

Purchase price allocation study

December 2019

Table of Contents

- Introduction 3
- Criteria and methodology 4
- Statistics
 - Allocation based on transaction size 6
 - Allocation across industries 7
 - Allocation across intangibles 8
 - Allocation across industries and intangibles 9
 - Useful life per intangible asset 12
 - Useful life per intangible asset and industry 13
- Disclaimer 14
- About PPAlyser 15

Introduction

- We are proud to present the eight edition of our Purchase Price Allocation study. This study presents statistics on publicly disclosed purchase price allocation studies and economic useful lives for the years 2017 and 2018. The source of this analysis is the PPAAnalyser database. PPAAnalyser is a subscription database which contains financial details of publicly disclosed purchase price allocations, discount rates and impairments. Besides purchase price allocation data, PPAAnalyser also provides data on economic useful lives. For more information, visit www.ppanalyser.com.
- This analysis presents a selection of statistics. These include statistics for each industry, region and type of intangible. In addition you will find statistics on economic useful lives.
- Should you have any questions or comments, please do not hesitate to contact us, info@ppanalyser.com.

Criteria & Methodology

- The source used for this study is the [PPAnalyser](#) database. PPAnalyser includes purchase price allocation data that was identified by searching for purchase price allocations disclosed in annual and quarterly reports.
- For the purpose of this study a selection of PPA's included in the database was made based on the following criteria:
 - Year: 2017 and 2018
 - Financial information disclosed: only PPAs were included that disclosed both the purchase price as well as the allocation of intangibles.
- Intangibles identified in the PPAs and discount rates were assigned to one of the following intangible categories:
 - Marketing related intangible assets
 - Customer related intangible assets
 - Artistic related intangible assets
 - Contract related intangibles
 - Technology related intangibles
 - Research & Development related intangibles
- All amounts were converted to USD using a single exchange rate for 2017 and 2018.
- When analysing the proportion of tangible assets, intangible assets and goodwill compared to total assets, total assets is determined by the purchase price net of liabilities.

Criteria & Methodology

- We classified the PPAs and impairments into the following industry categories:
 - Agriculture, forestry and fishing
 - Construction
 - Finance, insurance and real estate
 - Manufacturing
 - Mining
 - Public administration
 - Retail trade
 - Services
 - Transportation and public utilities
 - Wholesale trade
- We segmented the allocation results across seven size categories (in USD x millions):
 - > 1,000
 - 500 - 1,000
 - 250 - 500
 - 100 - 250
 - 50 - 100
 - 25 - 50
 - < 25
- Consolidated statistics were determined based on percentages of the individual PPAs (i.e. not weighted).
- For categories with less than 10 observations the results are regarded as not significant and are not further analysed.
- For economic useful lives a distinction is made between intangibles with definite and indefinite lifetimes. Both are disclosed and analysed separately.

Statistics

Allocation based on transaction size

- The median purchase price in the year 2018 increased by 31.9% compared to the year 2017, from approximately USD 73.5 million to 97.0 million. The number of transactions decreased in 2018, however it should be noted that transactions that occurred in 2018 are typically not all disclosed in the annual reports of 2018, therefore a reporting delay exists.
- Although an increase in the overall median purchase price can be observed, the purchase price of transactions for most categories decreased. Only the purchase price of transactions between USD 50 million and 100 million and between USD 250 million and 500 million increased with 0.8% and 0.3% respectively. The main reason for the increase in the median purchase price is the lower amount of observations of smaller transactions.
- The majority of the purchase price allocations included in this study are published in US annual reports. For 2018, the proportion of US related PPAs increased from 67.6% to 68.2% while the proportion of European PPAs decreased from 13.4% to 5.8%.

Comparison	Number of transactions			
	2018		2017	
	#	% of total	#	% of total
United States	283	68.2%	448	67.6%
Canada	59	14.2%	68	10.3%
Europe	24	5.8%	89	13.4%
Other	49	11.8%	58	8.7%
Total	415	100.0%	663	100.0%

	Transactions		Median PP (x 1000)		
	2018	2017	2018	2017	% change
PP > 1,000	50	70	2,300,000	2,565,700	-10.4%
500 < PP < 1,000	44	55	665,613	676,656	-1.6%
250 < PP < 500	53	54	354,584	353,663	0.3%
100 < PP < 250	64	116	150,963	158,200	-4.6%
50 < PP < 100	45	77	74,353	73,757	0.8%
25 < PP < 50	61	86	35,102	37,554	-6.5%
PP < 25	104	206	8,337	9,089	-8.3%
Total	421	664	97,000	73,526	31.9%

Statistics

Allocation across industries

- The median purchase price of all transactions increased in 2018 to approximately USD 97.0 million (31.9%).
- Most transactions are observed in the manufacturing sector, with 43% of the total amount of the transactions in 2018. The second largest sector is the services sector with 24% of the total.
- When looking at the median purchase price, the most significant increase can be observed in the construction industry (381.7%) and the most significant decrease in the retail trade industry (-70.0%).

	Number of transactions				Median PP (x 1000)		
	2018	% of total	2017	% of total	2018	2017	% change
All industries	415	100%	663	100%	97,000	73,526	31.9%
Agriculture, forestry and fishing	4	1%			55,351		
Construction	9	2%	15	2%	164,758	34,200	381.7%
Finance, insurance and real estate	33	8%	87	13%	141,347	155,420	-9.1%
Manufacturing	178	43%	243	37%	121,300	87,000	39.4%
Mining	14	3%	21	3%	244,313	59,700	309.2%
Public administration			2	0%		101,328	
Retail trade	19	5%	16	2%	14,461	48,269	-70.0%
Services	99	24%	193	29%	96,496	35,656	170.6%
Transportation and public utilities	42	10%	64	10%	81,265	137,600	-40.9%
Wholesale trade	17	4%	22	3%	32,073	98,577	-67.5%

Statistics

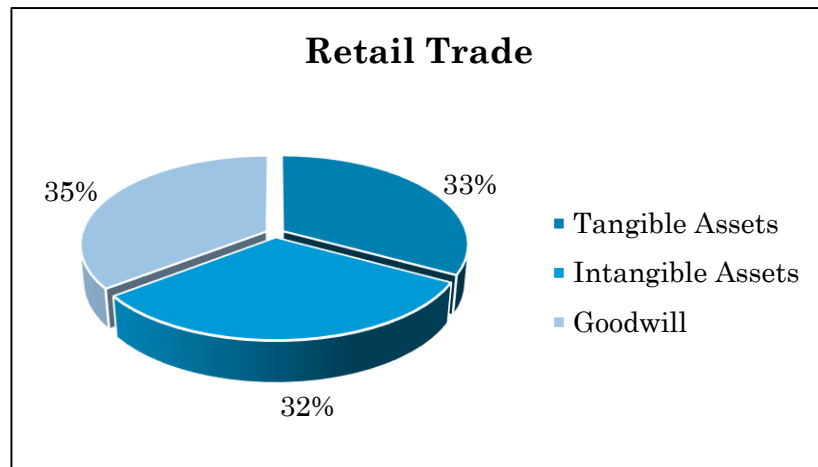
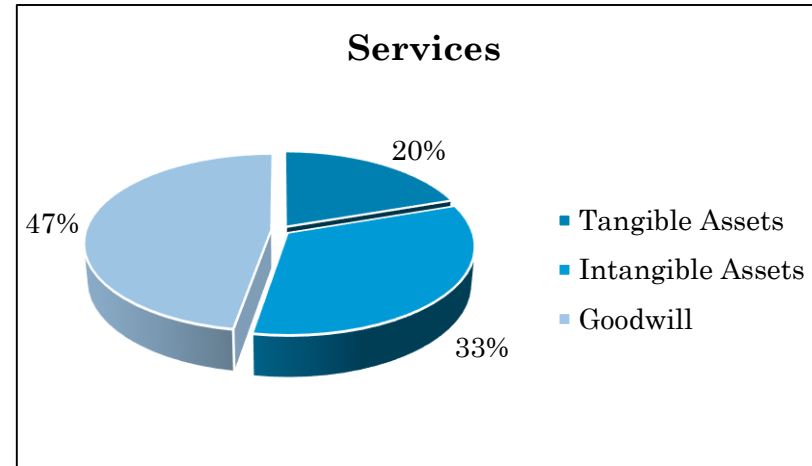
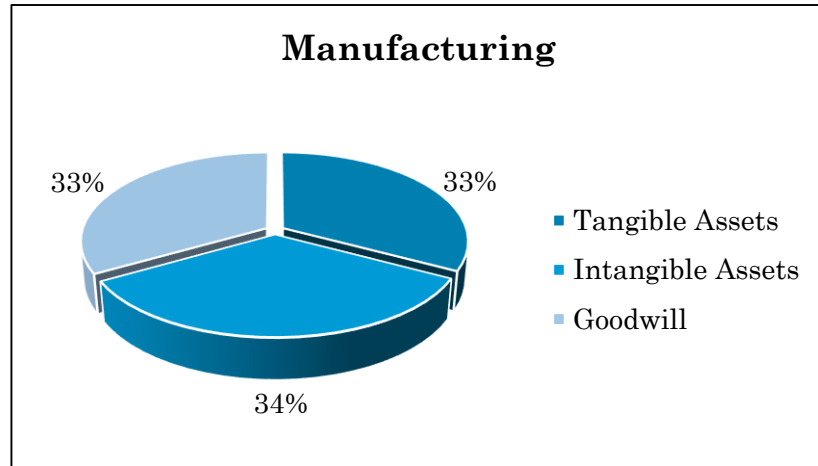
Allocation across intangibles

- Overall, the proportion of intangible assets (incl. goodwill) in relation to total assets increased across all asset class sizes (1.4% on average). The largest increase can be observed for transactions with assets values above 1 billion (10.9%) and the largest decrease can be observed for transactions with asset values between USD 100 million and 250 million (-7.9%).
- The total proportion of intangible assets (excl. goodwill) in relation to total assets increased slightly with 0.8% on average.
- The total proportion of goodwill in relation to total assets increased with 2.1% on average.

	Intangible assets as a % of total assets			Goodwill as a % of total assets			Total intangibles as a % of total assets		
	2018	2017	% change	2018	2017	% change	2018	2017	% change
Total assets > 1,000	22%	24%	-8.9%	38%	30%	26.7%	59%	53%	10.9%
500 < total assets < 1000	29%	25%	16.2%	34%	35%	-3.1%	63%	60%	4.8%
250 < total assets < 500	28%	26%	8.6%	40%	38%	5.2%	68%	64%	6.6%
100 < total assets < 250	29%	33%	-11.4%	38%	40%	-5.0%	67%	72%	-7.9%
50 < total assets < 100	28%	28%	-0.7%	37%	40%	-7.6%	65%	68%	-4.7%
25 < total assets < 50	34%	33%	3.0%	37%	39%	-4.6%	71%	72%	-1.1%
Total assets < 25	32%	33%	-1.5%	38%	36%	3.3%	70%	69%	1.0%
Average			0.8%			2.1%			1.4%

Statistics

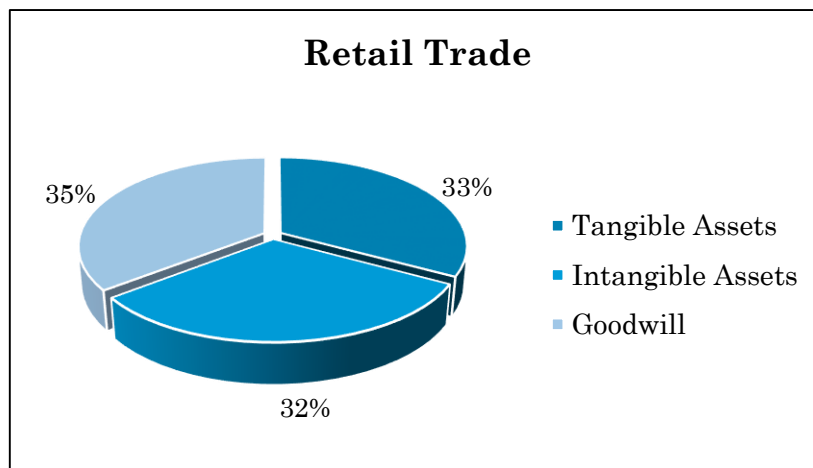
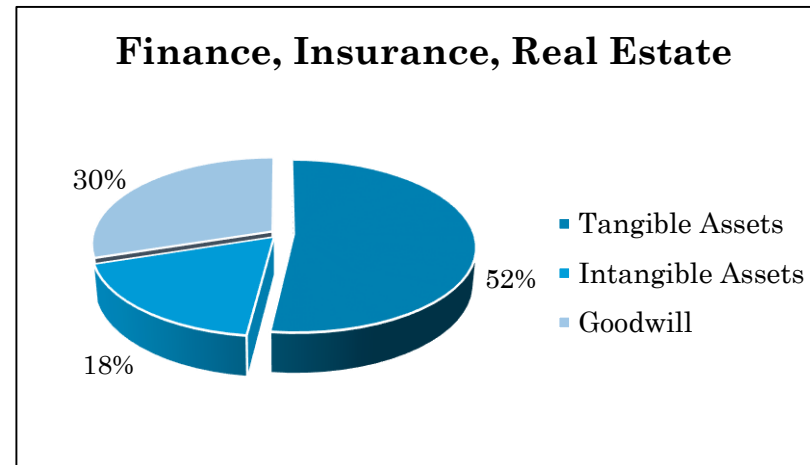
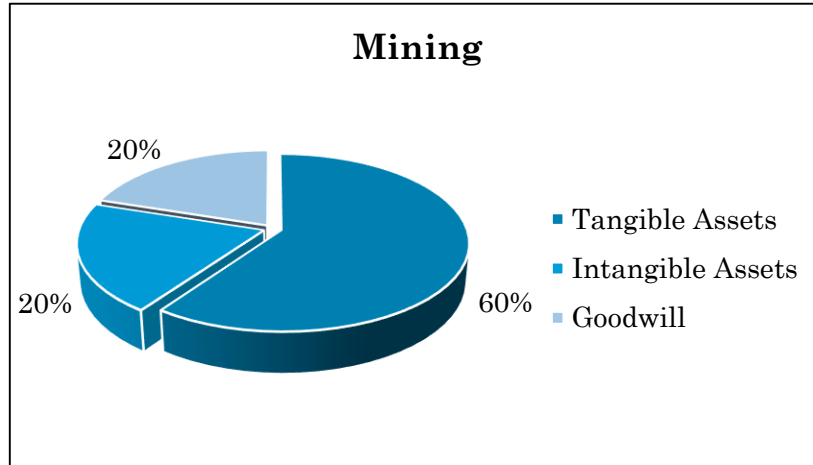
Allocation across intangibles & industries (1/3)



- The industries with the highest proportion of intangible assets compared to total assets are the manufacturing industry (34%), services industry (33%), and the retail trade industry (32%).
- The industries with the highest proportion of goodwill compared to total assets are the services industry (47%), the retail trade industry (35%), and the manufacturing industry (33%).

Statistics

Allocation across intangibles & industries (2/3)



- The industries with the highest proportion of tangible assets compared to total assets are the mining industry (60%), the finance, insurance, real estate industry (52%), and the retail trade industry (33%).

Statistics

Overview allocation across intangibles & industries

- The most frequently identified intangibles are marketing, customer and technology related intangibles. Contract, R&D and artistic related intangibles are observed less frequently.
- The proportion of marketing related intangibles to total assets is highest in the manufacturing industry (9.4%) and retail trade (3.4%).
- The proportion of customer related intangibles to total assets is highest in wholesale trade industry (10.5%) and the transportation and public utilities industry (8.7%).
- The proportion of technology related intangibles to total assets is highest in the manufacturing industry (23.2%) and the transportation and public utilities industry (16.4%) .

2018	Count						Intangible as a % of total assets					
Comparison	Marketing	Customer	Technology	Contract	R&D	Artistic	Marketing	Customer	Technology	Contract	R&D	Artistic
Construction	4	5	-	1	-	-	0.2%	0.8%	-	-0.1%	-	-
Finance, insurance and real estate	5	9	4	5	-	-	0.2%	0.6%	0.5%	2.2%	-	-
Manufacturing	79	87	57	15	20	3	9.4%	6.8%	23.2%	0.9%	10.7%	0.1%
Mining	2	2	2	0	1	0						
Public Administration	-	-	-	-	-	-	-	-	-	-	-	-
Retail trade	6	1	2	2	-	2	3.4%	2.3%	3.3%	0.2%	-	0.6%
Services	52	64	50	16	1	-	2.8%	7.6%	3.9%	2.7%	0.1%	-
Transportation and public utilities	6	21	4	8	-	-	0.0%	8.7%	16.4%	0.7%	-	-
Wholesale trade	1	4	2	-	-	-	0.0%	10.5%	0.0%	-	-	0.0%
Total	155	193	121	47	22	5						

Statistics

Useful life per intangible asset

- The number of PPAs with a disclosed economic useful life increased slightly with 0.9% (from 41.3% in 2017 to 42.4% in 2018).
- In 2018 the highest economic useful life was observed for customer and contract related intangibles, with a median of 10 years.
- When comparing 2018 to 2017, a few changes can be observed. The median economic useful life of marketing related intangibles increased, with 1 year. The median economic useful life of customer, contract and technology related intangibles stayed the same.

	2018		2017	
Comparison	#	%	#	%
Total PPA's	415	100%	663	100%
Total PPA's with disclosed useful life	176	42%	274	41%

Interquartile range (in years)	2018			2017		
Comparison	Lower	Median	Upper	Lower	Median	Upper
Marketing- related	4.5	7.8	11.9	4.0	7.0	10.0
Customer related intangible assets	6.6	10.0	15.0	7.0	10.0	14.5
Artistic related intangible assets	9.6	9.7	9.9	-	-	-
Contract related intangible assets	6.0	10.0	11.8	5.1	9.3	10.0
Technology related intangible assets	5.0	7.0	10.0	5.0	7.0	10.0
R&D related intangible assets	-	Indef.	-	-	Indef.	-

Statistics

Useful life per intangible asset and industry

- The economic useful life attributed to marketing related intangibles is highest in the construction industry (10 years) and lowest in the wholesale trade industry (1 year).
- The economic useful life attributed to customer related intangibles is highest in the Finance, Insurance, Real Estate industry, Manufacturing industry and Wholesale trade industry (10 years) and lowest in the construction industry (5 years).
- The economic useful life attributed to technology related intangibles is highest in the mining industry (10 years) and lowest in the Transportation & Public Utilities industry and the Wholesale Trade industry (5 years).

	Marketing	Customer	Technology	Contract	R&D	Artistic		Marketing	Customer	Technology	Contract	R&D	Artistic
2018	PPA's with disclosed useful life							Median useful life (in years)					
Agriculture, Forestry, Fishing	-	-	-	-	-	-		-	-	-	-	-	-
Construction	2	3	-	1	-	-		10.0	5.0	-	2.0	-	-
Finance, Insurance, Real Estate	4	5	4	2	-	-		6.0	10.0	6.6	10.5	-	-
Manufacturing	43	63	43	7	2	2		7.3	10.0	8.0	11.0	Indef.	9.7
Mining	1	2	1	-	-	-		Indef.	8.0	15.0	-	-	-
Public Administration	-	-	-	-	-	-		-	-	-	-	-	-
Retail Trade	1	-	1	-	-	-		5.0	-	10.0	-	-	-
Services	42	50	99	9	-	-		5.3	8.5	7.0	9.6	-	-
Transportation & Public Utilities	2	10	3	2	-	-		8.5	6.5	5.0	35.5	-	-
Wholesale Trade	1	3	1	-	-	-		1.0	10.0	5.0	-	-	-
Total	96	136	152	21	2	2	Median Tot.	7.8	10.0	7.0	10.0	Indef.	9.7

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