

Issue 34 – Summer 2018

What's inside

- Applying regression analysis to valuation and forensic engagements
- Loss causation
- The Opioid crisis: The important role of CPAs
- Case Law Corner: Suit against Tesla 'controlling' shareholders advances
- Technical Advisory Board

Contact us: We welcome your comments, questions or article ideas. Please send them to fvsconsultingdigest@aicpa.org.

Skilled nursing facility valuations – how to apply industry data



by Maureen M. Rutecki

Introduction

Recently, a majority owner of a skilled nursing facility (SNF) asked us to review an email from one of the minority shareholders of the facility, who was concerned that the operations were being sold for \$20,000 per bed. Attached to the email was a letter from the minority shareholder's attorney, who was

seeking significant documentation about the transaction and other documents that referred to record high prices for senior care facilities' transactions in 2016, including average prices of \$100,000 per bed for SNFs and \$500,000 per unit for senior housing facilities.

continued on page 2

Chair's corner



Tax Valuation Task Force

With the approval of the Tax Cuts and Jobs Act (TCJA) in December 2017, pundits were quick to take a position on how this will affect businesses or individuals; however, the reality

is that there are still a lot of unknowns about the true impact this reform will have. To keep the FVS community current on how TCJA might affect them, the Business Valuation Committee has formed a Tax Valuation Task Force, which Heather Tullar chairs, that is working in conjunction with other committees within the AICPA to provide both accurate and timely information to our members. Additionally, for a concise and informative summary of how the tax reform could affect forensic and valuation professionals, consider reading the blog [Forensic and valuation pros: 4 ways tax reform affects you](#).

ABV Exam soon available any time, any place

The new [Global ABV Exam Content Specification Outline \(CSO\)](#) launches Aug. 1 for candidates pursuing the ABV[®] credential. The Global CSO addresses the growing needs of members and firms that practice business valuation across international borders as it allows candidates to take the exam any time, in any place.

Recognize a talented young pro

Do you, your staff, or colleagues exhibit outstanding work in the forensic accounting or business valuation fields? We are seeking nominations of dedicated and passionate leaders, age 40 and under, who hold the ABV or CFF[®] credential, or both, for the AICPA Standing Ovation program. The [nomination process](#) is simple and closes Aug. 31.

Skilled nursing facility valuations – how to apply industry data (continued from page 1)

Gathering the facts

We first took a closer look at the documents the majority shareholder provided and sought out information on 2016 SNF transactions. We turned to the 2017 Senior Care Acquisition Report (SCAR), which Irving Levin Associates published. According to SCAR, the average price per bed for an SNF in 2016 was \$99,200.¹ SCAR goes on to explain, "Some of these are the newly built facilities, while many others are older properties either with a significant Medicare census or in markets with the potential to increase census."² Later in the document, the authors explain that all transactions in the book are reported based on the sale of both the real estate and the operating business and that EBITDAR (earnings before interest, taxes, depreciation, amortization and rent) is considered to be the same as cash flow.³

In the case of the specific transaction in question, the operations, without the real estate, were sold for \$20,000 per bed, so the average \$99,200-price-per-bed reference, which includes both real estate and operations, was not comparable. SCAR reports data not only on transaction prices (aggregate and price per bed) but also data on number of beds, expense ratios, capitalization (cap) rates, and gross income multiples, among other statistics. Although the typical SNF transaction might have a cap rate in the 11% to 15% range, it is important to understand that these published cap rates are made up of two components: real estate and operations (business).

For example, if we were to separate a transaction with a 13.0% cap rate into real estate and operations, we might reasonably expect that 65% of the value would be attributed to real estate and 35% of the value might be attributed to operations. Using a real estate cap rate of 7.50% and a business cap rate of 23.25%, we arrive at the 13.0% cap rate through a mathematical equation:

	Weight	Cap rate	Weighted average
Real estate	65.0%	7.50%	4.9%
Operations	35.0%	23.25%	8.1%
			13.0%

Based on this analysis, we would expect a transaction of an older facility that equates to a value of \$60,000 per bed for real estate and operations together to equate to a value of \$39,000 for real estate (65% of \$60,000) and \$21,000 for operations (35% of \$60,000).

Regarding the shareholders and their transaction, we further investigated the references to the senior housing prices, although we recognized that the references were not applicable to the specific transaction and the source of the reference was a business broker. A broker profits from selling businesses, making it easy to understand why he selected market information that would attract SNF owners to his website. A deeper dive into the reference showed a transaction for \$234 million, with 678 beds, which was not at all comparable to the 140-bed, single-facility transaction being questioned.

Typically, senior housing includes only assisted living facilities and independent living facilities, although, depending on the source, it may also include SNFs. Although the three types of facilities service seniors, they are distinct types of businesses with different value drivers.

Overview

Valuation analysts often are challenged to find good industry information, including details on transactions. In the case of the senior care industry, there is so much industry and market data that the valuation analyst must decide what information is most relevant to the engagement at hand, that is, what to do, if anything, with this information. Moreover, as the shareholder example demonstrates, the availability of the information results in clients who require assistance in understanding the data.

Analyzing the facility

The published data on senior care facilities may be used for benchmarking purposes to see how one facility compares to another. Facility occupancy and expense ratios are key factors to understand in an SNF valuation. If an average facility has 80% to 85% occupancy and the subject facility being valued has a significantly higher or lower occupancy rate, then the valuation analyst will want to understand the factors affecting those differences. Further, SNFs tend to offer similar services, resulting in expense ratios that fall in a tight range. Consequently, if the subject facility differs significantly from the range, then the valuation analyst will need to investigate the reasons for those differences.

Some owners have multiple facilities and charge management fees to each individual facility for those non-medical functions handled outside the facility. Such

continued on page 3

¹ *The Senior Care Acquisition Report, Twenty-Second Edition, 2017*, Irving Levin Associates Inc. Norwalk, CT, 2017, p. 4.

² *Ibid.*, p. 7.

³ *Ibid.*, p. 23.

Skilled nursing facility valuations – how to apply industry data (continued from page 2)

services might include billing, accounting and other administrative functions. Consequently, management fees of 5% of revenues are common.⁴ The valuation analyst will want to understand the management fees charged and the services provided for those fees. To the extent that fees charged are inconsistent with the services provided, an adjustment is made to the earnings stream in the income approach of the valuation. A common error in SNF valuations is to automatically adjust management fees to 5% of revenues without understanding the services provided for the fees.

In addition, the analysis of an SNF will incorporate the age of the facility and the impact on capital expenditures, relationships with referral sources, location, demographics of the local population, regional and industry outlook, government regulations, Medicare/Medicaid census and expected changes in reimbursement.

Payer mix, specifically the percentages of Medicaid, Medicare and private pay revenues, is analyzed. Medicaid typically is the largest payer source for SNFs, although if a specific facility has a higher than normal Medicare or private pay mix, then the cash flow of the facility, and the overall value, will be positively affected.

Industry trends

Recent industry trends that affect SNF valuations include the following:

- **Aging demographic trends** – Spending on acute care is expected to rise as baby boomers age.
- **Supply and demand dynamics** – The supply of SNFs has been decreasing, in part, due to the increase in required clinical capabilities to care for higher acuity patients.
- **Shift of patients to quality care in cost-effective settings.**
- **Growth of Medicare and Medicaid replacement programs through managed care organizations.**
- **Value-based care delivery and reimbursement reform** – Medicare is implementing value-based care delivery models to focus on patient outcomes and cost containment along the entire health care continuum.
- **Consolidation** – The industry is highly fragmented, which increases the opportunity for large groups and publicly traded companies to purchase local and regional facilities.⁵

Methodology

In an industry with substantial market data, as with any industry, the valuation analyst follows standard valuation methodology. For SNFs, the income approach, using either the capitalization of earnings and cash flows method or the discounted cash flow method, reflects the ongoing earnings expectations of the facility. Discount rates and capitalization rates are developed using either the capital asset pricing model or the build-up method. The valuation analyst will adjust these rates if they are applied to an earnings measurement other than cash flows. For a single facility valuation, we use the build-up method to develop our discount and capitalization rates. As a sanity check, we compare our capitalization rate to the market cap rates published by the industry, making sure to adjust to the appropriate level of earnings (that is, our debt-free cash flows versus the industry EBITDAR).

The transactions method and the guideline public company method are applicable in most SNF valuations and should not be disregarded without thorough consideration. Each SCAR report lists the senior housing and care transactions that were publicly announced in that year. Additionally, 10-K filings of publicly traded companies in the industry include details on acquisitions made during the year. The challenge for the valuation analyst is to determine if specific transactions are truly comparable to the subject interest being valued. For example, New York State is a Certificate of Need (CON) state, and transactions outside of New York, particularly in non-CON states, may not be comparable to a New York SNF. Other considerations include the number of facilities and beds purchased and the age of the facility.

In considering the guideline public company method, the valuation analyst's list may include the following publicly traded companies:

- **AdCare Health Systems Inc.** – Owns and operates 15 skilled nursing facilities, with 1,449 beds, in six states. Also operates one assisted living facility with 80 beds.⁶
- **Diversicare Healthcare Services Inc.** – Provides a broad range of post-acute care services to patients and residents, including skilled nursing, ancillary health care services and assisted living. Additional services include rehabilitative, nutritional, respiratory and other specialized ancillary services. Operations consist of 76 nursing centers and 8,453 licensed skilled nursing beds.⁷

continued on page 4

⁴ *Ibid.*, p. 23.

⁵ Genesis Healthcare Inc., Form 10-K, Dec. 31, 2016, filed with United States Securities and Exchange Commission. p. 4.

⁶ AdCare Health Systems Inc., Form 10-K, Dec. 31, 2016, filed with United States Securities and Exchange Commission.

⁷ Diversicare Healthcare Services Inc., Form 10-K, Dec. 31, 2016, filed with United States Securities and Exchange Commission.

Skilled nursing facility valuations – how to apply industry data (continued from page 3)

- **The Ensign Group Inc.** – Provider of health care services across the post-acute care continuum, including skilled nursing, assisted living, home health, and hospice. Provides services in 210 skilled nursing and assisted living facilities in 13 states. Provides ancillary services in 14 states.⁸
- **Kindred Healthcare Inc.** – Operates a home health, hospice and community care business, transitional care hospitals, in-patient rehabilitative facilities, a contract rehabilitation services business, nursing centers and assisted living facilities across the United States. Organized into four operating divisions. The nursing center division has 91 nursing centers and seven assisted living facilities in 19 states.⁹
- **National HealthCare Corporation** – Operates skilled nursing, assisted living, and independent living and home care programs. Manages 74 skilled nursing facilities with a total of 9,398 licensed beds. 68 of these facilities are leased or owned, and 6 facilities are managed for others. Of the 68 leased or owned facilities, 39 are leased and 29 are owned.¹⁰
- **Genesis HealthCare Inc.** – Operates 499 skilled nursing and assisted/senior living facilities across 34 states, consisting of 473 skilled nursing facilities and 26 stand-alone assisted/senior living facilities. Of the 499 facilities, 393 are leased, 64 are owned, 36 are managed and six are joint ventures.¹¹

After adjusting for size differentials, the valuation analyst may conclude that the publicly traded guideline companies are in disparate businesses and, therefore, not comparable to the subject interest. The valuation analyst will read the 10-K reports of these companies, as the reports will address key issues within the industry.

The primary component in the asset-based approach for an SNF valuation is the real estate appraisal. The real estate appraisal is a topic of considerable discussion in SNF valuations. Specifically, are business valuations needed, or can the facility just use a real estate appraisal? An SNF valuation is like any other real-estate-intensive business, that is, the overall value includes components of both real estate and business values. Consequently, the purpose of the appraisal will dictate which appraisal is appropriate. For example, real estate appraisals typically are required for bank

financing, whereas business valuations are required for estate tax purposes and may incorporate real estate appraisals into the valuations.

The valuation analyst needs to completely read the real estate appraisal and understand the methodology the appraiser used because real estate appraisers may value these properties using an income approach, resulting in a value that is derived in a similar manner to a value indication under the income approach in a valuation engagement. The real estate appraiser may arrive at a normalized net operating income (NOI) and include a replacement reserve. The adjusted NOI is then capitalized to arrive at a market value. The valuation analyst should review the methodology and assumptions and determine if they make sense. We have encountered real estate appraisers who use the same capitalization rate for all SNFs or have not adjusted NOI to account for a facility in a ramp-up phase. The other challenge for the valuation analyst is to determine which assets are included as part of the real estate appraisal and which are not. This review is required to determine if the adjusted net asset value is a potential indicator of value for a facility.

The price-per-bed conundrum

The valuation analyst may use the price-per-bed rule of thumb as a sanity check on other valuation methods, referencing the reasonableness of the implied price-per-bed multiple. However, the conclusion of value will be either a single dollar amount or a range of values, per VS section 100, *Valuation of a Business, Business Ownership Interest, Security, or Intangible Asset*,¹² and not a price-per-bed conclusion. If valuation analysts follow standard valuation methodology and explain the results using industry terminology (for example, price-per-bed), then they comply with valuation standards and communicate valuation results in terms that clients understand.

Conclusion

With the abundance of market information related to SNFs, a bystander might expect that the role of the valuation analyst would be diminished. As illustrated by the majority/minority shareholder example, valuation analysts are needed more than ever to explain to clients the myriad of data and how to use standard valuation methodology.

⁸ The Ensign Group Inc., Form 10-K, Dec. 31, 2016, filed with United States Securities and Exchange Commission.

⁹ Kindred Healthcare Group Inc., Form 10-K, Dec. 31, 2016, filed with United States Securities and Exchange Commission.

¹⁰ National HealthCare Corporation, Form 10-K, Dec. 31, 2016, filed with United States Securities and Exchange Commission.

¹¹ Genesis HealthCare Inc., Form 10-K, Dec. 31, 2016, filed with United States Securities and Exchange Commission.

¹² VS section 100 can be found in AICPA *Professional Standards*.

Applying regression analysis to valuation and forensic engagements



by Dan Werner, Ph.D., CPA

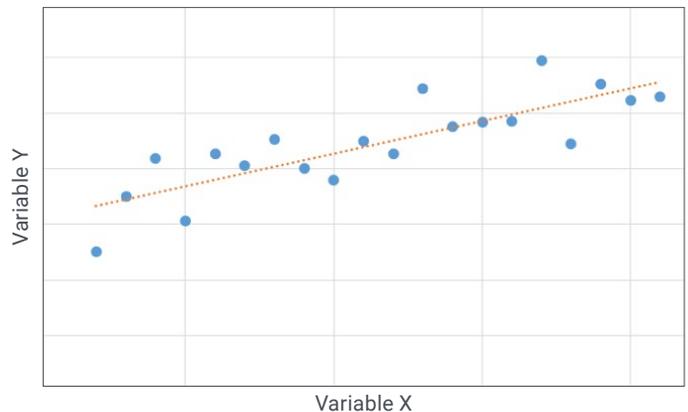
Despite being in an era of abundant data, advanced statistical tools are not always fully used by practitioners in valuation and forensic engagements. Well-established statistical tools, such as regression analysis, can add computational precision, enhance quantitative insights, and uncover new conclusions for valuation and forensic experts. Regression analysis has a variety of applications in forensic and valuation engagements, especially when projecting quantitative scenarios that would have occurred “but for” the alleged conduct.

This article introduces the concept of regression analysis in valuation and forensic engagements, before then discussing how it should be implemented correctly. This is the second of two articles I have written for this publication on regression analysis, with the prior article focusing on the use of regressions in consumer fraud and false advertising cases.¹ These articles are intended to provide a real-world introduction to such techniques in the context of valuation and forensic engagements.²

What is a regression?

A regression is a statistical technique used to estimate the relationship between variables. At its simplest, a regression can summarize the relationship between variable Y and variable X, as shown in figure 1 that follows. The blue dots provide a hypothetical scatter plot of data, and there is a clear positive relationship between variable Y and variable X. The orange line provides the best estimate of the relationship between the variables and is calculated using a regression. The general equation for the line in figure 1 is simply $y = mx + b$, where m represents the slope of the line and b represents where it intercepts the vertical y-axis. The slope of the regression line estimates the incremental impact of variable X on variable Y, meaning the amount that variable Y increases for each unit change in variable X.³

Figure 1: Hypothetical scatter plot with regression line



In this hypothetical example, consistent with real-world data analysis, the regression line does not fit the data perfectly and is not expected to. Although the line shown in figure 1 generally appears to fit the data well, a regression equation always includes an error term, which indicates the amount by which the actual observation differs from the regression line. Practitioners can use the standard deviation of this error term to quantify the uncertainty surrounding the estimated relationship between variables, in order to test if the estimated relationship is statistically different from having no relationship at all.⁴

There will always be a certain percentage of variation in the data that is unexplained by a regression model. Statisticians and economists regularly use the “coefficient of determination,” denoted as R^2 (pronounced “R-squared”), to quantify the amount of variation that is explained by the regression model.⁵ A regression model’s R^2 can range between 0 and 1, with a higher R^2 generally meaning that the

continued on page 6

¹ Werner, Dan. “Using Advanced Data Analytics to Measure Economic Damages in Consumer Fraud and False Advertising Cases.” *FVS Consulting Digest*, Issue 33. American Institute of Certified Public Accountants, January 2018.

² These articles are not meant to replace the advanced training and professional experience required to implement regression analysis. Thus, computational discussion is generally omitted from this article because regression analysis is commonly performed in statistical programs such as STATA, SAS, and R (simple linear regressions can also be done in Excel). There are many online resources covering introductory implementation of regression analysis in these programs (for example, see <http://data.princeton.edu/stata/> or <https://stats.idre.ucla.edu/sas/>). For a full, detailed discussion on implementing regression analysis, see Wooldridge, Jeffrey M. *Introductory Econometrics: A Modern Approach*. Fourth Edition. Mason, OH: South-Western Cengage Learning, 2009; Greene, William H., *Econometric Analysis*, Seventh Edition. Boston: Prentice Hall, 2012.

³ The equation for the slope of a regression line is $\frac{\sum(x-\bar{x})(y-\bar{y})}{\sum(x-\bar{x})^2}$ where \bar{x} and \bar{y} represent the average of the data points for the corresponding x-axis and y-axis.

⁴ In certain cases, regression models may falsely report a relationship between variables purely by chance. However, using the output of the regression model, a practitioner can construct a confidence interval and measure the probability that the model’s reported relationship is actually different from no relationship at all.

⁵ For a detailed discussion of the coefficient of determination (R^2), see Greene, William H. *Econometric Analysis*. Seventh Edition. Boston: Prentice Hall, 2012, at pp. 39–46.

Applying regression analysis to valuation and forensic engagements (continued from page 5)

regression model better explains the dependent variable. Although what constitutes a “good” R^2 depends on the context of the model and the nature of the data involved, a lower R^2 can indicate that the regression model explains relatively little about the dependent variable. Practitioners should be cognizant of a model’s R^2 , but the final regression model specification should be driven by economic theory and the facts of the engagement, not by R^2 alone.

Although the previous simple example demonstrates the relationship between one explanatory variable (variable X) and a dependent variable (variable Y), regression analysis can also measure the effect of multiple explanatory variables (also

called independent variables) on a dependent variable. In other words, regression analysis can help to explain the effect of one variable on another while “controlling” for other factors (that is, backing out the effect of variables we are not interested in). This article focuses on linear regression, which assumes that the dependent variable is a linear combination of the explanatory variables. Thus, the prior equation ($y = mx + b$) is generalized to $Y = \beta_0 + \beta_1 X_1 + \dots + \beta_n X_n + e$ for n number of explanatory variables, where β_n represents the marginal impact of X_n on Y , and e represents an error term. Regression analysis can also be used to model nonlinear relationships, although such discussion is beyond the scope of this article.⁶

Using regression analysis in valuation

Regression analysis can be used successfully in a variety of valuation engagements, especially in instances in which the market approach is used. In essence, the market approach to valuation estimates an asset’s value by comparing it to sales of similar assets. The practitioner can analyze recent sales to

establish a metric of value (for example, company valuation as a multiple of revenues), which can then be applied to the target asset in order to calculate its value. Two examples of using regression analysis in valuation follow.

Example 1: Although the market approach to valuation can be straightforward, there are many different financial measures that can theoretically relate to market valuation. For example, a multiple of revenues may be appropriate for a growing technology company with minimal profits, whereas a multiple of earnings before interest, taxes, depreciation and amortization (EBITDA) might be more appropriate for a stable company in a more mature industry. How does the practitioner know the appropriate metric to use? A valuation expert will often use his or her judgment to determine the appropriate metric of value consistent with industry standards, but this expertise can be supplemented using regression analysis.⁷ A regression analysis, along with its associated diagnostics (for example, R^2 and tests of statistical significance), can help to determine which metric is the best, most accurate predictor of value.

To implement such analysis, a practitioner would first collect data on sales of comparable companies, for example, the price paid, annual revenues, EDTDA or other metrics. Next, a separate regression for each financial metric could be run and compared, or all metrics could be included as explanatory variables simultaneously in one regression. The appropriate approach depends on the nature of the data (for example, the sample size and the extent of variation in the variables) and the facts of the engagement. The results of such an analysis can indicate which financial metric is the best predictor of value in the industry subsector and, thus, provide a quantitative basis to choose the appropriate metric.

However, this approach is not without practical limitations. For example, when using statistical tests, the practitioner must be attuned to the sample size because there may not be a sufficient number of comparable company sales to properly perform meaningful statistical tests. Although there is not an agreed-upon threshold for the sample size required for regression analysis, including more explanatory variables may necessitate a larger sample size to prevent “Type II” error (that is, falsely concluding that there is no relationship when such relationship exists).⁸

continued on page 7

⁶ For more detailed discussion on nonlinear regression models, see Greene, William H. *Econometric Analysis*. Seventh Edition. Boston: Prentice Hall, 2012, at pages. 181–218.
⁷ For a step-by-step guide on implementing a similar hypothetical example, see Hawkins, George B. “Regression Analysis in Valuation Engagements.” *Business Valuation Review* 27, No. 1 (2008): 30–37.
⁸ A detailed discussion on hypothesis testing is beyond the scope of this article. For a more detailed discussion, see Greene, William H. *Econometric Analysis*. Seventh Edition. Boston: Prentice Hall, 2012, pages. 111–112 and 1062–1065.

Example 2: Regression analysis can also be particularly useful when valuing assets in development stages, when incremental value is added as development continues. Early stage projects and assets in progress can carry significantly more risk (thus, resulting in a lower “risk-adjusted” valuation when compared to operational assets). How does the practitioner know the relationship between the project life cycle and valuation? A 2016 Deloitte report on wind farm asset valuation provides a good example of using regression analysis to answer this question.⁹

First, the Deloitte team collected data on 278 onshore wind farm transactions at various stages in development. After categorizing the transactions into different stages of development, they performed a regression analysis to measure the impact of the project’s megawatts (MW) on enterprise value (EV) at each stage of the project’s life cycle. As a result, multiples of EV/MW can be estimated for the generation capacity in each stage of the project life cycle. With this information, a valuation practitioner can then provide a valuation of wind farm assets that are not yet fully installed and operational, thereby supplementing a valuation calculated via the discounted cash flow methodology.

Although the discounted cash flow methodology is theoretically feasible in valuing assets that are pre-cash flow, in some instances, there is substantial uncertainty over the appropriate discount rate to apply for early-stage projects in order to properly capture the risk of projected cash flows. A reproduction cost approach is also theoretically feasible

for early-stage projects, but it may be difficult to acquire the necessary detailed data on construction costs along with purchase prices for comparable projects. Thus, depending on the facts of the engagement, it may be preferable to use a market approach to valuation while incorporating a well-designed regression analysis.

Using Regression Analysis in Forensic Engagements

Forensic engagements often require a computation of lost profits that involves comparing what actually occurred with what would have occurred in the absence of the alleged misconduct. Regression analysis can be particularly useful when there is a need to project quantitative scenarios that would have occurred “but for” the alleged conduct. Depending on the facts of the case, the regression model

may be able to estimate the relationships between financial, economic, or accounting data during a benchmark period (for example, before the alleged misconduct occurred). After these relationships are established, the regression model can then be used to inform, or perhaps directly estimate, but-for scenarios. Two examples of using regression analysis in litigation follow.

Example 1: Consider a simple example in which a practitioner is hired to estimate lost profits due to some alleged misconduct, which allegedly resulted in lower production to the plaintiff firm. In addition to estimating but-for revenues, the practitioner may need to estimate the incremental costs associated with that but-for production using accounting data on total costs and production over time.¹⁰ If the true production process requires fixed costs in addition to variable costs, then simply projecting but-for costs using the average cost per unit may yield incorrect but-for costs. Instead, a regression model can estimate variable costs using monthly accounting data in accordance with the following equation: Total Cost = Fixed Cost + (Variable Cost × Units Produced)

Using the estimated variable cost and fixed cost parameters, the practitioner can then more accurately predict but-for costs consistent with but-for production. Although this simple example considered only one variable cost component, a regression model can include many different explanatory variables, as previously discussed. In addition, although this example focuses on simple linear regression modeling, the approach can be generalized to model nonlinear relationships, as well, allowing the practitioner to account for issues such as economies of scale.

continued on page 8

⁹ Deloitte. A Market Approach for Valuing Wind Farm Assets. April 2016.

¹⁰ This example is adapted from Weil, Roman L., Peter B. Frank, Christian W. Hughes, and Michael J. Wagner. “Statistical Estimation of Incremental Cost from Accounting Data.” Chapter 5 in *Litigation Services Handbook: The Role of the Financial Expert*. 4th Edition. John Wiley & Sons, 2007, pages. 10–14.

Example 2: Regression analysis can also directly estimate the overcharge to consumers related to alleged misconduct. Consider a hypothetical example of price-fixing allegations in which the practitioner is tasked with measuring the extent to which prices were elevated, if at all, because of the alleged conspiracy. Regression models are commonly deployed in antitrust cases to answer this question.¹¹ In this case, the dependent variable can be the price paid by consumers, whereas variables meant to capture supply and demand characteristics are included as explanatory variables, including a variable related to the allegations. If properly implemented, the regression model will identify the price impact from the alleged price-fixing and allow the practitioner to statistically test if this effect is greater than zero.

Implementing regression analysis correctly

Although regression analysis is a well-established, defensible statistical tool that has many tangible applications in valuation and forensic engagements, there are common potential pitfalls. In the text that follows, six examples of potential issues are described.

Data quality — At the onset, a practitioner should perform exploratory data analysis to ensure the data quality is sufficiently reliable for regression analysis. Any quantitative model is only as good as the data used to calibrate it. For example, if material measurement error is present in the data, this can create biased regression results and affect quantitative conclusions.¹² It is good practice to review summary statistics and ensure that the data conforms to reasonable expectations based on prior industry research. To the extent that a data point is an error or definitively an outlier, it should be removed prior to implementing a regression model. Similarly, it can be problematic if data for certain variables are systematically missing. Although it is not the focus of this article, it is worth noting that regression analysis can be used to estimate missing data, although there may be superior methods to impute missing data.¹³

Omitted variable bias — Before implementing a regression analysis, it is important to think critically about the explanatory variables that materially affect the dependent variable of interest. What outcome is being explained with the regression model, and what are the salient factors influencing that outcome? If there are multiple factors that considerably affect the dependent variable, omitting one or more important explanatory variables might result in statistically biased outcomes and result in false conclusions. However, a regression model is not expected to control for every miniscule variable that could theoretically affect outcomes. Remember that the regression “model is only a simplification of reality. It will include the salient features of the relationship

of interest but will leave unaccounted for influences that might well be present but are regarded as unimportant.”¹⁴

Model sensitivity — “The issue of robustness — whether regression results are sensitive to slight modifications in assumptions (for example, that the data are measured accurately) — is of vital importance.”¹⁵ When implementing a regression analysis, it is good practice to perform a sensitivity analysis to ensure the overall conclusions of the model are defensible. This can involve, for example, re-running the model while omitting potential outliers or omitting a small subset of the data to ensure that the model reaches similar conclusions without that group. Similarly, a sensitivity analysis may involve testing other “functional forms” because the relationship between variables is not always linear (for example, an explanatory variable may have an exponential impact on the dependent variable). However, any changes to model specification should be well-grounded in economic theory, the facts of the engagement, and the practitioner’s own knowledge, education, expertise, and training. For example, if regression results change due to the unreasonable omission of a variable, then the practitioner’s overall conclusions should not change.

Extrapolation — As the saying goes, “past performance is no guarantee of future results.” In other words, practitioners should always be wary of making out-of-sample predictions (that is, extrapolation) from regression models. Although a regression model may accurately represent economic relationships in the past, the relationships between variables can change over longer periods of time. For example, a regression model may accurately predict outcomes in the near future, but the results can quickly become speculative if used to predict outcomes decades into the future.

continued on page 9

¹¹ For example, see Baker, Jonathan B., and Daniel L. Rubinfeld. “Empirical methods in antitrust litigation: Review and critique.” *American Law and Economics Review* 1, No. 1/2 (1999): 386–435; Macartney, Gareth and Gordon Rausser. “Economic Principles for Class Certification Analysis in Antitrust Cases.” *Antitrust* 30, No. 3 (Spring 2017): 60–67; Finkelstein, Michael O., and Hans Levenbach. “Regression estimates of damages in price-fixing cases.” *Law and Contemporary Problems* 46, No. 4 (1983): 145–169.

¹² Rubinfeld, Daniel L. “Reference guide on multiple regression.” *Reference Manual on Scientific Evidence* 179 (2000): 425–469, page. 200.

¹³ For a detailed discussion of imputing data, see Enders, Craig K. *Applied Missing Data Analysis*. Guilford Press, 2010.

¹⁴ Greene, William H. *Econometric Analysis*. Seventh Edition. Boston: Prentice Hall, 2012, page. 5.

¹⁵ Rubinfeld, Daniel L. “Reference guide on multiple regression.” *Reference Manual on Scientific Evidence* 179 (2000): 425–469, page. 195.

Applying regression analysis to valuation and forensic engagements (continued from page 8)

Correlation vs. causation – Finding a statistically significant correlation between variables does not necessarily mean that one variable causes changes in the other variable. When developing a regression model to explain how one variable causes another, practitioners should think critically about the direction of influence: Is the dependent variable being influenced by the independent variable, or vice versa? Feedback between variables and simultaneous causality can create significant problems in regression models if left unaddressed and may even result in an incorrect conclusion being reached.¹⁶

Economic vs. statistical significance – When performing regression results, practitioners should always consider regression results in context. There is rightfully a heavy focus on “statistical significance” when performing regression analysis because a regression model includes diagnostics that allow a practitioner to test if the measured effect between variables is statistically different than zero. However, “[t]oo much focus on statistical significance can lead to the false conclusion that a variable is ‘important’ for explaining [a dependent variable] even though its estimated effect is modest.”¹⁷ A variable can have an inconsequential economic effect on another variable but still be statistically significant.

Conclusion

Regression analysis is a flexible statistical tool used to model relationships between variables and has many tangible applications in forensic and valuation engagements. This article provided several introductory examples related to asset valuation and financial estimations, but more advanced regression techniques can be used more broadly. For example, a logit regression can measure how a variable

affects the probability of an outcome, whereas an ordered probit regression can be used to predict categorical outcomes that have a regular order (for example, company credit ratings from poor to excellent).¹⁸ Alternatively, the hedonic regression approach can be used to provide a valuation of product features, including the contested feature in labeling cases.¹⁹ Regression analysis is a well-established, defensible statistical tool when properly applied. However, to avoid improper applications that could lead to incorrect conclusions, practitioners should be familiar with issues related to data quality, omitted variable bias, and extrapolation, among others, before implementing such an analysis.

[Dan Werner, Ph.D., CPA](#), is an economist at [OnPoint Analytics](#), an economic, financial, and statistical consulting firm specializing in expert testimony in litigation. Dr. Werner has worked on a variety of forensic accounting and economic damage issues across various industries, including, for example, matters related to valuation, lost profits, fraudulent inducement of investments, product labeling, anti-competitive behavior, and class certification, among others.

¹⁶ Simultaneous causality, among other issues, can create a statistical problem known as endogeneity, which can result in biased regression results. This can be overcome using an “instrumental variables” technique that is beyond the scope of this article. For additional discussion on endogeneity and instrumental variable estimation, see Greene, William H. *Econometric Analysis*. Seventh Edition. Boston: Prentice Hall, 2012, page. 219–256.

¹⁷ Wooldridge, Jeffrey M. *Introductory Econometrics: A Modern Approach*. Fourth Edition. Mason, OH: South-Western Cengage Learning, 2009, page. 135.

¹⁸ For example, see Greene, William H. *Econometric Analysis*. Seventh Edition. Boston: Prentice Hall, 2012, pages. 681–832.

¹⁹ Werner, Dan. “Using Advanced Data Analytics to Measure Economic Damages in Consumer Fraud and False Advertising Cases.” *FVS Consulting Digest*, Issue 33. American Institute of Certified Public Accountants, January 2018.

Loss causation



by Scott A. Stringer, CPA/ABV/CFF, CGMA, CFE and Laura Lewis, CPA/CFF

Introduction

Loss causation is the connection that exists between a defendant's wrongdoing and the financial harm to a plaintiff (that is, the cause and effect). Both legal and loss causation are required for a plaintiff to succeed in a civil lawsuit and be awarded damages. A plaintiff must establish that the defendant is not only liable for a wrongful act that caused the plaintiff economic harm, but also that the defendant's act was the proximate cause of a financial loss.

Who and when determines

The level of work and analysis required for each case will depend in large part on instructions from the attorney and the complexity of the case. In circumstances in which the causal link between the damaging act and financial loss are self-evident, the attorney frequently asks damages experts to assume that the defendant's liability and the causal link between the act and the financial loss already exists. In other circumstances, when the engagement requires highly specialized technical or scientific training to establish a causal link, the damages expert may need to depend on the work of subject matter experts or fact witnesses, if he or she does not have the requisite skills and knowledge to competently conduct the analysis. In situations when subject matter expertise is required (and not held by the damages expert), the court may find that the burden of establishing the financial causal link is not the responsibility of the damages expert.¹

An attorney's knowledge of and history with a judge and how he or she has ruled with regard to allowing or disallowing a damage expert's testimony that assumes loss causation will play an important role in defining the parameters of work that a damage expert is required to do for a particular case.

Although court decisions are dependent on the facts of a case, the courts appear less likely to exclude damages expert's testimony that assume loss causation when the following factors exist:

- The legal and loss causation are straightforward, such as a medical procedure gone awry, and the plaintiff can no longer work.

- The damages expert has properly applied generally accepted methodologies to calculate damages.
- The calculation of damages does not rely on complex or numerous assumptions, which create a speculative causal link and amount.
- Where no other obvious causes of damage are evident.
- When multiple experts have been retained and at least one expert has established loss causation.²

Conversely, the factors that most often result in the courts excluding a damages expert for assuming causation or not sufficiently establishing loss causation include the following:

- Case facts that are speculative regarding any causal link to damages.
- Failure of the damages expert to perform tests of causal links when data and other evidence are available
- Assuming that all losses occurring after the harmful act must be caused by the harmful act
- Ignoring obvious possible alternative causes of loss, such as deterioration of general economic conditions, competitive forces in the marketplace, regulatory and legal environment, technological advances, and other foreseeable causes of loss³

Whether the attorney determines that the causal link is "self-evident" and believes the court will allow a testimony that assumes loss causation, or the court places the burden to prove causation on someone other than the damages expert, the damages expert should not interpret these situations as a "free pass" to ignore evidence and not perform an analysis. Instead, a damages expert who finds himself or herself in either of these situations may still want to consider, at a minimum, evaluating the causal link in order to "be more informed when deciding the amount of the loss that can be attributed to the alleged cause."⁴

continued on page 6

¹ AICPA Forensic & Valuation Services Practice Aid, *Attaining Reasonable Certainty in Economic Damages Calculations*, page 38.

² AICPA Forensic & Valuation Services Practice Aid, *Attaining Reasonable Certainty in Economic Damages Calculations*, page 39.

³ AICPA Forensic & Valuation Services Practice Aid, *Attaining Reasonable Certainty in Economic Damages Calculations*, pages 55 and 63.

⁴ AICPA Forensic & Valuation Services Practice Aid, *Attaining Reasonable Certainty in Economic Damages Calculations*, page 55.

Loss causation (continued from page 5)

Poor support = no support

When damages experts are engaged to evaluate loss causation issues, they must carefully consider what types of information should be considered and clearly link the relevant information to the facts and circumstances of the engagement. There is no set way to do this, however, many damages experts will start by analyzing seemingly obvious causes to either quantify their impact on losses or rule them out as a cause.⁵ As causes are ruled out, the suspect pool narrows, and the damages experts can focus on the causes that do have an impact on losses and find out who or what may have been involved in the harmful act. This entire process, from the initial considerations to the final conclusion of causation and amount of loss, must be thoroughly documented and well-organized when presented to the court in order to put yourself and the attorney's client in the best position to prevail. Without this rigorous and careful documentation of the thought process and support for causation, damages experts who find themselves in court are more likely than not to be on the losing end of the judge's decision, with little to no recourse for the client (for example, a successful appeal).

For example, the case *Microstrategy Inc. v. Business Objects* involved the claim of misappropriation of trade secrets, among other claims, and the plaintiff's damages expert prepared and filed three reports to support three separate business tort claims attributing all the alleged losses the plaintiff sustained to the defendant's actions. The district court did not allow two of the three damages expert's reports into evidence due to "flawed methodology." (Note: The third report was also precluded from being submitted into evidence due to a procedural violation.) The district court cited the fact that the reports did not consider many relevant factors (for example, which included, among other things, the plaintiff's financial problems following the dot.com burst, the impact of a financial statement restatement, and an investigation by the U.S. Securities and Exchange Commission), and "did not link any single instance of misconduct to a specific amount of damages."⁶

As this case illustrates, damages experts who prepare poorly supported reports are at risk of having those reports precluded from ever making it into evidence — effectively rendering them useless and leaving the attorney's client at the mercy of the judge to decide what should or should not be considered when determining causation.

Occam's razor

For most engagements, damage experts will need to put in a lot of work to identify causes for damages and link those causes to support their damage assessments. In the process of identifying causes of damages, it may be helpful for damages experts to think pragmatically about what causes to consider as the most probable and obvious of potential causal factors for examination. Getting tangled up in causes that prove difficult to connect to the damages can take valuable resources away from potentially more supportable and relevant causes.

The failure to consider probable and obvious causes could result in the successful exclusion of the plaintiff's damages expert testimony, as demonstrated in the *McGlinchy v. Shell Clem. Co.* matter. In this case, the plaintiff's damages expert determined the plaintiff's lost profits by using only the before-and-after method, without any consideration for other obvious and possible causes for a decrease in profits. The district court found that he was not only unable to associate his damages calculation to the wrongful acts of the defendant, but he was also unable to recall basic circumstances related to the loss, such as when the wrongful act first occurred and for how long the wrongful act continued. As a result, the plaintiff's damages expert testimony was disallowed, with the main reason cited being the expert's failure to establish causation.⁷

What about cases in which there are no clear-cut alternatives or when damages occur in the future and it is impossible to foresee other causal factors? For example, consider a hypothetical case in which an expert might have determined future lost profits for a business when the analyses and opinion were rendered in the months immediately prior to the recession of 2008. The damages expert would not be able to consider the effects of the recession because the severity of it was unforeseen at the time. However, if the same hypothetical case occurred a few months later, in 2009 or early 2010, the expert would have to consider the impact. Although the damage expert is not expected to have a crystal ball, the expert should consider the obvious alternative causes for loss and generally would not be expected to consider significant events.

continued on page 7

⁵ AICPA Forensic & Valuation Services Practice Aid, *Attaining Reasonable Certainty in Economic Damages Calculations*, page 56.

⁶ *Microstrategy, Inc. v. Business Objects, S.A.*, Civil Action No. 2:01cv826, slip op. at 5-9 (E.D. Va, Dec. 2, 2002) (Exclusion Order).

⁷ *McGlinchy v. Shell Chem. Co.*, 845 F.2d 802 (9th Cir. 1988).

Loss causation (continued from page 6)

Conclusion

Although each case is different, having its own unique set of facts and circumstances, some examples of the type of information damage experts often use to establish a causal link to the alleged wrongdoing include the following:

- Depositions of key individuals involved in the matter
 - In addition to the written transcripts, which will be valuable in learning more granular details of the matter, exhibits produced during deposition will help determine context and provide a better understanding of causation and possible alternative causes of loss.
- Fluctuation in sales volume or profit results, or both
 - This could provide a correlation to the timeline of the harmful act.
- Industry research
 - This is usually very helpful in determining obvious possible causes of loss or offsets of gain that may be happening in the industry.
- General economic research
 - Understanding the correlation between the economy and the industry that may have an effect on losses.
- Competitive market forces, shift in consumer demand, and other obvious business risks

- Product quality issues unrelated to the harmful act
- Technology changes that could be impact losses and be unrelated to the harmful act
- Loss of key personnel that is unrelated to the harmful act
- Known environmental or political events that may have affected losses
- Reputational issues of the plaintiff that may be unrelated to the harmful act

Overall, although a damages expert may not necessarily be tasked with establishing the causal link between a defendant and the damages incurred by the plaintiff, it is still an important element of a damage calculation that should be considered. The facts and circumstances should be analyzed on a case-by-case basis to determine if the plaintiff has properly established the causal link such that little additional analysis is needed. When the damages expert needs to establish the causal link, he or she should be sure to do so in a manner that will result in a well-supported damages report and reduce the possibility that a judge will preclude the report from evidence. Damage experts who are aware of these critical thought processes and incorporate them into their practice will give them a much better chance of surviving a *Daubert* exclusion and successfully rendering their opinion.

The Opioid crisis: The important role of CPAs



by Randal Wolverton, CPA/CFF, CFE and Valerie Rock, CHC, CPC

CPAs should be aware of the emerging trends in opioid abuse and the impact of this crisis on the audit, tax and financial statements of businesses in virtually all industries, but particularly in health care. Specifically, the legal and illegal flow of money has significantly affected businesses – hospitals; physician practices; pharmaceuticals; government-sponsored programs such as Medicare, Medicaid and TRICARE; and private insurance health care plans. Federal, state, county and local governmental resources are now addressing the issues.

Scope of the crisis

President Donald Trump declared this crisis a public health emergency Oct. 26, 2017, and United States Attorney General Jeff Sessions has announced “new tools” that the Department of Justice will use to combat the crisis. Although not defined as a national emergency at this point, the federal government seems committed to partnering to solve the problem. The President’s Commission on Combating Drug Addiction and Opioid Crisis issued a preliminary report that described the overdose death toll as “September 11 every three weeks.”¹

Attorney General Sessions has formed the Opioid Fraud and Abuse Detection Unit, a new Department of Justice (DOJ) pilot program to confront the crisis. The new unit will use data to identify those fraudulently prescribing and worthy of prosecution. Focusing on prescription opioids, the data analytics team will identify the following:

- Which physicians are writing opioid prescriptions at a rate that far exceeds their peers
- How many of a doctor’s patients died within 60 days of an opioid prescription
- The average age of the patients receiving these prescriptions
- Pharmacies that are dispensing disproportionately large amounts of opioids
- Regional hot spots for opioid issues²

In 2016, about 63,600 Americans lost their lives to drug overdoses. Of these drug deaths, 42,200 were linked to opioids³ – prescription drugs, heroin and synthetic drugs such as fentanyl. To confront the crisis, the DOJ will focus on prevention, enforcement, and treatment.⁴

Recent U.S. Department of Justice actions

On July 3, 2017, the DOJ and FBI announced charges against more than 400 individuals, including doctors, nurses, and licensed medical professionals, for their roles in fraud schemes involving about \$1.3 billion in false Medicare billings. Of the 412 individuals charged, 1 in 4 cases involved opioid-related crimes, underscoring the scope of what federal officials are calling an abuse epidemic that is killing about 115 Americans daily.⁵

As planned, investigations concentrated on federal health insurance programs’ submissions and payment data, searching for anomalies potentially indicative of medically unnecessary drug prescriptions or unlawful distribution of opioids and other prescription narcotics. The investigators at the U.S. Department of Health & Human Services (HHS) Office of the Inspector General (OIG) were able to conduct their probe and forward any substantial findings to federal, state, and local law enforcement.

Focus on the flow of money

Recent data the HHS OIG released indicate that Medicare spending for Part D drugs has continued to rise by more than \$10 billion a year. In 2015, total Part D spending reached \$137 billion, marking the third consecutive year that spending increases surpassed \$10 billion. Overall spending for commonly abused opioids exceeded \$4 billion.⁶

Federal and state officials responsible for addressing the opioid issues are committed to long-term audits and investigations. A significant part of these efforts will address

continued on page 9

¹ Goodnough, Abby. “White House Panel Recommends Declaring National Emergency on Opioids.” *New York Times*. July 31, 2017.

² Department of Justice, Office of Public Affairs. “Attorney General Sessions Announces Opioid Fraud and Abuse Detection Unit.” August 2, 2017.

³ Levitz, Eric. “Drug Overdoses Killed 63,600 Americans Last Year.” *New York Magazine*. Dec. 21, 2017.

⁴ See footnote 2.

⁵ Wide-ranging online data for epidemiologic research (WONDER). Atlanta, GA: CDC, National Center for Health Statistics; 2017. Available at wonder.cdc.gov.

⁶ U.S. Department of Health & Human Services. “High Part D Spending on Opioids and Substantial Growth in Compounded Drugs Raise Concerns.” OEI-02-16-00290. June 2016.

The Opioid crisis: The important role of CPAs (continued from page 8)

the flow of money from the starting point of product manufacturing to final distribution to end users, and all points in between. Practitioners can count on increased audit and investigative scrutiny of taxpayer dollars expended through Medicare, Medicaid and TRICARE. Private insurance payments will certainly fall under the spotlight, as well.

In a study published in 2017, researchers at Boston Medical Center found that 1 in 12 doctors has received money from drug companies marketing prescription opioid medications. Further, from 2013–15 (the most recent Centers for Medicare and Medicaid Services (CMS) data available at the time of the study), 68,177 doctors received more than \$46 million in payments from drug companies. Fentanyl, typically used in hospitals to treat post-surgical pain, for cancer patients, and for end-of-life care, is the drug doctors were found to be paid the most to promote. Additionally, companies were not aggressively marketing tamper-proof versions of the pills, designed to reduce issues of improper use.⁷

The drug industry — opioid painkiller manufacturers, distributors, wholesalers and pharmacy chains — is facing a “tidal wave” of litigation from government entities. At least 30 states, cities and counties have either filed lawsuits or are formally recruiting lawyers using a process that tends to preclude full-blown legal action. In many cases, the complainants argue that manufacturers used aggressive sales tactics to boost revenues from the drugs, while downplaying the risks, or did too little to identify large numbers of orders for controlled substances or “suspicious orders.” The DOJ recently announced a \$150 million settlement with McKesson Corporation, one of the largest pharmaceutical distributors in the United States. The DOJ alleged that McKesson failed to detect and report “suspicious orders” for controlled substances that were distributed to McKesson’s independent and small-chain pharmacies. The settlement requires McKesson to suspend sales of controlled substances from distribution centers in Colorado, Ohio, Michigan and Florida for several years.⁸

The list of attorneys general (AGs) pursuing companies that have profited from opioids is expected to grow. Recently, three AGs sent out a tender document, known as a “request for proposal,” inviting law firms to bid for contracts to manage the litigation.⁹

What can CPAs do?

Last year, in hopes of discouraging opioid painkiller use, Aetna sent notices to more than 900 physicians who prescribe such drugs at high rates. Aetna was able to determine physicians’ opioid prescribing patterns by analyzing data collected through insurance claims.¹⁰ Much like Aetna’s team and the new DOJ Opioid Fraud and Abuse Detection Unit, CPAs must play an important role in monitoring and pinpointing potential instances of fraud and abuse related to the opioid crisis.

Industry CPAs (CFOs, controllers, internal auditors and so on) within financial, internal audit or compliance departments may be able to observe and inquire about controls in their hospitals or organizations. Although CPAs may not have access to extensive prescribing and claims data, they do have access to key financial statements that tell the story of an entity and its processes. As a CPA, it is important to understand enough about your entity and how it operates, so you can better identify abnormalities in revenue or costs, or both, that may be a result of fraud, abuse or other compliance issues. The following actions are important for industry CPAs and financial officers in identifying fraud and abuse:

- Develop a compliance department notification process. This will ensure that the appropriate individuals receive the relevant information, so an investigation can take place, if necessary. Refrain from creating your own monitoring and auditing program for these or other areas of risk if it might conflict with the organization’s compliance efforts.
- Partner with the compliance department to assist in the monitoring or auditing, if appropriate. Entities typically follow a certain protocol for investigations, so your role might be to report a potential concern to compliance, rather than investigate that concern.
- Assist the compliance department in determining the scope and method for testing reasonableness of data related to controlled substance prescribing, dispensing, or collections that typically routes through your own department.
- Maintain a list of risk areas your compliance department has identified for ongoing monitoring and auditing.
- Along with compliance and the internal audit manager, examine the audit trails embedded within your organization’s automated pharmacy systems.

continued on page 10

⁷ Zezima, Katie. “Study: Doctors Received More Than \$46 Million From Drug Companies Marketing Opioids.” *The Washington Post*. August 9, 2017.

⁸ Department of Justice, Office of Public Affairs. “McKesson Agrees to Pay Record \$150 Million Settlement for Failure to Report Suspicious Orders of Pharmaceutical Drugs.” Jan. 17, 2017.

⁹ Crow, David. “Drug Industry Faces ‘Tidal Wave’ of Litigation Over Opioid Crisis.” *Financial Times*. Aug. 11, 2017.

¹⁰ Advisory Board. “How Aetna Is Curbing Opioid ‘Superprescribers.’” *Advisory Board Daily Briefing*. Aug. 5, 2016.

The Opioid crisis: The important role of CPAs (continued from page 9)

- Implement controls and policies related to drug access and dispensing and perform routine auditing and monitoring in the various departments with access to drugs.
- If you are serving a client as a public practice CPA, notify the client if you notice data is trending abnormally, for example, a sudden spike in revenue for a certain controlled substance, and possibly discuss ways in which to assist the client with monitoring.

Monitor the data

Increase in opioid and other pain-related drug revenue

If physicians or entities are experiencing increased revenue associated with opioids or other pain-related drugs, it may be important to consider where exactly the revenue is originating. A Massachusetts doctor recently pleaded guilty to health care fraud after it was discovered that he was seeing 100+ patients a day and writing prescriptions for oxycodone and other opioids without doing exams or tests. In fact, he wrote more oxycodone prescriptions in one month (over 1,100) than some of the largest hospitals in Massachusetts.¹¹ As a CPA, you might ask yourself: Do the numbers add up? Can these increased volumes and revenues be supported by the current staffing? Is it possible for one physician to see 100+ patients per day?

Similarly, in 2016, an Alabama physician was also charged with illegally prescribing and health care fraud for activities dating back to 2012. In 2012, he saw 80 to 145 patients per day and wrote prescriptions for all patients seen. Initial visits lasted only five minutes or fewer, and follow-ups for medication refills lasted two minutes or fewer. The physician did not obtain prior medical records and did not treat with anything other than controlled substances. According to the state's prescription drug monitoring program, this physician would have had to write 423 prescriptions per day if he worked five days per week.¹² This case raises many of the same questions. Monitoring trends in revenues, visits, and charges can allow accountants to identify potential areas of concern. If significant increases in volume and revenue occur, do not hesitate to ask questions about what is driving that growth. Even periodic checks to assess reasonableness can be instrumental in identifying potential fraud and abuse risk.

Increase in opioid and other pain-related drug costs

For health care entities and facilities, monitoring drug costs, particularly opioid drug costs, is important. If a facility has a significant jump in drug expense, it is worth investigating. These increases could point to an overprescribing or overdispensing issue within the organization. Many payers use claims data to identify "superprescribers" of opioid medications. The same logic can be applied here. By monitoring drug costs and inventory, accountants may be able to assist in identifying departments or providers that are prescribing large quantities of these medications. Sharp increases in drug costs can also highlight an inventory issue. Regardless of quantities of opioids in inventory, it is important for financial and operational teams to ensure that sufficient physical and financial controls are in place to mitigate opportunities for theft and misuse of these medications. (Federal and state-controlled substance boards also have specific requirements related to the storage and custody of, and access to, all controlled substances, including opioids.) Additionally, internal audits should be conducted to test these controls.

Pharmaceutical company payments

Similarly, if it appears that one particular opioid is purchased more than others, or that revenue associated with one kind of opioid drug has increased, the financial or operations team should investigate further. As mentioned previously, 1 in 12 doctors has received some sort of payment from drug companies.¹³ Although most of these payments are small (meals, drinks and so on), research suggests that pharmaceutical company payments result in increased prescribing of marketed medication, even when payments are of low monetary value.¹⁴

To avoid litigation issues, it is vital to verify the legality of any payments your entity receives from drug companies and ensure that they are reported in accordance with the Physician Payments Sunshine Act. Additionally, if you identify any undefined or uncategorized revenue streams, ask questions about the origin of the revenue. There have been instances of drug companies providing kickbacks to physicians who regularly prescribe their medications.

continued on page 11

¹¹ Finnegan, Joanne. "Massachusetts Pain Doctor Pleads Guilty to Healthcare Fraud." *FierceHealthcare*. March 16, 2017.

¹² Department of Justice, Office of Public Affairs. "Alabama Pill Mill Doctor Charged with Illegal Prescribing and Health Care Fraud." Sept. 23, 2016.

¹³ Zezima, Katie. "Study: Doctors Received More Than \$46 Million From Drug Companies Marketing Opioids." *The Washington Post*. Aug. 9, 2017.

¹⁴ Orenstein, David. "Opioid Makers Made Payments to 1 in 12 U.S. Doctors." *News from Brown University*. Aug. 9, 2017.

The Opioid crisis: The important role of CPAs (continued from page 10)

Increase in urine drug screens and testing revenue

Both the Massachusetts and Alabama physicians mentioned previously also routinely billed payers for urine drug tests they did not use, or need, in treatment. In fact, 80% of paid claims that the Alabama physician submitted to Medicare and Blue Cross were for urine drug tests. Payers view the billing of urine drug screens as unnecessary and fraudulent when the documentation does not clearly indicate medical necessity per their coverage guidelines. The guidelines related to how often urine drug screens should be used for patients taking opioid medications are complex. Further, they have changed significantly as opioid prescription use has increased in the last five years. If there is a significant increase in urine drug screens, confirm that the appropriate monitoring and auditing is performed, ensure that documentation supports the order per state and federal governmental and payer guidance, and that there are no medical necessity concerns.

If you work for a laboratory, monitor the marketing department's spending on complimentary supplies that are provided to physicians and other ordering providers. In 2015, a laboratory paid \$256 million to settle claims for unnecessary drug testing. The company purportedly had provided free testing cups to physicians in exchange for referrals.¹⁵ Free supplies to physicians, which may be considered inducement for referrals, are not permitted in the health care industry.

Be part of the solution

Although a robust monitoring process is important in identifying potential fraud, abuse and compliance risks for your entity, it is just as important to have a communication protocol in place. Work with your organization's compliance officer to determine potential indicators of an issue – inclusive of those that affect your entity's revenue and your own typical

legal and compliance responsibility, but also those that could indicate overuse or cause for concern. If you identify an issue, notify your compliance officer. Your knowledge in accounting, coupled with your health care experience, can help identify potential fraud and abuse, which could help your organization, and the associated patients, mitigate risks associated with the opioid crisis.

Randal A. Wolverton, CPA/CFF, CFE, retired from the FBI after about 28 years of service and is licensed as a CPA in Missouri and Kansas, providing forensic accounting services as a sole practitioner. Wolverton has developed and provided training related to fraud detection, investigation and prevention to numerous law enforcement agencies; college undergraduate and graduate programs; auditors; accountants in private practice; and other professional organizations. Wolverton formerly served on the AICPA Forensic and Litigation Services Committee and is a member of the AICPA Fraud Task Force.

Valerie Rock, CHC, CPC, is senior manager of the compliance advisory services team at PYA, specializing in coding, reimbursement, and compliance. She would like to thank Katie Ray, PYA staff consultant, for her contributions to this article.

¹⁵ Alltucker, Ken. "Labs, Doctors Scrutinized Over Lucrative Drug Tests for Pain-Pill Abuse." AZ Central. Dec. 26, 2015.



Suit against Tesla ‘controlling’ shareholders advances

by Sylvia Golden, JD, Executive Legal Editor

In re Tesla Motors Stockholder Litig., 2018 Del. Ch. LEXIS 102 (March 28, 2018)

The Delaware Court of Chancery recently let proceed a dissenting shareholder action that arose out of Tesla’s acquisition of SolarCity. At the time of the acquisition, Elon Musk owned 22.1% of Tesla and 21.9% of SolarCity.

On both sides of the transaction — Musk joined Tesla shortly after its founding in 2003. In 2004, he became chairman of the board and led a financing round, appointing himself CEO in 2007. On several occasions, he took on personal debt to help “keep Tesla afloat.” Tesla went public in 2010, and Musk remains its largest shareholder and the public face of the brand. He plays a key role in product design, attracting talent, and bringing investors to the company.

In 2006, Musk and two cousins founded SolarCity, whose revenue came from leasing solar panel equipment. It went public in 2012, and its debt kept growing. By February 2016, SolarCity effectively had no more access to the debt and equity markets.

In February 2016, and several times thereafter, Musk proposed that Tesla acquire SolarCity. The board first met with a financial adviser in June 2016 and, at the same meeting, approved the offer to buy SolarCity. Musk and another director did not participate in the vote but remained present during the board’s discussion; in fact, Musk led most of the discussion. Even though the financial adviser gave a brief presentation of “various potential targets,” the board did not talk about acquiring a company other than SolarCity. Yet, around the same time, Goldman Sachs, one of Tesla’s underwriters in a major equity offering, called SolarCity the “worst positioned” company in the solar energy sector in terms of capitalizing on future growth in the industry.

Tesla offered to acquire SolarCity in a stock-for-stock transaction at an exchange ratio of 0.122x to 0.131x. The offer valued SolarCity at \$26.50 to \$28.50 per share, or \$2.6 billion to \$2.8 billion. In August 2016, the companies announced the merger at a slightly lower

price of \$2.6 billion, or \$25.37 per share. In November 2016, Tesla stockholders, excluding certain SolarCity directors, voted in favor of the acquisition. As the court notes, SolarCity became a subsidiary of Tesla and, “with the stroke of a pen, Tesla’s debt load nearly doubled.”

Various DCF valuations — Tesla’s financial advisor cautioned the board about SolarCity’s large outstanding debt: nearly \$3.2 billion as of March 2016, a major part of which would become due in three to five years.

As part of its fairness analysis, the financial adviser performed two discounted cash flow (DCF) analyses. One DCF analysis relied on SolarCity management forecasts (this was prior to the release of less optimistic forecasts in August 2016). A second less-optimistic forecast reduced certain projections, which lowered cash requirements; they also reduced overhead and increased costs related to potential litigation. Both analyses still supported the acquisition price and fairness opinion.

Tesla’s financial adviser did not perform another DCF analysis based on SolarCity’s updated, less optimistic forecast, and Tesla’s board did not ask for one, even though prices as low as \$10.50 a share were mentioned in SolarCity’s own analyses.

Allegations and defense — Shareholders of Tesla filed suit, claiming the acquisition “spread across all of Tesla’s stockholders the loss,” and unjustly enriching Musk and some SolarCity directors. The defendants filed a motion to dismiss the complaint under the Delaware Supreme Court’s Corwin decision. The crux of their argument was that a majority of disinterested, fully informed and uncoerced stockholders approved the transaction. Therefore, the Court of Chancery was required to evaluate the plaintiffs’ breach of fiduciary duty claims under the business judgment rule, a less rigorous standard of review.

continued on page 13

Suit against Tesla ‘controlling’ shareholders advances (continued from page 12)

Key legal question – As the court explained, the issue immediately in front of it was whether Musk, who owned less than 50% of the voting power of Tesla, could still be considered a controller because he “exercises control over the business affairs” of Tesla. For their complaint to survive, the plaintiffs had to show either that Musk dominated and controlled the corporation and its board in terms of the challenged transaction or that he dominated and controlled most of the board generally.

The court found that the plaintiffs presented enough evidence to show it was reasonably conceivable that Musk was Tesla’s controlling stockholder, even at 22%. Other factors suggested he had the ability “to exercise the equivalent of majority voting control,” including the following:

- The company took virtually no steps to separate Musk from the board’s consideration of the transaction.
- He proposed the acquisition repeatedly until the board agreed to consider the proposal.
- He led the board’s discussions with a “laser focus” on SolarCity as the acquisition target.
- Musk engaged the financial and legal advisers.
- The board never considered forming a committee of disinterested independent directors.
- By all accounts, Tesla’s board members had conflicts of interest. Besides including Musk and his brother, the board included a very close friend of Musk who

also served on SolarCity’s board at the time of the acquisition and owned a private equity firm that participated in several pre-IPO funding rounds for Tesla and SolarCity. Several other board members also were owners or stakeholders in venture capital funds and private equity firms that had invested in SolarCity and benefited from the transaction. (The court agreed with the plaintiffs that three out of the five board members who voted for the acquisition were not independent.)

The board also was aware of Musk’s crucial role in sustaining Tesla during difficult times and in providing a vision for the company’s success. The court observed that Tesla’s public filings, in effect, acknowledge the company’s dependence on Musk and state that the “concentration of ownership among existing executive officers, directors and their affiliates may prevent new investors from influencing significant corporate decisions.” Musk, in public statements, has claimed that Tesla is “his company.”

The court concluded that although the plaintiffs’ complaint did not clearly state whether Musk regularly exercised control over Tesla’s board or whether he did so only regarding the contested transaction, this distinction did not matter for ruling on the defendant’s motion to dismiss. The facts stated in the complaint showed Musk was a controlling shareholder. Consequently, the plaintiffs’ suit, alleging breach of fiduciary duty, could go forward to discovery, the Court of Chancery decided.

Technical Advisory Board



James Ashe,
CPA/CFF, MAFF
Marcum LLP
Melville, NY



Dennis Medica,
CPA/CFF, CGMA,
CVA, CFE
Medica LLC
Cleveland, OH



Linda B. Trugman,
CPA/ABV, MCBA,
ASA, MBA
Trugman Valuation
Associates
Plantation, FL



Rosanne J. Aumiller,
CPA/ABV/CFF, ASA
Grant Thornton LLP
Cleveland, OH



Michael D. Morhaus,
CPA/ABV/CFF, ASA, CVA
Anders Minkler & Diehl LLP
St. Louis, MO



Alan D. Westheimer,
CPA/CFF, CFE
Alan D. Westheimer,
CPA/CFF, CFE
Houston, TX



Don Barbo,
CPA/ABV
VMG Health
Dallas, TX



W. Marc Schwartz,
CPA/CFF, CFE
Hill Schwartz Spilker
Keller LLC
Houston, TX



Allen Wilen,
CPA/CFF, CIRA, CFA
Eisner Amper LLP
New York



Hubert Klein,
CPA/ABV/CFF, CVA, CFE
EisnerAmper LLP
Hackensack, NJ



Holly Sharp,
CPA/CFF, CFE
LaPorte Sehrt Romig Hand
New Orleans, LA

The views expressed by the authors do not necessarily represent the views, positions or opinions of the AICPA or the authors' respective employers. These articles are for educational purposes only and do not constitute accounting or legal advice or create an accountant-client or attorney-client relationship.



© 2018 Association of International Certified Professional Accountants. All rights reserved. AICPA and the American Institute of CPAs are trademarks of the American Institute of Certified Public Accountants and are registered in the United States, the European Union and other countries. The Globe Design is a trademark owned by the Association of International Certified Professional Accountants and licensed to the AICPA. 1808-5667