



## **Goodwill and Net-worth Covenants and SFAS 141 and 142**

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**Abstract:** This paper studies the association between goodwill and net-worth covenants after the adoption of Statements of Financial Accounting Standards No. 141 and 142 (SFAS 141 and 142). Building on Frankel, Seethamraju, and Zack (2008)'s finding that the use of net-worth covenants that include goodwill in the net-worth calculation moderately declined after SFAS 141 and 142, this paper extends their sample period to a longer time-series to mitigate the concerns of compounding events in around year 2000 and also investigate the differential effect of SFAS 141 and 142 on firms with different levels of goodwill. The results show the standards do not have a negative impact on the use of net-worth covenants, suggesting that the standards do not reduce the usefulness of goodwill for debt-contracting purpose. The findings of this study should be informative to the U.S. and international accounting standard-setters that are working together on revising goodwill accounting.

**Key words:** Goodwill, SFAS 141 and 142, net-worth covenants, FASB, IASB

**JEL Classification:** M41, M48, G19

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## 1. Introduction

Goodwill is a significant asset on U.S. corporate balance sheets. It on average accounts for 14% to 15% of firm total assets for over half of public corporations from 2003 to 2013 and presents at least two-thirds of total intangible assets (Wen and Burger, 2015). Goodwill represents the ability to earn abnormal returns on invested economic resources. This definition is intuitive but yet difficult to recognize and measure in accounting.<sup>1</sup> In 2001, the Financial Accounting Standards Board simultaneously issued the Statement of Financial Accounting Standards No.141 and 142 (SFAS 141 and 142). SFAS 141 eliminates the pooling method and goodwill amortization and SFAS 142 requires annual impairment testing. SFAS 141 and 142 gives more discretion to managers via impairment testing compared to the amortization requirement before the standards, which significantly changes goodwill accounting.

Frankel et al. (2008) include the first two years following the adoption of SFAS 141 and 142 to their sample to examine the effect of the standards on the use of net-worth covenants that include goodwill in net-worth calculation (TOTNW). They find some evidence of a reduction in TOTNW after the standards. Their test assumes that SFAS 141 and 142 have the same effect on firms with different levels of goodwill, which is inconsistent with the evidence that firms with larger goodwill are more likely to use TOTNW (Beatty, Weber, and Yu 2008; Seethamraju, and Zack 2008). In addition, the early period following the adoption of SFAS 141 and 142 in 2001 and 2002 is compounded by: (1) firms take advantage of the adoption of SFAS 141 and 142 to report goodwill impairments as related to a change in accounting principle while they have to report impairments loss as part of operating income if not during the adoption period (A. Beatty and Weber, 2006); (2) the economic downturn due to the “dot.com bubble” in the post 2000 period. This study is to further examine the impact of SFAS 141 and 142 on the use of TOTNW by accounting for the impact of SFAS 141 and 142 on firms with different levels of goodwill and extending the sample period to 2007.

Using the loan contract information from the Dealscan database and financial data from Compustat, this paper extends the sample period in Frankel, Seethamraju, and Zack (2008) from 2003 to 2007. This study address the potential differential effect of SFAS 141 and 142 on firms with different magnitudes of goodwill by adding an interaction term between the magnitude of goodwill and a dummy variable presenting the period following SFAS 141 and 142. This study finds that there is no change in the positive association between the magnitude of goodwill and the use of TOTNW in post-SFAS 141 and 142, which is different from Frankel et al (2008) and suggests the standards do not have a negative impact on the use of TOTNW. This finding indicates that SFAS 141 and 142 does not reduce the usefulness of goodwill for debt-contracting purpose, which should be informative to the U.S. and

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<sup>1</sup> Currently goodwill in accounting is defined as the excess payment beyond the identifiable net assets for a business acquisition.

international accounting standard-setters that are working together on revising goodwill accounting.

The remainder of the paper proceeds as follows: the next section develops hypotheses and describes the empirical model, and the last two sections present the sample and results and draw a conclusion, respectively.

## **2. Hypotheses Development and Empirical Model**

### **2.1 Hypotheses Development**

Frankel, Seethamraju, and Zach (2008) and Beatty, Weber, and Yu (2008) find that when goodwill comprises a large portion of total assets, TOTNW that includes goodwill and other intangibles in the calculation of net worth is more likely to be used than the tangible net-worth covenant that excludes intangibles from the calculation of net worth. This finding shows that the magnitude of goodwill is associated with its use in debt covenants, suggesting that debt-contracting parties are more likely to take goodwill into consideration in contract design when it has a significant presence.

The FASB in 2001 revised goodwill accounting significantly after issuing the Statement of Accounting Standards No. 141 (FASB, 2001a) and SFAS No. 142 (FASB, 2001b). The major revisions are the elimination the “Pooling of Interests” (pooling) method as an alternative for recording the original business combination and replacement of amortization with annual impairment. Within these two changes, the impairment requirement is still subject to continuing debate, because impairment tests rely on managerial projections, which are highly discretionary and cause concerns about manipulation of impairments (e.g. Ramnana and Watts 2012).

Extant research has provided evidence suggesting impairment manipulation by managers. Chambers (2010) finds that firms avoid or reduce goodwill impairments when impairments will result in a reported net loss or a reduction in earnings relative to four quarters prior, suggesting a managerial opportunistic behavior. In addition to earnings concerns, Muller, Neamtii and Riedl (2010) find that insiders sold shares before goodwill impairment disclosure, indicating that managers take advantage of their private information regarding goodwill. Ramanna and Watts (2012) find evidence supporting that impairment recognition is associated with CEO compensation, CEO reputation, and debt covenant violation concerns, suggesting managers behave opportunistically in their impairment decision.

On the other hand, goodwill is informative to investors. Two independent studies, Chen, Kohlbeck and Warfield (2008) and Li, Shroff and Venkataraman (2011), investigate market

reaction to goodwill impairments at the early adoption period of SFAS No. 142. They find that the stock market partially incorporates impairment with the stock market's anticipation of impairments. Consistent with their findings, Bens et al. (2011) also find a significant negative stock market reaction to unexpected goodwill write-offs. In addition to stock market investors, the literature examines the relation between goodwill impairments and other performance metrics, including future cash flows, analysts, disclosures, and find evidence supporting that goodwill impairments are informative about the economic future of the firm (Gu and Lev, 2011; Jarva, 2009; Li, Shroff, Venkataraman, et al, 2011).<sup>2</sup> Therefore, there is evidence that suggests impairments are informative to investors.

Depending on whether impairments are subject to managerial manipulation or being used to convey information about the firm, there are very different implications for the use of goodwill in net-worth covenants. Net-worth covenants are frequently used in debt contracts and require borrowers to main a minimum level of net worth (Dichev and Skinner, 2002). There are two types of net-worth covenants: one includes goodwill and other intangible assets in the net-worth calculation – total-asset net-worth (TOTNW) and the other excludes tangible-asset net-worth (TANNW). Under TOTNW, amortization and impairments of goodwill will lead borrowers closer to the minimum net-worth threshold and as a result closer to covenant violation, while under TANNW, it will not. Therefore, impairments that reflect borrowing companies' condition will increase the likelihood that lenders intervene with their borrowers, which helps protect their benefits.

If impairments required by SFAS 141 and 142, that eliminates amortization, are manipulated by a borrowing firm manager, TOTNW are less likely to be used in debt contracts. This effect would be magnified for borrowers whose goodwill presents a significant asset; therefore, the positive association would decrease between TOTNW and the magnitude of goodwill following SFAS 141 and 142. However, if impairments required by the standards communicate managers' information about the company, TOTNW are more likely to be used in debt contracts, which would have a more significant effect on borrowers with significant goodwill. This suggests a positive association increases between TOTNW and the magnitude of goodwill after SFAS 141 and 142. Therefore, it is an empirical question of the effect of the standards on the positive association between TOTNW and the magnitude of goodwill, which leads to my hypothesis in the null form.

***Hypothesis 1:*** There is no change in the association between the magnitude of goodwill and the probability of including TOTNW in a debt contract after SFAS 141 and 142.

### **3. Empirical Model**

The empirical model is as follows:

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<sup>2</sup> See Boennen and Glaum (2014) and Wen and Morehle (2015) for a detailed review on literature of goodwill.

$$\begin{aligned}
\text{Prob} (NWS_{COV}=m) = & \gamma_0 + \gamma_1 GW * SFAS141 \& 142 + \gamma_2 SFAS141 \& 142 + \gamma_3 DebtTan + \\
& \gamma_4 IndLend + \gamma_5 RelaLend + \gamma_6 GW + \gamma_7 OthIntan + \gamma_8 ZeroIntan + \gamma_9 DebtTan * ZeroIntan + \\
& \gamma_{10} RatingExist + \gamma_{11} RatingInv + \gamma_{12} ACQ + \gamma_{13} Size + \gamma_{14} BTM + \gamma_{15} LEV + \gamma_{16} ROA + \gamma_{17} LOSS + \\
& \gamma_{18} Maturity + \gamma_{19} SyndicateSize + \gamma_{20} LoanSize + \gamma_{21} Yield + \gamma_{22} FIN_{cov} + \gamma_{23} GEN_{cov} + \gamma_{24} Revolver.
\end{aligned}$$

The dependent variable ( $NWS_{COV}$ ) indicates the type of net-worth covenant included in a debt contract. It equals to three if a contract includes TOTNW, two if it includes TANNW, and one if it includes NNW.

The primary variables of interest are  $GW * SFAS141 \& 142$ .  $GW$  is goodwill balance scaled by total assets.  $SFAS141 \& 142$  is a dummy variable equal to one when a deal is activated in year 2001 to 2007.  $GW * SFAS141 \& 142$  is an interaction term between  $GW$  and  $SFAS141 \& 142$ . The signs of the coefficients on  $GW * SFAS141 \& 142$  (i.e.  $\gamma_1$ ) test my hypothesis. The coefficient of  $\gamma_1$  tells the effect of SFAS14 and 142 on the association between goodwill and the use of total-asset net-worth covenants (TOTNW). If the costs exceed (below or equal) the benefits of SFAS 141 and 142 on the contracting parties' view of using TOTNW, the coefficient of  $\gamma_1$  would be negative (positive or no different from zero).

The remaining variables in the regression model are control factors that are shown to associate with the types of net-worth covenants from prior literature. Wen (2015) finds that TOTNW is positively associated with debt-to-tangible-assets ratio ( $DebtTan$ ), the number of participant lenders that have experience lending to the borrowing firm's industry over the five years preceding the loan issue date ( $IndLend$ ), the average time that the lead lender has been the lead arranger for the borrowing firm ( $RelaLend$ ).  $DebtTan$  captures the reliance on intangible assets to repay debt.  $IndLend$  captures the extent to which the lenders have industry expertise and  $RelaLend$  captures lenders' access to private information. Frankel et al. (2008) find that the magnitude of goodwill ( $GW$ ) and other intangible assets ( $OthIntan$ ) are positively associated with the use of TOTNW.  $ZeroIntan$  is an indicator variable equal to one when borrowers' intangible assets is zero and an interaction term ( $DebtTan * ZeroIntan$ ) following Wen (2015). Beatty et al. (2008) show that firms with TOTNW have higher credit ratings than those with TANNW. Following Frankel et al. (2008), variables for the existence of firm credit ratings ( $RatingExist$ ) and credit rating above investment grade ( $RatingInv$ ) are included. In addition, prior research suggests less information asymmetry for bigger firms because these firms, on average, have better information environments (e.g., higher analyst following) so it thus might be easier for bigger firms to borrow based on their goodwill and I control for firm size ( $Size$ ). Finally, the book-to-market ratio ( $BTM$ ), leverage ( $LEV$ ), the return-on-assets ratio ( $ROA$ ), and the indication of negative net income ( $LOSS$ ) are included following Frankel et al. (2008).

Finally, a number of contract characteristics are included since the choice of net worth covenants is chosen simultaneously with all other contract terms: the maturity of the loan (*Maturity*), the syndicate size (*SyndicateSize*), the amount of the loan (*LoanSize*), the loan yield (*Yield*), and use of financial ( $FIN_{cov}$ ) and nonfinancial covenants ( $GEN_{cov}$ ). Appendix A provides detailed variable definitions.

## 4. Sample and Results

### 4.1 Sample

The sample selection procedure follows Wen (2015). The sample is drawn from the Dealscan database from Loan Pricing Corporation and includes U.S. debt contracts initiated between 1992 and 2007, which includes 66,454 loan facilities with nonmissing loan amounts, loan maturity, and loan yield information.<sup>3</sup> Dealscan collect loan information from SEC filings, loan syndicators as well as other internal sources, among which SEC filings account for around 60% based on Chava and Roberts (2008). Carey and Hrycray (1999) estimate Dealscan data to present about 50% to 75% of the outstanding commercial and industrial loans in the U.S.

Facilities are limited to those that can be matched with Compustat annual data, which reduces my sample size to 45,170 facilities.<sup>4</sup> Annual accounting data are gathered before the initiation date of loan packages to make sure that the data are available to contracting parties at the time of contract formation. The final sample includes observations with all the necessary variables available for subsequent tests. These steps lead to a final sample of 30,468 loan facilities for 7,684 borrowers.<sup>5</sup> The sample selection procedure is outlined in Table 1. Within this sample, 3,828 facilities have TOTNW, and 3,684 facilities have TANNW, consistent with prior research (e.g. Frankel et al. 2008).

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#### Table 1 Sample Selection

Sample Period: 1992–2007<sup>a</sup>

##### Dealscan Data

Numbers of facilities from Dealscan 62,930

##### Merge Dealscan with Compustat

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<sup>3</sup> My sample period ends in 2007, before the financial crisis hit at the end of that year. This avoids confounding effects from financing activities during the crisis and subsequent recession.

<sup>4</sup> The sample loss resembles that reported by Bradley and Roberts (2004). Dealscan includes debt contracts for private firms, which contributes to the sample loss when merging with Compustat.

<sup>5</sup> I collapse package-level information into facility level, following the prior literature (e.g., Frankel et al. 2008).

Number of facilities from Dealscan merged with Compustat to have variables used in tests	30,468
Number of borrowers	7,684

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<sup>a</sup> All deals in the sample have activation dates between 1992 and 2007.

## 4.2 Results

Table 2 reports summary descriptive statistics for the sample. The unlogged amounts for the five logged variables (Size, Yield, Maturity, FINcov and GENcov) are reported for ease of interpretation. Table 2 presents the statistics for firm characteristics. The sample firms on average have goodwill (GW) as 0.09 of their total assets. About half of the firms have credit ratings (RatingExist and RatingInv), and, among the firm characteristics, market size (Size) has the highest variation. Statistics related to lender and loan characteristics also have quite high variations (e.g., RelaLend, SyndicateSize, Yield, LoanSize, Maturity, FINCOV, and GENcov). Overall, Table 2 shows that my sample varies widely in firm, lender, and loan characteristics.

Table 3 reports the results of a multinomial logistic regression that examines the determinants of including TOTNW in debt contracts. As mentioned above, the multinomial logistic regression to include loans without net-worth covenants (NNW) is employed. This is to address a potential sample selection issue that can arise if loans without NNW are excluded. The dependent variable ( $NWS_{COV}$ ) is set to be three for the TOTNW group, two for the TANNW group (the base group) and one for the NNW group. The assignment of the values to groups does not affect the inference from multinomial regression. Table 3 presents the results for the comparison between the TOTNW group and the TANNW group, which is directly relevant to my hypothesis.

The insignificant coefficient on  $GW*SFAS141\&142$  provides support for Hypothesis 1 that SFAS 141 and 142 has no impact on the positive association between the magnitude of goodwill and the inclusion of TOTNW. This result suggests that debt contracting parties does not find the costs imposed by SFAS 141 and 142 significantly outweigh the benefits. My finding suggests that when account for the differential effect of SFAS 141 and 142 and extend the sample period to mitigate potential confounding period, there is no significant effect of the standards on the use of TOTNW. This provides additional insight to Frankel et al (2008). The results indicate that the impairment approach by SFAS 141 and 142 does not increase the contracting costs on goodwill when goodwill is significant assets, which should be of interest to the Financial Accounting Standards Board and the International Accounting Standards Board's joint project on goodwill impairment. Coefficients on control variables are

generally consistent with findings from prior literature.

<b>Table 2 Sample Descriptive Statistics</b>					
(N=30,468)	Std. Dev.	25th	Mean	Median	75th
<i>Firm Characteristics</i>					
<i>GW</i>	0.14	0.00	0.09	0.01	0.14
<i>OthIntan</i>	0.08	0.00	0.02	0.00	0.00
<i>ZeroIntan</i>	0.44	0.00	0.73	1.00	1.00
<i>RatingExist</i>	0.50	0.00	0.46	0.00	1.00
<i>RatingInv</i>	0.50	0.00	0.45	0.00	1.00
<i>Size</i>	22,536.86	125.54	5,891.67	627.85	2,989.84
<i>BTM</i>	9.34	0.31	0.90	0.50	0.75
<i>LEV</i>	38.81	0.35	2.96	0.77	1.65
<i>ROA</i>	0.14	0.01	0.02	0.03	0.07
<i>LOSS</i>	0.40	0.00	0.20	0.00	0.00
<i>DebtTan</i>	0.45	0.52	0.75	0.70	0.89
<i>Lender Characteristics</i>					
<i>IndLend</i>	0.38	0.00	0.34	0.25	0.63
<i>RelaLend</i>	1.75	0.00	1.16	0.33	1.90
<i>SyndicateSize</i>	22.88	2.00	15.29	8.00	18.00
<i>Loan Characteristics</i>					
<i>Yield</i>	140.54	75.00	184.44	160.00	255.00
<i>LoanSize</i>	2.17	0.05	0.28	0.13	0.27
<i>Maturity</i>	30.63	23.00	44.54	42.00	60.00
<i>FIN<sub>cov</sub></i>	1.43	0.00	1.28	1.00	2.00
<i>GEN<sub>cov</sub></i>	2.48	0.00	2.00	1.009	3.00
<i>Revolver</i>	0.50	0.00	0.57	1.00	1.00

For variable definitions, see Appendix A.



**Table 3 Determinants of the Inclusion TOTNW**

Multinomial Logistic Regression Results. Dependent variable: TOTNW=3; TANNW=2; NNW=1. Only results for TOTNW versus TANNW are shown below. RRR is relative risk ratio. Industry controls and firm clusters are included.

Variables	Coefficient	RRR	Z	P-value
<i>GW*Post</i>	0.1174	1.1246	0.17	0.869
<i>GW</i>	3.8618**	47.5486	8.23	0.000
<i>Post</i>	-0.1560	0.8556	-1.65	0.100
<i>DebtTan</i>	1.0329**	2.8091	3.57	0.000
<i>IndLend</i>	0.2531**	1.2880	2.79	0.005
<i>RelaLend</i>	-0.0337	0.9669	-1.63	0.103
<i>OthIntan</i>	3.3210**	27.6884	2.95	0.003
<i>ZeroIntan</i>	-0.1642	0.8486	-0.77	0.444
<i>DebtTan*ZeroIntan</i>	0.1471	1.1585	0.49	0.622
<i>RatingExist</i>	0.1791	1.1961	0.18	0.854
<i>RatingInv</i>	-0.2788	0.7567	-0.29	0.774
<i>ACQ</i>	-0.1320	0.8763	-0.79	0.429
<i>Size</i>	0.1327**	1.1420	3.81	0.000
<i>BTM</i>	-0.0434	0.9575	-1.14	0.253
<i>LEV</i>	0.0007	1.0007	0.20	0.843
<i>ROA</i>	0.6176*	1.8544	2.17	0.030
<i>LOSS</i>	-0.0337	0.9669	-0.31	0.757
<i>Maturity</i>	0.0660	1.0682	1.51	0.131
<i>SyndicateSize</i>	0.0123*	1.0123	3.20	0.001
<i>LoanSize</i>	0.3281	1.3883	1.70	0.090
<i>Yield</i>	-0.3237**	0.7235	-2.62	0.009
<i>FIN<sub>cov</sub></i>	-0.5488**	0.5776	-6.05	0.000
<i>GEN<sub>cov</sub></i>	0.6237**	1.8658	8.50	0.000
<i>Revolver</i>	-0.1780**	0.8369	-3.14	0.002
<i>Intercept</i>	-1.6728**	0.1877	-4.61	0.000
N	30,468			
Pesudo-R-Squared	22.80%			

\*\*,\*denote significance at the 0.01 and 0.05. For variable definitions, see Appendix A.

## 5. Conclusion

The Statements of Financial Accounting Standards No. 141 and 142 (SFAS 141 and 142) that make changes to goodwill accounting, which potentially affect how debt contracts use goodwill in debt covenants. Frankel et al. (2008) find some evidence suggesting that following SFAS 141 and 142 there is a decrease in the use of net-worth covenants that include goodwill in the net-worth calculation. Their sample period stops at 2003, which is 2 years after the adoption of SFAS 141 and 142. This period potentially compound their results by the internet bubble recession and option of adopting the standards. This paper extend their sample period and examine the differential effect of SFAS 141 and 142 on firms with different levels of goodwill. This study find that the standards do not have a negative impact on the use of net-worth covenants, which indicates that the standards do not reduce the usefulness of goodwill for debt-contracting purpose, which should be informative to the U.S. and international accounting standard-setters that are working together on revising goodwill accounting.

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## Appendix A

## Variable Definitions

Variable Names	Variable Definitions
$NWS_{COV}$	Equal to 3 for total-asset net-worth covenant, 2 for tangible net-worth covenant and 1 for no net-worth covenant.
$IndLend$	The number of participant lenders who have lent to the same industry as the current borrower in the preceding five years, scaled by the total number of participant lenders.
$RelaLend$	The average of the time length (i.e., in years) that lead lenders have been the lead arranger for the current borrower. I identify the lead arrangers following Bharath et al. 2007. A bank is not described as “participant” is treated as a lead bank.
$DebtTan$	The ratio of total liability divided by tangible assets.
$GW$	The amount of goodwill scaled by total assets.
$Post$	A dummy variable equals to one if the year of deal activation date is 2001 or after, otherwise zero.
$OthIntan$	The amount of other intangible assets scaled by total assets.
$ZeroIntan$	An indicator variable equal to one when the firm has zero intangible assets and zero otherwise.
$Yield$	The log of the markup (in basis points) over LIBOR (i.e., London Interbank Offered Rate).
$LoanSize$	The amount of loan divided by total assets.
$Maturity$	The log of loan maturity (in months).
$FIN_{cov}$	The log of the number of financial covenants. The types of financial covenants include net-worth covenants, max. capital expenditure, max.debt-to-EBITDA, max. DEBT-to-equity, max.debt-to-tangible net worth, max.leverage, max. loan to value, max. senior debt to EBITDA, max.senior leverage, min.cash interest coverage, min. current ratio, min. debt service coverage, min. EBITDA, min.fixed charge coverage, min. interest coverage, min. quick ratio, and other ratio.
$GEN_{cov}$	The log of the number of nonfinancial covenants. The type of General covenants include ExcessCFSweep, AssetSalesSweep, DebtIssuanceSweep, EquityIssuanceSweep, InsuranceProceedsSweep, DividendRestrictions, PercentageofExcessCF, PercentageofNetIncome, CollateralRelease, TermChanges.
$RatingExist$	An indicator variable equal to one if an S&P issuer long-term rating exists for the firm and zero otherwise.
$RatingInv$	An indicator variable equal to one if the S&P issuer long-term rating is investment grade or above and zero otherwise. I set the variable to zero when the rating is missing.
$Size$	The log of equity market value. Equity market value is in millions.

<i>BM</i>	Book value of equity divided by market value of equity.
<i>LEV</i>	Total liabilities divided by market value of equity.
<i>ROA</i>	Net income divided by total assets.
<i>LOSS</i>	An indicator variable equal to one if net income is negative and zero otherwise.
<i>ACQ</i>	The acquisition made in the firm's two-digit SIC code scaled by the total market value of all firms in the same industry group, in the year before the debt contract, following Frankel et al. (2008).