

Methodology

RCReports

Summary of Techniques Used to Estimate Reasonable Compensation

November, 2017

To Whom It May Concern:

- RCReports is cloud software that determines Reasonable Compensation for owners of closely-held businesses.
- RCReports is used by CPAs, EA's, tax advisors, valuers and forensic accountants when they need to determine a Reasonable Compensation figure for a client.
- RCReports provides reports for compliance, normalization or planning.
- RCReports synthesizes a proprietary blend of IRS criteria, court rulings, geographic data and its exclusive database of wages to accurately and objectively determine Reasonable Compensation for owners of closely-held businesses.
- All Reasonable Compensation Reports are designed to provide an independent and unbiased Reasonable Compensation figure that can be relied on in IRS examinations and litigation.
- RCReports has developed a methodology for preparing estimates of Reasonable Compensation for owners of small- and medium-sized closely-held businesses.
- This review and summary provides an overall assessment of the methodology and statistical techniques used to derive the estimates.

Methodology

Introduction:

The question of Reasonable Compensation is a hypothetical one that comes up frequently when discussing tax matters, business valuations and planning. Therefore the question is asked as a hypothetical. “What would it cost my business to replace all the services I currently provide?” In reality, it is highly unlikely a business could find another individual that identically matched all the skills, experience and tasks the business owner provides their company plus the dedication and commitment they give their business.

What is Reasonable Compensation?

RCReports defines Reasonable Compensation as:

- Replacement Cost: What would it cost the business to hire someone else to do all the services the owner provides?
- OR
- Fair Market Value: What is the Fair Market Value (FMV) in the community for all of the services the business owner provides?

The IRS defines Reasonable Compensation as:

- The value that would ordinarily be paid for like services by like enterprises under like circumstances.

Valuation experts define Reasonable Compensation as:

- The hypothetical replacement cost of an owner or key manager of a business.

Reasonable Compensation Approaches: ¹

There are three generally accepted approaches for determining Reasonable Compensation. Each approach should be matched to the facts and circumstances of the owner and the business.

Multiple approaches may be used and reconciled, depending on circumstances, to produce a single Reasonable Compensation figure.

1. Cost Approach (AKA Many Hats Approach): The Cost Approach breaks the duties of the business owner into its components such as: company administration, accounting, finance, marketing, advertising, engineering, purchasing, etc.

¹ Excerpts taken from: Reasonable Compensation ~ Job Aid for IRS Valuation Professionals. Click [HERE](#) for Job Aid

Methodology

The Cost Approach breaks down the time spent by the business owner into the various duties performed and quantifies the amount of time devoted to the different duties. Next, salary surveys are used to determine a comparable wage for each job duty performed by the business owner based on their proficiency, then added up to arrive at the total "cost" to replace the services of the business owner.

The Cost Approach generally works best for small businesses where the business owner provides multiple services for their business (wears many hats).

2. Market Approach (AKA Industry Standard Approach): Compares the business owner's compensation to compensation within the same industry. The market approach focuses as much as possible on the owner's business and the specific position being analyzed (often the CEO or General Manager who also owns the business). The question to be answered is: How much compensation would be paid for this same position, held by a non-owner in an arms-length employment relationship, at a similar company?

The Market Approach generally works best for medium and large businesses where the business owner provides only one duty: management of the business.

3. Income Approach (AKA Independent Investors Test): Seeks to determine whether a hypothetical investor would be satisfied with their return on investment when looking at the financial performance of the business in conjunction with the compensation level of the owner.

The income approach can only be correctly applied when the Fair Market Value (FMV) of the company is available for each year that compensation is examined.

The rationale behind the Independent Investor Test is that investors pay employees to work to increase the value of the assets entrusted to their management. A high rate of return indicates that the assets' value increased and that the employee provided valuable services. Thus, if investors obtain returns above what they should reasonably expect, an employee's salary is presumptively reasonable.

The Income approach generally works best when there is no comparability data available.

Methodology

The RCReports Replacement Cost Approach

An interview process guides the user through a description of duties and activities. A report is then created using the interview data to arrive at a Reasonable Compensation figure for the business owner.

The RCReports Replacement Cost Approach (AKA Cost Approach) takes into consideration all the tasks a business owner provides to their company and the amount of time spent on each task². The Replacement Cost Approach breaks down the owner's time by the various tasks performed. RCReports created eight categories that contain thirty-eight³ tasks a small business owner may perform for their business:

Eight Categories:

1. Maintenance
2. Administrative
3. Marketing
4. Finance
5. Human Resources
6. Information Technology
7. Inventory
8. Management

The business owner then selects any tasks they perform specific to their business from more than 6,200 different titles. The business owner may select as many tasks as needed to account for all the services they perform regularly for their business:

Next, wage levels are assigned to the tasks selected using proficiencies that map to the five standard wage percentiles:

1. Low (10th percentile)
2. Below Average (25th percentile)
3. Average (50th percentile)
4. Above Average (75th percentile)
5. High (90th percentile)

Last, all the tasks and proficiency levels are run through a mathematical model to calculate a hypothetical Replacement Cost for the owner.

² The number of hours worked per week can be set from 1 to 100, except for reports for S Corps where hours per week are capped at 40 – See SEAN MCALARY LTD, INC., Petitioner v. COMMISSIONER OF INTERNAL REVENUE, Respondent 2013

³ The number of tasks may vary depending on the report type.

Methodology

The wage data relied on for the RCReports Replacement Cost Approach is proprietary (See Appendix C). The wage data is local, from the city or county level, and nonspecific as to industry or business size (AKA Cross-Industry wage data).

Logic behind the RCReports Replacement Cost Approach

The Cost approach is generally the best option for determining reasonable compensation for a small business owner. Small business owners typically perform a wide variety of tasks for their business; they “wear many hats”. Therefore it is impractical to rely on a single occupation to incorporate all the tasks a small business owner performs.

Small businesses typically hire from a local pool of candidates. They can neither demand nor afford candidates so specialized or rare that they would need to be pulled from areas outside the small business’s community or from matching industries or business size. Therefore the wage data used is local: from the city, county, township, or metropolitan area where the business is located, and should include business of all sizes and industries.

ILLUSTRATION: When a small business hires a bookkeeper, the candidate pool would be comprised of bookkeepers from the local community and consist of candidates working for a variety of different industries and business size.

Methodology

The RCReports Market Approach

An interview process guides the user through a series of questions that define the subject business and its owner. A report is then created using the interview data to arrive at a Reasonable Compensation figure for the business owner.

The RCReports Market Approach focuses on the owner's business type and the specific position held by the owner: CEO or General Manager. The Market Approach then compares both the business type and the position of the owner to that of its peers to draw a conclusion for what Reasonable Compensation should be. RCReports takes the following input into consideration:

- Time Frame
- Location
- Owner's Responsibilities
- Business's Industry
- Number of Employees
- Gross Revenue
- Businesses Performance
- Owner Experience
- Time Dedicated to the Business

After the input is complete, RCReports uses a mathematical model to calculate a Reasonable Compensation figure for the owner based on what it would cost the business to hire a non-owner in an arms-length employment relationship from a similar company.

The wage data relied on for the RCReports Market Approach is proprietary (See Appendix C). The wage data is industry and size-specific from the national, state and metro area (if available).

Logic behind the RCReports Market Approach

The Market Approach works well when only one occupation, (usually upper-management), is compared to peers in the same industry, with similar company size and geographic area. This approach is favored when working with big-small companies (as in jumbo shrimp), and medium-sized businesses, where the owner is wearing only one hat: that of a general manager or chief executive.

Market Approach results include metro (if available), state and national wage data. The theory: big-small and medium businesses can pull from a larger area and attract candidates from around the state and/or country.

ILLUSTRATION: When a medium sized business hires a CEO, the candidate pool would be comprised of CEOs from the same industry and from the immediate metro area, state or national stage.

Methodology

The RCReports Income Approach

The RCReports Income Approach requires the user to input three key pieces of information based on the owner's business and what a hypothetical investor would require as a return on their investment:

1. Fair Market Value (FMV) of the business at the beginning of the year
2. Increase in FMV by the end of the year - before owner compensation
3. Target return of the independent investor

The Income Approach does not rely on comparability data, but instead draws a conclusion for what Reasonable Compensation should be based on the financial performance of the business in conjunction with the target return of a hypothetical investor.

Logic behind the RCReports Income Approach

Of the three approaches, the Income Approach is the only approach that does not rely on comparability data. The Income Approach generally works best when no comparability data is available or what RCReports terms an Outlier.

An Outlier is an individual who is truly unique because of special skills, duties or spectacular results. When this is the case, then the business owner's Reasonable Compensation will need to be determined by means other than comparability data.

ILLUSTRATION: The business is generating a rate of return significantly higher than its competitors (extraordinary results) due to the leadership and guidance of its CEO. Therefore using comparability data (Market/Cost approach) would not provide a fair benchmark for what this CEO should be paid.

Exceptions:

There are exceptions to every method. When this is the case, RCReports recommends multiple approaches be used and reconciled. RCReports also recommends a valuation or compensation expert conduct the analysis and proffer an opinion.

Methodology

Appendix A: Biography

Assessment prepared by:

Bill Schneider

Principal – IntelliStats Analytic Solutions

VP of Analytics – RCReports, Inc.

Bill Schneider has over 25 years of experience in database and direct marketing industries. He is the founding principal at IntelliStats Analytic Solutions where he oversees the application of a suite of customer intelligence, market segmentation, and predictive modeling solutions to support customer relationship management and loyalty marketing programs. Bill's responsibilities include leading internal teams and external business partners in the development of advanced analytical solutions that utilize transaction level data analysis, predictive modeling, segmentation, and other emerging marketing science techniques. Bill combines a unique blend of analytical ingenuity with creative insight resulting in actionable marketing strategies. He has worked with clients from multiple industries including retail, financial services, sports and recreation, telecommunications, hospitality, and non-profit organizations.

Bill has also previously served in a variety of leadership positions including Vice President of Analytics at Customer Communications Group, Director of Research for the Leisure Trends Group, and Director of Consumer Research and Product Development at National Demographics & Lifestyles (NDL). While with NDL, Bill was instrumental in the development and launch of Cohorts, the first household-based clustering model used for consumer and market segmentation research.

Bill holds a degree in Applied Mathematics and Statistics from the University of Vermont.

Nominated to the 2018 Bureau of Labor Statistics Technical Advisory Committee

Methodology

Appendix B: The RCReports Proprietary Wage Database

Developing the Wage Database

RCReports wage estimates are based on raw wage data gathered from public sources such as:

- The U.S. Department of Labor
- Individual State's Department of Labor
- The U.S. Census Bureau

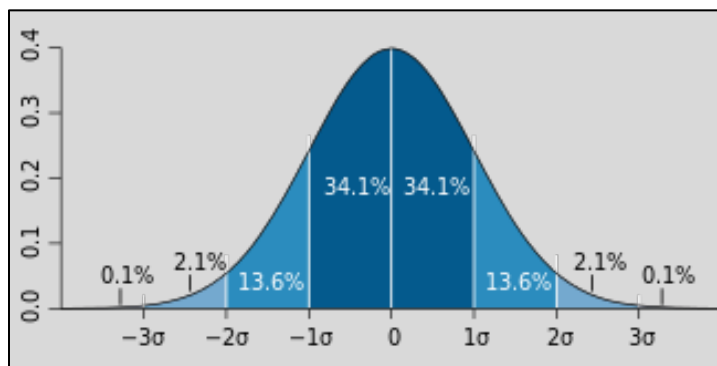
As an example, the U.S. Department of Labor compiles wage data from a survey called the Occupational Employment Statistics (OES) survey. This survey is conducted semiannually with results incorporated into the RCReports Wage Database.

Data from the above sources is thoroughly reviewed by RCReports for accuracy and reliability. Wage estimates are then created using proprietary algorithms. The basis for these algorithms is a series of statistical calculations that are customized to account for specific conditions and variations in the source data. The final algorithms are designed to generate the best unbiased estimate of wages within specific occupations and across a scale of worker proficiency levels.

Standard Error of Wage Estimates

With each wage estimate created by RCReports comes an associated standard error of the estimate. The standard error provides a standardized measure of the reliability or precision of the wage estimate.

For a value (such as a wage estimate) that is sampled with an unbiased, normally distributed error, the below graph depicts the proportion of samples that would fall between 0, 1, 2, and 3 standard deviations above and below the actual value.



The actual sample used to derive a wage estimate would be one of many possible samples of the same size that could have been selected using the same sample design. Sample estimates from a given design

Methodology

are said to be unbiased when an average of the estimates from all possible samples yields the true population value. For a given sample size, the standard error equals the standard deviation divided by the square root of the sample size. The relative standard error equals the standard deviation divided by the estimate (expressed as a percentage).

To illustrate, assume that two wage estimates have been derived based on Sample A (n=250) and Sample B (n=100) and the standard deviation is the same for both samples. Then we can calculate the standard error (this is the standard deviation divided by the square root of the sample size) and the relative standard error (this is the standard error divided by the sample estimate) with results as follows:

Determining Reliability and Precision of Wage Estimates

Sample Statistics	Sample A	Sample B
Sample Size	250	100
Hourly Wage Estimate	\$20.50	\$20.50
Standard Deviation (SD)	4.6	4.6
Standard Error (SE)	0.78	1.23
Relative Standard Error (RSE)	1.42 %	2.24 %

For the RCReports data, the same analysis was conducted to determine the Relative Standard Error for the wage estimates at various levels of geography. The results are summarized here:

Precision of Wage Estimates by Geography

Relative Standard Error (RSE) by Geographic Level of Analysis	Local	State	National
Average	5.4%	4.0%	1.1%
75 th Percentile	6.7%	5.0%	1.4%
Median	4.3%	3.2%	0.8%
25 th Percentile	2.9%	2.0%	0.5%
Interquartile Range	3.8%	3.0%	0.9%

At the local level (based on over 336,000 wage estimates) the average relative standard error is 5.4% with an inter-quartile range of 3.8%⁴. At the state level (based on over 36,000 wage estimates) the average relative standard error is 4.0% with an inter-quartile range of 3.0%.

At the national level (based on over 1,300 wage estimates) the average relative standard error is 1.1% with an inter-quartile range of 0.9%.

⁴ The inter-quartile range is equal to the 75th Percentile minus the 25th Percentile

Methodology

Level of Confidence in Wage Estimates

The sample estimate and its standard error can be used to construct confidence intervals, or ranges of values that include the true population value with known probabilities. For example, consider the following conditions:

- (1) The process of selecting a sample from the population is repeated many times
- (2) Each sample is surveyed under essentially the same unbiased conditions
- (3) An estimate and a suitable estimate of its standard error are made from each sample

Given all the above conditions are true, then approximately 90% of the intervals from 1.6 standard errors below to 1.6 standard errors above the estimate would include the true population value. This interval is called the 90% confidence interval. The larger the sample size from which an estimate is derived, the narrower the range of the confidence interval. In contrast, the smaller the sample size from which an estimate is derived, the wider the range of the confidence interval.

Using the same sample data as illustrated above, a 90% confidence interval would be as follows:

Calculating a Confidence Interval for Wage Estimates

	Sample A	Sample B
Sample Size	250	100
Hourly Wage Estimate	\$20.50	\$20.50
Standard Deviation (SD)	4.6	4.6
Standard Error (SE)	0.78	1.23
Relative Standard Error (RSE)	1.42%	2.24%
90% Confidence Interval	Low High \$20.03 --- \$20.97	Low High \$19.76 --- \$21.24

Confidence intervals provide a secondary means for evaluating the relative precision and accuracy of the RCReports wage estimates. For example, when considering the data from Sample A, the lowest wage estimate is expected to be \$20.03 and the highest wage estimate is expected to be \$20.97 with 90% confidence that the true wage estimate falls between these two values.

5% chance lower than ...	Low -----	90% Confidence	----- High	5% chance higher than ...
< \$20.03	\$20.03	----- \$20.50 -----	\$20.97	> \$20.97

Methodology

Since Sample B has a smaller sample size (n=100) compared to Sample A (n=250), we expect that the lower and upper boundaries of the 90% confidence interval calculated from Sample B will result in a wider range of wage estimates. This is shown to be true and is also reflected in the higher Relative Standard Error for Sample B (2.24%) compared to Sample A (1.42%).

Additional Notes Concerning the Overall Reliability of Wage Estimates

- The reliability of an estimate can be defined in terms of the “repeatability” or “consistency” of the estimate. In other words, an estimate is considered to be reliable if during multiple estimates the same result is derived again and again.
- Mathematically speaking, reliability can be calculated as the correlation between two or more observations of the same measure. This is expressed as a value between 0 (high degree of error) and 1 (low degree of error).
- The Relative Standard Error (RSE) is used as a benchmark for determining overall reliability. The lower the RSE, the more reliable the estimate.

Results for the reliability of RCReports wage estimates based on the RSE at various levels of geography are as follows:

Relative Standard Error (RSE)	Level of Geography		
	Local	State	National
Less than 3%	25%	46%	95%
3% to 3.99%	19%	17%	2%
4% to 4.99%	14%	12%	1%
5% to 5.99%	11%	8%	1%
6% to 7.99%	13%	9%	1%
8% to 9.99%	7%	4%	< 1%
10% or more	11%	5%	< 1%
Total	100%	100%	100%

From the above table:

- Approximately 25% of wage estimates at the local level have an RSE that is less than 3%. In other words, you can expect errors of less than 3% in size for 25% of the local areas that are measured. This compares to 46% and 95% at the state and national level respectively.

Methodology

- It is uncommon for the wage estimates to have error of 10% or more.
- Estimates for larger geographic areas have lower relative error compared to estimates for smaller geographic areas.

By way of example, suppose that you are interested in a wage estimate for different occupations across varying geographic areas, but also would like to see the relative accuracy of the estimate using a confidence interval. Here are three examples:

1 - Bartenders in Canton, OH (this is a local area)

The average wage for Bartenders is \$9.27 per hour with a relative standard error of 4%. A 90% confidence interval would be \$9.27 plus or minus $1.6 * (.04 * \$9.27)$. The result is a range of \$8.68 to \$9.86 with 90% confidence.

2 - Construction Managers in Colorado

The average wage for Construction Managers is \$44.55 per hour with a relative standard error of 2.5%. A 90% confidence interval would be \$44.55 plus or minus $1.6 * (.025 * \$44.55)$. The result is a range of \$42.77 to \$46.33 with 90% confidence.

3 - Loan Officers in the U.S.

The average wage for Loan Officers is \$36.14 per hour with a relative standard error of 0.5%. A 90% confidence interval would be \$36.14 plus or minus $1.6 * (.005 * \$36.14)$. The result is a range of \$35.85 to \$36.43 with 90% confidence.

For more details regarding the precision and reliability of RCReports wage estimates or how to calculate a confidence interval using the wage estimates, please contact us.

Methodology

Appendix C: Relevant Court Cases and IRS Information

Reasonable Compensation Job Aid for IRS Valuation Professionals - Developed by a Team of IRS Valuation Professionals from the Large Business and International Division [PDF Format](#)

IRS Fact Sheet 2008-25 - Wage Compensation for S Corporation Officers [PDF Format](#)

IRS Guidelines for determining Reasonable Compensation for S Corps [PDF Format](#)

IRS Who's an employee? [PDF Format](#)

Summary of Court Factors used to 'Stress Test' Reasonable Compensation Figures: - A synopsis of three popular lists used to stress test Reasonable Compensation figures. [PDF Format](#)

Sean McAlary Ltd, Inc. v. Commissioner of Internal Revenue 2013 – Reference this case for a look at how the courts applied the Cost Approach. [PDF Format](#)

LabelGraphics, Inc. v. Commissioner of Internal Revenue 1998 - Reference this case for a look at how courts applied the Market Approach. [PDF Format](#)

Mulcahy, Pauritsch, Salvador & Co., Ltd. v. Commissioner - Reference this case for a look at how the courts applied the Income Approach.

In addition, the IRS Job Aid on Reasonable Compensation referenced first on this page contains a list of court decisions focusing on methodologies. The list can be found in APPENDIX A: SUGGESTED READINGS ON REASONABLE COMPENSATION