

The Study on the Impact of the Account Age of Goodwill on Enterprise Value

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With the further development of economic globalization, the enterprise reorganization by merger and acquisition has increasingly become the important means of strategic development of many multinational companies. In many merger and acquisition cases happened around the world, the amount of goodwill accounts for the vast majority proportion in mergers and acquisitions. This study takes the Shanghai and Shenzhen two city A-share listed companies from 2009 to 2012 as research samples, the empirical study exams the impact of the goodwill in general and goodwill with the different account-age on the enterprise value. The study found that goodwill has the significant positive correlation with enterprise value in general. The impact of goodwill obtained in current year, one year and two year earlier respective on the share price gradually increased, but the correlation between goodwill with more than three years earlier and share price dropped significantly.

1. Introduction

Goodwill refers to the potential economic value which brings excess profits for business in the future, or the anticipated profitability of a company exceeds normal identifiable assets profitability (such as social average return on investment) the capitalized value. It is formed by the good customers' reputation, excellent enterprise management, and high business operating efficiency, the product technology of monopoly and the natural advantages of geographical position. Goodwill has always been a controversial concept; it firstly appeared in the 11th century, and it didn't draw much attention of the accounting profession until the end of the 19th century. Goodwill may bring enterprises more excess economic benefits than the other enterprise of the same industry in the future, but goodwill value has high uncertainty at the same time, it will change with the change of business environment; and goodwill has no legal validity, it can survive forever, it may also lose the ability of getting excess profits in a short time. For a long time, scholars at home and abroad have conducted the empirical studies on the correlation between goodwill and the enterprise value; and they found that goodwill can increase the enterprise value. But as time goes on, whether goodwill can bring lasting value increase? This study takes listed companies with goodwill of different account-age as the research samples, and it examines the influence of goodwill with the different account-age on corporation value.

2. Literature review and theoretical hypothesis

According to the American Merriam - Webster online Dictionary (M - W online Dictionary), "Goodwill" appeared in the 12th century. It mainly means a general sense of goodwill and satisfaction, and excess profits in business. Yan Gongyu (1999) pointed out that the earliest record of "Goodwill" appeared in the mid and late of 16th century, the British accounting scholar Leake in the paper "Goodwill: It's Nature and How to Value It" pointed out that: English people will have documented such legal language in 1571: "I put the interests and goodwill of my quarry to... John Stevens." in the late 19th century, goodwill began appear in accounting books of enterprise, it used to record the gap between the actual transaction prices and the book value of enterprise in the process of the property transaction, and lists the balance separately as a comprehensive project, that is goodwill in accounting. The existing studies show that purchased goodwill is in accordance with the definition of assets, and it can be recognized as an asset (Richard Gore and Dyan Zimmerman, 2010). The existing researches showed that there are positive correlations between enterprise value and goodwill, and there are

negative correlations between enterprise value and goodwill impairment. But these studies are limited to that goodwill as the overall has relationship with enterprise value. As time goes on, goodwill formed by corporate merger and acquisition during the identified as the assets, can its value relevance continue? If the anticipated future economic interests of the enterprise brought by the goodwill formed by corporate M&A cannot last, namely if the efficiency of corporate M&A is expected to exhaust in a short time, the correlation of goodwill value will decrease with time. According to the above analysis, this paper puts forward the following hypothesis:

Hypothesis 1: goodwill has value relevance. Corporation goodwill and shares price have a positive correlation.

Hypothesis 2: the correlation of goodwill value decrease with the increase account-age.

3. Sample selection and research design

3.1 Sample selection

This study selects a-share listed companies on the Shanghai and Shenzhen stock exchange from 2009 to 2012 as research samples, excluding 41 listed companies in financial and insurance industry, 163 abnormal listed companies(ST, PT companies) and 78 net tangible asset with negative, it finally gets 6752 sample observations data. In order to eliminate the influence of outliers, all continuous variables under the 5% level gets the tail process (winsorize). Samples selection and the relevant data of financial indicators come from huge financial platform. In this paper, the sample distributions are shown in table 1.

Table 1: Sample according to the annual industry distribution

Industry	Year				Samples in total
	2009	2010	2011	2012	
Extractive industries	45	44	48	53	190
Communication and cultural industries	14	15	24	28	81
Electricity, gas and water production and supply industry	62	63	65	66	256
The real estate industry	107	114	115	115	451
The construction industry	28	34	39	47	148
Transportation and warehousing	55	58	65	66	244
Agriculture, forestry, animal husbandry and fishery	24	26	35	39	124
Wholesale and retail trade	97	100	110	119	426
Social services	43	49	58	69	219
Information technology	71	88	133	165	457
manufacturing	775	830	1082	1290	3977
Comprehensive industry	43	43	47	46	179
The total	1364	1464	1821	2103	6752

3.2 Research design

Value relevance studies the relationship between shares price as dependent variable and a set of accounting data. If there is a significant correlation between accounting data and the dependent variable, then it is considered to be "value relevance" (Beaver, 2002). To examine the relationship between corporate value and goodwill, based on the Ohlson (1995) model and the improved model (Barth et al, 2001), adopted the similar ways of Jennings et al. (1996) and Henning et al. used(2000), we decomposed net asset into three parts of intangible assets, goodwill and tangible net assets to test hypothesis 1. According to Chen Xin yuan, Chen Donghua and Zhu Gongjun (2002) study that scale and proportion of circulation shares can significantly explain stock returns, so we add scale and proportion of circulation shares these two control variables in the capital asset pricing model:

$$price_{i,t} = \alpha_0 + \alpha_1 yxjzc_{i,t} + \alpha_2 mgjlr_{i,t} + \alpha_3 mgwxzc_{i,t} + \alpha_4 mgsy_{i,t} + \alpha_5 Size_{i,t} + \alpha_6 Stru_{i,t} + \varepsilon_{i,t} \quad (1)$$

Among them, $price_{i,t}$ is the share price of the last trading day of April, t+1 year in i company, according to the existing literature, we choose the last trading day's closing price of sample companies in April, t + 1 year as the explained variable, this is for from January to April each year is the legal period of listed companies' the

annual report, if markets are efficient, there is a reason to believe that share price has absorbed the company's accounting information at the end of April; $yxjzc$ is the book value of the net tangible assets per share in the balance sheet, tangible net assets = net assets - intangible assets - goodwill; $mgjlr$ is the net profits per share; $mgwxzc$ stands for intangible assets per share; $mgscy$ means goodwill per share.

In order to study the value relevance of goodwill with the different recording time, we further decompose the goodwill ($mgscy$). But our country Accounting Standards for Business Enterprises in 2006 made major adjustment on the measurement method of goodwill, system amortization method cancelled in the subsequent measurement of goodwill, we use the impairment test method instead, and it puts into practice in 2007. As a result, goodwill before 2007 is not comparable with goodwill after 2007. To eliminate the influence of rule changes, we only select the data from 2009 to 2012 to study. During the decomposition of goodwill, with only four years of data, so we divide goodwill into goodwill in the current year ($wgscy_0$), one year earlier and two years earlier ($wgscy_{-1}$ and $wgscy_{-2}$), and the net amount of goodwill at the end of each year exclude the current year ($gwgsy_0$, $gwgsy_{0-1}$, $gwgsy_{0-2}$) to test the value relevance of goodwill as well as difference between goodwill of the current year with those of the previous year. This forms the following three models:

$$price_{i,t} = \alpha_0 + \alpha_1 yxjzc_{i,t} + \alpha_2 mgjlr_{i,t} + \alpha_3 mgwxzc_{i,t} + \alpha_4 wgscy_{0,i,t} + \alpha_5 gwgsy_0 + \alpha_6 Size + \alpha_7 Stru + \varepsilon_{i,t} \quad (2)$$

$$price_{i,t} = \alpha_0 + \alpha_1 yxjzc_{i,t} + \alpha_2 mgjlr_{i,t} + \alpha_3 mgwxzc_{i,t} + \alpha_4 wgscy_{0,i,t} + \alpha_5 gwgsy_{-1,i,t} + \alpha_6 gwgsy_{0-1} + \alpha_7 Size + \alpha_8 Stru + \varepsilon_{i,t} \quad (3)$$

$$price_{i,t} = \alpha_0 + \alpha_1 yxjzc_{i,t} + \alpha_2 mgjlr_{i,t} + \alpha_3 mgwxzc_{i,t} + \alpha_4 wgscy_{0,i,t} + \alpha_5 gwgsy_{-1,i,t} + \alpha_6 gwgsy_{-2,i,t} + \alpha_7 gwgsy_{0-2} + \alpha_8 Size + \alpha_9 Stru + \varepsilon_{i,t} \quad (4)$$

In Model 2, goodwill is divided into goodwill of the current year and goodwill of the previous years. In Model 3, the previous years' goodwill is further divided into goodwill with one year and two years earlier. In model 4, goodwill with two years earlier and even earlier further decomposed into goodwill with two years earlier and three years earlier.

4. The empirical analysis

4.1 Descriptive statistical analysis

Table 2: variables descriptive statistical analysis

variable	2009		2010		2011		2012		The total	
	mean	median	mean	median	mean	media n	mean	median	mean	media n
price	37.43	26.12	53.75	36.43	55.43	38.35	38.35	23.65	46.24	30.77
yxjzc	3.153	2.546	3.454	3.234	4.235	3.345	4.654	4.534	4.856	3.234
mgjlr	0.412	0.523	0.423	0.426	0.523	0.658	0.493	0.234	0.456	0.433
mgwxzc	0.323	0.306	0.434	0.533	0.465	0.465	0.543	0.634	0.454	0.433
mgscy	0.142	0	0.042	0	0.125	0	0.1253	0	0.0123	0
wgscy0	0.012	0	0.0007	0	0.008	0	0.0064	0	0.0034	0
gwgsy0	0.014	0	0.0242	0	0.014	0	0.0124	0	0.023	0
wgscy_1			0.0050	0	0.0005	0	0.0034	0	0.0013	0
gwgsy0_1			0.0098	0	0.0123	0	0.0096	0	0.0034	0
wgscy_2					0.003	0	0.0001	0	0.00024	0
gwgsy0_2					0.007	0	0.0076	0	0.00923	0
size	21.12	21.12	20.06	20.12	21.15	21.12	21.45	21.45	21.06	21.07
stru	0.706	0.664	0.708	0.644	0.655	0.563	0.558	0.678	0.715	0.656

Table 2 shows: (1) the average of net profits per share began to rise from 2009 year by year, the highest is 0.523 yuan in 2010, and a slight drop in 2012, it shows that our country enterprise production and operation have been going out from the shadow of the financial crisis, the profitability is gradually improving; (2) the average of goodwill per share began to rise from 2009 year by year, it suggests that the amount of goodwill is increasing year by year, the importance of goodwill has become increasingly apparent.

4.2 Regression analysis

Table 3: The regression results of goodwill value relevance

VARIABLES	(1) p	(2) p	(3) p	(4) p
yxjzc	-2.129*** (-10.42)	-2.236*** (-10.45)	-2.923*** (-10.13)	-2.708*** (-8.86)
mjlr	53.12*** (34.24)	52.23*** (34.34)	55.23*** (31.23)	54.98*** (27.52)
mgwxzc	-5.231* (-4.230)	-5.723*** (-4.13)	-5.166*** (-3.35)	-5.044*** (-2.93)
mgsy	68.34*** (7.340)			
wgsy0		244.4*** (5.23)	206.5*** (3.23)	197.4*** (3.45)
gwgsy0		94.24*** (6.23)		
wgsy0_1			709.5*** (5.47)	595.4*** (3.57)
gwgsy0_1			114.5*** (4.23)	
wgsy0_2				1,242*** (4.59)
gwgsy0_2				83.03** (2.66)
size	2.123*** (7.320)	2.149*** (7.233)	1.243*** (5.23)	1.223*** (3.57)
stru	34.45*** (22.67)	34.23*** (22.23)	32.28*** (18.83)	34.61*** (17.70)
Constant	-32.67*** (-5.300)	-31.23*** (-5.23)	-19.03** (-2.97)	-16.30** (-2.51)
Observations	6,752	6,752	5,388	3,34
R-squared	0.212	0.252	0.223	0.34

In the regression results of model 1, when goodwill treated as a whole, the regression coefficient is 68.34 and is significant at 1% level, it suggests that goodwill was significantly positive correlated with the share price, namely the better goodwill of the enterprise, the higher the share price of the future enterprise, it verifies hypothesis 1.

In Model 2, 3 and 4, goodwill is decomposed, from Table 3 you can see, goodwill of different time are significantly correlated with the share price. Among them, the regression coefficient of goodwill the current year is 244.4***, the regression coefficient of goodwill one year earlier is 709.5***, the regression coefficient of goodwill with two years earlier of is 1242***, the regression coefficient of goodwill in three years earlier is 83.03**. The highest the regression coefficient of goodwill with two years earlier is, the biggest impact it has on the company's share price, it reveals that when the companies merge, the positive influence of the economic value of the goodwill on the company's profits is not totally showed in the current year, goodwill with booked two years earlier can better reflect the potential profitability of the company in the eyes of investors. The possible reason is that the benefits of mergers and acquisitions (or loss) can be really reflected in the market over a period of time later. But regression coefficient of goodwill with three years or earlier decreases quickly, and it is only 5% significant level, it suggests goodwill value relevance with three years began to decline.

The view that goodwill does not have value relevance and even might not have economic value is in accordance with the opinion that the company merger and acquisition can't bring the improvement of the merged company's performance. This can be confirmed in the literature on corporate merger and acquisition. For example, Sharma and Ho (2002) found that after corporate M&A three years later, and M&A didn't brings the improvement to accounting profit of the enterprise. The correlations studied on the stock market returns and the M&A also found that enterprise's performance has not improved after the merger.

4.3 The robustness test

To test the reliability of the regression results, this paper made the following stability test.

In this paper us exam value relevance of goodwill as the overall sample, but the performance of the enterprise's share price in different years may be affected by special factors. In order to eliminate the influence of different year, we took the sample into regression analysis by year; the results are shown in table 4-5.

Table 4: The regression results of value relevance of goodwill in 2009

VARIABLES	(1) p	(2) p
yxjzc	-1.862*** (0.623)	-1.454*** (0.45)
mgjlr	40.09*** (2.934)	40.17*** (2.645)
mgwxzc	-5.824** (2.856)	-5.947** (2.843)
mgsy	8492*** (22.34)	
wgsy0		334.5** (110.3)
gwgysy0		103.5** (34.87)
size	3.623* (0.523)	3.634*** (0.523)
stru	42.42*** (3.535)	42.57*** (3.623)
Constant	-68.23*** (10.24)	-68.82*** (10.23)
Observations	1,364	1,364
R-squared	0.221	0.272

Table 5: The regression results of value relevance of goodwill in 2010

VARIABLES	(1) p	(2) p	(3) p
yxjzc	-2.84*** (0.775)	-2.671*** (0.703)	-2.694*** (0.703)
mgjlr	62.7*** (3.924)	62.37*** (3.914)	62.43*** (3.911)
mgwxjc	-7.125** (3.312)	-7.492** (3.311)	-7.654** (3.308)
mgsy	113.2*** (26.37)		
wgsy0		1,466*** (489.1)	1,396*** (492.3)
gwgysy0		121.8*** (32.57)	
wgsy_1			477.7*** (177.2)
gwgysy0_1			157.8*** (53.95)
size	2.590*** (0.655)	2.472*** (0.656)	2.476*** (0.654)
stru	30.83*** (3.675)	31.12*** (3.681)	30.89*** (3.682)
Constant	-34.85*** (13.42)	-33.13** (13.34)	-33.36** (13.23)
Observations	1,464	1,464	1,464
R-squared	0.223	0.253	0.225

The above results of regression analysis showed that goodwill is significantly positive correlation with stock price in general, the annual regression results show that the coefficient of goodwill with the current year, one year earlier, two years earlier increase year by year excluding 2011, but the coefficient of goodwill began to decline three years earlier and the significance is also reduced.

5. The research conclusions and policy recommendations

5.1 The research conclusions

1. Goodwill has significant positive correlation with share price in general. It demonstrates that goodwill can bring future economic benefits to enterprises in the eyes of investors.

2. To test whether there is difference among goodwill with different booked time, we divided goodwill into goodwill with the current year, 2 years earlier, three years or earlier. The study results showed that goodwill with the current year and the two years earlier is significantly positive correlated with stock price, but the correlation between goodwill with more than 2 year earlier and share price dropped significantly. That revealed investor respond to goodwill information has certain hysteresis quality.

5.2 Recommendations

Combining with the conclusions of this study, I put forward the following suggestions:

1. Strengthen theoretical research, understand the connotation of goodwill and standardize the initial confirmation of goodwill. In this paper, the research results show that goodwill's contribution to the enterprise value is significantly. Our country Accounting Standards regulates that corporate mergers should be respectively dealt with by equity method or purchase method of accounting treatment according to whether it is under the same control of business merger. Only the corporate merger by purchase method can confirm goodwill. The identification that whether business merger is under the same control directly affect the confirmation and measurement of goodwill as well as profits, it might become a means for enterprise to manipulate profits. This difference not only contains future economic benefits by merging, it also includes estimate deviation of assets and liabilities and the bias error of merging cost by management's excessive ego. The latter is difficult to bring the future economic benefits, but the merger price difference included in the merger price shall be recognized as goodwill, it affects the value relevance of goodwill. So we must strengthen the theoretical research, specify constitutes of the goodwill and eliminate valuation deviation which bring no future economic benefits to enterprise to enhance the value relevance of the goodwill.

2. Improve accounting standards, standardize follow-up measurement of goodwill. The value relevance of goodwill with confirmation of over three years later decrease sharply, it shows that impairment have taken place at this time and must carry out the corresponding impairment test, the impairment must take impairment preparation.

But the judgment of the signs of asset impairment and the recognizance of the asset group did not make specific regulation in accounting standards; there is certain subjectivity in calculating the future cash flow, discount rate and net realizable value when testing goodwill impairment. And from the perspective of earnings management enterprises can be relatively subjectively decide the motivation and the proportion of recalculated the goodwill impairment, the preparation of goodwill impairment is not either recalculated for long-term, or it is totally recalculated in one year. So we must perfect the standard of the assets impairment, improve the goodwill impairment test and standardize the calculation of the assets impairment to avoid abusing of goodwill accounting policy, out of the purpose of earnings management and to ensure the relevance and reliability of accounting information.

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