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Subjective Goodwill as a Determinant of Earnings Quality

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This study examines two questions: The first question is regarding the amount of subjective goodwill that is included in accounting earnings. Subjective goodwill (internally generated goodwill) of an asset is assumed to be the difference between the asset's value-in-use and its market price. Value-in-use is the present value of future cash flows expected from the best use of the asset, discounted by the discount rate, while the market price represents the price quoted in the distribution market for an asset. Value-in-use reflects the subjective value estimated by the reporting entity, and it consists of the market price and subjective goodwill. Current financial reporting standards do not allow the recognition of subjective goodwill, and this is supported by many authorities. However, it is necessary to examine whether subjective goodwill should indeed be recognised. The second question is whether subjective goodwill included in accounting earnings is assumed to be a determinant of earnings quality. Although various determinants of earnings quality are discussed in the literature, we focus on earnings persistence. Persistent earnings are of higher quality. Persistence of earnings derives from the allocation of subjective goodwill to accounting earnings, provided that the covariance of the market price of the asset and its present value is not positive.

Field of Research: financial accounting
Keywords: subjective goodwill, internally generated goodwill, allocation, earnings quality, income measurement.

1. Literature review on earnings quality

The concept of earnings quality has been developed mainly in the area of business practices on corporate valuations in the U.S. (Brown 1994, O'glove 1987). This concept has been used by analysts in fundamental analysis since the 1930s, and the widespread use of the concept has occurred since the late 1960s (Ayres 1994). Although the concept of earnings quality has been discussed widely, arguments related to its definition and measurement continue. As Siegel (1982) indicates, it is an elusive concept. Brown [1994] points out that it lacks accuracy. Goncharov [2005]

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notes that current accounting research has not achieved a consensus on what exactly characterizes ‘high quality’ earnings.

Hawkins and Campbel [1978], in one of the earliest studies on earnings quality, detect that companies with higher earnings quality had higher price-to-earnings multiples. They point out that conservativeness, the ability to distribute cash, and persistence, among others, are the determinants of earnings quality. However, earnings quality is not classified by its characteristics, but only itemised. Another early study by Siegel (1991) mentions five elements, including economic reality reflection, as characteristics of higher quality, and eleven items, including estimated discretion, as characteristics of lower quality. Francis et al. (2004) argue that seven attributes of earnings exist, such as accruals quality, persistence, predictability, smoothness, value relevance, timeliness and conservatism, and examined their relationship with the cost of equity capital. Kothari (2001) notes corporate evaluations by investors and discretional management as relevant factors, and categorizes arguments on earnings quality. Recent studies, such as Francis et al. (2008), often measure earnings quality using the attributes of the accruals mapping to cash flows as the regression error of working capital accruals on cash from operations and as the estimated value of abnormal accruals.

Earnings quality is commonly defined as being ‘inversely related to the amount of time elapsed between revenue (income) recognition and cash collection’. This definition was detected by K. Schipper, a moderator at a panel discussion on earnings quality at the Financial Statement Analysis Conference in 2002. However, various ways to define earnings quality exist. For instance, in Penman (2007), earnings are defined as high quality if they are good indicators of future earnings. In Schipper and Vincent (2003) and Schroeder (2009), earnings quality is defined as the extent to which reported earnings faithfully represent Hicksian income.

The definitions of earnings quality discussed differ from each other. However, it would be worthless to only list these definitions. It is necessary to consider the determinants of earnings quality because there should be a close connection between the definitions of earnings quality and its determinants. Characteristics such as persistence, predictive ability, smoothness and conservatism are not necessarily separable theoretically. Moreover, the viewpoint of value relevance is contained with earnings management. We will examine the characteristics of the determinants and categories of earnings quality.

In Goncharov (2005), the concept of earnings quality is divided into two categories depending on the measurement used, such as market based or/and accounting

based. Market-based measurements include value relevance, conservatism and the timeliness of earnings. Accounting-based measurements include time-series properties of earnings, smoothness and accrual quality among others. These are not theoretically distinguishable; for example, accrual quality categorized in accounting-based measurements is closely related to the value relevance categorized in market-based measurements. Thus, it is necessary to consider the viewpoint of market-based measurements to judge the relationship between the components in accounting-based measurements and earnings quality. If there is a theoretically close connection between the two categories, the categorization is not appropriate.

Schipper and Vincent (2003) present the value relevance viewpoint and examine attributes that specify earnings quality, for example, time-series properties of earnings such as persistence, predictive ability and variability; the qualitative characteristics of a conceptual framework; the relationships between income, cash and accruals and the implementation of decisions. Regarding comprehensiveness, fundamental analysis and corporate valuation, as discussed by Penman (2007), is not discussed in Schipper and Vincent (2003). Also, a close connection exists between the categories. Time-series properties of earnings are related to the viewpoint of income, cash and accruals. Therefore, when mentioned by themselves, the categories are not comprehensive and are not distinguishable theoretically.

Francis et al. (2006) discuss the attribute that measures information quality, and focus on earnings quality as a summary indicator of financial reporting quality. They consider earnings to be of high quality if they are precise with respect to an underlying construct that pertains to capital market decisions. They view earnings quality as influenced by two types of factors: (1) those that reflect the innate features of the business models and operating environments and (2) those that reflect the financial reporting process per se. They describe several measures of earnings quality that have been used in accounting research, including accrual quality, abnormal accruals, persistence, smoothness, earnings variability, value relevance, earnings response coefficient, earnings opacity, timeliness, conservatism and e-loadings. We will focus on persistence in the context of income measurement.

2. Subjective goodwill in accounting earnings

The Accounting Standards Board of Japan (ASBJ) is an independent, private entity that develops accounting standards in Japan. ASBJ (2006) states that the objective of financial reporting is to measure and disclose the position of the entity's investments and the results of those investments. Investors decide on the funds that they will invest in entities at their own will, with the expectation of obtaining uncertain

future cash flows. In many cases, a disparity exists between investors and managers regarding the opportunity to obtain pertinent information. It is necessary to promote the disclosure of private information held by managers to relieve the information asymmetry and to resolve the malfunctioning of a capital market caused by such asymmetry—the *raison d'etre* of the disclosure system. Managers are basically required to disclose information on the results of the investments actually achieved (Chap.1, paras.1, 2).

We would discuss quality of earnings as net income, as specified by the concept of 'release from risk', one of the core concepts in ASBJ (2006). Supposing, as ASBJ (2006) assumes, that earnings are useful for investors because certain information in the future is reflected, the key might exist in the accounting accruals that are composed of earnings elements. The conversion amount of subjective goodwill is one accounting accrual that relates to the income measurement specified by the concept of released from risk.

Subjective goodwill is assumed to be the difference between the value-in-use and the market price. Value-in-use is the present value of the future cash flows expected from making the best use of the asset, discounted by the discount rate as on the measurement date, while market price represents a price quoted in the distribution market for the asset. Value-in-use reflects the subjective value estimated by the reporting entity, and consists of a market price and intangible (subjective) goodwill (Chap.4, paras.11, 20, 21). In the present system, subjective goodwill is excluded from financial reporting, and several researchers support this exclusion (Yang 1927, Couchman 1924, etc.). However, it is necessary to examine whether it makes sense for subjective goodwill to not be recognized. The argument outlining what the exclusion of subjective goodwill means and to what extent it should be eliminated from accounting earnings and the financial reporting system has not been entirely verified.

Many studies exist on income measurement and subjective goodwill, including Edwards and Bell (1961) (hereafter, referred to as E&B), Lee (1975) and Solomon (1961). E&B define subjective goodwill G_t as the difference between the subjective value (value-in-use) of the asset V_t and market price of the asset P_t. V_t is the present value of future cash flows, C_i, earned between time t+1 and time n at time t, expressed as follows.

$$V_t = \sum_{i=t+1}^{n} \frac{C_i}{(1+r)^{i-t}} \qquad (1)$$

Subjective goodwill is decreased by the portion of the expected return from investments that has been realized, as cash flows and is increased by time value. It is also decreased or increased by changes in market price. The conversion amount is generally expressed, not by numerical example as in E&B, in the following equation (2).

$$
\begin{aligned}
G_{t-1} - G_t &= (V_{t-1} - P_{t-1}) - (V_t - P_t) \\
&= \left[\sum_{i=t}^{n} \frac{C_i}{(1+r)^{i-t+1}} - P_{t-1}\right] - \left[\sum_{i=t+1}^{n} \frac{C_i}{(1+r)^{i-t}} - P_t\right] \\
&= \left[\sum_{i=t}^{n} \frac{C_i}{(1+r)^{i-t+1}} - P_{t-1}\right] - \left[(1+r)\left\{\sum_{i=t}^{n} \frac{C_i}{(1+r)^{i-t+1}} - \frac{C_t}{(1+r)^{t-t+1}}\right\} - P_t\right] \\
&= C_t - r\sum_{i=t}^{n} \frac{C_i}{(1+r)^{i-t+1}} - (P_{t-1} - P_t) \\
&= C_t - rV_{t-1} - (P_{t-1} - P_t) \qquad (2)
\end{aligned}
$$

In E&B, subjective profit (economic income) Y_t is defined as the amount that could be paid out as dividends in any period without impairing the subjective value at the beginning of the period. It is expressed in equation (3).

$$
\begin{aligned}
Y_t &= (C_t + V_t) - V_{t-1} \\
&= C_t - (V_{t-1} - V_t) \\
&= rV_{t-1} \qquad (3)
\end{aligned}
$$

Similarly, realizable profit I_t is defined as the size of the dividend that a firm can plan to pay at the end of a period without impairing the market value of its assets. It is expressed in equation (4).

$$
\begin{aligned}
I_t &= (C_t + P_t) - P_{t-1} \\
&= C_t - (P_{t-1} - P_t) \qquad (4)
\end{aligned}
$$

The difference between subjective profit and realizable profit is equivalent to the conversion amount of subjective goodwill. This is explained only by numerical examples in E&B. Equation (5) shows that this relation is obvious as long as subjective goodwill is defined as detected above.

$$
\begin{aligned}
I_t - Y_t &= C_t - (P_{t-1} - P_t) - \{C_t - (V_{t-1} - V_t)\} \\
&= (V_{t-1} - P_{t-1}) - (V_t - P_t) \\
&= G_{t-1} - G_t \\
I_t &= Y_t + (G_{t-1} - G_t) \qquad (5)
\end{aligned}
$$

In E&B, although the conversion process of subjective goodwill is clarified by comparing subjective profit with realisable profit, the process drawn from the relation between subjective profit and accounting income is not clarified. This study examines the relation between subjective profit and accounting income, and clarifies the conversion process of subjective goodwill in accounting income.

The definition of accounting income E_t, which follows from E&B and where B_t is book value at time t, is as follows. Equation (6) shows that C_t is divided into accounting income E_t and accounting depletion $(B_{t-1} - B_t)$.

$$\begin{aligned} E_t &= C_t - (B_{t-1} - B_t) \\ C_t - E_t &= (B_{t-1} - B_t) \end{aligned} \qquad (6)$$

First, the simple case of t = 1, $B_1 = P_1$ is examined. Since this is a case where book value at time 1 corresponds with the market price, accounting income E_1 is equivalent to realizable profit I_1 (because $B_1 = P_1$, $B_0 = P_0$). Realizable profit I_1 is transformed as follows using equation (5). These equations show that the total amount of conversion of subjective goodwill $(G_0 - G_1)$ is included in accounting income E_1, since $\{Y_1 + (G_0 - G_1)\}$ is equivalent to realizable profit I_1 as well as accounting income E_1. Therefore, $(G_0 - G_1)$ is included in accounting income E_1 as shown in equation (7). In the case where a dividend is equivalent to accounting income E_1, $(B_0 - B_1)$ $(= P_0 - P_1)$, which is carried out to financial investment that leads to the target rate of interest, is maintained as capital.

$$\begin{aligned} I_1 &= C_1 - (P_0 - P_1) \\ C_1 - \{Y_1 + (G_0 - G_1)\} &= (P_0 - P_1) \end{aligned} \qquad (7)$$

Second, the case of t = 1, $B_1 \neq P_1$ is examined. In this case, the relation between accounting income I_1, realizable profit E_1 and subjective profit Y_1 is expressed as $E_1 = I_1 - (P_1 - B_1) = Y_1 + (G_0 - G_1) - (P_1 - B_1)$. Using this equation with the definition of realizable profit I_1 in equation (5), transformed equations are expressed as the following equation (8). This shows that the total amount of conversion of subjective goodwill $(G_0 - G_1)$ is not necessarily included in accounting income E_1, but $(G_0 - G_1) - (P_1 - B_1)$ is included. In this case, when a dividend is equivalent to accounting income E_1, $(B_0 - B_1)$ is maintained as capital.

$$\begin{aligned} I_1 &= C_1 - (P_0 - P_1) \\ C_1 - \{Y_1 + (G_0 - G_1)\} &= (P_0 - P_1) \\ C_1 - [\{Y_1 + (G_0 - G_1)\} - (P_1 - B_1)] &= (P_1 - B_1) + (P_0 - P_1) \end{aligned} \qquad (8)$$

In the case of $B_1 < P_1$, since $(P_1 - B_1) > 0$, the conversion amount of subjective goodwill, $(G_0 - G_1) - (P_1 - B_1)$, is included in accounting income E_1 in the current period. This means that $(P_1 - B_1)$ of accounting income is not recognized in the

current period, but will be recognized in the future. That is, a part of current income is deferred. On the other hand, in the case of $B_1 > P_1$, since $(P_1 - B_1) < 0$, the conversion amount of subjective goodwill, $(G_0 - G_1) + (P_1 - B_1)$, is included in accounting income E_1 in the current period. This means that $(P_1 - B_1)$ of accounting income will not be recognized in the future, but is recognized in the current period. That is, a part of future income is advanced.

Finally, the general case at time t is examined. In this case, the relation between accounting income I_1, realizable profit E_1 and subjective profit Y_1 is expressed as $E_t = I_t - \{(B_{t-1} - B_t) - (P_{t-1} - P_t)\} = Y_t + (G_{t-1} - G_t) - \{(B_{t-1} - B_t) - (P_{t-1} - P_t)\}$. Using this equation with the definition of realizable profit I_1 in equation (5), transformed equations are expressed as in the following equation (9). This shows that the total conversion amount of subjective goodwill $(G_{t-1} - G_t)$ is not necessarily included in accounting income E_1 in the current period, as in the previous case. The amount $(G_{t-1} - G_t) - \{(B_{t-1} - B_t) - (P_{t-1} - P_t)\}$ is included in it.

$$I_t = C_t - (P_{t-1} - P_t)$$

$$C_t - \{Y_t + (G_{t-1} - G_t)\} = (P_{t-1} - P_t)$$

$$C_t - [Y_t + (G_{t-1} - G_t) - \{(B_{t-1} - B_t) - (P_{t-1} - P_t)\}] = (B_{t-1} - B_t) - (P_{t-1} - P_t) + (P_{t-1} - P_t) \quad (9)$$

This conclusion can also be confirmed from the context of residual income. The coincidence of the present value of residual income based on accounting income and subjective goodwill at time 0 is verified as follows.

$$PV_0[RI(E_t)] = \sum_{i=1}^{n} \frac{(C_i + B_i) - (1+r)B_{i-1}}{(1+r)^i}$$

$$= \sum_{i=1}^{n} \frac{C_i}{(1+r)^i} - \frac{B_0}{(1+r)^0} + \sum_{i=1}^{n} \frac{B_i}{(1+r)^i} - \sum_{i=2}^{n} \frac{B_{i-1}}{(1+r)^{i-1}}$$

The third and fourth terms are transformed as follows: $i' = i - 1$, $i = 2 \Leftrightarrow i' = 1$, $i = n \Leftrightarrow i' = n - 1$.

$$\sum_{i=2}^{n} \frac{B_{i-1}}{(1+r)^{i-1}} = \sum_{i'=1}^{n-1} \frac{B_{i'}}{(1+r)^{i'}}$$

$$\therefore \sum_{i=1}^{n} \frac{B_i}{(1+r)^i} - \sum_{i'=1}^{n-1} \frac{B_{i'}}{(1+r)^{i'}} = \frac{B_n}{(1+r)^n}$$

By substitution,

$$\begin{aligned} PV_0[RI(E_t)] &= \sum_{i=1}^{n} \frac{C_i}{(1+r)^i} - B_0 + \frac{B_n}{(1+r)^n} \\ &= V_0 - B_0 \\ &= V_0 - P_0 \\ &= G_0 \end{aligned} \tag{10}$$

On the other hand, at time t, the present value of residual income based on accounting income is not equivalent to subjective goodwill.

$$\begin{aligned} PV_t[RI(E_t)] &= \sum_{i=t+1}^{n} \frac{(C_i + B_i) - (1+r)B_{i-1}}{(1+r)^{i-t}} \\ &= \sum_{i=t+1}^{n} \frac{C_i}{(1+r)^{i-t}} - \frac{(1+r)B_{t+1-1}}{(1+r)^{t+1-t}} + \sum_{i=t+1}^{n} \frac{B_i}{(1+r)^{i-t}} - \sum_{i=t+2}^{n} \frac{B_{i-1}}{(1+r)^{i-t-1}} \end{aligned}$$

The third and fourth terms are transformed as follows: $i' = i-1$, $i = t+2 \Leftrightarrow i' = t+1$, $i = n \Leftrightarrow i' = n-1$.

$$\sum_{i=t+2}^{n} \frac{B_{i-1}}{(1+r)^{i-t-1}} = \sum_{i'=t+1}^{n-1} \frac{B_{i'}}{(1+r)^{i'-t}}$$

$$\therefore \sum_{i=t+1}^{n} \frac{B_i}{(1+r)^{i-t}} - \sum_{i'=t+1}^{n-1} \frac{B_{i'}}{(1+r)^{i'-t}} = \frac{B_n}{(1+r)^{n-t}}$$

By substitution,

$$\begin{aligned} PV_t[RI(E_t)] &= \sum_{i=t+1}^{n} \frac{C_i}{(1+r)^{i-t}} - B_t + \frac{B_n}{(1+r)^{n-t}} \\ &= V_t - B_t \\ &\neq V_t - P_t \\ &\neq G_t \end{aligned} \tag{11}$$

This means that the total amount of subjective goodwill converted is not entirely included in accounting income. In contrast, the present value of residual income based on realizable profit equals subjective goodwill at time t, and not just at time 0.

3. Subjective goodwill as a determinant of earnings quality

What are the implications of this finding for the theory of earnings quality? We derive the implications by focusing on the persistence of earnings. As mentioned above, we

found that the amount $(G_{t-1} – G_t) – \{(B_{t-1} – B_t) – (P_{t-1} – P_t)\}$ is included in accounting earnings. This means that the present system of financial reporting does not include the total amount of converted subjective goodwill in current accounting income. Only a portion of non-converted subjective goodwill is included in accounting income in the subsequent year. That is, in the present system, the structure of income measurement does not entirely exclude the non-converted subjective goodwill.

Earnings quality is often discussed from the perspective of value relevance or its usefulness in decision making. When earnings quality is treated in this way, the factor that is first mentioned is the concept of persistence. According to Lipe (1990), persistence of earnings is defined as the autocorrelation of earnings. Sustainability and persistence are considered interchangeable (Schipper and Vincent 2003). Revsine et al. (2001), Bernstein and Wild (2000) and Penman and Zhang (2002) consider persistence to be one of the characteristics that constitutes earnings quality from the perspective of value relevance. It has often been argued that persistence of earnings and ERC have a positive correlation, (see Kormendi and Lipe 1987). Lipe (1990) verified that earnings with a higher predictive ability for future earnings have a higher ERC. Penman (2003) also mentions that high quality earnings will become a better index of future earnings. Several studies discuss the persistence of earnings in relation to the fundamentals. Lev and Thiagarajan (1993) consider that persistence is an index that measures the grade in which earnings reflect fundamentals.

However, several unresolved problems exist regarding the relationship between persistence and value relevance. Sloan (1996) notes that information on the relationship between future earnings and each constituent factor of reported earnings, accruals and cash flow is not rationally reflected in capital markets. Sloan highlights an ‘accruals anomaly’; that is, accruals have a higher correlation with stock returns, even though persistence of accruals is lower than operating cash flow (also in Lev and Nissim 2006, Collins and Hribar 2000). As suggested by Richardson et al. (2006), two streams of disagreement exist regarding the explanation for Sloan’s (1996) result. The first stream argues that the result is attributable to accounting distortions, and the second stream argues that the result is attributable to growth-related factors such as diminishing returns to new investments, which explains the lower persistence of accruals.

How does the persistence of earnings relate to subjective goodwill in accounting earnings? One of the findings of this study was that subjective goodwill would be allocated each year. Subjective goodwill allocation produces higher persistence because this allocation is a regular apportionment. Therefore, an allocation of

subjective goodwill causes higher quality earnings. However, it is necessary to mention the condition under which the conclusion is restrained, which is when the covariance of expected cash flow (C_t) and market price (P_t) is not positive. Provided that the covariance condition is assumed, accounting earnings may be more persistent, and thus, of a higher quality when subjective goodwill is allocated.

In addition, suppose that managerial discretion in measurement serves as a means to transmit private information that managers themselves hold and that the usefulness of accounting earnings is increased by such information. It is also possible that certain additional informational content about the future is included in the portion $(G_{t-1} - G_t) - \{(B_{t-1} - B_t) - (P_{t-1} - P_t)\}$. This means the possibility exists that information contents are included in the allocation error itself in which managerial discretion or judgment is included.

4. Conclusion

This study examines two questions. The first question is regarding the amount of subjective goodwill included in accounting earnings. In current financial reporting standards, recognition of subjective goodwill is not allowed, and this standard is supported by many authorities. However, it is necessary to examine the sensibility of not recognising subjective goodwill. We found that if subjective goodwill is included in accounting earnings, then the amount is $(G_{t-1} - G_t) - \{(B_{t-1} - B_t) - (P_{t-1} - P_t)\}$. If exclusion of non-converted subjective goodwill is required, market price appraisal accounting is necessary, implying that non-converted subjective goodwill cannot be excluded from accounting earnings.

The second question is whether subjective goodwill in accounting earnings relates to earnings theory. Of the various determinants of earnings quality discussed in the literature, we focus on persistence, as earnings quality is often discussed from the perspective of value relevance. When earnings quality is treated in this way, the factor that is first mentioned is the concept of persistence. In this context, persistent earnings are of higher quality. We clarified the conversion (allocation) process of subjective goodwill. Because subjective goodwill is allocated regularly each year, persistence of earnings derives from the allocation of subjective goodwill, provided that the covariance of the market price of an asset and the present value of the asset is not positive. Therefore, subjective goodwill included in accounting earnings may be a determinant of earnings quality, as a determinant of persistence.

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