IFRS Application and the Comparability of Financial Statements

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The purpose of this paper is to examine whether the application of IFRS by Japanese firms increases comparability of financial statements with other IFRS firms. I focus on IFRS firms in Japan and pair them with firms that are selected from IFRS firms in the EU member countries and JPN GAAP firms. Two approaches are developed from the definition of "Comparability" in the IASB Conceptual Framework. The results of tests show that the application of IFRS increases the comparability of financial statements among IFRS firms, however it does not decrease comparability with JPN GAAP applying firms.

INTRODUCTION

One of the objectives of the International Accounting Standards Board (IASB) is to develop a single set of global accounting standards that requires comparable information in financial statements, with the aim of helping participants in the various capital markets of the world and other users of the information to make economic decisions (IASB, 2001). Currently the International Financial Reporting Standards (IFRS) developed by IASB are approved for use in more than 120 countries, including Japan and the European Union (EU) member countries.

The Commission of European Communities (EC Commission) adopted IFRS for listed firms in the EU from the financial year starting on or after January 1, 2005. Regulation No. 1606 in 2002 states that one merit of IFRS adoption is to ensure a high degree of comparability of financial statements and, thus, efficient functioning of the Community capital market and the internal market (EC Commission, 2002).

The Financial Service Agency (FSA) in Japan permitted the preparation of consolidated financial statements according to IFRS from the fiscal year ending March 31, 2010. The Business Accounting Council (BAC) in Japan emphasizes that the application of IFRS enhances the international comparability of financial statements (BAC, 2009). About 60 firms listed on the Tokyo Stock Exchange (TSE) voluntarily adopted IFRS in 2015.

The purpose of this paper is to examine whether the application of IFRS by Japanese firms increases comparability of financial statements with other IFRS firms and decreases comparability with firms applying Japanese GAAP (JPN GAAP firms). I focus on IFRS firms in Japan and pair them with firms that are selected from IFRS firms in EU member countries and JPN GAAP firms. An "Accounting System Comparability Approach" and an "Economic Outcomes Comparability Approach" are developed from the definition of "Comparability" in the IASB Conceptual Framework. I measure the comparability of financial statements of IFRS firms in Japan and paired firms and compare the measurements for pre-IFRS application periods and post-IFRS application periods. This research provides evidence that the application of IFRS achieves the aims of firms that have voluntarily adopted IFRS and helps to provide useful information for global decision makers.

The organization of this paper is as follows. First, I explain the significance of IFRS application for global firms in Japan. Next, some prior related research is reviewed. Then I propose the hypotheses and the research design. After that, the sample selection procedures and descriptive statistics for the samples are shown. Last, I present the results of the empirical analysis and some concluding remarks.

Significance of Information Comparability and Related Research

Table 1 shows the current status of the application of IFRS in Japanese listed firms. For 2015, 60 firms have applied IFRS to prepare their consolidated financial statements and 31 firms are scheduled to apply IFRS in the near future. The features of IFRS firms in Japan are relatively high ratios of overseas sales and foreign ownership (Mukai, 2012; Mukai, 2015).

TABLE 1
NUMBER OF IFRS APPLICATION FIRMS

	March 2015	July 2016
Number of IFRS application firms	60	86
Expected number of IFRS application firms	31	31
Sum.	91	117

Reference: Japan Exchange Group

Table 2 summarizes the reasons for the voluntary adoption of IFRS and the primary merits (by ranking of importance) after the transition to IFRS[1]. This report discusses how companies that have voluntarily adopted IFRS overcame any challenges they faced during the transition to IFRS and the advantages that their shift to IFRS has brought about. The common answers are that the adoption of IFRS contributes to business management and improves the comparability of financial statements, which facilitates explanations to foreign investors. These answers are explained by the features of IFRS firms in Japan: they have a lot of overseas subsidiaries and approximately 30% of their shares are held by foreign investors.

TABLE 2
REASONS FOR THE VOLUNTARY APPLICATION OF IFRS AND PRIMARY MERITS AFTER THE TRANSITION TO IFRS

No.	Items	Pre-Application		Post-Application	
		No.	%	No.	%
1	Contributions to business management	29	44.6	27	45.0
2	Improved comparability	15	23.1	12	20.0
3	Makes explanations to foreign investors easier	6	9.2	7	11.7
4	Better reflection of performance	6	9.2	9	15.0
5	Smoother finance from abroad	5	7.7	2	3.3
6	Others	4	6.2	3	5.0
	Sum	65	100.0	60	100.0

Reference: FSA, 2015.

Table 3 presents the reasons for IFRS application as disclosed in Brief Reports (Summary of Financial Statements). These survey results show that the improved comparability of financial statements gives a strong incentive for global firms in Japan to apply IFRS.

TABLE 3
SURVEY RESULTS OF BASIC CONCEPTS RELATED TO IFRS APPLICATION

No.	Reasons of IFRS Application	No.[*1)]	%
1	Improved comparability of financial statements	56	88.9
2	Unification of accounting policy	22	34.9
3	Improved convenience for global information users	21	33.3
4	Contributions to business management	21	33.3
5	Globalization of business activities	10	15.9
6	Better reflection of performance and decision-making	6	9.5
7	Strengthen corporate governance	6	9.5
9	Improved quality of financial reporting	4	6.3
10	Smoother finance from abroad	4	6.3
11	Common language of business	4	6.3
12	Enhanced disclosure	3	4.8
13	Increasing Business Valuation	3	4.8
14	Financial transparency	2	3.2
15	Management transparency	2	3.2
16	Other	6	9.5
	Total survey number	63	

[*1)] Multiple answers allowed

The Conceptual Framework 2010 by the IASB (and the Exposure Draft 2015 for revising the conceptual framework) discusses the qualitative characteristics of useful financial information. Comparability is one of the enhancing qualitative characteristics, together with verifiability, timeliness, and understandability. Comparability is defined as the relative ability of users to identify and understand similarities of, and differences between, items (IASB, 2010). This definition has the following finer points.

First, comparability is not uniformity. For information to be comparable, like things must look alike and different things must look different (IASB, 2010). DeFranco et al. (2011) interprets comparability as meaning that a similar set of economic events should produce similar accounting amounts among firms that prepare their financial statements in accordance with the same accounting standards ("Accounting System Comparability Approach").

Second, comparability is explained as satisfying fundamental qualitative characteristics. A faithful representation of a relevant economic phenomenon should naturally possess some degree of comparability with a faithful representation of a similar economic phenomenon by another reporting entity (IASB, 2010). Barth et al. (2012) regard accounting amounts as comparable if they explain the same variation in economic outcomes ("Economic Outcomes Comparability Approach").

Much prior literature has developed analytic models based on a definition of comparability. Lang et al. (2010), DeFranco et al. (2011), Yip and Young (2012), Barth et al. (2012), Casino and Gassen (2014), and Mukai (2016) analyze comparability using the Accounting System Comparability Approach. Yip and Young (2012) examine the comparability of financial statements by calculating the similarity of accounting functions, using the correlations between accounting data or the return on assets and stock market returns[2]. Casino and Gassen (2014) investigate the effects of mandatory IFRS adoption on comparability. Comparability is measured on the basis of correlations between accounting income and economic events (e.g., stock returns and cash flows). Mukai (2016) focuses on Japanese firms. This paper examines the information comparability between IFRS firms in Japan and IFRS firms in EU member countries before and after IFRS application in Japan.

Jones and Finley (2011), Barth et al. (2012), Yip and Young (2012), and Liao et al. (2012) use the Economic Outcomes Comparability Approach for their analyses. Barth et al. (2008) explain that value relevance is frequently used as a summary measure of how well accounting amounts reflect a firm's underlying economics. Barth et al. (2012) examine the value relevance comparability of IFRS firms listed on the New York Stock Exchange (NYSE) before and after IFRS application. Jones and Finley (2011) examine whether the mandatory IFRS regime has led to any significant reductions in overall financial reporting diversity by companies within the EU and Australia. They focus on changes in intra-country and intra-industry financial reporting diversity after mandatory IFRS adoption and compute coefficients of variance for a number of accounting measures before and after mandatory IFRS adoption.

Many papers have found that the comparability of accounting information for similar firms from different countries is significantly greater in the post-IFRS period than in the pre-IFRS period. Typically, those papers focus on the financial information of IFRS firms in EU member countries and compare the information comparability before and after IFRS application.

However, the results in some papers are different. Shipper (2005) predicts that, if IFRS is adopted without sufficient implementation guidance, diminished comparability may result. Lang et al. (2010) examine the changes in cross-country financial statement comparability around the time of mandatory IFRS adoption and the effects of these changes on firms' information environments. They find that accounting comparability increases for both groups after IFRS adoption, but more for non-adopters. This finding suggests to them that the imposition of IFRS did little to increase accounting comparability relative to the worldwide trend. Liao et al. (2012) examine the changes in the comparability of French and German firms' financial reporting information after mandatory IFRS adoption. The comparability of financial information is assessed by investigating the valuation usefulness of earnings and book values after IFRS adoption. They find that French and German IFRS earnings and book values are comparable in the year before IFRS adoption, but become less comparable in the years after IFRS adoption. They guess that the diminishing comparability of IFRS earnings and book values is due to French and German managers making different implicit and explicit accounting choices. They find that the differences in accounting estimates, recognition of special items, and other equity reserves between French and German firms help to explain the decrease in comparability over time.

HYPOTHESES AND RESEARCH DESIGN

Hypotheses
The hypotheses are follows.

H0: *The voluntary application of IFRS in Japan does not affect information comparability between IFRS firms in Japan and other firms.*

H1: *The voluntary application of IFRS in Japan increases information comparability between IFRS firms in Japan and IFRS firms in the EU member countries.*

H2: *The voluntary application of IFRS in Japan decreases information comparability between IFRS firms in Japan and JPN GAAP firms.*

To test these hypotheses, I employ the Accounting System Comparability Approach and the Economic Outcomes Comparability Approach.

Accounting System Comparability Approach

The Accounting System Comparability Approach is based on the idea that similar economic events are reflected as similar accounting amounts (De Franco et al., 2011). The Accounting System Comparability Approach is represented in equation (1).

$$FS_x = f_x (EE_x) \tag{1}$$

Here,

f_x: Accounting function of firm x

EE: Economic events of firm x

FS: Financial statements of firm x

Net income before income taxes is a proxy for *FS* because it is generally used as an indicator of key performance. I use the ratio of quarterly net income before extraordinary items to the beginning-of-period total assets (*Earnings*) as a proxy for *FS*. Stock return (*Return*) and cash flows from operating activities are proxies for *EE*. Operating cash flows during the quarter are divided by the beginning-of-period total assets (*CFO*). The empirical tests are conducted for two cases: that the proxy for *EE* is *Return* or it is *CFO*. Information comparability is analyzed stepwise.

First, each Japanese firm's accounting functions pre- and post-IFRS application in Japan are estimated by using 16 quarters' data before and after IFRS application separately[3]. Firm i's accounting functions are estimated using equations (2a) and (2b). The coefficients $\alpha_{i,pre}$ and $\beta_{i,pre}$ represent the accounting function of firm i in the pre-IFRS term and the coefficients $\alpha_{i,post}$ and $\beta_{i,post}$ represent the accounting function in the post-IFRS term. Equations (3a) and (3b) are similar expressions for non-Japanese firms j that are paired with Japanese firms for analysis. The subscripts "*pre*" and "*post*" refer to before and after IFRS application by firms in Japan.

$$FS_{i,pre} = \alpha_{i,pre} + \beta_{i,pre} \, EE_{i,pre} + \varepsilon_{i,pre} \tag{2a}$$

$$FS_{i,post} = \alpha_{i,post} + \beta_{i,post} \, EE_{i,post} + \varepsilon_{i,post} \tag{2b}$$

$$FS_{j,pre} = \alpha_{j,pre} + \beta_{j,pre} \, EE_{j,pre} + \varepsilon_{j,pre} \tag{3a}$$

$$FS_{j,post} = \alpha_{j,post} + \beta_{j,post} \, EE_{j,post} + \varepsilon_{j,post} \tag{3b}$$

Here,

$\alpha_{i,pre}$ & $\beta_{i,pre}$: Accounting Function coefficients of firm i in the pre-IFRS period

$\alpha_{i,post}$ & $\beta_{i,post}$: Accounting Function coefficients of firm i in the post-IFRS period

$\alpha_{j,pre}$ & $\beta_{j,pre}$: Accounting Function coefficients of paired firms j in the Japanese pre-IFRS period

$\alpha_{j,post}$ & $\beta_{j,post}$: Accounting Function coefficients of paired firms j in the Japanese post-IFRS period

Second, firm i's predicted earnings are calculated by using *Return* and *CFO* separately in different accounting functions. Equations (2c) and (2d) calculate the predicted earnings under firm i's accounting function, and equations (3c) and (3d) calculate the predicted earnings under firm j's accounting function.

$$\widehat{E(FS)}^i_{i,pre} = \alpha_{i,pre} + \beta_{i,pre} \, EE_{i,pre} \tag{2c}$$

$$\widehat{E(FS)}^i_{i,post} = \alpha_{i,post} + \beta_{i,post} \, EE_{i,post} \tag{2d}$$

$$\widehat{E(FS)}^j_{i,pre} = \alpha_{j,pre} + \beta_{j,pre} \, EE_{i,pre} \tag{3c}$$

$$\widehat{E(FS)}^j_{i,post} = \alpha_{j,post} + \beta_{j,post} \, EE_{i,post} \tag{3d}$$

Here,

$\widehat{E(FS)}$: Predicted Earnings calculated by using *Return* or *CFO* as *EE*

In the third step, the comparability of the accounting system between firm i's and firm j's accounting functions is measured by equations (4a) and (4b). The comparability measures are calculated by the negative of the average absolute differences of predicted earnings in different accounting functions:

greater values reflect greater information comparability. Equation (4a) is the comparability measure of predicted earnings in the pre-IFRS period (averaged over 16 quarters); equation (4b) is the comparability measure in the post-IFRS period (averaged over 16 quarters).

$$PreCompAcct_{i,pre}^{ij} = -1 \times \text{Average} \mid (\widehat{E(FS)}_{i,pre}^{i} - \widehat{E(FS)}_{i,pre}^{j}) \mid \tag{4a}$$

$$PostCompAcct_{i,post}^{ij} = -1 \times \text{Average} \mid (\widehat{E(FS)}_{i,post}^{i} - \widehat{E(FS)}_{i,post}^{j}) \mid \tag{4b}$$

In the final step, the comparability measures are compared for the pre-IFRS period and the post-IFRS period. If $PostCompAcct_{i,post}^{ij}$ is larger than $PreCompAcct_{i,pre}^{ij}$, then the information comparability between firm i and paired firm j increases after IFRS application. If $PreCompAcct_{i,post}^{ij}$ is larger than $PostCompAcct_{i,pre}^{ij}$, then information comparability between firm i and paired firm j decreases after IFRS application.

$$Comparability\ Increases: \quad PreCompAcct_{i,pre}^{ij} \quad < \quad PostCompAcct_{i,post}^{ij} \tag{5a}$$

$$Comparability\ Decreases: \quad PreCompAcct_{i,pre}^{ij} \quad > \quad PostCompAcct_{i,post}^{ij} \tag{5b}$$

Economic Outcomes Comparability Approach

Next, the comparability of financial statements is examined by the Economic Outcomes Comparability Approach. This approach is based on the idea that accounting amounts are comparable if they explain the same variation in economic outcomes (Barth et al., 2012) The Economic Outcomes Comparability Approach is represented in equation (1′).

$$EO_x = f_x (FS_x) \tag{1′}$$

Here,

f_x: Economic Function of firm x
FS: Financial Statements of firm x
EO: Economic Outcomes of firm x's business transactions

Earnings is a proxy for *FS. Return* and *CFO* are proxies for *EO* on the firm's transactions. The empirical tests are examined in the two cases that *Return* is a proxy of *EO* or *CFO* is a proxy of *EO*. The information comparability is analyzed stepwise as in the Accounting System Comparability Approach.

First, each firm's pre- and post-IFRS economic functions are estimated separately by using 16 quarters' data before and after IFRS application by Japanese firms using equations (2a′) and (2b′); equations (3a′) and (3b′) estimate paired firm j's economic functions before and after IFRS application by Japanese firms.

$$EO_{i,pre} = \alpha_{i,pre} + \beta_{i,pre}\ FS_{i,pre} + \varepsilon_{i,pre} \tag{2a′}$$

$$EO_{i,post} = \alpha_{i,post} + \beta_{i,pre}\ FS_{i,post} + \varepsilon_{i,post} \tag{2b′}$$

$$EO_{j,pre} = \alpha_{j,pre} + \beta_{j,pre}\ FS_{j,pre} + \varepsilon_{j,pre} \tag{3a′}$$

$$EO_{j,post} = \alpha_{j,post} + \beta_{j,pre}\ FS_{j,post} + \varepsilon_{j,post} \tag{3b′}$$

Second, firm i's predicted economic outcomes (predicted returns and predicted operating cash flows) are calculated for different economic functions. Equations (2c′) and (2d′) calculate predicted economic outcomes under firm i's function, while equations (3c′) and (3d′) calculate predicted economic outcomes under firm j's function.

$$\widehat{E(EO)}_{i,pre}^{i} = \alpha_{i,pre} + \beta_{i,pre}\ FS_{i,pre} \tag{2c′}$$

$$\widehat{E(EO)}_{i,post}^{i} = \alpha_{i,post} + \beta_{i,post}\ FS_{i,post} \tag{2d′}$$

$$\widehat{E(EO)}_{i,pre}^{j} = \alpha_{j,pre} + \beta_{j,pre}\ FS_{i,pre} \tag{3c′}$$

$$\widehat{E(EO)}_{i,post}^{j} = \alpha_{j,post} + \beta_{j,post}\ FS_{i,post} \tag{3d′}$$

Here,

$\widehat{E(EO)}$: Predicted Economic Outcomes (predicted returns and predicted operating cash flows)

In the third step, the information comparability between firm i's and firm j's economic functions is calculated using equations (4a′) and (4b′). Equation (4a′) gives the comparability measure of predicted economic outcomes in the 16 pre-IFRS terms; equation (4b′) gives the comparability measure in the 16 post-IFRS terms.

$$PreCompAcct_{i,pre}^{ij} = -1 \times \text{Average} \mid (\widehat{E(EO)}_{i,pre}^{i} - \widehat{E(EO)}_{i,pre}^{j}) \mid \qquad (4a')$$

$$PostCompAcct_{i,post}^{ij} = -1 \times \text{Average} \mid (\widehat{E(EO)}_{i,post}^{i} - \widehat{E(EO)}_{i,post}^{j}) \mid \qquad (4b')$$

Last, the information comparability is evaluated by the comparison of measures between the pre-IFRS period and in the post-IFRS period.

$$Comparability\ Increases: \quad PreCompAcct_{i,pre}^{ij} \ < \ PostCompAcct_{i,post}^{ij} \qquad (5a')$$

$$Comparability\ Decreases: \quad PreCompAcct_{i,pre}^{ij} \ > \ PostCompAcct_{i,post}^{ij} \qquad (5b')$$

SAMPLE SELECTION AND DESCRIPTIVE STATISTICS

Sample selection procedures are as follows (see Table 4). In 2015, there were 60 IFRS voluntary application firms. Of these firms, two are initial public offering firms, four are in the financial sector (banks, insurance and securities companies) and 9 firms are US GAAP application firms before applying IFRS. As a result, the final sample size was 45 firms.

I potentially estimate each firm's accounting and economic function in the 16 quarters of pre-IFRS terms and the 16 quarters of post-IFRS terms separately. However, some firms have had fewer than 16 quarters after IFRS application. The data of their firms are collected after IFRS application terms.

Pair firms are selected from IFRS firms in France, Germany, and UK, and JPN GAAP firms. The criteria for pair firm selection are
(i)   Same industry classification in the two-digit GICS
(ii) Similar market capitalization in the year that IFRS firms in Japan applied IFRS.
    Data of accounting amounts and stock prices are from the Capital IQ database of Standard & Poor's.
    Table 5 shows the descriptive statistics for sample firms and paired firms in each country.

TABLE 4
SAMPLE SELECTION

Sample	Firms	Firm-Terms	
		Pre-Application	Post-Application
IFRS firms in Japan (March, 2015)	60		
Initial public offering firms	2		
Financial sector; banks, insurance and securities companies	4		
US GAAP application firms before applying IFRS	9		
Total number of samples	45	663	409

TABLE 5
DESCRIPTIVE STATISTICS

IFRS firms: Japan

Variables	Pre-Application		Post-Application	
	Mean	St. Dev.	Mean	St. Dev.
Earnings	0.0244	0.0313	0.0230	0.0260
Return	1.0355	0.2314	1.0556	0.2141
CFO	0.0237	0.0312	0.0206	0.0266

IFRS firms: France

Variables	Pre-Application		Post-Application	
	Mean	St. Dev.	Mean	St. Dev.
Earnings	0.0230	0.0174	0.0212	0.0096
Return	1.0454	0.2189	1.0262	0.1406
CFO	0.0197	0.0180	0.0133	0.0125

IFRS firms: Germany

Variables	Pre-Application		Post-Application	
	Mean	St. Dev.	Mean	St. Dev.
Earnings	0.0300	0.0198	0.0212	0.0142
Return	1.0357	0.1953	1.0511	0.1818
CFO	0.0264	0.0266	0.0261	0.0230

IFRS firms: UK

Variables	Pre-Application		Post-Application	
	Mean	St. Dev.	Mean	St. Dev.
Earnings	0.0654	0.0847	0.1114	0.2151
Return	1.0545	0.2046	1.0499	0.1560
CFO	0.0567	0.0750	0.1028	0.1841

JPN GAAP firms

Variables	Pre-Application		Post-Application	
	Mean	St. Dev.	Mean	St. Dev.
Earnings	0.0209	0.0272	0.0262	0.0247
Return	1.0097	0.1764	1.0570	0.1533
CFO	0.0216	0.0256	0.0198	0.0112

Here,
Earnings: the ratio of quarterly net income before taxes to the beginning-of-period total assets
Return: stock price return during the quarter
CFO: operating cash flows during the quarter divided by the beginning-of-period total assets

RESULTS OF TESTS

Accounting System Comparability Approach

Table 6 presents the results of tests using the Accounting System Comparability Approach.

Table 6 - Panel A shows the results of measuring comparability when *Return* is used as a proxy for *EE*. The comparability measures between IFRS firms in Japan and pair firms in France and UK (except Germany) increase in the post-IFRS period. The number of increased comparability ("Increase") firms is more than the number of decreased comparability ("Decrease") firms in three European countries. The comparability measure between IFRS firms in Japan and JPN GAAP firms slightly increases after IFRS application. However, the number of Decrease firms is higher than the number of Increase firms.

Table 6 - Panel B presents the results when *CFO* is used as a proxy for *EE*. The comparability measure between IFRS firms in Japan and paired firms in France and Germany (but not the UK) increase in the post-IFRS period. The number of Increase firms is more than the number of Decrease firms in the three European countries. The comparability measure between IFRS firms in Japan and JPN GAAP firms slightly decreases after IFRS application. However, the number of Increase firms is greater than the number of Decrease firms.

The results of tests using the Accounting System Comparability Approach show that the variance of comparability measures between IFRS firms in Japan and paired firms in three European countries decreases in the post-IFRS period. This result means that information comparability among IFRS firms is increased by applying IFRS.

TABLE 6
COMPARABILITY USING THE ACCOUNTING SYSTEM COMPARABILITY APPROACH

Panel A: *Return* Proxy

Pair Firm	France	Germany	UK	Japan
Function	IFRS-FRN	IFRS-DEU	IFRS-UK	JPN-GAAP
Comparability	Increase	Decrease	Increase	Increase
Pre-Application	-0.0033	-0.0030	-0.0095	-0.00319
Post-Application	-0.0022	-0.0033	-0.0040	-0.00316
Chg. of Meas.	0.0011	-0.0003	0.0054	0.00003
No. of "Increase"	25	24	26	19
No. of "Decrease"	16	17	19	26
Sum.	41	41	45	45

Panel B: *CFO* Proxy

Pair Firm	France	Germany	UK	Japan
Function	IFRS-FRN	IFRS-DEU	IFRS-UK	JPN-GAAP
Comparability	Increase	Increase	Decrease	Decrease
Pre-Application	-0.0498	-0.0081	-0.0118	-0.0056
Post-Application	-0.0094	-0.0055	-0.0294	-0.0057
Chg. of Meas.	0.0403	0.0025	-0.0176	-0.0001
No. of "Increase"	17	20	24	12
No. of "Decrease"	15	15	14	10
Sum.	32	35	38	22

Economic Outcomes Comparability Approach

Table 7 presents the results of tests using the Economic Outcomes Comparability Approach.

Table7 - Panel A shows the results when *Return* is used as a proxy for *EO*. The comparability measures between IFRS firms in Japan and paired firms in all countries increase in the post-IFRS period. The number of Increase firms is also greater than the number of Decrease firms in all countries. The comparability measure between IFRS firms in Japan and JPN GAAP firms is the biggest in the pre-IFRS period and the change of comparability measure is relatively small in the post-IFRS period.

Table 7 - Panel B presents the results when *CFO* is used as a proxy for *EO*. The comparability measures between IFRS firms in Japan and paired firms in France and the UK (but not Germany) increase in the post-IFRS period. The number of Increase firms is greater than the number of Decrease firms in the three European countries. The comparability measure between IFRS firms in Japan and JPN GAAP firms increases after IFRS application; however, the change of comparability measure is relatively small in comparison to that of other IFRS firms. The number of Decrease firms is equal to the number of Increase firms.

Table 7 also shows that the variance of comparability measures between IFRS firms in Japan and paired firms in the three European countries decreases after IFRS application. This indicates that information comparability among IFRS firms is increased by applying IFRS.

TABLE 7
COMPARABILITY USING THE ECONOMIC OUTCOMES COMPARABILITY APPROACH

Panel A Independent Variable: *Return*

Pair Firm	France	Germany	UK	Japan
Function	IFRS-FRN	IFRS-DEU	IFRS-UK	JPN-GAAP
Comparability	Increase	Increase	Increase	Increase
Pre-Application	-0.0931	-0.1094	-0.1246	-0.0826
Post-Application	-0.0781	-0.0556	-0.0756	-0.0601
Chg. of Meas.	0.0149	0.0538	0.0490	0.0225
No. of "Increase"	27	27	27	24
No. of "Decrease"	14	14	18	21
Sum.	41	41	45	45

Panel B Independent Variable: *CFO*

Pair Firm	France	Germany	UK	Japan
Function	IFRS-FRN	IFRS-DEU	IFRS-UK	JPN-GAAP
Comparability	Increase	Decrease	Increase	Increase
Pre-Application	-0.0317	-0.0128	-0.0436	-0.0298
Post-Application	-0.0205	-0.0194	-0.0245	-0.0229
Chg. of Meas.	0.0111	-0.0065	0.0191	0.0069
No. of "Increase"	23	23	25	15
No. of "Decrease"	17	18	20	15
Sum.	40	41	45	30

CONCLUDING REMARKS

Many firms in Japan have tried to increase the comparability of financial statements by voluntary adoption of IFRS. The features of these firms are a relatively high ratio of overseas sales and foreign ownership. I have compared measures of information comparability between the pre-IFRS period and the post-IFRS period using both the Economic Outcomes Comparability Approach and the Accounting System Comparability Approach. The changes of information comparability are evaluated by the average of comparability measures and the numbers of Increase and Decrease firms. The empirical tests were conducted using both data from IFRS firms in Japan and pair firms' data.

The overall results of the tests show that the application of IFRS by Japanese firms increases information comparability between IFRS firms in Japan and IFRS firms in EU member countries. This research provides evidence that the application of IFRS achieves the aims of firms that have voluntarily adopted IFRS and helps to provide useful information for global decision makers. On the other hand, the application of IFRS in Japan does not always decrease the comparability of financial information between IFRS firms in Japan and JPN GAAP firms. The information comparability among Japan firms is relatively high and the changes of comparability measure are relatively small in comparison to those with IFRS firms in EU member countries. This result indicates the need for further analysis relating to the differences between IFRS and JPN GAAP, for example, the effects of the accounting for goodwill in financial information.

ENDNOTES

1. This table is based on the IFRS Adoption Report by the FSA in Japan (FSA, 2015).
2. Yip and Young use another method for measuring comparability. They analyze comparability by considering the similarity of the information content of earnings and that of the book value of equity. The information similarity between earnings and book-value-of-equity is measured by the long-window association between stock price and earnings and the book value of equity. They find evidence suggesting that both accounting convergence and higher quality accounting information are likely to be the mechanisms underlying the observed comparability improvement.
3. Some IFRS firms in Japan have been active for less than 16 quarters. The data of these firms are collected after IFRS application.

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