

# Concept and Relevance of Income<sup>\*</sup>

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September 2002

The original paper is the Chapter X-2 in the research report of special committee in JAA (Japan Accounting Association). The committee had been organized during 2000-2001. Its mission was to clarify the fundamental concepts underlying corporate accounting through examination of the changing process of accounting standards. The final report of the committee including this paper was officially published at the annual conference of JAA in 2001.

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\* This paper is originally written in Japanese and translated into English firstly by ASBJ (Accounting Standards Board of Japan) staff, finally by the author. I am very grateful for helpful comments by the participants of the committee in JAA. I gratefully acknowledge for support by ASBJ and its staff. On translation, I revised the unclear discussion and erratum and added the complementary explanations. However, the essence of the original paper is not changed. All remaining errors are those of the author.

# Concept and Relevance of Income

## Abstract

Recently, many people criticize the traditionally accepted principles of realization, matching, and allocation. In addition, the reporting performance project in the International Accounting Standards Board (IASB) is willing to substitute the extant concept of net income for the unexperienced concept of comprehensive income with prohibition of recycling of other comprehensive income. On the other hand, the usefulness or relevance of net income has been repeatedly ascertained in empirical studies. It seems that accountants do not necessarily understand the common knowledge in academic circles correctly. This awareness is one of the motives of this paper to review the empirical evidence on relevance of net income.

This paper investigates again to confirm the concept of net income by comparing it with similar concepts, which is closely related to net income. This investigation consists of two parts. The first part in Section 2 compares cash flows with net income by focusing on accounting allocation. This comparison emphasizes the rationale for income measurement with allocation of cash flows. The second part in Section 3 compares comprehensive income with net income. By focusing on the difference between the two (i.e. other comprehensive income), this paper examines, though indirectly, the essential meaning of net income excluding other comprehensive income.

The review in this paper deduces the following conclusion. First, although accruals are criticized for being affected by managerial discretion, they are in fact valuable sources of information for investors. This is a commonly accepted academic theory that has been confirmed repeatedly through comparison of the value relevance between earnings and cash flows. Second, we cannot find the evidence that other comprehensive income is value-relevant, though it is expected to respond to the information needs of accountants and analysts. In sum, net income characterized by realization, matching, and allocation is most useful in comparison with cash flows and comprehensive income.

*Keywords:* net income, accruals, earnings, cash flows, comprehensive income, value relevance

# Concept and Relevance of Income

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## 1. Introduction

Net income in the year, which is an accounting proxy calculated through inter-period allocation of cash flows from business activities during a given period, is generally accepted as a measure of business performance. As the study conducted by this special committee in JAA (Japan Accounting Association) has clarified, net income is determined by the concepts of realization, matching and allocation. Even with the emergence of accounting standards for valuing financial instruments at market value and for revaluing the impaired fixed assets at fair value, it seems that the core of net income concept is very robust and immortal.

This paper investigates again to confirm the concept of net income by comparing it with similar concepts, which is closely related to net income. This investigation consists of two parts. The first part in Section 2 compares cash flows with net income by focusing on accounting allocation. This comparison emphasizes the rationale for income measurement with allocation of cash flows. The second part in Section 3 compares comprehensive income with net income. By focusing on the difference between the two (i.e. other comprehensive income), this paper examines, though indirectly, the essential meaning of net income excluding other comprehensive income.

The purpose of this paper is to review and summarize the evidence of empirical studies and to collate theories with empirical evidence. Through surveying evidence supported by prior empirical research, we verify the validity of conclusions and implications in conceptual studies. The following review clarifies that accruals are more value-relevant than cash flows and that other comprehensive income may not have incremental information value. This review concludes that net income information is not only most useful but also has been playing the expected role in the present accounting system.

## 2. Cash Flows and Net Income

### 2.1 Performance measurement of a business entity

It is often claimed that net income in accounting is the amount calculated by artificial allocation based on estimates and assumptions, thus income information is influenced by arbitrary intentions of management.<sup>1</sup> This claim implies that the simple and factual information provided by cash flows is more

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<sup>1</sup> Whenever the term “income” is used and unqualified hereunder, it refers to net income.

useful to investors because it is free from managerial discretion. In spite of repeated debates on this issue, net income has been regarded as the principal indicator of corporate performance in accounting history and continues to be recognized as the core information in the present accounting regulation. The Financial Accounting Standards Board (FASB) in the United States also emphasizes that net income, not cash flows, is the best measure to judge performance of any business entity for a given period. The FASB presumes that investors forecast the future cash flows of a firm based on performance as indicated by income, and that cash flows information plays only a supplementary role with income information.

Statement of Financial Accounting Concepts No. 1 (CON 1) gives the following explanation.

Potential users of financial information most directly concerned with a particular business enterprise are generally interested in its ability to generate favorable cash flows because their decisions relate to amounts, timing, and uncertainties of expected cash flows. (par. 25)

Financial reporting should provide information to help present and potential investors and creditors and other users in assessing the amounts, timing, and uncertainty of prospective cash receipts from dividends or interests and the proceeds from the sale, redemption, or maturity of securities or loans. (par. 37)

The primary focus of financial reporting is information about an enterprise's performance provided by measures of earnings and its components. Investors, creditors, and others who are concerned with assessing the prospects for enterprise net cash inflows are especially interested in that information. Their interest in an enterprise's future cash flows and its ability to generate favorable cash flows leads primarily to an interest in information about its earnings rather than information directly about its cash flows. Financial statements that show only cash receipts and payments during a short period, such as a year, cannot adequately indicate whether or not an enterprise's performance is successful. (par. 43)

Information about enterprise earnings and its components measured by accrual accounting generally provides a better indication of enterprise performance than information about current cash receipts and payments. (par. 44)

However, accrual accounting provides measures of earnings rather than evaluation of management's performance, estimates of "earning power," predictions of earnings, assessments of risk, or confirmations or rejections of predictions or assessments. (par. 48)

Statement of Financial Accounting Concept No. 5 (CON 5), meanwhile, gives the following explanation on cash flows information contained in statements of cash flows.

Statements of cash flows commonly show a great deal about an entity's current cash receipts and payments, but a cash flow statement provides an incomplete basis for assessing prospects for future cash flows because it cannot show inter period relationships. Many current cash receipts, especially from operations, stem from activities of earlier periods, and many current cash payments are intended or expected to result in future, not current, cash receipts. Statements of earnings and comprehensive income, especially if used in conjunction with statements of financial position, usually provide a better basis for assessing future cash flow prospects of an entity than do cash flow statements alone. (par. 24c)

Since neither earnings nor comprehensive income measured by accrual accounting is the same as cash flow from operations, cash flow statements provide significant information about amounts, causes, and intervals of time between earnings and comprehensive income and cash receipts and outlays. Users commonly consider that information in assessing the relationship between earnings or comprehensive income and associated cash flows. (par. 53)

The disclosure system of accounting information is designed in order to deliver internal information within a firm to investors via the self-assessment of annual performance. When there exists an asymmetry or gap in information between investors and firms (or management), the goal of disclosure system is to reveal, through the self-assessment of accounting income, the relevant information not previously available to investors. It is often said that the expectations and estimations, as revealed in managerial choice of alternative accounting methods (e.g. depreciation method, inventory valuation method, judgement of useful lives and loan loss allowance, etc.), provide useful information to investors.

Estimations by management are reflected in accruals generated by allocation of cash flows over the periods. Since the amount of accruals is subject to managerial discretion, they are often criticized as hotbeds for income manipulation or earnings management. It is broadly believed that the smaller the accruals are, the higher the quality of income becomes. Moreover, this quality is sometimes taken as a yardstick for ethical judgement on the firm's accounting policy.

However, if the value of income information is greater than that of cash flows information, it is accruals that contribute to information contents of net income. Accruals information, which is reflecting managerial discretion, is a potentially valuable source of value relevance of income. The regulation of accounting disclosure is planned to embody the potential value of income. On this premise, the issues to be examined are how managerial discretion is reflected in accruals and how investors assess those accruals. Do accruals

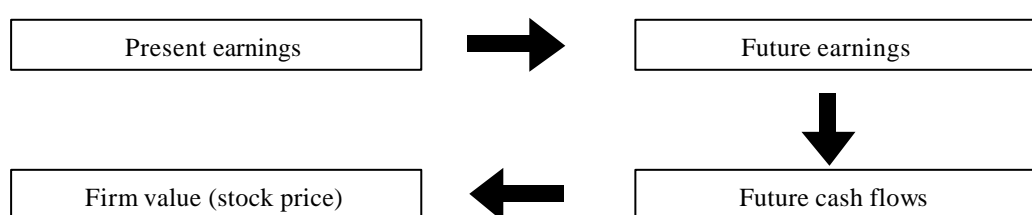
have such an information value as expected when the accounting system was designed? Or is their information value diminished by managerial discretion for earnings management, or by the investor's distrust in accruals? Many academics and researchers in the United States have investigated this issue in earnest over 15 years, and indeed this is the issue discussed below.

## 2.2 Empirical studies on the value relevance of earnings and cash flows

It is well known that many studies have been investigating the value relevance of earnings (including net income).<sup>2</sup> Among others, the comparison with the relevance of cash flows is a very important research issue. The primary purpose of the accounting disclosure is, as mentioned above, to provide investors in capital market with useful information for decision-making. It is, therefore, necessary to investigate, both from a conceptual and from an empirical point of view, why earnings is regarded as core information in the disclosure system, though it is derived from the artificial allocation of cash flows. This is the subject of many studies in the form of a comparison of value relevance between earnings and cash flows.

Various empirical studies on this issue have reconfirmed the intangible paradigm, which has heretofore been shared tacitly in academic circles. That is, when earnings is thought to have value relevance for decision-making by investors, the structure shown in Figure 1 is assumed. When a firm discloses earnings, analysts and investors forecast future income (or a series of earnings flows) based on that information (or a history thereof). Expectations of future cash flows are formulated or revised based upon the forecasted earnings. Under the given accounting standards, the quality of earnings and the nature of accruals peculiar to each firm or industry are simultaneously considered together. Then, by discounting the expected future cash flows, the firm value is estimated. In this way, the paradigm corresponds to investor's decision-making process.

**Figure 1: Traditional paradigm**



According to the traditional paradigm as described in Figure 1, empirical studies on the value relevance

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<sup>2</sup> This paper use the term 'earnings' in the conventional meaning. Strictly speaking, earnings does not include some elements included in net income. However, the difference is not critical for discussion here.

of earnings and cash flows can be classified into Types A through D in Figure 2.

Type A: Study on the ability to explain or forecast future earnings.

Type B: Study on the ability to explain or forecast future cash flows.

Type C: Study on the ability to explain the returns.

Type D: Study on value relevance of earnings based on a specific accounting-based valuation formula (e.g. the Ohlson model) or a stock valuation model (e.g. Dividends discount model)

Each type of studies has advantages and disadvantages. On the one hand, while Types A and B studies explicitly investigate a part of investor's decision-making process, they cannot verify the *value relevance* in the usual meaning. On the other hand, while Type C studies, like many relevance studies, can verify the relevance of earnings, its process is left in a black box. Therefore, we review all three types and sum up the empirical evidence in order to understand the usefulness of earnings matching to investor's decision process. Further, while Type D studies can provide helpful suggestions why earnings is value-relevant, they investigate inevitably the joint hypothesis of the relevance of earnings and the fitness of valuation model. Thus, we take up a few of Type D studies that are related to the issue here.

**Figure 2: Research types**

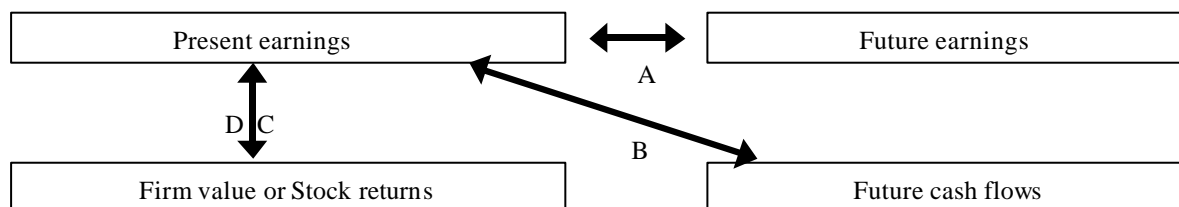


Table 1 classifies the various empirical studies on the value relevance of earnings and cash flows into Types A through D and summarizes the empirical results briefly one by one, then arranges them in chronological order.<sup>3</sup> Since Table 1 is vast, we reconfirm the empirical evidence very briefly below.

In Type A studies, there is no clearly discernable difference in value relevance between earnings and cash flows. In Type B category, however, most of the studies indicate that earnings is superior to cash flows in forecasting future cash flows. Among Type C studies, those that adopt multiple regression models mostly report that both earnings and cash flows have value relevance.<sup>4</sup> On the other hand, empirical studies,

<sup>3</sup> For research conducted in Japan, see Yurikusa (2001).

<sup>4</sup> In general, multiple regression models cannot clarify the difference in value relevance between independent variables.

which do not adopt multiple regression models and directly examine the difference in relevance between earnings and cash flows, report that earnings is more value-relevant. Of Type D studies, many have also confirmed from various angles that accruals have the higher information value.

When we survey the findings of previous studies entirely, it seems fair to say that while cash flows has its information value, earnings and accruals are more value-relevant. This seems to be a universal fact not affected by region or age. The artificial allocation of cash flows based on the concept of realization or matching has a universal role in enhancing the value of earnings. In other words, many empirical studies have proved the roles and rationale of income information disclosure.

**Table 1: Empirical studies on the comparison between earnings and cash flows**

<b>Type A: Relation to future earnings</b>			
Author	Samples	Summary	Methods
Pfeiffer and Elgers (1999)	United States 1979-1996 24,444 firm-years	Operating cash flows, current accruals, and non-current accruals all have the ability to explain the future earnings. However, regression coefficient on operating cash flows is the largest.	MR
Charitou, Clubb and Andreou (2000)	Japan 1990-1994 529 firms per year	Earnings and cash flows both have the ability to explain future earnings.	MR
<b>Type B: Relation to future cash flows</b>			
Author	Samples	Summary	Methods
Bowen, Burgstahler and Daley (1986)	United States 1971-1981 324 firms per year	It is not clear whether accruals are superior to cash flows in forecasting future cash flows.	MR*
Greenberg, Johnson and Ramesh (1986)	United States 1964-1982 157 firms per year	Earnings is superior to cash flows in forecasting future cash flows.	UR
Arnold, Clubb, Mason and Wearing (1991)	United Kingdom 1965-1984 171 firms per year	Earnings is not markedly superior to cash flows in forecasting future cash flows.	MR*
Percy and Stokes (1992)	Australia 1974-1985 99 firms per year	Earnings is superior to cash flows in forecasting future cash flows, but the increases and decreases in working capital from business activities are an even better predictor.	UR
Finger (1994)	United States 1935-1987 50 firms per year	Given cash flows, earnings has an incremental ability to explain (forecast) future cash flows.	MR
Simons (1994)	United States 1984-1985 563 firms per year	Earnings has the ability to explain dividends, but cash flows does not.	MR
Lorek and Willinger (1996)	United States 1989-1991 62, 61, 51 firms, respectively	When earnings or accruals is included in regression, the explanatory power of cash flows for future operating cash flows is higher than operating cash flows alone.	MR*
Charitou and Vafeas (1998)	United States 1981-1991 5,997 firm-years	Operating earnings is associated with dividends in the year, but operating cash flows is not.	MR
Dechow, Kothari and Watts (1998)	United States 1963-1992 1,337 firms per year	Earnings is superior to cash flows in forecasting future operating cash flows.	MR*



Pfeiffer, Elgers, Lo and Rees (1998)	United States 1980-1996 22,839 firm-years	Both earnings and operating cash flows have the ability to forecast future operating cash flows.	MR
Quirin, O'Bryan, Wilcox and Berry (1999)	United States 1988-1996 1,442 firm-years	When future operating cash flows is predicted by the random walk model, operating cash flows is a better predictor than earnings.	UR Vuong test
Charitou, Clubb and Andreou (2000)	Japan 1990-1994 529 firms per year	Earnings has the ability to explain dividends, but operating cash flows does not. However, given earnings, operating cash flows can explain dividends.	MR
Krishnan and Largay (2000)	United States 1988-1995 405 firms per year	As compared with earnings and accruals, operating cash flows has the higher explanatory power for future operating cash flows.	MR*
<b>Type C: Relation to returns and firm value</b>			
Author	Samples	Summary	Methods
Rayburn (1986)	United States 1962-1982 175 firms per year	Cash flows, current accruals, and fixed accruals all have the ability to explain unexpected returns.	MR
Wilson (1986)	United States 1978-1981 322 firms per year	Given earnings, cash flows and accruals have additional information contents for returns. Given cash flows, accruals have additional information contents for returns. However, non-current accruals have no additional information contents .	MR*
Bowen, Burgstahler and Daley (1987)	United States 1972-1981 98 firms per year	Unexpected earnings and unexpected operating cash flows both have the ability to explain unexpected returns, but unexpected increase or decrease in working capital does not.	MR
Wilson (1987)	United States 1978-1981 336 firms per year	There is no difference in information contents for returns between cash flows and accruals.	UR
Bernard and Stober (1989)	United States 1976-1984 5,440 firm-years	Even under different economic circumstances, there is no difference in information contents for returns between cash flows and current accruals.	MR*
Board and Day (1989)	United Kingdom 1961-1977 39 firms per year	Earnings has the ability to explain unexpected returns, but cash flows does not.	R-Square, MR
Ismail and Kim (1989)	United States 1966-1985 272 firms per year	Risk (beta) of working capital and risk (beta) of operating cash flows have the ability to explain risks (market beta), but risk (beta) of earnings does not.	MR
Charitou and Ketz (1990)	United States 1980-1983 70 firms per year	Operating earnings is superior to operating cash flows in explaining firm value (market capitalization), but there is no difference between operating cash flows and accruals.	R-Square, MR
Livnat and Zarowin (1990)	United States 1974-1986 281 firms per year	Even when earnings is disaggregated into accruals and operating cash flows, the explanatory power for unexpected returns is not different from that of aggregated earnings. However, the explanatory power increases when cash flows is disaggregated into cash flows from investing and cash flows from financing.	R-Square, MR*
Charitou and Ketz (1991)	United States 1976-1985 403 firms per year	Not only accruals but also operating cash flows, cash flows from investing, and cash flows from financing have the ability to explain firm value (market capitalization).	MR

Elgers and Lo (1993)	United States 1971-1989 11,614 firm-years	Unexpected operating cash flows and current accruals both have the ability to explain size-adjusted returns. Regression coefficient is larger for firms with higher leverage.	MR
Ali (1994)	United States 1974-1988 8,820 firm-years	Unexpected earnings, unexpected operating cash flows, and unexpected increase or decrease in working capital from business activities all have the ability to explain returns. The larger the unexpected variable is, the smaller the coefficient is.	MR
Dechow (1994)	United States 1980-1989 30,489 firm-years	Earnings is superior to operating cash flows and net cash flows in explaining returns.	MR Vuong test
Philipich, Costigan and Lovata (1994)	United States 1971-1981 3,079 firm-years	Unexpected earnings and unexpected operating cash flows both have the ability to explain unexpected returns. There is a corroborative relation between earnings and operating cash flows.	MR
Ali and Pope (1995)	United Kingdom 1984-1990 1,160 firm-years	Earnings, increase or decrease in working capital, and cash flows all have the ability to explain returns.	MR*
Clubb (1995)	United Kingdom 1955-1984 48 firms per year	Not only unexpected cash flows but also unexpected long-term accruals have the ability to explain unexpected returns.	MR
Cheng, Liu and Schaefer (1996)	United States 1988-1992 5,120 firm-years	Earnings and cash flows both have the ability to explain unexpected returns. When earnings is less permanent, the information contents of earnings decrease and those of cash flows increase.	MR
Cotter (1996)	Australia 1975-1985 62 firms per year	Earnings is superior to cash flows in explaining returns. Operating cash flows and current accruals both have the ability to explain long-term returns over five to ten years.	R-Square, MR*
Subramanyam (1996)	United States 1973-1993 2,808 firms per year	Earnings is superior to operating cash flows in explaining returns. Accruals are also superior to operating cash flows and discretionary accruals have an even higher explanatory power.	MR Vuong test
Cheng and Liu (1997)	United States 1988-1993 3,982 firm-years	Earnings and operating cash flows both have the ability to explain unexpected returns.	MR
Chia, Czerkowski and Loftus (1997)	Australia 1985-1990 915 firm-years	The explanatory power increases when operating earnings is disaggregated into operating cash flows, current accruals, and non-current accruals as compared with operating earnings alone. Current accruals and non-current accruals also have the explanatory power individually.	MR F test
Cheng, Liu and Schaefer (1997)	United States 1988-1996 6,553 firm-years	Unexpected earnings and unexpected operating cash flows both have the ability to explain unexpected returns. The contents of information varies, depending on the history of earnings and accruals	MR
Loftus and Sin (1997)	Australia 1985-1990 915 firm-years	Accruals improve the ability of earnings to explain multiple-year returns. In particular, non-current accruals are the decisive factors in explaining the relation between returns and earnings. Current accruals, on the other hand, cannot explain multiple-year returns.	MR

McLeay, Kassab and Helan (1997)	United Kingdom 1975-1990 104 firms per year	Unexpected earnings, unexpected operating cash flows, and unexpected increase or decrease in working capital from business activities all have the ability to explain returns.	MR*
Black (1998)	United States 1975-1994 35,099 firm-years	Not only accruals but also cash flows and its components (amounts collected from receivables, amounts paid for payables, capital investment, etc.) have the ability to explain firm value (market capitalization). The explanatory power of earnings and cash flows varies, depending on the stage of the life cycle (founding, growth, maturity, decline) in which a firm is situated.	MR
Garrod and Hadi (1998)	United Kingdom 1971-1991 156 firms per year	Not only accruals but also operating cash flows and cash flows from investing have the ability to explain unexpected returns.	MR
Pfeiffer, Elgers, Lo and Rees (1998)	United States 1980-1996 22,839 firm-years	Unexpected earnings, unexpected operating cash flows, and unexpected increase or decrease in working capital from business activities all have the ability to explain unexpected returns (size-adjusted returns). The larger the unexpected variable is, the smaller the coefficient becomes.	MR
Wang and Eichenseher (1998)	United States 1977-1986 3,010 firm-years	Given unexpected earnings, the incremental explanatory power of unexpected cash flows for unexpected returns is limited.	MR
Charitou and Clubb (1999)	United Kingdom 1985-1992 520 firms per year	Earnings and operating cash flows both have the ability to explain long-term returns over four years or more.	MR
Green (1999)	United Kingdom 1976-1992 197 firms per year	Accruals and operating cash flows both have the ability to explain returns and changes in firm values.	MR
Pfeiffer and Elgers (1999)	United States 1979-1999 24,444 firm-years	Unexpected cash flows, unexpected current accruals, and unexpected non-current accruals all have the ability to explain unexpected returns. However, the regression coefficient is larger for operating cash flows.	MR
Plenborg (1999)	Denmark 1983-1992 121 firms per year	Earnings and operating cash flows both have the ability to explain unexpected returns.	MR*
Quirin, O'Bryan and Wilcox (1999)	United States 1988-1997 14,127 firm-years	Unexpected earnings has the ability to explain unexpected returns, but unexpected operating cash flows does not. The corroborative relation between earnings and operating cash flows is limited.	MR
Vincent (1999)	United States 1994-1996 138 real estate investment trusts	Earnings has the ability to explain returns, but increase or decrease in working capital from business activities does not improve the explanatory power.	MR
Charitou, Clubb and Andreou (2000)	Japan 1984-1993 6,662 firm-years	Earnings and cash flows both have the ability to explain returns. When earnings is transitory, operating cash flows can explain returns better.	MR
Hodgson and Clarke (2000)	Australia 1989-1996 774 firm-years	Earnings and cash flows become can explain returns better when a non-linear regression model is adopted. The larger the firm size is, the higher the explanatory power of cash flows is.	MR*
Charitou, Clubb and Andreou	United Kingdom 1985-1993	Earnings is superior to operating cash flows in explaining returns. When the permanence of	MR

(2001)	3,364 firm-years	income, growth, and firm size are controlled, the explanatory power of earnings increases further.	
Bartov, Goldberg and Kim (2001)	1988-1996 2,046 firm-years in the United States 1,862 firm-years in the United Kingdom 4,262 firm-years in Japan, etc.	It is observed in both the U.S. and other Anglo-Saxon countries that earnings is superior to operating cash flows in explaining returns. However, this superiority is not universal and affected by environment and system in each region.	MR Vuong test
Guay and Sidhu (2001)	United States 1962-1965 41,570 firm-years	Earnings is superior to operating cash flows in explaining returns. In addition, both short-term accruals and long-term accruals have the incremental explanatory power for returns.	MR Vuong test
Haw, Qi and Wu (2001)	China 1995-1998 1,516 firm-years	Earnings is superior to operating cash flows in explaining market adjusted returns.	MR
Moehrlle, Moehrlle and Wallace (2001)	United States 1988-1998 2,421 firm-years	Earnings before extra items is superior to operating cash flows in explaining market adjusted returns.	MR Vuong test
<b>Type D: Others adopting a specific valuation model</b>			
Author	Samples	Summary	Methods
Guay, Kothari and Watts (1996)	United States 1962-1993 47,498 firm-years	Given operating cash flows and non-discretionary accruals, discretionary accruals in the Jones model and revised Jones model have the ability to explain returns.	MR
Sloan (1996)	United States 1962-1991 40,679 firm-years	Not all cash flows information and accruals information included in earnings are reflected in returns.	MR*
Penman and Sougiannis (1998)	United States 1973-1990 4,192 firms per year	Earnings is superior to dividends and cash flows in explaining stock price levels. Application of the Ohlson model.	Prediction Errors
Barth, Beaver, Hand and Landsman (1999)	United States 1987-1996 15,405 firm-years	Given book value of equity and earnings, accruals and cash flows have incremental explanatory power for stock price levels (market capitalization).	MR
Chambers, Jennings and Thompson (1999)	United States 1977-1996 11,106 firm-years	Reported earnings can explain returns better than earnings adjusted for capital expenditure and depreciation in the year.	MR Vuong test
Ali, Hwang and Trombley (2000)	United States 1971-1995 86,108 firm-years	Even if risks and price-to-book value ratio (PBR) are controlled, accruals still have the ability to forecast (explain) returns.	MR
Francis, Olsson and Oswald (2000)	United States 1989-1993 2,907 firm-years	Abnormal earnings (residual income) is superior to dividends and cash flows in explaining stock price levels. Application of the Ohlson model.	Prediction Errors
Barth, Cram and Nelson (2001)	United States 1987-1996 10,164 firm-years	When accruals are disaggregated into components, a combination of each accrual and net cash flows are superior to the aggregated earnings in forecasting future cash flows.	MR Vuong test

UR = Univariable Regression, MR = Multiple Regression, \* = other method.

### 3. Net income and comprehensive income

#### 3.1 Definition of comprehensive income

It may be useful to identify the differences between net income and the similarity in order to understand the denotation of the concept of net income. In this paper, we focus on “other comprehensive income” that is included in comprehensive income but excluded from net income. The following survey confirms whether other comprehensive income is value-relevant. The reasons for this are twofold. First, there is a concern as to whether comprehensive income justified by the asset-liability view, which is politically adopted by the accounting standard setting body, may confuse the concept of net income developed under the traditional revenue-expense view. Second, there is a doubt as to whether information on comprehensive income is useful to investors in the conventional manner of empirical studies.

First, we attempt to confirm the meaning of comprehensive income by summarizing the definition by the FASB. Statement of Financial Accounting Concepts No. 6 (CON 6) defines comprehensive income as follows.

Comprehensive income is the change in equity of a business enterprise during a period from transactions and other events and circumstances from non-owner sources. It includes all changes in equity during a period except those resulting from investments by owners and distributions to owners. (par. 70)

It is important to note, first, that the above statement does not define “owner” and “non-owner.” These terms are used in a somewhat primitive sense without being clearly defined. Hence, their meanings are left to common sense judgement. In practice, a stockholder may fall under ‘an owner’ here on the *legal* basis in the case of a joint stock corporation. However, the body of terminology in CON 6 is not complete. For example, that incompleteness could raise complicated questions about accounting for stock options. When a standard setter decides how to account for option fees, he/she must judge whether the reception (on the credit side) is capital or income. Is an option holder is an owner? If so, the option fee must be treated as paid-in capital. In this context, when a firm vests a manager a stock option, the expense cannot be incurred. In definition, the income element cannot be generated from a transaction between a firm and its owner, as seen above. It seems contradictory that expense and paid-in capital are booked at the same time in accounting for stock options vested to managers. On the other hand, option fees are not liabilities because the deferrals under the revenue-expense view are, as a rule, excluded from the balance sheet by the asset-liability view. In this way, the incompleteness in CON 6 is, from a conceptual point of view, a serious defect.<sup>5</sup>

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<sup>5</sup> The FASB has long been trying to set clearer boundaries between liability and equity.

Second, comprehensive income is not defined directly as one of the components of equity. It is just the result of adopting the asset-liability view. The asset-liability view relies on the definition of assets and liabilities, and the stockholder's equity is defined as the difference between the two. It follows, therefore, that comprehensive income is defined in a double-indirect manner. Thus, in the Statement of Concepts, the concept of comprehensive income is not clarified and not defined *comprehensively*. For example, how comprehensive income relates to the firm value or the owner's wealth is not described, though investors generally use income as a proxy for the firm value. In fact, a few examples of individual comprehensive income are given through calculation of individual assets and liabilities.

This prompts us to ask what the difference is between the concept of comprehensive income and the traditional concept of net income that has already been broadly accepted and defined through accounting practice.<sup>6</sup> We pursue the answer by reviewing further from the official documents of the FASB. First, we confirm the difference between earnings and net income. Earnings represents a measure for corporate performance in "a narrow sense of the term." Statement of Concept 5 (CON 5) explains that the principal example included in the present net income but excluded from earnings is the cumulative effect of a change in accounting principles. On the other hand, income from discontinued operations and income from extraordinary items are included in earnings (par. 34). CON 5 shows the following formula in Paragraphs 42 through 44.

$$\begin{aligned} & \text{Earnings} \\ & - \text{Cumulative accounting adjustments} \\ & + \text{Other non-owner changes in equity} \\ & = \text{Comprehensive income} \end{aligned}$$

I characterize "a narrow sense" above because an issue could arise as to whether "the cumulative effect of a change in accounting principles" (i.e. a technical difference arising from a change in the accounting principles) should be regarded as corporate performance. It is possible to argue that this difference sometimes contains gains and losses for which the corporate managers cannot be responsible. Here particular attention should be given to the FASB's explanation for earnings derived by excluding certain items from net income. This concept of earnings appears to have been formulated while the concept of net income was refined publicly and after the introduction of a new concept of comprehensive income.

Next, we clarify the relation between net income and comprehensive income. Statement of Financial

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<sup>6</sup> The definition of net income (and earnings) is also ambiguous. However, its ambiguity is not a serious problem. Because lots of accountants, analysts, and investors have been using net income for a long time in the competitive market, the history is sufficient evidence that the definition or the meaning is generally accepted in practice. Since it is an important issue whether a new concept enhances the relevance of income information based on present net income *incrementally* in the meaning of 'Pareto Optimality,' only the definition of a new concept is out to be examined.

Accounting Standards No. 130 (FAS 130), i.e. accounting standards for disclosure of comprehensive income, gives only the following explanation in its Paragraph 10. FAS 130 does not provide any revised definitions of earnings or net income from the asset-liability view, but it seems that FAS 130 simply accepts their traditional definitions. FAS 130 merely lists “other comprehensive income” as an additional item in a fragmentary manner. (See Paragraph 39 of FAS 130)

This Statement uses the term *comprehensive income* to describe the total of all components of comprehensive income, including net income. (Note 4) This Statement uses the term *other comprehensive income* to refer to revenues, expenses, gains, and losses that under generally accepted accounting principles are included in comprehensive income but excluded from net income.

Note 4: This Statement uses the term *net income* to describe a measure of financial performance resulting from the aggregation of revenues, expenses, gains, and losses that are not items of *other comprehensive income* as identified in this Statement. (par. 10)

Thus, it is necessary to ascertain why firms are mandated to disclose such a vaguely defined amount of comprehensive income and what the purpose is to report it. On this issue, the FASB states as follows in FAS 130.

If used with related disclosures and other information in the financial statements, the information provided by reporting comprehensive income should assist investors, creditors, and others in assessing an enterprise’s activities and the timing and magnitude of an enterprise’s future cash flows. (par. 12)

Although total comprehensive income is a useful measure, information about the components that make up comprehensive income also is needed. A single focus on total comprehensive income is likely to result in a limited understanding of an enterprise’s activities. Information about the components of comprehensive income often may be more important than the total amount of comprehensive income. (par. 13)

This explanation offered by the FASB does not have sufficient academic foundations. There remains the necessity to verify the usefulness of information on comprehensive income, and that is the subject in subsection 2.2. However, the FASB does state as follows.

In addition to users’ concerns about reporting comprehensive income items in equity and the desire for international harmonization, the project on reporting comprehensive income became more urgent

because of the increasing use of separate components in equity for certain comprehensive income items. (par. 45)

This reveals that there have been practical requests for disclosure of information on comprehensive income. Since standard settings have been repeated in a fragmented manner, components of comprehensive income (later designated as “other comprehensive income”) are disorderly disclosed in the stockholder equity section on the balance sheet. Complaints from users of financial statements led ultimately to the promulgation of accounting standards for comprehensive income in order to streamline the composition of financial statements.<sup>7</sup> Because the disclosure requirement is mandated not by the theoretical reason or consensus but by such a practical and local need, it becomes all the more necessary to examine the usefulness of comprehensive income. Under the recycling method, comprehensive income and net income is related to each other in the nested structure. Thus, an incremental information value that comprehensive income adds to net income is logically equal to the information value of other comprehensive income. Thus, the center of interest must be directed to the relevance of other comprehensive income.<sup>8</sup>

### **3.2 Empirical studies on the value relevance of comprehensive income**

#### **3.2.1 Other comprehensive income**

As time has not passed yet since the introduction of disclosure requirements for other comprehensive income, there are not enough empirical studies. Not so many studies, therefore, have attempted to investigate directly the relevance of comprehensive income or the contents of such information. Table 2 lists principal studies that, in the main, treat comprehensive income as a subject of studies. At present, comprehensive income cannot seem to have any more information value than net income, as shown in Table 2. In other words, *other* comprehensive income cannot be deemed to have any additional information value. Therefore, we cannot believe that a new concept of comprehensive income improves the extant ‘net income information.’

Although there are still too few studies to support any conclusive statement, comprehensive income seems to lack information value in an academic sense. In fact, there is a need for disclosure of information in the market. However, the fact that there exist needs in the market is not necessarily evidence that the requested information would be value-relevant. It should be noted that its value relevance has not yet been

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<sup>7</sup> A number of papers have focused on the requests for disclosure of comprehensive income and the reaction of the FASB thereto. For examples, see: Robinson (1991), AIMR (1993), Johnson and Reither (1995), Beresford and Johnson (1996), Foster and Hall (1996), Johnson and Swieringa (1996) and Linsmeier and Gribble (1997).

<sup>8</sup> If the recycling is prohibited as currently proposed by the IASB, the extant net income cannot be calculated. The proposed comprehensive income does not conceptually overlap the extant net income but substitutes for it. Therefore, we cannot assess its proposal by empirical studies investigating the *incremental* value of other comprehensive income.



ascertained by empirical studies. The issue on the value relevance of information is an interesting case for exploring the relation among practical needs, the standard setting, and empirical research.

### **Table 2: Empirical studies on value relevance of comprehensive income**

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\*Cheng, Cheung and Gopalakrishnan (1993)

Comprehensive income has less information value than net income. Other comprehensive income has no information value.

\*Dhaliwal, Subramanyam and Trezevant (1999)

Net income is superior to comprehensive income in explaining returns. With a few exceptions, information on other comprehensive income is not useful.

\*O'Hanlon and Rope (1999)

Under UK accounting standards, factors able to explain returns are mingled among items that directly increase or decrease stockholders' equity as dirty surplus. In other words, some of the items that should have been calculated in net income were treated as dirty surplus.

\*Cahan, Courtenay, Gronewoller and Upton (2000)

Although the total amount of comprehensive income has information value, individual components (asset revaluation profit, foreign currency translation adjustment accounts) do not. A statement of changes in equity disclosing such information does not provide additional information to net income

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#### 3.2.2 Typical elements of other comprehensive income

This section takes up three typical elements of other comprehensive income as follows.

- A. Gains and losses from valuation of holding securities at market value.
- B. Currency translation adjustment accounts .
- C. Additional minimum liability of defined benefit pension plans.

This section confirms the value relevance of each element. In all three subsections below, we sum up theoretical and conceptual studies in advance, then we review empirical studies of those elements. Through two steps, we discriminate between the clarified issues and those unresolved. For a list of empirical studies on each element, see Table 3.

#### **A. Gains and losses from evaluation of securities at market value**

##### Theory

Under the current accounting standards, gains and losses from valuation of holding securities at market value are divided into those included in net income and those booked directly in stockholder's equity as other comprehensive income. Securities that are marketable and that can be sold out freely at any time without any business constraints, which is usually designated as "trading securities," should be valued at market value. The valuation difference is included in net income, not because the valuation difference is regarded as useful information to investors, but in order to measure the performance of those trading

activities in terms of changes in market values. With respect to this type of financial investment, it is enough for investors to know only gross market value, i.e. stocks information. The ‘*current level*’ of market value of those securities is value-relevant because its level is related to the present level of firm value just linearly (one to one). However, there is no reason to assume analogously that information on gains and losses from ‘*past changes*’ in market value in the year is useful to investors. If the security market is efficient at least in ‘weak form,’ past performance cannot signal the future performance. Therefore, gains and losses from mark-to-market cannot provide any valuable information for investors to estimate firm value.

Not all gains and losses from valuation of securities other than “trading securities,” which is usually designated as “available for sale” (or “held to maturity”), can be regarded as the performance of investment in those securities. There is sufficient justification to exclude these valuation differences from net income. Some of these securities can properly be classified as business investments (e.g. holding the supplier’s or customer’s shares to reduce the transaction costs), not as financial investment. To purchase these securities is the same as indirect investments in equipments for production of goods. The performance of such an investment would be included in outcome of business activities. The outcome of business investments should be measured based on the concept of realization, matching, and allocation. Therefore, those sorts of securities should be valued at original cost (or amortized cost).

In this logic, it is difficult to find any justification for the disclosure of market values of all holding securities, although some of them are used in business investments. Whichever a firm invests in securities or equipments, business investments are expected to generate more cash flows than those averagely expected in the market. The capital values of those assets for the firm exceed market values. That is, those capital values contain goodwill. For this reason, we cannot assume that any information on market values can signal future cash flows from business activities. There are no grounds to presume that information on market values (levels of market values, and gains and losses from changes in market values) can be relevant for estimating firm value by investors.

### Empirical Evidence

The primary subject of empirical studies on the value relevance of market values of holding securities has been financial institutions, principally banks.<sup>9</sup> At the start, it should be noted that market values of securities can be split into four elements and they are related mutually in the nested structure.

- a) The gross market value of holding securities.
- b) The difference between the market value and the original cost at initial acquisition, i.e. cumulative

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<sup>9</sup> We must notice that the observed findings for financial institutions cannot be necessarily applicable to the industrial firms straightly. Nevertheless, the current accounting standards require firms in all industries to adopt the same valuation rule of securities. This is a disputable point. However, this issue is not essential for this paper. We do not mention it further.

holding gains and losses). This is included in a) above.

c) Holding gains and losses on trading securities in the year. This is included in b) above. As mentioned earlier, this component is those included in net income.

d) Holding gains and losses on available-for-sale securities in the year. This is included in b) above. Only this component is included in other comprehensive income, which is booked directly in stockholder's equity.

When the value relevance of gains and losses from mark-to-market is the subject, both element c) and d) must be chosen as the target variables for explaining the returns or stock price levels. On the other hand, when the research issue is the relevance of other comprehensive income, only element d) must be considered.

However, many empirical studies are designed unfortunately without any clear distinction between these four elements. In many cases, either element a) or b) is chosen as the independent variable. Under this research design, the object is not the gains and losses *in the year* but the gross market value. Even if element b) is chosen as the dependent variable, the multiple regression model including book value of assets or equity may estimate the relevance of element a) because of the nested structure described above. Therefore, no conclusive studies have sought to clarify whether other comprehensive income has value relevance or whether it has any information value. Although only element c) should be regarded as corporate performance as mentioned earlier, it is still unclear whether investors in the market discriminate them from over all market values, and if so, how the difference is reflected in stock prices. After all, we cannot find conclusive evidence that gains and losses from mark-to-market in the year have any incremental information value.<sup>10</sup>

## **B. Foreign currency translation adjustment accounts**

### Theory

Foreign currency translation adjustment accounts (FCTAAs) represent the cumulative translation differences recognized in the book balance of foreign investments. For several reasons, not all FCTAAs can be regarded as corporate performance. First, they have not accrued in the outstanding balance of overseas investments. Second, as investments in consolidated enterprises are conducted to gain control, such investments should be considered as not financial but business activities. In the case of long-term trade receivables and payables, however, even though there may be constraints on their immediate conversion to cash (settlement) because of business activities, their translation differences are included in net income. Thus, it is difficult to find a substantial difference between the translation differences counted in net income and the FCTAAs that is excluded from net income. In summary, FCTAAs contain some

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<sup>10</sup> In the case of banks, there is also a need to consider BIS regulation of capital ratio and to control the regulatory climate in empirical studies. On this subject, see Barth, Landsman and Wahlen (1995), Carey (1995), Barth, Beaver and Landsman (1996), Cornett, Rezaee and Tehranian (1996), etc.

elements that should be treated as corporate performance.

Although it may be desirable to include certain elements of FCTAAs in net income rather than in shareholder's equity, this does not directly support the hypothesis that information on FCTAAs is useful to investors. It is well known that transitory earnings is less value-relevant than permanent earnings. FCTAAs reflect not only general trends in exchange rate fluctuations, but also differences arising from temporary fluctuations.<sup>11</sup> Whether FCTAAs have value relevance is very doubtful, because they contain transitory elements and those other than performance.

### Empirical Evidence

Many empirical studies are directed towards verifying the impact on stock prices at the adoption of FAS 8 and FAS 52 and the difference in usefulness between these two standards. One hypothesis underlying many studies is that, where noise included in net income under FAS 8 could be eliminated by techniques such as the functional currencies of FAS 52, the current rate method, and FCTAAs, then the adoption of FAS 52 is expected to enrich the relevance of net income. In other words, FCTAAs are considered as nothing more than noise and have no information contents. However, the results of empirical studies is mixed. It is not possible to conclude definitively, at present, that FCTAAs are useful to investors. This may be due in part to the mixed nature of FCTAAs of which some portions are regarded as corporate performance and others are not.

### **C. Additional minimum liability of defined benefit pension plans**

#### Theory

Calculation of pension costs for defined benefit pension plans is based on actuarial benefit obligations for retirees (projected benefit obligations, or PBO). This PBO is usually disclosed in footnotes to financial statements. The portion of the PBO recorded in the liability on the balance sheet represents, in principle, PBO minus fair value of the pension assets. But if part of PBO is not recognized (not amortized) as a result of delayed recognition or smoothing measures, the pension liabilities on the balance sheet becomes smaller than the amount obtained by subtracting the fair value of the pension assets from PBO.

Under FAS 87 in the United States, if the pension liabilities resulting from calculation of pension costs fall short of the accumulated benefit obligations (ABO) minus the fair value of pension assets, the difference is to be added to the pension liabilities in the form of an additional minimum liability (AML). At a minimum, therefore, a balance by subtracting the fair value of pension assets from ABO is recorded as pension liabilities on the balance sheet. The off-balanced pension obligations cannot exceed the difference between PBO and ABO. With the recognition of this AML, a part of it (equivalent to unrecognized

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<sup>11</sup> The outstanding book value of foreign investments can become an indirect indicator of exchange rate exposure of foreign investments. In such a case, FCTAAs could be regarded as a proxy of long-term trends related to the fluctuation of firm value. On this subject, see Walsh (1994), Bartov and Bodnar (1994), Chamberlain, Howe and Popper (1997), Shin and Soenen (1999), Pinto (2001), etc.

actuarial losses) is booked as *negative* other comprehensive income. Though this is not charged to net income, it is directly deducted from stockholder's equity.

From the standpoint of measuring corporate performance, it would be sufficient to allocate PBO over the service years. It would be meaningless to recognize AML without regard to such allocation. Even if the purpose is to disclose the economic value of the liabilities at the end of the year, there is no particular need to account for AML. PBO is already disclosed in the notes to the accounts and there is no need to disclose AML on the balance sheet. Furthermore, PBO would be more relevant than ABO because PBO reflect future estimates more appropriately than ABO. Therefore, it is assumed that the negative other comprehensive income recognized in recording AML is not only useful but also redundant.

### Empirical Evidence

Though a lot of empirical studies have been investigating the pension accounting since before the birth of the FASB, there has been no study, unfortunately, analyzing the value relevance of AML by focusing on other comprehensive income. Thus, we review the results of empirical studies to the extent related to this issue.

It has been frequently reported that, with regard to the factors influencing firm value (e.g. market capitalization itself, the ratings and credit premiums of corporate bonds, and risk indicators such as market beta), PBO is assessed in the same manner as legal debts such as bonds and loans. This stylized fact has been repeatedly observed since before the adoption of FAS 87. It is the common knowledge that, even if a liability is not shown on the balance sheet, an investor can appropriately estimate firm value by utilizing information in the notes. This evidence suggests that from the standpoint of providing information, there is no need to recognize AML on the balance sheet.<sup>12</sup> It can be presumed, therefore, that other comprehensive income related to pensions has no value relevance *incrementally*.

### 3.2.3 Typical items of dirty surpluses (in the United Kingdom, Australia, etc.)

In countries such as the United Kingdom, Australia and New Zealand, there are (or have been in the past) cases where items other than those discussed in 3.2.2 are directly booked in the stockholder's equity without being counted in net income. Typical items that have been subject of empirical research are

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<sup>12</sup> Some researchers are challenging the issue whether the difference exists in value relevance between the body of the financial statements and the footnotes (or the schedules). The discussion here does not intend to insist on the equivalence. However, it is necessary to notice that, even if certain information is value-relevant, its evidence does not force to disclose it on the body of the financial statements. Firms can disclose it through various channels. Market discipline may lead firms to select the optimal channel. Whether certain information is value-relevant could be one criterion to determine whether it is better to disclose it. However, it is not a satisfactory criterion to decide the disclosure channel. This is, as often pointed out, the serious limitation of value relevance study in providing implications for standard setting. On the other hand, if certain item is not value-relevant, the evidence can provide the agenda whether it can be eliminated. Although this is negative contribution, it is the awareness of the issues at the beginning of empirical accounting research in 1960's. The task of empirical research is, originally, not to propose a new standard but to investigate the rationale for the existing accounting standards.

reappraisal of tangible fixed assets and amortization of goodwill. Each of these items is reviewed hereunder, as in subsection 3.2.2. Refer to Table 3 for empirical studies of each item.

#### **A. Reappraisal of tangible fixed assets**

##### Theory

Gains and losses from revaluation of tangible fixed assets have no primary relation with corporate performance. In general, the market value is an aggregated result of expectations of individual participants in the market. That is, market value is determined by average expectation of future cash flows in the market. A firm continues business investment simply because it expects to generate cash flows exceeding the market average. The value of business assets owned by a firm exceeds the market value. The excess value of assets is called as *goodwill*. When goodwill exists, the summation of market values of individual assets and liabilities is not equal to the value of a firm or owner's wealth, and then the increase or decrease measured by periodical revaluation is not the same as *Economic Income* in the meaning of neo-classical economics.<sup>13</sup> The market value of assets used in business activities is irrelevant to the evaluation of corporate performance or estimation of firm value. In addition, the amount summed up cannot signal the future cash flows for a firm. Therefore, even if the market value of business assets were available to an investor, he/she could not forecast the firm's future cash flows, which is meaningful. The same discussion is applicable to gains and losses from revaluation, too.

##### Empirical Evidence

Reappraisal of assets, which has been examined by a number of empirical studies, was conducted at irregular intervals. In such a case, management may have exercised discretion in determining its scope, degree, and timing. It should be noted that these studies are not designed to confirm the value relevance of gains and losses from periodical revaluation of business assets.

Some empirical studies have reported that information on revaluation of tangible fixed assets is useful. However, even if significant response of stock prices or returns at the announcement of revaluation is observed, it is wrong to assume that investors regard market value fluctuation in the year as corporate performance and reflect it in stock prices or returns.<sup>14</sup> As discussed in the case of securities, empirical studies on revaluation of tangible fixed assets do not distinguish among a) gross market value, b) the difference between market value and original cost, i.e. cumulative amount of unrealized gains and losses,

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<sup>13</sup> Even if the values of intangible assets are taken into account, the incompleteness of markets of real goods and knowledge goods distorts the summation as an estimator of firm value. Though the unbiased best estimator of firm value (net assets) is market capitalization, it is a mistaken view that a firm should value stockholder's equity on the balance sheet at market value of share. First, estimation of firm value is the investors' task at their own risk. Second, a manager, who is well informed only about his/her business, cannot know the coming market equilibrium that God alone knows. Third, if a firm quotes from capital market in valuing shareholder's equity, investors already know the reported amount. It is meaningless to disclose it. Thus, fair value accounting is open to the further discussion.

<sup>14</sup> Probably, this type of market reaction should be explained by contracting theory or agency theory. On this subject, see Brown, Izan and Loh (1992), Wittred and Chan (1992), Cotter and Zimmer (1995), Cotter (1999), Muller (1999), Sloan (1999), Lin and Peasnell (2000b), Dietrich, Harris and Muller (2000), Jaggi and Tsui (2001), etc.

and c) the market value fluctuations during a period, i.e. unrealized gains and losses in the year. This leaves many unresolved problems in research designs. The important point is not whether the gross market value is value-relevant, but whether unrealized gains and losses in the year have incremental information value. As matters stand, there is nothing to verify the existence of any incremental information value.

## **B. Goodwill**

### Theory

When intangible assets or goods, which cannot be recognized on the balance sheet on the basis of going concern, are acquired by a corporate merger, the goodwill can be recognized under the purchase method. The book value of goodwill at initial measurement is the difference between the payment for the merger and the summation of fair values of assets and liabilities. If the merger is regarded as the acquisition of assets and liabilities, it is inappropriate to regard payment for goodwill as repayment of capital or dividends. The goodwill should be treated as expenditure to be recognized as expenses. In other words, goodwill should be amortized as expenses. It is inconsistent accounting practice to book it directly in stockholder's equity without charging to net income.

In general, the payment paid for a merger is larger than the fair value of the acquiring net assets because the future cash flows are expected to be more favorable than those expected in the market. As a matter of fact, it is commonly accepted that the recognized goodwill (on the debtor side) indicates an excess earning power of the investment project at the merger. It is difficult, however, to estimate the economic life of goodwill, as additional investments are made continuously to maintain the value of the goodwill. Nevertheless, the present international standard orders to amortize goodwill systematically within a priori determined period. The grounds for this rule are as follows.

- (1) Goodwill does not have a separately disposal value even if it is recognized as non-depreciation asset.
- (2) Continuous reappraisal would result in the recognition of internally generated goodwill (unrealized subjective profits).
- (3) Under normal circumstances, excess earning power is gradually diminished through market competition.

The unamortized balance of goodwill and the amortization thereof may reflect the managerial expectation of the remaining excess earning power as seen in Section 2. Thus, it is assumed that information on amortization (including write off) of goodwill is useful to investors. If goodwill and stockholder's equity were offset against each other, income elements would not be counted in net income and information on corporate performance would be mixed up with information on dirty surpluses that contains lots of noise.

### Empirical Evidence

Empirical studies report that the larger the value of goodwill recognized at the merger is, the larger the

firm value (market capitalization) becomes. It has also been pointed out that amortization of goodwill has a negative impact on the firm value (stock prices) and returns. These results imply that the market evaluates goodwill (on the debtor side) in the same manner as normal assets. In this context, there is no reason why the amortization of goodwill should not be charged to net income. An accounting method for writing off goodwill directly against shareholder's equity could mislead investors. There is, however, a mismatch between the formal, uniform pattern of amortization under GAAP and the decreasing pattern of goodwill assessed in the capital market. Consequently, it is also reported that the information on amortization of goodwill contains considerable noise and is less clear than the information on depreciation expenses of business assets (e.g. equipment for production).

**Table 3: Practical verification studies on other comprehensive income**

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**\*Gains and losses from valuation of securities at market value**

Barth (1994), Ahmed and Takeda (1995), Bernard, Merton and Palepu (1995), Petroni and Wahlen (1995) Barth, Beaver and Landsman (1996), Beatty, Chamberlain and Magliolo (1996), Eccher, Ramesh and Thiagarajan (1996), Nelson (1996), Venkatachalam (1996), Wampler and Posey (1998), Park, Park and Ro (1999), Jaggi and Zhao (2002), Mozes (2002), Seow and Tam (2002).

**\*Foreign currency translation adjustment accounts**

Houston (1989), Chen, Comiskey and Mulford (1990), Hooper and Liao (1990), Rezaee (1990), Kim and Ziebart (1991), Collins and Salatka (1993), Rezaee, Malone and Briner (1993), Haw, Jung and Pastena (1994), Soo and Soo (1994), Pourciau and Schaefer (1995), Bartov (1997), Inoue (1998).

**\*Additional minimum liability of defined benefit pension plans**

Feldstein and Seligman (1981), Martin and Henderson (1983), Dhaliwal (1986), Landsman (1986), Bulow, Morck and Summers (1987), Kemp (1987), Maher (1987), Gopalakrishnan and Sugrue (1990, 1993, 1995), Landsman and Ohlson (1990), Reiter (1991, 1992), Barth, Beaver and Landsman (1992), Maher and Ketz (1993).

**\*Gains and losses from revaluation of tangible fixed assets**

Sharpe and Walker (1975), Standish and Ung (1982), Emanuel (1989), Easton, Eddy and Harris (1993), Barth and Clinch (1998), Aboody, Barth and Kaznik (1999), Gaeremynck and Veugelers (1999), Lin and Peasnell (2000a).

**\*Goodwill**

Amir, Harris and Venuti (1993), Chauvin and Hirschey (1994), McCarthy and Schneider (1995), Barth and Clinch (1996), Davis (1996), Jennings, Robinson, Thompson and Duval (1996), Vincent (1997), Higson (1998), Brown, Tucker and Pfeiffer (1999), Choi, Kwon and Lobo (2000), Norris and Ayres (2000), Hopkins, Houston and Peters (2000), Jennings, LeClere and Thompson (2000).

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#### 4. Concluding remarks

This research report once again clarifies that the core of corporate accounting lies in net income determined by the concept of realization, matching and allocation. Information on net income is useful to investors, as planned in the primary purposes of the current accounting standards. Contribution of this paper is to confirm this view by surveying many empirical studies.

Although accruals are criticized for being affected by managerial discretion, they are in fact valuable sources of information for investors. This is a commonly accepted academic theory that has been confirmed repeatedly through comparison of the value relevance between earnings with cash flows. While it is recognized that some of the discretion permitted by the present accounting standards may not help to increase the value of income information, it would be wrong to criticize accruals simply because they allow managerial discretion and to constitute accounting standards based solely on formal or mechanical criteria. It is not certain that the formalism or the uniformity enriches accounting information. In addition, we cannot find the evidence that other comprehensive income is value-relevant, though it is expected to respond to the information needs of accountants and analysts. In sum, net income characterized by realization, matching, and allocation is most useful in comparison with cash flows and comprehensive income.

Of course, the asset-liability view and the idea of comprehensive income are playing certain roles itself. First, they grasp the flow of intangible goods that cannot be traditionally captured in terms of quantitative increases or decreases, and reflect them in income measurement. Second, they respond to the local and individual needs for disclosure on the balance sheet. Although no information value is found in other comprehensive income itself, it should be regarded as a buffer to protect, or sometimes strengthen, the core of net income from changes in social conditions and environments. The expansion of disclosure requirement would make a conflict between disclosure of net income as corporate performance and disclosure of information other than corporate performance. By utilizing the category of other comprehensive income and recycling, the conflict in accounting standards can be mitigated. At the same time, it must be emphasized that this policy choice clarifies further the fundamental nature of net income as developed by the revenue-expense view.

Strictly speaking, however, no answer has been found on how to utilize the results of empirical studies in setting accounting standards or how to proceed with academic studies that give useful implications on the construction of accounting standards. These were questions left unresolved by academic circles in Japan and the United States in the 20th century, and they remain as important challenges for the new century. Only when these questions are answered, we can clearly identify the reason for existence of studying the fundamental concepts underlying accounting standards.

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