Proceedings of the Australasian Conference on Business and Social Sciences 2015, Sydney
(in partnership with The Journal of Developing Areas)
ISBN 978-0-9925622-1-2

PRICE REACTION TOWARDS THE PENSION ACCOUNTING DISCLOSURES OF ACTUARIAL GAINS AND LOSSES

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ABSTRACT
This paper investigates whether stock prices react to the pension accounting disclosures of actuarial gains and losses among defined benefit pension (DB) schemes adopters in Malaysia. Standard event methodology is adopted to examine the immediate price reaction of companies that disclosed the actuarial gains and losses for the year 2009. Using market adjusted return (MAR) Model, the results suggest that market is indifferent on the disclosures of actuarial gains or losses (i.e. either aggregate or segregate between companies that disclosed actuarial gains and losses) on disclosure date. An additional analysis further provides evidence that average abnormal returns (AAR) for companies that disclosed actuarial gains (i.e. average of 1.09%) are positive and significant after the disclosure date, while the markets have negatively reacted towards the disclosures of actuarial losses before the disclosure date (i.e. day -3, -8, -10). These findings suggest that the disclosures actuarial gains are more welcomed by investors and signal "good news" after the announcement date of annual reports.

JEL Classifications: M 40, M42, G 14
Keywords: Event Study, Actuarial Gains and Losses, AAR, Pension Accounting
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INTRODUCTION

International Financial Reporting Standards "IFRS' which were issued by Malaysian Accounting Standard Board "MASB) have been known to the Malaysian business community and accounting society since 2008. In particularly, pension accounting standard that is MASB 29 'Employee Benefits' was issued by MASB to replace IAS 19 'Employee Benefits. This standard was named FRS 119 'Employee Benefits' in 2007. The MASB further amended FRS 119 'Employee Benefits' which became effective for periods beginning on or after 1 January 2010. This standard is further superseded by MFRS 119 (i.e. as amended by IASB in June 2011) with effect from 1 January 2013. Hence, this standard provides an interesting question related to pension accounting disclosures: "Does market react towards pension accounting disclosures, specifically actuarial gains and losses for developing country like Malaysia?"

Actuarial gains and losses 'AGL' are the most volatile of pension cost components (Collie and Gannon, 2011) which had been disclosed in the financial statements by 29 defined benefit pension scheme adopters in Malaysia for the year 2009 (Lode and Atef, 2014). They report that information related to AGL is equally disclosed between gains and losses, whereby 52% of companies reported actuarial losses, while 48% of companies reported actuarial gains. Originating on these significant issues related to disclosures of AGL and using efficient market theory, this study predicts that stock market prices would tend to react more towards disclosures of actuarial gains than actuarial losses. Specifically, this paper addresses two research questions. First, we investigate if the market reacts to the disclosures of actuarial gains and losses, and second, we expect that actuarial gains signal good news to the market than actuarial losses.

The remaining of the paper is organised as follows. Next section develops testable hypotheses. We then proceed with research method and findings. Last section concludes the paper.

ISBN 978-0-9925622-1-2

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Actuarial gains and losses (AGL) may arise in relation to both the scheme assets and liabilities, of which they may arise due to (a) differences between the expected return and the actual return (e.g. a sudden change in the value of the scheme assets); (b) differences between the actuarial assumptions underlying the scheme liabilities and actual experience during the period and the effect of changes in actuarial assumptions; and (3) any adjustment necessary resulting from the limit on the amount that can be recognised as an asset in the balance sheet (FRS 17, para. 58). These actuarial gains and losses 'AGL' which are the most volatile of pension cost components (Collie and Gannon, 2011) could result to stock price reactions.

The efficient market theory assumes that stock prices represent all available information about companies (Fama 1970). Ball and Brown (1968) state that information contained in the annual income number is useful when it is related to stock prices. Consequently, Brown and Kim (1993) hypothesise that non-earnings disclosures by managers and outsiders about news other than earnings (e.g. stock splits, takeover, new order) of small firms generally are "good news" (i.e. a positive stock price reaction at the time of the information disclosure). They find that small firms' non-earnings disclosures, on average, are associated with significant stock price increases, whereas large firms' non-earnings disclosures, on average, are valuation-neutral.

In contrary, a study on "The market reaction to 10-K and 10-Q filings and to subsequent The Wall Street Journal Earnings announcements" by Stice (1991) provides inconsistent findings. He finds no significant market reaction, on average, at the SEC filing date, even though the filing was the first public announcement of earnings for the quarter. However, the study provides evidence on the existence of a market reaction to the subsequent Wall Street Journal earnings announcement.

The 21st century studies provide further empirical findings. Li and Ramesh (2009) find a significant market reaction surrounding quarterly periodic reports when their filing coincides with the first public disclosure of earnings although the 10-K reports in not subsumed by earnings releases. De Franco, Wong and Zhou's (2011) suggest that more complex information, such as that disclosed in the notes to the financial statements, is priced as the time of the 10-K filing. Currently, Curtis, McVay and Whipple (2014) provide evidence that investors appear to efficiently price the transitory gains at the time of the earnings announcement, but this partially reverses at the time of the subsequent 10-Q/K filing.

In another dimension of studies that specifically examine the accounting disclosures, Anderson-Wier (2010) indicates that the stock market does not react to most of the individual firm rankings, but does react negatively to the Newsweek Rankings as a whole. He further suggests that investors do not consider the relative environmental choices of firms or that the stock market does not like hearing about environmental news.

Amir and Ziv (1997) investigate the timing and method of adoption of SFAS No. 106[1] "Employers' Accounting for Post-Retirement Benefits other than Pensions". They consider the trade-offs between early and non-early reporting of information to be released under new accounting standards and predict that discretionary revelation of private information constitutes good news. Assuming that managers have private information about the accounting standard's valuation effect and using the adoption timing choices to convey this information to the market, the market-adjusted return on a portfolio of 1991 adopters was significantly larger than the market-adjusted return on a portfolio of 1993 adopters.

In addition, Choi and Tokuga (2007) study on "market reaction to the disclosure of unfunded pension benefit obligation write-off policies in Japan". They find that market adjusted abnormal returns are significantly positive, largely led by early write-off policy adopters. The differential response in favor of immediate write-offs is interpreted as reflecting signaling effect, in the sense that early write-off policy choice signals financial affordability and quick removal of obligations, despite the negative impact on accounting earnings.

Unlike other studies, our main focus is given to the stock price movements over fairly narrow windows around the pension accounting disclosures of actuarial gains and losses. Stock prices can be used to gain significant insight into corporations and how these disclosures specifically are associated with the stock prices' of a company. Therefore, this study anticipates that the Malaysian stock market behaves efficiently, that is the stock returns over the short windows surrounding the actuarial gains and losses disclosures would be significant. The hypotheses are stated as follows:

H1: Market positively reacts towards disclosures of pension accounting disclosures of actuarial gains and losses; and

H2: Market reactions surrounding the pension accounting disclosures would be different between the disclosures actuarial gains and disclosures of actuarial losses.

[1] The standard was effective for fiscal year starting December 15, 1992 (Amir and Ziv, 1997)

ISBN 978-0-9925622-1-2

RESEARCH METHOD

Stock prices can be a useful indication to determine the relationship between an event and a company by looking at the change in the stock prices following the event becomes public information. Fama, Fisher, Jensen and Roll (1969), among others, adopted event study methodologies to capture stock prices respond to new information.

Using the method originally proposed by Mac Kinlay (1997) and subsequently adopted by Ishak and Latif (2012), the present study employs market adjusted returns models to investigate the markets' reaction towards the pension accounting disclosures of actuarial gains and losses. The first part of this study focuses on assessing the price effects of actuarial gains and losses announcements in general, while the second part investigates the stock markets' reactions on disclosures of actuarial gains and losses respectively. Malaysian firms listed on the Main Board for the year 2009 that have disclosed actuarial gains and losses are included in the sample. Apart from annual reports gathered through companies' websites, data such as EPS and stock prices are collected from data stream.

In addition, the Kuala Lumpur Composite Index (KLCI) is used as the market or benchmark index. Daily prices for each firm's and the KLCI are gathered beginning from 10 days prior to the announcement date to 3 days after the announcement date. Daily return for firm i on day t is computed as follow:

$$R_{i,t} = \frac{P_{i,t} - P_{i,t-1}}{P_{i,t-1}}$$

where,

$R_{i,t}$: return on firm i during day *t*

$P_{i,t}$: price of firm i shares at the end of day *t*

$P_{i,t-1}$: price of firm i shares at the end of day t-1

Similarly, the daily market return

$$R_{m,t} = \frac{CI_t - CI_{t-1}}{CI_{t-1}}$$

where,

$R_{m,t}$: Return on Composite Index during day *t*

CI_t : Composite Index level at the end of day *t*

CI_{t-1} : Composite Index level at the end of day *t-1*

Abnormal returns for each day t are computed by comparing daily firms' and market's returns as follows:

$$AR_{i,t} = R_{i,t} - (\hat{\alpha}_i + \hat{\beta}_i R_{m,t})$$

where,

$AR_{i,t}$ is the abnormal return of i firm on day t,

$R_{i,t}$ is return on firm *i* during the period t,

$R_{m,t}$ is return on Composite Index during the period t

Daily abnormal returns on each event day for all sample firms are cumulated and then divided by the number of observations to give the average abnormal returns (AAR) for the event day *t* as summarised below:

$AAR_t = \frac{\sum_{i=1}^{n} AR_{i,t}}{n_t}$ where n is the number of firms on day t. The variance for market adjusted return is $\frac{1}{n^2}\sum_{i=1}^{n}(AR_{it} - AAR_t)^2$. AAR_t is normally distributed and Z-statistics is equal to AAR_t divided by square root of the variance.

ISBN 978-0-9925622-1-2

FINDINGS AND DISCUSSIONS

This section presents the descriptive analysis and the immediate price reaction towards the disclosure of pension accounting disclosures of actuarial gains and losses among DB pension schemes adopters by Malaysian listed companies.

Descriptive Analysis

AGL had been disclosed in the financial statements by 29 companies (i.e. 41%) of 70 companies that adopted DB pension schemes in Malaysia for the year 2009. The reported AGL is equally disclosed between gains and losses, whereby 52% of companies reported actuarial losses and 48% of companies reported actuarial gains. The highest actuarial losses of RM18 million by Commerce International Merchant Bankers, while the highest actuarial gains of RM7.4 million were reported by Tenaga Nasional. The remaining companies (i.e. 59%) that did not disclose pension liabilities were not mentioning their AGL in the financial statements.

Price Reaction of Actuarial Gains and Losses Disclosure

The first part of the study is to assess the immediate price reaction on the disclosure of actuarial gains and losses. Table 1 provides the average abnormal returns (AAR) for day -10 to day +3 surrounding the disclosures of AGL using Market Adjusted Return Model (MAR). This Model indicates that abnormal return is a negative and insignificant about 0.09% on the day of the amount of actuarial gains and losses disclosed in the annual report. The results suggest that market is indifferent on the disclosures of actuarial gains or losses (i.e. either aggregate or segregate between companies that disclosed actuarial gains and losses) on disclosure date. These findings imply that investors do not consider the disclosures of AGL as significant events as market reacts negatively to those disclosures.

However, the market have positively reacted towards pension accounting disclosures of actuarial gains and losses on non- disclosure dates (i.e. day 1 and day -1, day -7 and day - 9) at 5% significant level. These findings thus provide evidence on the existence of a market reaction towards actuarial gains and losses before and after the announcement of AGL in the annual reports.

TABLE 1. AAR FOR DAY -10 TO DAY +3 SURROUNDING THE ANNOUNCEMENT OF \ ACTUARIAL GAINS AND LOSSES

	Actuarial Gains and Losses			
Event day	AAR	STDEV	Z score	P-value
-10	-0.0005	0.0273	-0.1132	0.9105
-9	0.0070	0.0338	-2.5617	0.0158*
-8	0.0026	0.0478	0.3069	0.7611
-7	0.0112	0.0224	2.7505	0.0101*
-6	0.0027	0.0341	0.4375	0.6649
-5	-0.0007	0.0164	-0.2445	0.8082
-4	-0.0016	0.0194	-0.4620	0.6474
-3	-0.0025	0.0116	-1.2028	0.2387
-2	-0.0028	0.0192	-0.8015	0.4293
-1	0.0058	0.0138	2.3214	0.0274*
0	-0.0009	0.03256	-0.1545	0.8782
1	0.0100	0.0206	2.6685	0.0123*
2	0.0068	0.0243	1.5379	0.1349
3	0.0053	0.0250	1.1688	0.2519

** indicates significant at 1% level, * indicates significant at 5 % level

ISBN 978-0-9925622-1-2

Table 2 compares the abnormal returns from day -10 to + 3 based on companies that had disclosed either actuarial gains or losses. The results suggest that market is indifferent either actuarial gains or losses had been disclosed on day 0. This additional analysis further indicates that average abnormal returns (AAR) for companies that disclosed actuarial gains (i.e. average of 1.09%) and actuarial losses (i.e. average of 0.7%) are positive and significant after the disclosure date (i.e. day 1 to day 3). The positive sign of coefficients indicate that actuarial gains and losses disclosures are welcomed by investors.

Nevertheless, the markets have negatively reacted towards the disclosures of actuarial losses before the disclosure date (i.e. day -3, -8, -10). This situation explains that the news related to actuarial losses reported by DB pension schemes were already spread before the actual date of the AGL announced in the annual reports. In conclusion, these findings suggest that disclosures of actuarial gains are more welcomed by investors and signal "good news" due to more negative and significant abnormal returns for disclosures of actuarial losses before and after the announcement date of annual report.

A further test is conducted to determine whether average abnormal returns are associated with announcements of earnings, whereby EPS is used as the variable in this test. The result shows that there is no significant association between AAR and EPS among companies that disclosed actuarial gains and losses.

TABLE 2. AAR FOR DAY -10 TO DAY +3 SURROUNDING THE ANNOUNCEMENT OF ACTUARIAL GAINS AND ACTUARIAL LOSSES SEPARATELY

	Actuarial Gains				**Actuarial Losses**			
Day	AAR	STDEV	Z score	P-value	AAR	STDEV	Z score	P-value
-10	-0.0214	0.0410	-2.8552	0.0078***	-0.0054	0.0080	-3.7403	0.0008***
-9	0.0075	0.0268	1.5504	0.1318	0.0059	0.0127	2.5410	0.0166**
-8	0.0096	0.0576	0.9130	0.3687	-0.0101	0.0172	-3.2288	0.0030***
-7	0.0132	0.0268	2.6888	0.0117**	0.0077	0.0114	3.7050	0.0008***
-6	0.0060	0.0416	0.7944	0.4333	-0.0034	0.0122	-1.5401	0.1343
-5	-0.0026	0.0140	-1.0252	0.3137	0.0027	0.0210	0.7214	0.4764
-4	-0.0029	0.0125	-1.3005	0.2036	0.0008	0.0295	0.1580	0.8754
-3	-0.0011	0.0092	-0.6547	0.5177	-0.0052	0.0156	-1.8381	0.0762*
-2	-0.0040	0.02262	-0.9910	0.3298	-0.0004	0.0119	-0.2083	0.8363
-1	0.0052	0.0120	2.4031	0.0228**	0.0069	0.0177	2.1477	0.0402**
0	-0.0089	0.0372	-1.3225	0.1963	0.0140	0.0136	5.6550	4.1194
1	0.0109	0.0245	2.4516	0.0204**	0.0083	0.0118	3.8554	0.0005***
2	0.0110	0.0288	2.0890	0.0455**	-0.0008	0.0104	-0.4614	0.6479
3	0.0046	0.0290	0.8733	0.3896	0.0066	0.0169	2.1429	0.0406**

*** indicates significant at 1% level, ** indicates significant at 5 % level* indicates significant at 10% level

ISBN 978-0-9925622-1-2

CONCLUSIONS

The present study investigates the price reactions towards the pension accounting disclosures of actuarial gains and losses among DB pension schemes adopters among Malaysian listed companies. Standard event methodology is adopted to examine the immediate price reactions of companies that disclosed the actuarial gains and losses for the year 2009. Using market adjusted return (MAR) Model, the results suggest that market is indifferent on the disclosures of actuarial gains or losses (i.e. either aggregate or segregate between companies that disclosed actuarial gains and losses) on disclosure date.

An additional analysis further provides evidence that average abnormal returns (AAR) of companies that disclosed actuarial gains (i.e. average of 1.09%) and actuarial losses (i.e. average of 0.7%) are positive and significant after the disclosure date. Nevertheless, the markets have negatively reacted towards the disclosures of actuarial losses before the disclosure date (i.e. day -3, -8, -10). These findings suggest that the disclosures actuarial gains are more welcomed by investors and signal more "good news" instead of disclosures of actuarial losses. However, the news related to actuarial losses was already spread before the actual date of AGL announced in the annual reports.

There are several limitations of the study. Firstly, other non-earnings factors may influence market price reactions, and secondly, the results of the study should be interpreted with caution as limited observations are used for the analysis of pension accounting disclosures and stock market reactions. A bigger sample and longer event window study would probably yield different results.

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