systematic pressures to reduce deficits and the constitutional recognition of a universal right to health regardless of financial considerations. When adequate provision of care was jeopardised by deficits, the central government felt compelled to allocate bailout funding. This makes the Italian National Health Service particularly relevant to the study of responses to regulatory forces, with specific respect to bailout opportunities. Bailouts have become increasingly common, especially in the aftermath of the financial and pandemic crises. As shown by the "soft budget

constraint" literature (Crivelli, Leive, & Stratmann, 2010; Kornai, 1980, 1986; Maskin, 1996, p. 6), bailouts may significantly affect real spending and debt choices. In principle, they may also affect misreporting. However, their impact on reporting has so far received scant consideration.

Moreover, Italy's healthcare system is decentralised, with 21 regional governments each providing healthcare through a plurality of public healthcare organisations. According to the institutional literature, mimetic forces provide an impetus to conform with the behaviour of comparable organisations or individuals (Meyer & Rowan, 1977; Scott, 2008). These pressures for conformity may also be expected to affect misreporting, but empirical evidence is lacking. The decentralisation of Italy's healthcare system offers an opportunity to explore whether misreporting is affected by mimetic forces, that is, whether Italian public healthcare organisations use misreporting to align their reported financial performance with that of peers from the same region.

Through an empirical analysis of misreporting in Italian public healthcare organisations between 2002 and 2018, this study provides evidence that public sector organisations may manipulate their reported financial performance to pursue a plurality of targets beside breakeven, offering important contributions to the extant literature. In particular, the study shows that bailouts may represent a relevant regulatory opportunity that encourages deviations from breakeven, with potentially important implications for the redistribution of public resources among healthcare organisations and, ultimately, local communities. Moreover, it shows that, in a decentralised system, such organisations may have incentives to compare themselves with their regional peers and align their reporting behaviours accordingly. More generally, by exploring regulatory and mimetic pressures, this study responds to calls for further evidence on the incentives that affect healthcare reporting practices (Ibrahim, 2022) and on the multiple institutional forces shaping them (Cardinaels & Soderstrom, 2013). In doing so, it extends previous empirical studies, which have generally focused on convergence toward breakeven as the primary explanation for misreporting.

This article is organised as follows. Section 2 provides information on the empirical setting. Section 3 develops the hypotheses. Section 4 describes data and methods. Section 5 presents the results. Finally, Section 6 draws some conclusions and discusses their implications.

2. Context: Italian public healthcare

The Italian National Health Service (*Servizio Sanitario Nazionale* – SSN) covers the entire population, is tax-funded, provides most care at no cost at point of service, and is organised into three tiers: central government, 21 regional governments, and about 200 public healthcare organisations. The central government is responsible for ensuring the provision of adequate healthcare in all regions, in line with the universal right to health as enshrined in the Constitution. Regional governments enjoy significant autonomy in that they define health policies, appoint public healthcare organisations' CEOs, provide them with goals and guidelines, and cover their expenditures by allocating national per-capita funding and supplementing it with regional taxes and user charges. Public healthcare organisations are responsible for providing healthcare services.

Funding allocations to public healthcare organisations are largely based on capitation and activity-based reimbursements. However, activity-based funding is generally capped to discourage the provision of unnecessary care and to contain spending. To some extent, moreover, funding allocations are also intended to finance investments, to cover the cost of services for which activity-based reimbursement is deemed not feasible or inappropriate (e.g., the presence of emergency departments), and possibly to compensate for structural conditions that produce excess expenses (e.g., overstaffing as well as overqualified or disproportionately long-serving personnel) and to cover losses. The capital needed to cover the losses of public healthcare organisations is typically raised by the regional government by increasing the rates of regional taxes, unless a national bailout is made available.

Central-government bailouts were explicitly banned in 2001 to strengthen decentralisation. Nevertheless, seven pieces of legislation have since been passed to grant bailout funding to the regions in exceptional circumstances. The seven bailout measures vary in terms of amounts and beneficiary regions. They also differ in the extent to which the allocation criteria left room for negotiation and manoeuvre. In some cases, the cross-regional allocation of bailouts has been explicitly tied to deficits, liabilities, and/or other amounts recorded in the past and already documented in published financial statements. In other cases, it has been delegated to future decisions by the Treasury and the National Department of Health, possibly in concert with the regions; it has also been discussed and decided while public healthcare organisations were preparing their financial statements. Five bailout measures granted non-repayable transfers from the central to regional governments, while the remaining two were structured as loans to be repaid in instalments within 30 years. A summary is provided in Table 1..

To encourage the pursuit of financial viability, regulations establish rewards and sanctions for both public healthcare organisations and their CEOs. According to these regulations, financial performance is one of the criteria that may be used to determine CEO compensation bonuses and CEOs may be dismissed if there are sizeable losses. As for public healthcare organisations, those reporting a surplus may use it to fund investments or current expenses; those facing financial hardship may have to implement hiring freezes, restructures, spin-offs, and mergers. However, these positive and negative incentives, as formally set by existing regulations, have been found to be significantly weaker in practice and lacking in credibility in terms of the day-to-day operations of the healthcare sector (Longo, Ferrè, Russo Valentini, & Sartirana, 2011; Longo, Pirazzoli, & Saporito, 2016). Indeed, Italian public healthcare has a long tradition of losses (see also Section 4, Table 2). Therefore, if dismissal was a credible threat, CEO recruitment would become particularly difficult, especially in those regions and organisations with large losses and particularly rigid expenses. Along similar lines, bonuses have been awarded using a wide set of non-financial criteria, often years after the period to which they related, and based on political considerations rather than actual results (Longo et al., 2011, 2016). Fixed and variable CEO compensation is also much lower than for private healthcare. Recent survey data (Longo et al., 2016) show that CEOs rate prestige, status, recognition, and impact much higher than compensation. Significantly, most CEOs come from careers within the relevant region's public healthcare organisations.

For all these reasons, CEOs may be mostly motivated by political loyalty and by a perceived need to conform with their regional peers. These considerations are further elaborated in the next section, which outlines the development of the hypotheses.

3. Misreporting in the public healthcare sector: hypothesis development

This section reviews relevant literature on healthcare and public sector misreporting practices, suggesting new potential explanations for misreporting. Drawing on institutional theories, it then develops hypotheses on how conformity with peers and bailout opportunities may shape behaviours.

3.1. Explaining misreporting in the public sector: from financial breakeven to institutional forces

Misreporting in the public sector has been the subject of limited attention. Moreover, the literature has generally focused on incentives to adjust financial performance towards a breakeven target, or similar targets imposed by regulations (Ballantine et al., 2007; Stalebrink, 2007; Pina et al., 2012; Ferreira et al., 2013; Boterenbrood, 2014; Ibrahim, Noikokyris, Fabiano, & Favato, 2019; on this, see also Hodges, 2018). With specific respect to public healthcare, Ballantine et al.'s (2007) analysis of English NHS Trusts confirmed an association between discretionary accruals and the reporting of financial performance in a narrow range just above zero. Boterenbrood (2014) highlighted the presence of income smoothing in Dutch hospitals. Focusing on Italian public hospitals (2009–2013), Ibrahim et al. (2019) found evidence of manipulated discretionary total and current accruals, provisions, and non-operating expenses to reduce small positive deviations from zero-profit, but no evidence of manipulation in the presence of small losses. Similar practices to report breakeven have been found in North American healthcare, although for non-profit entities rather than public sector ones (e.g., Hoerger, 1991; Leone & Van Horn, 2005; Mensah, Considine, & Oakes, 1994). As for public sector organisations outside healthcare, the few existing studies have also confirmed misreporting towards breakeven (Ferreira et al., 2013; Pina et al., 2012).

Conversely, and despite their potentially important role, much less is known about other, possibly conflicting incentives. Institutional theorists have generally described the public and healthcare sectors as highly institutionalised fields (Meyer & Rowan, 1977; Scott, 2008) where financial and economic considerations may compete with, or even be overcome by, institutional (regulatory, normative, and mimetic) pressures (DiMaggio & Powell, 1983). As institutional pressures have been found to affect the generality of behaviours, reporting practices may be no exception.

Two studies stand out for their focus on alternative incentives for misreporting in the healthcare sector. Looking at the English NHS, Greenwood, Baylis, and Tao (2017) showed that, under the coercive pressures of a regulatory regime that encouraged the improvement of financial performance, discretionary accruals were managed to report small surpluses, to smooth reported financial performance around thresholds that were relevant to the regulatory regime, and to avoid reporting small losses. In the US non-profit hospital context, Vansant (2016) found that managers face conflicting expectations; namely, compensation and reputational incentives to report higher earnings, but also normative pressures to use excess funds to subsidise charity care. Under these circumstances, they prefer to manage discretionary accruals to report higher earnings. This behaviour, however, is moderated by the extent of charity care that their organisations provide.

These two studies offer initial support to the idea of exploring regulatory and normative explanations for misreporting. Yet, Greenwood et al. (2017) analysed regulatory targets that encouraged the improvement of reported financial performance; it would thus be important to understand what happens when regulations provide incentives to worsen such performance. Mimetic forces, moreover, have so far been overlooked. To fill these gaps, the following subsections advance two hypotheses about misreporting in public healthcare organisations. The first hypothesis looks at mimetic forces in the form of conformity with peers. The second highlights the incentives produced by regulatory contexts where budget constraints are "soft" and bailout opportunities arise.

3.2. Conformity with peers

DiMaggio and Powell's (1983) concept of mimetic isomorphism describes organisations as mimicking the behaviours of peers to achieve stronger legitimacy.

The institutional literature suggests that highly institutionalised fields, including healthcare, are particularly prone to developing shared meaning systems or institutional logics (Alford & Friedland, 1985; Thornton, Ocasio, & Lounsbury, 2012), which tend to be strong and stable over time. This translates into strong expectations of conformity for members of the field (Meyer & Rowan, 1977; Scott, 2008), including conformity of structures, strategies, routines, and other practices. Empirically, evidence of conformity in the healthcare sector is provided by Waeraas and Sataoen (2015), who found Norwegian public hospitals to strongly value conformity as opposed to differentiation and competition. In that context, "toning down differences" was seen as politically important because it reduced external tensions (across hospitals) and internal conflicts, as "the hospitals do not want to be better, but 'just as good'" (p. 319). Similarly, Llewellyn and Northcott (2005) documented that, following a benchmarking exercise, UK hospitals became "more average".

Along similar lines, reporting a financial performance that is aligned with that of peers may be a rational choice, even when such performance is negative. For Italian public healthcare, following decentralisation, the most relevant group of peers is arguably that composed of all public healthcare organisations in a region. If all or most peers operate at a loss, then losses may be seen as acceptable. Consequently, the regional government would find it difficult to sanction loss-making organisations and CEOs, to differentiate CEO compensation bonuses based on financial performance, or even to distribute bonuses at all. In any case, as highlighted in section 2, potential bonuses are rather small and CEOs usually attach greater importance to other features of their position. Moreover, as the right

to health is enshrined in the Constitution and the related services are expected to be delivered irrespective of financial considerations, a breakeven target, even set by law, may be perceived as inconsistent with good public service if it appears to jeopardise the provision of adequate care, especially in comparison with peer organisations. For individual organisations, in fact, the pursuit of breakeven may even be viewed as counterproductive if it risks triggering a reduction in future funding. At the same time, politically appointed, internally promoted CEOs will preferably avoid standing out because of their organisations' excessive losses, as oversized losses may reflect badly on their prestige, require their political masters to raise additional regional taxes, and trigger sanctions specifically targeted at the culprit organisations.

To align reported financial performance with that of peers, public healthcare organisations may resort to misreporting. Hence, the first hypothesis is stated as follows:

H1. Public healthcare organisations manage their reported financial performance to conform with their peers' financial performance.

To test H1, a more granular level is required. In particular, it is worth considering those organisations where pre-managed financial performance is closer to zero compared to the performance of their peers, as these organisations will experience conflicting incentives. Additionally, it seems appropriate to distinguish organisations according to whether their pre-managed financial performance is negative or positive, as the relative intensity of these conflicting incentives may be different below and above zero.

When pre-managed financial performance is negative, the existing literature suggests that reported financial performance will be managed upwards to reduce the distance from breakeven. However, for organisations where pre-managed financial performance is negative, but better than their peers, H1 implies that the pursuit of breakeven will be at least partially offset by a desire to conform with peers and that this conformity will be achieved by managing reported financial performance downwards. Through conformity, the organisation will signal the "right" compromise between financial and non-financial considerations and will avoid suspicions that it may be receiving more funding than it needs. More formally:

H1a. Public healthcare organisations with negative pre-managed net incomes are less prone to manage their reported financial performance upwards when their pre-managed loss is smaller than their peer group's average expected loss.

Correspondingly, when pre-managed financial performance is positive, the existing literature suggests that reported financial performance will be managed downwards to reduce the distance from breakeven. For organisations where pre-managed financial performance is positive, but worse than their peers, H1 implies that the pursuit of breakeven will be at least partially offset by a desire to conform with peers and that this conformity will be achieved by managing reported financial performance upwards. However, as mentioned, organisations with pre-managed surpluses may not mirror those with pre-managed losses in their misreporting behaviours. In the public sector, organisations are generally expected to break even rather than to achieve a surplus and a higher surplus is not necessarily interpreted as better performance. Under these circumstances, reporting a non-negative net income may be viewed as satisfactory *per se*, regardless of peer performance. In other words, the propensity to manage reported financial performance downwards towards breakeven may prove much stronger than the desire to align reported financial performance with that of peers. Therefore, the hypothesis is more appropriately stated in the null form:

H1b. For public healthcare organisations with positive pre-managed net incomes, the propensity to manage reported financial performance downwards is not affected by whether pre-managed surplus is smaller than their peer group's average expected surplus.

3.3. Bailouts

Bailouts have attracted increasing attention in the aftermath of the financial and pandemic crises, although their implications had been examined previously (Berglof & Roland, 1995; Stern & Feldman, 2004). In economics, bailouts are studied under the theoretical lens of "soft budget constraints", which are said to occur when a higher level of government is unable to credibly commit to a no-bailout policy (Kornai, 1980, 1986; Maskin, 1996). This may result in higher-than-optimal expenditure and borrowing by lower tiers of government, which expect additional resources in case of financial distress.

Soft budget constraints are particularly common in specific circumstances (Crivelli et al., 2010, p. 6), such as, the risk of negative spill-overs in the absence of a bailout, the presence of significant political benefits associated with providing a bailout, higher tiers of government caring particularly about the welfare of constituents in the jurisdiction facing financial distress, and lower tiers of governments that cannot be made fully accountable for spending decisions (for example, due to limited tax-raising powers).

The economic literature generally assumes that soft budget constraints will affect *actual* spending and borrowing decisions. However, they may also induce accounting manipulations that affect *reported* spending and borrowing. Since bailout funding tends to be closely geared to reported debts and deficits, bailouts will presumably provide incentives for beneficiary organisations not only to increase actual spending (Bordignon & Turati, 2009), but also to worsen reported financial performance through misreporting.

The Italian public healthcare sector is particularly exposed to soft budget constraints. The central government has traditionally been committed to ensuring adequate healthcare throughout the country regardless of financial considerations. It has also been unable to credibly commit to a no-bailout policy (see section 2).

Under these circumstances, incentives may have arisen for public healthcare organisations to inflate their reported losses. More specifically, the expectation is that CEOs, faced with the prospect of benefitting from bailout measures, will weigh the benefits of inflating reported losses against the weakly credible threats of dismissal, risks of missing out on bonuses, and requirements to achieve breakeven. In fact, these threats, risks, and requirements will be even feebler than usual both because the organisations receiving the

Table 2
Number of public healthcare organisations, average net income, and percentage reporting a loss, 2002–2018.

Panel A: By year

year	number of existing public healthcare organisations	% of public healthcare organisations reporting a loss	average net income (scaled by lagged total assets)
2002	292	75%	−0.09
2003	293	65%	−0.09
2004	247	89%	−0.12
2005	250	64%	−0.10
2006	253	70%	−0.08
2007	234	68%	−0.06
2008	236	63%	−0.06
2009	216	64%	−0.06
2010	216	63%	−0.05
2011	224	53%	−0.03
2012	220	47%	−0.03
2013	209	27%	−0.01
2014	214	33%	−0.02
2015	214	39%	−0.02
2016	192	29%	−0.02
2017	173	17%	−0.01
2018	164	18%	−0.01
Total	**3847**	**54%**	**−0.06**

Panel B: By region

Region	yearly average number of existing public healthcare organisations	% of public healthcare organisations reporting a loss	average net income (scaled by lagged total assets)
Piedmont	22	79%	−0.03
Aosta Valley	1	24%	0.01
Lombardy	42	11%	−0.01
Alto Adige	2	40%	0.00
Trentino	1	0%	0.00
Veneto	21	70%	−0.10
Friuli Venezia Giulia	8	14%	0.00
Liguria	6	91%	−0.05
Emilia-Romagna	15	63%	−0.02
Tuscany	14	73%	−0.02
Umbria	5	25%	−0.02
Marche	4	53%	−0.04
Lazio	12	75%	−0.15
Abruzzo	5	75%	−0.09
Molise	2	88%	−0.25
Campania	15	62%	−0.12
Puglia	10	65%	−0.10
Basilicata	4	63%	−0.06
Calabria	10	77%	−0.10
Sicily	19	44%	−0.04
Sardinia	8	90%	−0.11
Total	**226**	**54%**	**−0.06**

The Table presents the number of existing public healthcare organisations for each year of analysis (Panel A) and for each region (Panel B). It also provides information on average net income (scaled by lagged total assets) and the percentage of public healthcare organisations reporting a loss. Because of mergers and spin-offs, the number of existing organisations varied over time, from 292 in 2002 to 164 in 2018. Overall, the sample consists of 3847 organisation-years, with an average of 226 organisations per year. 54% of organisation-years reported a loss. Average net income (scaled by lagged total assets) was −6%. Panel A presents further details by year. Both the average size of losses and the percentage of organisations reporting a loss became smaller over time. Panel B presents further details by region. The number of healthcare organisations varies significantly across regions, also because the regions have very different populations. Reported losses were extremely common (≥75% of organisation-years) in some Northern (Piedmont, Liguria), Central (Lazio), and Southern regions (Abruzzo, Molise, Calabria, Sardinia). Their average size was particularly large (>10% of lagged total assets) in four Central and Southern regions (Lazio, Molise, Campania, Sardinia).

bailouts will often be very distant from breakeven and because the relevant regional government will welcome the receipt of bailout funding. These considerations lead to the following hypothesis:

H2. Public healthcare organisations will worsen their reported financial performance for periods when a bailout is expected.

4. Data and methods

4.1. Overview

This study analyses all Italian public healthcare organisations between 2002 and 2018.[1] Table 2 shows the number of existing organisations for each year (Panel A) and each region (Panel B). It also provides information on average net income (scaled by lagged total assets) and the percentage of organisations reporting a loss. On average, net income (scaled by lagged total assets) was −6%, with 54% of organisation-years reporting a loss.

The hypotheses are tested using an aggregate-accruals approach (DeAngelo, 1986; Dechow, Sloan, & Sweeney, 1995; Healy, 1985; Jones, 1991; McNichols & Wilson, 1988; Nelson, 2000; Petroni, 1992). Appendix 1 presents the average size of each accrual over the entire period under analysis.

The four subsections below illustrate how discretionary accruals are estimated, how distributional analysis is used for a preliminary exploration of the hypotheses, how the hypotheses are tested by relating discretionary accruals to their likely determinants through regression analysis, and the data sources used.

4.2. Estimation of discretionary accruals

To identify discretionary accruals,[2] the factors proposed by Jones (1991) and Dechow and Dichev (2002) are used simultaneously (see also Ballantine et al., 2007; McNichols, 2000), with an additional factor intended to capture a peculiarity of the Italian system (Langella, Anessi-Pessina, & Cantù, 2021). The final specification is presented in Equation (1):

$$\frac{ACC_{i,t}}{TA_{i,t-1}} = \gamma_{0,t} + \frac{\gamma_{1,t}\,(\Delta Revenues)_{i,t}}{TA_{i,t-1}} + \frac{\gamma_{2,t}\,GrossPPE_{i,t}}{TA_{i,t-1}} + \frac{\gamma_{3,t}\,CFO_{i,t+1}}{TA_{i,t-1}} + \frac{\gamma_{4,t}\,CFO_{i,t}}{TA_{i,t-1}} + \frac{\gamma_{5,t}\,CFO_{i,t-1}}{TA_{i,t-1}} + \frac{\gamma_{6,t}\,CapFund_{i,t}}{TA_{i,t-1}} + \epsilon_{i,t} \quad [1]$$

In Equation (1), $ACC_{i,t}$ is organisation i's total accruals in period t.[3] Total accruals are commonly computed as the change in current non-cash[4] assets, minus the change in current liabilities, and minus depreciation and amortisation expenses (e.g., Jones, 1991). In the Italian case, an additional component is the "transfers from the capital funding reserve", that is, the portion of capital funding that is released from equity to income in the relevant financial year.[5] The resulting composition of total accruals is presented in Equation (2).[6]

$$ACC_{i,t} = \Delta Current\ Assets - \Delta Cash - \Delta Current\ Liabilities - Depreciation\ and\ Amortisation\ Expenses + Transfers\ from\ capital\ funding\ reserve \quad [2]$$

In Equation (1), the first two explanatory factors are those originally put forward by Jones (1991). $\Delta Revenues_{i,t}$ is the change in revenues from the previous period and is intended to capture the nondiscretionary component of the changes in current assets and liabilities (e.g., accounts receivable, inventory, and accounts payable). It cannot be signed *a priori* because a given change in revenues can cause income-increasing changes in some working capital accounts (e.g., increases in accounts receivable) and income-decreasing changes in others (e.g., increases in accounts payable). $GrossPPE_{i,t}$ is gross property, plant, and equipment at the end of year t and is intended to capture the portion of total accruals that is related to nondiscretionary depreciation expenses. Its expected coefficient is

[1] The sample consists of 3847 organisation-years, with an average of 226 organisations per year. Because of mergers and spin-offs, the number of organisations varied over time, from 292 in 2002 to 164 in 2018.

[2] Accruals are not entirely discretionary. For example, all other things being equal, the amount of accounts receivable will increase with both the volume of sales and the average collection period. Similarly, depreciation expenses will reflect the gross amount of the entity's fixed assets. It is thus necessary to break down total accruals into their (estimated) discretionary and nondiscretionary components.

[3] Total accruals can be measured using balance sheet items or cash flow statement items. Hribar and Collins (2002) found that, when using balance sheet-based accruals, the frequency and magnitude of errors in estimates can be substantial. They consequently recommended the use of cash flow statements. Cash flow statement items, however, are often unavailable. For Italian public healthcare organisations, the publication of cash flow statements became mandatory only in 2012.

[4] In their NHS-specific model, Ballantine et al. (2007) modified this approach to also include the change in cash balances. Cash is conventionally excluded when modelling working capital accruals as it is not regarded as discretionary. However, English NHS Trusts used to receive both (i) "financial support" (a.k.a. "brokerage"), that is, funds that were credited to income and were intended to assist in the achievement of financial breakeven, and (ii) "cash brokerage", which involved only a transfer of cash, did not affect income, and was aimed at relieving liquidity pressures. The existence of both cash brokerage and financial support led Ballantine et al. (2007) to include cash in their measurement of working capital accruals for English NHS Trusts. This peculiarity of English health care is not entirely replicated in the Italian case. In our analysis, therefore, cash is excluded from the definition of working capital accruals.

[5] Italian public healthcare organisations fund a large share of their investments through capital transfers from other governmental or private entities. Accounting standards for public healthcare organisations require that these transfers be initially credited to a capital funding reserve within equity. Subsequently, they must be gradually released to the operating statement to match the depreciation and amortisation expenses that they finance, on a systematic basis. If depreciation and amortisation expenses are included in the definition of total accruals, therefore, so must be the corresponding transfers from the capital funding reserve.

[6] Since the formats of the balance sheet and the notes do not provide a breakdown of provisions by expected due date, all provisions are classified as current liabilities for the purposes of this study. $ACC_{i,t}$ thus incorporates the net change in provisions from the previous period as a consequence of recognitions, utilisations, and reversals.

Table 3
Estimation of discretionary accruals.

Variable	Definition	Expected sign	Coefficient (p-value in parenthesis)
$\frac{(\Delta Revenues)_{i,t}}{TA_{i,t-1}}$	Change in revenues from the previous period	?	0.0227(0.246)
$\frac{GrossPPE_{i,t}}{TA_{i,t-1}}$	Gross property, plant, and equipment at the end of year *t*	–	−0.0296***(0.000)
$\frac{CFO_{i,t+1}}{TA_{i,t-1}}$	Cash flows from operations in the next period	+	0.155***(0.000)
$\frac{CFO_{i,t}}{TA_{i,t-1}}$	Cash flows from operations in the current period	–	−0.849***(0.000)
$\frac{CFO_{i,t-1}}{TA_{i,t-1}}$	Cash flows from operations in the previous period	+	0.190***(0.000)
$\frac{CapFund_{i,t}}{TA_{i,t-1}}$	Stock of capital funding for investment received as at the end of period t	+	0.0363***(0.000)
Constant			−4705.5***(0.000)
N			2649
R-sq			0.717
Mean VIF			2.29

*p < 0.05, **p < 0.01, ***p < 0.001.
The dependent variable is total accruals for organisation *i* in period *t* ($ACC_{i,t}$). $ACC_{i,t}$ is defined as: ΔCurrent Assets – ΔCash – ΔCurrent Liabilities – Depreciation and amortisation expenses + Transfers from capital funding reserve. Transfers from capital funding reserve are the portion of the capital funding reserve that is released from equity to income in the relevant financial year. ΔCurrent Liabilities includes the net change in provisions from the previous period due to recognitions, utilisations, and reversals. The independent variables are a set of hypothesised explanatory factors for nondiscretionary accruals. For each, the Table shows the expected sign ("?" means that the variable could not be signed *a priori*). All variables are scaled by lagged total assets. R-sq is 0.717. The residuals are interpreted as an estimate of the discretionary component of total accruals.

negative because depreciation expenses are an income-decreasing accrual.

Following Dechow and Dichev (2002), the next three explanatory factors in Equation (1) are organisation *i*'s cash flows from operations in the next ($CFO_{i,t+1}$), current ($CFO_{i,t}$), and previous ($CFO_{i,t-1}$) periods. The expected signs are positive, negative, and positive, as accruals (i) largely anticipate future cash flows, (ii) reverse when cash is received and paid, but (iii) may also defer the recognition of past cash flows into current earnings.

The sixth and last explanatory factor ($CapFund_{i,t}$) reflects the composition of total accruals as presented in Equation (2). As mentioned, total accruals include depreciation expenses, but also transfers from the capital funding reserve. If $GrossPPE_{i,t}$ is intended to capture the portion of total accruals related to nondiscretionary depreciation and amortisation expenses, it seems appropriate to also include a corresponding explanatory factor for nondiscretionary transfers from the capital funding reserve. Such is the role of $CapFund_{i,t}$, that is, the stock of capital funding received by organisation *i* as at the end of period *t*. The expected coefficient for $CapFund_{i,t}$ is positive, because transfers from the capital funding reserve are an income-increasing accrual.

All variables in Equation (1) are scaled by lagged total assets ($TA_{i,t-1}$).

Equation (1) is estimated cross-sectionally by year (Becker, DeFond, Jiambalvo, & Subramanyam, 1998; Leone & Van Horn, 2005).[7] The results are presented in Table 3. All the hypothesised explanatory factors except revenues are statistically significant with the expected signs. R^2 is 72%.

4.3. Distributional analysis

Misreporting can be investigated by analysing the distribution of financial performance around a specified benchmark before and after discretionary accruals. The benchmark usually suggested by the literature is a net income of zero (Burgstahler & Dichev, 1997; Degeorge, Patel, & Zeckhauser, 1999; Hayn, 1995; Jacob & Jorgensen, 2007). Conversely, for the purposes of this study, and specifically for a preliminary investigation of H1, the chosen benchmark is the projected mean financial performance of public healthcare organisations within the relevant region, used as a proxy for the expected financial performance of the peer group in the current year.

More specifically, the analysis rests on six variables (Appendix 2). $NIADA_{i,t}$ (net income after discretionary accruals) is reported surplus or loss for organisation *i* in year *t*, scaled by lagged total assets. $DA_{i,t}$ is the estimate of discretionary accruals as derived in the previous subsection. $NIBDA_{i,t}$ (net income before discretionary accruals) is pre-managed net income, defined as the difference between *NIADA* and *DA*. $REG\_NET\_INCOME_{r,t}$ is the projected regional mean net income for region *r* in year *t*, determined by linear extrapolation from the average net incomes of all the region's public healthcare organisations in the previous two years. The reference to a *projected* regional mean reflects the fact that *actual* regional mean net income, being the average of reported net incomes for all public healthcare organisations in the region, cannot be known *ex ante*. The use of linear extrapolation assumes that public healthcare organisations will

[7] The requirement for lagged and leading variables reduces the sample to 2649 observations. Specifically, the use of lagged total assets and lagged cash flows implies the loss of all 2002 and 2003 observations, totalling 292 + 293 = 583. At the other end of the time series, the use of lead cash flows implies the loss of all the 164 observations for 2018. The remaining 449 observations are lost due to discontinuities in the time series following mergers and spinoffs of healthcare organisations.

Fig. 1. Five-way partition of observations
The Figure presents the classification of observation-years into five groups. The first four groups are defined according to whether net income before discretionary accruals (*NIBDA*) is at least equal to (i) zero (*NIBDA* $\geq$ 0, x-axis) and/or to (ii) the projected regional mean (*NIBDA* $\geq$ *REG_NET_INCOME* or, equivalently, *NIBDA_DELTA* $\geq$ 0, y-axis). The fifth group includes observations with particularly poor financial performances.

expect recent trends to persist.[8] Finally, $NIADA\_DELTA_{i,t,}$ and $NIBDA\_DELTA_{i,t}$ are the distances of *NIADA* and *NIBDA* from *REG_NET_INCOME*.[9] Analysing the distributions of *NIADA_DELTA* and *NIBDA_DELTA* around zero is thus the same as analysing the distributions of *NIADA* and *NIBDA* around *REG_NET_INCOME*.[10]

On this basis, histograms are constructed for both *NIBDA_DELTA* and *NIADA_DELTA*. Following Degeorge et al. (1999),[11] bin width is set at 0.01. In the presentation of results, therefore, bin (0), bin (1), and bin (–1) correspond respectively to intervals [0, 0.01), [0.01, 0.02), and [–0.01, 0). The Z-statistic proposed by Burgstahler and Dichev (1997)[12] (henceforth referred to as "BD statistic") is then used to test whether the frequencies of organisation-years in the bins just around the benchmark are consistent with the expectation that, under the null hypothesis of no manipulation, the distribution of reported net income is relatively smooth.

As an additional test, the distribution of *NIADA_DELTA* is analysed conditional on *NIADA* being non-negative. This is because, in the presence of multiple thresholds such as conformity with peers and breakeven, manipulation should produce a discontinuity in the distribution of the more important threshold even when the other threshold is achieved (Degeorge et al., 1999).

To analyse the use of discretionary accruals in more detail, observations are subsequently organised into five groups – henceforth referred to as the "five-way partition of observations" (Fig. 1). The first four groups are defined according to whether *NIBDA* is at least equal to zero (*NIBDA* $\geq$ 0) and/or to the projected regional mean (*NIBDA* $\geq$ *REG_NET_INCOME* or, equivalently, *NIBDA_DELTA* $\geq$ 0). The fifth group includes observations with particularly poor financial performances.

In the *GREATER_LOSS* (*NIBDA* $<$ 0 and *NIBDA_DELTA* $<$ 0) and the *GREATER_SURPLUS* (*NIBDA* $\geq$ 0 and *NIBDA_DELTA* $\geq$ 0) groups, discretionary accruals can be expected to respectively manage reported net income upwards and downwards in order to shorten the distance from breakeven.

The *SMALLER_LOSS* group (*NIBDA* $<$ 0 and *NIBDA_DELTA* $\geq$ 0) is characterised by conflicting objectives: income-increasing discretionary accruals would serve the pursuit of financial breakeven, while income-decreasing ones would align reported financial performance with that of peers. H1a posits that, compared to the *GREATER_LOSS* group, these organisations will be less prone to manage reported net income upwards. For further analysis, the *SMALLER_LOSS* group is broken down into three subgroups of equal size (*SMALLER_LOSS_1*, *SMALLER_LOSS_2*, and *SMALLER_LOSS_3*) depending on the ratio of the distances of the organisation's *NIBDA*

[8] Untabulated pairwise correlation coefficients amounting respectively to 0.92 and 0.80 confirm the strong association of $REG\_NET\_INCOME_{r,t}$ with both an alternative, simpler proxy for the expected financial performance of peers (namely, the previous year's average net income for all public healthcare organisations in the region) and the actual regional mean net income for year *t*.

[9] In other words, $NIADA\_DELTA_{i,t}$ will be zero when $NIADA_{i,t}$ equals $REG\_NET\_INCOME_{r,t}$. Similarly, $NIBDA\_DELTA_{i,t}$ will be zero when $NIBDA_{i,t}$ equals $REG\_NET\_INCOME_{r,t}$.

[10] Given this focus on the distance from the regional group of peers, the four (very small) regions that include only one healthcare organisation are dropped from the analysis.

[11] Degeorge et al. (1999, p. 18) recommend "a bin width positively related to the variability of the data and negatively related to the number of observations". They thus suggest a width of 2 (IQR) ($N^{-1/3}$), where IQR is the sample interquartile range and N is the number of available observations.

[12] Burgstahler and Dichev (1997) assume that "under the null hypothesis of no earnings management, the [distribution of earnings levels is] relatively smooth", where smoothness is operationalised to imply that "the expected number of observations in any given interval of the distribution is the average of the number of observations in the two immediately adjacent intervals". The test statistic for smoothness is the difference between the expected and actual number of observations in an interval, divided by the estimated standard deviation, the latter being the square root of $N\ p_i\ (1-p_i) + (1/4)\ N\ (p_{i-1} + p_{i+1})\ (1 - p_{i-1} - p_{i+1})$, where N is the number of observations and p_i is the probability that an observation will fall into interval *i*.

from the projected regional average and from zero, with *SMALLER_LOSS_1* and *SMALLER_LOSS_3* corresponding to observations with *NIBDA*s being closest respectively to the projected regional average and to zero.

The *SMALLER_SURPLUS* group (*NIBDA* ≥ 0 and *NIBDA_DELTA* < 0) may also show conflicting incentives. However, H1b posits that a non-negative *NIBDA* may be perceived as satisfactory *per se* and that, therefore, organisations in the *SMALLER_SURPLUS* and *GREATER_SURPLUS* groups will not differ in their propensity to manage reported net income downwards.

The fifth group, labelled *BIGBATH*, is carved out of the *GREATER_LOSS* and *SMALLER_LOSS* groups to include observations with pre-managed net losses exceeding a given threshold. This is intended to account for possible incentives to pursue a "big-bath strategy" even in the absence of a national bailout. The threshold is set at a loss exceeding the national projected average by 15% of lagged total assets (e.g., 22% of lagged total assets if the national projected average loss for the year is 7%). The reference to 15% of lagged total assets is based on Stalebrink (2007). The addition of the national projected average loss is intended to account for variations in the perception of what a "big bath" would be, depending on the existing financial conditions of the SSN.

The distributions of *NIBDA_DELTA*, *NIADA_DELTA*, and *DA* are then compared across groups, using *t*-tests and pairwise comparisons to verify whether group mean *DA*s are significantly different from zero and from one another.

Finally, observations are also classified according to whether the availability of bailouts may have affected the preparation of financial reports. As mentioned in section 2, bailout measures differed as to whether their allocation criteria left room for negotiation and manoeuvre. Only when there was room for negotiation and manoeuvre can bailouts be expected to have produced incentives and opportunities for misreporting by healthcare organisations in the beneficiary regions. Looking at the specifics of each bailout measure (Table 1), this was the case for measures 3 (for 2004 and 2005 financial reports), 4 and 5 (for 2006 reports), and 7 (for 2013 reports). For the relevant observations, as listed in Appendix 3, the dichotomous variable *BAILOUT* is set equal to 1. H2 posits that these organisations are more likely to have managed their net incomes downwards. A *t*-test is consequently performed to verify whether mean *DA* is significantly negative.

4.4. Determinants of the size of misreporting

To test H1a, H1b, and H2, discretionary accruals are regressed against a set of independent variables intended to operationalise the research hypotheses and to control for possible confounders. The regression model is presented in Equation (3):

$$DA_{i,t} = \beta_0 + \beta_1\, FIVE\_WAY_{i,t} + \beta_2\, BAILOUT_{i,t} + \beta_3\, FIVE\_WAY_{i,t} * BAILOUT_{i,t} + \beta_4\, CONTROLS_{i,t} + \beta_5\, NIADA_{i,t-1} + \beta_6\, DA_{i,t-1} + \sum_{t=2004}^{2017} \beta_t\, YD_t + \epsilon_{i,t} \quad [3]$$

In Equation (3), *FIVE_WAY* is a categorical variable corresponding to the five-way partition of observations, with *GREATER_LOSS* as the baseline. A significantly negative coefficient for *SMALLER_LOSS* would support H1a by providing evidence that conformity with peers curtails the pursuit of financial breakeven. For further analysis, *SMALLER_LOSS* is replaced by its three subgroups (*SMALLER_LOSS_1*, *SMALLER_LOSS_2*, and *SMALLER_LOSS_3*). For *GREATER_SURPLUS* and *BIGBATH*, the considerations presented in the previous subsection also suggest the presence of negative coefficients. For *SMALLER_SURPLUS*, a statistically insignificant difference between its coefficient and the coefficient for *GREATER_SURPLUS* would support H1b by providing evidence that the propensity to reduce reported surplus is not affected by conformity with peers. However, the negligible number of organisations that fall into this group suggests extreme caution in the interpretation of results.

Equation (3) also includes the dichotomous variable *BAILOUT*. Its purpose is to test H2. Its expected sign is negative because, in the presence of bailouts, healthcare organisations are hypothesised to use income-decreasing accruals to worsen reported financial performance. *BAILOUT* is also interacted with *FIVE_WAY* because the two variables are not mutually exclusive and because an organisation's propensity to worsen its reported financial performance in the presence of a bailout may reasonably depend on its positioning vis-àvis the breakeven target and the expected performance of peers.

To control for confounders, Equation (3) includes a vector of three variables. *NEWCEO* is a dichotomous variable for whether the organisation's CEO had changed from the previous year (Brickley & Van Horn, 2002; Leone & Van Horn, 2005), as newly appointed CEOs may be prone to worsening reported financial performance at the beginning of their tenure (Francis, Hanna, & Vincent, 1996; Pourciau, 1993; Strong & Meyer, 1987). *LOGREVENUES* is the organisation's logged operating revenues as a proxy for size, which is often cited as exercising a pivotal influence on opportunistic behaviours (Dougherty, Klase, & Song, 1999; Liberty & Zimmerman, 1986; Zimmerman, 1983). *LEVERAGE* is the ratio of total liabilities to total assets, as the private sector literature has long debated the impact of indebtedness on earnings management (Press & Weintrop, 1990; Sweeney, 1994; DeFond & Jiambalvo, 1994; Jensen, 1986; Watts & Zimmerman, 1990; Mohrman, 1996; Becker et al., 1998).

The set of regressors also includes the previous year's net income, scaled by lagged total assets ($NIADA_{i,t-1}$) as well as the previous year's discretionary accruals ($DA_{i,t-1}$): the former because past performance has been shown to be positively related to current-period discretionary accruals (Kothari, Leone, & Wasley, 2005); the latter to control for likely autocorrelation in discretionary accruals (see, for instance, Leone & Van Horn, 2005; Pina et al., 2012). To improve the interpretation of the constant, all continuous variables (*LOGREVENUES*, *LEVERAGE*, $NIADA_{i,t-1}$, and $DA_{i,t-1}$) are centred at their means.

Finally, yearly dummies are included to control for national policy changes and other system-wide events that may have occurred during the long period (2002–2018) under investigation.

Appendix 3 lists the variables with their definitions, data sources, and expected signs.

The models are tested using panel-data specifications. Fixed effects by organisation are chosen over random effects on the basis of

Table 4
Overall summary statistics.

	N	Mean	Median	SD	Min	p25	p75	Max	Skewness	Kurtosis
DA	2462	0	0.007	0.061	−0.405	−0.019	0.03	0.271	−1.456	9.179
operating revenues (m€)	2462	465	337	393	34	208	586	2743	2.222	9.408
total assets (m€)	2462	361	258	398	41	160	404	3881	4.330	27.662
net income (m€)	2462	−12	−1	26	−266	−13	0	39	−3.773	22.795
NIADA	2462	−0.049	−0.003	0.088	−0.502	−0.069	0	0.159	−2.062	7.465
NIADA_DELTA	2462	0.010	0	0.093	−0.470	−0.015	0.032	0.507	0.24	6.259
REG_NET_INCOME	2462	−0.059	−0.008	0.090	−0.576	−0.100	0	0.047	−1.954	7.69
NIBDA	2462	−0.048	−0.032	0.062	−0.389	−0.084	−0.006	0.121	−1.142	4.722
NIBDA_DELTA	2462	0.010	−0.002	0.087	−0.293	−0.035	0.037	0.495	1.253	6.753
GREATER_LOSS	2462	0.504	1	0.500	0	0	1	1	−0.015	1.000
SMALLER_LOSS	2462	0.288	0	0.453	0	0	1	1	0.934	1.873
SMALLER_SURPLUS	2462	0.003	0	0.053	0	0	0	1	18.674	349.717
GREATER_SURPLUS	2462	0.192	0	0.394	0	0	0	1	1.563	3.443
BIGBATH	2462	0.013	0	0.113	0	0	0	1	8.599	74.951
BAILOUT	2462	0.069	0	0.253	0	0	0	1	3.412	12.642
NEWCEO	2462	0.262	0	0.440	0	0	1	1	1.085	2.177
LOGREVENUES	2462	12.772	12.728	0.740	10.434	12.247	13.282	14.824	0.108	2.907
LEVERAGE	2462	0.762	0.717	0.281	0.145	0.562	0.926	1.462	0.657	3.070

The Table reports the descriptive statistics for the final sample used in the analyses. Variable definitions are provided in Appendices 2 and 3.

the Hausman test (Wooldridge, 2009). The presence of autocorrelation is confirmed ($p < 0.01$) by the Wooldridge test for autocorrelation in panel data and controlled for using the previous year's discretionary accruals. The presence of heteroscedasticity is confirmed ($p < 0.01$) by a modified Wald statistic for groupwise heteroscedasticity in the residuals of a fixed effect regression model based on Greene (2000) and tackled using cluster-robust standard errors with individual organisations as clusters. For multicollinearity, both correlation coefficients (see Table 6) and Variance Inflation Factors (Mean VIF 1.76 with all VIF scores below 5, see Hair, Black, Babin, & Anderson, 2010) provide some reassurance regarding the absence of major issues. Similarly, for misspecification, some reassurance is provided by the statistical insignificance of Ramsey's Regression Equation Specification Error Test (RESET).

To verify the robustness of the results, the regressions are repeated using the IVREGHDFE procedure for Stata (Correia, 2017).[13] IVREGHDFE allows estimation of heteroscedasticity-and-autocorrelation consistent (HAC) standard errors. It also supports multiple levels of fixed effects, as is the case for public healthcare organisations within regions.

In addition, the projected regional mean net income is replaced by the previous year's actual regional mean net income, with the consequent recalculation of *NIADA_DELTA*, *NIBDA_DELTA*, and *FIVE_WAY*.

Finally, variations are introduced in the definitions of *BAILOUT*, *BIGBATH*, and *LEVERAGE*. *BAILOUT* is redefined by excluding the measures that granted loans as opposed to non-repayable transfers, as the incentives for misreporting are likely to have been weaker. More significantly, the beneficiaries of bailout measures were usually the regions subjected to specific "deficit reduction plans" under strict central-government oversight because of their critical financial conditions. The possibility thus exists that misreporting may not have been driven by specific bailout measures, but rather by the mere expectation of bailouts that came with these plans, or even from some common latent features of these regions. For this reason, *BAILOUT* is replaced by another dichotomous variable for whether the relevant region was subject to a deficit reduction plan in a given year. The model is also re-estimated solely for the subsample of public healthcare organisations in regions that were subjected to deficit reductions plans.

For *BIGBATH*, Stalebrink (2007: 450) acknowledges that "the 15 percent threshold [was] determined based upon experiments of 10 percent, 15 percent, 20 percent and 25 percent thresholds". The same thresholds are tested in the robustness analysis. Thresholds are also tested that do not incorporate the projected national mean net loss or that replace it with the projected mean net loss for the relevant region. Alternatively, *BIGBATH* is omitted and the five-way partition of observations is replaced by a four-way partition.

For *LEVERAGE*, total liabilities are alternatively replaced by financial liabilities only (although Italian public healthcare organisations rarely engage in borrowing) or supplemented by the capital funding reserve (which can be interpreted as a form of deferred revenues).

4.5. Data sources

The financial data are obtained from the National Ministry of Health. The information on bailouts is drawn from national legislation and other government documents (Table 1). The data on CEOs are provided by Cergas-Bocconi's Observatory on Healthcare Organisations and Policies in Italy (OASI).

[13] IVREGHDFE is a community contributed package available for download from the Boston College Statistical Software Components (SSC) archive.

Table 5
Summary statistics for Discretionary Accruals (*DA*) by year and by region.

Panel A: Discretionary Accruals (DA) by year				
year	N	Mean	Median	SD
2004	236	−0.001	0.017	0.090
2005	222	−0.001	0.025	0.104
2006	218	0.001	0.020	0.072
2007	195	0.000	0.005	0.055
2008	164	0.000	0.008	0.058
2009	158	0.001	0.007	0.054
2010	155	0.005	0.010	0.045
2011	177	−0.004	0.000	0.047
2012	205	−0.001	0.001	0.038
2013	198	0.001	0.000	0.038
2014	191	−0.001	0.006	0.042
2015	133	−0.001	0.007	0.049
2016	107	−0.002	0.008	0.041
2017	103	−0.002	0.004	0.037
Total	**2462**	**0.000**	**0.007**	**0.061**

Panel B: Discretionary Accruals (DA) by region				
Region	N	Mean	Median	SD
Piedmont	232	0.011	0.005	0.040
Lombardy	479	0.017	0.012	0.032
Veneto	259	−0.015	−0.009	0.065
Friuli-Venezia Giulia	85	0.035	0.023	0.048
Liguria	82	−0.008	−0.006	0.041
Emilia Romagna	202	0.016	0.017	0.028
Tuscany	180	0.014	0.011	0.034
Umbria	58	0.019	0.010	0.040
Marche	33	0.005	0.007	0.029
Lazio	117	−0.065	−0.034	0.113
Abruzzo	50	−0.030	−0.000	0.083
Campania	140	−0.010	0.013	0.108
Puglia	104	−0.000	0.005	0.061
Basilicata	38	0.003	0.003	0.049
Calabria	111	−0.019	−0.009	0.075
Sicily	189	−0.003	−0.009	0.050
Sardinia	103	−0.036	−0.031	0.057
Total	2462	0.000	0.007	0.061

The Table provides details about the dependent variable, that is, Discretionary Accruals (*DA*). Panel A provides a breakdown of its mean, median, and standard deviation by year. Panel B provides the same information by region.

Table 6
Pairwise correlation coefficients.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) DA	1.00								
(2) SMALLER_LOSS	−0.09*	1.00							
(3) SMALLER_SURPLUS	0.02	−0.03	1.00						
(4) GREATER_SURPLUS	−0.16*	−0.31*	−0.03	1.00					
(5) BIGBATH	−0.12*	−0.07*	−0.01	−0.06*	1.00				
(6) BAILOUT	−0.24*	0.13*	−0.01	−0.09*	−0.00	1.00			
(7) NEWCEO	−0.01	0.08*	−0.01	0.03	0.01	−0.00	1.00		
(8) LOGREVENUES	−0.01	−0.03	−0.00	0.11*	0.01	−0.15*	0.02	1.00	
(9) LEVERAGE	−0.34*	0.10*	−0.03	−0.09*	0.16*	0.07*	0.04	0.32*	1.00

*$p < 0.05$.
The Table reports the pairwise correlation coefficients among the variables included in the regressions (N = 2462). Variable definitions are provided in Appendices 2 and 3.

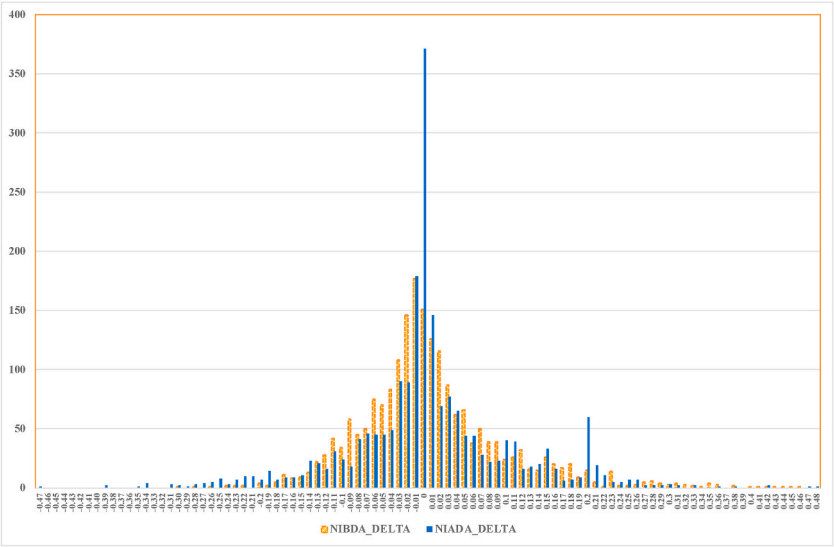


Fig. 2. Distributional analysis. Net income before and after discretionary accruals, in terms of distances from the projected regional mean (*NIBDA_DELTA* and *NIADA_DELTA*)
NIBDA_DELTA is the difference between the organisation's pre-managed net income and the projected regional mean net income: *NIBDA_DELTA= NIBDA – REG_NET_INCOME. NIADA_DELTA* is the difference between the organisation's reported net income and the projected regional mean net income: *NIADA_DELTA= NIADA – REG_NET_INCOME.* The Figure presents the distributions of *NIBDA_DELTA* (dotted pattern) and *NIADA_DELTA* (solid fill). The width of each bin is 0.01. Observations are removed whenever the difference between *NIADA* and *NIADA_DELTA* is smaller than the width of a bin. This is intended to exclude all organisation-years for which financial breakeven and alignment with the projected regional mean could be achieved simultaneously. These deletions reduce N to 2065. The numbers on the x-axis reflect the lower bound of each bin. The y-axis reports the number of observations in each bin. Compared to *NIBDA_DELTA*, *NIADA_DELTA* shows a greater concentration of observations in the close vicinity of zero. At the same time, it is characterised by a longer left tail and a greater variance. For both *NIBDA_DELTA* and *NIADA_DELTA*, the numbers of observations for the three bins below and the three bins above zero are also reported in Table 7, together with the relevant BD statistics.

5. Results

5.1. Descriptive statistics

Table 4 reports the descriptive statistics for the final sample to be used in the analyses.[14] In the five-way partition of observations, most organisation-years fall in the *GREATER_LOSS* (1240, 50%), *SMALLER_LOSS* (710, 29%), and *GREATER_SURPLUS* (473, 19%) groups; the *BIGBATH* group contains 32 observations (2%) and the *SMALLER_SURPLUS* group only 7. For 169 organisation-years (6.9%), the availability of bailouts may have affected the preparation of financial reports (*BAILOUT* = 1). Mean *DA* is zero by construction. Table 5 provides a breakdown of *DA*'s mean, median, and standard deviation by year and by region.

Pairwise correlation coefficients among the variables used in the regressions are presented in Table 6. All coefficients are <0.35. The 0.32 correlation between *LOGREVENUES* and *LEVERAGE* suggests a greater propensity for indebtedness among larger organisations. The absence of correlation between *BAILOUT* and *BIGBATH* is counterintuitive, but explainable. Bailout funding was handed out only in some years and based on average regional conditions. Evidently, the worst financial performances, producing potential *BIGBATH* incentives, generally emerged in regions that did not receive bailout funding or in years when no bailout funding was made available.

5.2. Distributional analysis

The distributional analysis focuses on conformity with peers and consequently compares the distributions of *NIBDA_DELTA* and *NIADA_DELTA*. In the summary statistics for the entire sample (Table 4), *NIBDA_DELTA* and *NIADA_DELTA* have identical means because average discretionary accruals are zero by construction. *NIADA_DELTA*, however, is characterised by a significantly ($p < 0.01$) larger standard deviation and by a wider range between the minimum and maximum values (0.977 v. 0.788), mostly due to a much

[14] The exclusion of the four regions that have only one healthcare organisation and the need to control for lagged discretionary accruals reduce the number of useable observations to 2462.

Table 7
Distributional analysis. *NIBDA_DELTA* and *NIADA_DELTA*. Numbers of observations and BD statistics for the three intervals below and above zero.

	NIBDA_DELTA		NIADA_DELTA		NIADA_DELTA if NIADA ≥0	
Interval	N	BD statistic	N	BD statistic	N	BD statistic
Bin(-3): [-0.03, -0.02)	108	−0.525	90	1.931	4	0.428
Bin(-2): [-0.02, -0.01)	146	0.249	89	−3.796***	5	−7.294***
Bin(-1): [-0.01, 0.00)	177	1.898	179	−3.207**	75	−6.139***
Bin(0): [0.00, +0.01)	151	−0.035	371	10.798***	272	14.585***
Bin(+1): [+0.01, +0.02)	126	−0.565	146	−4.964***	68	−8.157***
Bin(+2): [+0.02, +0.03)	116	0.758	69	−3.939**	29	−3.716***

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.
NIBDA_DELTA is the difference between the organisation's pre-managed net income and the projected regional mean net income: *NIBDA_DELTA* = *NIBDA* – *REG_NET_INCOME*. *NIADA_DELTA* is the difference between the organisation's reported net income and the projected regional mean net income: *NIADA_DELTA* = *NIADA* – *REG_NET_INCOME*. For both, the entire distribution is presented in Fig. 2. This Table focuses on the bins in the vicinity of zero. For such bins, the Table presents the numbers of observations and the BD statistics. The BD statistic was proposed by Burgstahler and Dichev (1997: 102–103) to measure the smoothness of the distribution of earnings levels. Smoothness is operationalised to imply that "the expected number of observations in any given interval of the distribution is the average of the number of observations in the two immediately adjacent intervals". The BD statistic is the difference between the expected and actual number of observations in an interval, divided by the estimated standard deviation. The estimated standard deviation is the square root of $N\,p_i\,(1-p_i) + (1/4)\,N\,(p_{i-1} + p_{i+1})\,(1 - p_{i-1} - p_{i+1})$, where N is the number of observations and p_i is the probability of an observation falling into interval *i*. Before discretionary accruals (*NIBDA_DELTA*), the numbers of observations for the three bins below and the three bins above zero are not significantly different from what would be expected from a smooth distribution. After discretionary accruals (*NIADA_DELTA*), the size of bin(0) more than doubles, from 151 to 371 observations (BD statistic = 10.798, $p < 0.001$). The sizes of bin(–1) and bin(1) also increase slightly. The further bins to the left and to the right, conversely, shrink significantly. In addition, the Table presents the numbers of observations and the BD statistics for *NIADA_DELTA* conditional on the breakeven objective being met (*NIADA* ≥ 0). Once again, *NIADA_DELTA* peaks at 0 (272 observations, BD = 14.585, $p < 0.001$).

lower minimum value (−0.470 v. −0.293). Its interquartile range, conversely, is narrower (0.047 v. 0.072). These statistics seemingly suggest that many organisations used discretionary accruals to draw closer to the projected regional average, while some moved further away towards the left tail of the distribution, possibly to take advantage of bailouts or in the pursuit of big-bath strategies.

Fig. 2 provides a visual representation of these dynamics by depicting the distributions of *NIBDA_DELTA* and *NIADA_DELTA*, organised into histograms for widths of 0.01.[15] Table 7 focuses on the vicinity of zero by presenting the numbers of observations and the BD statistics for the relevant bins. Before discretionary accruals (*NIBDA_DELTA*), the numbers of observations for the three bins below and the three bins above zero are not significantly different from what would be expected under a smooth distribution. After discretionary accruals (*NIADA_DELTA*), the size of bin (0) more than doubles, from 151 to 371 observations (BD statistic = 10.798, $p < 0.001$). The sizes of bin (–1) and bin (1) also increase slightly, the former from 177 to 179 observations, the latter from 126 to 146. The further bins to the left and to the right, conversely, shrink significantly. Furthermore, Table 7 also presents the numbers of observations and the BD statistics for *NIADA_DELTA* conditional on the breakeven objective being met (*NIADA* ≥ 0). Once again, *NIADA_DELTA* peaks at 0 (272 observations, BD = 14.585, $p < 0.001$). Overall, the distributions are thus seemingly consistent with the hypothesis that public healthcare organisations may be using discretionary accruals to pursue conformity with peers.

By construction, the shift from *NIBDA_DELTA* to *NIADA_DELTA* is due to *DA*. Descriptive statistics for the five groups that originate from the five-way partition of observations (Table 8, Panels A to E) show that mean *DAs* for the five groups differ from zero and from one another. Leaving aside the *SMALLER_SURPLUS* group because of its negligeable size, *t*-tests and pairwise comparisons of means (Table 9) confirm that these differences are statistically significant.

For the *GREATER_LOSS* group, in particular, mean *DA* is significantly positive (+0.014). This is consistent with *NIBDA* and *NIBDA_DELTA* both being negative and thus with the incentive to manage reported financial performance upwards toward both the regional mean and the breakeven benchmark. For the *BIGBATH* group, *NIBDA* and *NIBDA_DELTA* are also both negative, but mean *DA* is significantly negative as well (−0.063), which *prima facie* would suggest the pursuit of big-bath strategies. At the other end of the spectrum, mean *DA* for the *GREATER_SURPLUS* group is also significantly negative (−0.021), which is consistent with *NIBDA* and *NIBDA_DELTA* both being positive and thus with the incentive to manage reported financial performance downwards toward both the regional mean and the breakeven benchmark. In the *SMALLER_LOSS* group, organisations need to decide whether to manage reported financial performance upwards or downwards in order to align it respectively with the breakeven benchmark or with the expected performance of peers. Because this group's mean *DA* is significantly lower compared to the *GREATER_LOSS* group, incentives for conformity seemingly have an impact, as posited by H1a. In fact, because this group's mean *DA* is significantly negative (−0.009), such incentives seem to prevail. When the *SMALLER_LOSS* group is split into its three subgroups, the use of income-decreasing accruals is particularly evident for *SMALLER_LOSS_3* (mean *DA* = −0.022), that is, the subgroup of organisations for which *NIBDA* is closest to zero and farthest from the projected regional average. For the other two subgroups, mean *DA* is not significantly different from zero, but it remains significantly lower if compared to the *GREATER_LOSS* group. Contrary to the expectations expressed in H1b, finally,

[15] To this end, observations are removed whenever the difference between *NIADA* and *NIADA_DELTA* is smaller than the width of a bin. This is intended to exclude all organisation-years for which financial breakeven and alignment with the projected regional mean could be achieved simultaneously. These deletions reduce N to 2065. Without these deletions, the effects depicted in Fig. 2 and described in the text are even stronger.

Table 8
Summary statistics for the five-way partition of observations and for the *BAILOUT* group.

Panel A – Observations for which GREATER_LOSS = 1

Variables	N	Mean	Median	SD	Min	p25	p75	Max	Skewness	Kurtosis
DA	1240	0.014	0.017	0.054	−0.276	0	0.04	0.271	−1.013	7.405
operating revenues (m€)	1240	446.072	316.479	383.376	34.006	200.329	550.83	2686.696	2.254	9.173
total assets (m€)	1240	338.025	257.568	331.699	40.939	163.812	390.01	3525.972	4.423	31.171
net income (m€)	1240	−12.049	−0.574	24.809	−265.562	−14.47	0	33.284	−3.941	25.801
NIADA	1240	−0.047	−0.003	0.08	−0.487	−0.07	0	0.125	−1.925	6.625
NIADA_DELTA	1240	−0.031	0	0.064	−0.341	−0.047	0	0.207	−1.738	6.874
REG_NET_INCOME	1240	−0.016	0	0.035	−0.22	−0.013	0	0.047	−2.447	8.835
NIBDA	1240	−0.061	−0.042	0.054	−0.25	−0.092	−0.019	0	−1.062	3.348
NIBDA_DELTA	1240	−0.045	−0.031	0.041	−0.25	−0.067	−0.013	0	−1.329	4.781
BAILOUT	1240	0.057	0	0.232	0	0	0	1	3.811	15.526
NEWCEO	1240	0.221	0	0.415	0	0	0	1	1.345	2.809
LOGREVENUES	1240	12.729	12.665	0.735	10.434	12.208	13.219	14.804	0.17	3.024
LEVERAGE	1240	0.745	0.709	0.271	0.145	0.554	0.898	1.462	0.688	3.266

Panel B – Observations for which SMALLER_LOSS = 1

Variables	N	Mean	Median	SD	Min	p25	p75	Max	Skewness	Kurtosis
DA	710	−0.009	0.008	0.079	−0.405	−0.036	0.032	0.163	−1.605	7.642
operating revenues (m€)	710	438.587	326.502	333.991	38.713	203.478	564.495	2085.829	1.756	6.729
total assets (m€)	710	297.176	229.337	245.011	41.835	140.878	375.825	2533.921	2.823	16.948
net income (m€)	710	−16.631	−6.68	30.107	−246.147	−19.184	0	27.095	−3.415	18.518
NIADA	710	−0.07	−0.029	0.096	−0.502	−0.119	0	0.159	−1.548	5.462
NIADA_DELTA	710	0.081	0.064	0.1	−0.381	0.02	0.15	0.507	0.012	4.918
REG_NET_INCOME	710	−0.151	−0.134	0.1	−0.576	−0.207	−0.069	−0.002	−1.166	5.677
NIBDA	710	−0.062	−0.051	0.049	−0.215	−0.093	−0.02	0	−0.856	3.132
NIBDA_DELTA	710	0.089	0.065	0.083	0	0.027	0.129	0.495	1.633	6.35
BAILOUT	710	0.12	0	0.325	0	0	0	1	2.343	6.489
NEWCEO	710	0.314	0	0.464	0	0	1	1	0.801	1.642
LOGREVENUES	710	12.737	12.696	0.723	10.564	12.223	13.244	14.551	−0.065	2.82
LEVERAGE	710	0.807	0.737	0.301	0.169	0.593	0.996	1.462	0.656	2.713

Panel C – Observations for which SMALLER_SURPLUS = 1

Variables	N	Mean	Median	SD	Min	p25	p75	Max	Skewness	Kurtosis
DA	7	0.023	0.012	0.033	0	0.003	0.026	0.095	1.66	4.314
operating revenues (m€)	7	391.242	267.804	216.99	158.575	217.211	611.963	669.048	0.267	1.236
total assets (m€)	7	244.757	209.698	105.903	138.608	141.632	366.135	386.053	0.306	1.399
net income (m€)	7	7.672	3.105	12.103	0.341	0.866	8.741	34.371	1.828	4.665
NIADA	7	0.03	0.014	0.045	0.002	0.004	0.029	0.129	1.812	4.658
NIADA_DELTA	7	0.014	0.001	0.033	−0.018	−0.002	0.024	0.082	1.456	3.953
REG_NET_INCOME	7	0.017	0.005	0.021	0.003	0.004	0.047	0.047	0.934	1.892
NIBDA	7	0.007	0.003	0.012	0	0.002	0.005	0.035	1.978	5.028
NIBDA_DELTA	7	−0.009	−0.002	0.016	−0.044	−0.012	−0.002	0	−1.792	4.537
BAILOUT	7	0	0	0	0	0	0	0		
NEWCEO	7	0.143	0	0.378	0	0	0	1	2.041	5.167
LOGREVENUES	7	12.735	12.498	0.584	11.974	12.289	13.324	13.414	0.07	1.347
LEVERAGE	7	0.592	0.561	0.305	0.273	0.314	0.893	1.043	0.321	1.59

Panel D – Observations for which GREATER_SURPLUS = 1

Variables	N	Mean	Median	SD	Min	p25	p75	Max	Skewness	Kurtosis
DA	473	−0.021	−0.013	0.032	−0.274	−0.027	−0.004	0.065	−3.097	18.195
operating revenues (m€)	473	557.595	389.224	482.474	50.734	230.46	692.621	2742.761	2.127	8.372
total assets (m€)	473	526.955	308.852	639.572	58.472	191.279	527.75	3881.367	2.927	12.009
net income (m€)	473	−1.096	0	10.401	−144.151	0	0.348	39.195	−7.84	94.975
NIADA	473	−0.003	0	0.028	−0.273	0	0.001	0.083	−4.15	31.604
NIADA_DELTA	473	0.022	0	0.062	−0.106	0	0.017	0.428	3.109	14.757
REG_NET_INCOME	473	−0.025	0	0.063	−0.434	−0.018	0	0.014	−3.289	14.629
NIBDA	473	0.018	0.012	0.018	0	0.005	0.025	0.121	1.983	8.838
NIBDA_DELTA	473	0.043	0.02	0.067	0	0.008	0.041	0.439	2.96	12.422
BAILOUT	473	0.023	0	0.151	0	0	0	1	6.326	41.024
NEWCEO	473	0.29	0	0.454	0	0	1	1	0.928	1.86
LOGREVENUES	473	12.934	12.872	0.767	10.834	12.348	13.448	14.824	0.124	2.703
LEVERAGE	473	0.712	0.692	0.244	0.184	0.529	0.906	1.462	0.341	2.77

Panel E – Observations for which BIGBATH = 1

Variables	N	Mean	Median	SD	Min	p25	p75	Max	Skewness	Kurtosis

(*continued on next page*)

Table 8 (*continued*)

Panel E – Observations for which BIGBATH = 1

Variables	N	Mean	Median	SD	Min	p25	p75	Max	Skewness	Kurtosis
DA	32	−0.063	−0.069	0.074	−0.236	−0.109	−0.007	0.094	−0.074	2.723
operating revenues (m€)	32	459.801	333.789	308.059	136.666	189.319	734.43	1203.222	0.847	2.565
total assets (m€)	32	241.783	225.434	104.344	65.42	175.455	304.63	506.452	0.353	2.883
net income (m€)	32	−71.748	−67.021	34.939	−182.943	−98.028	−48.509	−18.885	−0.752	4.331
NIADA	32	−0.323	−0.315	0.094	−0.496	−0.395	−0.248	−0.164	−0.279	1.971
NIADA_DELTA	32	−0.166	−0.186	0.131	−0.47	−0.251	−0.064	0.098	0.056	2.788
REG_NET_INCOME	32	−0.157	−0.126	0.098	−0.445	−0.213	−0.105	0	−0.972	3.892
NIBDA	32	−0.26	−0.257	0.048	−0.389	−0.283	−0.227	−0.181	−0.739	3.486
NIBDA_DELTA	32	−0.103	−0.112	0.107	−0.293	−0.166	−0.064	0.181	0.668	3.478
BAILOUT	32	0.062	0	0.246	0	0	0	1	3.615	14.067
NEWCEO	32	0.281	0	0.457	0	0	1	1	0.973	1.947
LOGREVENUES	32	12.82	12.718	0.677	11.825	12.151	13.507	14.001	0.135	1.728
LEVERAGE	32	1.155	1.189	0.245	0.547	0.976	1.366	1.462	−0.482	2.497

Panel F – *Observations for which BAILOUT = 1*

Variables	N	Mean	Median	SD	Min	p25	p75	Max	Skewness	Kurtosis
DA	169	−0.055	−0.027	0.12	−0.405	−0.126	0.031	0.16	−0.847	3.298
operating revenues (m€)	169	337.071	255.366	289.174	34.006	120.779	447.391	1276.416	1.321	4.127
total assets (m€)	169	272.679	208.764	234.136	40.939	102.268	355.781	1480.18	2.12	8.965
net income (m€)	169	−44.161	−22.806	53.885	−246.147	−68.181	−3.904	3.844	−1.567	5.156
NIADA	169	−0.152	−0.145	0.132	−0.502	−0.251	−0.02	0.052	−0.505	2.413
NIADA_DELTA	169	0.008	−0.002	0.171	−0.381	−0.123	0.124	0.507	0.228	2.551
REG_NET_INCOME	169	−0.159	−0.132	0.149	−0.576	−0.214	−0.048	0.005	−1.169	3.925
NIBDA	169	−0.096	−0.1	0.062	−0.264	−0.142	−0.054	0.068	0.111	2.722
NIBDA_DELTA	169	0.063	0.035	0.166	−0.226	−0.065	0.161	0.495	0.61	2.609
GREATER_LOSS	169	0.42	0	0.495	0	0	1	1	0.324	1.105
SMALLER_LOSS	169	0.503	1	0.501	0	0	1	1	−0.012	1
SMALLER_SURPLUS	169	0	0	0	0	0	0	0		
GREATER_SURPLUS	169	0.065	0	0.247	0	0	0	1	3.526	13.433
BIGBATH	169	0.012	0	0.108	0	0	0	1	9.028	82.512
NEWCEO	169	0.254	0	0.437	0	0	1	1	1.128	2.272
LOGREVENUES	169	12.359	12.45	0.894	10.434	11.702	13.011	14.06	−0.071	2.075
LEVERAGE	169	0.833	0.769	0.401	0.145	0.484	1.148	1.462	0.293	1.832

Table 4 presented summary statistics for the whole sample.
In this Table (Panels A to E), the sample is broken down according to the five-way partition of observations (*GREATER_LOSS, SMALLER_LOSS, SMALLER_SURPLUS, GREATER_SURPLUS,* and *BIGBATH*) and summary statistics are presented for each of the five groups.
The five-way partition of observations and the dichotomous variable for whether the availability of bailouts may have affected the preparation of financial reports (*BAILOUT*) are not mutually exclusive. Therefore, this Table (Panel F) also presents summary statistics for the subsample for which *BAILOUT* = 1. In Panel F, the means for *GREATER_LOSS, SMALLER_LOSS, SMALLER_SURPLUS, GREATER_SURPLUS,* and *BIGBATH* provide a cross tabulation of *BAILOUT* against the five-way partition of observations.
Variable definitions are provided in Appendices 2 and 3.

mean *DA* for *SMALLER_SURPLUS* is positive (0.24) and much higher than for *GREATER_SURPLUS*. As mentioned, however, none of the results for *SMALLER_SURPLUS* is statistically significant due to the group's extremely small size.

Table 8 (Panel F) also provides summary statistics for the 169 organisations for which the availability of bailouts may have affected the preparation of financial reports (*BAILOUT* = 1). In the five-way partition of observations for this subsample, most organisation-years fall into the *SMALLER_LOSS* (85, 50%) and the *GREATER_LOSS* (71, 42%) groups, while 11 (7%) are classified as *GREATER_SURPLUS*. The remaining two (1%) belong to the *BIGBATH* group, which confirms the lack of correlation between *BAILOUT* and *BIGBATH*. Consistent with H2, mean *DA* for this subsample is significantly negative ($p < 0.001$) and comparatively large (−0.05).

5.3. Determinants of the size of misreporting

Table 10 shows panel data results for both the baseline model (presented in Equation (3)) and an alternative model where *SMALLER_LOSS* is broken down into its three subgroups. For both models, estimates are presented that are based both on fixed effects with robust standard errors and on nested fixed effects with heteroskedasticity-and-autocorrelation consistent standard errors.

H1a (concerning the use of misreporting to increase conformity with peers by organisations where pre-managed losses are smaller than their peer group's average expected loss) is supported by the negative and significant coefficients for *SMALLER_LOSS* ($p < 0.05$) and especially for *SMALLER_LOSS_3* ($p < 0.001$). Given the use of *GREATER_LOSS* as the baseline and the median asset base of €258 million, the size of the *SMALLER_LOSS* coefficient indicates that, compared with organisation-years for which *NIBDA* is negative and worse than the projected regional mean, organisation-years for which *NIBDA* is negative but at least as good as the projected regional mean will use discretionary accruals to worsen reported financial performance by approximately €1.7 million. For the subset of *SMALLER_LOSS* organisations for which *NIBDA* is farthest from the projected regional mean and closest to zero, the magnitude of the

Table 9
Distributional analysis by groups and subgroups of observations.

				t-tests for mean *DA*=0		p-values for pairwise comparisons of mean *DA*						
	N	Mean	Std Err	t	p value	GREATER_ LOSS	SMALLER_ LOSS	*SMALLER_ LOSS_1*	*SMALLER_ LOSS_2*	*SMALLER_ LOSS_3*	SMALLER_ SURPLUS	GREATER_ SURPLUS
GREATER_LOSS	1240	.014	0.002	9.122	.000							
SMALLER_LOSS	710	-.009	0.003	-2.888	.004	.000						
SMALLER_LOSS_1	235	-.008	0.005	-1.423	.156	.000						
SMALLER_LOSS_2	240	.004	0.005	.798	.425	.012		.036				
SMALLER_LOSS_3	235	-.022	0.005	-4.009	.000	.000		.014	.000			
SMALLER_SURPLUS	7	.024	0.013	1.865	.112	.676	.158	.168	.380	.049		
GREATER_SURPLUS	473	-.021	0.002	-14.215	.000	.000	.000	.006	.000	.936	.050	
BIGBATH	32	-.063	0.013	-4.827	.000	.000	.000	.000	.000	.000	.000	.000

DA is discretionary accruals.
For each of the groups (*GREATER_LOSS*, *SMALLER_LOSS*, *GREATER_SURPLUS*, *SMALLER_SURPLUS*, and *BIGBATH*) and subgroups (*SMALLER_LOSS_1*, *SMALLER_LOSS_2*, and *SMALLER_LOSS_3*) stemming from the five-way partition of observations, the Table presents:
- a *t*-test for mean *DA* being statistically different from zero;
- a set of pairwise comparisons of mean *DA* across groups and subgroups, using Bonferroni's method to account for multiple comparisons.

coefficient is about three times as much.

Regarding H1b (which posits that the propensity to manage reported financial performance downward is not affected by whether pre-managed surplus is smaller than the peer group's average expected surplus), the difference between the coefficients for *SMALLER_SURPLUS* and *GREATER_SURPLUS* is positive, but statistically insignificant. In any case, the interpretation of this finding must consider that the *SMALLER_SURPLUS* group is particularly small.

Finally, H2 (concerning the use of misreporting to worsen reported financial performance in order to reap the benefits of bailouts) is supported by the negative and significant coefficient for *BAILOUT* ($p < 0.001$). Given the median asset base of €258 million, the size of the coefficient indicates that the expectation of a bailout triggered the use of discretionary accruals to worsen reported financial performance by approximately €17 million.

In the five-way partition of observations, *GREATER_SURPLUS* is significantly negative ($p < 0.001$), which is also consistent with expectations. *BIGBATH*, conversely, is insignificantly positive, which contradicts not only expectations, but also mean *DA* for *BIGBATH* being significantly negative and comparatively large (−0.063). However, it is not unusual for panel data analyses to contradict descriptive statistics and even OLS results. This is because fixed-effects regression is a purely within-panel estimation, which looks only at how changes in a variable within an organisation are associated with changes in another variable in that same organisation over time. In an ad-hoc, untabulated analysis of the organisations for which *BIGBATH* = 1 for at least one year, these organisations had similarly large and negative *DA*s ($p = 0.87$) regardless of whether their pre-managed loss for the year exceeded the big-bath threshold. Overall, we thus find no evidence of big-bath strategies.

As for the interactions between *BAILOUT* and the five-way partition of observations, the relevant coefficients are generally insignificant, the main exception being *SMALLER_LOSS_2*.[16] The combined coefficients for *BAILOUT* and its interaction with *SMALLER_LOSS_2*, having similar magnitudes but opposite signs, indicate that, for organisations in this subgroup, bailout opportunities in the relevant region did not induce a worsening of reported financial performance.[17]

Among the control variables, *LEVERAGE* is negative and statistically significant ($p < 0.001$) while *LOGREVENUES* is significantly positive ($p < 0.001$). Unexpectedly, so is *NEWCEO* ($p < 0.05$ in Model 2), possibly because new CEOs are often appointed halfway through the financial year and may feel expected to immediately deliver improvements in financial performance.

These results are generally robust to variations in the operationalisation of *REG_NET_INCOME*, *BAILOUT*, *BIGBATH*, and *LEVERAGE*. When the projected regional mean net income is replaced by the lagged regional mean net income as a proxy for peers' expected performance, the results remain virtually unchanged, which is consistent with the strong correlation between the two proxies.

When *BAILOUT* is redefined to exclude the measures providing loans as opposed to non-repayable transfers, the results also remain virtually unchanged, which is consistent with the limited number of observation-years receiving such loans. If *BAILOUT* is omitted, *SMALLER_LOSS* becomes marginally insignificant ($p < 0.10$), while *SMALLER_LOSS_3* remains significantly negative. Correspondingly, if the dichotomous variables reflecting the five-way partition of observations are omitted, *BAILOUT* remains significantly negative.

More interestingly, when *BAILOUT* is replaced by another dichotomous variable for whether the relevant region was subject to a deficit reduction plan, the variable emerges as significantly positive ($p < 0.001$), possibly reflecting an attempt by public healthcare

[16] The interactions of *BAILOUT* with *BIGBATH* and *GREATER_SURPLUS* are also statistically significant, although only in one of the two econometric specifications. However, the relevant numbers of observations (respectively 2 and 11, see Table 8) are very small.
[17] As also confirmed by untabulated marginal analysis.

Table 10
Regression results.

	Fixed effects with robust standard errors		Nested fixed effects with heteroscedasticity-and-autocorrelation consistent standard errors (IVREGHDFE)	
	Model 1: BASELINE	Model 2: Splitting SMALLER_LOSS into three subgroups	Model 1: BASELINE	Model 2: Splitting SMALLER_LOSS into three subgroups
smaller_loss	-0.006*		-0.007*	
	(0.026)		(0.017)	
smaller_loss_1		0.002		0.001
		(0.676)		(0.753)
smaller_loss_2		-0.003		-0.003
		(0.532)		(0.436)
smaller_loss_3		-0.021***		-0.022***
		(0.000)		(0.000)
bailout	-0.065***	-0.067***	-0.066***	-0.068***
	(0.000)	(0.000)	(0.000)	(0.000)
smaller_surplus	-0.016	-0.016	-0.026*	-0.025
	(0.214)	(0.238)	(0.045)	(0.054)
greater_surplus	-0.038***	-0.039***	-0.044***	-0.045***
	(0.000)	(0.000)	(0.000)	(0.000)
bigbath	0.023	0.024	0.028	0.029
	(0.095)	(0.077)	(0.060)	(0.052)
smaller_loss * bailout	0.014		0.007	
	(0.346)		(0.635)	
smaller_loss_1 * bailout		-0.001		-0.002
		(0.975)		(0.949)
smaller_loss_2 * bailout		0.067***		0.062***
		(0.000)		(0.001)
smaller_loss_3 * bailout		-0.015		-0.026
		(0.354)		(0.152)
greater_surplus * bailout	0.031*	0.027*	0.022	0.018
	(0.032)	(0.049)	(0.171)	(0.222)
bigbath * bailout	-0.044	-0.046	-0.056*	-0.058*
	(0.138)	(0.107)	(0.037)	(0.032)
newceo	0.004	0.005*	0.004	0.005*
	(0.073)	(0.033)	(0.109)	(0.045)
logrevenues	0.122***	0.119***	0.114***	0.112***
	(0.000)	(0.000)	(0.000)	(0.000)
leverage	-0.079***	-0.080***	-0.094***	-0.095***
	(0.000)	(0.000)	(0.000)	(0.000)
niada_lag	0.004	0.003	0.185***	0.177***
	(0.895)	(0.929)	(0.000)	(0.000)
da_lag	0.274***	0.264***		

	(0.000)	(0.000)		
Yearly dummies	Not tabulated	Not tabulated		
Constant	0.006 (0.075)	0.007 (0.053)		
N	2462	2462	2452	2452
R-sq	0.310	0.340	0.272	0.304

p-values in parentheses; * $p<0.05$, ** $p<0.01$, *** $p<0.001$.

The baseline model is defined as:

$$DA_{i,t} = \beta_0 + \beta_1\, FIVE\_WAY_{i,t} + \beta_2\, BAILOUT_{i,t} + \beta_3\, FIVE\_WAY_{i,t} * BAILOUT_{i,t} + \beta_4\, CONTROLS_{i,t} + \beta_5\, NIADA_{i,t-1} + \beta_6\, DA_{i,t-1} + \sum_{t=2004}^{2017} \beta_t\, YD_t + \epsilon_{i,t}$$

where $DA_{i,t}$ is discretionary accruals; $FIVE\_WAY_{i,t}$ is a categorical variable corresponding to the five-way partition of observations, with $SMALLER\_LOSS_{i,t}$, $SMALLER\_SURPLUS_{i,t}$, $GREATER\_SURPLUS_{i,t}$, and $BIGBATH_{i,t}$ as the categories used in the regressions and $GREATER\_LOSS_{i,t}$ serving as the baseline; $BAILOUT_{i,t}$ is a dummy for regions and years where the availability of bailouts may have affected the preparation of financial reports; $NEWCEO_{i,t}$ is a dummy for whether the organisation's CEO had changed from the previous year; $LOGREVENUES_{i,t}$ is logged operating revenues; $LEVERAGE_{i,t}$ is the ratio of total liabilities to total assets; $NIADA_{i,t-1}$ is the organisation's previous-year net income; $DA_{i,t-1}$ is the organisation's previous-year discretionary accruals; and YD_t are yearly dummies with 2010 as the reference year. In Model 2, $SMALLER\_LOSS_{i,t}$ is replaced by dummies for its three subgroups (*SMALLER_LOSS_1*, *SMALLER_LOSS_2*, and *SMALLER_LOSS_3*). The models are tested using two fixed-effects panel data specifications: (i) a specification with cluster-robust standard errors using individual organisations as clusters; and (ii) a nested specification with heteroscedasticity-and-autocorrelation consistent standard errors, allowing for multiple levels of fixed effects (organisations within regions). The difference between the coefficients for *SMALLER_SURPLUS* and *GREATER_SURPLUS* is always positive, but statistically insignificant. The relevant *p*-values in the four models are respectively .089, .152, .071, and .113.

organisations in these regions to demonstrate compliance with the plans' requirements. This finding contradicts the conjecture whereby the mere expectation of bailouts that comes with deficit reduction plans may encourage the use of income-decreasing accruals.

When the model is re-estimated solely for the subsample of public healthcare organisations in the regions that were subjected to deficit reductions plans, the signs and *p*-values of all the variables reflecting the five-way partition of observations are confirmed, with *BIGBATH* becoming significantly positive.

For *BIGBATH*, the coefficient becomes significantly positive also when the threshold is set closer to zero to include a greater number of observations, which is consistent with the general tendency of poorly performing organisations to use income-increasing accruals to converge towards both breakeven and average peer performance. If *BIGBATH* is omitted and the five-way partition of observations is replaced by a four-way partition, the results are virtually unaffected.

Finally, *LEVERAGE* remains significantly negative both when total liabilities are replaced solely by financial liabilities and when they are supplemented by the capital funding reserve. If *LEVERAGE* is omitted, *LOGREVENUES* remains significantly positive despite the correlation between the two variables.

6. Discussion and conclusions

6.1. Summary of findings and contribution

Given the economic and social relevance of the healthcare sector, calls have been raised over the years to accumulate more

knowledge on its reporting practices (Cardinaels & Soderstrom, 2013; Ibrahim, Begkos, Arnaboldi, & Graham, 2022), and particularly to go beyond breakeven, income-smoothing explanations for misreporting (Ibrahim et al., 2022). Drawing on institutional approaches, this study on Italian public healthcare addresses these calls and provides evidence of alternative misreporting behaviours that stem from mimetic and regulatory forces.

With reference to mimetic forces (H1), the results show that, even in the presence of breakeven targets, public healthcare organisations may manage accounting data to also conform with peers' financial performance. This finding seemingly confirms that the pressures for conformity that characterise public healthcare may produce incentives for misreporting that are alternative to breakeven. This is particularly the case when financial performance before discretionary accruals is better than the expected average performance of peers, but lower than zero. Under these circumstances, the opposite incentives to achieve breakeven and to avoid exceeding peer performance appear to partially offset each other, with some evidence pointing to the latter prevailing over the former. In this respect, misreporting can be viewed as yet another manifestation of decoupling as it ensures symbolic conformity to the field's expectations.

As for regulatory forces (H2), public healthcare organisations are found to worsen their reported financial performance when expecting a bailout. Greenwood et al. (2017) highlighted incentives to improve performance to align it with regulatory targets. This study complements theirs by providing evidence that Italian healthcare organisations responded to incentives to worsen their reported financial performance to take advantage of bailout regulatory opportunities. This finding also adds to the "soft budget constraint" literature by highlighting that the consequences of soft budget constraints are not confined to actual deficits and debts, but extend to misreporting.

6.2. Limitations, contextualisation, and implications for research

The Italian empirical setting used for this study is characterised by some specific features. These include: systematic pressures to reduce costs and improve financial performance despite stable or even reduced funding; the widespread presence of deficits; the intense commitment by the central government to ensure healthcare regardless of financial considerations; and the extent of decentralisation, coupled with the presence of significant interdependencies among healthcare organisations in the same region. These features make the Italian context ideal to explore the existence of multiple financial and institutional incentives for misreporting, and particularly to investigate the role of bailouts and conformity with peers.

As non-breakeven incentives to misreport emerge as worthy of further consideration, it would be interesting to explore if similar incentives – or other mimetic, coercive, and normative incentives – can be found elsewhere, under which conditions, and with what effects on misreporting. Specifically, conformity with peers, although possibly more likely to emerge in a decentralised setting, is a general behaviour that has been observed in other fields, both at the psychological (Cialdini & Trost, 1998) and sociological levels (DiMaggio & Powell, 1983; Meyer & Rowan, 1977), suggesting the importance of a strengthened understanding of how it may affect misreporting practices. This could be achieved by looking at other healthcare systems as well as other public sector contexts, such as local governments within regions or subnational governments in a federal system. Similarly, bailouts have become increasingly common worldwide. Exploring the consequent reporting responses may be a fruitful research avenue.

To pursue these further investigations, quantitative analyses could be carried out not only on aggregate accruals, but also on specific ones (McNichols, 2000), to better understand which accruals are used under what circumstances. Qualitative studies based on interviews with CEOs, CFOs, and policymakers could provide a deeper understanding of the motivations and decisions concerning misreporting, including the different reactions that bailout measures may produce depending on their size, design, communication, and implementation. Further insights could also be gained using experiments.

As for the specifics of Italian healthcare, an issue worthy of further analysis is whether and how regional governments can and do play a significant role in orchestrating their public healthcare organisations' misreporting practices and their convergence towards the regional average.

In terms of methodological limitations, the literature has highlighted the flaws of both the distributional approach (see, for example, Durtschi & Easton, 2005, 2009) and of discretionary accrual estimations (see, for example, Elgers, Pfeiffer, & Porter, 2003), although some comfort can be drawn from the consistency of the findings across the methods employed. Concerning data availability, the effects of bailouts could have been estimated with better confidence and refinement if the amounts assigned to each public healthcare organisation had been known. More critically, future research should test whether the conformity hypothesis holds also in the presence of positive net incomes.

6.3. Implications for practice and policy

The findings of this study have important implications for managers and policymakers as they point to the multiplicity of concurrent targets that the institutional context assigns to public healthcare organisations. Similar implications may also apply to other fields where multiple institutional forces are at play, comparisons with peer organisations are common, and budget constraints may not be particularly credible in the presence of bailout opportunities.

In particular, the results highlight that, in a decentralised system, where organisations operate within central regulations, but also regional policies and funding, and CEOs face a plurality of financial and non-financial expectations, each organisation may have incentives to measure itself against its regional peers and use misreporting to align its financial performance with theirs. Managers will consequently need to be aware not only of explicit targets, but also of the more implicit social norms for conformity that are commonly accepted in the field. Policymakers will similarly need to be aware of these implicit norms and to carefully assess the legitimacy and credibility of the targets that they ask these organisations to pursue. For policymakers wishing to understand the financial position and

performance of individual organisations, for example as a basis on which to make decisions about resource allocations, expansion or rationalisation efforts, or top management appointments and compensation, these results also suggest that financial reports may convey a misleading sense of homogeneity.

The results of this study also show that bailouts may encourage misreporting as a way of securing additional funding. Policymakers and managers who decide, design, and implement bailout initiatives must anticipate and contain such opportunistic behaviours, for example by linking bailout amounts to sufficiently objective parameters or by requiring specific controls and audits of financial reports.

For standard setters, these results highlight the need to improve accounting standards in terms of recognition, measurement, or at least disclosure, especially for the types of accruals that allow for greater manipulation. These accruals will also require specific attention from auditors, who may gain important insights from this study as to whether audited organisations operate under conditions that make misreporting more likely.

Data availability

Data will be made available on request.

Appendix 1. Average size of individual accruals, as scaled by lagged total assets (2002–18)

	Mean
Depreciation expenses	0.033
Transfers from capital funding reserve (*)	0.018
Increase in provisions for liabilities of uncertain timing or amount, from previous year	0.007
Increase in supplies and inventory, from previous year	0.001
Impairment of accounts receivable	0.001
Difference between extraordinary revenues and expenses (**)	−0.001
Increase in accounts receivable, from previous year	0.009
Increase in accounts payable, from previous year	0.015

(*) Italian public healthcare organisations fund a large share of their investments through capital transfers from other governmental or private entities. These transfers are initially credited to a capital funding reserve within equity. Subsequently, they are gradually released from equity to income to offset depreciation expenses.
(**) Largely consisting of corrections of previous errors (see for example Ragioneria Generale dello Stato, 2018, p. 161).

Appendix 2. Variables and data sources for distributional analysis

Variable	Definition	Data source
$NIADA_{i,t}$	"Net income after discretionary accruals", i.e., reported net income, as scaled by lagged total assets	Public healthcare organisations' financial reports, as collected by Ministry of Health
$DA_{i,t}$	Estimated discretionary component of total accruals	Residuals from regression of total accruals against a set of hypothesised explanatory factors
$NIBDA_{i,t}$	"Net income before discretionary accruals", i.e., pre-managed net income, as scaled by lagged total assets = Difference between reported net income (scaled by lagged total assets) and discretionary accruals	$NIADA - DA$
$REG\_NET\_INCOME_{r,t}$	Projected regional mean net income, determined by linear extrapolation from the average net incomes of all the region's public healthcare organisations in the previous two years: $REG\_NET\_INCOME_{r,t}=$ $= (REG\_NET\_INCOME_{r,(t-1)} - REG\_NET\_INCOME_{r,(t-2)})*2 + REG\_NET\_INCOME_{r,(t-2)}$ where $REG\_NET\_INCOME_{r,(t-1)}$ and $REG\_NET\_INCOME_{r,(t-2)}$ are the average net incomes for all public healthcare organisations in region r respectively for years (t–1) and (t–2)	Public healthcare organisations' financial reports, as collected by Ministry of Health
$NIADA\_DELTA_{i,t}$	Difference between the organisation's reported net income and the projected regional mean net income	$NIADA\_DELTA = NIADA - REG\_NET\_INCOME$
$NIBDA\_DELTA_{i,t}$	Difference between the organisation's pre-managed net income and the projected regional mean net income	$NIBDA\_DELTA = NIBDA - REG\_NET\_INCOME$

Appendix 3. Variables and data sources for regression analysis

Variable	Role	Type	Definition	Data source	Expected sign
$DA_{i,t}$	Dependent Variable	Continuous	Estimated discretionary component of total accruals	Residuals from regression of total accruals against a set of hypothesised explanatory factors	

$FIVE\_WAY_{i,t}$	Independent Variable (H1)	Categorical	Five categories corresponding to the 5-way partition of observations:
			
			BIGBATH
			if the organisation's pre-managed net loss exceeds the projected national average by at least 15% of lagged total assets
			
			GREATER_LOSS
			if (*NIBDA* < 0 & *NIBDA_DELTA* < 0 & *BIGBATH*=0)
			
			SMALLER_LOSS (focus of H1a)
			if (*NIBDA* < 0 & *NIBDA_DELTA* ≥ 0 & *BIGBATH*=0)
			
			SMALLER_SURPLUS (focus of H1b)
			if (*NIBDA* ≥ 0 & *NIBDA_DELTA* < 0)
			
			GREATER_SURPLUS
			if (*NIBDA* ≥ 0 & *NIBDA_DELTA* ≥ 0)
			
			For further analysis, *SMALLER_LOSS* is divided into three terciles according to the ratio of the distances of each observation's *NIBDA* from the (negative) projected regional mean and from zero:
			
			SMALLER_LOSS_1: Tercile for which *NIBDA* is closest to the projected regional average and farthest from zero. The ratio of *NIBDA* to *REG_NET_INCOME* ranges between 0.54 and 1
			
			SMALLER_LOSS_2: Tercile for which the ratio of *NIBDA* to *REG_NET_INCOME* ranges between 0.27 and 0.54
			
			SMALLER_LOSS_3: Tercile for which *NIBDA* is farthest from the projected regional average and closest to zero. The ratio of *NIBDA* to *REG_NET_INCOME* ranges between 0 and 0.27
				Financial reports, as collected by Ministry of Health	NEG
					
					(baseline)
					
					NEG
					
					NEG
					
					NEG
					
					NEG
					
					NEG
					
					NEG

$BAILOUT_{i,t}$	Independent Variable (H2)	Dichotomous	Dummy for regions and years where the availability of bailouts may have affected the preparation of financial reports. Specifically, all public healthcare organisations in the regions of: (i) Lazio, Abruzzo, Molise, Campania, Sicily, and Sardinia for 2004 and 2005; (ii) Lazio, Abruzzo, Molise, Campania, Sicily, and Liguria for 2006; (iii) Lazio for 2013. Molise was dropped from the analysis due to the presence of only one public healthcare organisation.	National legislation; *Relazione Generale sulla Situazione Economica del Paese* for 2012	NEG

NEWCEO$_{i,t}$	Control	Dichoto-mous	Dummy for change of CEO	Cergas-Bocconi's OASI Database	NEG
LOGREVENUES$_{i,t}$	Control	Contin-uous	Logged operating revenues as a proxy for organisational size (mean centred)	Financial reports, as collected by Ministry of Health	?
LEVERAGE$_{i,t}$	Control	Contin-uous	Ratio of total liabilities to total assets (mean centred)	Financial reports, as collected by Ministry of Health	?
YEARLY DUMMIES	Control	Dichoto-mous	From 2004 to 2017, with the midpoint (2010) as the baseline		?
NIADA$_{i,t-1}$	Control	Contin-uous	Previous year's net income, scaled by lagged total assets (mean centred)		POS
DA$_{i,t-1}$	Control	Contin-uous	Previous year's discretionary accruals (mean centred)		POS

The Table presents the variables used in the regression analysis. For each variable, the Table: (i) reports the role performed in the analysis – dependent, independent (with a reference to the relevant hypothesis), or control variable; (ii) specifies whether the variable is continuous, categorical, or dichotomous; (iii) provides a definition; (iv) identifies the relevant source of data; and (v) reports the expected sign (where "?" means that the variable could not be signed a priori). $GREATER\_LOSS_{i,t}$ corresponds to the largest of the five groups into which observations were organised to test H1 and thus serves as the baseline for the regressions.

References

Alford, R. R., & Friedland, R. (1985). *Powers of theory: Capitalism, the state, and democracy*. Cambridge: Cambridge University Press.

Ballantine, J., Forker, J., & Greenwood, M. (2007). Earnings management in English NHS hospital trusts. *Financial Accountability and Management, 23*(4), 421–440.

Becker, C. L., DeFond, M. L., Jiambalvo, J., & Subramanyam, K. R. (1998). The effect of audit quality on earnings management. *Contemporary Accounting Research, 15*(1), 1–24.

Berglof, E., & Roland, G. (1995). Bank restructuring and soft budget constraints in financial transition. *Journal of the Japanese and International Economies, 9*(4), 354–375.

Bordignon, M., & Turati, G. (2009). Bailing out expectations and health expenditure. *Journal of Health Economics, 282*, 305–321.

Boterenbrood, R. (2014). Income smoothing by Dutch hospitals. *Journal of Accounting and Public Policy, 33*, 510–524.

Bracci, E., Humphrey, C., Moll, J., & Steccolini, I. (2015). Public sector accounting, accountability and austerity: More than balancing the books? *Accounting, Auditing & Accountability Journal, 28*(6), 878–908.

Bracci, E., Saliterer, I., Sicilia, M., & Steccolini, I. (2021). Accounting for (public) value(s): Reconsidering publicness in accounting research and practice. *Accounting, Auditing & Accountability Journal, 34*(7), 1513–1526.

Brickley, J. A., & Van Horn, R. L. (2002). Managerial incentives in nonprofit organizations: Evidence from hospitals. *The Journal of Law and Economics, XLV*, 225–249.

Burgstahler, D., & Dichev, I. D. (1997). Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics, 24*(1), 99–126.

Cardinaels, E., & Soderstrom, N. (2013). Managing in a complex world: Accounting and governance choices in hospitals. *European Accounting Review, 22*(4), 647–684.

Cialdini, R. B., & Trost, M. R. (1998). Social influence: Social norm, conformity, and compliance. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *Handbook of social psychology* (pp. 151–192). New York, NY: McGraw-Hill, 2.

Correia, S. (2017). *Linear models with high-dimensional fixed effects: An efficient and feasible estimator (Working Paper)*. https://github.com/sergiocorreia/reghdfe/#citation.

Crivelli, E., Leive, A., & Stratmann, T. (2010). Subnational health spending and soft budget constraints in OECD countries. *IMF Working paper*.

DeAngelo, L. (1986). Accounting numbers as market valuation substitutes: A study of management buyouts of public stockholders. *The Accounting Review, 61*(3), 400–420.

Dechow, P. M., & Dichev, I. D. (2002). The quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review, 77*(Supplement), 35–59.

Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1995). Detecting earnings management. *The Accounting Review, 70*(2), 193–225.

DeFond, M. L., & Jiambalvo, J. (1994). Debt covenant violation and manipulation of accruals. *Journal of Accounting and Economics, 17*(1–2), 145–176.

Degeorge, F., Patel, J., & Zeckhauser, R. (1999). Earnings management to exceed thresholds. *Journal of Business, 72*(1), 1–33.

DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review, 48*(2), 147–160.

Dougherty, M., Klase, K., & Song, S. (1999). The needs and financial problems of small and rural localities: The case of West Virginia. *Public Budgeting & Finance*, 16–30.

Durtschi, C., & Easton, P. (2005). Earnings management? The shapes of the frequency distributions of earnings metrics are not evidence ipso facto. *Journal of Accounting Research, 43*(4), 557–592.

Durtschi, C., & Easton, P. (2009). 'Earnings management? Erroneous inferences based on earnings frequency distributions. *Journal of Accounting Research, 47*(5), 1249–1281.

Elgers, P. T., Pfeiffer, R. J., & Porter, S. L. (2003). Anticipatory income smoothing: A re-examination. *Journal of Accounting and Economics, 35*(3), 405–422.
Ferreira, A., Carvalho, J., & Pinho, F. (2013). Earnings management around zero: A motivation to local politician signalling competence. *Public Management Review, 15*(5), 657–686.
Francis, J., Hanna, D., & Vincent, L. (1996). Causes and effects of discretionary asset write-offs. *Journal of Accounting Research, 34*(Supplement), 117–134.
Greene, W. (2000). *Econometric analysis*. New York: Prentice-Hall.
Greenwood, M., Baylis, R., & Tao, L. (2017). Regulatory incentives and financial reporting quality in public healthcare organizations. *Accounting and Business Research, 47*(7), 831–855.
Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis: A global perspective* (7th ed.). Upper Saddle River, N.J.: Pearson.
Hayn, C. (1995). The information content of earnings. *Journal of Accounting and Economics, 20*(2), 125–153.
Healy, P. M. (1985). The effect of bonus schemes on accounting decision. *Journal of Accounting and Economics, 7*(1/3), 85–107.
Hodges, R. (2018). How might harmonization influence the future prevalence of public sector creative accounting? *Tekhnema, 16*(1), 3–14.
Hoerger, T. J. (1991). Profit variability in for-profit and not-for-profit hospitals. *Journal of Health Economics, 10*(3), 259–289.
Hribar, P., & Collins, D. W. (2002). Errors in estimating accruals implications for empirical research. *Journal of Accounting Research, 40*(1), 105–134.
Ibrahim, S., Begkos, C., Arnaboldi, M., & Graham, C. (2022). Call for papers – performance measurement, sustainability and governance in the healthcare sector. *The British Accounting Review*.
Ibrahim, S., Noikokyris, E., Fabiano, G., & Favato, G. (2019). Manipulation of profits in Italian publicly-funded healthcare trusts. *Public Money & Management, 39*(6), 428–435.
Jacob, J., & Jorgensen, B. (2007). Earnings management and accounting income aggregation. *Journal of Accounting and Economics, 43*(2–3), 369–390.
Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American Economic Review, 76*(29), 323–329.
Jones, J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research, 29*(2), 193–228.
Kornai, J. (1980). 'Hard' and 'soft' budget constraint. *Acta Oeconomica, 25*(3/4), 231–245.
Kornai, J. (1986). The soft budget constraint. *Kyklos, 30*(1), 3–30.
Kothari, S. P., Leone, A. J., & Wasley, C. E. (2005). Performance matched discretionary accrual measures. *Journal of Accounting and Economics, 39*, 163–197.
Langella, C., Anessi-Pessina, E., & Cantù, E. (2021). What are the required qualities of auditors in the public sector? *Public Money & Management, 41*(6), 466–476.
Leone, A. J., & Van Horn, L. (2005). How do nonprofit hospitals manage earnings? *Journal of Health Economics, 24*(2), 815–837.
Liberty, S. E., & Zimmerman, J. L. (1986). Labor union contract negotiations and accounting choices. *The Accounting Review, 61*(4), 692–712.
Llewellyn, S., & Northcott, D. (2005). The average hospital. *Accounting, Organizations and Society, 30*(6), 555–583.
Longo, F., Ferrè, F., Russo Valentini, R., & Sartirana, M. (2011). I livelli retributivi del top management: un'analisi comparata. In E. Anessi-Pessina, & E. Cantù (Eds.), *Rapporto OASI 2011*. Milano: Egea.
Longo, F., Pirazzoli, A., & Saporito, R. (2016). I percorsi di selezione ed auto-selezione dei direttori generali delle aziende sanitarie pubbliche: Evidenze e proposte di policy. In CERGAS (Ed.), *Rapporto OASI 2016*. Milano, Egea.
Marcuccio, M., & Steccolini, I. (2005). Social and environmental reporting in local authorities: A new Italian fashion? *Public Management Review, 7*(2), 155–176.
Maskin, E. S. (1996). Theories of the soft budget constraint. *Japan and the World Economy, 8*, 125–133.
McNichols, M. F. (2000). Research design issues in earnings management studies. *Journal of Accounting and Public Policy, 19*(4–5), 313–345.
McNichols, M. F., & Wilson, G. P. (1988). Evidence of earnings management from the provision for bad debts. *Journal of Accounting Research, 26*, 1–31. Supplement.
Mensah, Y. M., Considine, J. M., & Oakes, L. (1994). Statutory insolvency regulations and earnings management in the prepaid healthcare industry. *The Accounting Review, 69*(1), 70–95.
Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology, 83*, 340–363.
Mohrman, M. B. (1996). The use of fixed GAAP provisions in debt contracts. *Accounting Horizons, 10*(3), 78–91.
Nelson, K. (2000). Rate regulation, competition and loss reserve discounting by property-casualty insurers. *The Accounting Review, 75*(1), 115–138.
Petroni, K. (1992). Optimistic reporting in the property-casualty insurance industry. *Journal of Accounting and Economics, 15*(4), 485–508.
Pina, V., Arcas, M. J., & Martí, C. (2012). Accruals and 'accounting numbers management' in UK executive agencies. *Public Money & Management, 32*(4), 273–280.
Pourciau, S. (1993). Earnings management and nonroutine executive changes. *Journal of Accounting and Economics, 16*, 317–336.
Press, E. G., & Weintrop, J. B. (1990). Accounting-based constraints in public and private debt agreements. *Journal of Accounting and Economics, 12*, 65–95.
Ragioneria Generale dello Stato. (2018). *Il monitoraggio della spesa sanitaria, 5*. Roma: Rapporto n.
Scott, W. R. (2008). *Institutions and organizations: Ideas and interests*. Thousand Oaks, CA: Sage.
Stalebrink, O. J. (2007). An investigation of discretionary accruals and surplus-deficit management: Evidence from Swedish municipalities. *Financial Accountability and Management, 23*(4), 441–458.
Steccolini, I. (2019). Accounting and the post-new public management: Re-Considering publicness in accounting research. *Accounting, Auditing & Accountability Journal, 32*(1), 255–279.
Stern, G. H., & Feldman, R. J. (2004). *Too big to fail: The hazards of bank bailouts*. Washington, DC: Brookings Institution Press.
Strong, J., & Meyer, J. (1987). Asset write-downs: Managerial incentives and security returns. *The Journal of Finance*, (July), 643–661.
Sweeney, A. P. (1994). Debt-covenant violations and managers' accounting responses. *Journal of Accounting and Economics, 17*(3), 281–308.
Thornton, P. H., Ocasio, W., & Lounsbury, M. (2012). *The institutional logics perspective: A new approach to culture, structure and process*. New York: Oxford University Press.
Vansant, B. (2016). Institutional pressures to provide social benefits and the earnings management behavior of nonprofits: Evidence from the U.S. hospital industry. *Contemporary Accounting Research, 33*(4), 1576–1600.
Waeraas, A., & Sataoen, H. L. (2015). Being all things to all customers: Building reputation in an institutionalized field. *British Journal of Management, 26*, 310–326.
Watts, R. L., & Zimmerman, J. L. (1990). Positive accounting theory: A ten year perspective. *The Accounting Review, 65*(1), 131–156.
Wooldridge, J. M. (2009). *Introductory econometrics. A modern approach*. Mason, OH: South Western.
Zimmerman, J. L. (1983). Taxes and firm size. *Journal of Accounting and Economics, 5*, 119–149.