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An Empirical Investigation of the UK Stock Market Response to the Implementation of SSAP 20 "Foreign Currency Translation"[1]

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Abstract

This study presents an empirical investigation of the UK stock market response to the implementation of the UK Statement of Standard Accounting Practice (SSAP) No. 20 "Foreign Currency Translation" (issued in April 1983). Such an empirical investigation has not yet been undertaken for the UK. Our results show that the stock market generally appeared to have anticipated the implementation of SSAP 20. For the aggregate set of adopters, we found a positive stock market response in the official year of adoption, reflecting the appreciation of the income-stabilising effects of the standard. This paper also presents a cross-sectional analysis that tests for a relationship between the stock returns and the accounting measures of those firms that adopted SSAP 20. We found a significant relation between the stock returns and the related accounting measures in the actual adoption period of the aggregate set of adopters. This study generally focuses on the interpretation of the financial impacts of the various accounting choices of firms within their financial and economic environments.

Key words: Translation gains and losses; SSAP 20; Early, normal and late adopters; Stock market reaction.

1. Introduction

SSAP 20 gives guidance to UK firms with regards to the financial reporting of foreign exchange. According to SSAP 20, translation gains and losses should be recorded in the balance sheet. This kind of accounting treatment would tend to stabilise the income statement (see Soo and Soo, 1994). Before the issue of SSAP 20, there was no clear regulatory framework in the UK about the recognition and disclosure of translation differences in the financial statements. This tended to result in the discretionary treatment of translation gains and losses and income-smoothing (see Brayshaw and Eldin, 1989). The recognition of translation gains and losses in the balance sheet would make earnings less volatile and would therefore tend to reduce the risk of bankruptcy or debt covenant violation (see Holthausen, 1990). Overall, SSAP 20 would tend to stabilise the profit figure and also to improve the firms' financial position, which would in turn favourably affect the management payout and stock returns (see Matsunaga, 1995).

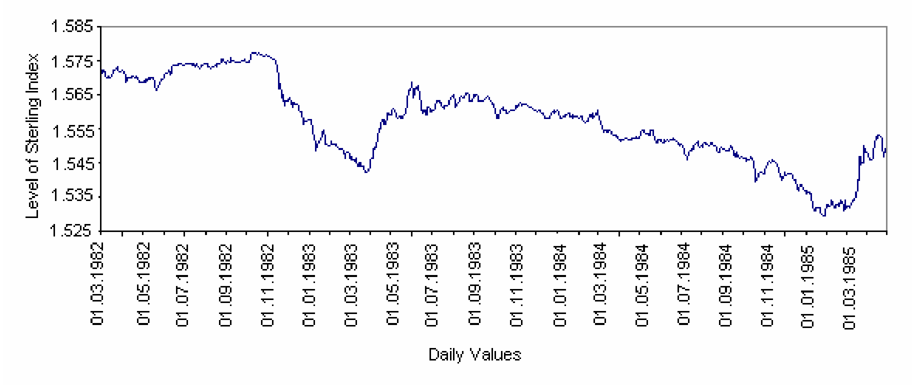

Fig. 1. Bank of England Multilateral Sterling Index 1 March 1982 to 1 April 1985

[1] The authors gratefully acknowledge the financial support provided by the Economic & Social Research Council (ESRC) of the United Kingdom for carrying out this research. The ESRC is not responsible for any statements in this study.

Figure 1 describes the behaviour of the UK pound for the period under analysis. It relies on the Bank of England multilateral sterling (pound) index and shows that the pound overall displayed a depreciation over the entire period.

Accounting policy choice is associated with issues regarding compensation, debt covenant arrangements and stock returns (see Fields, Lys and Vincent, 2001). According to the agency theory (see Jensen and Meckling, 1976), firms may influence or manipulate their financial accounting numbers in order to improve their picture and performance (see Healy, 1985; Lambert, 2001). This implies that firms may delay the adoption of SSAP 20, and thus the recognition of translation differences in the balance sheet, until they meet certain financial objectives or their profit figures improve. In the decision-making process of firms, the conditions of the UK economy should be taken into account. Over the period of the study, we observed that the UK pound tended to depreciate (see Figure 1). The depreciation of the pound could in fact defer the adoption of the standard since most UK firms had exhibited an overseas positive net asset balance[1]. In general, the analysis shows that most firms adopted SSAP 20 before or on the official issue period.

This paper investigates the extent to which the stock market responded to the adoption/deferral of adoption of the standard by attributing some value to the stock prices of those firms. Notice that the stock market reaction can well reflect the perception of the stock market regarding the impact of the adoption/non-adoption of the standard on firms' financial results. Since managers are also concerned about the stock market's perception of the impact of the standard on the financial results (see Burgstahler and Dichev, 1997; Levitt, 1998), a favourable stock market response provides some endorsement of the actions of managers and therefore of the appropriateness of the timing of the adoption. The examination of the stock market's response is undertaken by analysing the abnormal returns for the firms in the sample. We also investigate whether there is a connection between the financial characteristics of the firms and the observed abnormal returns. The finding of a connection would imply that the stock market behaviour relates to the perception of the market about the impact of the adoption/non-adoption of the standard on the financial results of the firms.

The US accounting literature regarding the accounting treatment of translation gains and losses shows that the US stock market responded negatively to SFAS 8 (see Wilner, 1982; Ayres and Rodgers, 1994; Bazaz and Senteney, 1995). SFAS 8 advocated that such FX differences should be recorded in the P&L. In contrast, SFAS 52, which argued that translation gains and losses should be disclosed in the balance sheet, was greeted positively by the stock market (Ziebart and Kim, 1987; Kim and Ziebart, 1991). Despite the positive US stock market response to SFAS 52, the UK stock market might not respond in a similar manner despite the similarities between SSAP 20 and SFAS 52. This may be because of the differences in the economic, financial and regulatory environments. To ensure that the empirical results are pertinent, we test the null hypothesis that the stock market did not respond to the implementation of SSAP 20. This hypothesis presupposes either that the stock market had already impounded the information into the stock prices or that managers had managed the timing of adoption so as to have minimal effects on stock prices.

Section 2 presents the data sets and the research hypotheses of the study. Section 3 describes the event study analysis that we undertake in this paper. Section 4 presents the model that we use to calculate the abnormal returns. Section 5 describes the theoretical and empirical considerations that are associated with the event study analysis. Sections 6 and 7 describe and interpret the stock market response to the implementation of SSAP 20. Section 8 presents the results of the cross sectional analysis. The conclusions of the study are presented in Section 9.

[1] The details below show the percentages of adopters that exhibited translation gains for the period from 1981 to 1985. In general, the percentage of late adopters that displayed translation gains tended to be larger relative to other types of adopters.

Firm type/year	1981/82	1982/83	1983/84	1984/85
Early adopters	73%	82%	82%	82%
Normal adopters	82%	91%	69%	77%
Late adopters	85%	90%	97%	94%
The official period of adoption was from 1 April 1983 to 31 March 1984.				

2. Data Sets and Research Hypotheses

The companies' annual financial statements could not be obtained in their physical form for the period under investigation, so we used the Microfiche service at the Manchester Business School (MBS) to generate the data for the model. This service provides miniaturised exact copies of the notes to the published accounts and the exact accounting entries for translation differences in the original published accounts. This information allowed us to identify the timing of adoption of each firm and to select the control sample. Once the firms were identified, we matched them with their stock prices and their reported financial results. Both datasets were taken from DataStream[1]. The samples exclude financial institutions, such as banks and insurance companies, as their accounting measures may have different meanings compared to those of industrial firms. The firms in the samples are from a number of industries including textile, retail, chemical and electrical firms (see Appendix 1). The accounting measures that we used in the analysis are presented in Appendix 2.

The analysis covers the period from 1 April 1981 to 31 March 1985. For this period, the full data set consists of 114 industrial companies, whose shares were listed on the London Stock Exchange. SSAP 20 became officially operational on 1 April 1983. The analysis therefore centres on the recommended period of adoption, i.e. from 1 April 1983 to 31 March 1984. In particular, for each accounting year that is analysed, only those firms that have actually adopted in that particular year are incorporated in the analysis. In this case, the adopters are divided into 1982/83 (early), 1983/84 (normal) and 1984/85 (late) adopters, and are analysed separately in relation to the period of their actual adoption. Using the MBS Microfiche service, we identified 56 firms that adopted SSAP 20 in the period of 1 April 1982 – 31 March 1983 (early adopters). Only 22 firms adopted the standard in the official year of adoption, i.e. 1 April 1983 – 31 March 1984 (normal adopters). Also, a number of firms – 36 – did not adopt SSAP 20 in the official period of adoption. These firms adopted the standard in a later period and particularly in the period from 1 April 1984 to 31 March 1985 (late adopters). Also, a supplementary set of tests is provided, where the analysis focuses on the whole set of (114) adopters. This additional analysis seeks to assess the robustness of the financial characteristics of adopters in relation to the hypothesised relations. We also use the control sample of 95 firms for further validation purposes.

The accounting and stock price measures that are employed to test the research hypotheses are intended to explain the decision-making process of firms[2]. The hypotheses that are tested in the attempt to identify the stock market response to the implementation of SSAP 20 are the following:

H0: 1 The stock market did not respond to the implementation of SSAP 20. The alternative hypothesis is that the stock market was conscious of the implications of SSAP 20 and therefore did respond to its implementation.

H0: 2 The stock market did not anticipate the implementation of SSAP 20. The alternative hypothesis is that the stock market was aware of the implications of SSAP 20 and thus anticipated its implementation.

H0: 3 The adoption of the standard has no effect on firms' stock returns and given an insignificant market response, there is no relation between the CAR and the financial accounting measures. The alternative hypothesis is that following the income-stabilising effects of SSAP 20, we predict a positive stock market response, i.e. a positive CAR, provided a firm adopts. We expect an association between the positive stock market response and the related accounting measures on the assumption that the information regarding the timing of the actual adoption is reflected on the stock returns.

3. Event Study Analysis

The event study analysis attempts to study how a specific event can affect the market value and the performance of a firm or set of firms. The event window regards the accounting pe-

[1] For the period under investigation, the data available on the MBS Microfiche service and DataStream as well as the disclosure of accounting information in the financial statements were limited. As a result, this reduced the sample size to 114 firms.

[2] However, the behaviour of firms may not always be observable, and therefore it may give rise to different interpretations.

riod 1983/84, which is actually the period of the official adoption of SSAP 20. In our time series analysis, we identify the stock market response to SSAP 20 in relation to 1982/83 (early – pre-event), 1983/84 (normal) and 1984/85 (late – post event) adopters. We have selected 1981/82 as the estimation period, because it is relatively close to the event period and the related stock returns are supposed not to be affected yet by the events around the official adoption period. The period, 1981/82, was also used in the analysis as a pre-actual adoption period for the 1982/83 adopters in the attempt to identify any patterns in the market behaviour concerning the specific category of adopters.

In the case of a non-zero correlation between the stock returns and the event dates, the estimation of the model parameters within periods outside the event could increase the possibility of bias among the estimates (see Thompson, 1985). However, it should be noted that it is rather hard to identify a completely "clean" estimation period mainly due to the fact that the stock market could have built in its own expectations in regard to the timing of the adoption and the adoption issue in general. These expectations may be affected by or result from the related exposure drafts[1] and press announcements, which preceded the official issue of SSAP 20. We have also used the period of 1 April 1982 – 31 March 1983 as an additional estimation period in order to assess whether it better captures the specific event[2]. The statistical inferences based on both estimation periods are generally similar. Finally, we have accounted for thin trading and size effect. In fact, it was found that there is no significant size effect. As described in Section 5.1, we have used the Dimson aggregate coefficients estimator (Dimson, 1979) to deal with thin trading. The empirical analysis has been based on daily data, which has been found, that can lead to more powerful and less biased results (Dimson and Marsh, 1986)

4. Calculation of Abnormal Returns – Market Model

In order to measure the impact of a specific event on firms' stock returns, the cumulative abnormal excess return (CAR) is computed. The CAR is used to deal with the case where there is uncertainty concerning the precise date of the event. The CAR should be calculated for each firm in the sample and for each accounting period around the event window. In addition, to estimate the abnormal returns one needs to select a certain market index. Each market index can consist of different types of securities, and different weighting may apply to each type of the involved components. The market index that is used in the specific research is the Financial Times All-Share Index that was obtained from Datastream. Further, in the specific study, we make use of logarithmic returns as opposed to discrete returns. It is evident, that the logarithmic returns tend to follow the normal distribution and thus they are in consistency with standard econometric methods. The underlying formulae for the calculation of logarithmic and discrete returns are respectively as follows (Strong, 1992, p. 535):

$$R_{jt} = \log\left[\left(P_{jt} + D_{jt}\right) / P_{jt-1}\right], \tag{1}$$

$$R_{jt} = \frac{P_{jt} + D_{jt} - P_{jt-1}}{P_{jt-1}}, \tag{2}$$

where P_{jt} is the price of security j at the end of period t;

D_{jt} is the dividend paid during period t;

P_{jt-1} is the price of security j at the end of period $t-1$, adjusted for any

[1] The exposure drafts, which preceded the issue of SSAP 20 (1983), are ED 16 "Supplement to Extraordinary Items and Prior Year Adjustments" (1975), ED 21 "Accounting for Foreign Currency Transactions" (1977) and ED 27 "Accounting for Foreign Currency Translations" (1980).

[2] Ball and Brown (1968) argue that the appropriate period to estimate the abnormal returns should be the period over which the expectations are built, usually one accounting period before the event date.

capitalisations in order to make it comparable with P_{jt} .

In order to obtain the abnormal return, we have employed the *market model* in the analysis. According to the accounting literature, the market model seems to be the most popular model employed in event studies for the computation of abnormal returns. The market model assumes that returns can be obtained as follows:

$$R_{jt} = \alpha_j + \beta_j R_{mt} + u_{jt} , \tag{3}$$

where R_{jt} is the return on security *j* in period *t*;

α_j is the intercept for security *j*;

β_j is the systematic risk of security *j* in relation to the market index;

R_{mt} is the return of the stock market in period *t*;

u_{jt} is a random error, which is assumed to have a mean of zero and no correlation with R_{mt} .

The above equation categorises R_{jt} into a systematic factor that is linearly related to R_{mt} and an unsystematic factor u_{jt} , which has no correlation with R_{mt} . In fact, the effect of firm-specific events tends to be associated with the unsystematic factor, u_{jt} since it is assumed that there is no correlation between the information that is conveyed (signal) and R_{mt} (Strong, 1992). Furthermore, the coefficients α_j and β_j have to be estimated and therefore the predicted abnormal return can be computed from equation (3) as follows:

$$\hat{u}_{jt} = R_{jt} - \left(\hat{\alpha}_j + \hat{\beta}_j R_{mt}\right). \tag{4}$$

According to Beaver (1981), the market model can result in smaller variances and smaller correlations between the abnormal stock returns. Thus, it can be argued that the market model can lead to more powerful tests and results. Finally, the method that is used to compute CAR is:

$$CAR = \sum_{t \in ECP} \frac{1}{N} \sum_{j} \hat{u}_{jt} , \tag{5}$$

where *ECP* is the Event Critical Period.

The beta coefficient is a measure of the sensitivity of stock returns to the market's overall return. In other words, the beta coefficient measures the responsiveness of stock returns to market changes and also the magnitude of the systematic risk to which a firm may be subject to (Chan and Lakonishok, 1993). Thus, stocks that display high beta coefficients are likely to be more volatile, because they are more sensitive to market changes. The systematic risk expresses the exposure of stock returns to macroeconomic and market changes, and cannot be diversified. In contrast, the non-systematic risk relates to the exposure of stock returns to firm-specific changes. Efficient portfolio-construction and diversification can eliminate or reduce the non-systematic risk. The systematic risk is likely to change over time as the firm's exposure to market conditions changes. Hence, the beta coefficient that measures the systematic risk will respond similarly and will also have a direct effect on the firm's stock returns. Moreover, the higher the beta is, the higher the return the investors are likely to require as a compensation for the higher risk they are willing to bear. In regard to the relationship between stock returns and risk, Sharpe and Cooper (1972) reported that this relationship is not always linear; they have found that for the higher risk groups, the risk tended to decline slightly. Similarly, Black et al. (1972) observed a positive linear relationship between monthly excess returns and risk, although the intercept tended to be higher than the zero value. Further, McEnally (1974) has found that stocks with high betas tended to exhibit high positive skewness. This could be explained by the fact that stocks that display high risk and high positive skewness would be expected to yield relatively higher returns.

The beta coefficient is calculated using the *Ordinary Least Squares* (OLS) regression analysis. According to Scott (1997), the estimate of the beta coefficient that is obtained from the regression analysis can actually depend on: a) the sample size, b) the accuracy of $\hat{a}_j$ and R_{mt}; c) the relation between R_{mt} and u_{jt}; and d) the stability of the true beta coefficient over time. As Levy (1971) and Fielitz (1974) report, the beta coefficient of the portfolio can be more stable as the size of the portfolio increases. In addition, Altman et al. (1974) and Baesel (1974) have found that the stability of the beta coefficient is also dependent on the length of the (beta) estimation period.

5. Theoretical and Empirical Considerations

5.1. Measurement Interval and Thin Trading

Nontrading or nonsynchronous trading – when stock prices are recorded at time intervals different from those that are actually recorded – can cause biases in event studies (Campbell et. al. 1997)[1]. This may be due to price-adjustment delays or obstructions within the trading process. Cohen et al. (1986) particularly argue that price-adjustment delays can lead to biased estimates of abnormal returns and beta coefficients. In certain cases, there may be measurement problems related to the size of the interval used in the analysis, making thus the stock returns deviate from their true values. Chan and Lakonishok (1993) have found that the relationship between stock returns and beta coefficients may be subject to change depending on the measurement interval that is used. Dimson (1979) reports that the explanatory power of the obtained beta coefficients gets higher as the measurement interval increases.

In our analysis, we have made use of the *Dimson aggregate coefficients* estimator (Dimson, 1979) in order to deal with the above problem, which is otherwise known as *thin trading*. The particular formula does not require a transaction to take place in each return interval or supplementary information, such as transactions information, and can be obtained as follows:

$$\hat{\beta}_D = \sum_{k=-n}^{n} \hat{\beta}_k \,, \tag{6}$$

where $\hat{\beta}_k$ $(k = -n, \ldots, 0, \ldots, n)$ are the estimates of the slope coefficients that are obtained in a multiple regression of the stock return in period t against the market return in periods $t-n, \ldots, 0, \ldots, t+n$.

Dyckman et al. (1984) and Brown and Warner (1985) have applied the Dimson method using daily data and less frequently traded stocks. Their results show that using the Dimson aggregate coefficients estimator to account for thin trading can result in significantly reduced bias. In addition, Dimson (1979, p. 215) has observed an increase in the R2 of the model, and also argues that the aggregate coefficients estimator can lead to "a more even distribution of the estimated betas across deciles of trading frequency". In order to avoid data-snooping Dimson (1979) has used five lags and five leads in his analysis. As he reports, the use of lags and leads in the market model has significantly improved the empirical results. Actually, the Dimson method together with the use of sufficient lagged and leading terms can effectively deal with thin trading, and thus it can result in an unbiased estimate of the beta coefficient (Dimson and Marsh, 1986). Similarly, in regard to our analysis and the application of the Dimson method, we have used five lagged and five leading market terms. Then, the Dimson aggregate coefficients estimator, which is the sum of the

[1] As Campbell et al. (p. 177, 1997) explain, the nontrading or nonsynchronous trading effect usually refers to the case where daily stock prices are used in event studies. The daily stock prices that are utilised are essentially closing prices, which are the prices at which the last transaction within the specific trading day was recorded. In fact, although the closing prices are not recorded at the same time on each trading day, it is "implicitly and incorrectly" assumed that they are divided in 24-hour intervals.

slope coefficients in a multiple regression of lagged, matching and leading stock returns, is entered in equation (4) to calculate the thin trading-adjusted abnormal stock return.

5.2. Size Effect, Data Snooping and Sample Selection Biases

Foster et al. (1984) and Dimson and Marsh (1986) note that the size effect can cause bias and distort the empirical results. In the case where the testing period is fairly short, the overall impact of the size effect is expected to be relatively small. The size effect can introduce further bias in the case where there is event-date clustering. In this case, the events are clustered in a particular calendar time period, and thus the overall size effect may be different between the estimation and the test periods (Dimson and Marsh, 1986).

Dimson and Marsh (1986 and 1988) together with Kothari and Wasley (1989) have provided methodologies to account for the size effect. One method is, for instance, to construct diversified portfolios based on the market capitalisation of the firms. In order to assess whether there is a size effect or not, we categorised the sample firms into two groups based on their market capitalisation. Then, in the linear regression model, we included a dummy variable[1], which was composed of zeros for small-size firms and ones for large-size firms. Finally, the dummy variable was placed along with the other independent accounting variables in the regression model, while CAR was the dependent variable. The regression of the CAR against the independent accounting variables, including the dummy variable, would determine whether there is significant size effect or not.

Campbell et al. (1997) emphasise data-snooping and sample selection biases, which may adversely affect the validity of the empirical results. In particular, data-snooping biases refer to the case where information regarding the data set and test results is used to lead further research with the same data set. In this sense, the research is manipulated in order to give results that are the most desirable. Thus, the output is biased and not objective. In fact, Lo and MacKinlay (1990b) attempted to measure the size of data-snooping biases. The criteria of forming portfolios in their analysis were not based on theory but on previous observations of the behaviour of mean stock returns. They observed that there was a significant difference in the results using data-snooping in comparison with the case where data-snooping had not been used in the analysis. In addition, the sample selection biases refer to the case where, subject to data availability and restrictions, certain sets of securities are excluded from the analysis. In particular, Kothari et al. (1995) argue that the results of Fama and French (1993), which were reported above, were to a large extent subject to sample selection biases. Overall, Campbell et al. (1997) argue that biases could also be used to interpret those cases where the empirical results seem to deviate from model predictions. In any event, however, they should be treated with caution.

6. Cumulative Abnormal Returns – Stock Market Response

6.1. Descriptive Statistics

Table 1 presents the descriptive statistics for the CARs. The Student *t*-statistics indicates that the CARs generally have zero means, suggesting that the stock market did not respond to the adoption of SSAP 20. In particular, when the estimation period is 1 April 1981 – 31 March 1982, we obtain a significantly negative market reaction only in the case of early adopters in the year of their actual adoption, i.e. 1982/83. Therefore, we infer that for the early adopters, the null hypothesis $H_{0:1}$ can be rejected. This seems to hold when the estimation period is from 1 April 1982 to 31 March 1983 as well. The negative reaction that is observed for the early adopters may be due to the fact that most adopters displayed translation gains over the period of the study. Thus, the exclusion of those gains from the P&L might have adversely affected the firms' profitability and dividend payout, and led therefore to a negative market response. However, the comparison with the control sample, for which SSAP 20 did not apply, shows that this finding should be treated with some caution. For both the normal adopters and the adopters as a whole, the results indicate that the market

[1] It is important to note, however, that in the case where the difference in the market capitalisation between small- and large-size firms is not significant, the dummy variable may not be able to sufficiently capture the size effect.

anticipated the implementation of SSAP 20, but there was no significant response in their actual adoption period. Therefore, the null hypothesis $H_{0:2}$ is rejected, while $H_{0:1}$ seems to hold.

Table 1

Descriptive Statistics for CAR Estimates

Panel A. Estimation period 1 April 1981 to 31 March 1982										
	N	Mean		Std. Dev.	Skewness		Kurtosis		Minimum	Maximum
1	2	3		4	5		6		7	8
Year	*Early Adopters*									
1981/82	56	0,008		0,071	0,261	***	1,868		-0,180	0,220
1982/83	56	-0,102	**	0,319	-0,374	***	0,304		-0,950	0,520
1983/84	56	-0,008		0,493	0,229	**	1,560		-1,330	1,520
1984/85	56	-0,023		0,546	-1,135	***	1,594		-1,570	0,880
Year	*Normal Adopters*									
1981/82	22	-0,007		0,069	-1,204	***	3,188		-0,210	0,100
1982/83	22	-0,189	*	0,489	-1,154	***	2,730		-1,660	0,630
1983/84	22	-0,066		0,670	0,560	***	2,954		-1,670	1,780
1984/85	22	-0,081		0,383	0,965	***	1,228		-0,660	0,960
Year	*Late Adopters*									
1981/82	35	-0,005		0,087	0,165		2,798		-0,250	0,260
1982/83	36	-0,071		0,429	0,338	**	-0,193		-0,960	0,870
1983/84	36	0,044		0,587	1,201	***	1,934		-0,980	1,780
1984/85	36	-0,129		0,475	0,423	***	-0,445		-0,860	0,960
Year	*All firms that adopted over the entire period*									
1981/82	113	0,001		0,076	-0,007		2,435	***	-0,250	0,260
1982/83	114	-0,109	***	0,391	-0,409	***	1,585		-1,660	0,870
1983/84	114	-0,003		0,557	0,648	***	2,120	**	-1,670	1,780
1984/85	114	-0,068		0,494	-0,495	***	0,809		-1,570	0,960
Year	*Control Sample*									
1981/82	95	-0,007		0,070	0,158	***	2,104	**	-0,200	0,220
1982/83	95	0,011		0,612	0,932	***	6,573	***	-1,900	3,070
1983/84	95	-0,019		0,507	-0,243	***	0,255		-1,310	1,410
1984/85	95	-0,080	*	0,474	-0,368	***	0,147		-1,520	1,000
Panel B. Estimation period 1 April 1982 to 31 March 1983										
	N	Mean		Std. Dev.	Skewness		Kurtosis		Minimum	Maximum
Year	*Early Adopters*									
1982/83	56	-0,014	*	0,057	1,400	***	2,941	***	-0,108	0,203
1983/84	56	0,079		0,518	0,469	***	1,899		-1,333	1,692
1984/85	56	0,044		0,539	-0,435	***	-0,007		-1,362	0,943
Year	*Normal Adopters*									
1982/83	22	-0,023		0,073	-0,070		0,018		-0,165	0,108
1983/84	22	0,100		0,586	2,007	***	5,860	***	-0,654	2,116
1984/85	22	0,049		0,370	-0,212		1,652		-0,910	0,832
Year	*Late Adopters*									
1982/83	36	-0,035	***	0,051	-0,140		0,034		-0,148	0,091
1983/84	36	0,081		0,507	0,392	***	0,806		-0,834	1,577
1984/85	36	-0,127		0,555	-0,511	***	2,732		-1,746	1,365

Table 1 (continuous)

1	2	3		4	5		6		7	8
Year	*All firms that adopted over the entire period*									
1982/83	114	-0,022	***	0,059	0,581	***	1,616		-0,165	0,203
1983/84	114	0,084	*	0,524	0,813	***	2,358	***	-1,333	2,116
1984/85	114	-0,009		0,518	-0,487	***	1,220		-1,746	1,365
Year	*Control Sample*									
1982/83	95	-0,022	***	0,076	-0,459	***	4,876	***	-0,322	0,268
1983/84	95	-0,051		0,678	-2,058	***	13,039	***	-4,109	1,651
1984/85	95	-0,140	**	0,580	-2,110	***	9,449	***	-3,350	1,044

***, ** and * indicate statistical significance at the 1%, 5% and 10% levels respectively.

Using the estimation period of 1 April 1982 – 31 March 1983, we observe that when we aggregate all the categories of adopters (114 firms), we notice that the stock market anticipated the implementation of SSAP 20 and also displayed a significantly positive reaction for the official period of adoption. The above findings may very well be associated with the income-stabilising effects of SSAP 20 and the related reduction of earnings volatility. Overall, we observe that for both estimation periods there is a significant degree of anticipation for the implementation of the standard. The CARs exhibit significant skewness and kurtosis. These features suggest that there is some tendency for the CARs to cluster although the implied outliers do not appear to result in significant means.

6.2. Friedman Test

As the CARs exhibit significant skewness and kurtosis the results of parametric statistical tests may be unreliable. So, we employ the non-parametric Friedman test to test for differences in the magnitude of the stock market reaction measured through the computation of CARs for each accounting period. However, following the generally insignificant market reaction to the issue of SSAP 20 (see Table 1), we would expect to obtain no significant results for the Friedman test. We carry out the test in order to obtain a thorough picture of the magnitude of the market reaction between the period of actual adoption and the periods before and after. The specific test will therefore be useful particularly for those cases where the descriptive statistics was significant (see Section 6.1). Thus, we test the null hypothesis that the magnitude and the sign of the CARs are similar across years.

Table 2

Panel A. Friedman Test Regarding CAR (Using 1981/82 as the Estimation Period)

	N	*Mean Rank*	*Chi-square*
1	*2*	*3*	*4*
Year	*Early Adopters*		
1981/82	56	2,590	
1982/83	56	2,230	
1983/84	56	2,540	
1984/85	56	2,640	
			3,407
Year	*Normal Adopters*		
1981/82	22	3,000	
1982/83	22	2,230	
1983/84	22	2,320	
1984/85	22	2,450	
			4,745
Year	*Late Adopters*		
1981/82	35	2,690	
1982/83	35	2,290	

Table 2 (continuous)

1	2	3	4
1983/84	35	2,690	
1984/85	35	2,340	
			2,931
Year	*All firms that adopted over the entire period*		
1981/82	113	2,700	
1982/83	113	2,250	
1983/84	113	2,540	
1984/85	113	2,510	
			7,120
Year	*Control Sample*		
1981/82	95	2,480	
1982/83	95	2,570	
1983/84	95	2,480	
1984/85	95	2,460	
			0,373

Panel B. Friedman Test Regarding CAR (Using 1982/83 as the Estimation Period)

	N	*Mean Rank*	*Chi-square*
1	2	3	4
Year	*Early Adopters*		
1982/83	56	1,880	
1983/84	56	2,020	
1984/85	56	2,110	
			1,536
Year	*Normal Adopters*		
1982/83	22	2,000	
1983/84	22	1,860	
1984/85	22	2,140	
			0,818
Year	*Late Adopters*		
1982/83	35	1,970	
1983/84	35	2,250	
1984/85	35	1,780	
			4,056
Year	*All firms that adopted over the entire period*		
1982/83	113	1,930	
1983/84	113	2,060	
1984/85	113	2,010	
			1,000
Year	*Control Sample*		
1982/83	95	2,040	
1983/84	95	2,020	
1984/85	95	1,940	
			0,589

***, **, * The relevant test statistics is significant at 1%, 5%, 10% level respectively.

Table 2 shows that the Friedman statistics is insignificant in most cases. Thus, the null hypothesis that the computed CARs are similar cannot be rejected. Using 1981-82 as the estimation period, Panel A shows that the Friedman test is significant only in the case of the adopters as a whole, who tended to exhibit larger mean ranks in the pre-adoption period of 1981/82. This shows that the market tended to anticipate the implementation of the standard. Using 1982/83 as the estimation period, Panel B shows that the Friedman test is significant only in the case of the late adopters, who tended to exhibit large r mean ranks in the pre-actual adoption period of 1983/84. This signifies that given that the period of 1983/84 was when SSAP 20 was officially issued, the stock market tended to anticipate that the late adopters would (ultimately) adopt the standard. Finally, in regard to the control sample, the results are insignificant in all cases.

6.3. Mann-Whitney Test

In order to assess whether there is any difference in the market reaction between the adopters and the control sample we have utilised the Mann-Whitney test. The Mann-Whitney test is a non-parametric equivalent to the *T*-test for two independent samples. It tests whether two independent samples come from the same population. Although Table 1 shows a generally insignificant market reaction to the issue of SSAP 20, we still considered it essential to carry out the test in order to further substantiate and assess the information content of our findings. We carried out the test only for the adopters as a whole (114 firms) versus the control sample (95 firms). The test was initially applied for each accounting period separately, and then for the whole period at the same time, i.e. 1981/82-1984/85. We report the results for the estimation periods 1981/82 and 1982/83. These estimation periods are similar to those we identified and used earlier in this study.

The results show that the null hypothesis that the samples come from different distributions cannot be rejected when the test is applied using the 1981/82 estimation period. It seems that the specific estimation period may not capture adequately the particular event. Alternatively, it may be that following the market's anticipation of the standard, the implications of the event on corporate financial reports might have already been incorporated in the stock returns, leading thus to insignificant results.

The Mann-Whitney statistics for the 1982/83-estimation period is significant and thus the null hypothesis can be rejected. Also, we observe that the mean ranks are larger for the adopters compared to the control sample. This is what we would expect, since a significant market response was observed for the specific set of firms for the periods of 1982/83 and 1983/84 (see Panel B, Table 1), according to which the market anticipated the implementation of the standard and also responded positively in the official issue period, i.e. 1983/84. This is also in consistency with the US (positive) market reaction to SFAS 52. It seems that the findings tend to be more consistent and similar to what we would expect to obtain based on the literature as the estimation period moves closer to the event.

7. Why Insignificant Stock Market Response?

The overall insignificant market response to the implementation of SSAP 20 is in inconsistency with the findings of US studies regarding SFAS 52 (see Kim and Ziebart, 1991), and is not entirely surprising if indeed managers planned the timing of adoption. Assuming that the capital market effects are a function of the effects of the accounting change contained in the financial statements (see also Salatka, 1989), the lack of a stock market response implies that the accounting change had no financial effects. It is also useful to note that both managers and market participants would have been aware of the implications of the implementation of the standard since ED 21 and ED 27 were issued up to six years before the official adoption of SSAP 20. This in turn would have allowed firms to plan the timing of adoption and the stock market to anticipate the accounting change effect. If the adoption of the standard was planned, firms would have little or no need to renegotiate contractual obligations, or hedge translation exposure in order to minimise the effects of the accounting policy change. Thus, the lack of a stock market response might be associated with the absence of such costs.

The insignificant market reaction may also be associated with the efficient market hypothesis. The efficient market hypothesis would suggest that if all relevant (accounting) information is already incorporated into stock returns, we should not expect a further response in the stock returns. This argument seems more consistent with our results and shows that the implications of the standard had probably already been incorporated in the stock returns. The market response may also be neutral in the case where firms are not so interested in translation exposure as opposed to other types of exposure. Khoury and Chan (1988) and Joseph and Hewins (1991) have shown that in certain cases firms tend to be interested more in economic or transaction exposure compared to translation exposure.

Furthermore, firms may have also hedged their accounting exposure to deal with variation in FX rates despite the provisions of the standard. Indeed, evidence from Houston (1990) indicates that under SFAS 52, US firms have continued to hedge translation exposure because of the nature of their operations and the impact this has on their balance sheet. The finding that in many cases the market reaction tended to be negative can be interpreted along with the overall climate of the economy for the period that we covered. The market recession that was generally observed for the period analysed might have adversely affected the market response to SSAP 20. It is important, though, to note that the negative market reaction was in general insignificant.

Finally, the stock market might have been aware of the US experience and SFAS 52. SFAS 52, which was positively greeted in the US (Kim and Ziebart, 1991), expressed several similarities with SSAP 20. Thus, the UK stock market might have been conscious of the impact of the relevant US standard on the US corporate accounts. Hence, an insignificant market response could be due to the fact that such information had already been incorporated in managers' and market participants' decision-making and accounting policy choice.

8. Cross Sectional Analysis

To further validate these results, we run a cross-sectional linear regression of the CAR values on the accounting measures, using the estimation period of 1 April 1982 – 31 March 1983, which brings us closer to the official adoption period[1]. This cross-sectional regression tests for a relationship between the CARs and the accounting measures, conditional upon the firms adopting and the stock market appreciating this outcome. We test for this relationship for each set of adopters for the entire period from 1981 to 1985. So, early, normal and late adopters are analysed separately in relation to the period of their actual adoption. CAR is the dependent variable, while the explanatory variables consist of growth, profitability, leverage, taxation and management payout measures. Also, a supplementary set of tests is provided, where the analysis focuses on the whole set of (114) adopters. In order to account for the size effect, we split the sample firms into two groups based on their market capitalisation and we attributed a dummy variable to distinguish between them (see Dimson and Marsh, 1986; Kothari and Wasley, 1989). The dummy variable used to control for the size effect was included in the linear regression model along with the other explanatory variables and was found to be insignificant.

The results that we obtain are significant only when we aggregate the sets of adopters, where we find that for the official year of adoption there is a significant relation between the CAR and the related accounting measures (Table 3). Hence, it seems that in this case the null hypothesis H0: 3 is rejected[2]. Recall that for the official year of adoption, we also obtained a significantly positive market response for the aggregate set of adopters when the estimation period was from 1 April 1982 to 31 March 1983. In addition, the table shows no significant relation between CARs and the accounting measures for the post adoption period, i.e. 1984/85. It seems that the implementation and the implications of the standard had already been reflected on the stock returns.

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[1] We have also run a cross-sectional linear regression of the CAR values on the accounting measures, using the estimation period from 1 April 1981 to 31 March 1982. The results that we obtained were generally insignificant.

[2] In regard to the cases where the market reaction was insignificant (see Table 1), the cross-sectional analysis has given no significant relation between the CAR and the accounting measures, which shows that in those cases the null hypothesis H0: 3 holds.

Table 3

OLS Regression Coefficients of Adopters using the 1 April 1982 to 31 March 1983 Estimation Period

	1 April 1982 – 31 March 1983		1 April 1983 – 31 March 1984		1 April 1984 – 31 March 1985	
Variables	Unstandardised coefficients	Standardised coefficients	Unstandardised coefficients	Standardised coefficients	Unstandardised coefficients	Standardised coefficients
RESFXHMV	0.00053	0.041	0.00009	0.002	0.00018	0.062
	(0.002)		(0.003)		(0.001)	
BHMV	0.00004**	0.849	0.00064	0.294	-0.00014	-0.051
	(0.001)		(0.001)		(0.002)	
TRESHMV	0.00005	0.169	-0.00074	-0.109	-0.00220	-0.395
	(0.001)		(0.001)		(0.002)	
DIVIDY	-0.00063	-0.142	-0.00022**	-0.897	-0.01544	-0.876
	(0.001)		(0.001)		(0.013)	
NEPS	0.00036	0.102	-0.00359	-0.151	0.00004	0.002
	(0.001)		(0.002)		(0.002)	
ROSC	0.00054	0.078	0.05207*	0.805	-0.00485	-0.089
	(0.001)		(0.030)		(0.008)	
ROCE	0.00002	0.083	-0.03045	-0.583	-0.00052	-0.111
	(0.001)		(0.020)		(0.001)	
OPM	-0.00144	-0.158	0.09160**	1.179	0.00152	0.060
	(0.003)		(0.039)		(0.031)	
TPM	0.00120	0.139	-0.02180***	-1.194	0.00295	0.117
	(0.003)		(0.009)		(0.032)	
NPM	-0.00179	-0.143	-0.14100**	-1.272	-0.00733	-0.064
	(0.001)		(0.063)		(0.019)	
TLOANEQRES	-0.00438	-0.034	-0.00332	-0.108	0.14300	0.054
	(0.014)		(0.003)		(0.339)	
IGEAR	0.00017	0.172	0.00002	0.049	-0.00022	-0.022
	(0.001)		(0.001)		(0.003)	
TBOREQRES	0.00001	0.097	-0.00101	-0.066	-0.00002	-0.010
	(0.001)		(0.002)		(0.001)	
TAXHMV	0.00100	0.162	0.01053	0.158	0.01589	0.396
	(0.001)		(0.008)		(0.014)	
TDIRHMV	-0.00333	-0.613	0.03548**	0.719	0.03404	0.879
	(0.002)		(0.015)		(0.026)	
Constant	-0.03580		0.09885		0.03875	
	(0.015)		0.186)		(0.161)	
Diagnostic Tests						
Model R^2	0.15		0.29		0.075	
S.E. of estimate	0.05		0.47		0.540	
Model *F*-statistic	1.19		2.66***		0.490	
Sample size *N*	114		114		114	

***, ** and * indicate statistical significance at the 1%, 5% and 10% levels respectively. Variable codes are explained in Appendix 2.

In regard to the significant association between the CAR and the related accounting measures, which was observed for the official year of adoption, 1983/84, a negative association is found between the dividend payout (DIVIDY) and the CARs. This result might reflect the reduction in earnings, and therefore in DIVIDY, following the recognition of the translation gains that firms had experienced over the period under analysis in the reserves. A similar interpretation can follow for the observed negative coefficient of the net profit margin (NPM). The negative coefficient of DIVIDY, which can be regarded as a growth ratio, might also result from the fact that the stock market has expected that there would be an earnings decline due to the recognition of the underlying translation gains in the reserves. Thus, this expectation might have adversely affected firms' growth options.

As expected, the adoption of SSAP 20 has positively affected the return on shareholders' capital (ROSC), which exhibits a positive coefficient. Further, the transfer of the translation gains to the balance sheet would normally tend not to affect the operating profit margin (OPM) and the trading profit margin (TPM). This is because the former are usually not included in the calculation of the latter. The positive coefficient of the ratio of directors' remuneration to historical market value (TDIRHMV) may be associated with the reduction of earnings volatility following the adoption of SSAP 20. Stable earnings would tend to favourably affect the stock returns and the compensation plans (see also Kirsch et al., 1990). Comparing the adopters with the control sample, we find that generally there are no particular similarities in the results between the two sets of firms.

. Conclusions

In this study, we assess whether the stock market anticipated the implementation of SSAP 20. We also test for a relationship between CARs and the accounting measures. Using the estimation period of 1 April 1982 – 31 March 1983, we found that for the whole set of adopters, the stock market response to the implementation of SSAP 20 was positive in the official year of adoption. This was expected following the incomestabilising effects of the standard, and also is in consistency with the results of US studies regarding the market response to SFAS 52 (see Kim and Ziebart, 1991). We also observed a negative market reaction for the early adopters in the year of their actual adoption, which might have been associated with the recognition of the translation gains that they had exhibited over the period in the reserves instead of the P&L. In general, we found that the stock market anticipated the adoption of SSAP 20 and exhibited a significant reaction in the pre-actual adoption periods. For the other sets of adopters, such as normal and late adopters, we observed an insignificant market reaction in their actual adoption period. One interpretation of this result is that the market had already anticipated the adoption of the standard, and that the accounting impact had already been impounded into the stock prices. Alternatively, managers had planned the timing of the implementation, so that the accounting change would have minimal impacts. Either of these explanations can be attributed to our empirical results. However, since our findings suggest that the timing of adoption seems to have been planned, the outcome of this action would be to minimise the impact of adoption on the stock prices of firms.

The cross-sectional analysis shows that the case where there is a significant and meaningful relation between the CAR and the related accounting measures basically refers to the actual adoption period of the adopters as a whole when the estimation period is 1982/83. In particular, we observed a negative association between the dividend payout and the net profit margin and the CAR. This may be associated with the fact that the recognition of the translation gains, which most adopters exhibited over the period of the study, in the balance sheet might have adversely affected the net profits and the dividend payout. This in turn might have also adversely affected the stock returns. Finally, the transfer of the translation gains to the reserves and the reduction of earnings volatility tended to positively affect firms' equity capital and management payout.

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Appendix 1

Sample Industrial Sectors

	Early adopters	Normal adopters	Late adopters
Aerospace and defence	-	1	2
Automobiles	1	-	-
Beverages	-	-	-
Chemicals	5	2	3
Construction & building materials	6	4	1
Distributors	3	2	1
Diversified industrials	-	-	-
Electronic and electrical equipment	4	1	1
Engineering	10	4	5
Food	3	-	3
Health care	1	1	-
Household products	3	4	3
Leisure	2	2	2
Media	3	-	1
Mining	-	1	-
Oil and gas	1	-	-
Packaging	2	-	1
Pharmaceuticals	-	-	-
Real estate	1	-	-
Retailers	6	-	3
Software	-	-	1
Support services	3	-	5
Textiles	-	-	1
Transport	2	-	3
Total number of firms	*56*	*22*	*36*

The sample of firms covers the accounting periods from 1981 to 1985.

Appendix 2

Accounting Measures used as Explanatory Variables

Growth options	
RESFXHMV	Foreign exchange gains and losses recorded in the reserves to HMV
BHMV	Book value to HMV
TRESHMV	Total reserves to HMV
DIVIDY	Dividend yield
Profitability	
NEPS	Adjusted net earnings per share
ROSC	Return on shareholders' capital
ROCE	Return on capital employed
OPM	Operating profit margin
TPM	Trading profit margin
NPM	Net profit margin
Leverage	
TLOANEQRES	Loan capital to equity and reserves
IGEAR	Income gearing
TBOREQRES	Total borrowing to equity and reserves
Taxation	
TAXHMV	Tax charge on profit and loss to HMV
Management payout	
TDIRHMV	Total directors' remuneration (plus pension fund contributions) to HMV