



2014 Purchase Price Allocation Study

December 2015

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Introduction

We are proud to present the second edition of our Purchase Price Allocation Study. In this study you will find statistics on publically disclosed purchase price allocation studies, discount rates and impairments of 2014 and 2013. The source for our analysis is the PPAAnalyser database. PPAAnalyser is a subscription database that includes financial details of publically disclosed purchase price allocations, discount rates and impairments. Besides purchase price allocation data, PPAAnalyser also provides economic useful life data used in PPA analyses. For more information visit www.ppanalyser.com.

In this second edition you will find a selection of statistics. These include statistics per type of industry, type of intangible and per region. In addition you will find statistics on economic useful lives.

Should you have any questions or comments, please don't hesitate to contact us on ppastudy@ppanalyser.com.

Criteria & methodology

- The source we used for this study was the [PPAnalyser](#) database. PPAAnalyser 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 PPAs included in the database was made based on the following criteria:
 - Year: 2013 and 2014.
 - Financial information disclosed: only those 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:
 1. Marketing related intangible assets
 2. Customer related intangible assets
 3. Artistic related intangible assets
 4. Contract related intangible assets
 5. Technology related intangible assets
 6. Research & Development related intangible assets
- All amounts were converted to USD using a single exchange rate for 2013 and a single exchange rate for 2014.
- When analyzing 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, Fishing
 - Construction
 - Finance, Insurance, Real Estate
 - Manufacturing
 - Mining
 - Public Administration
 - Retail Trade
 - Services
 - Transportation & Public Utilities
 - Wholesale Trade
- We segmented the allocation results across seven size categories (in USD x Millions):
 - > 1,000
 - 500 - 1000
 - 250 - 500
 - 100 - 250
 - 50 - 100
 - 25 – 50
 - < 25
- Consolidated statistics were determined based on the percentages of the individual PPA's (i.e. not weighted).
- For categories with less than 10 observations the results are not significant and are not discussed in this analysis.
- For economic useful life a distinction is made between intangibles with definite and indefinite lifetime. Both are disclosed and analysed separately.

Statistics

Allocation based on transaction size

- The median purchase price in the year 2014 increased by 36% compared to the year 2013, from 49.2 million USD to 68.9 million USD. The number of transactions decreased in 2014, however it should be noted that transactions that took place in 2014 are typically not all disclosed in the annual reports of 2014, therefore a reporting delay exists.
- Although an increase in the median purchase price can be observed, the purchase price of transactions above 1 billion stayed roughly the same, between 500 million and 1 billion decreased with -10% and between 100 million and 250 million decreased with -2.6%.

Year	# transactions	Median purchase price (x 1000)
2014	309	68,890
2013	573	49,168
% Change		36%

	Number of transactions		Median purchase price (x1000)		
	2014	2013	2014	2013	% change
PP > 1000	23	53	2,080,804	2,083,969	-0.2%
500 < PP < 1000	19	40	615,900	685,086	-10.1%
250 < PP < 500	38	45	337,700	313,487	7.7%
100 < PP < 250	55	74	151,000	155,000	-2.6%
50 < PP < 100	37	70	68,649	67,833	1.2%
25 < PP < 50	35	73	37,922	36,656	3.5%
PP < 25	102	218	9,451	8,961	5.5%

Statistics

Allocation across industries

Purchase price

- The median purchase price of all transactions increased in 2014 to approximately USD 68.9 million (+36%).
- Most transactions are observed in the manufacturing sector, with 41% of the total amount of transactions in 2014. The second largest sector is the services sector with 18% of the total amount of transactions.
- When looking at the median purchase consideration, the most significant increases can be observed in the Transportation & Public Utilities (+570%) and Wholesale trade (+117%) as a result of large takeovers. The most significant decrease can be observed in the Services industry.

	Number of transactions				Median purchase consideration		
	2014	% of PPA's 2014	2013	% of PPA's 2013	2014	2013	% change
All industries	309	100%	573	100%	66,890	49,168	36%
Agriculture, Forestry, Fishing	2	1%	2	0%	57,620	474,017	-88%
Construction	3	1%	7	1%	270,916	16,217	1571%
Finance, Insurance, Real Estate	42	14%	45	8%	122,000	106,074	15%
Manufacturing	128	41%	249	43%	72,556	67,453	8%
Mining	4	1%	13	2%	41,841	178,545	-77%
Public Administration	2	1%	8	1%	301,840	93,971	221%
Retail Trade	20	6%	16	3%	50,644	35,196	44%
Services	56	18%	131	23%	23,345	34,600	-33%
Transportation & Public Utilities	37	12%	76	13%	189,379	28,253	570%
Wholesale Trade	15	5%	26	5%	60,895	28,026	117%

Statistics

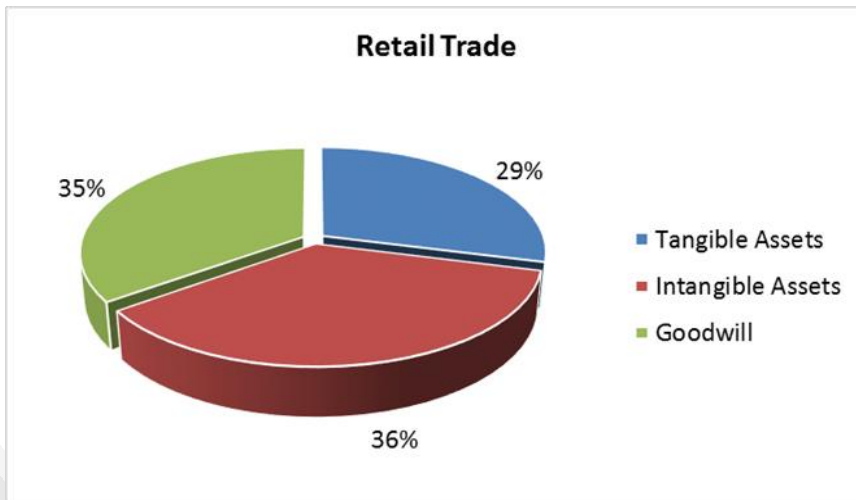
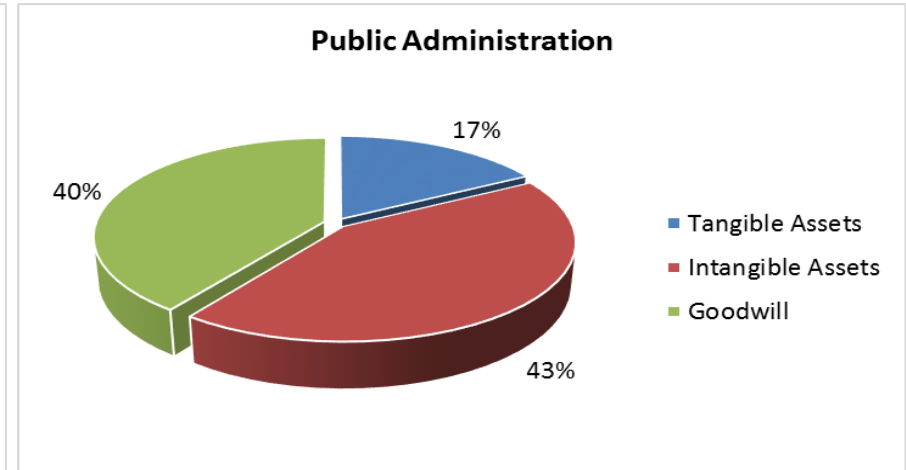
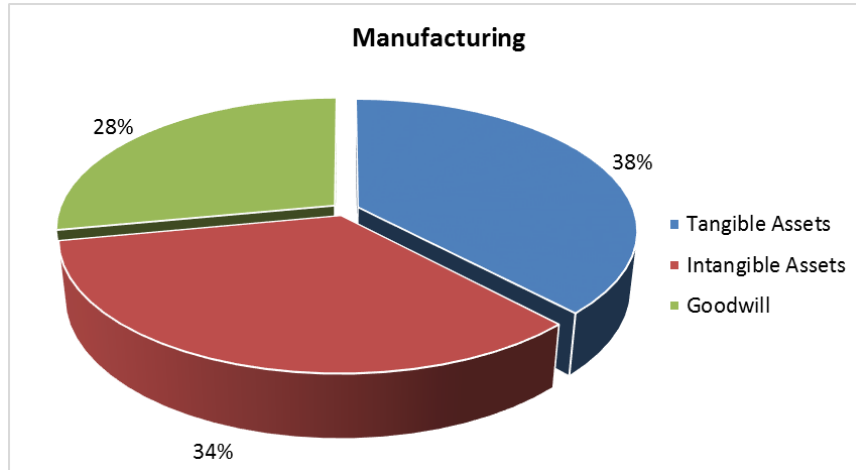
Allocation across intangibles

- Overall, the proportion of intangible assets (incl. goodwill) in relation to total assets decreased across all transaction sizes (-2.9%). An exceptional increase can be observed for transactions values between 25 million USD & 50 million USD (8%).
- The proportion of intangible assets (excl. goodwill) in relation to total assets decreased in 2014 for nearly all transactions (-3.7% on average). The proportion of goodwill in relation to total assets increased with 0.9% on average. These observations suggest a shift from allocation to goodwill to an allocation to intangible assets.

	Int. asset % of total assets			Goodwill as % of total assets			Total Int. as % of total assets		
	2014	2013	%	2014	2013	% change	2014	2013	% change
Total assets > 1000	29%	27%	2.0%	34%	36%	-2.0%	63%	63%	0.0%
500 < Total assets < 1000	26%	32%	-6.0%	29%	32%	-3.0%	55%	64%	-9.0%
250 < Total assets < 500	26%	33%	-7.0%	31%	28%	3.0%	57%	61%	-4.0%
100 < Total assets < 250	30%	33%	-3.0%	32%	29%	3.0%	62%	62%	0.0%
50 < Total assets < 100	25%	35%	-10.0%	31%	31%	0.0%	56%	66%	-10.0%
25 < Total assets < 50	29%	29%	0.0%	40%	32%	8.0%	69%	61%	8.0%
Total assets < 25	35%	37%	-2.0%	33%	36%	-3.0%	68%	73%	-5.0%
Average			-3.7%			0.9%			-2.9%

Statistics

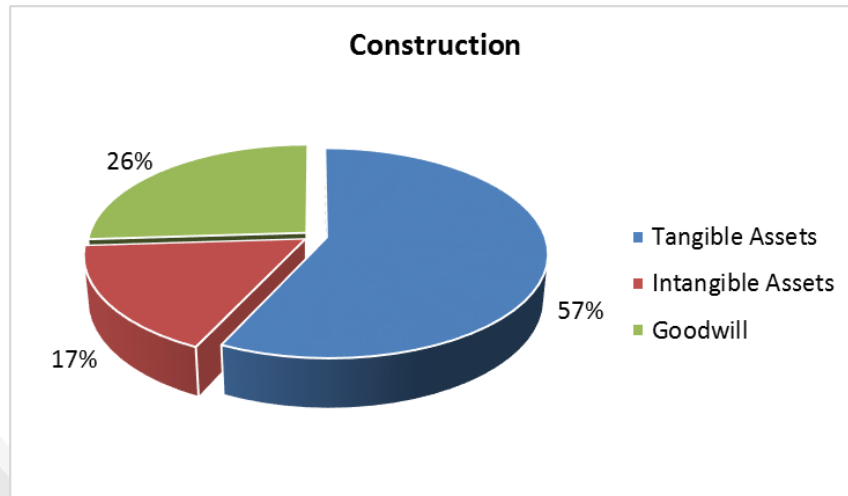
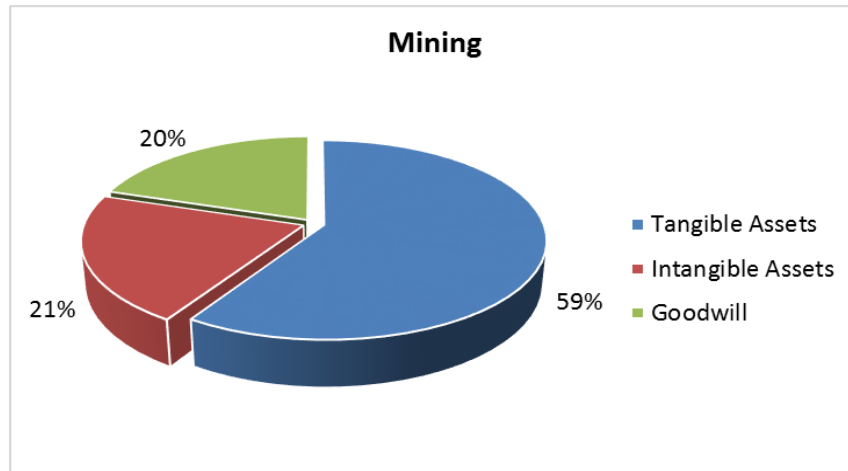
Allocation across intangibles & industries (1/4)



- The next 3 slides discuss the proportion of tangibles, intangibles and goodwill compared to total assets across industries.
- The industries with the highest proportion of intangible assets compared to total assets are Manufacturing, Public Administration and retail trade (as expected).
- For Manufacturing, 1/3 share allocation to intangible assets can be observed
- Public Administration and retail trade both have the highest share of goodwill among all industries.

Statistics

Allocation across intangibles & industries (2/4)

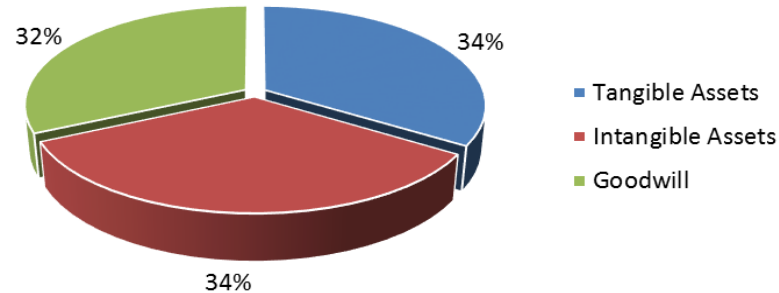


- Mining, Wholesale Trade and Construction have the highest proportion of tangible assets compared to total assets among all industries.
- The highest proportion of tangible assets among total assets is identified in the mining industry (59%).
- Mining and Construction both have the lowest percentage of intangible assets (21% and 17% respectively).

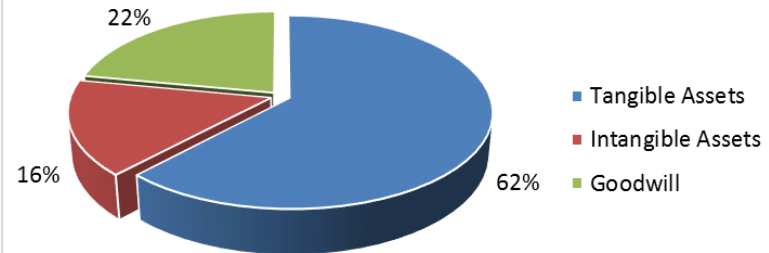
Statistics

Allocation across intangibles & industries (3/4)

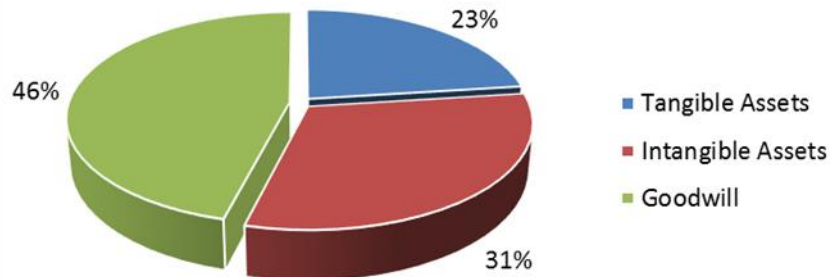
Transportation & Public Utilities



Agriculture, Forestry, Fishing



Services



- The data of Agriculture, Forestry, Fishing, is not representative because of the low amount of purchase price allocation included (4)
- For Transportation & Public Utilities and Services the proportion of intangible assets compared to total assets is between 31% and 34%.
- Transportation & Public Utilities has an almost equal allocation between goodwill, intangible and tangible assets.

Statistics

Allocation across intangibles & industries (4/4)

- The most frequently identified intangibles are: marketing-, customer-, and technology related intangibles. Contract-, R&D-, and artistic related intangibles are observed less frequently⁽¹⁾.
- The proportion of marketing related intangibles is highest in Retail trade and Manufacturing.
- The proportion of contract related intangibles is highest in Retail Trade and Wholesale Trade.
- The proportion of customer related intangibles is highest in the Transportation & Public Utilities industry and Finance, Insurance and Real estate industry
- Manufacturing and services have the highest number of PPA's with R&D related intangibles.

	Count						Intangible as a % of Total Assets					
	Mark	Contr	Cust	Tech	Art	R&D	Mark	Contr	Cust	Tech	Art	R&D
Total	409	109	451	246	-	49						
Agriculture, Forestry, Fishing	2	1	3	2	-	-	2%	4%	4%	16%	-	-
Construction	5	-	4	2	-	-	4%	-	6%	4%	-	-
Finance, Insurance, Real Estate	57	22	44	24	-	3	3%	22%	26%	7%	-	5%
Manufacturing	165	44	203	119	4	40	13%	15%	17%	17%	0%	29%
Mining	2	-	7	0	-	1	4%	13%	22%	-	-	-
Public Administration	10	-	11	-	-	1	5%	-	30%	10%	-	4%
Retail Trade	19	22	9	2	-	-	22%	31%	24%	6%	-	-
Services	112	20	131	86	2	3	6%	14%	22%	16%	7%	28%
Transportation & Public Utilities	37	33	39	11	-	1	7%	30%	28%	12%	-	23%
Wholesale Trade	23	12	14	4	-	-	5%	30%	14%	14%	-	-

⁽¹⁾ For artistic related intangibles, the amount of observations is too low to arrive at representable statistics

Statistics

Allocation across regions

- The majority of the purchase price allocations included in this study are published in US annual reports. For 2014, the proportion of US related PPA's decreased from 79% in 2013 to 76% in 2014.
- The proportion of Canadian PPA's increased from 8% to 10% in 2014 and the proportion of European PPA's showed an increase from 10% in 2013 to 13% in 2014.
- The overall median purchase price increased for all regions with Canada as exception.
- The median purchase price is highest in Europe (USD 101 Million), followed by the US (USD 69 Million) and Canada (USD 23 Million).

Comparison	Number of transactions				Median purchase price	
	2014		2013		2014	2013
	#	% of total	#	% of total	thousands	thousands
United States	234	76%	455	79%	66,890	21,722
Canada	30	10%	45	8%	21,649	44,304
Europe	41	13%	55	10%	101,120	57,524
Other	4	1%	18	3%	213,039	23,100
Total	309	100%	573	100%	66,890	49,168

Statistics

Useful life per intangible asset

- The number of PPA's that disclosed the economic useful life decreased by 13% (from 51% in 2013 to 38% in 2014).
- In 2014, the highest economic useful life was observed for contract-related intangibles (between 5 and 20 years). The lowest economic useful life was observed for marketing-related intangibles (between 3 and 10 years).
- When comparing 2014 to 2013, a few changes can be observed. In 2014, the median economic useful life of Technology related intangibles decreased from 7 to 6.4 years. The median economic useful life of customer related intangibles increased from 9 to 10 years.

# PPA with useful life disclosure	2014		2013	
Comparison	#	%	#	%
Total PPA's	309	100%	573	100%
Total PPA's with disclosed useful life	117	38%	253	51%

Interquartile range (in years)	2014			2013		
Comparison	Lower	Median	Upper	Lower	Median	Upper
Marketing- related	3.0	5.0	10.0	3.0	5.0	10.0
Contract related intangible assets	5.0	10.0	20.0	5.0	10.0	14.0
Customer related intangible assets	7.0	10.0	15.0	5.0	9.0	15.0
Technology related intangible assets	5.0	6.4	10.0	5.0	7.0	10.0
Artistic related intangible assets	5.0	5.0	5.0	2.8	5.0	8.3

Statistics

Useful life per intangible asset and industry

- The economic useful life attributed to marketing related intangibles is highest in the Manufacturing industry (10 years) and lowest in the Services industry (4.5 years).⁽¹⁾
- The economic useful life attributed to customer related intangibles is highest in the Finance, Insurance, Real Estate industry, the Manufacturing industry and the Transportation and Public utility industry (10 years) .⁽²⁾
- The economic useful life attributed to Technology related intangibles is highest in the Manufacturing industry and lowest in the Finance, Insurance, Real Estate and Services industry.
- For some combinations of industries and useful life categories the amount of PPA's was too low to make any useful comments. This mostly concerns Artistic and R&D related intangibles.

	Marketing Contract Customer Technology Artistic R&D							Marketing Contract Customer Technology Artistic R&D						
	Count of PPAs with eco. useful life							Median Economic useful life (years)						
Agriculture, Forestry, Fishing	2	-	3	2	-	-		12.5	-	20	15	-	-	
Construction	3	-	2	-	-	-		7.5	-	20	-	-	-	
Finance, Insurance, Real Estate	38	8	27	20	-	-		5	3	10	5	-	-	
Manufacturing	102	24	154	89	5	7		10	8	10	8.2	5	6.5	
Mining	1	2	3	-	-	-		4	14	20	-	-	-	
Public Administration	4	-	4	3	-	-		2	-	10	5	-	-	
Retail Trade	12	7	8	1	-	-		7.5	20	8.5	10	-	-	
Services	69	12	86	59	1	-		4.5	12	8	5	3	-	
Transportation & Public Utilities	16	8	16	9	-	-		5	11.7	10	10	-	-	
Wholesale Trade	17	11	10	4	-	-		5	10	5	8.75	-	-	
Total	264	72	313	187	6	7	Median Tot.	6.3	11.2	12.2	8.4	4.0	6.5	

⁽¹⁾ For the Agriculture, Forestry and Fishing industry Construction, Mining and the public administration industry, the amount of observations is considered too low to arrive at representable statistics

⁽²⁾ For the Agriculture, Forestry and Fishing industry, the Construction industry, the mining industry and the Retail trade industry, the amount of observations is considered too low

Statistics

Discount rates per intangible asset

- The median discount rate decreased from 13.5% in 2013 to 11% in 2014.
- When looking at the breakdown per type of intangible the majority of the observations are recorded for goodwill. In addition a large number of bundled discount rates were recorded. For contract, customer, technology and R&D related intangibles the amount of discount rates recorded are too low to make any useful comments.
- For marketing related intangibles, the median discount rate for 2014 is 17%, similar to 2013.
- The lowest median discount rate is 11% and is observed under the bundled rate and goodwill in 2014, down by respectively 5% and 1%.

Year	# Count	Median Discount Rate
2014	189	11%
2013	218	13.5%
% Change		-21%

Interquartile range (in years)	Discount rate 2014				Discount rate 2013			
	#	Lower	Median	Upper	#	Lower	Median	Upper
Marketing- related intangible assets	11	14%	17%	24%	11	14%	17%	24%
Contract related intangible assets	7	9%	10%	10%	7	10%	13%	18%
Customer related intangible assets	6	15%	21%	23%	13	15%	19%	24%
Technology related intangible assets	3	10%	11%	16%	9	19%	21%	24%
R&D related intangible assets	3	13%	26%	36%	16	12%	17%	22%
Other non defined intangibles	8	10%	12%	13%	-	-	-	-
Goodwill	95	9%	11%	12%	120	10%	12%	14%
Bundled	60	9%	11%	13%	42	12%	16%	18%

Statistics

Impairments per industry

- In 2014 the median impairment amount decreased from 20 million in 2013 to 14.6 million in 2014 (-27%)
- When looking at the breakdown per industry the largest amount of observations are recorded for Manufacturing, Services and Transportation & Public Utilities. ⁽¹⁾
- From the intangibles with a sufficient amount of observations, the highest median impairment amount can be observed for Transportation & Public Utilities in 2013 and for Manufacturing in 2014.

Year	Impairments Disclosed	Median (x100)
2014	193	14,637
2013	218	20,044
% Change		-27%

	Number of impairments			
	# 2014	Median Impairment (USD)	# 2013	Median Impairment (USD)
Agriculture, Forestry, Fishing	3	44,000	-	-
Construction	1	1,471	2	10,758
Finance, Insurance, Real Estate	16	14,637	9	8,970
Manufacturing	55	16,409	43	28,122
Mining	5	217,188	5	76,738
Public Administration	1	23,400	1	100,000
Retail Trade	10	5,701	6	22,667
Services	20	7,980	15	6,636
Transportation & Public Utilities	12	2,878	18	45,225
Wholesale Trade	6	33,666	3	11,260

⁽¹⁾ For Agriculture, Forestry, Fishing, Construction, Mining, Public administration and Wholesale trade the amount of impairments recorded are the low to make any useful comments.

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