Market Perceptions of the Informational and Comparability Effects of Fair Value Reporting for Tangible Assets:
US and Cross-Country Evidence

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Research Question

- What is the *equity market perception* of the costs/benefits associated with fair value adoption for tangible assets?

- Costs/benefits inferred from reactions to related events – *event study*

- Differing markets allows us to infer
  - expected *informational and comparability* effects (US firms)
  - expected *comparability* effects (non-US firms)

Setting: Investment Property Firms – Who Cares?

- **<u>Investment Properties (Real Estate Assets)</u>**
  - used for investment/rental streams (not in production/administration)
- **<u>Single industry setting</u>** – limits generalizability
- **<u>But</u>** . . .
  - Only setting with US standard setters exploring *<u>fair value for tangible assets</u>*
  - Focuses on fair value for firms' *<u>primary operating asset</u>*
  - Investment property
    - *<u>as an asset</u>* – one of largest asset classes in world
    - *<u>as an industry</u>* – **<u>$800 billion market cap</u>** for US sample firms (2014)
  - Not subject to regulatory confounds of other fair value settings (banking)

Set-up

- **<u>Major difference in US versus IFRS Reporting</u> for real estate assets**

- **<u>US GAAP</u>** – requires *<u>historical cost</u>*
  - Fair value neither required nor voluntarily provided by US firms

- **<u>IFRS</u>** – requires *<u>fair value (IAS 40)</u>*
  - Recognition (recommended; "best practice"; most publicly-traded firms use)
  - Disclosed in footnotes (mandatory)

- **<u>Comparability</u>** – explicit efforts by FASB/IASB to align US GAAP and IFRS
  - FASB added reporting of investment properties to agenda (2010)
  - IASB – no concurrent change to its agenda
  - Initially **<u>strong</u>** FASB support to adopt *<u>fair value recognition</u>*
  - Subsequently FASB reversed position, and dropped the topic from agenda

Events (Table 1)

- **6 events** affecting likelihood of US FV adoption for these tangible assets

Strong identification of events:

    FASB source document

Event	Date	Description	Expected Effect on Likelihood of Fair Value Adoption in US	Predicted Market Reaction if: $FV_{benefits} > Fv_{costs}$	Predicted Market Reaction if: $FV_{benefits} < FV_{costs}$
1	March 10, 2010	FASB Board Meeting: the FASB adds to its agenda whether to permit or require investment property to be carried at fair value, as part of its convergence efforts with IFRS	Increase	+	−
2	July 22, 2010	FASB Board Meeting: the FASB decides to _require_ fair value measurement of investment properties	Increase	+	−
3	August 24, 2011	FASB Board Meeting: the FASB clarifies criteria to qualify as an investment property entity, maintaining support that such entities report investment property assets at fair value	Increase	+	−
4	October 21, 2011	FASB issues Exposure Draft (_Real Estate – Investment Property Entities_, Topic 973), explicitly proposing that investment property be reported at fair value	Increase	+	−
5	August 8, 2012	FASB Board Meeting: after receiving and compiling comment letters, the FASB indicates a majority of stakeholders do not support the Exposure Draft, and that the FASB is now considering alternative approaches	Decrease	−	+
6	January 29, 2014	FASB Board Meeting: the FASB removes the investment property topic from its agenda	Decrease	−	+

Hypotheses – H1

H$_1$ US equity investors react positively (negatively) to events increasing the likelihood of fair value reporting for investment property assets in the US if the expected benefits associated with changes in the information environment and/or comparability exceed (are less than) the expected costs.

- focuses on _net benefits/costs_

- for US firms, either _informational_ or _comparability_ effects

- **Benefits:**
    - enhancements to information environment (timely valuation information)
    - improved comparability of US and non-US firms

- **Costs:**
    - reduced quality of information due to greater measurement error/bias
    - additional monitoring, processing costs, preparation costs, higher borrowing costs

Hypotheses – H2

H$_2$ Non-US equity investors react positively (negatively) to events increasing the likelihood of fair value reporting for investment property assets in the US if the expected benefits associated with changes in comparability exceed (are less than) the expected costs.

- again, focuses on *net benefits/costs*

- for non-US firms, should be *comparability effects only*

    - No change in the information for these firms – already providing FV under IFRS

- **Benefits:**

    - improved comparability (reduced risk due to more easily comparing investment options)

- **Costs:**

    - Higher cost of capital (non-US firms look less attractive)

Research Design – Univariate (US sample)

Y-Variable = **CAR$_{it}$**

- 1-day market reaction by firm *i* to event *t*
- "abnormal" – subtract <u>*same size-decile return*</u> (using Compustat population)
- six events assessed <u>*in aggregate*</u> (viewed as a <u>*process*</u>)
- <u>**Note:**</u> events *ex ante* well-identified (so we use narrow 1-day window)
  - If "leakage" (or takes time for market to incorporate) – will add noise/reduce power
  - If include irrelevant (exclude relevant) events, will add noise (reduce power)

Both bias against our findings

Three univariate tests (Armstrong et al. 2010)

- (1) *t-statistic (versus 0)*
  - assumes we have correct market-adjustment, so expected return = 0

- (2) *t-statistic (versus 300 non-event)*
  - compare mean of event CAR to mean of 300 random non-events CAR

- (3) *p-value (bootstrap)*
  - compare event mean to mean of random 6 non-events – perform 500x to derive distribution

Research Design – Cross-Sectional (US sample)

$$CAR_{it} = \beta_0 + \boxed{\beta_1 MVE_{it} + \beta_2 Big4_{it}} \quad +, +$$

$$+ \boxed{\beta_3 \%Insti_{it} + \beta_4 \%Insider_{it} + \beta_5 CrossList_{it} + \beta_6 IntlAssets_{it}} \quad +, -, +, +$$

$$+ \boxed{\beta_7 Std\_Ret_{it} + \beta_8 Leverage_{it} + \beta_9 MTB_{it}} \quad +/-, +/-, +/-$$

$$+ \boxed{\beta_{10} Acqu/TA_{it} + \beta_{11} AssetAge_{it}} \quad -, +$$

$$+ \text{Event Fixed Effects} + \varepsilon_{it}$$

Information Environment / Commitment to Higher Quality Reporting

Demand for Fair Value Information

Risk proxies

Staleness of Reported Tangible Asset Values

Sample Selection – US sample (Table 2)

Panel A. Sample Selection

	Firms	Observations
Firms on the SNL database, listed in the US and identified in the investment property industry	178	1068
Less: Observations missing SNL returns data	−13	−223
Less: Observations missing necessary CRSP data, Compustat data, or having extreme values	−6	−66
Final US Sample	**159**	**779**

Panel B. Distribution by Event

Event	Date	Observations
1	March 10, 2010	118
2	July 22, 2010	118
3	August 24, 2011	128
4	October 21, 2011	128
5	August 8, 2012	131
6	January 29, 2014	156
Final US Sample		**779**

Spread evenly over 6 events

Univariate Analysis – US Sample (Table 4)

Event	Date	Description	Predicted Market Reaction if: $FV_{benefits} > FV_{costs}$ ($FV_{benefits} < FV_{costs}$)	Raw Return	Market-Adjusted Return
1	March 10, 2010	FASB adds reporting investment property at fair value to its agenda	+ (−)	0.0049 ***	–0.0017 ***
2	July 22, 2010	FASB requires fair value measurement of investment properties	+ (−)	0.0356 ***	0.0121 ***
3	August 24, 2011	FASB clarifies the criteria for investment property entity	+ (−)	0.0171 ***	0.0062 ***
4	October 21, 2011	FASB issues Exposure Draft requiring investment property be reported at fair value	+ (−)	0.0351 ***	0.0148 ***
5	August 8, 2012	FASB indicates lack of support for the Exposure Draft, now considering alternative approaches	− (+)	–0.0094 ***	–0.0100 ***
6	January 29, 2014	FASB removes the investment property topic from its agenda	− (+)	–0.0103 ***	–0.0019 ***
Mean Return Across Events				Cumulative Market Reaction ≈ 4.3%	0.0072
t-statistic (versus 0)					2.799 **
t-statistic (versus 300)					2.192 *
p-value (bootstrap)					0.018 **

Cross-Sectional Analysis – US Sample (Table 5)

Panel B. Cross-sectional analysis

Variable	Predicted Sign	Coeff (*t*-stat) (1)	Coeff (*t*-stat) (2)
Intercept	?	−0.019 (3.26) ***	−0.006 (1.21)
MVE	+	0.000 (0.08)	0.000 (0.04)
Big4	+	0.005 (2.30) **	0.005 (2.44) ***
%Insti	+	0.005 (2.75) ***	0.004 (2.35) **
%Insider	−	0.002 (0.41)	0.002 (0.34)
CrossList	+	0.005 (1.85) **	0.005 (1.86) **
IntlAssets	+	0.002 (1.36) *	0.002 (1.42) *
Std_Ret	+ / −	0.111 (0.73)	−0.085 (0.72)
Leverage	+ / −	0.001 (1.09)	0.001 (1.68) *
MTB	+ / −	−0.002 (1.72) *	−0.002 (2.41) **
Acqu/TA	−	−0.022 (0.48)	−0.023 (0.47)
AssetAge	+	0.012 (1.65) **	0.015 (1.98) **
Fixed Effects		Event	Year
Number of Firm Events		779	779
Number of Firms		159	159
Adj-R^2		0.119	0.073

Info Environ/Commitment

Demand for FV

Risk

Staleness of Asset Values

Research Design – Univariate (Non-US sample)

Y-Variable = CAR_NonUS$_{it}$

- 1-day (or 2-day) market reaction for non-US firm *i* to event *t*

- "abnormal" – subtract <u>the same one-day (or two-day) return for the corresponding size-matched portfolio (using above versus below median market capitalization to form two portfolios) and we calculate the median by reference to all of Europe.</u>

- six events assessed <u>*in aggregate*</u> (viewed as a <u>*process*</u>)

- **Note:** Although events *ex ante* are well-identified, it is possible that the market reaction to a particular document will not be captured by the non-US stock exchange on the same date due to the difference in time zones.

Three univariate tests (Armstrong et al. 2010)

    (1) ***t-statistic (versus 0)***
- assumes we have correct market-adjustment, so expected return = 0

    (2) ***t-statistic (versus 300 non-event)***
- compare mean of event CAR to mean of 300 random non-events CAR

    (3) ***p-value (bootstrap)***
- compare event mean to mean of random 6 non-events – perform 500x to derive distribution

Research Design – Cross-Sectional (Non-US sample)

$$CAR_{it} = \alpha_0 + \alpha_1 MVE_{it} \qquad +$$

$$+ \alpha_2 \%Insider_{it} + \alpha_3 USAssets_{it} + \alpha_4 Ret\_Comove_{it} \qquad -, +, +$$

$$+ \alpha_5 Std\_Ret_{it} + \alpha_6 Leverage_{it} + \alpha_7 MTB_{it} \qquad +/-, +/-, +/-$$

$$+ \text{Event Fixed Effects} + \varepsilon_{it}$$

Information Environment

Demand for Comparable Information

Risk proxies

Univariate Analysis – Non-US Sample (Table 6)

Panel A. Distribution by country

Country	Firms	Observations
Austria	6	31
Belgium	11	52
Denmark	1	2
Finland	3	13
France	17	86
Germany	19	81
Greece	3	12
Italy	5	26
Netherlands	4	24
Poland	2	11
Spain	6	26
Sweden	11	45
United Kingdom	32	155
Final Non-US Sample		**564**

Univariate Analysis – Non-US Sample (Table 6)

Panel B. Univariate analysis

Event	Date	Description	1-Day Raw Return	1-Day Market-Adjusted Return	2-Day Raw Return	2-Day Market-Adjusted Return
1	March 10, 2010	FASB adds reporting investment property at fair value to its agenda	0.0023 ***	–0.0023 ***	0.0005 ***	–0.0037 ***
2	July 22, 2010	FASB requires fair value measurement of investment properties	0.0174 ***	0.0077 ***	0.0271 ***	0.0158 ***
3	August 24, 2011	FASB clarifies the criteria for investment property entity	0.0138 ***	0.0041 ***	0.0069 ***	0.0003 ***
4	October 21, 2011	FASB issues Exposure Draft requiring investment property be reported at fair value	0.0228 ***	0.0115 ***	0.0306 ***	0.0127 ***
5	August 8, 2012	FASB indicates lack of support for the Exposure Draft, now considering alternative approaches	0.0017 ***	0.0028 ***	–0.0002 ***	–0.0012 ***
6	January 29, 2014	FASB removes the investment property topic from its agenda	–0.0046 ***	–0.0029 ***	–0.0053 ***	–0.0055 ***
		Mean Return Across Events		0.0035		0.0053
		t-statistic (versus 0)		1.5412 *		1.7110 *
		t-statistic (versus 300)		1.2147		1.3315
		p-value (bootstrap)		0.038 **		0.018 **

Cross-Sectional Analysis – Non-US Sample (Table 7)

Panel A. Variable-level analysis

Variable	Above Median (or Indicator = 1) Mean *CAR_NonUS*	Below Median (or Indicator = 0) Mean *CAR_NonUS*	Difference	*t*-statistic
	(1)	(2)	(3) = (1) – (2)	(4)
MVE	0.0047 (*N* = 282)	0.0004 (*N* = 282)	0.0043	2.830 ***
%Insider	0.0019 (*N* = 281)	0.0032 (*N* = 283)	–0.0013	0.870
USAssets	0.0092 (*N* = 39)	0.0021 (*N* = 525)	0.0071	2.302 **
Ret_Comove	0.0050 (*N* = 282)	0.0001 (*N* = 282)	0.0048	3.203 ***
Std_Ret	0.0020 (*N* = 282)	0.0031 (*N* = 282)	–0.0011	0.703
Leverage	0.0023 (*N* = 281)	0.0028 (*N* = 283)	–0.0004	0.264
MTB	0.0015 (*N* = 282)	0.0036 (*N* = 282)	–0.0021	1.356

Cross-Sectional Analysis – Non-US Sample (Table 7)

Panel B. Cross-sectional analysis

		Coeff (*t*-stat) 1-Day Market-Adjusted *CAR_NonUS*	Coeff (*t*-stat) 2-Day Market-Adjusted *CAR_NonUS*	Coeff (*t*-stat) 1-Day Euro Index Market-Adjusted *CAR_NonUS*
Variable	**Predicted Sign**			
		(1)	(2)	(3)
Intercept	?	–0.015 (4.37) ***	–0.020 (4.26) ***	–0.015 (4.39) ***
MVE	+	0.001 (3.07) ***	0.001 (1.37) *	0.001 (3.17) ***
%Insider	–	0.000 (0.12)	0.005 (1.02)	0.001 (0.19)
USAssets	+	0.005 (2.02) **	0.010 (2.27) **	0.006 (2.23) **
Ret_Comove	+	0.009 (1.40) *	0.019 (2.00) **	0.011 (1.66) **
Std_Ret	+ / –	0.252 (2.71) ***	0.257 (2.04) **	0.226 (2.30) **
Leverage	+ / –	–0.000 (0.68)	–0.000 (0.71)	–0.000 (0.73)
MTB	+ / –	–0.000 (0.52)	0.000 (0.01)	–0.000 (0.37)
Fixed Effects		Event	Event	Event
Number of Firm Events		564	564	564
Number of Firms		120	120	120
Adj-R^2		0.062	0.047	0.099

Info Environ

Demand for Comparable information

Risk

Conclusion

US Firms

- US Equity markets view movement towards FV in the US for investment property assets *positively*

- Reaction is *increasing* for US firms with
  - **higher commitment to quality reporting**
  - **investor base more likely to demand FV**
  - **staler asset base**
  - **lower risk**

- Effects reflect expected enhancements to **information environment** and/or **comparability benefits**

Conclusion

Non-US Firms

- Non-US Equity markets view movement towards FV in the US for investment property assets _positively_

- Reaction is _increasing_ for Non-US firms with
  - **stronger information environments**
  - **investor base more likely to demand comparable information**
  - **higher risk**

- Some evidence that non-US firms also appear to value **comparability**

Thank you (very)$^\infty$ much!