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Did loan-loss provisioning by UK banks become less timely after implementation of IAS 39?

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Following the financial and banking crisis of the late 2000s, accounting regulators sought to replace the incurred-loss method of loan-loss provisioning by a more forward-looking expected-loss method. Difficulties arose, including with respect to the weight that expected-loss provisioning should place on objective evidence of loss relative to evidence of a less specific and more judgemental nature. This paper provides evidence relevant to this issue by examining whether loan-loss provisioning by UK banks was less timely under the stricter evidence requirements of the IAS 39 incurred-loss regime implemented in 2005 than under the less strict evidence requirements of the previous UK incurred-loss regime. It does so by reference to the relationship in time between loan write-offs and loan-loss expense. The results do not suggest that provisioning became less timely under the stricter evidence requirements of IAS 39. There is no evidence that provisioning became less timely immediately prior to the crisis of the late 2000s. Also, there is no evidence that general provisioning, permitted under the pre-IAS 39 regime, enhanced the timeliness of loan-loss provisioning. The results do not suggest that stricter requirements regarding the evidence necessary to support recognition of loan losses have resulted in less timely loan-loss provisioning.

Keywords: accounting; bank accounting; impairment; incurred loss; loan-loss provisioning

1. Introduction

Following the financial and banking crisis of the late 2000s, concerns were raised about the incurred-loss method of loan-loss provisioning, and in particular about the timeliness of banks' recognition of loan-loss expense under that method.[1] Such concerns prompted the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) to aim to replace their existing incurred-loss methods of loan-loss provisioning by a more forward-looking expected-loss method. This gave rise to a series of sets of proposals. These included an IASB exposure draft, a FASB exposure draft, a joint IASB–FASB supplementary document and further revised joint IASB–FASB proposals. All of these attracted significant criticism. There were several sources of difficulty in arriving at a generally acceptable expected-loss

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method of loan-loss provisioning. Some issues that arose related to the weight that an expected-loss provisioning method should place on objective evidence of loss relative to evidence of a less specific and more judgemental nature. This paper provides evidence relevant to this issue by comparing loan-loss provisioning under two regimes that differed with regard to the strictness of their requirements that recognition of loan losses should be supported by objective evidence of loss. Specifically, it examines whether loan-loss provisioning by UK banks became less timely after implementation in the UK in 2005 of IAS 39: *Financial instruments – recognition and measurement* (issued by the International Accounting Standards Committee (IASC) in 1999 and subsequently amended) than it had been under the less strict evidence requirements of the previous UK provisioning regime.

Prior to the implementation in the UK of IAS 39, loan-loss provisioning by UK banks was in accordance with *Statement of Recommended Accounting Practice: Banks* (BBA and IBF 1997) (hereinafter SORPB) and general requirements of UK GAAP with regard to provisioning. This loan-loss-provisioning regime required that the recognition of a loan loss should be supported by evidence that a loss had been incurred. It could therefore be described as an incurred-loss regime. An effect of the implementation of IAS 39 in the UK was to replace the incurred-loss regime of SORPB with an incurred-loss regime that had a stricter requirement that the recognition of loan loss should be supported by objective evidence that loss had been incurred. A manifestation of this was that IAS 39 eliminated the practice of general provisioning that had been permitted under SORPB.

In order to compare the timeliness of loan-loss provisioning by UK banks under the stricter evidence requirements of the IAS 39 incurred-loss regime and under the less strict evidence requirements of the previous SORPB incurred-loss regime, this paper uses data for 37 UK banks for the interval from 2001 to 2008. Of these 37 banks, 12 were bank holding companies that had a UK stock market quotation at some time during this interval and the remaining 25 were usually much smaller banks which, in many cases, were UK subsidiaries of non-UK banks. This paper's evidence on differences between the timeliness of loan-loss provisioning by UK banks under the IAS 39 regime and under the previous SORPB regime is based on examination of the relationship in time between current-year loan write-offs and current-year and previous-year loan-loss expense.

Some of the concerns about the alleged lack of timeliness of the IAS 39 incurred-loss method arose from the perception that it had delayed the recognition of loan losses until the onset of the financial and banking crisis of the late 2000s. Therefore, the paper also examines whether loan-loss provisioning by UK banks was less timely immediately prior to accounting years ended in the second half of 2008, when the effects of the financial and banking crisis of the late 2000s became particularly severe, than it had been previously under IAS 39. One of the consequences of the implementation of IAS 39 in the UK was the elimination of general provisioning, which had provided a means of recognising non-specific evidence about loan losses under the UK's previous SORPB regime. Therefore, the paper also examines whether the pre-IAS 39 general-provision element of the loan-loss expense enhanced the timeliness of provisioning. The 12 bank holding companies that had a UK stock market quotation may have differed from the other 25 banks in their incentives and ability to deploy relatively sophisticated provisioning methods in response to the implementation of IAS 39 and other contemporaneous regulatory influences. Consequently, the banks in the data set are partitioned by whether or not they had a UK stock market quotation during the interval examined.

The evidence reported in this paper does not suggest that loan-loss provisioning by UK banks was less timely under IAS 39 than under SORPB. For the subset of banks that had a stock market quotation during the interval examined, there is evidence that loan-loss provisioning was more timely under IAS 39 than under SORPB. However, inferences based on this subset of banks

have to be qualified in light of the relatively small size of the data set for these banks. The evidence does not indicate that loan-loss provisioning by UK banks was less timely immediately prior to accounting years ended in the second half of 2008 than it had been previously under IAS 39. Furthermore, there is no evidence that general provisioning permitted by SORPB enhanced the timeliness of loan-loss provisioning. Overall, the results reported in this paper do not suggest that stricter requirements, regarding the evidence necessary to support recognition of loan losses, have resulted in less timely loan-loss provisioning.

The remainder of the paper is organised as follows. Section 2 outlines the background to the paper. Section 3 describes the research design. Section 4 describes the data used in the paper. Section 5 reports the results. Section 6 concludes.

2. Background

The loan-loss expense is typically a significant item in the financial statements of banks. The consequent potential for loan-loss provisioning to have significant economic effects, including by contributing to procyclicality, has been documented in a number of studies (Kim and Kross 1998, Ahmed *et al.* 1999, Laeven and Majnoni 2003, Bikker and Metzemakers 2005, Bouvatier and Lepetit 2008, Beatty and Liao 2011). This section outlines the recent activity of accounting regulators in the area of loan-loss provisioning, and indicates the contribution to be made by the evidence in this paper in the context of that activity. It then outlines the change in the UK loan-loss-provisioning regime that is the source of the evidence provided by this paper.

In recent years, a number of different terminologies have been used to denote concepts related to loan-loss provisioning. In light of this, I first provide below a summary of these terminologies.

	UK before IAS 39	UK under IAS 39	USA
Income-statement charge	Provision for bad and doubtful debts	Impairment losses (or impairment charges) on loans and advances	Provision for credit losses
Contra-asset account (netted off against loans)	Provision for bad and doubtful debts	Allowance for impairment	Allowance for loan losses (or allowance for credit losses on loans)

In this paper, 'loan-loss expense' denotes the income-statement charge in respect of impairment losses on loans (credit losses), 'loan-loss allowance' denotes the contra-asset account and 'loan-loss provisioning' denotes the overall process of recognising loan-loss expense.

2.1 *Loan-loss provisioning: recent regulatory activity*

In the years following the onset of the financial and banking crisis of the late 2000s, loan-loss provisioning by banks attracted significant attention. Much of this related to the incurred-loss method of loan-loss provisioning. This is required by IAS 39, which became mandatory in the UK from 2005. It is also required by US GAAP. See *FAS 5: accounting for contingencies* (FASB 1975) and *SEC staff accounting bulletin: no 102 – selected loan loss allowance methodology and documentation issues* (SAB 102) (SEC 2001). Among other things, it was alleged that the incurred-loss method may have delayed the accounting recognition of predictable loan losses,

thereby contributing to procyclicality during the financial and banking crisis by causing a concentration of loss recognition in a recessionary period.

Concerns about the incurred-loss method were expressed by a number of persons and bodies concerned with the regulation of banks. The US Comptroller of the Currency (Dugan 2009) said:

> I think it's high time to ask and answer some hard questions about loan loss provisioning. Does the current interpretation and implementation of the incurred-loss model result in the adequate use of forward-looking judgmental factors to permit appropriate early-in-the-cycle loss provisioning? Or does the model itself, by its very nature, prevent that result by allowing loss recognition only when a loss has somehow been 'incurred'? If so, is it appropriate and feasible to make changes to the basic approach to allow loss recognition at an early enough stage in the economic cycle to be counter-cyclical? (pp. 6–7)

The *Report of the Financial Crisis Advisory Group* (Financial Crisis Advisory Group 2009), which advised the IASB and the FASB on the implications of the financial and banking crisis of the late 2000s, referred both to the materiality of loans in banks' balance sheets and to the belief that the incurred-loss method of loan-loss provisioning had delayed the recognition of loan losses:

> While the crisis may have led to some understatement of the value of mark-to-market assets, it is important to recognize that, in most countries, a majority of bank assets are still valued at historic cost using the amortized cost basis. Those assets are not marked to market and are not adjusted for market liquidity. By now it seems clear that the overall value of these assets has not been understated – but overstated. The incurred loss model for loan-loss provisioning and difficulties in applying the model – in particular, identifying appropriate trigger points for loss recognition – in many instances has delayed the recognition of losses on loan portfolios. (p. 4)

A report by the Financial Stability Forum (2009) includes the following:

> The FASB and IASB should reconsider the incurred loss model by analysing alternative approaches for recognising and measuring loan losses that incorporate a broader range of available credit information . . . Standards setters should reconsider their current loan loss provisioning requirements and related disclosures including by analysing fair value, expected loss and dynamic provisioning approaches. (p. 4)

Also, *The Future of Banking Commission* (Consumers' Association 2010), which was set up in the wake of the financial and banking crisis in the UK, includes the following:

> Loans in the banking book are accounted for at their cost, less an allowance for credit losses. Accounting standards require that the allowance for credit losses can only be recognised when there is objective evidence that impairment has occurred. This has a procyclical effect which leads to banks overstating profitability in the up phase of the cycle, and understating profitability in the down phase of the cycle. (p. 72)

Note that some of those concerned with banking regulation called for consideration of economic-cycle-based provisioning, sometimes termed 'dynamic provisioning'. This would permit the loan-loss allowance at a balance sheet date to be determined in part by reference to the economic cycle rather than solely by reference to the impairment of loans in place at the balance sheet date.

Furthermore, IASB proposals for a revised accounting treatment of loan losses, referred to below, elicited much critical comment about the incurred-loss method from banks, bank

regulators, accounting regulators, professional accounting firms and bodies representing accountants and financial analysts.[2] Often with reference to the financial and banking crisis, commentators referred to 'delay' (in loss recognition), (lack of) 'timely recognition' (of credit losses), (losses being recognised) 'too late', and (the desirability of replacing the incurred-loss method by a method that permits) 'earlier recognition' (of loan losses).

In a wide-ranging Europe-wide comparison of the quality of accounting by banks before and after mandatory adoption of International Financial Reporting Standards (IFRS), Gebhardt and Novotny-Farkas (2011) suggest that the IAS 39 incurred-loss method leads to delayed recognition of loan losses. Using a measure derived from asymmetric earnings-persistence measures proposed by Basu (1997) and Nichols *et al.* (2009), they report that loan-loss provisioning by European banks became less asymmetrically timely under the IAS 39 incurred-loss method than it had been previously.

Concerns about the incurred-loss method of loan-loss provisioning helped prompt the publication in November 2009 by the IASB of *Exposure draft ED/2009/12: financial instruments – amortised cost and impairment* (IASB 2009), which proposed replacing the incurred-loss method by a more forward-looking expected-loss method. Although commentators mainly welcomed the proposal to introduce a more forward-looking loan-loss-provisioning method, significant criticism was directed at the IASB's proposed expected-loss method. One prominent source of comment was the exposure draft's proposal that expected credit losses should be reflected in the computation of the effective interest rates on loans at the outset and that, consequently, the recognition of expected credit losses on newly originated loans should be spread over the life of the loans. Other issues that arose related to the loan-specific or closed-portfolio-specific level of detail at which the IASB's proposed method would have to be applied. In May 2010, the FASB issued *Proposed accounting standards update: accounting for financial instruments and revisions to the accounting for derivative instruments and hedging activities* (FASB 2010). The FASB's proposals differed from the IASB's proposals in a number of respects. An important difference was that the FASB's effective interest rates on loans would not reflect expected credit losses, and that expected losses on newly originated loans would therefore be recognised in the loan-loss allowance at the outset rather than being spread over the life of the loans. Another difference was that impairment losses would reflect all information relating to past events and existing conditions, but not potential future events. Another difference with respect to the IASB's proposals was that loans would be recognised at fair value on the balance sheet. The FASB's proposals also attracted significant criticism, including with respect to the above-mentioned features.[3] From the end of the comment period for the FASB's proposed update, the FASB and the IASB initiated a formal collaboration. This gave rise to joint proposals aimed at achieving desired objectives of both boards, focusing in particular on loans held in open portfolios. These were published by the IASB in *Supplement to exposure draft ED/2009/12: financial instruments – amortised cost and impairment* (IASB 2011a) and by the FASB in *Supplementary document: financial instruments – impairment* (FASB 2011). These proposals centred on the classification of loans into a 'good book' and a 'bad book'. Expected losses for the 'good book' would be recognised over time subject to a requirement to recognise in full those losses expected to occur in the foreseeable future, and expected losses for the 'bad book' would be recognised in full. These revised proposals also attracted criticism. Commentators referred to the complexity and burdensome specific information requirements of the proposed method, and to the scope for management judgement in various areas.[4] This prompted the development of further revised proposals involving the allocation of loans to one of three 'buckets', which would differ from each other with regard to the level of specificity of the evidence of impairment. At the time of writing, deliberations towards an agreed accounting standard continue.[5]

It should be noted from the above that proposals under consideration have related to an expected-loss provisioning method applicable to loans in place at the balance-sheet date rather than to an economic-cycle-based provisioning method.

The events and views summarised above indicate that accounting regulators have had to deal with a number of difficult issues in their attempts to develop a generally acceptable expected-loss method of loan-loss provisioning. One source of difficulty has been the issue of the extent to which loan-loss provisioning under such a method should be required to be supported by specific objective evidence of likely loss. This difficulty arises from the potential for conflict between the preference of accounting regulators that the recognition of losses should be supported by appropriate objective evidence and the preference of bankers and others that loan-loss-provisioning methods should be consistent with banks' methods of managing credit risk, including with respect to open portfolios, and should take appropriately prudent account of information relevant to the estimation of likely loan losses. Evidence relevant to the issue of the extent to which loan-loss provisioning should be supported by specific objective evidence of loss can be obtained by examination of loan-loss provisioning by UK banks before and after the implementation in the UK in 2005 of IAS 39. IAS 39 introduced stricter requirements than had previously existed in the UK with regard to the evidence required to support recognition of a loan loss, and it was believed by some commentators that the imposition of these stricter evidence requirements adversely affected the quality of loan-loss provisioning. The nature of the loan-loss-provisioning regime change brought about by IAS 39 in the UK is outlined in Section 2.2.

2.2 *UK loan-loss provisioning under IAS 39 and before IAS 39*

Up to 2004, loan-loss provisioning by UK banks was in accordance with SORPB and UK GAAP provisioning requirements reflected in the *Statement of Principles for Financial Reporting* (ASB 1999). For reporting periods starting on or after 1 January 2005, loan-loss provisioning by UK banks has been in accordance with IAS 39. Although UK unquoted companies continued to report under UK GAAP after 2004, UK GAAP included FRS 26: *Financial instruments: recognition and measurement* (ASB 2004) which is essentially identical to IAS 39. (Hereinafter, IAS 39 and FRS 26 are referred to collectively as IAS 39.) I now outline the nature of the change in the UK loan-loss-provisioning regime brought about by IAS 39.

Extracts from SORPB, the *Statement of Principles for Financial Reporting* and IAS 39 are given in Table 1. It is also relevant that, unlike the regimes in some other European countries, the UK's SORPB did not adopt the option provided by Article 37 of the European Community's *Council directive of 8 December 1986 on the annual accounts of consolidated accounts of banks and other financial institutions* (*86/635/EEC*) (Official Journal of the European Communities 1986) (Directive 86/635/EEC), which permitted provisioning in respect of 'prudence dictated by particular risks associated with banking'. Therefore, SORPB did not permit economic-cycle-based loan-loss provisioning. Also, it should be noted from Table 2 that the 'general' category of the loan-loss allowance under SORPB related to loans that were impaired at the balance-sheet date but would not be specifically identified as such until some time in the future; it did not relate to economic-cycle-based provisioning. Furthermore, it should be noted that this 'general' category did not correspond to the 'collective' category under the IAS 39 regime.[6]

The extracts provided in Table 1 indicate that both the pre-IAS 39 regime and the IAS 39 regime required that loan-loss expense should only be recognised if a loss had been incurred, and that both regimes were therefore incurred-loss regimes. They also suggest that the IAS 39 regime imposed stricter requirements regarding the evidence necessary to support recognition of a loan loss. Some indication as to whether this interpretation is reasonable can be found in expert evidence to an inquiry by the UK House of Lords Select Committee on Economic

Table 1. Loan-loss provisioning in the UK before IAS 39 and under IAS 39: annotated extracts from relevant documents.

Before IAS 39	IAS 39
SORPB 'The balance sheet valuation of advances should reflect any diminution of their ultimate realisable amount below their cost . . . Although specific and general provisions are computed separately, they are in effect components of the same provision. In total the specific and general components of a bank's provisions for bad and doubtful advances should represent the aggregate amount by which the bank considers it necessary to write down its impaired advances in order to state them at their expected ultimate net realisable value'. (paragraph 9)	'An entity shall assess at the end of each reporting period whether there is any objective evidence that a financial asset or group of financial assets measured at amortised cost is impaired'. (paragraph 58)
'A loan is impaired when, based on current information and events, the bank considers that the creditworthiness of a borrower has undergone a deterioration such that it no longer expects to recover the advance in full. In these circumstances, it is necessary to consider whether a specific provision should be made against the advance. Such advances are described in this SORP as "impaired" . . . Although it is often an event of default that serves as trigger, a provision should be considered whenever the information available to the bank suggests that the advance has become impaired. When an advance has been identified as being impaired, the amount of the specific provision should be the bank's estimate of the amount (if any) needed to reduce the carrying value to the expected ultimate net realisable value'. (paragraphs 12 and 13)	'A financial asset or a group of financial assets is impaired and impairment losses are incurred if, and only if, there is objective evidence of impairment as a result of one or more events that occurred after the initial recognition of the asset (a "loss event") and that loss event (or events) has an impact on the estimated future cash flows of the financial asset or group of financial assets that can be reliably estimated . . . Losses expected as a result of future events, no matter how likely, are not recognised'. (paragraph 59)
'Experience shows that portfolios of advances often contain advances which are in fact impaired at the balance-sheet date, but which will not be specifically identified as such until some time in the future. There will not usually be sufficient information to hand at the review of advances to be certain that all impaired advances have been identified. To cover the impaired advances which will only be identified as such in the future, a general provision should be made. It is emphasised that the general provision relates to impairment already existing in the advances portfolio at the balance-sheet date. It does not relate to advances which at the balance-sheet date are subject to no more than normal credit risk, but which in the nature of things may become impaired in the future. Assessment of the appropriate level of general provision is the responsibility of the directors and is inevitably subjective'. (paragraphs 17–19)	*IAS 39 allowed that assets could be assessed for impairment both individually and collectively. It cited a number of examples of observable evidence that a financial asset had been impaired, including significant financial difficulty of the issuer, breach of contract, probability that a borrower would enter bankruptcy and the existence of observable data indicating a measurable decrease in the estimated future cash flows from a group of financial assets. It also gave examples of events that would not constitute evidence of impairment:* 'The disappearance of an active market because an entity's financial instruments are no longer publicly traded is not evidence of impairment. A downgrade of an entity's credit rating is not, of itself, evidence of impairment, although it may be evidence of impairment when considered with other available information. A decline in the fair value of a financial asset below its cost or amortised cost is not necessarily evidence of impairment'. (paragraph 60)

(*Continued*)

Table 1. Continued

Before IAS 39	IAS 39
Statement of principles for financial reporting 'Nor is it appropriate to use prudence as a reason for, for example, creating hidden reserves or excessive provisions, deliberately understating assets or gains, or deliberately overstating liabilities or losses, because that would mean that the financial statements are not neutral and, therefore, not reliable'. (paragraph 3.20)	*Extensive application guidance given in paragraphs AG84 to AG93 includes more detailed guidance on what can and cannot be regarded as evidence of impairment. An example of this guidance is the following, which refers to assets that are collectively assessed for impairment:* 'As an example . . ., an entity may determine, on the basis of historical experience, that one of the main causes of default on credit card loans is the death of the borrower. The entity may observe that the death rate is unchanged from one year to the next. Nevertheless, some of the borrowers in the entity's group of credit card loans may have died in that year, indicating that an impairment loss has occurred on those loans, even if, at the year-end, the entity is not yet aware which specific borrowers have died. It would be appropriate for an impairment loss to be recognised for these "incurred but not reported" losses. However, it would not be appropriate to recognise an impairment loss for deaths that are expected to occur in a future period, because the necessary loss event (the death of the borrower) has not yet occurred'. (paragraph AG90) 'If there is objective evidence that an impairment loss on financial assets measured at amortised cost has been incurred, the amount of the loss is measured as the difference between the asset's carrying amount and the present value of estimated future cash flows (excluding future credit losses that have not been incurred) discounted at the financial asset's original effective interest rate'. (paragraph 63)

Note: The author's annotations are in italics. Extracts from IAS 39: © IFRS Foundation.

Affairs into *Auditors: market concentration and their role* (House of Lords 2011a, 2011b), which included consideration of the change from the SORPB loan-loss-provisioning regime to the IAS 39 provisioning regime under IFRS. Although evidence to this inquiry reflects significant divergence of views on the nature and effect of the change from the SORPB regime to the IAS 39 regime, it is largely supportive of the interpretation given above. One witness argued that 'there is no major difference in the requirements of the SORP on Loans and Advances, which represented UK GAAP on the topic, and IAS 39 under IFRS: both are incurred loss models' (House of Lords 2011b, p. 236). This view was included in the inquiry's report (House of Lords 2011a, p. 34). Another witness observed that, although both the SORPB regime and the IAS 39 regime required the use of an incurred-loss method, IAS 39 'provides more detailed guidance than UK GAAP and does not distinguish between specific and general provisions' (House of Lords 2011b, p. 248). This witness also expressed the view that the increased requirement for objective evidence under IAS 39 tended to restrict provisioning. Another witness said that IAS 39 had changed provisioning practice significantly in that it 'had a less prudent loan loss model "incurred loss", which did not allow for risk-sensitive loan provisioning where there was as yet no evidence of default' (House of Lords 2011b, p. 25). Another witness said that 'even though the old UK GAAP SORP

Table 2. Data used in the analysis.

Panel A: construction of the data set			
All banks listed on any of the monthly lists of 'Banks Incorporated in the United Kingdom' published by the United Kingdom Financial Services Authority plus any UK companies described as banks by the Perfect Information Filings database at any time from December 2001 to August 2009, with financial statements available from Perfect Information Filings and/or Thomson Research			58
Less: banks that are subsidiaries of other UK banks in the data set			−13
			45
Less: banks for which financial statements are only available for 1 or 2 years			−8
Number of banks in the data set			37
Number of bank-years for which accounting data were collected for years from 2000 to 2009 inclusive			292
Less: cases for which data items required for this analysis were unavailable			−6
Cases for which financial statements were obtained			286
Less: cases lost due to the need for lagged loan-loss expense data for the first year			−37
Less: cases lost due to the need for next-year recoveries data in the last year			−37
Number of bank-year cases in the data set used in the analysis			212
Panel B: summary statistics for banks used in the analysis			
	Bank-years	Mean	Median
All banks in the data set			
Total assets (in billions of UK pounds)	212	151.16	12.69
Book equity/total assets (opening)	212	10.07%	5.78%
Loans/total assets	212	72.05%	72.91%
Loan-loss allowance/loans (see note)	212	1.57%	0.87%
Loan-loss expense/profit on ordinary activities (absolute values)	212	45.42%	24.03%
Banks with a stock market quotation			
Total assets (in billions of UK pounds)	81	383.20	221.63
Book equity/total assets (opening)	81	5.74%	3.79%
Loans/total assets	81	67.63%	65.31%
Loan-loss allowance/loans	81	0.90%	0.82%
Loan-loss expense/profit on ordinary activities (absolute values)	81	44.34%	25.58%
Banks without a stock market quotation			
Total assets (in billions of UK pounds)	131	7.68	4.53
Book equity/total assets (opening)	131	12.74%	7.70%
Loans/total assets	131	74.78%	78.39%
Loan-loss allowance/loans	131	1.99%	0.89%
Loan-loss expense/profit on ordinary activities (absolute values)	131	46.09%	20.39%

Notes: The mean values for book equity/total assets (opening) are for the winsorised data used in the regression models, as also reported in Table 3. Profit on ordinary activities is stated before loan-loss expense. The mean (median) values of loan-loss allowance as a proportion of loans before IAS 39 and under IAS 39 are 1.76% (0.93%) and 1.18% (0.74%), respectively. Differences between the loan-loss allowance/loans before IAS 39 and under IAS 39 are not significant at the 10% level.

approach to loss provisioning may have been far from perfect, it still allowed scope for more reasonable and prudent provisioning than has been possible under IFRS' (House of Lords 2011b, p. 326). After referring to the general provisioning that was permitted under SORPB, this witness also said that 'the introduction of IFRS removed even that limited ability to make prudent general provisions by imposing a model that strictly limited incurred losses to those

that had occurred' (House of Lords 2011b, p. 326). Another witness disputed claims that the SORPB regime was a pure incurred-loss regime, and characterised the IAS 39 and SORPB regimes as follows: 'If there is a spectrum from incurred loss to expected loss, IFRS is at one extreme, Spanish economic cycle provisioning at the other, and "UK GAAP" (Companies Act Rules, including the SORP) was somewhere between' (House of Lords 2011b, p. 108).

The extracts included in Table 1 and the inquiry evidence quoted above are largely supportive of the view that the SORPB loan-loss-provisioning regime and the IAS 39 regime are both incurred-loss regimes and that the IAS 39 regime has a stricter evidence requirement than the SORPB regime with regard to the recognition of a loss. They also indicate that some commentators believe that the stricter evidence requirement adversely affects the quality of loan-loss provisioning. Comparison of the quality of loan-loss provisioning under the SORPB regime and the IAS 39 regime can provide evidence relevant to the question arising within recent accounting-regulatory debate regarding the degree of objective evidence that should be required to support recognition of a loan loss. In this paper, I examine whether loan-loss provisioning by UK banks was less timely under the stricter evidence requirements of the IAS 39 regime than under the less-strict evidence requirements of the UK's previous SORPB regime.

The number of observations in the UK data set used in this analysis is small relative to the number that would have been available for an analysis based on a large number of European countries. A disadvantage of using this relatively small data set is that it limits the strength of the inferences that can be drawn. However, there is also a significant advantage in using this UK data set in this context. There were some significant differences between pre-IAS 39 provisioning regimes across Europe. An example of a source of such differences was the European Communities' Directive 86/635/EEC, referred to above, which permitted but did not require provisioning in respect of 'prudence dictated by particular risks associated with banking'.[7] The UK data used in this paper are all drawn from a single setting for which the UK House of Lords enquiry referred to above provides an unusually detailed formal documentation of the nature of the regime change. A study involving examination of pre- and post-IAS 39 loan-loss provisioning in a large number of European countries would not benefit from such formally documented detail for all countries. The ability to provide, as in the preceding paragraphs, a clear statement of the precise nature of the regime change that is being examined facilitates interpretation of the results in the context of debate on further potential changes in the accounting for loan-losses.

2.3 *Some US evidence on the impact of a more restrictive evidence requirement for loan-loss provisioning*

Evidence on the effect of imposing a stricter evidence requirement with regard to loan-loss provisioning can be found in a US study by Beck and Narayanamoorthy (2012). They examine the association between loan-loss provisioning and write-offs in US banks before and after the issue of SAB 102 and associated guidance, which were seen as imposing a stricter evidence requirement in respect of loan-loss provisioning and thereby reducing the opportunities for earnings management.[8]Beck and Narayanamoorthy (2012) report evidence that relatively large banks and relatively strong banks relied to a greater degree after SAB 102 than before on past loan write-offs as support for loan-loss allowances. Of particular relevance to this study, they also report that, for relatively strong banks, the association between write-offs and past allowances became greater after SAB 102 than before. This is consistent with the more restrictive regime imposed by the SAB 102 guidance in conjunction with the relative stability of strong banks diminishing the extent of earnings management in those banks and thereby improving the quality of their loan-loss provisioning.

3. Research design

This paper seeks evidence on whether loan-loss provisioning by UK banks was less timely under the stricter evidence requirements of the IAS 39 incurred-loss regime than under the less-strict evidence requirements of the previous UK incurred-loss regime. The difference between the timeliness of provisioning under the two regimes is measured by reference to the relationship in time between loan write-offs and loan-loss expense. The rationale for this is that the relationship in time between loan write-offs and loan-loss expense relates directly to commentators' concerns that the restrictive evidence requirements of the incurred-loss method cause delay in the recognition of predictable loan losses, and that imposition of stricter evidence requirements tends to exacerbate the delay. In the extreme case of such delay, loan losses would be recognised only when the associated loans are deemed to be beyond any realistic prospect of recovery and are written off. In this case, 100% of loan losses recognised within the loan-loss expense of the current year would be associated with current-year loan write-offs and 0% of previously recognised loan losses would be associated with current-year write-offs. Assuming that all loan write-offs relate to loans for which loan-loss expense is recognised either in the current year or in the previous year, a 100%/0% combination of ratios would indicate a less timely loan-loss-provisioning regime than a 70%/30% combination of ratios. With a 70%/30% combination, there would be some recognition in year $t-1$ of losses in respect of loans deemed in year t to be beyond realistic prospect of recovery, whereas there would be no such recognition under a 100%/0% regime. Provisioning under a regime with an 80%/20% (60%/40%) combination of ratios would be deemed to be less (more) timely than provisioning under the regime with a 70%/30% combination of ratios.[9]

Following on from this, evidence as to whether loan-loss provisioning was less timely under IAS 39 than before IAS 39 is obtained by estimating regression models where scaled loan write-off is the dependent variable and the similarly scaled current-year loan-loss expense and previous-year loan-loss expense are explanatory variables. The coefficients on the current-year loan-loss expense and the previous-year loan-loss expense can be interpreted as the proportions of those loan-loss expenses that are reflected in current-year loan write-offs. The difference between the coefficient for the current-year loan-loss expense under IAS 39 and before IAS 39 and the difference between the coefficient for the previous-year loan-loss expense under IAS 39 and before IAS 39 are the indicators of the difference between the timeliness of loan-loss provisioning under IAS 39 and its timeliness before IAS 39. This approach has some similarity with approaches used by Cantrell *et al.* (2011) and Beck and Narayanamoorthy (2012) to examine the association between loan-loss allowances and future loan losses.

3.1 *Was loan-loss provisioning less timely under IAS 39 than before IAS 39?*

In examining whether loan-loss provisioning was less timely under IAS 39 than before IAS 39, I estimate three regression models using observations from 2001 to 2008. All of these models have current-year write-offs as the dependent variable and current-year loan-loss expense and previous-year loan-loss expense as the explanatory variables.[10] These three regression models each include a number of control variables. The change in non-performing loans is included in order to control for changes in the quality of banks' loan portfolios. This variable has been used in a number of earlier studies for related purposes. See, for example, Ahmed *et al.* (1999) and Gebhardt and Novotny-Farkas (2011). The profit on ordinary activities before loan-loss expense is included in order to control for possible effects of any earnings-smoothing activity. Again, this variable has been used in a number of earlier studies for related purposes. See, for example, Ahmed *et al.* (1999), Bouvatier and Lepetit (2008) and Gebhardt and Novotny-

Farkas (2011). In order to control for effects related to regulatory capital and in light of the non-availability of regulatory-capital data for many of the smaller banks in the data set, the ratio of opening equity to opening total assets is included. Bank controls are included in light of the possibility that banks might have adopted different write-off policies. Calendar-year controls for years from 2002 to 2005 are included in order to control for time-varying macro-economic effects other than those captured by the segregation of the post-IAS 39 interval and the segregation in one regression model of accounting years ended in the second half of 2008. In order to observe the impact of control variables on the coefficients for the explanatory variables, I also report the results from estimation of the regression models without the control variables.

First, in order to provide preliminary evidence on the relationship in time between loan write-offs and current-year and previous-year loan-loss expense, I estimate regression model (1), which does not partition the data with respect to whether or not IAS 39 was in force. Regression model (1) is as follows:

$$\mathrm{WO}_{it} = \beta_{1,1} + \beta_{1,2}\mathrm{LLE}_{it} + \beta_{1,3}\mathrm{LLE}_{i,t-1} + \beta_{1,10}\mathrm{CHNPL}_{it} + \beta_{1,11}\mathrm{EARN}_{it} + \beta_{1,12}\mathrm{EQASS}_{i,t-1} + \sum_{j=1}^{j=b-1} \gamma_{1,j}\mathrm{Bank\ Control}_{jit} + \sum_{j=2002}^{j=2005} \delta_{1,j}\mathrm{Year\ Control}_{jit} + \varepsilon_{1,it}, \tag{1}$$

where WO_{it} is the loan write-off for bank i for year t, divided by the average of the opening and closing balance-sheet values of loans of bank i for year $t-1$; LLE_{it} ($\mathrm{LLE}_{i,t-1}$) is the loan-loss expense for bank i for year t ($t-1$), divided by the average of the opening and closing balance-sheet values of loans of bank i for year $t-1$; CHNPL_{it} is a control variable equal to the proportionate change in a measure of the non-performing loans of bank i during year t;[11] EARN_{it} is a control variable equal to the profit on ordinary activities of bank i for year t (before loan-loss expense) divided by the average of opening and closing loans of bank i for year t; $\mathrm{EQASS}_{i,t-1}$ is a control variable equal to the ratio of equity to total assets in the opening balance sheet of bank i for year t; $\mathrm{Bank\ Control}_{jit}$ is the value for bank i for year t of an indicator-variable control for bank j, where b is the number of banks; $\mathrm{Year\ Control}_{jit}$ is the value for bank i for year t of an indicator-variable control for calendar year j; the β, γ and δ terms are regression coefficients; the ε term is an error term. Both write-offs and loan-loss expense are stated gross of recoveries of loans written-off in previous years. In light of evidence in Liu and Ryan (2006) that US banks may have overstated loan write-offs in order to help conceal excessive loan-loss expensing, loan write-offs are stated net of next-year recoveries. For this and all other regression models, p-values are based on White standard errors that are robust to clustering by bank.

The principal evidence reported in this paper is based on regression model (2). This includes an indicator variable in respect of years where IAS 39 was in force for the previous year. This allows comparison of coefficients under IAS 39 and coefficients before IAS 39, and thereby provides evidence on whether loan-loss provisioning was less timely under IAS 39 than before IAS 39. Regression model (2) is as follows:

$$\mathrm{WO}_{it} = \beta_{2,1} + \beta_{2,2}\mathrm{LLE}_{it} + \beta_{2,3}\mathrm{LLE}_{i,t-1} + \beta_{2,4}\mathrm{DI}_{it} + \beta_{2,5}\mathrm{LLE}_{it} \times \mathrm{DI}_{it} + \beta_{2,6}\mathrm{LLE}_{i,t-1} \times DI_{it} + \beta_{2,10}\mathrm{CHNPL}_{it} + \beta_{2,11}\mathrm{EARN}_{it} + \beta_{2,12}\mathrm{EQASS}_{i,t-1} + \sum_{j=1}^{j=b-1} \gamma_{2,j}\mathrm{Bank\ Control}_{jit} + \sum_{j=2002}^{j=2005} \delta_{2,j}\mathrm{Year\ Control}_{jit} + \varepsilon_{2,it}, \tag{2}$$

where DI_{it} is an indicator variable equal to one where bank i applied IAS 39 in year $t-1$, and zero otherwise; and the other notation is as previously defined. The coefficient $\beta_{2,5}$ can be interpreted as the excess of the coefficient for write-offs with respect to current-year loan-loss expense under IAS 39 over the corresponding coefficient before IAS 39. Similarly, the coefficient $\beta_{2,6}$ can be interpreted as the excess of the coefficient for write-offs with respect to previous-year loan-loss expense under IAS 39 over the corresponding coefficient before IAS 39. For each of the coefficients $\beta_{2,5}$ and $\beta_{2,6}$, I conduct a two-tailed test of the null hypothesis that the coefficient is equal to zero against the alternative hypothesis that it is not equal to zero. If IAS 39 made loan-loss provisioning less timely, estimation of model 2 would give $\beta_{2,5}>0$ and $\beta_{2,6}<0$. However, if IAS 39 made loan-loss provisioning more timely, estimation of model 2 would give $\beta_{2,5}<0$ and $\beta_{2,6}>0$. Finally, if IAS 39 gave rise to a neutral change with no significant impact on the timeliness of loan-loss provisioning, $\beta_{2,5}$ and $\beta_{2,6}$ would both be insignificantly different from zero.

In light of concern that the IAS 39 incurred-loss method may have been particularly damaging in delaying the recognition of predictable loan losses until the onset of the financial and banking crisis of the late 2000s, I also estimate regression model (3). This includes the IAS 39 indicator variable included in regression model (2). It also includes an additional indicator variable in respect of cases where the accounting year ended in the second half of 2008, when the UK effects of the financial and banking crisis of the late 2000s became particularly severe as evidenced by the annual rate of UK GDP growth falling below zero. Regression model (3) is as follows:

$$\begin{aligned} \mathrm{WO}_{it} = {} & \beta_{3,1} + \beta_{3,2}\mathrm{LLE}_{it} + \beta_{3,3}\mathrm{LLE}_{i,t-1} + \beta_{3,4}\mathrm{DI}_{it} + \beta_{3,5}\mathrm{LLE}_{it} \times \mathrm{DI}_{it} \\ & + \beta_{3,6}\mathrm{LLE}_{i,t-1} \times \mathrm{DI}_{it} + \beta_{3,7}\mathrm{DI}_{it} \times \mathrm{DF}_{it} + \beta_{3,8}\mathrm{LLE}_{it} \times \mathrm{DI}_{it} \times \mathrm{DF}_{it} \\ & + \beta_{3,9}\mathrm{LLE}_{i,t-1} \times \mathrm{DI}_{it} \times \mathrm{DF}_{it} + \beta_{3,10}\mathrm{CHNPL}_{it} + \beta_{3,11}\mathrm{EARN}_{it} + \beta_{3,12}\mathrm{EQASS}_{i,t-1} \\ & + \sum_{j=1}^{j=b-1} \gamma_{3,j}\mathrm{Bank\ Control}_{jit} + \sum_{j=2002}^{j=2005} \delta_{3,j}\mathrm{Year\ Control}_{jit} + \varepsilon_{3,it}, \end{aligned} \tag{3}$$

where DF_{it} is an indicator variable equal to one for accounting years ended in the second half of 2008 and zero otherwise; and the other notation is as previously defined. From regression model (3), the coefficient $\beta_{3,5}$ ($\beta_{3,6}$) can be interpreted as the excess of the coefficient for LLE_{it} ($LLE_{i,t-1}$) under IAS 39 for accounting years other than those ended in the second half of 2008 over the corresponding coefficient before IAS 39. As for $\beta_{2,5}$ and $\beta_{2,6}$, I conduct for each of the coefficients $\beta_{3,5}$ and $\beta_{3,6}$a two-tailed test of the null hypothesis that the coefficient is equal to zero against the alternative hypothesis that it is not equal to zero. The coefficient $\beta_{3,8}$ ($\beta_{3,9}$) can be interpreted as the excess of the coefficient for LLE_{it} ($LLE_{i,t-1}$) under IAS 39 for accounting years ended in the second half of 2008 over the corresponding coefficient for previous years under IAS 39. I also conduct for each of these two coefficients a two-tailed test of the null hypothesis that the coefficient is equal to zero against the alternative hypothesis that it is not equal to zero. $\beta_{3,8}>0$ and $\beta_{3,9}<0$ ($\beta_{3,8}<0$ and $\beta_{3,9}>0$) would indicate that loan-loss provisioning was less timely (more timely) immediately prior to accounting years ended in the second half of 2008 than it had been previously under IAS 39.

3.2 *Did general provisioning enhance the timeliness of loan-loss provisioning before IAS 39?*

One of the effects of IAS 39 in the UK was to eliminate general loan-loss provisioning, which provided a means for reflecting in loan-loss expense evidence of a relatively non-specific and

judgemental nature with regard to likely loan losses. Data for accounting years ended in 2001–2005, for which general provisioning could have occurred in the previous accounting year, are therefore examined for evidence of greater timeliness in the general-provision element of the loan-loss expense than in the specific-provision element. This examination is carried out using a regression model that includes the general-provision element of the previous-year loan-loss expense as a separate explanatory variable.[12] The regression model is as follows:

$$\mathrm{WO}_{it} = \beta_{4,1} + \beta_{4,2}\mathrm{LLE}_{it} + \beta_{4,3}\mathrm{LLE}_{i,t-1} + \beta_{4,4}\mathrm{LLEGEN}_{i,t-1} + \beta_{4,10}\mathrm{CHNPL}_{i,t} + \beta_{4,11}\mathrm{EARN}_{i,t} + \beta_{4,12}\mathrm{EQASS}_{i,t-1} + \sum_{j=1}^{j=b-1} \gamma_{4,j}\mathrm{Bank\ Control}_{jit} + \sum_{j=2002}^{j=2005} \delta_{4,j}\mathrm{Year\ Control}_{jit} + \varepsilon_{4,it}, \quad (4)$$

where $\mathrm{LLEGEN}_{i,t-1}$ is the general-provision element of the loan-loss expense (gross of recoveries) for bank i for year $t-1$, divided by the average of the opening and closing balance-sheet values of loans of bank i for year $t-1$; and other notation is as previously defined. The principal object of interest here is the estimate of the coefficient $\beta_{4,4}$. This can be interpreted as the excess of the coefficient for the previous-year general-provision element of the loan-loss expense over the coefficient for the previous-year specific-provision element. I conduct for this coefficient a two-tailed test of the null hypothesis that the coefficient is equal to zero against the alternative hypothesis that it is not equal to zero. $\beta_{4,4} > 0$ ($\beta_{4,4} < 0$) would indicate that the general-provision element was more timely (less timely) than the specific-provision element. Regression model (1) is also estimated for the data for which regression model (4) is estimated.

3.3 *Partitioning of the data set*

The data set used in this paper comprises 37 UK banks, including 12 banks that had a UK stock market quotation at some time during the interval examined and 25 other UK banks which, in many cases, were UK subsidiaries of non-UK banks. The banks in the first subset differ from those in the second subset in that they are bank holding companies subject to more direct regulatory oversight and are usually much larger. The banks in the first subset may have differed from those in the second subset in their incentives and ability to deploy relatively sophisticated approaches to loan-loss provisioning in response to the implementation of IAS 39 and any other contemporaneous regulatory influences. In light of the potential difference between the two subsets of banks, all regression models are estimated separately for (i) all 37 banks together, (ii) the 12 banks that had a UK stock market quotation at some time during the interval examined and (iii) the 25 other banks.

4. Data

Details of the data used in the analysis are provided in Table 2. The analysis uses yearly accounting data for years from 2001 to 2008. As reported in Table 2 Panel A, data collection commenced with the identification for the interval from December 2001 to August 2009 of all banks included in the monthly lists of 'Banks Incorporated in the United Kingdom' published by the UK Financial Services Authority and all UK companies described as banks by the Perfect Information Filings database for which financial statements are available from Perfect Information Filings and/or Thomson Research. This gives 58 banks. Of these, 13 banks are eliminated because for

all cases they were subsidiaries of other banks included in the data set. A further 8 banks are eliminated because financial statements are available for only 1 or 2 years. This gives 37 banks for which 292 bank-year cases from 2001 to 2009 are available. Of these 292 cases, 6 cases are lost due to the non-availability of data items required for the analysis, and a total of 74 cases are lost because of the need for lagged loan-loss-expense data and next-year recoveries data. This leaves 212 cases. For some parts of the analysis, the data set is subdivided into those banks that had a UK quotation during part of the interval covered by the analysis and those that did not. The former subset comprises 12 banks with 81 bank-year cases; the latter subset comprises 25 banks with 131 bank-year cases.[13]

Table 2 Panel B provides summary statistics for the banks in the data set. The loan-loss expense is a material component of earnings: for the whole data set, the mean (median) of the absolute value of loan-loss expense as a proportion of the absolute value of profit on ordinary activities before loan-loss expense is 45.42% (24.03%); the corresponding figures for the banks with and without a stock market quotation are 44.34% (25.58%) and 46.09% (20.39%), respectively. Also, as reported in a note to Table 2, the mean and median values of the loan-loss allowance as a proportion of loans are larger before IAS 39 than under IAS 39, but the differences are not statistically significant.

All data used in this paper are hand-collected from annual financial statements, by reference to notes on the movements in the loan-loss allowance account. Loans are defined as those items that are classified on banks' balance sheets as loans and advances to customers or banks. The loan-loss allowance account and all movements therein examined in this paper are in respect of items defined as loans. Data are summarised by the author in accordance with the structure depicted in Figure 1, which shows how the beginning-of-year and end-of-year balances on the loan-loss allowance account articulate with the various movements in the account. Collection of data on write-offs, loan-loss expense and recoveries within this structure ensures that these data are internally consistent and complete.[14] Write-offs for year t, loan-loss expense for year t and loan loss-expense for year $t-1$ are all divided by the average of opening and closing loans (gross of the loan-loss allowance) for year $t-1$. Unlike with US banks, there is the potential for significant inconsistency both across banks and across time with regard to what is reported as non-performing loans by UK banks during the interval examined. This is indicated by Frost (2004, p. 379) and is also evident from examination of the financial statements of UK banks in the data set. In order to deal with this inconsistency, the change in non-performing loans is measured as the proportionate change in a measure of non-performing loans as a percentage of loans between the opening and closing balance-sheet dates, where opening and closing data for each bank-year case are all collected from the same set of annual financial statements. Where available, impaired loans as reported by Bankscope are used as the starting point for this exercise. In some cases no disclosure corresponding to non-performing loans is identified, and in some cases the ratio of proportions gives rise to an extreme value. In cases of no identifiable disclosure, the change in non-performing loans is set equal to zero; extreme values are dealt with by winsorising the item at the lower decile (-40%) and the upper decile ($+68\%$). Profit on ordinary activities before loan-loss expense is measured before tax and is divided by the average of opening and closing loans. The ratio of opening equity to opening total assets is measured as the opening book value of equity divided by opening total assets before subtracting the loan-loss allowance. With the exception of change in non-performing loans, all continuous variables are winsorised at the 5th and 95th percentile.

Table 3 reports descriptive statistics for the variables used in the regression models. Table 4 reports the correlation matrix for the variables.

Movements in the Loan-Loss Allowance Account

Debit entries		Credit entries	
		Balance brought forward at the beginning of year *t*	XXX
		Plus/less: Prior-year adjustments	XXX
		Plus / less: Changes arising from acquisition or disposal of businesses	XXX
		Plus/less: Transfers from other allowance accounts on reclassification of assets	XXX
		Plus/less: Foreign-currency translation differences	XXX
		Plus/less: Sundry adjustments described as 'other' or similar	XXX
Less: Unwind of discount post-IAS 39, when impairment of a financial asset carried at amortised cost is measured by reference to the present value of estimated future cash flows discounted at the effective interest rate on the asset at initial recognition	XXX		
Less: Credit to income statement in respect of recovery of items previously written off	XXX	*Plus*: Charge to income statement (before subtracting credit to income statement for recovery of items previously written off)	XXX
Less: Amounts written off with credit to the loan asset account (before subtracting any debit to the loan asset account for recoveries)	XXX	*Plus*: Debit to loan asset account in respect of recovery of items previously written off	XXX
Balance carried forward at the end of year *t*	XXX		
Total of debit entries	XXX	Total of credit entries	XXX
		Balance brought forward at the beginning of year *t*+1	XXX

Figure 1. Movements in the loan-loss allowance account.
Note: From information available in UK published financial statements, the categories of movement in the loan-loss allowance account described above can all be identified throughout the interval examined in this paper. Before the implementation of IAS 39, UK banks were required to disclose separately the movements on the specific and general components of the loan-loss allowance account. IAS 39 abolished general provisioning and introduced an individual/collective classification for loan-loss allowances. The standard did not require movements in the individual and collective components of the allowance to be separately disclosed. Some banks disclosed information about movements in these components and some did not.

5. Results

5.1 *Was loan-loss provisioning less timely under IAS 39 than before IAS 39?*

Table 5 reports the results from estimation of regression models (1), (2) and (3), both without control variables and with control variables. All models are estimated separately for: (i) all banks (all) (Panel A); (ii) the subset of banks which had a UK stock market quotation at any time during the interval covered by the analysis (quoted) (Panel B); (iii) the subset of banks which did not have a UK stock market quotation at any time during the interval covered by the analysis (unquoted) (Panel C). For each regression coefficient reported in the table, the *p*-value for a two-tailed test is reported in parentheses.

Table 3. Descriptive statistics for variables used in the regression models.

	N	Mean (%)	S. Dev (%)	Minimum (%)	Q1 (%)	Median (%)	Q3 (%)	Maximum (%)
All banks in the data set								
Write-off (as a percentage of lagged loans)	212	0.48	0.62	−0.02	0.01	0.27	0.66	2.31
Loan-loss expense (as a percentage of lagged loans):								
All cases: total expense	212	0.59	0.81	−0.40	0.03	0.37	0.84	3.07
Pre-IAS 39: lagged expense (total)	143	0.46	0.61	−0.37	0.03	0.30	0.76	2.10
Pre-IAS 39: lagged expense (general)	143	0.00	0.10	−0.28	−0.01	0.00	0.03	0.17
Change in non-performing loans	212	1.86	27.42	−40.00	−12.06	0.00	2.70	68.00
Profit on ordinary activities (as a percentage of loans)	212	1.82	1.32	−1.02	0.97	1.82	2.69	4.55
Equity as a percentage of total assets (opening)	212	10.07	10.08	1.90	3.74	5.78	11.01	37.98
Banks with a stock market quotation								
Write-off (as a percentage of lagged loans)	81	0.44	0.38	−0.02	0.16	0.36	0.59	1.50
Loan-loss expense (as a percentage of lagged loans):								
All cases: total expense	81	0.61	0.45	0.00	0.26	0.56	0.82	2.17
Pre-IAS 39: lagged expense (total)	49	0.43	0.29	0.01	0.21	0.42	0.60	1.20
Pre-IAS 39: lagged expense (general)	49	0.01	0.06	−0.28	−0.01	0.01	0.03	0.14
Change in non-performing loans	81	2.15	27.22	−40.00	−13.48	−1.51	11.59	68.00
Profit on ordinary activities (as a percentage of loans)	81	1.69	1.22	−1.02	1.00	1.90	2.65	3.68
Equity as a percentage of total assets (opening)	81	5.74	7.08	1.90	3.13	3.79	5.68	37.98
Banks without a stock market quotation								
Write-off (as a percentage of lagged loans)	131	0.51	0.73	−0.02	0.00	0.10	0.80	2.31
Loan-loss expense (as a percentage of lagged loans):								
All cases: total expense	131	0.57	0.96	−0.40	0.00	0.14	0.95	3.07
Pre-IAS 39: lagged expense (total)	94	0.47	0.73	−0.37	0.00	0.14	0.86	2.10
Pre-IAS 39: lagged expense (general)	94	0.00	0.11	−0.28	−0.01	0.00	0.04	0.17
Change in non-performing loans	131	1.68	27.64	−40.00	−6.89	0.00	0.00	68.00
Profit on ordinary activities (as a percentage of loans)	131	1.90	1.38	−1.02	0.95	1.69	2.74	4.55
Equity as a percentage of total assets (opening)	131	12.74	10.74	1.90	5.30	7.70	21.34	37.98

Notes: Statistics are for the bank-year cases used in the analysis (after winsorisation). All are expressed as percentages. The items for which statistics are provided are as follows: write-off (as a percentage of lagged loans) is the loan write-off (gross of current year recoveries and net of next-year recoveries) for bank *i* for year t as a percentage of the average of the opening and closing balance-sheet values of loans of bank *i* for year $t-1$; loan-loss expense (as a percentage of lagged loans) is the loan-loss expense (gross of recoveries) for bank *i* for year *t* as a percentage of the average of the opening and closing balance-sheet values of loans of bank *i* for year $t-1$; change in non-performing loans is the percentage change in a measure of the non-performing loans of bank *i* during year *t*; profit on ordinary activities is the profit on ordinary activities of bank *i* for year *t* (before loan-loss expense) as a percentage of the average of opening and closing loans of bank *i* for year *t*; equity as a percentage of total assets (opening) is the equity as a percentage of total assets in the opening balance sheet of bank *i* for year *t*.

Table 4. Correlation matrix.

	WO_{it}	LLE_{it}	$LLE_{i,t-1}$	NPL_{it}	$EARN_{it}$	$EQASS_{i,t-1}$
WO_{it}	1.00	0.68	0.75	0.02	0.58	0.01
LLE_{it}	0.72	1.00	0.74	0.24	0.39	−0.14
$LLE_{i,t-1}$	0.75	0.81	1.00	0.07	0.46	−0.08
$CHNPL_{it}$	−0.05	0.20	0.07	1.00	−0.14	−0.13
$EARN_{it}$	0.57	0.41	0.46	−0.16	1.00	0.32
$EQASS_{i,t-1}$	0.11	−0.09	−0.11	−0.18	0.14	1.00

Notes: Pearson (Spearman) correlation coefficients are below (above) the diagonal. Data are for UK banks from 2001 to 2008 (37 banks; 212 cases). WO_{it} is the loan write-off (gross of current-year recoveries and net of next-year recoveries) for bank i for year t, divided by the average of the opening and closing balance-sheet values of loans of bank i for year $t-1$; LLE_{it} ($LLE_{i,t-1}$) is the loan-loss expense (gross of recoveries) for bank i for year t ($t-1$), divided by the average of the opening and closing balance-sheet values of loans of bank i for year $t-1$; $CHNPL_{it}$ is the proportionate change in a measure of the non-performing loans of bank i during accounting year t; $EARN_{it}$ is the profit on ordinary activities of bank i for year t (before loan-loss expense) divided by the average of opening and closing loans of bank i for year t; $EQASS_{i,t-1}$ is the ratio of equity to total assets in the opening balance sheet of bank i for year t.

It should be noted that the implementation of IAS 39 by UK banks pre-dated by only 3 years the implementation in the UK in 2008 of the Basel II framework (Basel Committee on Banking Supervision 2006). Any change in the timeliness of loan-loss provisioning after the implementation of IAS 39 may therefore have been due in part to effects arising from the development of this framework. Inferences regarding the effect of IAS 39 itself should be qualified in light of this.

From regression model (1), for the full set of banks and for each of the two subsets, the $\beta_{1,2}$ coefficient (in respect of current-year loan-loss expense) and the $\beta_{1,3}$ coefficient (in respect of previous-year loan-loss expense) are all positive but are not always significantly different from zero at the 5% level. In all cases, the sum of the $\beta_{1,2}$ and $\beta_{1,3}$ coefficients is in the range 63% to 101%, consistent with most of the loan-loss expense of a year relating to loans that are written off in either the current year or the following year. In all cases $\beta_{1,3} > \beta_{1,2}$.

The principal focus of interest in this analysis is the output from estimation of regression model (2). Here, the principal objects of interest are the estimates of the coefficients $\beta_{2,5}$ and $\beta_{2,6}$, which indicate whether loan-loss provisioning under IAS 39 was less timely than loan-loss provisioning before IAS 39. Specifically, $\beta_{2,5} > 0$ and $\beta_{2,6} < 0$ ($\beta_{2,5} < 0$ and $\beta_{2,6} > 0$) would indicate that loan-loss provisioning under IAS 39 was less timely (more timely) than loan-loss provisioning before IAS 39. In all six cases (all, quoted, unquoted; without control variables and with control variables), the coefficient $\beta_{2,5}$ ($\beta_{2,6}$) is negative (positive), which is indicative of greater timeliness under IAS 39 than before IAS 39. However, most of the coefficients are not significantly different from zero at the 5% level. The exceptions are: $\beta_{2,6}$ (all, without controls) = 0.4996 (p-value 0.043); $\beta_{2,5}$ (quoted, without controls) = −0.7698 (p-value < 0.001); $\beta_{2,5}$ (quoted, with controls) = −0.7857 (p-value 0.001); $\beta_{2,6}$ (quoted, without controls) = 0.5865 (p-value 0.002); $\beta_{2,6}$ (quoted, with controls) = 0.6605 (p-value < 0.001). The evidence that provisioning became more timely under IAS 39 is stronger for the quoted subset, where all $\beta_{2,5}$ ($\beta_{2,6}$) coefficients are negative (positive) and significantly different from zero, than for the data set as a whole and for the unquoted subset. This could reflect the quoted banks' greater incentives and ability to deploy relatively sophisticated approaches to loan-loss provisioning in response to IAS 39 and any other regulatory influences at around the time that IAS 39 was introduced. However, the inferences that can be drawn from the quoted subset of banks should be qualified in light of the relatively small number of cases (81) in this subset.

Table 5. Tests of timeliness of loan-loss expense relative to write-offs.

		Model (1)		Model (2)		Model (3)	
		Without controls	With controls	Without controls	With controls	Without controls	With controls
Panel A: All banks in the data set (37 banks; 212 cases)							
Intercept	($\beta_{n,1}$)	0.0010 (0.159)	−0.0020 (0.411)	0.0016 (0.090)	−0.0021 (0.423)	0.0016 (0.092)	−0.0022 (0.394)
LLE_{it}	($\beta_{n,2}$)	0.2453 (0.046)	0.2464 (0.040)	0.3253 (0.057)	0.2945 (0.111)	0.3252 (0.058)	0.2942 (0.111)
$LLE_{i,t-1}$	($\beta_{n,3}$)	0.5224 (0.002)	0.4860 (0.002)	0.3769 (0.066)	0.4101 (0.019)	0.3769 (0.068)	0.4146 (0.023)
DI_{it}	($\beta_{n,4}$)			−0.0018 (0.052)	−0.0012 (0.202)	−0.0018 (0.052)	−0.0013 (0.206)
$LLE_{it} \times DI_{it}$	($\beta_{n,5}$)			−0.2306 (0.238)	−0.1404 (0.479)	−0.1551 (0.576)	−0.2034 (0.431)
$LLE_{i,t-1} \times DI_{it}$	($\beta_{n,6}$)			0.4996 (0.043)	0.3678 (0.172)	0.4230 (0.220)	0.4617 (0.205)
$DI_{it} \times DF_{it}$	($\beta_{n,7}$)					−0.0004 (0.620)	0.0006 (0.644)
$LLE_{it} \times DI_{it} \times DF_{it}$	($\beta_{n,8}$)					−0.0609 (0.708)	0.0468 (0.849)
$LLE_{i,t-1} \times DI_{it} \times DF_{it}$	($\beta_{n,9}$)					0.0291 (0.895)	−0.1151 (0.749)
$CHNPL_{it}$	($\beta_{n,10}$)		−0.0001 (0.460)		−0.0003 (0.704)		−0.0004 (0.644)
$EARN_{it}$	($\beta_{n,11}$)		0.1393 (0.012)		0.1411 (0.007)		0.1422 (0.006)
$EQASS_{i,t-1}$	($\beta_{n,12}$)		0.0157 (0.022)		0.0121 (0.033)		0.0128 (0.020)
Adjusted R^2		59.0%	76.8%	60.6%	77.2%	60.1%	76.9%
Panel B: Banks with a stock market quotation (12 banks; 81 cases)							
Intercept	($\beta_{n,1}$)	−0.0004 (0.017)	0.0035 (0.016)	−0.0010 (0.012)	0.0002 (0.881)	−0.001 (0.013)	0.0005 (0.720)
LLE_{it}	($\beta_{n,2}$)	0.2430 (0.099)	0.2992 (0.149)	0.8278 (<0.001)	0.8688 (<0.001)	0.8278 (<0.001)	0.8799 (<0.001)
$LLE_{i,t-1}$	($\beta_{n,3}$)	0.7663 (0.001)	0.3333 (0.101)	0.2966 (0.055)	0.1172 (0.075)	0.2967 (0.060)	0.1081 (0.059)
DI_{it}	($\beta_{n,4}$)			0.0008 (0.204)	0.0013 (0.009)	0.0008 (0.128)	0.0012 (0.045)
$LLE_{it} \times DI_{it}$	($\beta_{n,5}$)			−0.7698 (<0.001)	−0.7857 (0.001)	−0.6859 (0.003)	−0.5895 (0.003)
$LLE_{i,t-1} \times DI_{it}$	($\beta_{n,6}$)			0.5865 (0.002)	0.6605 (<0.001)	0.5055 (0.041)	0.4173 (0.027)
$DI_{it} \times DF_{it}$	($\beta_{n,7}$)					−0.0010 (0.267)	−0.0004 (0.822)
$LLE_{it} \times DI_{it} \times DF_{it}$	($\beta_{n,8}$)					−0.0252 (0.907)	−0.2000 (0.130)
$LLE_{i,t-1} \times DI_{it} \times DF_{it}$	($\beta_{n,9}$)					0.0575 (0.796)	0.2846 (0.101)
$CHNPL_{it}$	($\beta_{n,10}$)		−0.0012 (0.204)		−0.0012 (0.063)		−0.0012 (0.044)
$EARN_{it}$	($\beta_{n,11}$)		0.0302 (0.288)		0.0001 (0.999)		−0.0024 (0.946)
$EQASS_{i,t-1}$	($\beta_{n,12}$)		−0.0079 (0.155)		0.0007 (0.883)		−0.0055 (0.617)
Adjusted R^2		75.9%	88.3%	86.3%	95.9%	86.0%	95.9%

(*Continued*)

Table 5. Continued.

		Model (1)		Model (2)		Model (3)	
		Without controls	With controls	Without controls	With controls	Without controls	With controls
Panel C: Banks without a stock market quotation (25 banks; 131 cases)							
Intercept	($\beta_{n,1}$)	0.0014 (0.152)	−0.0030 (0.325)	0.0020 (0.120)	−0.0022 (0.495)	0.0020 (0.124)	−0.0025 (0.396)
LLE_{it}	($\beta_{n,2}$)	0.2606 (0.076)	0.2427 (0.092)	0.2952 (0.111)	0.2379 (0.232)	0.2952 (0.116)	0.2331 (0.233)
$LLE_{i,t-1}$	($\beta_{n,3}$)	0.4727 (0.015)	0.5261 (0.002)	0.3764 (0.098)	0.4426 (0.014)	0.3765 (0.102)	0.4449 (0.019)
DI_{it}	($\beta_{n,4}$)			−0.0021 (0.087)	−0.0022 (0.129)	−0.0020 (0.087)	−0.0028 (0.099)
$LLE_{it} \times DI_{it}$	($\beta_{n,5}$)			−0.1742 (0.460)	−0.0356 (0.872)	−0.0958 (0.786)	−0.3110 (0.285)
$LLE_{i,t-1} \times DI_{it}$	($\beta_{n,6}$)			0.4748 (0.126)	0.3387 (0.289)	0.3905 (0.385)	0.7425 (0.120)
$DI_{it} \times DF_{it}$	($\beta_{n,7}$)					−0.0002 (0.813)	0.0018 (0.439)
$LLE_{it} \times DI_{it} \times DF_{it}$	($\beta_{n,8}$)					−0.0756 (0.741)	0.2674 (0.465)
$LLE_{i,t-1} \times DI_{it} \times DF_{it}$	($\beta_{n,9}$)					0.0393 (0.903)	−0.4852 (0.394)
$CHNPL_{it}$	($\beta_{n,10}$)		−0.0014 (0.268)		−0.0008 (0.452)		−0.0013 (0.368)
$EARN_{it}$	($\beta_{n,11}$)		0.1802 (0.009)		0.1979 (0.005)		0.2050 (0.002)
$EQASS_{i,t-1}$	($\beta_{n,12}$)		0.0196 (0.016)		0.0120 (0.097)		0.0115 (0.139)
Adjusted R^2		57.0%	75.5%	57.7%	76.1%	56.7%	75.7%

Table 5. Continued

Notes: Regression models (1), (2) and (3) are estimated using pooled cross-section and time-series yearly data for UK banks from 2001 to 2008. The models are as follows:

$$\mathrm{WO}_{it} = \beta_{1,1} + \beta_{1,2}\mathrm{LLE}_{it} + \beta_{1,3}\mathrm{LLE}_{i,t-1} + \beta_{1,10}\mathrm{CHNPL}_{it} + \beta_{1,11}\mathrm{EARN}_{it} + \beta_{1,12}\mathrm{EQASS}_{i,t-1} + \sum_{j=1}^{j=b-1} \gamma_{1,j}\mathrm{Bank\ Control}_{jit} + \sum_{j=2002}^{j=2005} \delta_{1,j}\mathrm{Year\ Control}_{jit} + \varepsilon_{1,it} \quad (1)$$

$$\mathrm{WO}_{it} = \beta_{2,1} + \beta_{2,2}\mathrm{LLE}_{it} + \beta_{2,3}\mathrm{LLE}_{i,t-1} + \beta_{2,4}\mathrm{DI}_{it} + \beta_{2,5}\mathrm{LLE}_{it} \times \mathrm{DI}_{it} + \beta_{2,6}\mathrm{LLE}_{i,t-1} \times DI_{it} + \beta_{2,10}\mathrm{CHNPL}_{it} + \beta_{2,11}\mathrm{EARN}_{it} + \beta_{2,12}\mathrm{EQASS}_{i,t-1} + \sum_{j=1}^{j=b-1} \gamma_{2,j}\mathrm{Bank\ Control}_{jit} + \sum_{j=2002}^{j=2005} \delta_{2,j}\mathrm{Year\ Control}_{jit} + \varepsilon_{2,it}, \quad (2)$$

$$\mathrm{WO}_{it} = \beta_{3,1} + \beta_{3,2}\mathrm{LLE}_{it} + \beta_{3,3}\mathrm{LLE}_{i,t-1} + \beta_{3,4}\mathrm{DI}_{it} + \beta_{3,5}\mathrm{LLE}_{it} \times \mathrm{DI}_{it} + \beta_{3,6}\mathrm{LLE}_{i,t-1} \times \mathrm{DI}_{it} + \beta_{3,7}\mathrm{DI}_{it} \times \mathrm{DF}_{it} + \beta_{3,8}\mathrm{LLE}_{it} \times \mathrm{DI}_{it} \times \mathrm{DF}_{it} + \beta_{3,9}\mathrm{LLE}_{i,t-1} \times \mathrm{DI}_{it} \times \mathrm{DF}_{it} + \beta_{3,10}\mathrm{CHNPL}_{it} + \beta_{3,11}\mathrm{EARN}_{it} + \beta_{3,12}\mathrm{EQASS}_{i,t-1} + \sum_{j=1}^{j=b-1} \gamma_{3,j}\mathrm{Bank\ Control}_{jit} + \sum_{j=2002}^{j=2005} \delta_{3,j}\mathrm{Year\ Control}_{jit} + \varepsilon_{3,it}, \quad (3)$$

where WO_{it} is the loan write-off (gross of current-year recoveries and net of next-year recoveries) for bank i for year t, divided by the average of the opening and closing balance-sheet values of loans of bank i for year $t-1$; LLE_{it} ($\mathrm{LLE}_{i,t-1}$) is the loan-loss expense (gross of recoveries) for bank i for year t ($t-1$), divided by the average of the opening and closing balance-sheet values of loans of bank i for year $t-1$; CHNPL_{it} is a control variable equal to the proportionate change in a measure of the non-performing loans of bank i during year t; EARN_{it} is a control variable equal to the profit on ordinary activities of bank i for year t (before loan-loss expense) divided by the average of opening and closing loans of bank i for year t; $\mathrm{EQASS}_{i,t-1}$ is a control variable equal to the ratio of equity to total assets in the opening balance sheet of bank i for year t; Bank $\mathrm{Control}_{jit}$ is the value for bank i for year t of an indicator-variable control for bank j, where b is the number of banks; Year $\mathrm{Control}_{jit}$ is the value for bank i for year t of an indicator-variable control for calendar year j; DI_{it} is an indicator variable equal to one where bank i applied IAS 39 for year $t-1$, and zero otherwise; DF_{it} is an indicator variable equal to one for accounting years ended in the second half of 2008, when the effects of the financial and banking crisis of the late 2000s became particularly severe; the β, γ and δ terms are regression coefficients; the ε terms are error terms. Coefficients for bank controls and calendar-year controls are not reported. p-Values for a two-tailed test are given in parentheses. p-Values are based on White standard errors that are robust to clustering by bank.

Regression model (3) includes post-IAS 39 interaction terms and interaction terms for accounting years ended in the second half of 2008. The coefficients $\beta_{3,5}$ and $\beta_{3,6}$ are all of the same sign as the corresponding $\beta_{2,5}$ and $\beta_{2,6}$ coefficients. With one exception, the coefficients $\beta_{3,5}$ and $\beta_{3,6}$ are (are not) significantly different from zero at the 5% level where the corresponding $\beta_{2,5}$ and $\beta_{2,6}$ coefficients are (are not) significantly different from zero. The coefficient $\beta_{3,8}$ ($\beta_{3,9}$) reflects the excess of the coefficient for LLE_{it} ($\text{LLE}_{i,t-1}$) under IAS 39 for accounting years ended in the second half of 2008 over the corresponding coefficient for previous years under IAS 39. $\beta_{3,8} > 0$ and $\beta_{3,9} < 0$ ($\beta_{3,8} < 0$ and $\beta_{3,9} > 0$) would indicate that loan-loss provisioning was less timely (more timely) immediately prior to accounting years ended in the second half of 2008 than it had been previously under IAS 39. There is no consistent pattern with respect to the signs of the coefficients $\beta_{3,8}$ and $\beta_{3,9}$ reported in Table 5. Four of the six $\beta_{3,8}$ coefficients are negative and two are positive, four of the six $\beta_{3,9}$ coefficients are positive and two are negative, and none of the $\beta_{3,8}$ and $\beta_{3,9}$ coefficients are significantly different from zero at the 5% level. On the basis of this, there is no evidence that provisioning was less timely in respect of loans written-off in accounting years ended in the second half of 2008, when the effects of the financial and banking crisis became particularly severe, than previously.

As indicated previously, the use of the relationship in time between write-offs and loan-loss expense to compare the timeliness of the loan-loss expenses in different intervals relies on the assumption that write-offs themselves are equally timely across the different intervals. In order to mitigate to some extent the effect of possible management of the timing of write-offs, the write-offs used in this analysis are stated net of next-year recoveries. Nevertheless, I also carried out an additional test to provide evidence as to whether results reported in Table 5 that suggest greater timeliness of loan-loss provisioning by UK banks under IAS 39 than previously may be due to write-offs under IAS 39 being less timely than previously. I estimate additional regression models with the same structure as model (2), with and without control variables, except that the loan-loss expense is replaced by the change in non-performing loans and the latter item no longer appears as a control variable. These models provide evidence as to whether there is a difference between the pre-IAS 39 interval and the post-IAS 39 interval in the timeliness of write-offs with respect to changes in the quality of the loan portfolio. If the signs of the coefficients $\beta_{2,5}$ (negative) and $\beta_{2,6}$ (positive) reported in Table 5 are primarily attributable to such a difference, the same pattern of coefficients would be observed in these additional regression models. I estimate these regression models for all banks and separately for quoted banks and for unquoted banks. In none of the six cases (all banks, quoted banks and unquoted banks; with and without control variables) does this give rise to the pattern of coefficients reported in Table 5. Therefore, it does not appear that the pattern of $\beta_{2,5}$ and $\beta_{2,6}$ coefficients reported in Table 5 is due to reduced timeliness of write-offs with respect to changes in the quality of the loan portfolio.

The results reported in this subsection are consistent with a US result reported by Beck and Narayanamoorthy (2012), referred to in Section 2.3, which suggests that the more restrictive evidence requirement introduced in the US in 2001 by SAB 102 improved the association between loan write-offs and past loan-loss allowances for some banks.

5.2 *Did general provisioning enhance the timeliness of loan-loss provisioning before IAS 39?*

Table 6 reports the results from estimation of regression models (1) and (4), both without control variables and with control variables, for the interval before IAS 39 was implemented in the UK. From regression model (1), all coefficients for the current-year loan-loss expense ($\beta_{1,2}$) and the previous-year loan-loss expense ($\beta_{1,3}$) are positive and the majority of them are significantly

Table 6. Tests of timeliness of general-provision element of loan-loss expense before IAS 39.

		Model (1)		Model (4)	
		Without controls	With controls	Without controls	With controls
Panel A: All banks in the data set (34 banks; 143 cases)					
Intercept	($\beta_{n,1}$)	0.0016 (0.089)	−0.0034 (0.269)	0.0015 (0.117)	−0.0037 (0.269)
LLE_{it}	($\beta_{n,2}$)	0.3253 (0.056)	0.3107 (0.043)	0.3087 (0.050)	0.2939 (0.029)
$LLE_{i,t-1}$	($\beta_{n,3}$)	0.3769 (0.066)	0.4239 (0.028)	0.4321 (0.021)	0.4581 (0.007)
$LLEGEN_{i,t-1}$	($\beta_{4,4}$)			−0.9457 (0.121)	−0.3984 (0.499)
$CHNPL_{it}$	($\beta_{n,10}$)		−0.0003 (0.740)		−0.0003 (0.767)
$EARN_{it}$	($\beta_{n,11}$)		0.2274 (0.022)		0.2269 (0.020)
$EQASS_{i,t-1}$	($\beta_{n,12}$)		0.0058 (0.612)		0.0090 (0.444)
Adjusted R^2		51.1%	74.7%	52.5%	74.7%
Panel B: Banks with a stock market quotation (10 banks; 49 cases)					
Intercept	($\beta_{n,1}$)	−0.0010 (0.014)	0.0025 (0.164)	−0.0009 (0.020)	0.0022 (0.125)
LLE_{it}	($\beta_{n,2}$)	0.8278 (<0.001)	0.9074 (<0.001)	0.7712 (0.001)	0.9168 (<0.001)
$LLE_{i,t-1}$	($\beta_{n,3}$)	0.2966 (0.061)	0.1214 (0.016)	0.3473 (0.068)	0.1057 (0.034)
$LLEGEN_{i,t-1}$	($\beta_{4,4}$)			−0.4361 (0.155)	0.0988 (0.479)
$CHNPL_{it}$	($\beta_{n,10}$)		−0.0015 (0.107)		−0.0016 (0.123)
$EARN_{it}$	($\beta_{n,11}$)		0.0573 (0.079)		0.0589 (0.058)
$EQASS_{i,t-1}$	($\beta_{n,12}$)		−0.0643 (0.024)		−0.0600 (0.019)
Adjusted R^2		86.4%	96.9%	86.5%	96.8%
Panel C: Banks without a stock market quotation (24 banks; 94 cases)					
Intercept	($\beta_{n,1}$)	0.0020 (0.118)	−0.0040 (0.364)	0.0018 (0.155)	−0.0042 (0.374)
LLE_{it}	($\beta_{n,2}$)	0.2952 (0.109)	0.2422 (0.129)	0.2872 (0.097)	0.2328 (0.103)
$LLE_{i,t-1}$	($\beta_{n,3}$)	0.3765 (0.097)	0.4569 (0.035)	0.4206 (0.041)	0.4810 (0.018)
$LLEGEN_{i,t-1}$	($\beta_{4,4}$)			−0.8204 (0.267)	−0.3121 (0.679)
$CHNPL_{it}$	($\beta_{n,10}$)		−0.0018 (0.359)		−0.0017 (0.381)
$EARN_{it}$	($\beta_{n,11}$)		0.2696 (0.029)		0.2702 (0.027)
$EQASS_{i,t-1}$	($\beta_{n,12}$)		0.0033 (0.834)		0.0061 (0.715)
Adjusted R^2		48.4%	72.6%	49.1%	72.3%

(*Continued*)

Table 6. Continued.

Notes: Regression models (1) and (4) are estimated using pooled cross-section and time-series yearly data for UK banks from 2001 to 2008. The models are as follows:

$$\mathrm{WO}_{it} = \beta_{1,1} + \beta_{1,2}\mathrm{LLE}_{it} + \beta_{1,3}\mathrm{LLE}_{i,t-1} + \beta_{1,10}\mathrm{CHNPL}_{it} + \beta_{1,11}\mathrm{EARN}_{it} + \beta_{1,12}\mathrm{EQASS}_{i,t-1} + \sum_{j=1}^{j=b-1}\gamma_{1,j}\mathrm{Bank\ Control}_{jit} + \sum_{j=2002}^{j=2005}\delta_{1,j}\mathrm{Year\ Control}_{jit} + \varepsilon_{1,it}, \quad (1)$$

$$\mathrm{WO}_{it} = \beta_{4,1} + \beta_{4,2}\mathrm{LLE}_{it} + \beta_{4,3}\mathrm{LLE}_{i,t-1} + \beta_{4,4}\mathrm{LLEGEN}_{i,t-1} + \beta_{4,10}\mathrm{CHNPL}_{i,t} + \beta_{4,11}\mathrm{EARN}_{i,t} + \beta_{4,12}\mathrm{EQASS}_{i,t-1} + \sum_{j=1}^{j=b-1}\gamma_{4,j}\mathrm{Bank\ Control}_{jit} + \sum_{j=2002}^{j=2005}\delta_{4,j}\mathrm{Year\ Control}_{jit} + \varepsilon_{4,it}, \quad (4)$$

where WO_{it} is the loan write-off (gross of current-year recoveries and net of next-year recoveries) for bank i for year t, divided by the average of the opening and closing balance-sheet values of loans of bank i for year $t-1$; LLE_{it} ($\mathrm{LLE}_{i,t-1}$) is the loan-loss expense (gross of recoveries) for bank i for year t ($t-1$), divided by the average of the opening and closing balance-sheet values of loans of bank i for year $t-1$; $\mathrm{LLEGEN}_{i,t-1}$ is the general-provision element of the loan-loss expense (gross of recoveries) for bank i for year $t-1$, divided by the average of opening and closing balance-sheet values of loans of bank i for year $t-1$; CHNPL_{it} is a control variable equal to the proportionate change in a measure of the non-performing loans of bank i during year t; EARN_{it} is a control variable equal to the profit on ordinary activities of bank i for year t (before loan-loss expense) divided by the average of opening and closing loans of bank i for year t; $\mathrm{EQASS}_{i,t-1}$ is a control variable equal to the ratio of equity to total assets in the opening balance sheet of bank i for year t; $\mathrm{Bank\ Control}_{jit}$ is the value for bank i for year t of an indicator-variable control for bank j, where b is the number of banks; $\mathrm{Year\ Control}_{jit}$ is the value for bank i for year t of an indicator-variable control for calendar year j; the β, γ and δ terms are regression coefficients; the ε terms are error terms. Coefficients for bank controls and calendar-year controls are not reported. p-Values are given in parentheses. p-Values are based on White standard errors robust to clustering by bank.

different from zero at the 5% level. The principal object of interest here is the estimate of coefficient $\beta_{4,4}$ from model (4), which indicates whether the general-provision element of the loan-loss expense was more timely than the specific-provision element. $\beta_{4,4} > 0$ ($\beta_{4,4} < 0$) would indicate that the general-provision element was more timely (less timely) than the specific-provision element. In all but one case, the coefficient is negative, and in no case is it significantly different from zero at the 5% level. Thus, there is no evidence that the general-provision element of loan-loss expense enhanced the timeliness of loan-loss provisioning by UK banks before general provisioning was eliminated by IAS 39.

5.3 *Additional tests and robustness tests*

The results reported in Table 5 suggest that, for the quoted subset of banks, loan-loss provisioning by UK banks became more timely under IAS 39 than it had been before IAS 39. However, it is possible that banks across the world, including those not directly affected by the implementation of IAS 39 in the UK, may have been affected by events that coincided with the implementation of IAS 39 in the UK, and that the effect documented in Table 5 is attributable to these events. In order to investigate this possibility, model (2) is applied to US banks, which were not directly affected by the implementation of IAS 39. Here, the indicator variable DI_{it}, which in the main tests denotes that a bank applied IAS 39 in the previous year and which corresponds to the years 2006–2008, denotes the years 2006–2008. The following variables are collected from Compustat Bank for 601 banks and 3466 bank-years for which required data items are available during the interval 2001–2008: LNTAL (loans – net of total allowances for loan losses), RCL (reserves for credit losses (assets)), PCL (provision – credit losses (income account)), NCO (net charge-offs) (termed write-offs in this paper), LLRCR (loan loss recoveries – credited to reserves), NPAT (nonperforming assets – total), PI (pretax income), AT (assets – total), CEQ (common/ordinary equity – total). Variables are constructed as follows, as for the UK data and with the same winsorisation. WO_{it} is constructed from NCO and LLRCR to give write-offs gross of current-year recoveries and net of next-year recoveries, and LNTAL and RCL to give lagged gross loans by which this and other items are scaled; LLE_{it} and $LLE_{i,t-1}$ are constructed from PCL and LLRCR, to give the loan-loss expense gross of current-year recoveries, which is scaled by lagged gross loans; the control variable $CHNPL_{it}$ is constructed from NPAT and gross loans; the control variable $EARN_{it}$ is constructed from PI, PCL and LLRCR, to give earnings before loan-loss expense, which is scaled by gross loans; the control variable $EQASS_{i,t-1}$ is constructed from CEQ and AT.

Table 7 reports in Panels A and B summary statistics for the US data. In Panel C, it reports the results of applying model (2) to these US data. Recall that, for the UK data for which results are reported in Table 5, the coefficients $\beta_{2,5}$ are all negative and the coefficients $\beta_{2,6}$ are all positive. For the US data for which results are reported in Table 7, this pattern is not observed. $\beta_{2,5}$ is positive both for the model without control variables and for the model with control variables, with both coefficients significantly different from zero at the 5% level; $\beta_{2,6}$ is negative for the model without control variables and positive for the model with control variables, with neither coefficient significantly different from zero at the 5% level. These results suggest that results reported for UK banks that are consistent with loan-loss provisioning by UK banks becoming more timely under IAS 39 are not driven by events that may have affected banks across the world rather than just UK banks subject to IAS 39.

Gebhardt and Novotny-Farkas (2011) (GN) report evidence that the loan-loss expense of European banks was less asymmetrically timely with respect to the recognition of bad news and good news after the implementation of IAS 39 than previously. GN's results are not directly comparable with those reported above in this paper. First, GN measure asymmetric timeliness in the loan-loss expense with regard to its recognition of bad news and good news rather than its

Table 7. Estimation of model (2) for US banks 2001–2008.

Panel A: Summary statistics – US banks

	Bank-years	Mean	Median
Total assets (in billions of US dollars)	3466	14.03	1.04
Book equity/total assets (opening)	3466	8.91%	8.74%
Loans/total assets	3466	67.54%	69.02%
Loan-loss allowance/loans	3466	1.39%	1.29%
Loan-loss expense/profit on ordinary activities (absolute values)	3466	27.73%	14.32%

Panel B: Descriptive statistics for variables used in the regression models – US banks

	N	Mean	Std. Dev.	Minimum	Q1	Median	Q3	Maximum
Write-off (as a percentage of lagged loans)	3466	0.33%	0.35%	0.00%	0.08%	0.21%	0.43%	1.31%
Loan-loss expense (as a percentage of lagged loans):	3466	0.52%	0.47%	0.01%	0.20%	0.37%	0.67%	1.85%
Change in non-performing loans	3466	13.65%	42.40%	−40.00%	−27.25%	4.70%	68.00%	68.00%
Profit on ordinary activities (as a percentage of loans)	3466	2.65%	1.13%	0.70%	1.88%	2.56%	3.31%	5.13%
Equity as a percentage of total assets (opening)	3466	8.91%	1.88%	5.88%	7.52%	8.74%	10.04%	13.06%

Panel C: Results from estimation of model (2) for US banks (601 banks; 3466 cases)

		Without controls	With controls
Intercept	($\beta_{2,1}$)	−0.0002	0.0032
		(0.025)	(<0.001)
LLE_{it}	($\beta_{2,2}$)	0.4815	0.4607
		(<0.001)	(<0.001)
$LLE_{i,t-1}$	($\beta_{2,3}$)	0.2347	0.1378
		(<0.001)	(<0.001)
DI_{it}	($\beta_{2,4}$)	−0.0001	−0.0005
		(0.485)	(0.002)
$LLE_{it} \times DI_{it}$	($\beta_{2,5}$)	0.0614	0.0770
		(0.048)	(0.031)
$LLE_{i,t-1} \times DI_{it}$	($\beta_{2,6}$)	−0.0475	0.0277
		(0.293)	(0.585)
$CHNPL_{it}$	($\beta_{2,10}$)		−0.0002
			(0.021)

Table 7. Continued.

$EARN_{it}$	$(\beta_{2,11})$		−0.0302
			(0.001)
$EQASS_{i,t-1}$	$(\beta_{2,12})$		−0.0076
			(0.069)
Adjusted R^2		68.4%	78.1%

Notes: In Panel A, the mean value for book equity/total assets (opening) is for the winsorised data used in the regression models, as also reported in Panel B. Profit on ordinary activities is stated before loan-loss expense. In Panel B, statistics are for the bank-year cases used in the analysis (after winsorisation). All are expressed as percentages. The items for which statistics are provided are as follows: write-off (as a percentage of lagged loans) is the loan write-off (gross of current year recoveries and net of next-year recoveries) for bank i for year t as a percentage of the average of the opening and closing balance-sheet values of loans of bank i for year $t-1$; loan-loss expense (as a percentage of lagged loans) is the loan-loss expense (gross of recoveries) for bank i for year t as a percentage of the average of the opening and closing balance-sheet values of loans of bank i for year $t-1$; change in non-performing loans is the percentage change in a measure of the non-performing loans of bank i during year t; profit on ordinary activities is the profit on ordinary activities of bank i for year t (before loan-loss expense) as a percentage of the average of opening and closing loans of bank i for year t; equity as a percentage of total assets (opening) is the equity as a percentage of total assets in the opening balance sheet of bank i for year t. Regression model (2) is estimated, without control variables and with control variables, using pooled cross-section and time-series yearly data for US banks from 2001 to 2008. The model is:

$$\mathrm{WO}_{it} = \beta_{2,1} + \beta_{2,2}\mathrm{LLE}_{it} + \beta_{2,3}\mathrm{LLE}_{i,t-1} + \beta_{2,4}\mathrm{DI}_{it} + \beta_{2,5}\mathrm{LLE}_{it} \times \mathrm{DI}_{it} + \beta_{2,6}\mathrm{LLE}_{i,t-1} \times DI_{it} + \beta_{2,10}\mathrm{CHNPL}_{it} + \beta_{2,11}\mathrm{EARN}_{it} + \beta_{2,12}\mathrm{EQASS}_{i,t-1} + \sum_{j=1}^{j=b-1} \gamma_{2,j}\mathrm{Bank\ Control}_{jit} + \sum_{j=2002}^{j=2005} \delta_{2,j}\mathrm{Year\ Control}_{jit} + \varepsilon_{2,it}, \quad (2)$$

where WO_{it} is the loan write-off (gross of current-year recoveries and net of next-year recoveries) for bank i for year t, divided by the average of the opening and closing balance-sheet values of loans of bank i for year $t-1$; LLE_{it} ($\mathrm{LLE}_{i,t-1}$) is the loan-loss expense (gross of recoveries) for bank i for year t ($t-1$), divided by the average of the opening and closing balance-sheet values of loans of bank i for year $t-1$; DI_{it} is an indicator variable equal to one where the fiscal year is 2006, 2007 or 2008, and zero otherwise; CHNPL_{it} is a control variable equal to the proportionate change in a measure of the non-performing loans of bank i during year t; EARN_{it} is a control variable equal to the profit on ordinary activities of bank i for year t (before loan-loss expense) divided by the average of opening and closing loans of bank i for year t; $\mathrm{EQASS}_{i,t-1}$ is a control variable equal to the ratio of equity to total assets in the opening balance sheet of bank i for year t; $\mathrm{Bank\ Control}_{jit}$ is the value for bank i for year t of an indicator-variable control for bank j, where b is the number of banks; $\mathrm{Year\ Control}_{jit}$ is the value for bank i for year t of an indicator-variable control for calendar year j; the β, γ and δ terms are regression coefficients; the ε terms are error terms. Coefficients for bank controls and calendar-year controls are not reported. p-Values are given in parentheses. p-Values are based on White standard errors robust to clustering by bank.

overall timeliness by comparison with an event. Second, GN use data for 12 EU countries for which differing pre-IAS 39 provisioning regimes may have been in place, whereas this paper uses data for the UK only. Nevertheless, in light of the different inferences that might be drawn based on this study and GN's Europe-wide study, a regression model similar to that used by GN is estimated for the UK data used in this paper. The model used by GN derives ultimately from a model proposed by Basu (1997), which is motivated by the belief that greater timeliness in the recognition of bad news than of good news will cause negative earnings changes to be less persistent than positive earnings changes. More directly, it derives from a development of the Basu (1997) model by Nichols *et al.* (2009), which tests for asymmetric timeliness in the loan-loss expense by testing for evidence of asymmetric persistence in earnings changes with respect to income-decreasing changes and income-increasing changes in the loan-loss-expense component of the earnings change.[15] For the UK data used in this paper, I estimate a regression model that is similar to that used by GN. The number of cases used is 175, which is less than the number used in the main tests due to the model's use of lagged changes in earnings components. The model estimated is as follows:

$$\begin{aligned}\Delta\mathrm{EBT}_{it} = {} & \beta_{5,1} + \beta_{5,2}\mathrm{DE}_{it} + \beta_{5,3}\Delta\mathrm{EPLLE}_{i,t-1} + \beta_{5,4}\Delta\mathrm{LLE}_{i,t-1} + \beta_{5,5}\Delta\mathrm{EPLLE}_{i,t-1} \times \mathrm{DP}_{it} \\ & + \beta_{5,6}\Delta\mathrm{LLE}_{i,t-1} \times \mathrm{DL}_{it} + \beta_{5,7}\mathrm{DI}_{it} + \beta_{5,8}\mathrm{DE}_{it} \times \mathrm{DI}_{it} + \beta_{5,9}\Delta\mathrm{EPLLE}_{i,t-1} \times \mathrm{DI}_{it} \\ & + \beta_{5,10}\Delta\mathrm{LLE}_{i,t-1} \times \mathrm{DI}_{it} + \beta_{5,11}\Delta\mathrm{EPLLE}_{i,t-1} \times \mathrm{DP}_{it} \times \mathrm{DI}_{it} \\ & + \beta_{5,12}\Delta\mathrm{LLE}_{i,t-1} \times \mathrm{DL}_{it} \times \mathrm{DI}_{it} + \beta_{5,13}\mathrm{CHNPL}_{it} + \beta_{5,14}\mathrm{EQASS}_{i,t-1} \\ & + \sum_{j=1}^{j=b-1} \gamma_{5,j}\text{Bank Control}_{jit} + \sum_{j=2003}^{j=2005} \delta_{5,j}\text{Year Control}_{jit} + \varepsilon_{5,it},\end{aligned} \tag{5}$$

where $\Delta\mathrm{EBT}_{it}$, $\Delta\mathrm{EPLLE}_{i,t-1}$ and $\Delta\mathrm{LLE}_{i,t-1}$ are, respectively, the change in earnings before tax for bank i for year t, the change in earnings before tax and loan-loss expense for bank i for year $t-1$ and the change in loan-loss expense for bank i for year $t-1$ times -1, where each item is scaled by the average of the opening and closing balance-sheet values of loans of bank i for year $t-1$ as for the principal variables in the main tests in this paper; DE_{it} is an indicator variable equal to one where the change in earnings before tax for bank i for year $t-1$ is negative, and zero otherwise; DP_{it} is an indicator variable equal to one where $\Delta\mathrm{EPLLE}_{i,t-1}$ is negative, and zero otherwise; DL_{it} is an indicator variable equal to one where $\Delta\mathrm{LLE}_{i,t-1}$ is negative (income decreasing), and zero otherwise; DI_{it} is an indicator variable equal to one where bank i applied IAS 39 for year $t-1$, and zero otherwise; CHNPL_{it} is a control variable equal to the proportionate change in a measure of the non-performing loans of bank i during year t; $\mathrm{EQASS}_{i,t-1}$ is a control variable equal to the ratio of equity to total assets in the opening balance sheet of bank i for year t; Bank $\mathrm{Control}_{jit}$ is the value for bank i for year t of an indicator-variable control for bank j, where b is the number of banks; Year $\mathrm{Control}_{jit}$ is the value for bank i for year t of an indicator-variable control for calendar year j (now for 2003–2005 because of the reduced data set); the β, γ and δ terms are regression coefficients; the ε term is an error term. The control variable in respect of earnings included in models (1) to (4) is not included here, since earnings change is the dependent variable. Following the reasoning outlined above with respect to the Basu (1997) asymmetric-persistence model, a negative (positive) value for the coefficient $\beta_{5,12}$ would indicate that the loan-loss expense was more (less) asymmetrically timely after the implementation of IAS 39 than before.[16] The results from estimation of model (5), with and without control variables, for the whole sample of banks are reported in Table 8. In each case, the coefficient $\beta_{5,12}$

Table 8. Asymmetric-persistence-based test of asymmetric timeliness in the loan-loss expense (35 banks; 175 cases).

		Without controls	With controls
Intercept	($\beta_{5,1}$)	0.0039 (0.024)	0.0093 (0.040)
DE_{it}	($\beta_{5,2}$)	−0.0003 (0.924)	0.0001 (0.979)
$\Delta EPLLE_{i,t-1}$	($\beta_{5,3}$)	−0.1179 (0.701)	−0.2691 (0.493)
$\Delta LLE_{i,t-1}$	($\beta_{5,4}$)	−0.8091 (0.310)	−1.3453 (0.146)
$\Delta EPLLE_{i,t-1} \times DP_{it}$	($\beta_{5,5}$)	0.1585 (0.710)	0.3862 (0.495)
$\Delta LLE_{i,t-1} \times DL_{it}$	($\beta_{5,6}$)	0.9847 (0.260)	1.8625 (0.088)
DI_{it}	($\beta_{5,7}$)	−0.0054 (0.066)	−0.0024 (0.538)
$DE_{it} \times DI_t$	($\beta_{5,8}$)	−0.0015 (0.755)	−0.0008 (0.887)
$\Delta EPLLE_{i,t-1} \times DI_{it}$	($\beta_{5,9}$)	−0.2070 (0.677)	−0.4348 (0.474)
$\Delta LLE_{i,t-1} \times DI_{it}$	($\beta_{5,10}$)	1.2560 (0.274)	0.2457 (0.839)
$\Delta EPLLE_{i,t-1} \times DP_{it} \times DI_{it}$	($\beta_{5,11}$)	0.0118 (0.989)	0.0888 (0.923)
$\Delta LLE_{i,t-1} \times DL_{it} \times DI_t$	($\beta_{5,12}$)	−2.1940 (0.127)	−1.3150 (0.373)
$CHNPL_{it}$	($\beta_{5,13}$)		−0.0058 (0.168)
$EQASS_{i,t-1}$	($\beta_{5,14}$)		−0.0547 (0.079)
Adjusted R^2		1.5%	8.9%

Notes: Regression model (5) is estimated using pooled cross-section and time-series yearly data for UK banks from 2002 to 2008. The model is as follows:

$$\begin{aligned}\Delta EBT_{it} = {} & \beta_{5,1} + \beta_{5,2}DE_{it} + \beta_{5,3}\Delta EPLLE_{i,t-1} + \beta_{5,4}\Delta LLE_{i,t-1} + \beta_{5,5}\Delta EPLLE_{i,t-1} \times DP_{it} \\ & + \beta_{5,6}\Delta LLE_{i,t-1} \times DL_{it} + \beta_{5,7}DI_{it} + \beta_{5,8}DE_{it} \times DI_{it} + \beta_{5,9}\Delta EPLLE_{i,t-1} \times DI_{it} \\ & + \beta_{5,10}\Delta LLE_{i,t-1} \times DI_{it} + \beta_{5,11}\Delta EPLLE_{i,t-1} \times DP_{it} \times DI_{it} \\ & + \beta_{5,12}\Delta LLE_{i,t-1} \times DL_{it} \times DI_{it} + \beta_{5,13}CHNPL_{it} + \beta_{5,14}EQASS_{i,t-1} \\ & + \sum_{j=1}^{j=b-1} \gamma_{5,j}\text{Bank Control}_{jit} + \sum_{j=2003}^{j=2005} \delta_{5,j}\text{Year Control}_{jit} + \varepsilon_{5,it},\end{aligned} \tag{5}$$

where ΔEBT_{it}, $\Delta EPLLE_{i,t-1}$ and $\Delta LLE_{i,t-1}$ are, respectively, the change in earnings before tax for bank i for year t, the change in earnings before tax and loan-loss expense for bank i for year $t-1$ and the change in loan-loss expense for bank i for year $t-1$ times -1, where each item is scaled by the average of the opening and closing balance-sheet values of loans of bank i for year $t-1$; DE_{it} is a indicator variable equal to one where the change in earnings before tax for bank i for year $t-1$ is negative, and zero otherwise; DP_{it} is an indicator variable equal to one where $\Delta EPLLE_{i,t-1}$ is negative, and zero otherwise; DL_{it} is an indicator variable equal to one where $\Delta LLE_{i,t-1}$ is negative (income-decreasing), and zero otherwise; DI_{it} is an indicator variable equal to one where bank i applied IAS 39 for year $t-1$, and zero otherwise; $CHNPL_{it}$is a control variable equal to the proportionate change in a measure of the non-performing loans of bank i during year t; $EQASS_{i,t-1}$ is a control variable equal to the ratio of equity to total assets in the opening balance sheet of bank i for year t; Bank Control_{jit} is the value for bank i for year t of an indicator-variable control for bank j, where b is the number of banks; Year Control_{jit} is the value for bank i for year t of an indicator-variable control for calendar year j; the β, γ and δ terms are regression coefficients; the ε term is an error term. p-Values for a two-tailed test are given in parentheses. p-Values are based on White standard errors that are robust to clustering by bank.

is negative and not significantly different from zero at the 5% level.[17] This contrasts with the corresponding coefficient in GN (coefficient β_{11} in GN's Table 9), which was positive and significantly different from zero and therefore indicative that loan-loss expense was less asymmetrically timely under IAS 39 than before IAS 39 for Europe as a whole. The application of the asymmetric-persistence-based test of asymmetric timeliness to the data used in this paper does not suggest that the UK loan-loss expense is more asymmetrically timely under IAS 39 than before IAS 39. One possible source of difference between the Europe-wide asymmetric-timeliness result reported by GN and the UK result reported here is the adoption in some European countries but not in the UK's SORPB of the provisioning method allowed by the European Community's Directive 86/635/EEC (see Section 2.2).

Two robustness tests are carried out. First, it is recognised that the regression models for which results are reported measure the association between write-offs at year t and loan-loss expenses at year t and year $t-1$ only, but that the distance in time between a loan-loss expense and an associated write-off might exceed one year. A parsimonious way of including in the analysis loan-loss expenses that precede associated write-offs by more than one year is to replace the lagged loan-loss expense by the lagged end-of-year loan-loss allowance, which reflects all previous loan-loss expenses less write-offs. Estimation of regression models (1)–(3) with the lagged end-of-year loan-loss allowance in place of the lagged loan-loss expense gives the same inferences as the results reported for regression models (1)–(3). Second, regression model (4) is augmented by the general-provision element of the current-year loan-loss expense and is estimated using a reduced data set for 2001–2004, when general provisioning was always permitted in both the current year and the previous year. This gives the same inference as the results reported for model (4) in Table 6.

5.4 *Summary*

The main results reported in this section do not suggest that loan-loss provisioning by UK banks was less timely under the stricter evidence requirements of the IAS 39 incurred-loss regime than it had been under the less-strict evidence requirements of the previous UK incurred-loss regime. There is some evidence that loan-loss provisioning became more timely under IAS 39 than it had been previously. However, the relevant coefficients are only all statistically significant at the 5% level for the subset of banks that had a UK stock market quotation for part of the interval examined, for which the data set is relatively small. There is no evidence that UK provisioning was less timely in the interval leading up to the financial and banking crisis of the late 2000s than it had been previously under IAS 39. Also, there is no evidence that UK general provisioning enhanced the timeliness of loan-loss provisioning in the interval before IAS 39 was implemented. Results of an additional test using US data do not suggest that the pattern observed in the UK was due to a general worldwide phenomenon. Also, results of an asymmetric-persistence-based test of asymmetric timeliness do not suggest that, for the UK banks in the sample, loan-loss expense became less asymmetrically timely under IAS 39 than it had been previously.

6. Conclusion

The financial and banking crisis of the late 2000s gave rise to much accounting regulatory activity regarding loan-loss provisioning. Much of this arose from the view that the incurred-loss method of provisioning delayed the recognition of loan-loss expense. Attempts by regulators to replace the incurred-loss methods required by US GAAP and IFRS encountered significant difficulties. One issue that arose related to the method by which the effective rate of interest on loans should be calculated. Another related to the weight that an expected-loss provisioning method should place on objective evidence of loss relative to evidence of a less specific and more judgemental nature.

This paper reports evidence relevant to the latter of these issues. It examines whether UK loan-loss provisioning was less timely under the stricter evidence requirements of the IAS 39 incurred-loss regime than it had been under the less strict evidence requirements of the previous UK incurred-loss regime. In light of concern that the lack of timeliness of loan-loss provisioning under IAS 39 may have been a particular problem immediately prior to the financial and banking crisis of the late 2000s, it also examines whether provisioning was less timely then than it had been previously under IAS 39. Furthermore, it examines whether the pre-IAS 39 general-provision element of the loan-loss expense enhanced the timeliness of loan-loss

provisioning by UK banks before the implementation of IAS 39. The evidence is based on data from 2001 to 2008 for 37 UK banks, of which 12 had a UK stock market quotation at some time during this interval and the remaining 25 were usually much smaller banks which, in many cases, were UK subsidiaries of non-UK banks. Differences in timeliness are measured by reference to the relationship in time between loan write-offs and loan-loss expense.

The results in this paper do not suggest that loan-loss provisioning by UK banks was less timely under the IAS 39 incurred-loss regime than it had been under the previous UK incurred-loss regime. In contrast, for the subset of quoted banks, the results indicate that it was more timely under IAS 39 than before IAS 39. The results of the application of the main test used in this paper to US banks, which were not directly affected by the implementation of IAS 39, do not suggest that these results were due to an economic event that affected banks all over the world. The evidence does not indicate that loan-loss provisioning by UK banks was less timely immediately prior to accounting years ended in the second half of 2008 than it had been previously under IAS 39. Furthermore, for the interval before the implementation of IAS 39 when general provisioning was permitted in the UK, there is no evidence that general provisioning enhanced the timeliness of loan-loss provisioning. The results reported in this paper do not suggest that stricter requirements regarding the evidence necessary to support recognition of loan losses have resulted in less timely loan-loss provisioning.

The results in this paper are subject to some caveats. The data set is relatively small. This is particularly so for the subset of quoted banks for which there is evidence that loan-loss provisioning by UK banks was more timely under IAS 39 than previously. Also, it is possible that effects observed may be due in part to changes in the banking regulatory environment during the interval analysed in this paper. Furthermore, it should be emphasised that this paper compares the timeliness of loan-loss provisioning under the IAS 39 incurred-loss regime and under the pre-IAS 39 UK incurred-loss regime, and does not consider the timeliness of any particular proposed expected-loss method. Finally, as is evidenced by recent regulatory debate, it is important to emphasise that there are criteria other than timeliness by which the quality of loan-loss provisioning might be judged.

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Notes

1. In this paper, the term 'provisioning' denotes the overall process of recognising loan-loss expense.
2. See http://www.ifrs.org/Current+Projects/IASB+Projects/IASB+Work+Plan.htm for comment letters in respect of *Exposure draft ED/2009/12: financial instruments – amortised cost and impairment* (IASB 2009).
3. See http://www.fasb.org (comment letter reference 1810–100) for comment letters in respect of *Proposed accounting standards update: accounting for financial instruments and revisions to the accounting for derivative instruments and hedging activities* (FASB 2010).
4. See http://www.fasb.org (comment letter reference 2011–150) for comment letters in respect of Supplement to *Exposure draft ED/2009/12: financial instruments – amortised cost and impairment* (IASB 2011a) and *Supplementary document – financial instruments: impairment.* For a summary of the principal issues raised, see IASB (2011b).
5. See also Laux (2012) and Ryan (2012) for informative reviews that refer to loan-loss provisioning within the context of recent events. Laux (2012) includes a comparison of properties and possible effects of an expected-loss provisioning method and those of an incurred-loss method. Ryan (2012)

discusses the potential contribution of extended disclosure of components of the loan-loss expense as a means of enhancing the quality of risk reporting.

6. IAS 39 did not require separate disclosure of the individual and collective components of the loan-loss allowance, but some UK banks disclosed these components. Comparison of loan-loss allowance accounts in the final year of the SORPB regime and the first year of the IAS 39 regime indicates that the 'collective' category of some banks' loan loss allowances under IAS 39 included a substantial element that had been categorised as 'specific' under the SORPB regime. For example, for HSBC Holdings plc, the specific and general components of the loan-loss allowance in the final pre-IAS 39 balance sheet on 31 December 2004 were $10,117 million and $2569 million, respectively, and the individual and collective components of the brought-forward balance reported in the 2005 financial statements were $3728 million and $8906 million, respectively. Similar patterns were observed in other banks for which disclosures were made.
7. For example, the directive was not adopted in the UK but, as can be seen from Poveda (2000, p. 11), it influenced aspects of the loan-loss-provisioning regime in Spain. As mentioned above, the difference between the pre-IAS 39 loan-loss provisioning regimes in the UK and in Spain was sufficiently significant to give rise to comment as part of the evidence to the House of Lords enquiry (House of Lords 2011b, p. 108).
8. The issue of SAB 102 coincided with a policy statement from the Federal Financial Institutions Examination Council (2001).
9. See Vyas (2011) for another event-based approach to the examination of the timeliness of loan-loss provisioning. Vyas (2011) examines the timeliness of provisioning through comparison of loan-loss expense with changes in credit-quality indices.
10. All accounting periods used in this paper are years or minor variants thereof. Accounting periods are therefore referred to as 'years' or 'accounting years'.
11. As the previous change in non-performing loans is also a candidate for inclusion as a control variable, this is used instead of the current-period change in non-performing loans in tests for which results are not reported. The results from the use of the lagged change in non-performing loans are very similar to the results that are reported.
12. The current-year general-provision element is not included here as general provisioning did not occur in the UK for the last year of this 2001–2005 data set. In a robustness test, a regression model that includes an additional current-year general-provision term is estimated using a shorter data set for 2001–2004 for which current-year general-provision data are available for all cases. The inference from this model is the same as that given by the model for which results are reported.
13. Some of the banks included in the former category did not have a UK stock-market quotation for all years used in the analysis. Abbey National plc became part of Grupo Santander in late 2004; Alliance and Leicester plc became part of Grupo Santander in late 2008; Bradford and Bingley plc was nationalised in late 2008, with part of the business being transferred to Grupo Santander; Northern Rock plc was nationalised in early 2008. All of these banks were assigned to the quoted group throughout the analysis. Data from their financial statements for the entire interval covered by the analysis, including for that part of the interval after they ceased to be quoted, were used.
14. The disclosure of recoveries, required by SORPB and continued by UK banks under IAS 39, is typically in a more compact form than in Figure 1. Typically only one of the two recovery-related movements is shown explicitly, either as an addition or a subtraction within the allowance account.
15. As has been observed by Ryan (2006, p. 519), the interpretation of asymmetric-persistence measures as measures of asymmetric timeliness is subject to some limitation in that asymmetric-persistence measures are strictly measures of asymmetry in the degree to which bad news and good news are recognised in a 'chunky' fashion rather than measures of asymmetric timeliness.
16. A negative value for the coefficient would imply that any tendency for income-decreasing changes in the loan-loss expense to give rise to lower persistence in earnings changes was more pronounced under IAS 39 than previously. Following the reasoning outlined above with respect to the Basu (1997) asymmetric-persistence model, this would be interpreted as evidence of greater asymmetric timeliness in the loan-loss expense under IAS 39 than previously
17. A slightly adapted version of regression model (5) is also estimated for the subsets of quoted and unquoted banks. Due to the lack of income-increasing changes in loan-loss expense under IAS 39 for the quoted banks in the data set, the models for the subsets are estimated where DL_{it} is equal to one where $\Delta LLE_{i,t-1}$ is below its mean, and zero otherwise. Using this criterion for the quoted and unquoted subsets and for the sample as a whole, the coefficient $\beta_{5,12}$ is negative and not significantly different from zero in all cases, as in the results reported in Table 8.

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