Impact of implementing Uniform Accounting Standards on Equity Investments

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Abstract

Today's global economy facilitates investment diversification in equity securities globally. The global diversity in accounting principles makes it difficult to assess various investment alternatives from non-host countries. This led to a need for uniform international accounting standards that are now being used by more than 100 countries as of 2017. The International Financial Reporting Standards (IFRS) were implemented in Australia in 2005. The purpose of this study was to determine the effects of the IFRS implementation on cross-listing of Australian companies and trading volume for these companies between 2002 and 2008. The sample of companies included in this study were all Australian companies listed on the Australian Securities Exchange (ASX) as of January 1, 2002, which were still listed on the ASX as of December 31, 2008. The test results based on the Australian cross-listed companies affirm that the implementation of IFRS improves access to equity capital.

Introduction

The purpose of this study was to determine the impact of implementing international financial reporting standards (IFRS) by Australia on access to equity capital. Use of globally diverse accounting standards makes it difficult and costly for investors to assess various foreign investment opportunities in equity securities because of difficulty in comparing financial results from different companies in different countries (White, 2007). Investors would need to reconcile financial results to the host country accounting standards to facilitate financial information comparability (Johnson, 2009).

Because of the global nature of today's capital markets and the significance of financial information to facilitate assessment of investment opportunities, International Accounting Standards Board (IASB) found it vital to establish uniform financial reporting regulation (Bova & Pereira, 2010). Prior researchers (e.g., Armstrong et al., 2007; Johnson, 2009; Li, 2009; White, 2007; Zhou et al., 2009) found that adopting IFRS improved financial reporting transparency and comparability, reduces cost of equity capital, and minimizes earnings management. Although IFRS is being used or required by more than 100 countries to ensure financial information comparability from participating companies for the ease of cross-listing (Gallery et al., 2008), the effects of IFRS implementation in Australia had not been fully explored in terms of impact on access to equity capital.

Australia implemented the International Financial Reporting Standards in 2005, but the impact of the IFRS adoption had not yet been evaluated in terms of access to equity capital. The main purpose of this study was to examine the unknown effect of adopting the IFRS in 2005 on the cross-listed Australian firms and the related trading volumes between 2002 and 2008. To accomplish this, the researcher applied a quantitative research method.

The remainder of the paper is organized as follows: a brief literature review is presented in the next section. Then, the research method is discussed. Finally, the results are presented and discussed. This study was conducted as part of a doctoral dissertation program requirement for the author.

BRIEF Literature Review

Brief IFRS background

The two main sets of financial reporting systems which are considered globally highly reliable by investors, scholars, and practitioners are the U.S. GAAP and IFRS with U.S. GAAP being most widely used in global capital markets (Akisik & Pfeiffer, 2009). Many emerging economies are now voluntarily adopting either U.S. GAAP or IFRS to make their capital markets more attractive to foreign investors (Bhattacharya as cited in Akisik & Pfeiffer, 2009).

International flows of capital primarily result from foreign investments (Akisik & Pfeiffer, 2009). Prior study by Akisik and Pfeiffer (2009) on globalization, U.S. foreign investments, and accounting standards showed that a higher quality of financial reporting environment is associated with higher international capital flows. Although foreign capital investments benefit host countries, they are also beneficial to investors by providing expanded opportunities for financial returns, scale economies, and diversification (Akisik & Pfeiffer, 2009).

Cross-Border Investing

The diversity in accounting standards across borders is often cited as a significant factor that affects the information processing costs for U.S. investors who wish to globally diversify their investment portfolios (Khurana & Michas, 2011). The European Union (EU) mandatorily adopted IFRS in 2005 providing a common set of accounting standards. This provides financial information comparability benefits to financial statement users who wish to compare investment alternatives among different firms from other jurisdictions (Hail et al., 2010a).

The development of high-quality, global accounting standards has been supported by the FASB in the United States because of the demand for globally comparable financial information which capital providers find useful in making investment decisions in the global capital markets (FAF as cited in Khurana & Michas, 2011). Prior research by Barth et al. (as cited in Khurana & Michas, 2011) showed evidence that firms which use IFRS for financial reporting have greater accounting and value–relevance comparability with U.S. firms than when non-U.S. domestic accounting standards are applied. Other recent studies using different research designs and data sources (DeFond et al., 2011; Florou & Pope as cited in Khurana & Michas, 2011; Yu, 2010, as cited in Khurana & Michas, 2011) found that cross-border investments increase in the year of IFRS adoption. This implies that IFRS implementation in a country would substantially reduce information processing costs which would improve access to equity capital investments by investors in the United States and elsewhere.

A global economic environment with uniformity in procedures for financial reporting would benefit investors, lenders, accountants, and others interested in evaluating investment opportunities in various countries (Gaspar et al. as cited in Smith, 2008). Adopting IFRS provides uniformity in accounting standards which facilitate comparability of financial results among different companies operating in multiple countries (Smith, 2008).

The simultaneous adoption of IFRS by all firms in a country that has a strong enforcement will improve the capital markets and attract more foreign investments because of the perceived transparency, reliability, and comparability of the financial reporting (Barth et al., 2005; Hope et al., 2006). Results from the study by Tarca (2004) shows that competitive market forces can promote use of IFRS because management in most firms believe that use of those standards improve communication with financial information users (Hope et al., 2006). A country's accessibility of its capital markets by foreign investors benefits the country by attracting foreign capital through available opportunities for portfolio diversification (Hope et al., 2006; Pine, 2010).

Cost of Equity Capital

Many firms strive to have their equity securities listed on multiple stock exchanges for exposure to new markets, to obtain foreign debt and equity capital for growth, technological advancement, and reduction of possible political costs (Al-Shiab, 2008). Analyzing foreign financial statements to assess investment opportunities is difficult for investors when there are no common accounting principles being followed by all reporting firms. The diversity in financial reporting which affects presentation, disclosure, and measurement of financial results impacts capital markets participants when making investments decisions (Al-Shiab, 2008; Kristandl & Bontis, 2007).

The implementation of IFRS is important towards the achievement of a country's equity trading and it provides a basis for understanding the economic consequences which have implications for financial reporting and capital markets integration (Li, 2009). The use of IFRS requires higher financial disclosures than most local GAAP and the increased financial reporting disclosures reduce the cost of equity capital (Li, 2009; Kristandl & Bontis, 2007). Armstrong et al. (2008) argued that global use of one set of uniform accounting standards such as IFRS improves financial information comparability among firms which not only results in reduction of cost of equity capital, but also improves access to equity capital. Implementing IFRS improves accessibility of capital markets by investors for portfolio diversification (Hope et al., 2006; Pine, 2010).

Research Methodology

In the current study, a quantitative research methodology was used to determine the effect of the implementation of IFRS in 2005 on cross-listing of Australian firms and trading volume for cross-listed Australian companies between 2002 and 2008. The first research question involved a comparison of financial data between the pre-IFRS (2002–2004) and post-IFRS (2006–2008) periods with 2005 as the event year. Thus, the independent variable for this research question was time—the pre-IFRS period was compared to the post-IFRS period. The second research question involved a comparison of financial data between companies based on cross-listing status. These independent variables could not be manipulated by the researcher making the ex post facto research design appropriate (Black, 1999).

Sample Selection

The unit of analysis for this study consisted of the individual companies. The population of interest in the study consisted of Australian companies listed on the ASX. The sample of companies included in this study was all the Australian companies listed on the ASX as of January 1, 2002, which were still listed on the ASX as of December 31, 2008.

A power analysis was conducted using the G*Power computer program (Faul, Erdfelder, Buchner, & Lang, 2009) to determine the number of companies required for the study. The two statistical tests used in this study were the McNemar test to compare dependent proportions and a one-way ANOVA. For McNemar's test, assuming an odds ratio of 1.50, two-tailed test, desired power of .80, and alpha level of .05, a total of 664 companies were required. For the one-way ANOVA, assuming a medium effect size of $f = .25$, two-tailed test, desired power of .80, and an alpha level of .05, a total of 159 companies would be required. According to ASX (2012), there are currently over 2,000 companies listed on the ASX, indicating that the required sample sizes of 664 and 159 would be obtained.

The sample sizes of 664 and 159 were merely those required to achieve adequate statistical power but not the actual sample size used (the actual sample size used was 1,172 companies). The ASX (2012) website provides access to the data on the companies listed on the Australian exchange including whether or not they were cross-listed on a foreign exchange and if so, during which years this was the case. As noted above, the study included, for both research questions, all companies listed on the ASX as of January 1, 2002, which were still listed on the ASX as of December 31, 2008.

Data Collection, Processing, and Analysis

The data used in this study were accessed from the ASX (2012) and Global Financial Data Corporation (2012) databases. The ASX database is the official securities exchange in Australia. The average daily trading volume on the ASX exceeds 5 billion Australian dollars (ASX, 2012). The ASX provides current and historical data on companies traded on the exchange.

The ASX was used as the reference universe to select the sample of Australian companies that reported financial information under domestic GAAP and traded on the domestic exchange only, prior to the mandatory adoption of IFRS in 2005. The sample selection was made from the ASX publicly traded companies that used local GAAP in 2002–2004 to report their financial results for the year ended December 31 (pre-IFRS period) and only used IFRS in 2005 (event year) and 2006–2008 (post-IFRS period). Precautions were taken to ensure inclusion of historical constituents in the index as they appeared during the study period. The inherent limitations of secondary data such as use of outdated data and lack of control over the data accuracy by the researcher were assessed (Zikmund, 2003).

Two-tailed tests and an alpha level of .05 were used for all inferential tests. The first research question of this study was: What is the difference, if any, in the proportion of ASX-traded companies that are cross-listed on a foreign exchange before and after the implementation of the IFRS? In order to answer this question, the proportion of ASX-traded companies that were cross-listed at any point during the 3 years prior to the implementation of IFRS in 2005 (i.e., 2002–2004) were compared to the proportion of ASX-traded companies that were cross-listed at any point during the 3 years after the implementation of the IFRS (i.e., 2006–2008). To answer this research question, McNemar's test was used to test the null hypothesis that there is no difference in the proportion of companies cross-listed prior to IFRS and after IFRS. The McNemar test is a nonparametric test that does not involve assumptions of normality, linearity, homoscedasticity, or other common parametric statistical assumptions. The only assumption of the McNemar test is that the data consist of dichotomies that are matched, and this is the case in the proposed study. Specifically, the data were dichotomies indicating whether or not the company was cross-listed or not, and the data from the pre-IFRS period were matched to the data from the post-IFRS period because the same companies were compared at the two time points.

The second research question was: What is the difference, if any, in the trading volume ASX-traded companies that were cross-listed on a foreign exchange versus those that were not cross-listed on a foreign exchange before and after the implementation of the IFRS? The dependent variable was the average daily trading volume. The independent variable was cross-listing group, with three groups compared: (a) Those that were not cross-listed at any point between 2002 and 2008; (b) Those that were cross-listed at any point between 2002 and 2004 (prior to 2005 IFRS implementation); and Those that were not cross-listed between 2002 and 2004 (prior to 2005 IFRS implementation), but were cross-listed at any point between 2006 and 2008 (after the 2005 IFRS implementation). A one-way ANOVA was performed comparing these three groups on their average daily trading volume. If the ANOVA is statistically significant, follow up tests were performed using Tukey's honestly significant difference tests. The use of the ANOVA required the assumptions of normality for the dependent variable and equality of variances on the dependent variable across the three groups. Normality for the dependent variable was tested by computing the Kolmogorov-Smirnov test of normality. The equality of variance was tested using Levene's test. If it was determined that either of these assumptions were not met then a Kruskal-Wallis test was substituted in place of the ANOVA.

Methodological Assumptions, and Limitations

The current study was based on one primary assumption. It was assumed that the archival data used for the study from the ASX (2012) and Global Financial Data Corporation (2012) databases are reliable and of a quality that is sufficient for scientific research. The ASX database is the official securities exchange in Australia and there was no reason to doubt the veracity of the data.

The primary limitation of this study was that the ex post facto research design does not allow for firm causal conclusions to be drawn as would be the case in an experimental study (Black, 1999). Specifically, it was difficult to isolate the direct impact of IFRS adoption from other general trends towards globalization of capital markets. However, these variables (i.e., general trends) were constants for all companies and therefore were used as control variables in this study. That is, all companies had the same values for global economic indicators at the pre-IFRS and post-IFRS period making them unusable as control variables.

A second limitation was that other variables that could influence the dependent variables such as type of company, size of company, or industry classification were not examined in this study. These variables were not included in this study because the focus was on an examination of the pre-IFRS implementation period and the post-IFRS implementation period, not on whether or not company size or the other variables affect the pre- to post-IFRS differences.

Results and Discussion

In this section, the findings from the study are discussed. The descriptive statistical analyses conducted are presented followed by the results from the inferential analyses that were performed. Finally, the findings are evaluated in the context of past research in this area.

Descriptive Analysis

Initially, descriptive statistical analyses were performed. The three variables in this study were time period, cross-listing status, and average daily trading volume. In concordance with the inferential analyses presented in the subsequent parts of this section, descriptive statistics consisted of an examination of the number (i.e., the frequency) of companies in each category (i.e., cross-listed or not cross-listed) within each time period (pre-IFRS and post-IFRS). In addition to the frequencies, percentages within each category were computed. Table 1 shows cross-listing status as a function of time period. Before the implementation of the IFRS, 594 of the 1,174 companies were cross-listed (50.6%) and after the implementation of the IFRS, 316 companies were added (i.e., there were 910 [77.5%] companies cross-listed).

Table 1
CROSS-LISTING STATUS' DESCRIPTIVE STATISTICAL ANALYSIS BASED ON TIME PERIOD

	Pre-IFRS (2002 to 2004)		Post-IFRS (2006 to 2008)	
Cross-Listing Status	*n*	%	*n*	%
Not Cross-Listed	580	49.4	264	22.5
Cross-Listed	594	50.6	910	77.5
Total	1,174	100.0	1,174	100.0

Note. The difference between the percentage of companies that were cross-listed in the pre-IFRS period and the post-IFRS period was statistically significant using the McNemar test, $\chi^2(1) = 314.00$, $p < .001$.

Table 2 shows average daily trading volume as a function of cross-listing status for both the pre-IFRS average trading volumes and the post-IFRS trading volumes. The average daily trading volume was computed as the total trading volume for the year divided by the number of trading days in the year. Results from this analysis indicated that there were differences in the trading volume of ASX-traded companies that were cross-listed on a foreign exchange versus those that were not cross-listed on a foreign exchange before (2002 to 2004) and after (2006 to 2008) the implementation of the IFRS in 2005. Those who were cross-listed even before the IFRS implementation had higher average trading volumes than the other two groups at both time points. In the pre-IFRS period, companies that would eventually become cross-listed had lower average trading volumes than companies that would not, whereas in the post-IFRS period, companies that had become cross-listed had higher average trading volumes than those that were not cross-listed.

Table 2
DESCRIPTIVE STATISTICAL ANALYSIS FOR AVERAGE DAILY TRADING VOLUME BEFORE AND AFTER IFRS IMPLEMENTATION AS A FUNCTION OF CROSS-LISTING STATUS

	Pre-IFRS Implementation			Post-IFRS Implementation		
Group	*n*	*M*	*SD*	*n*	*M*	*SD*
Not cross-listed at any point between 2002 and 2008.	264	295,345	769,715	262	454,188	1,222,472
Cross-listed only after the 2005 IFRS implementation	171	249,542	981,147	316	487,938	2,068,844
Cross-listed prior to 2005 IFRS implementation	594	596,326	1,619,731	594	1,152,132	2,978,842
Total Sample	1,029	461,478	1,359,857	1,172	817,024	2,468,536

Figure 1 contains a bar chart of the average trading volume data. As the figure shows, the trading volumes for the post-IFRs period were higher than for the pre-IFRS period. In addition, trading volumes for companies that were cross-listed prior to the 2005 IFRS implementation tended to have the highest trading volumes both before and after the IFRS implementation. Prior to the IFRS implementation, companies that were not cross-listed tended to have slightly higher trading volumes than those who would eventually become cross-listed, but this latter group had higher trading volumes in the post-IFRS implementation period. This is consistent with the hypothesis that cross-listing resulted in increased higher trading volumes. These differences are explored in more detail in the next two sections.

Figure1

THE AVERAGE DAILY TRADING VOLUME BEFORE AND AFTER IFRS IMPLEMENTATION AS A FUNCTION OF CROSS-LISTING STATUS.
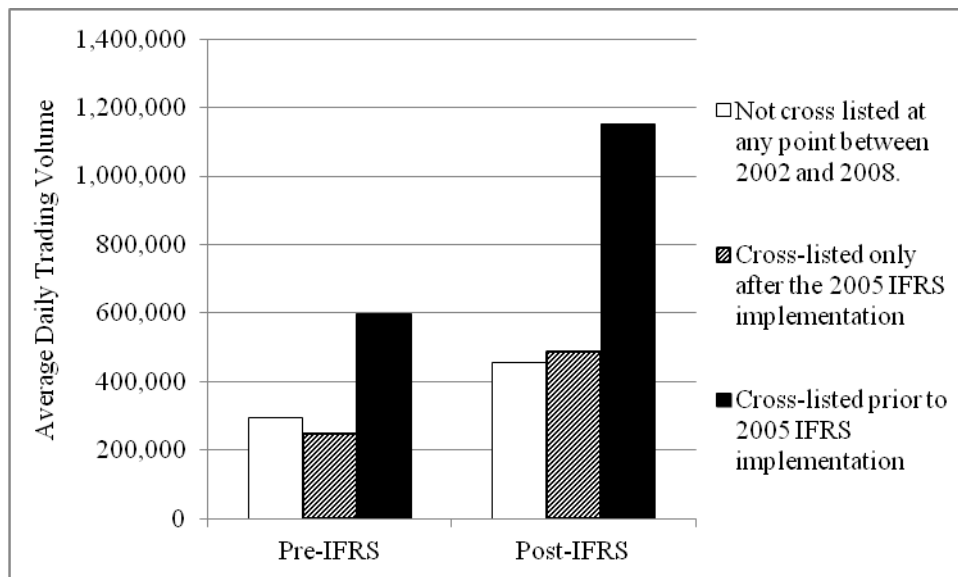
Inferential Analysis

To determine if the proportion of ASX-traded companies that were cross-listed at any point during the 3 years prior to the implementation of IFRS in 2005 (i.e., 2002–2004) differed from the proportion of ASX-traded companies that were cross-listed at any point during the 3 years after the implementation of the IFRS (i.e., 2006–2008), McNemar's test was used (Adedokun & Burgess, 2012). The result from this test was statistically significant, $\chi^2(1) = 314.00$, $p <.001$. I concluded that there was a difference in the proportion of ASX-traded companies that were cross-listed on a foreign exchange before (2002 to 2004) and after (2006 to 2008) the implementation of the IFRS in 2005, with a higher proportion of companies being cross-listed after the IFRS implementation.

The next null hypothesis was that the average trading volume for the following three groups did not differ: (a) Not cross-listed at any point between 2002 and 2008; (b) Cross-listed only after the 2005 IFRS implementation; and (c) Cross-listed prior to 2005 IFRS implementation. Normality for the dependent variable (average daily trading volume) was tested by computing the Kolmogorov-Smirnov test of normality (Simard & L'Ecuyer, 2011). Kolmogorov-Smirnov test of normality is most appropriately used when a researcher wishes to know if the scores on a continuous variable are normally distributed. Normality is an assumption of the proposed ANOVA and therefore the Kolmogorov-Smirnov test was used to test this assumption (Simard & L'Ecuyer, 2011). The result was statistically significant for both pre-IFRS trading volumes ($p <.001$) and for post-IFRS trading volumes ($p <.001$) indicating that the score distributions were not normal.

The second assumption of the planned ANOVA was the equality of variance assumption (Gastwirth, Gel, & Miao, 2009). The assumption of equality of variances means that the variance in scores (i.e., the squared standard deviation) is the same for the subgroups being compared (Brown & Forsythe, 1974; Gastwirth et al., 2009). This assumption was tested using Levene's test which is used to test the statistical significance of the difference in variances on a continuous variable across groups (Bowerman & O'Connell, 2003; Brown & Forsythe, 1974; Gastwirth et al., 2009). The variances of average daily trading volumes for the three groups were not equivalent for the pre-IFRS volumes, $F(2, 1026) = 11.48$, $p <.001$, or for the post-IFRS volumes, $F(2, 1169) = 19.43$, $p <.001$.

Based on the nonnormality of the average daily trading volume and the lack of equal variances across groups, two Kruskal-Wallis tests (Howell, 2010) were performed in place of the planned ANOVA analysis. The Kruskal-Wallis test does not compare the means for the various groups (as the ANOVA would have) but rather is used to determine if the data for the groups were drawn from the same distribution. Therefore, it is based on a test of whether there is a difference in the distributions from which the samples were drawn (Howell, 2010). The Kruskal-Wallis test is the nonparametric alternative to ANOVA and is used when the assumptions of ANOVA (i.e., normality and equality of variances) are not met (Howell, 2010). Like the ANOVA, the Kruskal-Wallis can be used to compare more than two groups.

The first Kruskal-Wallis test was performed to compare the average daily trading volumes between 2002 and 2004 (pre-IFRS implementation) between the three groups of companies. The results were statistically significant, $\chi^2(2, N = 1,079) = 84.44$, $p <.001$. Because the Kruskal-Wallis test was statistically significant, follow up Mann-Whitney tests were performed to compare each pair of groups. Mann-Whitney tests are similar to Kruskal-Wallis tests but only two groups are compared. The statistically significant Kruskal-Wallis test only allows for the conclusion that not all three groups are the same, but it does not tell us which pairs of groups differ. This is the purpose of the Mann-Whitney test (Howell, 2010). Results from the Mann-Whitney tests indicated that those companies that were not cross-listed at any point between 2002 and 2008 had higher average trading volumes in the pre-IFRS period than those who were cross-listed only after the 2005 IFRS implementation, $z = -2.04$, $p = .042$. Those that were not cross-listed at any point between 2002 and 2008 also had lower trading volumes in the pre-IFRS period than those that were cross-listed prior to 2005 IFRS implementation, $z = -8.09$, $p <.001$.

Finally, those that were cross-listed only after the 2005 IFRS implementation had lower trading volumes in the pre-IFRS period than those who were cross-listed prior to the 2005 IFRS implementation, $z = -6.20$, $p <.001$.

The second Kruskal-Wallis test was performed on average daily trading volumes between 2006 and 2008 (post-IFRS implementation). The result from this test was also statistically significant, $\chi^2(2, N = 1,172) = 117.82$, $p <.001$. Those who were not cross-listed at any point between 2002 and 2008 had lower average trading volumes in the post-IFRS period than those who were cross-listed only after the 2005 IFRS implementation, $z = -5.87$, $p <.001$, a reversal of the results from the pre-IFRS period. Those that were not cross-listed at any point between 2002 and 2008 had lower average trading volumes than those who were cross-listed prior to 2005 IFRS implementation, $z = -10.16$, $p <.001$. In addition, those that were cross-listed only after the 2005 IFRS implementation had lower average trading volumes than those who were cross-listed prior to the 2005 IFRS implementation, $z = -5.81$, $p <.001$.

Based on these analyses, it was concluded that there were differences in the trading volume of ASX-traded companies that were cross-listed on a foreign exchange versus those that were not cross-listed on a foreign exchange before (2002 to 2004) and after (2006 to 2008) the implementation of the IFRS in 2005. All pairs of groups differed from each other both prior to and after the IFRS implementation in 2005. Those that were cross-listed even before the IFRS implementation had higher average trading volumes than the other two groups at both time points. In the pre-IFRS period, companies that would eventually become cross-listed had lower average trading volumes than companies that would not, whereas in the post-IFRS period, companies that had become cross-listed had higher average trading volumes than those who had not.

Conclusion

The purpose of the study was to determine the effect of implementing IFRS in 2005 (event year) on the cross-listed Australian firms and trading volumes for the cross-listed Australian companies on access to equity capital. Results indicated that there was a difference in the proportion of ASX-traded companies that were cross-listed on a foreign exchange before (2002 to 2004) and after (2006 to 2008) the implementation of the IFRS in 2005, with a higher proportion of companies being cross-listed after the IFRS implementation. Results also indicated that there were differences in the trading volume of ASX-traded companies that were cross-listed on a foreign exchange versus those that were not cross-listed on a foreign exchange before (2002 to 2004) and after (2006 to 2008) the implementation of the IFRS in 2005.

Companies that were cross-listed even before the IFRS implementation had higher average trading volumes than the other two groups at both time points. In the pre-IFRS period, companies that would eventually become cross-listed had lower average trading volumes than companies that would not, whereas in the post-IFRS period, companies that had become cross-listed had higher average trading volumes than those who had not. In addition, the results from the supplemental analyses indicated that the average trading volume for all three groups increased from the pre-IFRS period to the post-IFRS period, with a smaller increase for companies that were not cross listed at any point between 2002 and 2008 than for the other two groups.

It was expected that after the implementation of IFRS standards for ASX-traded companies in 2005, shareholders and potential shareholders should have been more willing to buy, sell, and trade stock in these companies and this increased demand should have been reflected in an increase in the percentage of companies being cross-listed on a foreign exchange after the implementation of the IFRS standards. Consequently, trading volumes should have increased. The results from this study were consistent with the expectations: the percentage of ASX-traded companies that were cross-listed on some foreign exchange increased from 50.6% in the pre-IFRS period to 77.5% in the post-IFRS period, and the average trading volumes increased from the pre-IFRS period to the post-IFRS period.

The findings from this study were only applied to Australian companies, and it cannot be assumed that the results based on the sample of Australian companies would apply to companies in other countries that have, or will in the future, implement the IFRS standards. Further research may be needed to extend the study to companies in other countries, preferably using different time periods to determine whether results from this study are replicable.

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