

Newly Recognised Goodwill and Intangibles under IFRS – An Empirical Investigation of Market Values and Analysts' Forecasts

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Motivation

Intangibles in financial statements

- Shift towards intangible-driven business models
- Intangibles are rarely represented in financial statements (Sullivan, 2000)
- Business combinations under IFRS 3 as unique setting to investigate the capitalization of intangibles

Intangibles under IFRS 3

- IFRS 3 requires firms to recognize all identifiable intangible assets (IIA) apart from goodwill
 - **Deliver relevant and faithfully represented information** (IFRS 3, Basis for Conclusions (BC) 158)
- Management discretion within IFRS 3 (Glaum et al. 2013)
 - **Goodwill contains overpayments/overstatements and synergies are often not realised** (Loughran and Vijh, 1997; Agrawal and Jaffe, 2000; Andrade et al., 2001; Moeller and Schlingemann, 2005; Alexandridis et al., 2010)

RQ: Is newly recognised goodwill a relevant and faithfully represented accounting number compared to identifiable intangible assets?

The study in a nutshell

WHAT

Effect of newly recognised goodwill and IIA on market value and analysts forecast dispersion

WHY

Assess the relevance and faithful representation of newly recognised goodwill compared to identifiable intangible assets

HOW

Empirical archival study (M&As from German HDAX firms over 11 years)

RESULTS

- Newly recognised goodwill and IIA are value relevant → no statistical difference
- Goodwill recognised apart from other intangible assets → higher analysts' forecasts dispersion
- Contribution to goodwill (see D'Arcy and Tarca 2018 for a review) and intangibles debate (e.g. Barth et al. 1998; Wyatt 2005; Penman 2009)

Hypotheses Development

Value Relevance Effect of Goodwill

- Acquired goodwill theoretically consists of future economic benefits from the M&As that are not individually identifiable
 - Goodwill is measured as residual of the purchase price allocation
 - Goodwill comprises overpayments and overstatements (Johnson and Petrone, 1998)
- Unclear effect of goodwill on future economic benefits of the firm

Value Relevance Effect of IIA

- IIA deliver more concrete information about the extent of future cash flows (Jeny et al., 2016), as they can be individually identified and valued at fair value
- Intangible investment capitalisation lets managers signal private information about future economic benefits (Matolcsy and Wyatt, 2006; Ahmed and Falk, 2009)
- Firms tend to capitalise intangible assets when the FEBs of investments are more certain (Wyatt 2005)



H1: Newly recognised goodwill is positively related to the market value of equity but valued at a discount compared to other identifiable intangible assets.

Hypotheses Development

- Analysts' forecast dispersion is a proxy for uncertainty about future economic benefits and is used in the literature to assess the faithful representation of accounting information (Barron et al., 1998)
- The future economic benefits of newly recognised goodwill are more uncertain concerning the different components of goodwill
- Impairment-Only approach requires to forecast impairment time and magnitude while goodwill impairments are subject to earnings management (Ramanna and Watts, 2012; Filip et al., 2015; Saastamoinen and Pajunen, 2016)
- **Increased forecast complexity for analysts**
- Increasing forecast complexity is associated with decreasing analysts' forecast accuracy (e.g., Ramnath et al., 2008; Lin and Yang, 2012; Liu and Natarajan, 2012)

H2: The proportion of intangible assets recognised as goodwill in the PPA is positively related to the acquiring firms' analysts' forecast dispersion.

Research Design

Sample

	Firm-Years
Total observations (10 years x 234 German listed firms)	2,340
Less, inactive firm-years	-731
Less, firm-years under German GAAP	-20
Less, firm-years under US GAAP	-64
Less, firm-years without material business combinations	-899
Less, firm-years with missing information	-5
Final number of observations (all IFRS)	625

- Majority of data is manually-collected from firm's annual reports (and press releases and finance websites are additionally used for deal characteristics)
- Market and analysts data from Thomson Reuters Datastream and I/B/E/S

Research Design

Empirical Model for the Effect on Market Value

$$MV_{i,t+3m} = \beta_0 + \beta_1 recGW_{i,t} + \beta_2 recIIA_{i,t} + \beta_3 BVadj_{i,t} + \beta_4 NI_{i,t} + \sum \beta_j INDUSTRY_{i,j,t} + \sum \beta_y YEAR_{i,y,t} + \varepsilon_i$$

$PPAIA_{it}$	Purchase price allocation quality is measured using the proportion of the total purchase price allocated to identifiable tangible and intangible assets (i.e., excluding goodwill)
BAS_{it+1}	Acquiring firm's information asymmetry in t+1 as proxied by the bid-ask spread measured as the annual average of the daily relative bid-ask-spread following Muller et al. (2011)
$ICC5_{it+1}$	Acquiring firm's implied cost of capital in t+1 as proxied by a composite measure estimated by Hou et al. (2012)

- Following H1, β_1 and β_2 are expected to be positive and significant, suggesting that investors consider newly acquired goodwill and identifiable intangibles for their valuation purposes
- The statistical difference between coefficients β_1 and β_2 is expected to be significant

Research Design

Empirical Model for the Effect on Analysts' Dispersion

$$SDF_{i,t+1} = \beta_0 + \beta_1 \text{recGW/recIA}_{i,t} + \beta_2 \text{BVadj}_{i,t} + \beta_3 \text{NI}_{i,t} + \beta_4 \text{dealsize}_{i,t} + \beta_5 \text{SIZE}_{i,t} + \beta_6 \text{lnFOL}_{i,t} + \beta_7 \text{LEV}_{i,t} + \beta_8 \text{VOL}_{i,t} + \sum \beta_j \text{INDUSTRY}_{i,j,t} + \sum \beta_y \text{YEAR}_{i,y,t} + \varepsilon_i$$

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$ICC5_{it+1}$	Acquiring firm's implied cost of capital in t+1 as proxied by a composite measure estimated by Hou et al. (2012)

→ Following H2, β_1 is expected to be positive and significant, indicating that higher goodwill relative to other intangible assets is associated with a higher standard deviation of analysts' forecasts

Results

Value relevance of recognised goodwill and identifiable intangible assets

	Pred. Sign	(1) MV _{i,t+3m}	(2) MV _{i,t+3m}	(3) MV _{i,t+3m}
<i>recGW_{i,t}</i>	(+)	5.990*** (4.253)	6.116*** (4.692)	5.714*** (4.512)
<i>recIIA_{i,t}</i>	(+)	2.130*** (2.613)	2.081*** (2.808)	2.305*** (3.214)
<i>BV_adj_{i,t}</i>	(+)	2.281*** (7.067)	2.224*** (7.206)	2.200*** (7.038)
<i>NI_{i,t}</i>	(+)	2.388*** (3.222)	2.186*** (2.995)	2.157*** (2.922)
intercept		-0.177 (-1.417)	-0.599** (-2.267)	-0.418 (-0.852)
Observations		625	625	625
R ²		0.716	0.737	0.750
Adjusted R ²		0.714	0.731	0.741
Industry Fixed Effects		NO	NO	YES
Year Fixed Effects		NO	YES	YES
Highest VIF		1.43	1.48	1.55
P-value of t-test $\beta_1 = \beta_2$		0.02	0.00	0.02

Results

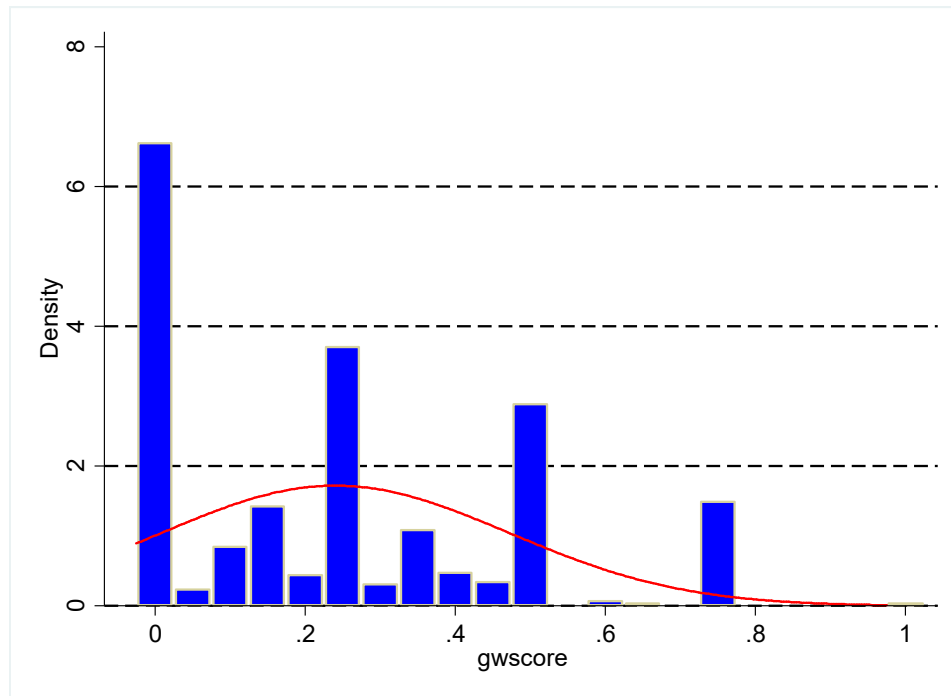
The association of recognised goodwill with analysts' forecast deviation

	Pred. Sign	(1) SDF _{i,t}	(2) SDF _{i,t}	(3) SDF _{i,t}	(4) SDF _{i,t}
<i>recGW/recIA_{i,t}</i>	(+)	.296*** (3.798)	.166*** (3.361)	.189** (2.351)	.115*** (6.584)
<i>BV_adj_{i,t}</i>	(?)		0*** (4.856)	0*** (2.849)	0*** (8.82)
<i>NI_{i,t}</i>	(?)		0 (-1.478)	0 (.567)	0 (.937)
<i>Dealsize_{i,t}</i>	(+)		0*** (4.174)	0*** (3.045)	0*** (6.613)
<i>Size_{i,t}</i>	(-)			0 (-.382)	0* (-1.879)
<i>lnFOL_{i,t}</i>	(+/-)			0* (1.875)	0 (.585)
<i>LEV_{i,t}</i>	(+/-)			0** (2.013)	0*** (5.189)
<i>VOL_{i,t}</i>	(+)			0 (-.005)	0 (.4)
intercept		0 (-.095)	0*** (-5.635)	0 (-.852)	0 (-.849)
Observations		409	408	378	378
R ²		0.5620	0.7265	0.8092	.
Adjusted R ²		0.561	0.724	0.795	.
Industry Fixed Effects		NO	NO	YES	NO
Year Fixed Effects		NO	NO	YES	NO
Model		OLS	OLS	OLS	RE Model

Additional Results

Moderating effect of goodwill disclosures - background

Disclosure score to measure disclosure level



Examples of low and high levels of goodwill disclosures

Goodwill from the transaction amounted to €222 MN and primarily reflects anticipated growth opportunities in the Turkish insurance market. The impact of Yapı Kredi Sigorta and Yapı Kredi Emeklilik on

Annual Report Allianz 2013 – Acquisition of Yapı Kredi Sigorta A.Ş.

- The following factors led to the recognition of goodwill:
- A good balance between own production and purchasing in terms of minimizing risk
 - Cost synergies in administration
 - A growing portfolio of products (fruit juice concentrate, fruit juice, fruit wine, beverage bases, aromas and flavors)
 - Complementary geographic market focuses of the individual companies
 - A broader shared customer portfolio
 - Knowledge transfer with regard to production technologies and quality parameters
 - A global presence, both in terms of sales & distribution and procurement activities

Annual Report Suedzucker 2012 – Acquisition of Ybbstaler Fruit Austria GmbH

Additional Results

Moderating effect of goodwill disclosures – results on analysts forecast dispersion

		Observations with low levels of GW Disclosure	Observations with high levels of GW Disclosure	Difference between low and high levels of GW Disclosure
	Pred. Sign (+/?)	(1) SDF _{i,t+1}	(2) SDF _{i,t+1}	(3) SDF _{i,t+1}
<i>recGW/recIA_{i,t}</i>		.323*** (2.669)	.108* (1.796)	-.215* (-1.651)
<i>BV_adj_{i,t}</i>		0 (.684)	0 (.009)	0 (.718)
<i>NI_{i,t}</i>		0 (.716)	0 (.594)	0 (.752)
intercept		0.000 (0.254)	0.000 (1.344)	0.000* (1.763)
Controls		YES	YES	
Observations		121	94	
R ²		0.861	0.944	
Adjusted R ²		0.825	0.925	
Industry Fixed Effects		YES	YES	
Year Fixed Effects		YES	YES	

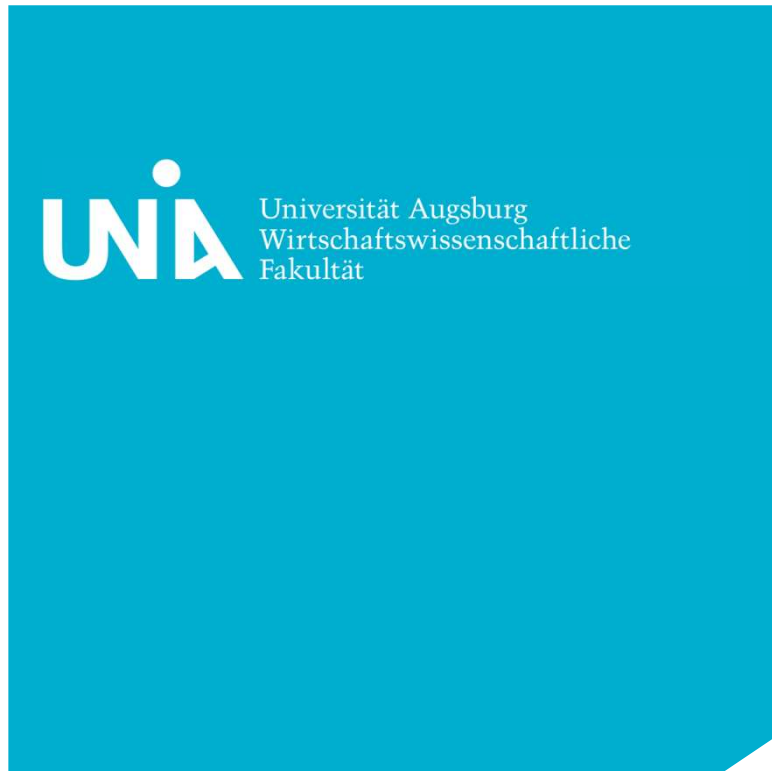
Conclusion & Implications

- Newly recognised goodwill is value relevant and not valued at a discount compared to identifiable intangible assets
- The proportion of intangible assets recognised as goodwill is positively related to analysts' forecasts dispersion
- Goodwill is associated with a higher relative uncertainty concerning future economic benefits than other intangible assets recognised in the acquisition
- Uncertainty is mitigated by high quality goodwill disclosures

CONTRIBUTION

- 1) Literature on the value relevance of goodwill (see (D'Arcy and Tarca 2018) for a literature review on IFRS goodwill)
- 2) Literature on intangibles and analysts' forecasts (Peek, 2005; Matolcsy and Wyatt, 2006; Anagnostopoulou, 2010; Chalmers et al., 2012; Dinh et al., 2015)
- 3) Standard Setting Implications (IFRS 3 and IAS 38)

Questions & Discussion



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BACKUP

Descriptive Statistics

Summary Statistics I

Variable	N	Mean	Median	Std.Dev.	Min	Max
$MV_{i,t+3m}$	626	1.172	0.722	1.816	.006	30.425
$recGW_{i,t}$	630	.038	0.005	.099	0	1.021
$recIA_{i,t}$	630	.031	0.003	.098	0	1.018
$BV_{adj}_{i,t}$	629	.413	0.360	.508	-.386	8.487
$NI_{i,t}$	630	.05	0.046	.093	-.431	.555
$SDF_{i,t+1}$	489	.359	0.24	.376	0	3.63
$recGW/recIA_{i,t}$	601	.602	0.625	.311	0	1
$Dealsize_{i,t}$	630	.08	0.017	.186	-.186	1.731
$Size_{i,t}$	630	21.748	21.600	2.03	13.812	25.984
$FOL_{i,t}$	613	16.974	16	10.218	1	42
$LEV_{i,t}$	629	.616	0.632	.187	0	.996
$VOL_{i,t}$	586	.026	0.020	.026	.003	.402
$GW_discor_{i,t}$	589	.24	0.25	.232	0	1
$GWold_{i,t}$	629	.147	0.12	.131	0	.753

Descriptive Statistics

Correlations (Pearson/Spearman) I

	$MV_{i,t+3m}$	$recGW_{i,t}$	$recIA_{i,t}$	$BV_{adj_{i,t}}$	$NI_{i,t}$	$SDF_{i,t+1}$	$recGW/recIA_{i,t}$	$Dealsize_{i,t}$	$Size_{i,t}$	$FOL_{i,t}$	$LEV_{i,t}$	$VOL_{i,t}$	$GW_discor_{i,t}$	$GWold_{i,t}$
$MV_{i,t+3m}$	1	0.5080***	0.3427***	0.6269***	0.6457***	0.5460***	0.5709***	0.5230***	-0.5002***	-0.1648***	-0.6785***	0.0118	0.1223**	0.2410***
$recGW_{i,t}$	0.521***	1	0.5886***	0.2435***	0.3344***	0.3835***	0.5030***	0.8859***	-0.3721***	-0.2471***	-0.3964***	0.1215**	0.0867*	0.1605***
$recIA_{i,t}$	0.356***	0.524***	1	0.0882*	0.2689***	0.2756***	0.1029**	0.6616***	-0.2102***	-0.0785	-0.2375***	0.1259**	0.1473***	0.0744
$BV_{adj_{i,t}}$	0.729***	0.170***	0.078**	1	0.4660***	0.4959***	0.5687***	0.2791***	-0.5207***	-0.2387***	-0.8927***	-0.0145	0.0792	0.1874***
$NI_{i,t}$	0.393***	0.212***	0.164***	0.301***	1	0.3384***	0.2907***	0.3908***	-0.1970***	-0.0637	-0.5117***	-0.0178	0.0348	0.1119**
$SDF_{i,t+1}$	0.677***	0.443***	0.344***	0.711***	0.210***	1	0.7905***	0.4718***	-0.8094***	-0.5380***	-0.4945***	0.3602***	0.0474	0.0229
$recGW/recIA_{i,t}$	0.537***	0.383***	0.162***	0.564***	0.074*	0.717***	1	0.4453***	-0.8497***	-0.6031***	-0.5790***	0.2991***	0.0729	0.1082**
$Dealsize_{i,t}$	0.467***	0.860***	0.758***	0.160***	0.199***	0.416***	0.304***	1	-0.4425***	-0.2889***	-0.4077***	0.1546***	0.0752	0.0897*
$Size_{i,t}$	-0.353***	-0.174***	-0.153***	-0.377***	-0.036	-0.366***	-0.517***	-0.193***	1	0.6315***	0.5368***	-0.3343***	-0.0775	-0.0486
$FOL_{i,t}$	-0.133***	-0.126***	-0.107***	-0.211***	0.004	-0.238***	-0.387***	-0.129***	0.658***	1	0.2355***	-0.3112***	-0.0372	-0.0704
$LEV_{i,t}$	-0.386***	-0.146***	-0.104***	-0.493***	-0.257***	-0.274***	-0.320***	-0.160***	0.542***	0.288***	1	0.0419	-0.0982**	-0.2602***
$VOL_{i,t}$	0.109***	0.065	0.041	0.018	0.047	0.049	0.067	0.081*	-0.152***	-0.153***	0.033	1	-0.0955*	-0.1027**
$GW_discor_{i,t}$	0.058	0.028	0.057	0.038	0.041	0.053	-0.004	0.047	-0.031	0.005	-0.093**	-0.035	1	0.0914*
$GWold_{i,t}$	0.008	0.041	-0.028	-0.020	0.030	-0.062	-0.008	-0.007	-0.014	-0.020	-0.190***	0.067*	0.085**	1

Robustness Tests

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	$MV_{i,t+3m}$	$MV_{i,t+3m}$	$MV_{i,t+3m}$	$SDF_{i,t+1}$	$SDF_{i,t+1}$	$SDF_{i,t+1}$	$SDF_{i,t+1}$
<i>recGW</i> _{<i>i,t</i>}	5.978*** (4.578)	5.369*** (4.475)	5.682*** (4.430)				
<i>recIIA</i> _{<i>i,t</i>}	2.295*** (3.151)	2.449*** (3.438)	2.306*** (3.167)				
<i>BV_adj</i> _{<i>i,t</i>}	2.107*** (6.717)	2.648*** (8.858)	2.169*** (6.771)	0.000*** (14.102)	0.000*** (16.412)	0.000*** (6.414)	0.000*** (15.844)
<i>NI</i> _{<i>i,t</i>}	1.959*** (2.733)	2.049*** (2.869)	2.384*** (2.892)	0.000* (1.915)	0.000 (1.622)	-0.000*** (-3.243)	0.000 (1.453)
<i>GW_discore</i> _{<i>i,t</i>}			-0.029 (-0.164)				
<i>recGW/recIA</i> _{<i>i,t</i>}				0.099*** (4.704)	0.109*** (6.300)	0.086*** (2.869)	0.104*** (5.627)
<i>Dealsize</i> _{<i>i,t</i>}				0.000*** (5.128)	0.000*** (6.436)	0.000*** (4.688)	0.000*** (6.205)
<i>Size</i> _{<i>i,t</i>}				-0.000 (-0.566)	-0.000** (-2.089)	0.000*** (5.326)	-0.000** (-2.268)
<i>FOL</i> _{<i>i,t</i>}				-0.000 (-0.073)	0.000 (0.345)	-0.000*** (-3.061)	0.000 (0.374)
<i>LEV</i> _{<i>i,t</i>}				0.000*** (3.797)	0.000*** (4.982)	-0.000 (-0.554)	0.000*** (4.426)
<i>VOL</i> _{<i>i,t</i>}				0.000 (0.472)		0.000 (0.601)	0.000 (0.451)
<i>BETA</i>					-0.000 (-0.066)		
intercept	-0.688 (-1.374)	-1.065** (-2.227)	-0.432 (-0.772)	-0.000 (-0.051)	0.000 (0.232)	-0.000*** (-4.605)	0.000 (0.652)
Observations	628	557	583	378	378	425	342
R ²	0.731	0.736	0.757	0.763	.z	.z	.z
Adjusted R ²	0.721	0.726	0.747	0.714	.z	.z	.z
Industry Fixed Effects	YES	YES	YES	YES	YES	YES	YES
Year Fixed Effects	YES	YES	YES	YES	YES	YES	YES