Staff paper

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Project	**Statement of Cash Flows and Related Matters**
Topic	**Academic literature review**
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Purpose and structure

1. This literature review summarises evidence from academic papers on topics that the International Accounting Standards Board (IASB) might explore in its project on statement of cash flows and related matters (see Agenda Paper 20B for further information on possible topics).

2. The list of academic papers in this review is not exhaustive but is based on:

   (a) papers selected by academics who participated in an IASB workshop with the European Accounting Association (EAA) and EFRAG and who were asked to gather academic evidence relevant to the questions the IASB might explore in a project on statement of cash flows and related matters;

   (b) papers gathered by EFRAG for their forthcoming discussion paper on statement of cash flows and related matters;

   (c) a project report from the KPMG and International Association for Accounting Education and Research (IAAER) research programme; and

(d) additional published and working papers not included in the sources described in paragraphs 3(a)–3(c), which were located via EBSCO, Google Scholar, Social Science Research Network and other databases of academic studies.[1]

3. This review also includes academic papers focusing on US generally accepted accounting principles (GAAP) reporting of cash flows because US-based evidence may highlight issues that are relevant to the application of IAS 7 *Statement of Cash Flows*.

4. This literature review includes a summary of:

(a) a body of general academic evidence on the usefulness of the statement of cash flows to:

(i) users (investors); and

(ii) lenders.

(b) academic evidence relevant to some of the detailed topics that were identified from stakeholder feedback to the Third Agenda Consultation:

(i) requirements for classifying cash flows into operating, investing and financing categories;

(ii) disaggregation requirements for information about cash flows;

(iii) definition of cash and cash equivalents;

(iv) use of the direct method (instead of, or as well as, the indirect method);

(v) requirements for information about commonly used cash flow measures; and

(vi) specific requirements for the statement of cash flows for financial institutions.

5. The summary of the academic literature is structured as follows:

(a) key messages (paragraphs 6–26);

[1] Even though the results of working papers may change prior to publication, working papers were included in this review for the purpose of outlining the scope of academic research related to the statement of cash flows.

(b) detailed research findings (paragraphs 27–85);

(c) question for the IASB; and

(d) appendix—List of academic references.

Key messages

Evidence on the usefulness of the statement of cash flows

Users

6. Academic evidence on the usefulness of the statement of cash flows for non-financial entities shows that:

(a) cash flow information is value relevant—associated with share prices and returns;

(b) cash flow information is useful for predicting future cash flows from operating activities;

(c) evidence on whether cash flows or earnings are better in predicting future cash flows from operating activities is mixed; and

(d) disaggregating earnings into cash and non-cash components improves forecasts of future cash flows from operating activities; and

Lenders

7. The statement of cash flows provides decision useful information to lenders, for example, in assessing an entity's financial condition and predicting entity failure (or survival).

Detailed topics

Requirements for classifying cash flows into operating, investing and financing categories

8. Research found that entities with market-related incentives to inflate cash flows from operating activities were likely to opportunistically classify cash flow line items from one category to another.[2]

Disaggregation requirements for information about cash flows

9. The evidence on disaggregation of cash flow information is limited but indicates that disaggregated cash flow components predict future cash flows and earnings differently.

10. One study found that core cash flows related to sales, cost of goods sold and operating expenses were better predictors of future cash flows than non-core cash flows related to interest, taxes and other expenses.

11. Another study showed that net cash distributions to equity holders were the item most strongly associated with future earnings. The study also showed that investors correctly priced distributions to equity and debt holders but appeared to misprice changes in cash balances, underestimating their lower persistence.

Definition of cash and cash equivalents

12. Three academic studies identified scenarios when cryptocurrencies could be considered as cash or cash equivalents.

Use of the direct method (instead of, or as well as, the indirect method)

13. Most academic evidence showed that the direct method provides users with more useful information than the indirect method for forecasting entities' future cash flows and earnings.

14. Direct method information is also more strongly associated with share prices than indirect method information.

[2] Academic research focused mostly on the choice for the classification of interest and dividends in the statement of cash flows that was removed by consequential amendments to IAS 7 made by IFRS 18 *Presentation and Disclosure of Financial Statements*.

15. Evidence based on a survey of 104 analysts following US and Australian entities and 52 follow-up interviews between 2017 and 2022 showed that analysts viewed the direct method as more useful than the indirect method for:

    (a) confirming earnings reliability;

    (b) improving confidence in earnings; and

    (c) providing more accurate forecasts of cash flows from operating activities and earnings.[3]

16. Researchers showed that direct method line items could not be reliably estimated using financial statements, leading to estimation errors that varied by line item.

17. Other academic evidence showed that the indirect method is more decision useful or that both methods were equally useful to users.

18. Some evidence suggests that indirect method information (such as reconciliation between cash flow from operating activities and net income) remains useful in the presence of direct method information.

19. Some academics argued that using both the direct and indirect methods in combination would improve comparability across entities.

Requirements for information about commonly used cash flow measures

20. The evidence on cash flow measures is focused on free cash flow—definition and disclosure.

21. Research showed that an increasing number of entities disclosed free cash flow but free cash flow definitions varied among entities.

22. Academic research examined the characteristics of entities that disclose free cash flow.

[3] Kent, Kent and Killey (2023).

23. Researchers provided evidence that some entities disclosed free cash flow to present a more favourable financial position, others disclosed free cash flow to provide better information to users.

24. Evidence suggests a growing usefulness of free cash flow to users, particularly for entities with high levels of asymmetric information, younger entities and entities in high technology industries.

Specific requirements for the statement of cash flows for financial institutions

25. Academic research on financial institutions' statements of cash flows is limited and the existing evidence is mostly based on US commercial banks.

26. The evidence on the value relevance of financial institutions' cash flows from operating activities and their predictive ability for future cash flows, earnings and bank failures is mixed.

Detailed research findings

27. The detailed research findings are organised in the following sections:

(a) evidence on the usefulness of the statement of cash flows (paragraphs 28–36):

(i) users (paragraphs 28–31); and

(ii) lenders (paragraphs 32–36).

(b) detailed topics (paragraphs 37–85):

(i) requirements for classifying cash flows into operating, investing and financing categories (paragraphs 38–42);

(ii) disaggregation requirements for information about cash flows (paragraphs 43–46);

(iii) definition of cash and cash equivalents (paragraphs 47–50);

(iv) use of the direct method (instead of, or as well as, the indirect method) (paragraphs 51–72);

(v) requirements for information about commonly used cash flow measures (paragraphs 73–80); and

(vi) specific requirements for the statement of cash flows for financial institutions (paragraphs 81–85).

Evidence on the usefulness of the statement of cash flows

Users

28. A literature review by Fazio, Grande, and Estébanez (2022) provided an overview of 145 academic papers on the statement of cash flows. The review's main findings were that:

(a) cash flow information is value relevant;

(b) cash flow information is useful for predicting future cash flows from operating activities for non-financial entities. The evidence on whether cash flows or earnings are better in predicting future cash flows from operating activities is mixed. Disaggregating earnings into cash and non-cash components improves forecasts of future cash flows from operating activities; and

(c) the direct method for reporting cash flows provides more useful information for predicting entities' future performance than the indirect method.

29. Examples of academic evidence on the topics described in paragraphs 28(a)–28(b) are:

Academic paper	Summary of evidence	Sample
Value relevance of cash flow information		
Bepari, Rahman, and Mollik (2013)	Cash flows from operating activities were incrementally value relevant to book value of equity and earnings[4]. During the 2008 financial crisis, the value relevance of cash flows from operating activities decreased and the value relevance of earnings increased indicating in the authors' view that users rely less on cash-based performance measures in unstable conditions.	4,885 Australian entity-year observations; period 2004–2009.
Lee, Glasscock, and Park (2017)	Cash flows from operating activities of financially distressed entities were more strongly associated with annual returns than earnings.	8,371 US entity-year observations; period 2004–2012.
Prediction of future cash flows from operating activities		
Ball, Gerakos, Linnainmaa, and Nikolaev (2016)	Cash flows from operating activities outperformed operating profit in predicting future returns measured over the subsequent month.	US listed non-financial entities; period 1963–2014.
Nallareddy, Sethuraman and Venkatachalam (2020)	Cash flows performed better than earnings in predicting future cash flows from operating activities. The researchers documented that cash flow predictability increased over time due to entities' shortening operating cycles, decreasing levels of non-cash working capital, and increasing intangible intensity.	104,576 observations of US non-financial entities; period 1989–2015; and 139,707 entity-year observations from 21 jurisdictions; period 1998–2015.
Ball and Nikolaev (2022)	Earnings performed better than cash flows from operating activities in predicting future cash flows.	Listed, non-financial US entities; period 1988-2019.
Disaggregating earnings into cash and non-cash components		
Barth, Cram, and Nelson (2001)	Disaggregating earnings into cash and non-cash components significantly increased the ability of earnings to predict	10,164 US entity-year observations; period 1987–1996.

[4] Incremental value relevance in the academic literature means an association of a variable (cash flows from operating activities) with share prices and/or returns in the presence of other variables (earnings and book value of equity) suggesting in this case that cash flows from operating activities provide additional information to users beyond earnings and book value of equity.

	future cash flows from operating activities.	
Hewitt (2009)	Experiment participants forecasted earnings more accurately when they were: • required to forecast cash and non-cash components of earnings separately; and • given cash and non-cash components of past earnings as inputs.	74 analysts and 128 graduate students.

30. Academic studies have also examined analysts' operating cash flow forecasts. The evidence is that there is market demand for operating cash flow forecasts, highlighting another use of the statement of cash flows. Examples of such studies are:

(a) DeFond and Hung (2003) documented an increasing incidence of analysts' operating cash flow forecasts over time, analysing 8,886 US entities and 34,787 earnings forecasts from 1993 to 1999. The researchers showed that cash flow forecasts were more common for entities with accounting choices that differ from those of industry peers, predicted earnings losses, shorter operating cycles, higher capital intensity and higher leverage. The study indicated that analysts forecasted operating cash flows when current cash flows predicted future cash flows better than earnings. In the authors' view, market participants demanded cash flow forecasts when cash flow information was more useful than earnings for valuing entities.

(b) Call, Chen, and Tong (2009) studied whether analyst earnings forecasts were more accurate when accompanied by cash flow forecasts, using 1990–2005 data. The researchers found that combined forecasts were 1% to 5% more accurate.

(c) Call, Chen, and Tong (2013), in a subsequent study, examined 90 analyst reports and analysed a sample of cash flow forecasts from 1993 to 2008. They found that analysts adjusted working capital and non-cash earnings components, resulting in more accurate forecasts compared to naïve

prediction models. The market reacted positively to revisions in cash flow forecasts, suggesting the market viewed these forecasts as useful.

31. In a current project from the KPMG/IAAER research grant programme, Garavaglia and Mongold (2023) are conducting a study designed to inform the IASB on deficiencies and opportunities for improvement in the statement of cash flows. The project team conducted preliminary interviews with academics and users, and reviewed IASB's and Financial Accounting Standards Board (FASB)'s documents, comment letters responding to standard setters' consultations and industry groups' writings to assist in drafting their survey. In addition, the project team received feedback from IASB members and staff as well as the grant program advisory committee before finalising the survey instrument, which aims to understand more about how analysts currently use the information in the statement of cash flows as well as areas for potential improvements. The project team has received over 200 responses to their survey and will present their findings in the second deliverable of the research programme in November 2024.

Lenders

32. Academic research has also examined the usefulness of the statement of cash flows to lenders's decisions, such as assessing an entity's financal condition and predicting its failure (or survival). Overall, the evidence suggests that the statement of cash flows provides decision useful information to lenders.

33. Billings and Morton (2002) showed that the cash flow statement contains useful information about credit risk, incremental to information in the income statement and the balance sheet. Using 3,856 US entity-year observations over the 1991–1996 period, the researchers found that a cash flow measure—an operating cash flow interest coverage measure—was associated with credit ratings after controlling for measures of profitiablity and risk. They also showed that the inclusion of the cash flow measure improved the accuracy of future credit rating forecasts.

34. Charitou, Neophytou, and Charalambous (2004) also provided evidence that information in the statement of cash flows was incrementally useful for predicting

financial distress beyond information in the income statement and the balance sheet. Using 51 pairs of failed UK industrial entities and surviving entities with similar characteristics over the 1988–1997 period, the researchers showed that cash flows from operating activities, along with measures of profitability and leverage, correctly predicted 83% of entity failures in the following year.

35. Based on a UK sample of 90 failed and 1,000 surviving entities over the 2000–2013 period, Almamy, Aston, and Ngwa (2016) showed that including cash flows from operating activities in a bankruptcy prediction model improved the model's performance.

36. Rizzo, Valentinuz, Obratil and Pediroda (2020) examined the effectiveness of cash flow ratios in predicting corporate bankruptcy. Based on a sample of 719,124 observations of entities from five European countries (Germany, Spain, France, UK, Italy) and five industry sectors (agriculture, industry, services, construction, commerce and food) during the period 2015–2018, the study found that using cash flow ratios significantly improved the predictive ability of bankruptcy models compared to traditional models that primarily rely on non-cash accounting measures. The authors discussed the need for standardising financial information (including cash flow) transparency among jurisdictions to enable large scale risk assessments.

Detailed topics

37. This section provides an overview of the academic literature relevant to some of the topics that the IASB might explore in the project on statement of cash flows and related matters.

Requirements for classifying cash flows into operating, investing and financing categories

38. Most academic studies that examined the requirements for classifying cash flows into operating, investing and financing activities focused on the classification of interest received, interest paid, dividends received and dividends paid before IFRS 18's consequential amendments for the classification of interest and dividends in the

statement of cash flows. This literature review does not include a summary of this research because such evidence is not relevant to the project on statement of cash flows and related matters. [5]

39. One takeaway from the research examining entities' classification choices is that entities with market-related incentives to inflate cash flows from operating activities were more likely to opportunistically classify cash flow items from one category to another.

40. For example, using a sample of 13,847 observations of US entities outside financial and regulated sectors in 1988–2008, Lee (2012) showed that entities were more likely to classify a cash flow item to inflate cash flow from operating activities when:

    (a) entities were financially distressed,

    (b) entities' long-term credit ratings were near the investment grade cutoff;

    (c) analysts issued cash flow forecasts for these entities; and

    (d) entities' cash flows from operating activities were highly associated with share returns.

41. The researcher identified two ways that entities used to inflate cash flow from operating activities:

    (a) cash flow restatements due to classification errors; and

    (b) classification of tax benefits from exercised stock options in the operating category of the cash flow statement.[6]

42. Some researchers proposed new approaches or principles for classifying items in the cash flow statement (eg Barker, 2010; Dichev, 2021). These studies are outside the

[5] Examples of this evidence are: Baik, Cho, Choi and Lee (2016) and Yang and Kim (2020) – Korean evidence; Kretzmann, Teuteberg and Zülich (2015) – German evidence; Gordon, Henry, Jorgensen and Linthicum (2017) – European evidence; Charitou, Karamanou and Kopita (2018) – UK evidence; Costa, Pinto, Nunes and Lemes (2019) – Brazilian evidence; and Chiang, Kleinman and Lee (2021) – Taiwanese evidence.

[6] US GAAP did not require stock option benefits to appear in a specified category of the statement of cash flows before 20 July 2000. The Emerging Task Force issue No 00-15, effective 20 July 2000, required entities to classify the tax benefit in the operating category.

scope of this review because it aims to identify topics that the IASB might consider in deciding the scope of the project.

Disaggregation requirements for information about cash flows

43. The evidence on disaggregation of cash flow information is limited. The papers relevant to this topic showed that disaggregated components of cash flows have different abilities to predict future cash flows or earnings.

44. Cheng and Hollie (2008) disaggregated cash flow components of earnings into core components (related to sales, cost of goods sold and operating expenses) and non-core components (related to interest, taxes and other expenses) for a sample of 29,828 US entity-year observations in the period 1988-2002. The researchers defined core and non-core cash flows based on their relation to the functional classification of the income statement. The authors showed that core cash components were better predictors of future cash flows from operating activities than non-core cash components. They also showed that disaggregating cash flow from operations improved the prediction of future cash flows particularly for larger entities and entities with volatile cash flows and earnings.

45. Using 237,673 US entity-year observations over the 1950–2003 period, Dechow, Richardson and Sloan (2008) disaggregated the cash component of earnings into change in cash balances, net non-interest cash distributions to debt holders (debt repayments less debt issuances), and net cash distributions to equity holders (dividends and repurchases less equity issuances). They showed that the distributions to equity holders were the most persistent, that is, most strongly associated with earnings in the following period.

46. The researchers also showed that investors appeared to price correctly the distributions to equity and debt holders but seemed to misprice the change in cash balances. In their view, the earnings expectations embedded in share prices did not fully reflect the lower persistence of cash that was retained by the entity and the higher persistence of cash distributed to equity holders.

Definition of cash and cash equivalents

47. Academic research examined the question whether cryptocurrencies can be considered as cash.

48. Tan and Low (2017) argued that the economic substance of Bitcoin varied among reporting entities and the accounting treatment for Bitcoin should reflect its economic substance. In the authors' view, trading entities used Bitcoin as a medium of exchange for trading goods and therefore their temporary holdings of Bitcoin could be treated as cash or cash equivalents.

49. Prokazka (2018) also identified scenarios when cryptocurrencies could be treated as cash:

    (a) medium of exchange in business transactions—when they are acquired in a business transaction as a means of payment for goods or services sold by an entity; and

    (b) foreign currency translations—when they are used as a payment method but are not generally accepted as a medium of exchange.

50. Hampl and Gyönyörová (2021) examined 11 fiat-backed stablecoins—cryptocurrencies whose values were pegged to traditional currencies (eg USD and EUR), precious metals or other cryptocurrencies—representing almost the entire market capitalisation of such assets. Analysing terms and conditions of stablecoins and comparing their risk characteristics with those of traditional currencies and similar financial assets, the researchers concluded that nine of them substantially met the definition of cash equivalents due to their liquidity and price stability.

Use of the direct method (instead of, or as well as, the indirect method)

Usefulness of the direct method

51. Hales and Orpurt (2013) reviewed 35 papers published in the period 1990–2012 on the direct and indirect method for reporting cash flows from operating activities.[7] Their findings were:

(a) based on evidence from multiple jurisdictions, such as Australia, China, Japan, and US, the direct method provides users (investors and lenders) with more decision useful information than the indirect method. The researchers defined decision usefulness as the ability of the (in)direct method to predict future cash flows from operating activities and earnings.

(b) based on a survey of 82 Australian loan officers and 75 Australian equity analysts in 1998, that [8]:

(i) 70% of users preferred the direct method and less than 5% of users preferred the indirect method; and

(ii) respondents said they preferred the direct method because it was more useful for:

1. understanding cash flow data;
2. estimating future cash flows; and
3. assessing the quality of earnings.

(c) based on a survey of 210 Australian listed entities in 1995, that preparers applying the direct method preferred it to the indirect method. Preparers said that information provided by the direct method helped users understand entities' cash flows better. Preparers also viewed direct method information as a better indicator of entity solvency[9];

[7] For another review of the literature see Gebhardt and Scholz (2014).

[8] Jones and Widjaja (1998).

[9] Jones, Romano and Smyrnios (1995).

(d) direct method cash flow line items—such as cash received from customers and cash paid to suppliers—improved the accuracy of predicting cash flows from operating activities;

(e) based on indirect evidence, that preparers perceived the benefits of the direct method to exceed its costs. The indirect evidence was mainly drawn from a study showing that by 2009, two years after Australian entities were allowed to use either the direct or indirect method and provide a reconciliation if they used the direct method in the primary financial statements, only nine of 2,105 listed entities had stopped using the direct method.[10] In addition, the authors of the review looked at 25 newly listed Australian entities after 2007 and showed that all entities used the direct method and provided the required indirect method reconciliation;[11] and

(f) based on a number of US and Australian studies, that in the presence of direct method information, indirect method information (for example, the reconciliation between cash flow from operating activities and net income) was also useful to users, highlighting in the authors' view the benefits of the Australian dual method approach.[12]

52. The review summarised proposals by academics to improve the usefulness of the indirect method. These proposals included:

(a) additional disaggregation of indirect method items which, based on research on presentation effects, would facilitate users in forecasting future cash flows from operating activities and earnings; and

(b) reversing the orientation of the indirect method, reconciling instead from cash flows from operating activities to operating income. Experimental evidence showed that such reversal would make it easier for users to extract

[10] Bond, Bugeja and Czernkowski (2012).

[11] The researchers acknowledged that they did not know what method the entities had used before their listing.

[12] Australian Accounting Standard 1026 Statement of Cash Flows, effective from 1 January 1992, required entities to present a direct method statement of cash flows, supplemented by an indirect method reconciliation in the notes to the financial statements.

information from the indirect method reconciliation because items subtracted in the income statement (such as depreciation expense) would also be subtracted on the statement of cash flows[13].

53. The academic participants in the IASB/EAA/EFRAG academic workshop on statement of cash flows and related matters identified a large number of papers supporting the use of the direct method. These papers showed that the direct method provided users with more useful information than the indirect method for forecasting entities' future cash flows and earnings. Direct method information was also more strongly associated with share prices than indirect method information.

54. Many papers provided empirical evidence on the use of the direct method in Australia where entities were required to use it until July 2007. Examples of such academic papers are:

Academic paper	Summary of evidence	Sample
Clinch, Sidhu, and Sin (2002)	Direct method cash flow line items had incremental explanatory power for annual share returns beyond net cash flows from operating activities if they also had predictive ability for operating cash flows from operating activities in the following period. Direct method line items presented in the statement of cash flows were more strongly associated with share returns than estimates of direct method lines items based on other financial statement disclosures.	648 observations of the largest Australian mining and industrial entities; period: 1992–1997.
Frino and Jones (2005)	The bid-ask spreads of entities that started applying the direct method when AASB 1026 came into effect in 1992 declined more than the bid-ask spreads of entities that had started using the direct method before it became required.[14]	104 Australian entities that started using the direct method after it was required in 1992, and 57 entities that had started using the direct

[13] Hodder, Hopkins and Wood (2008).

[14] High (low) bid-ask spreads indicate higher (lower) information asymmetry between entities and investors.

		method before it was required; period 1992–1993.
Arthur, Cheng, and Czernkowski (2010)	Replacing net cash flow from operating activities with direct method cash flow line items in a future earnings prediction model increased the model's predictive ability.	3,672 observations; period: 1992–2005.
Clacher, Ricquebourg, and Hodgson (2013)	Following adoption of IFRS Accounting Standards: • most entities continued using the direct method; and • direct method line items remained value relevant for extractive entities and, became more value relevant for industrial entities.	459 listed entities; period 2000–2010.
Farshadfar and Monem (2011)	Direct method cash flow line items together with disaggregated non-cash components of earnings could predict cash flows from operating activities in the next period better than any combination of net cash flow from operating activities and total or disaggregated non-cash components of earnings.	4,520 entity-year observations; period 1992–2004.
Farshadfar and Monem (2013)	Direct method cash flow line items and disaggregated non-cash components of earnings had higher predictive ability for future cash flows than net cash flows from operating activities and aggregate non-cash earnings.	349 entities; period 1992–2004.
Kent and Bu (2020)	Entities using the direct method had lower cost of equity compared to entities with similar characteristics using the indirect method. The cost of debt of entities using the direct and indirect method did not differ.	327 observations of entities that used direct method before 2007 and indirect method after 2007, and a matched sample of 279 observations of entities that used the direct method throughout the period.

55. One study provided survey and interview evidence of users' views on the usefulness of the direct method. Kent, Kent and Killey (2023) surveyed 104 analysts following US and Australian entities and conducted 52 follow-up interviews between 2017 and 2022. The researchers found that analysts viewed the direct method as more useful than the indirect method for:

    (a) confirming earnings reliability;

    (b) improving confidence in earnings; and

    (c) providing more accurate forecasts of cash flows from operating activities and earnings.

56. In addition, the participants believed that disclosure of direct method line items could help lower entities' cost of equity and be particularly helpful during unstable economic periods.

57. Jeppson, Ruddy, and Salerno (2016) analysed comment letters submitted by preparers and users in response to the joint FASB-IASB 2008 Discussion Paper *Preliminary Views on Financial Statement Presentation*. Their findings were:

    (a) 37% of 27 users who submitted comment letters preferred the direct method;

    (b) members of the CFA Institute Centre for Financial Market Integrity, representing 100,000 analysts, portfolio managers, financial advisors, and other investment professionals in 134 countries, strongly supported the direct method;

    (c) a small majority of respondents to a survey by the UK CFA Society (351 responses representing almost 5% of the Society's membership) favoured the direct method; however,

    (d) 84.3% of 153 preparers who submitted comment letters preferred the indirect method.

58. Academic evidence, based on experiments and surveys, showed that the direct method was also useful for lenders. Examples of such academic papers include:

    (a) Klammer and Reed (1990) conducted an experiment with 151 bank analysts and loan officers from ten large US financial institutions. Participants were asked to answer questions about the cash flows of an entity and decide whether to grant an entity's loan request. The participants answered the questions more accurately and granted loans of less variable sizes when using direct method information compared with indirect method information. In the authors' view, the direct method of presenting cash flow information was preferable for lenders.

    (b) Similarly, Kojima (2012)'s experiment involving 38 graduate students in Japan showed that participants calculated financial ratios for lending decisions more accurately when using direct method compared to indirect method information.

59. Academic research has also examined whether direct method line items can be estimated from information in the primary financial statements including statement of cash flows prepared using the indirect method.

60. Using 405 yearly observations of US entities using the direct method in the 1988–1993 period, Krishnan and Largay (2000) showed that:

    (a) cash collected from customers could be estimated with relatively low measurement error; however, cash paid to suppliers and employees was prone to significant estimation errors; and

    (b) in the researchers' view, direct method cash flow information could not be accurately estimated from financial statement data.

61. Orpurt and Zang (2009) analysed 604 US yearly observations of entities using the direct method in the period 1989–2002. Their findings were:

(a) a decreasing proportion of entities in the sample disclosed direct method information (3% in 1989 and 0.5% in 2002). [15]

(b) direct method line items, such as cash received from customers and cash paid to suppliers and employees, could not be reliably estimated using income statement, balance sheet or statement of cash flows prepared using the indirect method, leading to estimation errors[16]. These errors—differences between amounts disclosed using the direct method and estimated amounts—represented incremental information available from the direct method format. The estimation errors varied among line items—the average estimation error, scaled by average total assets, for cash received from customers (cash paid to suppliers and employees) was 2.4% (5.1%).

(c) including these estimation errors in cash flows and earnings forecasting models (using indirect method cash flow information) improved the forecasting performance of these models.

(d) using direct method instead of indirect method information was associated with an increase in the market's ability to incorporate earnings information into share prices.

Usefulness of the indirect method

62. Several academic papers challenged the view that the direct method is more useful for predicting future cash flows than the indirect method.

[15] The researchers commented that that US GAAP requirement for entities using the direct method to also provide an indirect method disclosure for comparability may lead managers to prefer the indirect method.

[16] The authors used disclosed tax and interest payments instead of estimates because entities in the sample were required to disclose these items regardless of whether they used the direct or indirect method.

63. Using a sample of 1000 Chinese listed entities that were required to disclose both direct and indirect method in the period 1988–2004, Ding, Jeanjean and Stolowy (2006) showed that:[17]

    (a) the use of the indirect method was associated with better predictive ability for future cash flows for entities with unstable growth compared to the direct method;

    (b) no difference between the predictive abilities of the two methods was observed for entities with stable growth; and

    (c) in the authors' view, both methods provided useful information to users, and should be used in combination. However, in dynamic and less stable economies like China, the indirect method line items would be more useful for predicting future cash flows.

64. Based on a sample of 348 Australian entities in the period 1992–2004, Farshadfar (2012) documented:

    (a) disaggregating cash flow from operations into both direct and indirect method line items improved the forecasts of future cash flows from operating activities;

    (b) the use of the indirect method was associated with better predictive ability for future cash flows compared to the direct method;

    (c) the higher predictive ability of the indirect method compared to the direct method was observed across industries; and

    (d) in the authors' view, both direct and indirect methods should be used in combination to improve comparability across entities.

[17] The Accounting Standard on Cash Flow Statement for all business enterprises in China was published by the China Ministry of Finance on 2 June 1998. It required entities to report cash flows using the direct method and disclose all adjustments from net income to operating cash flow in the notes.

65. Pornupatham, Tan, Vichitsarawong and Yoo (2023) conducted experiments in Thailand on how users process direct method versus indirect method information in forecasting future cash flows from operating activities. The experiment had two parts:

    (a) engaging 148 graduate students and 79 audit managers from two Big Four audit firms, the researchers compared the participants' forecast errors when the financial statements they used for forecasting had non-recurring non-cash components, non-recurring cash components or neither. Participants' forecast errors were smaller when using indirect method information compared to direct method information in the scenario with non-recurring non-cash components but not in the other two scenarios. In the authors' view' the usefulness of the direct versus indirect method depends on the type of decision involved.

    (b) using graduate students only, the researchers showed that the participants made smaller forecast errors when using both methods than when using the direct method alone; their forecast errors when using the indirect method alone and when using both direct and indirect methods were similar. In the authors' view, using both methods in combination was not associated with additional benefits to using the indirect method.

Usefulness of the direct method and indirect method, used in combination

66. Other academic research has shown that, in the presence of direct method information, indirect method information provided by the reconciliation between cash flows from operating activities and net income, is incrementally value relevant (eg Krishnan and Largay, 2000; Orpurt and Zang, 2009, Arthur et al, 2010).

67. Kent and Birt (2021) reconciled evidence supporting the use of one method over another by showing that both the direct and indirect method were value relevant for a sample of 5,113 Australian entity-year observations in the period 2007–2017. However, the direct method line items (cash receipts, cash payments, income taxes paid, net interest paid and other components included in the direct method cash flow

statement) were more value relevant than indirect method line items (cash flow from operating activities and the items reconciling cash flow from operating activities and net income) for:

(a) entities reporting transitory earnings and entities reporting losses;

(b) entities in stable state (identified by small absolute changes in non-cash earnings/operating cash flows); and

(c) small entities for which investors have fewer alternative sources of information beyond the financial statements.

68. In the authors' view, except for specific circumstances, the information disclosed using the direct method and the information disclosed using the indirect method were equally useful to users.

Cost of the direct method

69. Several studies provided indirect evidence of the initial setup cost of the direct method and the ongoing cost of using it.

70. In a survey of 210 Australian listed entities conducted by Jones, Romano and Smyrnios (1995), almost all participants said that complying with the requirement of using the direct method presented no difficulties.

71. Bond, Bugeja and Czernkowski (2012) found that only nine Australian entities switched from the direct method to the indirect method between 2007 and 2009, after Australia allowed entities to choose either method. More Australian entities switched to the indirect method in subsequent years, although the majority continued to use the direct method.[18]

72. Using a sample of 2,024 US yearly observations of US entities from 1989 to 2015, Sidhu and Yu (2021) showed that entities that needed to issue new debt were more

[18] In a later study Kent and Bu (2020) identified around 40 entities per year that switched from direct to indirect method in the period 2007-2014.

likely to use the direct method voluntarily. In the authors' view, the benefit of the direct method outweighed the initial setup cost under certain circumstances.

Requirements for information about commonly used cash flow measures

73. The academic participants in the IASB/EAA/EFRAG academic workshop on statement of cash flows and related matters identified a number of papers relevant to commonly used cash flow measures. Most of these papers focused on free cash flow.

74. Awasthi, Chipalkatti and de Souza (2013) examined how different free cash flow measures explained the value of the entity. The researchers introduced an adjusted measure of free cash flow, derived from adjusting cash distributed to claimholders for misclassifications and omissions and adding the net changes in surplus cash.[19] Examples of misclassifications were interest payments, classified in operating instead of financing activities and tax shield on interest classified in operating instead of financing activities. Examples of omissions were non-cash movements, arising from transactions such as acquisition of assets using debt or equity that bypass the corporate cash account. [20] The researchers also used five other definitions of free cash flow measures.[21] Using a sample 1,497 US and Canadian entities outside the finance, insurance, and real estate sectors in the period 1988–2010, the authors found that, compared to other measures, the adjusted free cash flow measure produced valuations that were more accurate, less biased and closer to the true value generating process. However, they noted that in cases where the increase in surplus cash was excessive (exceeding 12% of entity value in their sample), free cash flow should exclude the net change in surplus cash.

[19] The researcher followed the standard definition that free cash flow equals net cash flows distributed to debt and equity holders plus changes in cash and cash equivalents and marketable securities (in the reverse sign).

[21] The other five free cash flow measures were: 1) cash distributed to debt and equity holders, adjusted for accounting distortions and omissions, excluding changes in surplus cash; 2) operating cash flow minus capital expenditures; 3) operating cash flow minus investing cash flows; 4) operating cash flow minus capital expenditures minus dividends and 5) earnings before interest, taxes, depreciation, and amortization minus depreciation and amortization multiplied by (1 - effective tax rate) plus depreciation and amortization minus capital expenditures minus changes in net working capital.

75. Adhikari and Duru (2006) examined US entities' disclosure of free cash flow information. Based on a sample of 985 10-K and 10-Q filings by 429 entities during 1994–2004, the findings were:

    (a) the number of entities disclosing free cash flow information increased from 12 in 1994 to 176 in 2004;

    (b) free cash flow definitions varied among entities;

    (c) disclosing entities were less profitable, more leveraged, and had lower credit ratings compared to non-disclosing entities; and

    (d) entities were more likely to disclose free cash flow when it portrayed their financial position more favourably than earnings. In the authors' view, entities disclosed free cash information to supplement reported earnings and cash flow information.

76. Consistent with the evidence in paragraph 75 (a)-(b), Zirkler and Grunwald-Delitz (2010) found for a sample of 553 annual reports by 73 German entities (excluding banks and insurance entities) in the period 2002–2009 that:

    (a) the number of entities disclosing free cash flow information grew from 20 in 2002 to 53 in 2009; and

    (b) free cash flow definitions varied which in the authors' view impaired comparability among entities.

77. Contrary to the findings described in paragraph 75 (c)–(d), however, the authors found that disclosing entities were larger, had better credit ratings, paid higher dividends, and had higher free cash flows than non-disclosing entities. Based on these differences and despite disclosing entities having lower price-to-earnings ratios than non-disclosing entities, the authors' view was that entities disclosed free cash flow information to increase their performance transparency and benefit their investor relations and not to distract from poor performance. The paper called for standardised free cash flow reporting to improve transparency and comparability.

78. Adame, Koski, Lem and McVay (2020) explored the increasing importance of free cash flow disclosures in entities' earnings announcements. The authors analysed data from 19,484 entity-years for 2,217 entities in Standard and Poor (S&P)'s 1500 index from 2004 to 2016 and showed that the proportion of entities disclosing free cash flow increased from 10% in 2004 to 22% in 2016. The most common free cash flow definition observed in 40% of entities' disclosures was operating cash flow minus gross capital expenditure. In the rest of the disclosures free cash flow definitions varied widely. The researchers found that the market reaction to free cash flow surprises was stronger for entities with higher levels of asymmetric information, such as smaller entities, entities with higher bid-ask spreads, younger entities and entities in high technology industries where earnings were less value relevant. In the authors' view, the increasing market reaction to free cash flow news was attributed to a rise in the value relevance of free cash flow, particularly for entities with high levels of asymmetric information, younger entities and entities in high technology industries.

79. In a follow up paper, Adame, Koski, Lem and McVay (2023) showed that entities' primary motive to disclose free cash flow information was to provide better information to investors. Using a sample of 3,086 earnings announcements by S&P 1500 entities in the period 2004–2016, their findings were:

    (a) the frequency of free cash disclosure was increasing;

    (b) capital-intensive entities, intangible-intensive entities, and entities undergoing one-time events (such as discontinued operations) were more likely to disclose free cash flow information, revealing, in the authors' view, entities' motive to provide information to investors;

    (c) entities with positive and increasing free cash flow, and declining earnings were more likely to disclose free cash flow information highlighting, in the authors' view, an opportunistic motive; however,

(d) in the authors' view, entities' primary motive for free cash flow disclosure was to provide better information to investors.[22]

80. Some researchers proposed a cash flow statement format that provides a measure of free cash flow and, more generally, focuses on operating activities (Kousenidis, 2006; Penman, 2013).

Specific requirements for the statement of cash flows for financial institutions

81. Academic research on financial institutions' statements of cash flows is limited and the existing evidence is mostly based on US commercial banks. The evidence on the value relevance of financial institutions' cash flows from operating activities and their predictive ability for future earnings, cash flows and bank failures is mixed.

82. Two studies showed that financial institutions' cash flow statements provide decision useful information:

(a) using a sample of 4,233 US bank-year observations over the 2004–2014 period, Burke and Wieland (2017) found that banks' cash flows and non-cash components of operating earnings were associated with share prices and future cash flows and earnings. In the authors' view, banks' statements of cash flows were decision useful.

(b) using a sample of 120 Japanese banks over the 2001–2019 period, Saito and Yasuda (2023) showed that banks shifted cash flows across classification categories—for example, from investing and/or financing activities to operating activities—to avoid consecutive declines of cash flows from operating activities and to avoid liquidity shocks. The study showed that this type of classification shifting increased with increasing banks' risk

[22] The authors used regression analysis to examine the determinants of free cash flow disclosure. The analysis showed that proxies for information provision had higher explanatory power than proxies for opportunistic behaviour. The study also found that entities were more likely to disclose free cash flow if their industry peers did so. In the authors' view, free cash flow disclosure is driven by the need to provide comparable and useful information within an industry.

exposure. In the authors' view, these activities provided useful information about banks' cash flow management and risk exposure.

83. Gao, Li, and O'Hanlon (2019) challenged evidence that banks' statement of cash flows provide useful information to users. They examined whether banks' statements of cash flows provided incremental information to investors beyond the information in banks' income statements and balance sheets. Using a sample of 4,450 US bank-year observations over the 2004-2016 period, the researchers found that, after taking into account the information in banks' balance sheets and income statements, the information in banks' statements of cash flows:

    (a) was not incrementally value relevant; and

    (b) did not predict future bank failures.

84. Consistently, Barth, Beaver, Hand, and Landsman (1999) had also shown that, whereas non-financial entities' cash components of earnings were more strongly associated with share prices than their non-cash components of earnings, this difference in association with share prices was less pronounced for financial institutions.

85. Academic evidence also showed that certain cash flows (and non-cash components of earnings) of financial institutions, such as those arising from trading activities, can be viewed as 'hybrid'—both as operating and non-operating activities. Using a sample of 37 US banks with trading activities over the 1991-2003 period, Ryan, Tucker, and Zarowin (2006) showed that cash and non-cash components of non-trading operating activities were more strongly associated with share returns than those of trading activities. In the authors' view, classifying financial institutions' trading-related cash flows as operating activities did not adequately account for their hybrid nature.

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

Appendix—List of academic references

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