
IASB[®] meeting

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Topic **Review of academic literature**
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Purpose and structure of this paper

1. This paper provides a summary of the academic literature relevant to the [Post-implementation Review \(PIR\) of IFRS 9—Hedge Accounting](#). The academic literature reviewed consists of:
 - (a) four papers identified through academic engagement;
 - (b) a project report from the KPMG and International Association for Accounting Education and Research (IAAER) research programme; and
 - (c) six papers identified through a search for papers in Social Science Research Network, Google Scholar and other databases of academic studies.
2. The summary of the academic literature is structured as follows:
 - (a) key messages (paragraphs 5–9);
 - (b) detailed research findings (paragraphs 10–26);
 - (c) question for the IASB; and
 - (d) Appendix A—List of academic references.
3. The key messages and detailed research findings are based on academic papers that examine the implementation of the hedge accounting requirements in IFRS 9 *Financial Instruments*. Our search did not identify papers on the hedge accounting

requirements in IAS 39 *Financial Instruments: Recognition and Measurement* whose findings might be relevant to the IASB's [Risk Mitigation Accounting](#) project nor on the disclosure requirements related to entities' hedge accounting activities in IFRS 7 *Financial Instruments: Disclosures*.

4. We did not review papers focused on FASB ASC Topic 815. Given the differences in the requirements between IFRS 9 and US GAAP, the findings of those papers would not enable the IASB to derive meaningful conclusions on the hedge accounting requirements in IFRS 9 by analogy.

Key messages

5. Three studies examining European non-financial entities showed that most entities applying hedge accounting transitioned to IFRS 9 in 2018. A few more entities transitioned in subsequent years with only a small number of entities continuing to apply IAS 39. In contrast, evidence from an international sample of banks showed limited adoption, with many continuing to apply IAS 39. Interview evidence from a small sample of preparers of financial statements (preparers) indicated that they perceive IFRS 9 as easier to apply than IAS 39, citing closer alignment with risk management practices and simplified documentation.
6. Theoretical studies using analytical models indicated that the hedge accounting requirements in IFRS 9 enable better alignment of accounting outcomes with entities' risk management strategies compared to IAS 39. In particular, the evidence from these theoretical studies suggests that removing the 80–125 per cent 'bright-line' effectiveness test and allowing rebalancing of hedging relationships potentially reduces earnings volatility (because entities could maintain hedging relationships that would otherwise have been required to be discontinued under IAS 39). In contrast, one empirical study found inconclusive evidence on the effect of the transition from the hedge accounting requirements in IAS 39 to those in IFRS 9 on earnings volatility and share return volatility.

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7. Empirical evidence showed that users of financial statements (users) faced difficulties interpreting the effect of unrealised cash flow hedge gains and losses on future performance and did not immediately reflect in share prices the information that unrealised cash flow hedge gains and losses provided about future profitability both before and after the hedge accounting requirements in IFRS 9 became effective. In the authors' view, these difficulties might reflect challenges in processing the complex relationship between hedge accounting outcomes, future cash flows, and entity value.
 8. Evidence from Chinese samples indicated that the transition to the hedge accounting requirements in Chinese Accounting Standard 24 (CAS 24) improved financial reporting transparency, with reductions in share price crash risk and audit fees.¹ These effects were more pronounced for entities with stronger earnings management incentives (such as those that faced pressures to meet financial benchmarks) or entities with weaker information environments (such as those with lower analyst following, institutional ownership or media scrutiny).
 9. Evidence on the real effects² of the hedge accounting requirements in IFRS 9 showed that entities applying hedge accounting had higher capital investment than those that did not, and this association strengthened post-IFRS 9. In the authors' view, the more flexible qualifying criteria in IFRS 9 and the ability to rebalance hedging relationships rather than discontinue them allowed entities to reduce earnings volatility more effectively. This in turn, might have supported higher capital investment by reducing financing frictions (for example, cost of capital) and facilitating the pursuit of investment opportunities.

¹ Because Chinese Accounting Standards (CAS) are largely converged with IFRS Accounting Standards, the IASB can apply findings from CAS-based studies to IFRS 9 by analogy.

² 'Real effects' is used in accounting research to refer to the impact of accounting standards on actual economic decisions and behaviour—such as investment, financing, hedging, and risk management choices.

Detailed research findings

10. This section provides more detailed information about the academic research findings summarised in the key messages of this paper. Specifically, it summarises findings on the following areas:
- (a) implementation of the hedge accounting requirements in IFRS 9 (paragraphs 11–14);
 - (b) the usefulness of hedge accounting-related information for users' decisions (paragraphs 15–24); and
 - (c) the real effects of the hedge accounting requirements (paragraphs 25–26).

Implementation of the hedge accounting requirements in IFRS 9

11. Čiperová, Procházka and Křivanec (2025) examined the impact of the hedge accounting requirements in IFRS 9 on the risk management practices of 100 large European non-financial entities listed on STOXX Europe 600 over the period 2016–2022. Their findings were:
- (a) based on information in entities' financial statements that:
 - (i) 84 entities transitioned to the hedge accounting requirements in IFRS 9 in 2018; by 2022 this number had risen to 92, with eight entities continuing to apply IAS 39.
 - (ii) although some entities had large non-designated positions, the typical entity in the sample held more designated than non-designated derivatives.
 - (iii) changes in the carrying amount of designated derivatives were primarily driven by macroeconomic volatility rather than systematic changes in entities' hedging strategies related to the hedge accounting requirements in IFRS 9. For example, a temporary reduction in the carrying amount of foreign exchange designated derivatives was observed in 2018–2019, which the authors attributed partly to more

stable economic conditions around the adoption period reducing fair values of derivatives, rather than to the accounting change itself. The carrying amount of non-designated derivatives also declined over the same period, ruling out substitution between the two derivative categories.

- (iv) by 2022 when economic conditions became more volatile—with rising energy prices, interest rate spikes and geopolitical instability—both overall hedging intensity and the carrying amount of designated derivatives had increased significantly. In the authors' view, IFRS 9 provides an effective framework for reflecting entities' risk management activities.
 - (b) based on interview evidence from two preparers, that IFRS 9 was easier to apply than IAS 39, with respondents citing closer alignment between accounting outcomes and risk management practices and simplified documentation.
12. Čiperová (2024) examined 72 non-financial entities listed on the Warsaw Stock Exchange over the period 2016–2019. The author's findings were:
- (a) 37 entities applied hedge accounting in the year the hedge accounting requirements in IFRS 9 became effective; of these, 24 transitioned to IFRS 9 and 13 continued applying IAS 39. No new entities chose to apply hedge accounting that had not done so before the effective date.
 - (b) the use of hedge accounting was positively associated with entities' market value; this association was not statistically different between entities applying IFRS 9 and entities applying IAS 39.
13. Čiperová, Procházka and Zelenka (2024) examined whether the requirements in IFRS 9 influenced the use of hedge accounting for a sample 157 UK non-financial entities over the period 2015–2021 (1,099 entity-year observations). Their findings were:

- (a) the number of entities applying hedge accounting increased only marginally over the sample period—from 89 in 2015 to 94 in 2021, suggesting, in the authors' view, that IFRS 9 had a limited effect on the number of first-time adopters of hedge accounting.
 - (b) most entities applying hedge accounting transitioned to the hedge accounting requirements in IFRS 9 over the sample period—44 of 89 entities applied IFRS 9 in 2018; by 2021, 84 of 94 entities applied IFRS 9, with 10 continuing to apply IAS 39.
14. Fontes, Panaretou, and Shakespeare (2025) examined 122 IFRS-reporting banks in 28 jurisdictions in the period 2014–2021 and found that, in 2018, 20 banks (16% of the sample) elected to apply the hedge accounting requirements in IFRS 9; 58 (48%) continued to apply IAS 39; and 44 (36%) did not apply hedge accounting.³

The usefulness of hedge accounting-related information for users' decisions

15. This section provides evidence of the effects of the hedge accounting requirements in IFRS 9 on:
- (a) comparability of financial statement information (paragraph 16);
 - (b) earnings volatility (paragraphs 17–20);
 - (c) pricing of hedge accounting gains and losses (paragraph 21); and
 - (d) share price crash risk and audit fees (paragraphs 22–24).
16. Fontes, Panaretou and Shakespeare (2025), mentioned in paragraph 14, analysed the effect of IFRS 9 on financial statement comparability by using quarterly data from 2014 to 2021 to compare the relationship between earnings and share returns of pairs of banks that applied the hedge accounting requirements in IFRS 9 and pairs of banks

³ The authors assumed that the number of banks applying the hedge accounting requirements in IFRS 9 remained unchanged after 2018.

that continued to apply the hedge accounting requirements in IAS 39 or did not apply hedge accounting. The authors showed that pairs of banks that both applied the hedge accounting requirements in IFRS 9 showed greater similarity in how their earnings reflected share returns (indicating greater comparability of accounting numbers) compared to pairs of banks that continued to apply the hedge accounting requirements in IAS 39 or did not apply hedge accounting. However, in the authors' view, the effect of IFRS 9 on comparability should be interpreted with caution because of the small number of banks (20 out of 122) in the sample electing to apply the hedge accounting requirements in IFRS 9.

17. Theoretical studies using analytical models examined the effects of the hedge accounting requirements on earnings volatility while holding hedging behaviour constant. These studies showed that the hedge accounting requirements in IFRS 9 enabled entities to better align the accounting outcome with their actual risk management activities and reduce earnings volatility. Paragraphs 18–19 summarise the key findings from these studies.⁴
18. Mueller (2020) used simulations to analyse the effects of cash flow hedging using forward contracts on the earnings of a non-financial entity exposed to exchange rate risk arising from the purchase of raw materials. The author considered hedge accounting alternatives that differed mainly in (i) the application of the hedge accounting requirements (IAS 39 versus IFRS 9), and (ii) the designation of either the entire forward contract or only its spot element as the hedging instrument. The findings indicated that:
 - (a) applying the hedge accounting requirements in IFRS 9 compared to those in IAS 39:

⁴ Panaretou, Shackleton, and Taylor (2013) cautioned that, when estimating the effects of hedge accounting requirements, empirical studies face the challenge of disentangling two distinct effects: first, effects resulting from accounting requirements that reflect hedging more or less accurately in reported numbers; and second, effects resulting from changes in hedging behaviour—for example, entities adjusting hedging horizons or the types of financial instruments used in order to qualify for hedge accounting.

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- (i) reduced earnings volatility during the time-period of the hedging relationship;
 - (ii) reduced earnings sensitivity to changes in foreign exchange rates; but
 - (iii) had a mixed effect on the earnings sensitivity to changes in the volatility of foreign exchange rates; and
 - (b) earnings volatility differed depending on whether the entire forward contract or only its spot element was designated as the hedging instrument, with spot-only designation under IAS 39 generating greater earnings volatility than under IFRS 9.
19. Rannou and Barneto (2021), in a simulation study using emissions and carbon market data, provided evidence on whether IFRS 9 could reduce accounting-driven earnings volatility by examining the use of European Union Allowances (EUAs)⁵ and Certified Emissions Reductions (CERs)⁶ derivatives to hedge risks associated with carbon emission compliance costs.⁷ The authors estimated the theoretical carbon hedging needs of 19 large European power entities by computing the difference between verified emissions and the number of EUAs and CERs surrendered by these entities. They found that some economically effective hedge ratios, particularly for less liquid CER markets in Phase III of the EU Emissions Trading System, fall outside the 80–125 per cent ‘bright-line’ effectiveness test under IAS 39. In the authors’ view, IFRS 9 has the potential to reduce accounting-driven earnings volatility because it removes the quantitative effectiveness test and permits rebalancing (allowing economically justified hedging relationships to continue rather than be discontinued under IAS 39).

⁵ European Union Allowances (EUAs) are tradable permits issued under the EU Emissions Trading System, with each allowance giving the holder the right to emit one tonne of carbon dioxide equivalent.

⁶ Certified Emissions Reductions (CERs) are credits generated under the Kyoto Protocol’s Clean Development Mechanism, each representing one tonne of carbon dioxide equivalent reduced or avoided, and which could be used, subject to limits, for compliance in the EU system.

⁷ The authors did not examine actual designated hedging relationships in entities’ financial statements. Instead, they examined whether derivatives linked to EUAs and CERs could be used to hedge carbon price risk associated with emission compliance costs.

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20. Číperová, Procházka and Zelenka (2024),⁸ mentioned in paragraph 13, also examined the effects of the transition from the hedge accounting requirements in IAS 39 to those in IFRS 9 on earnings volatility and share return volatility using the same sample of 157 UK non-financial entities over 2015–2021. Their findings showed that the transition from IAS 39 to IFRS 9 was not associated with a change in earnings volatility or share return volatility for entities applying hedge accounting. However, in the authors' view, these findings should be interpreted with caution because the small number of non-financial entities continuing to apply the IAS 39 hedge accounting requirements in the latter part of the sample period might have limited the ability of the tests to detect statistically significant differences in earnings volatility or share return volatility between entities applying IFRS 9 and those applying IAS 39.
21. De Paula, Flores, and Campbell (2026) examined the relationship between cash flow hedge gains and losses, and subsequent profitability and share returns using a panel of over 2,000 non-financial entities from 44 jurisdictions over the period 2005–2023 (25,410 entity-year observations). The authors reported that:
- (a) before 2018, unrealised gains and losses in the cash flow hedge reserve were negatively associated with subsequent changes in profitability one or two periods ahead, indicating that an unrealised gain (loss) reflects a movement in the price of the underlying hedged item in a direction that would decrease (increase) the entity's profit once hedge protection has ended.
 - (b) after 2018, when some entities transitioned to the hedge accounting requirements in IFRS 9 (the authors did not identify entity-specific transition years) this association differed depending on whether the cash flow hedge reserve was in a net gain or net loss position—entities with unrealised losses experienced higher future profitability whereas entities with unrealised gains showed no significant association with future profitability.

⁸ The paper examined several aspects of hedge accounting. To focus on matters most relevant to the PIR, we report only its findings on earnings volatility and share return volatility.

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- (c) users priced unrealised gains and losses in the cash flow hedge reserve with a delay throughout the sample period. Specifically, contemporaneous share returns reflected the direction of the hedge position—positive for entities with unrealised gains and negative for entities with unrealised losses—but these initial reactions reversed in subsequent periods, consistent with users failing to fully price the implications of unrealised gains and losses in the cash flow hedge reserve for future profitability. In the authors' view, users' delay in pricing was related to difficulties in processing the complex relationship between hedge accounting outcomes, future cash flows, and entity value.
22. Two academic papers focusing on Chinese listed non-financial entities examined the effects of the hedge accounting requirements in IFRS 9 on share price crash risk and audit fees. These studies showed that the hedge accounting requirements in IFRS 9 improved the transparency and alignment of financial reporting with entities' hedging activities.⁹
23. Jiang, Lu, Xiao and Ye (2025) examined whether entities that hedge risks using derivatives had higher or lower share price crash risk than entities that did not use derivatives to hedge risk and whether the hedge accounting requirements in IFRS 9 influenced this relationship.¹⁰ They used a sample of Chinese listed non-financial entities (14,543 entity-year observations) during the period 2016–2021 and measured share price crash risk by (i) the frequency and severity of unusually negative entity-specific weekly share returns and (ii) how much more volatile returns are in below-average weeks than in above-average weeks after removing market effects. The authors showed that:
- (a) in their baseline analysis over the full sample period 2016–2021, entities that hedged risks using derivatives had a higher share price crash risk than entities that did not use derivatives to hedge risks, suggesting, in the authors' view,

⁹ In these studies, the authors refer to the revised hedge accounting requirements in China as IFRS 9 requirements because revised CAS 24 is substantially converged with the hedge accounting requirements in IFRS 9.

¹⁰ The authors exclude entities that use derivatives for speculation from the sample.

that hedging activities were associated with less transparent financial reporting.

- (b) after the effective date of the hedge accounting requirements in IFRS 9, the association between hedging and share price crash risk declined. In additional analyses, the authors examined whether entities that use derivatives to hedge risks, applied hedge accounting and showed that the reduction in share price risk is concentrated among entities applying hedge accounting (which they interpret as evidence that IFRS 9 improved the transparency of entities' financial statement information on the use of derivatives for which hedge accounting is applied). The authors do not directly distinguish between entities that apply the hedge accounting requirements in IAS 39 and those that apply the hedge accounting requirements in IFRS 9. Instead, they treat observations after the effective date as being subject to those requirements.

24. Using a sample of Chinese listed non-financial entities that used derivatives (1,697 entity-year observations) over the period 2016–2021, Jiang and Ye (2024) examined whether entities that applied hedge accounting had higher or lower audit fees than entities that used derivatives but did not apply hedge accounting and whether the hedge accounting requirements in IFRS 9 influenced this relationship. The findings were:

- (a) entities applying hedge accounting had higher audit fees, which the authors attribute to the need to assess hedge effectiveness, resulting in higher audit effort and audit risk.
- (b) after the effective date of the hedge accounting requirements in IFRS 9, the positive association between hedge accounting and audit fees decreased. The authors attribute this result to (i) lower earnings volatility and (ii) reduced use of discretionary accruals (accruals not explained by business fundamentals but driven by managerial judgment and accounting choices),

both of which are associated with lower audit effort in verifying hedge effectiveness and lower audit risk.¹¹

- (c) the reduction in audit fees post-IFRS 9 was more pronounced for entities audited by large audit firms and for those operating in stronger institutional environments (characterised by stricter legal enforcement and higher institutional ownership).

The real effects of the hedge accounting requirements

- 25. Allini, Maffei, Santonastaso and Spagnuolo (2025) examined a sample of 286 listed EU entities in the oil and gas, petroleum, chemical, communications, healthcare, and airline sectors over the period 2016–2019. The analysis was based on 1,144 entity-year observations (722 with hedge accounting and 422 without). The sample excluded entities that continued to apply the hedge accounting requirements in IAS 39 after the hedge accounting requirements in IFRS 9 became effective.
- 26. The authors' findings were that entities that applied hedge accounting, either applying IAS 39 or IFRS 9, had higher investments, captured by (i) annual changes in property, plant and equipment and (ii) the ratio of capital expenditure to sales, than entities that did not apply hedge accounting. This positive association between hedge accounting and investment:
 - (a) was more pronounced after the effective date of the hedge accounting requirements in IFRS 9. In the authors' view, the principles-based qualifying criteria in IFRS 9 and the ability to rebalance hedging relationships (rather than discontinue them) allowed entities to reduce earnings volatility more effectively and to increase their capital investment as a result.
 - (b) remained robust after correcting for potential selection bias that entities choosing to apply hedge accounting might differ systematically from those that did not.

¹¹ The study does not directly identify the underlying behavioural drivers of changes in accruals.

Question for the IASB

Question for the IASB

Does the IASB have any comments or questions on the academic literature presented?

Appendix A—List of academic references

Allini, A., Maffei, M., Santonastaso, R. and F. Spagnuolo. (2025). ‘Hedge accounting usage and capital investment: European evidence under IFRS requirements’. *Journal of Management and Governance*, 29(2), 319–353.

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