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CYBERSECURITY AND BUSINESS VALUATIONS: INCREASING VALUE AND REDUCING RISK FOR VALUATORS

By Raymond Hutchins and

Dave Miles, CPA, CVA, CGMA

It is rare and notable when anything new hits the valuation industry. But that moment has come. Cybersecurity due diligence must now be part of any new business valuation. To ignore this new reality invites unnecessary credibility challenges, liability, and litigation. Cybersecurity risk applies to all businesses today, not just large enterprises. The authors discuss the overall impact on business valuation.

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21 **LETTERS TO THE EDITOR**

In this issue, we have two detailed responses to articles that appeared earlier this year.

Response to *How Not to Use Duff and Phelps Data*, May/June 2019
By Joshua Feldman, CPA, CFE, CVA, AIAF
I read the article, *How Not to Use Duff & Phelps Data*. I agree with some of Grabowski, d'Almeida, and Jacobs (D&P) observations, but certainly not all, as my article (*Rethinking Using Arithmetic Mean Returns in Calculating Small Company Risk Premiums, The Value Examiner*, November/December 2018) would indicate.

Response to *Vasicek and Blume Betas: Back to the Future (Parts I and II)* , January/February 2019; March/April 2019
By Prof. Dr. Leonhard Knoll, Prof. em. Dr.; Dr. h.c. Lutz Kruschwitz, Prof. Dr.; Dr. Andreas Löffler; and Prof. Dr. Daniela Lorenz
In the first two issues of *The Value Examiner* in 2019, Diana Raicov and Richard Trafford offered a further contribution to the ongoing studies on the modification of CAPM and, in particular, on the empirical estimation of Beta. They compare different methods for estimating Beta and evaluate them according to the criteria of unbiasedness, stability, and predictive ability. We would like to make some comments on their procedures and results.

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Moderated by Nancy McCarthy, Senior Editor, The Value Examiner

Over the course of the year, this column is expertly written by Peter Lohrey. However, in the summer months, Dr. Lohrey takes a well-deserved break. Last month, our guest editor was Matthew Crane, DBA, ASA, CPA. This month, Dr. Lohrey has been joined by several members of *The Value Examiner* editorial board for a lively discussion on the challenges and needs of students who one day hope to enter the valuation profession.

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By Kevin A. Diehl, JD, CPA

For a valuation expert, *Wal-Mart Puerto Rico, Inc. v. Zaragoza-Gomez*, Civil No. 3:15-CV-03018 (JAF), 174 F. Supp. 3d 585 (2016), is gold. It first discusses how to value transfers between related entities in the U.S. and Puerto Rico, an ongoing issue for many Fortune 500 companies expanding to multiple states and internationally. The case is a good example of transfer-pricing valuations in today's business environment in general. It does ultimately show that Wal-Mart utilizes the proper transfer-pricing valuation steps.

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PRACTICE MANAGEMENT

HOW IRS GUIDANCE MAKES IT IMPOSSIBLE TO COMPLY WITH SECTION 2801 IN TWO HOURS OR LESS

By Fabio Ambrosio, JD, LLM, MBA, CPA, PFS, ABV, CFP, EA, CVA, MAFF, CFE, CGMA,

In 2008 Congress added Section 2801 to the Internal Revenue Code. This section targets those individuals who, by relinquishing citizenship or residency, could potentially escape the gift or estate tax. The author describes, how the mechanics of how Section 2801 have troubled the IRS for the last eleven years.

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PRACTICING SOLO: ZACHARY SHARKEY

By Rod P. Burkert, CPA, ABV, CVA, MBA

The author interviews sole practitioner, Zachary Sharkey, CFA, CPA, ABV, from St. Louis, MO.

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TELLING YOUR STORY: EDITORIAL BOARD MEMBERS AND CONTRIBUTORS TO *THE VALUE EXAMINER* SAY WHY THEY WRITE (PART II)

Compiled by Nancy McCarthy, Senior Editor, The Value Examiner

Kindra Hall, a motivational speaker and one of the keynotes at the June 8, 2019 NACVA and the CTI's Annual Consultants' Conference, presented a unique topic: "The Power of Storytelling on Your Journey to the Top." In the March/April 2019 issue of *The Value Examiner*, contributors and board members gave insights into why they write. In this issue, we hear from several more professionals who write as part of their business life.

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VALUATION

Cybersecurity and Business Valuations: Increasing Value and Reducing Risk for Valuators

By Raymond Hutchins and Dave Miles, CPA, CVA, CGMA

It is rare and notable when anything new hits the valuation industry. But that moment has come. Cybersecurity due diligence must now be part of any new business valuation. To ignore this new reality invites unnecessary credibility challenges, liability, and litigation.

THE PROBLEM

Cybersecurity risk applies to all businesses today. While valuators might think that cybersecurity applies only to larger enterprises, that is incorrect. The internet has created a playing field where size does not matter. Small businesses are using technology every day in completing their tasks, whether it is making a call on a smart phone or using e-mail. Many smaller business owners mistakenly believe that installing a firewall or using antivirus software is enough protection because their companies are small and do not have any "valuable" data. Cybersecurity breaches do not discriminate based on size. Cyber thieves look for opportunity. Small businesses are just as likely to have a cybersecurity breach as large ones—and they have far fewer resources to deal with one when it happens.

In today's world, cybersecurity (like accounting) is a business process that permeates every area of the business. Accounting is a part of the sales cycle; so is cybersecurity. Accounting is a part of the supply cycle; so is cybersecurity. Accounting is a part of the manufacturing process; so is cybersecurity. The point is simple. If a valuation professional gets a bad feeling about accounting, the value of the business is questioned. Likewise, if the valuation professional gets a bad feeling about the cybersecurity, the value should be affected.

It is not required that valuation professionals be cybersecurity experts. Valuation experts are smart enough to understand that a risk exists, and it should be quantified or excluded from the valuation scope. Obviously, "it depends" comes into play. If the costs to mitigate or correct the breach are minimal, then there is less of a problem. However, if those costs are substantial, then the reverse is true.

The first takeaway is exactly this: in the limiting conditions or scope limitation of the report, there should be a statement about cybersecurity. At the extreme end, a limiting condition should disclose that cybersecurity risk was not considered and that it may have a material impact on the value of the business. If cybersecurity is considered, the limiting condition can be softened to be in sync with the work performed.

CYBERSECURITY: A KEY CONSIDERATION IN ANY BUSINESS VALUATION

It is accepted that risk affects valuation, but only recently has it been recognized that cybersecurity is a pervasive risk. Once insurance companies started selling cybersecurity insurance, any arguments to the contrary were stilled. The fact that there is a burgeoning market for cybersecurity insurance is validation that cybersecurity is a real risk. It could be the subject of an entire article, but cybersecurity insurance is not a "get out of jail free card" for dealing with cyber risk. It is the last resort. And, cybersecurity insurance has many landmines of its own because it is a non-standard form policy.

In today's world, most businesses are forced to operate on top of an IT infrastructure that is inherently insecure. Not every business must use this IT infrastructure to move and store sensitive data, but for most businesses, that is the reality. In today's world: The greater the dependence upon the IT infrastructure to operate the business, the greater the risk.

If a business cannot effectively defend its IT systems and data from attack, then it is worth less than a business that can defend itself. It is the valuation professional's job to define the impact of cybersecurity risk on that valuation.

Nowadays, in addition to other valuation factors, a company's value is directly related to the value of different types of data:

- Intellectual property data
- Client data
- Application (software) data

Additionally, that value is impacted by the amount of unmitigated cybersecurity risk, including:

- Accessibility to that data
- Security of that data
- Safety and security of the systems required to use that data
- Commitment to security by the people controlling that data

If a valuator is not aware of these issues and does not ask questions related to these issues, then how can the valuator establish the company's true value? And remember, nondisclosure of cybersecurity risk is no longer an option.

CASE STUDIES

Let's look at several real-life examples that will demonstrate the point—some larger companies and then some smaller companies. Note that larger companies are more likely able to survive breach events because they have resources to deal with a breach, while smaller companies may have to file for bankruptcy protection or dissolve.

Target Breach, December 2013

We will not discuss how the breach happened, but forty million credit cards plus an additional seventy million customer loyalty cards were stolen. Target paid nineteen million dollars in fines and another $154 million in legal settlements. Their 2016 annual report said that total financial cost to the company was $292 million—less a $100 million cyber insurance payment.

The event occurred in 2013, and it is still not resolved; hard costs continue to accrue as of 2019.

But what is the cost of being distracted by litigation for five to ten years? What is the unfunded liability? How has this impacted Target's value? The stock price took a major hit immediately after the breach but has since recovered. This is because the target had major resources to respond that a smaller enterprise would not have.

Verizon Purchase of Yahoo, 2013–2014

During Verizon's due diligence process in purchasing Yahoo during 2013–2014, Verizon accidentally discovered a breach of Yahoo's systems. The personal data of three billion account holders were exposed, but no credit card info was exposed.

As a result of this breach, Verizon reduced the purchase price from $4.8 billion to $4.48 billion and demanded that Yahoo shareholders pay costs associated with remediation, loss of customers, business disruption, regulatory fines, legal costs, etc. Yahoo shareholders also had to set aside monies to cover retained liability associated with this breach.

While the sale ultimately went through, as of 2019, the matter is still not fully settled.

Marriott's Acquisition of Starwood and Sotheby's Acquisition of Home[1]

Both of these acquisitions occurred in late 2018, and in both cases, hackers had been operating undetected inside the IT systems of the companies being acquired for years. In both cases, the hackers were not detected until years after the acquisitions were completed.

In neither case was there any hold-back for cyber issues nor any retained liability in the sale documents. The new buyers just had to absorb all negative impacts.

Microsoft Purchase of a Small Company for Ten Million Dollars

During the purchase, Microsoft did not perform good cybersecurity due diligence and discovered various cybersecurity network and application vulnerabilities after the sale had closed. Microsoft was forced to mitigate all the problems, and it cost them ten million dollars to do so.

They paid double for the acquisition.

The only saving grace was that there was no breach of the systems or public data involved, or it would have been worse. But from a valuation point of view, this was a disaster.

1 NOTE: on July 9, 2019, the U.K. Information Commissioner's Office (ICO) has proposed a $124M fine against Marriott related to the acquisition of Starwood. "The GDPR makes it clear that organizations must be accountable for the personal data they hold," Information Commissioner Elizabeth Denham said. "This can include carrying out proper due diligence when making a corporate acquisition, and putting in place proper accountability measures to assess not only what personal data has been acquired, but also how it is protected."

Deal Killed Because of Poorly Built Software

This was a company acquisition that CyberCecurity LLC partner, Mitch Tanenbaum, personally witnessed.

In 1996, the financial services company Mitch worked for purchased another company for three million dollars. The primary reason they wanted to buy the company was to get ownership of a key piece of software that was core to its business.

But the buying company failed to request adequate access to that software to conduct proper cyber due diligence. When the software was originally developed, the developers did not use a secure software development lifecycle process. Therefore, the software application was completely not secure, impossible to maintain, and vulnerable to attack (by the way, the vast majority of legacy software in use today falls into this category).

By the time the purchasing company discovered their error, the transaction had already been funded. It was determined that the cost to review the code, remediate the coding errors, and put into place a company-wide cybersecurity program, would have been one million dollars or thirty-three percent of the original valuation of three million dollars.

In this case, the buying company was able to reverse the transaction and get their money refunded due to a threat of litigation.

After that, the buyer was not willing to stay in the deal because they did not know if sensitive data had already been stolen and/or compromised by competitors.

BENEFITS TO CLIENTS CONSIDERING CYBERSECURITY IN VALUATIONS

When valuators include cybersecurity due diligence as part of your valuation process, you do the following:

- Provide a more accurate valuation of the business
- Help the client protect and increase the value of their business
- Help the client better understand and protect their data
- Help the client better understand and protect their money and assets

BENEFITS TO VALUATORS BY CONSIDERING CYBERSECURITY IN VALUATIONS

While the conversation may be unexpected and somewhat psychologically painful, benefits accrue to valuators as well. They are:

- Reducing the risk and liability associated with valuations that do not factor in cybersecurity
- Bringing more value to your clients
- Increasing and protecting the value of your practice
- Gaining a competitive edge

HOW TO DETERMINE WHETHER CYBERSECURITY IS A VALUATION FACTOR

While it is certainly true that virtually all businesses today are built upon an insecure IT infrastructure, not all businesses are vulnerable to attack and material financial loss. For example, restaurants that use secure third-party Point-of-Sale (POS) systems could be reasonably immune to attack if they do not directly collect and store customer data. Their IP (recipes and business processes) may be exposed and should be protected, but the remediation of this issue might be fairly inexpensive and fast.

To determine if you have a cybersecurity risk, it is important to ask several important questions that help you decide if you are in danger of a cybersecurity breach.

TEN CYBERSECURITY VALUATION TEST QUESTIONS

1. Does the company have sensitive data that it is responsible for protecting, and that might be of value to competitors, criminals, or foreign governments (intellectual property, client data, non-public personal information)?
2. Is the business in compliance with applicable state, federal, or professional cybersecurity/privacy laws or requirements (HIPAA, PCI, various privacy laws, and others)?
3. Does the business have a significant online presence?
4. Does the company develop and/or maintain online applications that collect sensitive information, or which are crucial to the operation of the business?
5. Does the company have a written cybersecurity program?
6. Is an executive-level employee responsible for this program?

7. Would a cyber incident that affected the company's reputation impact the value of the company?
8. Would the company be negatively impacted if their online systems (internal or public) were taken out of service for a week or a month due to a cyber incident?
9. What kind of cybersecurity insurance does the company carry?
10. Has the company ever had a cyber incident (virus, ransomware, business e-mail compromise, wire fraud, breach of NPI)?

These ten questions should help to decide the extent of the risk cybersecurity present. If the risk is small or immaterial, it might be ignored.

But if the risk is determined to be unquantifiable, then a third-party expert should be consulted. And if the risk is large and quantifiable, then the valuation professional should consider that fact in the development and reporting of a conclusion of value.

CYBERSECURITY RISK IN DEVELOPMENT STANDARDS

In the Asset Approach, can you identify intellectual property that needs to be protected? Is there a risk to computer systems and technology that would affect value? If there is a risk, and it is material, an expert might be sought out to determine how much it would cost to mitigate the risk and the value adjusted accordingly, i.e., treated as an off-balance sheet liability. The hypothetical buyer would do this.

In the Income Approach, the discount rate should be adjusted or a direct adjustment to value made. Typically, when company-specific risk is assigned, different characteristics are listed. Based on the ten questions asked in an interview, cybersecurity should be one of the characteristics. Furthermore, if the costs to control and mitigate the risk are known, a direct adjustment to value would be appropriate. Perhaps, cash flow would be adjusted to show the ongoing cost of cybersecurity.

The Market Approach becomes interesting. Did the comparable transactions consider cybersecurity risk? Does cybersecurity create a material change in the multiplier? As experts, the data you choose to use must be understood and used accordingly. The additional value of strong cybersecurity and the downward adjustments to value for

SECURITY BREACHES IN THE NEWS

In July 2019, just before *The Value Examiner* went to press, It was revealed that a hacker gained access to more than one-hundred million Capital One customers' accounts and credit card applications earlier this year. According to the bank and the US Department of Justice, the accused hacker, Paige Thompson, gained access to 140,000 Social Security numbers, one million Canadian Social Insurance numbers and 80,000 bank account numbers, in addition to an undisclosed number of people's names, addresses, credit scores, credit limits, balances, and other information.

In the same month, Equifax, the credit rating company, announced a settlement agreement with regards to its data breach, which occurred in September 2017. One hundred forty-seven million consumers were affected. Hackers were able to get access to a multitude of consumer private information, including names, Social Security numbers, dates of birth, credit card numbers and even driver's license numbers.

During the investigation into the breach, Equifax admitted the company was informed in March that hackers could exploit a vulnerability in its system, but failed to install the necessary patches. As part of the settlement agreement, Equifax will also pay $175 million in civil penalties to states, and a $100 million fine to the Consumer Financial Protection Bureau.

According to experts in cybersecurty such as George Wrenn, CEO of Cybersaint, a company based in Boston, MA, these breaches are an example of when an organization does not practice integrated risk and compliance. According to Wrenn, challenge for many of these enterprises - especially those like Capital One that process such sensitive information - is ensuring that they have the infrastructure in place to be aware when a vulnerability like this exists or a control fails… There needs to be a greater awareness across the entire organization, and especially within the information security organization, that these kinds of breaches directly impact their customers as well as directly impact the business' bottom line."

Nancy McCarthy, Senior Editor, The Value Examiner

weak cybersecurity are recent developments. We believe that the expert should decide the best approach but start with the cost to mitigate as a decrease to the value of the subject company.

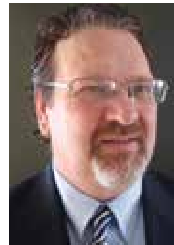
CYBERSECURITY RISK IN THE REPORTING STANDARDS

There are three areas where this risk must be identified if it exists and a fourth if an outside expert is used. The first discussion is in the limiting conditions or scope limitations where the risk is identified and its effect on the results quantified. The second discussion is in the description of the company and how it does business where the risk is identified. The third discussion is in the valuation method used where the value adjustment is made. Lastly, if a third-party specialist is used, the report discussion should disclose what reliance was placed upon that work and who is responsible for the work done by the specialist.

CONCLUSION

While it is not necessary to be a cybersecurity expert, cybersecurity may now have a material impact on valuation. The magnitude of this impact can be determined by addressing cybersecurity in the management interview, the development of a value, and the reporting of a value. VE

Raymond Hutchins is the managing partner for CyberCecurity LLC, a full-service cybersecurity and privacy firm headquartered in Denver, Colorado that has an international client base. He and his partner, Mitch Tanenbaum, have over fifty years of IT, cybersecurity, and privacy experience. They are highly respected national cybersecurity leaders who speak and write frequently on the subject of cybersecurity, privacy, and compliance. They are the first cybersecurity professionals to introduce cybersecurity due diligence to the accounting and valuation professions. E-mail: rh@cybercecurity.com



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VALUATION

The Role of Managerial Ability in Firm Valuation

By Davit Adut, PhD; Marinilka Barros Kimbro PhD; Marc Picconi, PhD; and Philipp Schaberl, PhD

In this article, we provide an explanation based on Ohlson (1995) and empirical evidence that managerial ability (MA) significantly influences the relationship between market value (MV) and accounting fundamentals, such as book value of equity (BV), net income (NI), cash flows (CF), and accruals (ACCR).

We define MA as a mathematical ratio of inputs to outputs and provide a novel approach to measuring MA. Valuation analysts usually use discounted CF or residual income methods. These models usually adjust for MA in their discount rates. Although valuation analysts already evaluate the quality of management in their evaluation of risk by direct inputs, this approach is not standardized and is *ad hoc* as it relates to evaluation of accounting fundamentals. This approach, although widely used, might contain biases specific to the analyst. Generally Accepted Accounting Principles place great emphasis on and urges systematic approaches to asset valuations as well as other accounting information. Consistent with this approach, our measure presents a more systematic valuation method that can be used by analysts. We argue that this should be of value to the business valuation community. In a related article, Hambrick *et al.*, (1995) provide evidence that managerial discretion differs widely among industries. Our measure provides an industry adjusted approach to MA and provides insights to a problem recognized by security analysts. We argue that these two important points present an incremental contribution to business valuation techniques and can be utilized by valuation analysts.

The management literature has explored the value of MA and concludes that human capital (talent) adds additional value to the firm (e.g., Hambrick and Mason, 1984). Indeed, numerous studies provide evidence in support of the argument that strong MA has a positive effect on firm performance, and therefore firm value. For example, Demerjian *et al.*, (2013) document a positive association between MA and earnings and ACCR persistence.

In light of these findings, the natural question emerges as to whether investors price accounting fundamentals differently conditional on a firm's level of MA. In other words, is a dollar of income more valuable when it is generated by a high-ability manager? The purpose of this article is to examine this question. Moreover, at the end of the article, we use two real-world examples to demonstrate how estimating the relationship between accounting fundamentals and firm value by applying an appropriate level of MA can reduce the error when estimating firm value.

Based on a sample of 150,348 publicly traded firm-year observations for the twenty-nine-year period 1987–2015, we use the robust Theil-Sen (TS) estimation methodology to estimate the relationships between MV and several accounting fundamentals. We find that the association between MV and NI is stronger for high-ability managers. To obtain a better understanding whether this result is driven by the CF or ACCR component of NI, we repeat this analysis after decomposing NI into CF and ACCR. Again, we find that CF and ACCR are more strongly associated with MV for firms with high-ability managers. Based on Ohlson (1995) and Demerjian *et al.*, (2012) we propose a positive relationship between MA and earnings persistence as an explanation for our findings.

MEASURING MANAGERIAL ABILITY

Demerjian, *et al.*, (2012) develop a two-step process which measures MA based on how effective managers are at converting a given set of resources into revenue. In the first step of the process, Demerjian *et al.*, use data envelopment analysis (DEA) to estimate firm efficiency. DEA is a nonparametric method that uses multiple inputs and outputs to measure the relative efficiency of decision-making units (DMUs) or firms within their industries. DEA creates an efficient frontier of observed production points from linear programming to maximize a ratio of outputs to inputs. DEA assigns a value of one to the most efficient DMUs on the frontier and a value less than one to less efficient DMUs. To estimate firm efficiency

scores, Demerjian *et al.*, use sales revenue as the sole output variable and the following seven input variables that are all derived from firms' publicly available financial reports which are widely used by valuation analysts: (1) net property, plant, and equipment; (2) cost of goods sold; (3) selling, general, and administrative costs; (4) capitalized operating leases; (5) net research and development; (6) purchased goodwill; and (7) other intangible assets.

In the second step, the resulting *FirmEfficiency* measure from step one is regressed against several firm characteristics[1] to obtain a measure of MA, i.e., the residual firm efficiency not accounted for by firm characteristics. Demerjian, *et al.*, (2012) validate their MA measure (MA score) by comparing it with other previously developed—and arguably imperfect—proxies for MA like CEO pay, earnings quality, and CEO turnover, and find that their MA score is superior to these proxies.[2]

We obtain the annually estimated *FirmEfficiency* scores from Peter Demerjian's website. *FirmEfficiency* is the first stage, DEA-based measure of total firm efficiency, with values ranging from zero to one.[3] Next, following Adut *et al.*, (2019) we estimate the following Tobit regression model across firms by year and Global Industry Classification Standard (GICS) sector to obtain the measure of MA that we use in this analysis.[4] These Tobit regressions are estimated annually for GICS sectors which allow us to obtain a MA score that is relative to other firms in the same industry which is a more novel approach than current methods in business valuation:

$$FirmEfficiency_{i,t} = \alpha + \beta_1 Ln(Assets)_{i,t} + \beta_2 MarketShare_{i,t} + \beta_3 D_Pos_FCF_{i,t} + \beta_4 FirmAge_{i,t} + \beta_5 BusSegConcentration_{i,t} + \beta_6 D_ForeignCurrency_{i,t} + \varepsilon_{i,t} \quad (1)$$

where *Ln(Assets)* is the natural log of assets; *MarketShare* is the percentage of revenues earned by the firm in its Fama and French (1997) industry in year t; *D_Pos_FCF* is an indicator variable coded as one when a firm has nonnegative free CF and zero otherwise; *FirmAge* is the number of years the firm has been listed on Compustat at the end of year t; *BusSegConcentration* is the ratio of individual business segment sales to total sales, summed across all business segments for year t (if segment data is not available, the firm is assigned a concentration of one); *D_ForeignCurrency* is coded as one when a firm reports nonzero value for foreign currency adjustments in year t, and zero otherwise.[5]

The residual from Equation (1) represents MA, i.e., the part of firm efficiency that is not due to firm characteristics. Since this is a firm specific score, business analysts can use the corresponding score for the corresponding firm and can obtain individual scores. Alternatively, the analyst can obtain the firm-year specific variable MA score directly from Peter Demerjian's website. Please see the "Practitioner's Note" in the appendix available online at http://www.TheValueExaminer.com/2019/19-JA-Appendix/.

DATA AND EMPIRICAL ANALYSIS

Univariate Analysis

We obtain financial statements data from Compustat and merge this data with the previously discussed measure of MA. The Full sample consists of all annual firm-year observations with non-missing data required for our analysis. The Full sample contains 150,348 publicly traded firm-year observations for the twenty-nine-year period 1987–2015. The average sample year contains five,184 firm-years. The number of observations per sample-year range from a high of 6,843 for the year 1999, to a low of 805 for the year 1987. We allocate firms into Low, Medium, and High MA terciles by year.

1 Demerjein *et al.*, (2012) uses a linear estimation and regresses the total firm efficiency score from the first step DEA against: firm size, firm market share, cash availability, life cycle, operational complexity, and foreign operations. The residual from this estimation is the MA score.

2 These proxies of MA likely introduce measurement error, because they also contain factors beyond managers' control and thus do not exclusively measure MA.

3 We want to thank Peter Demerjian for providing the MA data on his website: http://faculty.washinhgton.edu/smcvay/ability/data.html

4 A copy of the working paper is available from the authors upon request. Please reach out to adutd@seattle.edu

5 For a more detailed discussion about how to measure MA please see Demerjian *et al.*, (2012).

TABLE 1: DESCRIPTIVE STATISTICS AND UNIVARIATE COMPARISON

	Low-MA	Med-MA	High-MA	High - Low
MV	1.979	1.946	3.325	1.345***
BV	0.545	0.546	0.602	0.056*
NI	(0.154)	(0.084)	(0.062)	0.092***
CF	(0.031)	0.011	0.029	0.061***
ACCR	(0.121)	(0.092)	(0.091)	0.030**

Table 1 shows time-series averages of annually estimated means. Except for MA, all variables are measured in $ millions. ***, **, * indicates statistically significant difference at the one percent, five percent, and ten percent level, respectively. Statistical significance is estimated with two-tailed t-tests based on the parameter's distribution across the twenty-nine sample years (1987 to 2015). All variables are unscaled and unwinsorized.

Table 1 shows time-series averages of the annually estimated means for a firm's MV, BV, NI, CF from operations, and ACCR by MA tercile. Using time-series averages (rather than pooled averages) has the advantage that each sample year receives an equal weight. The appendix at the end of the article shows a list of variable definitions. Except for MA, all variables are unscaled and measured at the firm-year level in $ millions at the end of the fiscal period.

A comparison between the Low-MA tercile in Column (1) with the High-MA tercile in Column (3) shows that firms with high-ability management tend to be more valuable and more profitable in terms of NI, CF, and ACCR. Column (4) shows the difference between the Low and High-MA terciles. We estimate statistical significance with a two-tailed t-test based on the parameters' distribution across the twenty-nine sample years. For all variables examined, the difference between the High and Low-MA tercile is statistically significant at the ten percent level or better.

TABLE 2: PEARSON AND SPEARMAN CORRELATIONS

	MA	MV	BV	NI	CF	ACCR
MA		0.111	0.038	0.091	0.071	0.068
MV	0.233		0.340	−0.454	−0.423	−0.262
BV	0.125	0.531		0.136	0.049	0.207
NI	0.230	0.266	0.365		0.797	0.661
CF	0.119	0.134	0.203	0.670		0.181
ACCR	0.115	0.052	0.199	0.420	−0.214	

The top (bottom) triangle of Table 2 shows the time-series averages of the annually estimated Pearson (Spearman) correlation coefficients. Except for MA (MA), all variables are measured in $ millions. Bold font indicates that the correlation is statistically significant at the five percent level or better. Statistical significance is estimated with two-tailed t-tests based on the parameter's distribution across the twenty-nine sample years (1987 to 2015).

Table 2 shows the time-series averages of annually estimated correlation coefficients. The top (bottom) triangle is based on Pearson (Spearman) correlation coefficients. For ease of exposition, the following discussion will focus on the Spearman correlation coefficient shown in the bottom triangle. Bold font indicates that the coefficient is statistically significant at the five percent level or better.

As shown in the MA column of Table 2, all variables are positively associated with MA. Consistent with the results presented in Table 1, this finding suggests that firms with high-ability management tend to be more valuable and more profitable in terms of NI, CF, and ACCR. Moreover, the correlation between MA and MV or NI, is almost twice as large as the correlation between MA and the other variables.

Multivariate Analysis

Ohlson (1995) provides the theoretical basis for the valuation model we are using in this study. Specifically, Ohlson (1995) models MV as a function of accounting fundamentals and so called "other" information which includes value relevant information that is not-yet captured by the accounting system. Following prior literature (e.g., Barth *et al*., 1998) we model MV as a function of BV and NI as shown in Equation (2). Specifically, we estimate the following cross-sectional regression each year:

$$MV_i = \beta_0 + \beta_1 BV_i + \beta_2 NI_i + \varepsilon \qquad (2)$$

Ohlson (1995) shows analytically that the NI-coefficient is increasing with earnings persistence and decreasing with the cost of capital.[6] Given that firms with high-ability managers have more persistent earnings (see Demerjian *et al*., 2013) and/or lower cost of capital, we hypothesize that the NI-coefficient for firms with high-ability management is larger than the NI-coefficient for firms with low-ability managers.

The widely used Ordinary-Least-Squares (OLS) regression approach suffers from two problems. First, the coefficient estimates can be strongly influenced by outlier observations. Second, heteroscedastic residuals create the need to scale variables (e.g., Ohlson and Kim 2015).[7] Moreover, it is common

6 For a more detailed explanation, please see Equation (7) in Ohlson (1995), p. 670 ff.

7 In this context, the issue of heteroscedasticity refers to the circumstance in which the variability of the dependent variable is unequal across the range of values of the independent variables that predict it.

practice to winsorize or truncate data to mitigate the influence of outliers. To overcome these issues, we follow prior literature and use the TS estimation approach. The methodology under the TS approach is intuitive and straightforward. Rather than running a single OLS regression based on an entire sample, the TS approach runs repeated OLS regressions on thousands of small sub-samples comprised of n randomly selected observations, where n equals the number of estimated parameters (i.e., intercept and coefficients). Given the small sample size for each of the sub-samples, the n-parameters estimated based on a given sub-sample may be heavily influenced by outliers. However, since the TS-parameter is estimated as the median across the parameter estimates generated by the thousands of randomly generated sub-samples, any undue influence from outlier observations or outlier parameters is largely removed.

We employ the TS estimation method following an approach similar to Schaberl and Sellers (2017). Given the robustness of this approach, we use unscaled, unwinsorized firm-year level variables. First, for each sample year, we randomly draw 10,000 sub-samples with n-observations, with replacement. Second, for each sample year, we calculate the median for each parameter estimate in the regression. Third, we use two-tailed t-tests based on the distribution of the annually estimated parameters across the twenty-nine sample years to determine statistical significance for each parameter estimate.

TABLE 3: TS COEFFICIENT ESTIMATES FOR BV AND NI

$MV_i = \beta_0 + \beta_1 BV_i + \beta_2 NI_i + \varepsilon$

	(1)	(2)	(3)	(4)	(5)
	Full	Low	Med	High	High - Low
Intercept	5.191	9.378	3.400	5.331	
	<0.01	<0.01	<0.01	<0.01	
BV	1.373	1.281	1.320	1.543	0.262
	<0.01	<0.01	<0.01	<0.01	<0.01
NI	2.025	0.892	1.787	4.077	3.184
	<0.01	<0.01	<0.01	<0.01	<0.01

Table 3 shows time-series averages of annually TS coefficient estimates. For each sample year, we randomly draw 10,000 sub-samples with n-observations, with replacement. Next, for each sample year, we calculate the median for each parameter estimate in the regression. Statistical significance is estimated with two-tailed t-tests based on the parameter's distribution across the twenty-nine sample years (1987 to 2015). All variables are unscaled and unwinsorized.

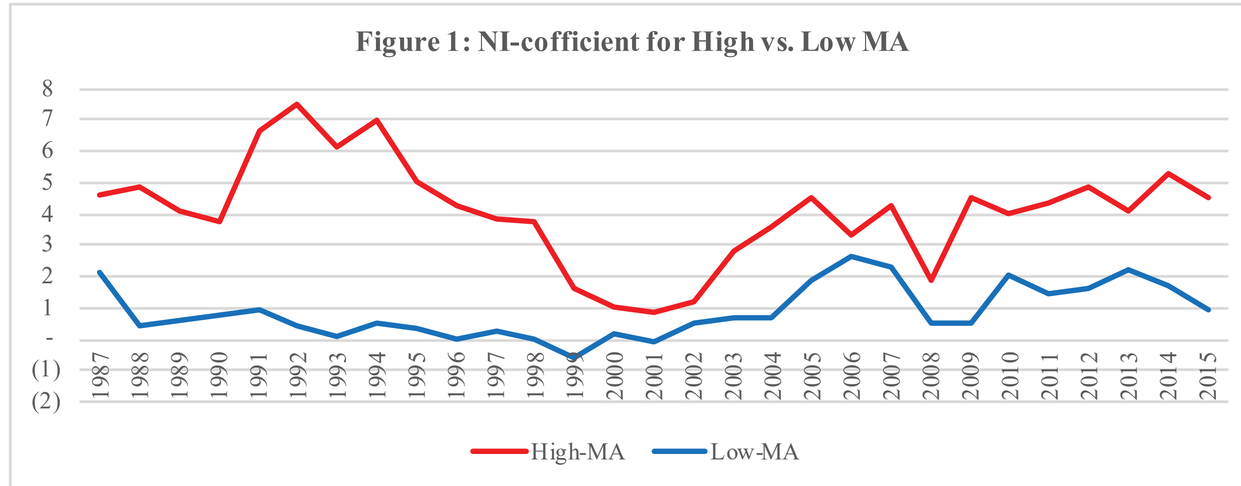
Table 3 shows the time-series averages of annually estimated TS regression coefficients. Column (1) shows the results based on the Full sample with 150,348 firm-years, while the results presented in Columns (2), (3), and (4) are based on the Low, Med, and High-MA terciles. Each tercile contains approximately 50,100 firm-year observations. To indicate statistical significance, p-values are reported in italics under the time-series averages of the coefficient estimates. The results presented in Column (5) show the difference and the statistical significance of the difference between the Low and High-MA column.

The results presented in Column (1) show that BV and NI are significantly positively associated with MV. Consistent with our expectations, the NI-coefficient for the High-MA tercile is significantly larger than the NI-coefficient for the Low-MA tercile (4.077 vs. 0.892). In fact, the NI-coefficient for the High-MA tercile is over four times the size of the NI-coefficient for the Low-MA tercile. However, inferences based on averages

can potentially be driven by outliers. To demonstrate that this result is consistent across time, Figure 1 shows that the NI-coefficient is larger for the High-MA tercile in every year of the sample period.

In short, the results presented in Table 3 and Figure 1 indicate that investors perceive a dollar of NI as relatively more valuable when it is generated by a firm with high-ability management in charge.

Sloan (1996) has documented that the CF component of NI is more persistent than the ACCR component of NI. Given that NI = CF + ACCR, our Equation (2) implicitly forces the coefficient for CF and ACCR to



be equal. To allow the coefficients—and the implied persistence—to vary, we decompose NI into its cash and ACCR components and MV as a function of BV, from operations CF and ACCR as shown in Equation (3). Specifically, we estimate the following cross-sectional regression each year:

$$MV_i = \beta_0 + \beta_1 BV_i + \beta_2 CF_i + \beta_3 ACCR_i + \varepsilon \quad (3)$$

TABLE 4: TS COEFFICIENT ESTIMATES FOR BV, CF, AND ACCR.

$$MV_i = \beta_0 + \beta_1 BV_i + \beta_2 CF_i + \beta_3 ACCR_i + \varepsilon$$

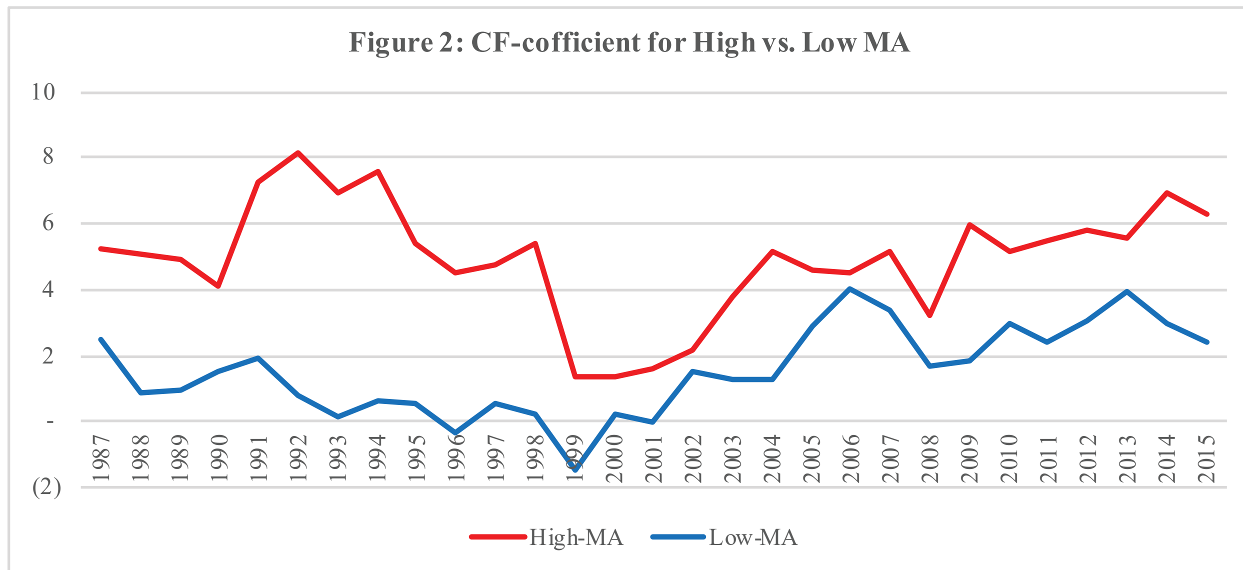
	(1)	(2)	(3)	(4)	(5)
	All	Low	Med	High	High - Low
Intercept	4.892	8.218	3.498	4.826	
	<0.01	<0.01	<0.01	<0.01	
BV	1.307	1.186	1.268	1.520	0.333
	<0.01	<0.01	<0.01	<0.01	<0.01
CF	2.935	1.543	2.603	4.953	3.410
	<0.01	<0.01	<0.01	<0.01	<0.01
ACCR	1.340	0.440	1.038	2.627	2.187
	<0.01	<0.01	<0.01	<0.01	<0.01

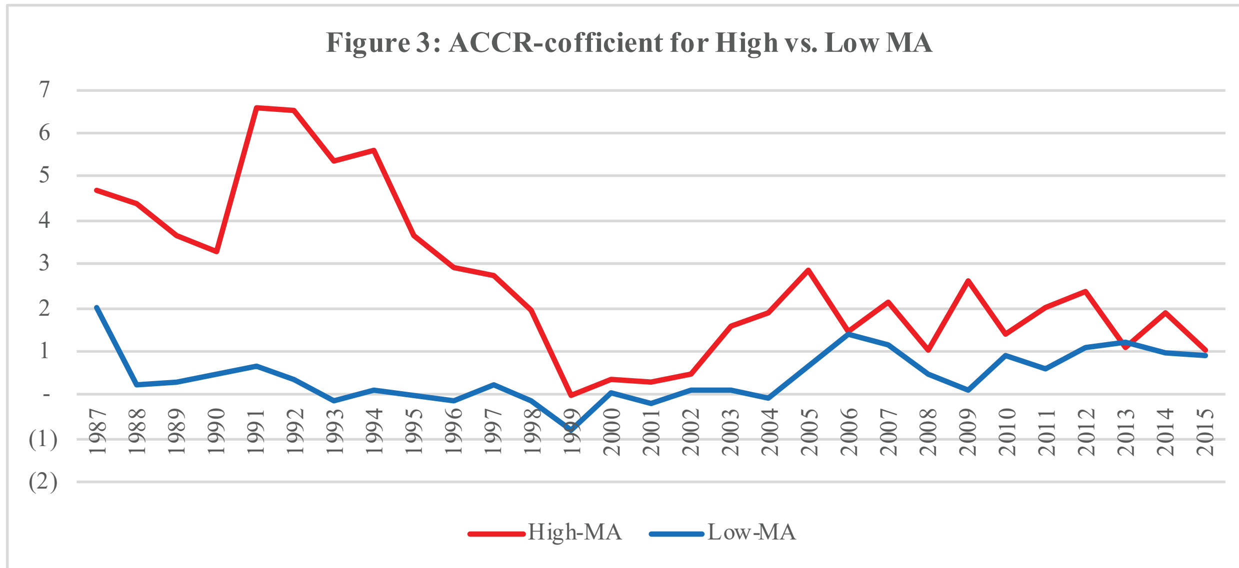
> Table 4 shows time-series averages of annually TS coefficient estimates. For each sample year we randomly draw 10,000 sub-samples with n-observations, with replacement. Next, for each sample year, we calculate the median for each parameter estimate in the regression. Statistical significance is estimated with two-tailed t-tests based on the parameter's distribution across the swenty-nine sample years (1987 to 2015). All variables are unscaled and unwinsorized.

Table 4 shows the time-series averages of annually estimated TS regression coefficients. Column (1) shows the results based on the Full sample with 150,348 firm-years, while the results presented in Columns (2), (3), and (4) are based on the Low, Med, and High-MA terciles. To indicate statistical significance, p-values are reported in italics under the time-series averages of the coefficient estimates. The results presented in Column (5) show the difference and the statistical significance of the difference between the Low and High-MA column.

Consistent with the idea that CF is more persistent than ACCR, the result presented in Column (1) shows a CF-coefficient that is more than twice as large as the ACCR-coefficient (2.935 vs. 1.340); untabulated results confirm that this difference is statistically significant ($p < 0.001$) for the Full sample as well as for each of the three MA-terciles. Moreover, this result is consistent across time. Specifically, the CF-coefficient is larger than the ACCR-coefficient in ninety-three percent, 100 percent, ninety-seven percent, and ninety-three percent of the sample years for the Full, Low-MA, Med-MA, and High-MA samples, respectively.

The results presented in Columns (2) and (4) show that the CF-coefficient is significantly larger for the High-MA tercile relative to the Low-MA tercile (4.953 vs. 1.543). Similarly, the ACCR-coefficient is significantly larger for the High-MA tercile (2.627 vs. 0.440). As shown in Column (5), both of these differences between the coefficients across the High vs. Low-MA terciles are statistically significant.





To demonstrate that these results are consistent across time, Figure 2 (Figure 3) shows the CF-coefficient (ACCR-coefficient) for the High and Low-MA tercile for every year of the sample period. As shown in Figure 2, the CF-coefficient for the High-MA tercile is larger than the CF-coefficient for the Low-MA tercile in every sample year. Similarly, Figure 3 shows that the ACCR-coefficient is relatively larger for the High-MA tercile in every sample year but 2013.

In short, the results presented in Table 4 and Figures 2 and 3 indicate that investors perceive a dollar of CF or ACCR as relatively more valuable when generated by a firm with high-ability management.

Although a more thorough explanation of our findings is beyond the scope of this article, we propose the previously documented positive relationship between MA and earnings persistence as a likely explanation for our results (Demerjian *et al.*, 2013). Another possible explanation is that firms with high ability managers have lower cost of capital, or higher growth and, therefore, a stronger association between MV and income. We are not aware of a study that has directly tested the relationship between MA and the cost of equity capital. However, the recent literature has documented that MA is positively associated with the quality of a firm's information environment (Baik *et al.*, 2018) and a firm's credit ratings (Cornaggia *et al.*, 2017), and negatively associated with bank loan prices (DeFranco *et al.*, 2017). Taken together, these recent findings strongly suggest that firms with high-ability managers face lower cost of capital, which, in turn, should yield a larger earnings coefficient. Determining whether MA's influence on earnings persistence or the cost of capital drives its impact on firm valuation could prove a fruitful avenue for future research.

CONCLUSION

In this study, we investigate whether MA influences the strength of the relationship between MV and several accounting fundamentals. To measure MA, we use a novel metric of MA based on Demerjian *et al.*, (2012). Utilizing a sample of 150,348 publicly traded firm-year observations for the twenty-nine-year period, 1987–2015, we employ the robust TS estimation methodology to estimate the relationships between MV and several accounting fundamentals. We find that the association between MV and NI is stronger for high-ability managers. To better understand the driver of our results, we repeat our analysis decomposing NI into its CF and ACCR components. We find that both components, CF and ACCR, have a stronger impact on MV for firms with high-ability managers. In short, our findings suggest that a dollar of income (be it CF or ACCR) is more valuable when generated by a firm with high ability management in charge.

These findings should be helpful to valuation analysts. By showing that MA influences the relationship between firm value and accounting fundamentals, we hope to help the analyst to incorporate MA in the valuation process in a more systematic way. More specifically, valuation analysts can potentially increase the accuracy of their value estimates by estimating regression models by MA group. To demonstrate this increase in accuracy, we provide two examples in the appendix, which is found online at http://www.TheValueExaminer.com/2019/19-JA-Appendix/. VE

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VALUATION

Letters to the Editor

RESPONSE: How Not To Use Duff And Phelps Data, May/June 2019

By Joshua Feldman, CPA, CFE, CVA, AIAF

I read the article "HOW NOT TO USE DUFF & PHELPS DATA." I agree with some of Grabowski, d'Almeida & Jacobs (D&P) observation, but certainly not all, as my article (Rethinking Using Arithmetic Mean Returns In Calculating Small Company Risk Premiums, *The Value Examiner*, November/December 2018) would indicate.

I agree that the rationale for using a one percent size premium based upon the company's "Stable history and lack of debt" is nonsensical. This would be an argument for an adjustment to the Company-Specific Risk Premium (C-SRP) and would apply equally to pre- and post-construction. I do not have much of a problem with the equity risk premium being 5.5 percent, because it is not sensitive to the method of its computation be it arithmetic mean or geometric mean.

The two percent contingency added to the post-construction rate not only seems unjustified, but unjustifiable. Let us assume there is a pipeline explosion, leak, or another mishap. Would not the owner have a separate course of action against the pipeline to recover their damages? Not only is the probability of such an occurrence seems to be low, but also the expected loss should be very small if the tort system is functioning properly.

I disagree with D&P on several points. As I wrote last year, the use of their 5.60 for size premium is based on arithmetic means and smoothing is logically and mathematically unsupportable. People's expectations are based on historical experience, and nobody uses arithmetic means when computing historical returns. The model used to justify using arithmetic means is flawed, treating each period as independent of the next, which may be true for periods of a year or less, but are not true for long periods. Using geometric means from 12/31/1925 to 12/31/2016, I have a risk premium of 3.27 percent. I believe that this overstates the risk premium based on market behavior after World War II. The post-war geometric size risk premium is 1.17 percent based on the 2019 SBBI Classic Yearbook data.

The expert's exclusion of a C-SRP for pre-construction is probably inappropriate. The subject company is tiny, with annual revenues below half a million dollars. I have rarely seen a company of this size not to have specific company risk, but your experience should be instructive. One abundantly clear risk is the Company has a single location. Forest fire, flood, road construction are just a few of the existential risks created by one location. The financials were based on tax returns, and there is no indication that they have an annual audit. There is no need one since they carry almost no debt, but this makes the veracity of their results a greater risk. How are there computer systems operated? How much managerial depth do they have? I could ask a bunch of additional questions, but the point here is that besides having no debt and decent profit margins, there is plenty of reason to believe that zero percent is unrealistically low. Increasing the discount rate for both pre-construction and post-construction with a C-SRP would lower the damages. For example, a five percent C-SRP would double the five percent pre-construction cap rate and halve that value.

D&P's CAPM argument holds no water here. The tree company is not public, so there is no reliable way to compute its value using CAPM. Furthermoe the company's size, industry, and location make it an unlikely target for a public company or private equity group to acquire. The significance of that is the hypothetical buyer cannot be assumed able to diversify away from the Company's specific risks fully.

It is curious how D&P supports their overblown small company risk premium, but poo-poos specific company risk. In defense of size premiums, we see: "Small firms have risk characteristics that differ from those of large firms, including the ability to enter the market, take market share and respond to changes in the market. Large firms generally have more resources to weather economic downturns, spend more on advertising and R&D hire top talent, and access capital and a larger customer base." On C-SRP, they quote

the Delaware Court of Chancery "…However, the Build-up Method typically incorporates heavy dollops of what is called 'company-specific risk,' the very sort of unsystematic risk that the CAPM believes is not rewarded by capital markets and should not be considered in calculating the cost of capital…" You as valuators should ask yourselves where is the risk differential bigger between a one-hundred billion dollar public company to a one hundred million dollar public company or between a one-hundred million dollar public company and a one million dollar private company? I put my money on the latter, but you can decide for yourselves.

D&P's continued recommendation of a "normalized" risk-free rate as opposed to the spot rate is without any theoretical foundation. The risk-reward concept is based upon substitutability. You cannot substitute 3.5 percent bond rates when they do not exist in today's market. Sorry. After being consistently over projecting interest rates for more than ten years of advocating this methodology, D&P may want to consider abandoning it.

No discussion is made of the analyst's usage of a five percent presumed growth rate. Wayne County, Ohio's population grew from 111,564 in 2000 to 114,520 as of April 1, 2010, or 0.262 percent annual growth. It can be noted that annual population growth from 2010–2018 has been about 0.15 percent. U.S. population growth was 0.931 percent per annum between 2000 and 2010. So, growth should be reduced at least 0.67 percent just based on population growth. The regional economy is significant in this industry because trees are too costly to ship long distances due to their weight, bulk, and relatively low value. The usage of the national average is not a reasonable estimate for this business.

TAKEAWAYS

1. Support the usage of a size risk premium based upon a reasonable method of computation such as a geometric or logarithmic regression rather than using arithmetic based concoctions based on flawed rationalizations.
2. Company-specific risk premiums belong in companies that might/probably be acquired by someone without a fully diversified portfolio.
3. Be cognizant that the use of means or medians is not always appropriate. Not every characteristic of every business is near the middle of a normal curve.
4. It requires awareness and judgment to identify when central tendencies apply.
5. Avoid using CAPM when it is near impossible to properly select a justifiable comparative, let alone explain its computation to a judge or jury. Basing CAPM solely on capitalization size ignores the broad distribution of betas within a decile range, particularly for the smallest companies (see three above).
6. "Normalized" risk-free rates should be avoided. Theoretically bankrupt and historically inaccurate, this should be a source of embarrassment for anybody that uses them. Maybe someday rates will get high enough, so this becomes irrelevant.

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RESPONSE: Vasicek and Blume Betas: Back to the Future (Parts I and II) January/February 2019; March/April 2019

By Prof. Dr. Leonhard Knoll, Prof. em. Dr.; Dr. h.c. Lutz Kruschwitz, Prof. Dr.; Dr. Andreas Löffler; and Prof. Dr. Daniela Lorenz

In the first two issues of *The Value Examine in 2019,*[1] Diana Raicov and Richard Trafford offered a further contribution to the ongoing studies on the modification of CAPM and, in particular, on the empirical estimation of Beta. They compare different methods for estimating Beta and evaluate them according to the criteria of unbiasedness, stability, and predictive ability.[2] We would like to make some comments on their procedures and results.

1 Diana Raicov and Richard Trafford, *The Value Examiner,* January/February 2019, pp. 13–22 (Part I), and March/April 2019, pp. 12–22 (Part II).

2 Cf. Raicov, D and Trafford, R., VE J/F 2019, p. 16.

THE TWO ROLES OF ECONOMETRICS

From the beginning of CAPM in the sixties,[3] econometrics played two different roles. The first one was to test the model itself, and the results over some decades were quite mixed.[4] The other one was the best possible estimation of the parameters for a direct application of the model. In doing so, one assumes the CAPM to be correct and this has a serious (and unfortunately often neglected) consequence—the estimation model must correspond to the CAPM (as the theoretical model) or the structure of the estimation model must not contradict the structure of the CAPM.

This is all the more important for the CAPM, because the fathers of the CAPM did not only create a consistent model, but found themselves in the comfortable situation that a very simple econometric structure corresponded with their theory—the market model.[5] There was just one problem—the statistical quality of the results was (as in the case of testing the CAPM itself) not the best. Thus, investors and valuators had, and still have, two alternatives: either they throw away the CAPM and use another theoretical base for valuation or they try to modify the estimation procedure. Both alternatives have been tried extensively since the seventies, but just the second one is relevant in the article by Raicov and Trafford.

VASICEK, BLUME, AND INFORMATION EFFICIENCY

The list of trials of this second alternative is quite long and shows prominent protagonists, but just a few gained attention and practical application up to now. The approaches by Vasicek[6] and especially by Blume,[7] that were selected for examination by Raicov and Trafford, were indeed the ones that are most commonly used.

We will not discuss their empirical strength and, insofar, also do not criticize the results of Raicov and Trafford. Nevertheless, we want to recall that both approaches contradict the CAPM in a fundamental sense as they rely not only on contemporary share prices, they reflect a situation of missing information efficiency,[8] a supporting basis of the CAPM.[9] If one believes in lagged information processing or a kind of mean reversion within the relatively short time windows for estimating Beta, one should seriously question ones confidence in the CAPM itself. In our view, this is an even greater problem for using such approaches than the results of studies that were in favor of semi-strong information efficiency.[10]

FILTERING ADJUSTMENTS

Compared with that, the filtering adjustments considered by Raicov and Trafford, play a minor fundamental role. Looking at their use in practice, it is, nevertheless, understandable that the authors tested them.

As in their obvious paradigm study by Gray et al.,[11] they concede that filtering adjustments may cause biases, especially upward biases. Raicov and Trafford stress this so often[12] that

3 Beside the Nobel Prize awarded work by Sharpe, W.F. (1964). Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk. The Journal of Finance (19), pp. 425–442, especially Lintner, J. (1965). The Valuation of Risky Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets. The Review of Economics and Statistics (47), pp. 13–37, and Mossin, J. (1966). Equilibrium in a Capital Asset Market. Econometrica (34), pp. 768–783. J.L. Treynor´s (1961) preceding manuscript Towards a Theory of the Market Value of Risky Assets remained unpublished for a long time, cf. for a reprint Asset Pricing and Portfolio Performance: Models, Strategy, and Performance Metrics, edited by Korajczyk, R.A. (1999), pp. 15–22.

4 Cf. e.g. Copeland, T.E., Weston, J.F., and Shastri, K. (2005), Financial Theory and Corporate Policy, 4th ed., pp. 164–171. In 2013, the well-known journal Abacus dedicated a whole supplement to discussions about the CAPM and its half-century existence.

5 This was introduced by one of these fathers, cf. Sharpe, W.F. (1963). A simplified Model for Portfolio Analysis. Management Science 9 (2), pp. 277–293.

6 Vasicek, O. (1973). A Note on Using Cross-sectional Information in Bayesian Estimation of Security Betas. The Journal of Finance 28 (5), pp. 1233–1239.

7 Blume, M.E. (1971). On the Assessment of Risk. The Journal of Finance 26 (1), pp. 1–10; Blume, M.E. (1975). Betas and their Regression Tendencies. The Journal of Finance 30 (3) pp. 785–795; and Blume, M.E. (1979). Betas and their Regression Tendencies: Some Further Evidence. The Journal of Finance 34 (1) pp. 265–267.

8 The concept of information efficiency is strongly connected with Fama, E.F. (1965). The Behavior of Stock Market Prices. Journal of Business 38 (1), pp. 34–105; and Fama, E.F. (1970). Efficient Capital Markets: A Review of Theory and Empirical Work. The Journal of Finance 25 (?), pp. 383–417; although there were many preceding and contemporaneous authors, cf. Albrecht, P. and Maurer, R. (2016). Investment- und Risikomanagement. 4th ed., pp. 286–287; and Copeland, T.E., Weston, J.F., and Shastri, K. (2005), Financial Theory and Corporate Policy, 4th ed., pp. 353–372.

9 The most serious critique on the testability of the CAPM itself came from Roll, R. (1977). A Critique of the Asset Pricing Theory´s Test, Part I: On Past and Potential Testability of the Theory. The Journal of Financial Economics 4 (2), pp. 129–176. He rightly stated that the CAPM is based on efficient capital markets. If empirical numbers deviate from the model´s predictions, this may be caused by the fact that you have chosen an inefficient representative for the market portfolio in your regression.

10 Just for the sake of integrity, we want to mention that returns mostly show a mean reversion when observed over very long horizons (some decades), cf. for an overview Knoll, L. (2010). Anmerkungen zur Mittelungsproblematik historischer Marktrisikoprämien, in Königsmaier, H. and Rabel, K. (eds.): Unternehmensbewertung. Theoretische Grundlagen – Praktische Anwendung. Festschrift für Gerwald Mandl zum 70. Geburtstag, Wien, pp. 325–344 (336–339). This is a topic in the measurement of the equity risk premium which we do not need highlight here.

11 Gray, S., Hall, J., Klease, D., and Mc Crystal, A. (2009). Bias, stability, and predictive ability in the measurement of systematic risk. Accounting Research Journal, 22 (3), pp. 220–236.

12 Cf. pp. 17, 20, and 21 in part I and pp. 17 and 20 in part II.

we should investigate why they do not immediately discard such procedures. In doing so, we find a statement on p. 22 of part I (*The Value Examiner*, January/February 2019) that might give some reason for their examination:

"In the last period, the filters eliminate approximately twelve percent of the sample. This percentage is reasonable, and it does not permit the filters to introduce imprecision. The filtered observations display higher OLS Beta than the unfiltered statistics. This can be the result of systematically eliminating firms with very low market capitalization which may also exhibit low Betas. The second filter seems to shift the estimates closer to the absolute mean and proves to be more accurate."

Finally, in the Raicov/Trafford paper, there is no convincing justification for the use of mechanisms that produce biases. In particular, the following questions arise:

1. If twelve percent are reasonable, why is that so and where is the exact limit of reasonableness?
2. Why should firms with low market capitalization be eliminated and why are low Betas bad?
3. Why does shifting the estimates closer to the mean prove to be more accurate when we do not know the true values?

The problems with the filtering mechanisms do not stop here. In what follows, we are concentrating on R^2 and the t-statistic, because there are strict mathematical relationships between them that are not open to personal interpretation. Gray *et al.*, at least showed the analytical reasons why the R^2- and the t-statistic-filters produce an upward bias,[13] but they do not see that both do essentially the same and can be transferred into one another mathematically:[14]

with

n = number of observations per firm (here 48 months).

This relationship between the two filters has also the consequence that one cannot set critical values for R^2 and the t-statistic independently, because just one of them will be a binding restriction. To typify that for the study at hand, insert 2 for t and 48 for n in eq. (1)

or 0.1 for R^2 and 48 for n in eq. (2)

Consequently, the critical value 2 for the t-statistic cannot be binding, as long as there are no t-statistics with less than -2.26. As that result is very seldom observed in practice,[15] we ignore it for the moment, but will return to this possibility soon.

Taking together this and the upward bias-result (not only)[16] by Gray *et al.*, we should expect two effects on the results:

1. The filter of the t-statistic (here t-stat > 2) should never exclude more companies than the filter of R^2 (here $R^2 > 0{,}1$).
2. As the upward bias should be stronger in the binding filter restriction, R^2-filtered Beta means should by trend[17] be higher than means of measurements filtered by the t-statistic.

The fact that one cannot exclude equal effects in (a) and (b) is caused by the discrete composition of the industry groups, i.e., in some groups, there is no Beta with a t-statistic between 2 and 2.26 and, therefore, the firms under consideration and their Beta mean must be the same.

13 Cf. Gray, S., Hall, J., Klease, D., and Mc Crystal, A. (2009). Bias, stability, and predictive ability in the measurement of systematic risk. Accounting Research Journal, 22 (3), p. 223.

14 Cf. for the following demonstration Knoll, L., Ehrhardt, J. and Bohnet, F. (2007). Kleines Beta – kleines Bestimmtheitsmaß: großes Problem?. CFO aktuell, 6, pp. 210–213; Knoll, L. (2010). Äquivalenz zwischen signifikanten Werten des Beta-Faktors und des Bestimmtheitsmaßes. Die Wirtschaftsprüfung, 63, pp. 1106–1109; and Ziemer (2018) Der Betafaktor, Wiesbaden, p. 180. The intuition behind that result is quite simple: The RHS of the first eq. in (2) is the F-statistic for a univariate linear regression, cf. e.g. Wooldridge, J.M. (2017). Introductory Econometrics. 6th ed., p 135, and the F-statistic is the square of the t-statistic in univariate cases, cf. ibid., p. 132.

15 Negative Betas are precluded neither by theory; cf. Berk, J. and DeMarzo, P. (2017), Corporate Finance, Global Edition, 4th ed. Prentice Hall, p. 421; nor by empirical findings. While this itself is a reason against the use of a positive t-filter, one must admit that share Betas with t-statistics of that negative magnitude are almost never reported.

16 Cf. e.g. Knoll, L., Ehrhardt, J., and Bohnet, F. (2007). Kleines Beta – kleines Bestimmtheitsmaß: großes Problem?. CFO aktuell, 6, pp. 210–213.

17 The positive relationships Beta/R^2 and Beta/t-statistic are strict only c.p. While the volatility of the market return is of no importance, the positive relationships can be disturbed, if smaller Betas are accompanied by smaller volatilities of the share returns or, respectively, smaller dispersions of the disturbance terms, cf. e.g. the formulas in Gray, S., Hall, J., Klease, D., and McCrystal, A. (2009). Bias, stability, and predictive ability in the measurement of systematic risk. Accounting Research Journal, 22 (3), p. 223. Cf. the empirical results of that study, p. 227, and Knoll, L., Ehrhardt, J. and Bohnet, F. (2007). Kleines Beta – kleines Bestimmtheitsmaß: großes Problem?. CFO aktuell, 6, pp. 210–213 (212), for such a trend.

Now let us look at Table 2 of part I (p. 21) to test these propositions:

			R sq>0.1			R sq > 0.1 & Mkt Cap > $ 100m			t-stat > 2		
No.	GICS CODE	GICS Industry Group	Market Cap (£m)	No of companies	Mean	Market Cap	No of companies	Mean	Market Cap	No of companies	Mean
1	1010	ENERGY	14663.72	22	1.2195	14663.72	22	1.2195	14058.43	23	1.2833
2	1510	MATERIALS	6048.06	35	1.3877	6409.99	33	1.4063	5583.14	37	1.5702
3	2010	CAPITAL GOODS	1209.42	32	1.1186	1287.89	30	1.1327	1178.22	33	1.1348
4	2020	COMMERCIAL & PROFESSIONAL SERVICES	1388.25	41	1.2822	1527.23	37	1.2291	1360.13	42	1.3172
5	2030	TRANSPORTATION	2124.67	12	1.2016	2811.10	9	1.2760	2124.67	12	1.2016
6	2510	AUTOMOBILES & COMPONENTS	1450.23	2	2.0239	2842.25	1	2.2734	1450.23	2	2.0239
7	2520	CONSUMER DURABLES & APPAREL	1373.90	5	0.8571	1373.90	5	0.8571	1373.90	5	0.8571
8	2530	CONSUMER SERVICES	948.28	21	1.2618	1040.92	19	1.2969	945.01	22	1.3398
9	2540	MEDIA	2415.90	20	0.9911	3420.78	14	1.0729	2415.90	20	0.9911
10	2550	RETAILING	1348.93	17	0.9495	1348.93	17	0.9495	1329.28	17	1.1793
11	3010	FOOD & STAPLES RETAILING	6761.84	13	0.8620	7319.55	12	0.8813	6761.84	13	0.8620
12	3020	FOOD, BEVERAGE & TOBACCO	9549.21	19	0.9329	9549.21	19	0.9329	9075.07	20	1.0195
13	3030	HOUSEHOLD & PERSONAL PRODUCTS	5048.65	5	0.9225	6298.52	4	0.7580	5048.65	5	0.9225
14	3510	HEALTH CARE EQUIPMENT & SERVICES	1592.18	4	1.3290	1592.18	4	1.3290	1592.18	4	1.3290
15	3520	PHARMACEUTICALS, BIOTECHNOLOGY & LIFE SCIENCES	16091.69	8	0.7064	16091.69	8	0.7064	16091.69	8	0.7064
16	4510	SOFTWARE & SERVICES	752.49	13	0.8520	875.89	11	0.9395	752.49	13	0.8520
17	4520	TECHNOLOGY HARDWARE & EQUIPMENT	548.91	18	1.2960	577.57	17	1.2985	548.91	18	1.2960
18	4530	SEMICONDUCTORS & SEMICONDUCTOR EQUIPMENT	3194.45	3	1.2578	3194.45	3	1.2578	3194.45	3	1.2578
19	5010	TELECOMMUNICATION SERVICES	10020.04	11	0.9525	12232.86	9	0.9431	10967.95	10	1.0385
20	5510	UTILITIES	8796.79	7	0.4798	8796.79	7	0.4798	8796.79	7	0.4798
		Equal weighting	4766.38	308	1.0942	5162.77	281	1.1120	4732.45	314	1.1331
		Market capitalisation weighting			0.9751			0.9949			1.0146
		High Risk Industries Beta > 1.1		197	1.3109	4268.54	185	1.3376	3898.57	204	1.3571
		Average Risk Industries 0.9> Beta <1.1		34	1.0245	3486.18	30	0.9945	2834.20	34	1.1012
		Low risk Industries Beta < 0.9		77	0.8144	7158.78	66	0.8400	6737.22	76	0.8267

If we compare the columns "R sq > 0.1" and "t-stat. > 2", we observe the following results:

Ad (a) In all but one industry group, the number of companies with the filter of the t-statistic is greater than or equal to the number of companies with the filter of the R^2—by trend an accordance with the proposition, but as (a) reflects a strict mathematical relationship, the result of the "Telecommunication Services"-line is in high need of an explanation. Did Raicov/Trafford observe any t-statistics less than -2.26?

Ad (b) In no industry group is the Beta mean is lower under the filter of the t-statistic than under the filter of the R^2, in most lines it is greater—a perfect contradiction to the proposition. As the last finding does not only contradict the mathematical relationship, but also prior empirical findings,[18] it is highly recommended to be discussed. The first possibility for an explanation is that the "Mean"-columns for "R sq > 0.1" and "t-stat. > 2" have been confounded. When asked this question by e-mail, Mr. Trafford advised that this was not the case. Looking at the section "R sq > 0.1 & Mkt Cap > $ 100m", it is understandable, that a simple confounding of the mentioned kind cannot be the (only) reason. As this double restriction excludes even more firms with—by empirical trend, not in a strict mathematical manner—lower Betas, the mean Betas should be the highest ones compared to the two alternatives. Indeed, they mostly, but not always, are located between the values in "R sq > 0.1" and "t-stat. > 2". At this point, we must stop our deliberations, because the only persons who can clarify these relationships are the authors of the original paper.

As long as those puzzles are not solved, it makes no sense to discuss further results which may rely on the summary statistics in question or other ones, which cannot be discussed by an outsider just because of obvious structural contradictions.

PROVISIONAL CONCLUSIONS

Thus, for the time being, we must wait for a statement of the authors concerning these econometric riddles.

Concerning the general approach of searching for the best Beta, we have a certain understanding. In practice, valuation means working with the least evil, whenever you have no

18 Cf. again Gray, S., Hall, J., Klease, D., and Mc Crystal, A. (2009). Bias, stability, and predictive ability in the measurement of systematic risk. Accounting Research Journal, 22 (3), pp. 223–236 (table 1 on p. 227), and Knoll, L., Ehrhardt, J., and Bohnet, F. (2007). Kleines Beta – kleines Bestimmtheitsmaß: großes Problem?. CFO aktuell, 6, pp. 210–213 (212).

perfect theory (and when do you ever have one?). Many experts try to modify this situation by looking for a Beta with better empirical properties. Despite our critique, we find that Diana Raicov and Richard Trafford do this job in a serious way, but as many others, they do not ask whether their estimation models correspond with the theoretical model, i.e., the CAPM, forming the basis for the statistical analysis.

Some decades ago, Lord Peter Bauer published a harsh critique under the title *The Disregard of Reality*.[19] His philippic against the overuse of mathematical models in economics culminated in a comparison with a prominent tale:

> What we see is an inversion of the familiar Hans Andersen story of the Emperor´s new clothes. Here there are new clothes, and at times they are *haute couture*. But all too often there is no Emperor within.[20]

Today, the analogue comparison can be made looking at the relationship between the (missing) Emperor economic theory and the, more or less, *haute couture* clothes econometrics. In general, we should be careful in deviating from the use of the simple own Beta of a share and avoid talking about "modifications" of the CAPM. If we are not content with the empirical properties of the CAPM and, therefore, deviate from its basis requirements, we just should not call our proceeding CAPM-based. Beside the question, whether the proceeding at hand will be an improvement, it will at least be straightforward. VE

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19 Bauer, P. (1987). The Disregard of Reality. The Cato Journal 7, pp. 29–42.
20 Bauer, P. (1987), The Disregard of Reality. The Cato Journal 7, pp. 29–42 (36), emphasized in original.

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Andreas Löffler studied mathematics at Leipzig University and Academy of Science in Berlin (major: differential equations and dynamical systems). He obtained his PhD in mathematics from University Leipzig in 1993, and a second PhD in economics in 1995. In 2000, he was tenured professor at the Chair of Banking and Finance at University Hannover. In 2006, he was appointed to the Chair of Banking and Finance at Friedrich Alexander University Erlangen-Nuremberg and in 2008, he moved to Paderborn as a professor of finance and investment. Since 2012, he is Chair of Banking and Finance at Free University of Berlin.

Academic Review

ROUND TABLE DISCUSSION: EDUCATING TOMORROW'S LEADERS

With: Peter Lohrey, PhD, CVA, CDBV; Lari Masten, MSA, CPA, ABV, CFF, CPVA, CVA, MAFF, ABAR; Danny Pannese, MST, CPA, ABV, CVA, CSEP; Keith Sellers, CPA, ABV; and Richard Trafford, MSc, CVA, CFE, MAFF, FAIA, FCT, FHEA

Moderated by Nancy McCarthy, Senior Editor, The Value Examiner

Over the course of the year, this column is expertly written by Peter Lohrey. However, in the summer months, Dr. Lohrey takes a well-deserved break. Last month, our guest editor was Matthew Crane, DBA, ASA, CPA. This month, Dr. Lohrey has been joined by several members of *The Value Examiner* (TVE) editorial board for a lively discussion on the challenges and needs of students who one day hope to enter the valuation profession.

In addition to running or being an integral part of a practice, each member of the discussion group teaches at a college or university: Lari Masten and Keith Sellers teach at the University of Denver in Denver, CO; Peter Lohrey is an assistant professor of accounting at Montclair State University in Montclair, NJ; Danny Pannese teaches at Sacred Heart University in Hartford, CT; and Richard Trafford is a Visiting Fellow at Portsmouth University, Portsmouth, UK. In spite of work or vacation schedules, the members of this discussion group made the time to discuss what they see as the pitfalls and positives of how we are academically preparing future generations of accounting students, and, hopefully, the next crop of CVAs.

TVE: Welcome everyone, I am so pleased you could make it. Our topic today is "Educating Tomorrow's Leaders." I read a statistic recently from the Bureau of Labor Statistics stating employment of accountants and auditors is projected to grow ten percent from 2016 to 2026, faster than the average for all occupations. How well are we preparing students to assume these roles?

Richard Trafford: I would say, in the UK at least, we are doing a fairly credible job of it. But I am not so sure we are facing some realities.

Lari Masten: I think we are doing a credible job in the U.S., too, but there are some issues for which we need to develop solutions.

Richard Trafford: And some realities we need to face.

TVE: Such as?

Richard Trafford: There are a few areas such as how we present the material—students are so tech-savvy; it is hard to pry them from their iPhones at times. Then there is the sheer amount of data to deal with, and finally, I think Artificial Intelligence or AI is going to be a big game-changer, not just in our profession but in all professions.

Lari Masten: I agree. I think there are some global issues facing everyone in this profession or studying to become part of it.

TVE: Let's break this down a bit. How is a student being "tech-savvy" a problem in the classroom?

Lari Masten: That's a good question. There is nothing wrong with knowing, using, and understanding technology. And I think most colleges and universities are doing a good job in terms of course selection. However, we need to incorporate technology better in terms of delivering instruction.

Danny Pannese: This is true. The old "learn it by rote" system is dying. Giving students a thirty-page outline and a bunch of question just doesn't cut it. We need to help students think outside the box. And use technology less as a tool for "getting the right answer" and more as an application for getting the answer right.

Lari Masten: Right. The lecture-test method is not doing it anymore. We need to incorporate a more dynamic system of learning. Accounting is a complex topic, so how do we become more interactive? Currently, you can only speak for about ten minutes before you lose the students completely. We can't afford that.

Peter Lohrey: I can attest to that. Students are so used to getting their answers from Google that they are losing the ability to think critically. We need to bring that component

back into the equation. It's not that students can't do it—it's that they have not been taught that it is important. In one of my courses, I require both an oral presentation and a written essay. These projects are painful to grade. Students will grab information from the internet and think they mollified me.

TVE: I think you all have identified a problem, but what is the solution?

Keith Sellers: I think the most important thing to teach, aside from basics, is how to make professional judgments. While it is important to keep the students focused, they do need to rely on their insights, experience, and education. The more you rely on a black box, the less you are making real decisions.

Peter Lohrey: What I find troubling is the reliance on tools. Somehow, we need to show students that, while tools are important in making calculations, you cannot leave out the human part of the equation.

Keith Sellers: If, after a few years of practicing as a CPA, a student wants to go on to business valuation, they will find they need to have honed their judgment. And it's not just apps and programs that are distractions. For example, although fair value reporting is now part of mainstream financial reporting, most textbooks provide a somewhat shallow coverage of the topic. Let's face it, accounting textbooks are very strong on teaching rules but struggle more with topics that require increasing levels of professional judgment. Few full-time professors have experience with valuation, so they "teach the book."

Lari Masten: We have got to add a component to the training that introduces the human judgment aspect. When students are first learning accounting principles, they may lean into automated tools. We need to take the crutch away at some point and emphasize decision-making ability.

TVE: You've brought up "big data" as an issue. Can you explain how that affects students?

Danny Pannese: There is so much information out there. So much. And access to it is not difficult. But not all of it is important or valuable in specific situations. I am concerned that, with their reliance on automated programs, students do not see the "small picture" as it pertains to a client. My concern is that students will not value the information they can access. If they learn they can send off a set of financial data and be "ok" with the canned response, that is troubling and devalues our profession.

Keith Sellers: The biggest new thing out there is the push towards data analytics, especially "big data." I recently received information from a Big Four firm outlining their "needs" from new hires. The list included programming in Python, database skills in SQL, financial modeling, etc. Addition of these topics in accounting curriculums can only reduce the time allocated to valuation-related studies.

Peter Lohrey: It comes back to human judgment. The amount of data that can be managed and the decisions of a valuator becomes a bigger issue. We need to contemplate the role of human interaction. Giving a lecture on internet viability—the roles we play will still include a step for humans. We need to think more about what that step will be.

TVE: Let's look at AI. Do you feel it will help or hurt the profession?

Richard Trafford: Well, as I've said, it is a huge game-changer, and we are just at the beginning of the trend. I am concerned that AI will turn our business into a machine-based profession. AI will reduce the demand for certain repetitive tasks, which could be a positive thing. But it has the potential to take out that human quality we have been discussing.

Lari Masten: Given how machine learning can reduce errors, and perform certain functions faster than we humans can, there is a very real concern about its impact. If we can learn to harness the power of AI instead of succumbing to it, we could see an amazing future.

Richard Trafford: All true. But it could also eliminate jobs. Machine intelligence is massive in terms of speed and scale. It can identify patterns and be programmed to make informed decisions. How do we address that aspect?

Peter Lohrey: For me, the concern about AI is a bit like the concept of self-driving cars, it is coming, but it isn't here yet, and we have some time to determine how to utilize the process to our best advantage.

Danny Pannese: No time like the present. I read an article that quotes AICPA CEO, Barry Melancon, predicting that "the accounting industry could be negatively affected by changes in technology, losing more than one million jobs." Whether that is an overstatement or not, accountants will have to adopt this technology, just as they had to adopt the computer or internet. And, as educators, we need to be aware of these changes.

TVE: Why am I thinking of HAL from Stanley Kubrick's "Space Odyssey: 2001?"

Keith Sellers: I am less afraid of AI at this point than I am of the structure of higher education. Let's face it, we are geared to having the students pass a CPA exam. And hiring is almost all driven by the Big Four. I don't know how it is in the UK, Richard, but the Big Four try to get students to commit to a position with their firm by the end of their sophomore or junior year. Right after an internship, they are given an offer, which is usually in the audit department. Later, these seniors and master students worry about what will happen if I back out of their accepted position. In other words, people who would like to do valuation work are locked up long before they graduate to do an audit or tax job. We are trying to avoid this lockstep.

Another problem is designing academic curriculums around the desires of firms. Local recruiters tell us they want warm bodies in the audit field who have good people skills and can pass the CPA exam. At the same time, we hear from the top people at these same firms that we should focus on broader decision making, quantitative, and problem-solving skills.

Danny Pannese: Well, there is a job that is expected to be significantly impacted by AI—audit.

Richard Trafford: Maybe not so terrible, either. In the UK we get direction from the Big Four, also. They are looking for individuals who can communicate at a much higher level. We take a middle path. In the master in accounting [program], one module is business valuation. What we find is that a lot of people in the Big Four want to come out of the audit function.

But we do look at things a little differently; for example, the program administrators try to determine where the profession will be ten years hence, which I find a bit problematic—in ten years, if past is prologue, it will be a different world. How do you teach what may be?

Keith Sellers: Most U.S. programs don't have that flexibility to add courses that may be helpful. To add courses is tough to do due to a combination of faculty resources and curriculum limitations. At my program at the University of Denver, we decreased the number of required courses, which hurt programs that were popular and important. The CPA exam largely drives students' choices for electives.

Danny Pannese: I am going to circle back. AI, in my opinion at this point, will make inroads in audit first. If that is true, Big Four will not need warm bodies. If that is the case, students will be freed up to pursue courses that will help with judgment and insight.

Peter Lohrey: I attended a conference recently, and in one of the breakout seminars, the presenter discussed the various inroads made with a certain software package. There are some, like TABLEAU, that now can spend more time thinking and reasoning rather than inputting data. I think AI will make more inroads in the audit. Eventually, that will change what the Big Four looks for and, as Danny says, put a spotlight on other functions.

Danny Pannese: AI will have the same impact on taxation. In one firm of which I am aware, the actual data processing is sent over to India, and the processed information comes back overnight. Input is all AI.

Peter Lohrey: It is our value as thinkers that challenges AI.

Richard Trafford: Given that, it seems critical thinking should be part of all curriculums.

TVE: You are singing my song. In my teaching experience, students are woefully underprepared in that area.

Lari Masten: It does scare me that we are embracing technology in a profession that needs to make critical, serious judgments. And, one size solutions do not fit all.

Danny Pannese: I agree; I am afraid we are encouraging students to apply a formula and peddle the results. We need a little more art and maybe a bit less science in our programs.

Keith Sellers: I am big on the science side; I think it just gives more info. But it is only a tool.

Lari Masten: Right, but I think we rely too much on the science side.

Richard Trafford: Given the trend for students in general wanting to know what facts they need to learn to pass, there needs to be a much greater emphasis on teaching critical thinking as an employability skill. Providing students with the ability to think in depth about what is necessary to make a decision is really important. There needs to be more emphasis on critical thinking. Students want to know what facts they need to know to pass a course.

Lari Masten: Exactly. As an example, when we were students and learning material as it relates to cost of capital, we read the book every year. Now there is an online program which purports to present the answer. Consequently, students think they do not need to understand the concepts.

Richard Trafford: Everyone wants an instant answer and thinks the answer is on the internet.

Peter Lohrey: I remember my Arthur Anderson days. I had a colleague who loudly proclaimed how we were going through "the information age." Even then, I remember thinking, there is so much information, we don't know how to manage it. I think we have gotten away from helping young people to think critically and should find ways to bring that back. Get young people to sit down and think critically.

TVE: So, I have to ask, do you see the academic glass as half-full or half-empty?

Keith Sellers: Oh, it is overall pretty positive in spite of some issues. If AI is a reality, let's embrace it and use it. Let's not lock up students in jobs they either will hate eventually or that do not provide them with the growth they need. I have a surprising number of students who felt pressured into taking a job. If auditing becomes more automated, it could free students to take courses that help them utilize judgment better.

Lari Masten: I see mostly positives, too. But the educational world needs to embrace the reality of how business works.

Danny Pannese: Yes. I think the NACVA based course is positive.

Peter Lohrey: It is a big deal here at Montclair State.

Danny Pannese: Can I request NACVA? During the conference, there ought to be an area for educators to brainstorm—sort of an academic forum.

TVE: I think we can propose that! This has been a great conversation. Any final thoughts?

Richard Trafford: If you divert students away from the need for constant online, there is great hope for the profession.

Keith Sellers: I feel that, generally, good students love valuation courses. After taking one or more valuation classes, most of my students want to ditch their offers for auditing positions and pursue advisory services. We need to figure out a way to take advantage of that.

Peter Lohrey: I think the system has to improve. Students want to learn; they need to be able to take advantage of more than just the internet or learn just enough to pass a CPA exam.

Lari Masten: I would have to agree that the NACVA academic programs are excellent at providing training and real-world experience. I would like to see the program expand.

TVE: Thank you all. As usual, I learn so much from these discussions. This has been a powerhouse panel. VE

PANEL

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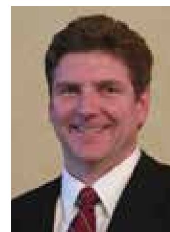

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LEGAL INSIGHTS

Proper Transfer-Pricing Rates Between U.S. and Puerto Rico: *Wal-Mart Puerto Rico, Inc. v. Zaragoza-Gomez*

By Kevin A. Diehl, JD, CPA

For a valuation expert, *Wal-Mart Puerto Rico, Inc. v. Zaragoza-Gomez*, Civil No. 3:15-CV-03018 (JAF), 174 F. Supp. 3d 585 (2016), is gold. It first discusses how to value transfers between related entities in the U.S. and Puerto Rico, an ongoing issue for many Fortune 500 companies expanding to multiple states and internationally. The case is a good example of transfer-pricing valuations in today's business environment in general. It does ultimately show that Wal-Mart utilizes the proper transfer-pricing valuation steps.

WAL-MART'S PROPER FOUR-STEP TRANSFER-PRICING PROCESS HERE

In issue, Wal-Mart utilized four-step transfer-pricing, involving product cost, handling fee, shipping fee, and profit elements. Wal-Mart assessed the actual cost from the third-party supplier. Then, Wal-Mart set 2.54 percent of the product cost as the handling fee. It was recomputed annually to show the actual cost of operating distribution center networks. Next, Wal-Mart assessed 6.7 percent of the product cost as the shipping fee. It was recalculated yearly to show the ideal pricing that it could get from third-party shippers from distribution centers to Puerto Rico. If Wal-Mart did not obtain the lowest rate, Wal-Mart Puerto Rico could find a lower-cost provider for shipping. No extra profit arose from these initial steps. Finally, two percent of the product cost became a profit charge. It was the sole profit element in transfer pricing to compensate for purchasing, logistics, and investment in Puerto Rico operations. The charge was set differently for each operating arm.

Overview

The paper proceeds by reviewing the facts of the case, discussion of the opinion, planning tips, and the future. The facts include details about Puerto Rico and Wal-Mart, and the discussion reviews whether taxes relating to transfer pricing concepts can violate the Dormant Commerce Clause and Equal Protection Clause of the U.S. Constitution.

Facts

Puerto Rican Insolvency

While the case is a good instruction on transfer pricing and property valuations, it also shows the difficulty in dealing with overseas operations for valuationsA. Puerto Rico was essentially insolvent with liabilities of seventy billion dollars. Its Treasury Account had a one billion dollar deficit. The Government Development Bank of Puerto Rico was insolvent as well.

As such, the Puerto Rican Treasury Department worked to enact taxation that would require current payments and force the payee to pursue refunds for years into the future. In the meantime, then, Puerto Rico could continue as a going concern.

Annual Taxes

Wal-Mart Puerto Rico paid twenty million dollars annually in tax until the tax increase. Then, it was paying double, forty million dollars yearly.

Procedural History

Wal-Mart Puerto Rico sued under 42 USC section 1983 for an injunction against Adjusted Minimum Tax (AMT) application and declaration of the illegality of the AMT under the Commerce Clause, Equal Protection Clause, and Bill of Attainder Clause of the Constitution primarily.

AMT's Purpose

The purpose of the AMT was allegedly to recoup multistate companies' income that they were shifting away from the commonwealth through their subsidiaries and transfer pricing. Originally, Zaragoza-Gomez wanted to cut the two percent flat tax by twenty-five percent, which affected

interstate transfers of property between commonly controlled companies or offices. He also argued for the end of the twenty percent flat tax on expenditures among commonly controlled companies or offices. The relevant Puerto Rican authorities were 13 LPRA sections 30073(b)(2)(A) and (B), regarding the tangible property and expenditures taxes respectively.

Revenue Grab

Instead of the legislature following his plan, it asked Zaragoza-Gomez to generate $125 million in additional revenues through playing with the AMT in the opposite direction. As such, the new top rate became 6.5 percent. Simultaneously, the provision permitting exemption of tangible property transfers if the transfer price was similar to arm's-length transactions between parties who were not related. What resulted was a tangible-property tax only on multistate corporations and their local subsidiaries if engaged in an interstate transaction. The result would be to tax Wal-Mart Puerto Rico for more than it earned in taxable income on each sale. The tax applied whether it sold the inventory at or below cost.

Discussion

The result was that the AMT became less an income tax and more a transfer-pricing tax. Profit shifting was the alleged movement of profits from Puerto Rico to another jurisdiction to seek a lower effective tax rate. Many multistate corporations operating in Puerto Rico were reporting losses and therein averting the AMT. However, in theory, they would not continue to operate in Puerto Rico if they were indeed sustaining ongoing losses.

Transfer-Pricing Regulations Unapplied

Transfer-pricing regulations permit the Treasury in Puerto Rico, just like that in the U.S., to re-determine transfer pricing to show an arm's-length value. However, because the regulations had fallen into disuse based on a lack of skill in applying them, the AMT became the transfer-pricing re-characterization mechanism.

AMT Legislative History

In 2009, an expenditures tax for services between related entities was legislated to recapture the usual management fees between related parties. In 2011, an additional tax on the gross value of tangible property transferred between related parties was enacted. In 2013, property transfers from a home office in other jurisdictions to a branch in Puerto Rico would then be taxed. In 2015, the AMT had a tax equal to the greater of the tentative minimum tax for the year over the regular tax for the year. The greater of the income earned or the gross value of goods and services transferred to the entity from a related party or home office outside Puerto Rico would be the basis for the AMT tax.

Fair Market Value of Such Property

The expenditures element and the tangible-property element summed together resulted in a second cut at the greater of the two for the base. The expenditures element provided a twenty percent tax on related entity provision of services. The tangible-property element put a two percent on gross value of goods transferred from related entities or home offices outside Puerto Rico. The value came from the invoice price. If none, the "fair market value of such property" became the standard. Wal-Mart Puerto Rico was directly challenging this standard.

AMT Exemptions

The exemptions from this tangible-property element as a second measure of tentative minimum tax included: having less than ten million dollars of gross income in Puerto Rico in the preceding three years, receiving notification of a lower rate from the Treasury Secretary that the transfer price charged from the related party or home office was "equal or substantially similar to the [price] for which such related party sells such property to an unrelated party, or being already subjected to Puerto Rican tax on the transaction."

Tax Schedule

The tax rate schedule was the following: less than ten million dollars, zero percent; ten million dollars or more but less than $500 million, 2.5 percent; $500 million or more but less than $1.5 billion, three percent; $1.5 billion or more but less than two billion dollars, 3.5 percent; two billion dollars or more but less than $2.75 billion, 3.5 percent; and $2.75 billion or more, 6.5 percent ("the Wal-Mart tax" as only this entity reached this level). After 2014, exemption for transfer price equal or substantially similar was deleted.

Regular Tax

The regular income tax on Wal-Mart Puerto Rico was thirty-nine percent, base of twenty percent, and surtax of nineteen percent.

Current Tax

Wal-Mart Puerto Rico's tax liability of $46.95 million primarily came from the $46.46 million tangible-property

tax. At the same time, Wal-Mart Puerto Rico had only $41.12 million in taxable income (profits). That effective tax rate was 114 percent.

Holding

While the tangible-property tax could seem like an income tax, it only would relate to income if profit-shifting were occurring. However, profit-shifting would be only a small part of the equation if any, not all interstate transactions between related parties. Further, no exemptions could be granted even on showing arm's-length transfer pricing. If Wal-Mart Puerto Rico were shifting profits from Puerto Rico to the U.S., it would not be moving that income to a tax haven. The AMT was not an income-based or transfer-pricing tax, so there really were no mechanisms in place to obtain an efficient remedy. In fact, because of the commonwealth's insolvency, any money Wal-Mart Puerto Rico paid that could be demanded on refund would be unavailable to be repaid. Thus, an injunction, though rarely issued for tax actions, had to be considered for violations of the Dormant Commerce Clause and the Equal Protection Clause.

Dormant Commerce Clause Violation

States cannot discriminate between transactions based on an interstate component under *Boston Stock Exchange v. State Tax Commission*, 429 U.S. 318 (1977). Such a discriminatory tax would be *per se* invalid and could only be supportable if the state has no other way of advancing a legitimate purpose under *Philadelphia v. New Jersey*, 437 U.S. 617 (1978). Puerto Rico's AMT is discriminatory against interstate commerce and therein *per se* invalid. It effectively burdened interstate commerce, making it inefficient then. Puerto Rico had no legitimate purpose that it could argue, let alone show as the only means by which to obtain it through the use of the AMT. Puerto Rico could use transfer pricing as a less burdensome alternative that would in fact be legal.

Equal Protection Clause Violation

The AMT violated the Equal Protection Clause. It was arbitrary in its discriminatory nature and not rationally related to a legitimate governmental purpose under the test from *Heller v. Doe,* 509 U.S. 312 (1993). Transfer pricing can pursue interstate commerce as profit-shifting can only occur through interstate activity. However, this AMT unfairly attacked interstate commerce solely for the purpose of a revenue grab under the test from *Zober v. Williams*, 457 U.S. 55 (1982).

Final Ruling

The court permanently enjoined application of the AMT and declared it invalid with regard to the expenditures and tangible-property taxes.

Planning Tips

1. Whether a jurisdiction tries to attack through transfer pricing regulations or similarly situated regulations, there generally must be exemptions available for showing arm's-length pricing. Thus, establishing arm's-length through documentation can be the best proactive approach to averting eventual litigation. Auditors prefer to concentrate on companies who are not proactive in documenting their transfer-pricing policies.
2. The court supported two percent as a profit charge for a retailer.
3. 2.54 percent was supportable for handling fees transfer-pricing application.
4. 6.7 percent was deemed fair for shipping fees transfer-pricing application from mainland U.S. to Puerto Rico.

The Future

Transfer-pricing regulations will come under further scrutiny with the eventual completion of the Organization for Economic Cooperation and Development's Base Erosion and Profit-Shifting project. In the interim, though, reliance on the above planning tips can help guide valuation of interstate transfers between the mainland U.S. and Puerto Rico. VE

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PRACTICE MANAGEMENT

How IRS Guidance Makes it Impossible to Comply with Section 2801 in Two Hours or Less

By Fabio Ambrosio, JD, LLM, MBA, CPA, PFS, ABV, CFP, EA, CVA, MAFF, CFE, CGMA

In 2008 Congress added Section 2801 to the Internal Revenue Code. This section targets those individuals who, by relinquishing citizenship or residency, could potentially escape the gift or estate tax. While the legislative intent is clear, the mechanics of how Section 2801 should function have troubled the IRS for the last eleven years. In those eleven years, the IRS has neither issued a publication nor released a form. The only administrative guidance to this date remains a set of proposed regulations issued in 2015. While the proposed regulations contain provisions, which will cause taxpayers to face nearly insurmountable compliance obstacles, the IRS estimates that a taxpayer should be able to comply in two hours or less! This article will outline the five most glaring miscalculations the IRS has made in the proposed 2801 regulations.

DEFINITION OF SECTION 2801

Section[1] 2801 of the Internal Revenue Code[2] was passed into law as part of the Heroes Earnings Assistance and Relief Tax Act of 2008[3]. To understand what Section 2801 is meant to accomplish, it is fundamental to revisit how Subtitle[4] B of the Code is structured:

- Subtitle B
  - Chapter[5] 11: The Estate Tax (Sections 2001-2210)
  - Chapter 12: The Gift Tax (Sections 2501-2524)
  - Chapter 13: The Generation-Skipping Transfer Tax (Sections 2601-2664)
  - Chapter 14: Special Valuation Rules (Sections 2701-2704)
  - Chapter 15: Gifts and Bequests from Expatriates (Section 2801)

Chapters 11 through 13 contain the essence of the three taxes that make up the U.S. transfer tax system: the estate tax, gift tax, and generation-skipping transfer tax. Together, this article refers to these three chapters collectively as the "Transfer Tax Regime." Chapter 14 is outside the scope of this article as it pertains to certain valuation exceptions not relevant to this discussion. Lastly, Section 2801 alone makes up the entire Chapter 15.

The estate tax applies to the estate of every decedent who is a citizen or resident of the United States.[6] Estates of non-citizens non-residents are exposed to the estate tax only to the extent of assets situated in the United States.[8] Similarly, the gift tax applies to all *inter vivos* gifts by citizens or residents of the United States and, concerning non-citizens non-residents, only if they transfer assets situated in the United States.[7] The same residency and citizenship regime applicable to the estate and gift tax applies to the generation-skipping transfer tax, which is a second-level tax premised on a transfer that is already subject to either the estate or gift tax.[9]

From Chapters 11 through 13, it derives that a non-citizen non-resident can avoid the Transfer Tax Regime by merely not holding assets in the United States. But what about those who are U.S. citizens or residents? Can they avoid the Transfer Tax Regime by relinquishing citizenship or residency? Section 2801 is meant to give guidance to both non-residents/citizens and citizen/residents alike. It does not.

The essence of Section 2801 is that U.S. citizens and certain long-term residents should not be able to escape the gift and estate tax by simply relinquishing citizenship or residency. The Section tries to accomplish this goal through the following key provisions:

1. While the domestic Transfer Tax Regime levies transfer taxes from the *transferor*, Chapter 15

1. All references to "Section" are to sections of the Internal Revenue Code of 1986, 26 U.S.C. § 1, et seq.
2. All references to the Internal Revenue Code (I.R.C. or the Code) are to 26 U.S.C. § 1, et seq.
3. Pub. L. No. 110-245, 122 Stat. 1624 (June 17, 2008).
4. All references to "Titles" and "Subtitles" are to titles and subtitles of the Internal Revenue Code of 1986, 26 U.S.C. § 1, et seq.
5. All references to "Chapters" are to chapters of the Internal Revenue Code of 1986, 26 U.S.C. § 1, et seq.
6. I.R.C. § 2001(a).
7. I.R.C. § 2103.
8. I.R.C. §§ 2501(a)(1), 2511(a).
9. I.R.C. § 2611.

imposes the transfer tax on the U.S. citizen or resident *recipient*.[10] The tax applies to any transfer made by a "covered expatriate."[11] A "covered expatriate" is generally a person who (a) meets a minimum wealth threshold and (b) relinquished U.S. citizenship or ceased to be a long-term resident of the United States after June 16, 2008.[12]

2. The tax is imposed on the value of the asset(s) transferred and by using the highest marginal estate tax rate.[13]

The intent behind Chapter 15 is made clear in paragraphs (d) and (e). Paragraph (d) allows full unilateral credit for any foreign transfer taxes paid. Paragraph (e) eliminates Section 2801 if the gift or estate tax already applies to a given transfer. For example, if a U.S. citizen relinquished citizenship and moved to Country X where the transfer tax regime is identical to that of the United States and the transfer tax rates are at least as high as those of the United States, Section 2801(d) would impose no additional tax. Similarly, if a U.S. citizen relinquished citizenship and moved to Country X but continued to hold only assets in the United States such that his entire estate would be subject to the U.S. estate tax upon death, Section 2801(e) would impose no additional tax beyond the ordinary estate tax. In other words, Chapter 15 targets only those individuals who, by relinquishing U.S. citizenship or residency, stand to save money by escaping the Transfer Tax Regime potentially.

In September 2015, seven years after the passage of the Heroes Earnings Assistance and Relief Tax, the IRS issued proposed regulations under Section 2801 (from now on referred to as the "Proposed Regulations").[14] The Proposed Regulations contain provisions which will cause taxpayers to face nearly insurmountable compliance obstacle, and this article will outline the five most glaring miscalculations in the Proposed Regulations.

MISCALCULATION NO. 1. THE WORLD POPULATION IS COMPOSED OF COVERED EXPATRIATES

Prop. Treas. Reg. 28.2801-7 states that the compliance obligation with Section 2801 falls on the recipient, "which includes determining whether the transferor is a covered expatriate."[15] The Proposed Regulations then state that "there is a rebuttable presumption that the donor is a covered expatriate and that the gift is a covered gift."[16] In other words, it is up to the *recipient* to prove that the *donor* is not a covered expatriate.

Let's revisit who is a "covered expatriate." A covered expatriate is defined by reference to Sections 877 and 877A as a person who relinquished U.S. citizenship or ceased to be a long-term lawful permanent resident of the United States after June 16, 2008, if, on the expatriation date:

1. That individual's average annual net income tax liability for the previous five years was greater than $168,000 (as adjusted for inflation in 2019); or
2. That individual's net worth was at least $2,000,000 (not adjusted for inflation); or
3. That individual was delinquent on any U.S. tax obligations for the five preceding taxable years.

It derives that any recipient who is required to ascertain whether a transferor is a "covered expatriate" would need to (a) know with certainty the transferor's date of expatriation and (b) have unrestricted access to the transferor's financial records as of the date of expatriation.

Sanity Check: *Perhaps the obvious absurdity is best visualized through an analogy. Suppose that a neighbor brings over a freshly baked apple pie for you and your family. You are required to assume that the neighbor did not wash his hands before baking the pie and therefore you must report the gift to the pie police and share two slices of the pie with the police, unless you can prove that, before baking the pie, the neighbor either washed his hands or his hands were not dirty in the first place. To do this, you must know and prove everything the neighbor did or did not do on that day.*

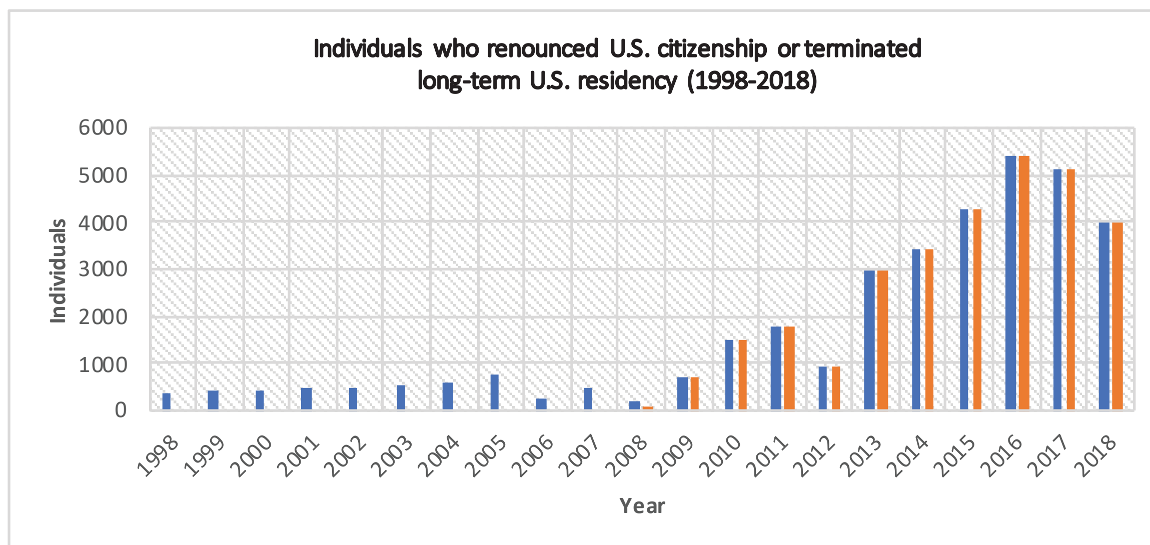
10. I.R.C. § 2801(b).
11. I.R.C. § 2801(e).
12. I.R.C. §§ 877A(g), 877.
13. I.R.C. § 2801(a).
14. 80 Fed. Reg. 54447 (2015) (to be codified at 28 C.F.R. pt. 28) (proposed Sep. 10, 2015).
15. Prop. Treas. Reg. 28.2801-7(a).
16. *See* Footnote 15.

The definition of "covered expatriate" is linked to the wealth (in terms of assets and income) of the transferor as of the date of expatriation. This alone makes it nearly impossible for a recipient to comply with Section 2801 without unrestricted access to the transferor's financial records. However, the most illogical aspect of the Proposed Regulations is that they presume that "the donor is a covered expatriate and that the gift is a covered gift."[17] Besides the income and wealth requirements, an individual can only be a covered expatriate if:

1. That person has been, at some point in his life, a U.S. citizen or long-term lawful permanent resident; and
2. That person relinquished U.S. citizenship or ceased to be a long-term lawful permanent resident after June 16, 2008.

The most recent estimate of the resident population of the United States is slightly above 327 million.[18] Assuming, *arguendo*, that (a) the entire resident population of the United States is composed of U.S. citizens and long-term lawful permanent residents and (b) each one of them were to relinquish U.S. citizenship or terminate residency immediately, there would be at the most 327 million covered expatriates.

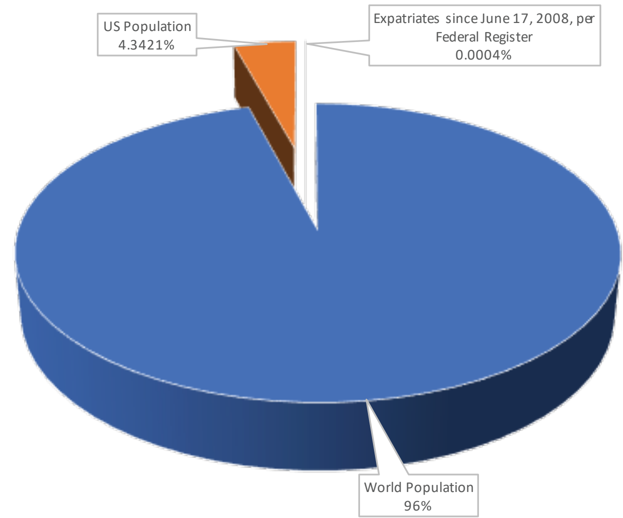
Each quarter the Treasury Department publishes the names of individuals who renounced their U.S. citizenship or terminated their long-term residency in the Federal Register.[19] Since 1998, there has never been a year in which more than 6,000 individuals renounced U.S. citizenship or terminated long-term residency. Collectively, only 30,323 individuals have renounced U.S. citizenship or terminated long-term residency after June 16, 2008. Therefore, as of the end of 2018, the world could only hold as many as 30,323 covered expatriates.



Source: Federal Register.

17. *See* Footnote 15.
18. Source: United States Census Bureau. Retrieved from the World Wide Web on June 11, 2019: https://www.census.gov/popclock/
19. Each quarterly publication can accessed at https://www.federalregister.gov/quarterly-publication-of-individuals-who-have-chosen-to-expatriate

Contrary to data from the United States Census Bureau and the Federal Register, the Proposed Regulations create the presumption that all transferors are covered, expatriates.[20] Embedded in this presumption is the assumption that the entire world population is composed of people who once were U.S. citizens or long-term lawful permanent residents of the United States but relinquished that status after June 16, 2008. In sum, the Proposed Regulations cast a net over 7.5 billion[21] individuals with the intent to impact at most 30,323 transferors. The relationship between 30,323 and 7.5 billion is that of four to 10,000!



MISCALCULATION NO. 2. THE REBUTTABLE ASPECT OF THE PRESUMPTION

The Proposed Regulations provide that the presumption discussed previously is rebuttable. "A taxpayer who reasonably concludes that a gift or bequest is not subject to section 2801 may file a protective" return to start the statute of limitations on assessment.[22] The Proposed Regulations otherwise provide no hint whatsoever as to what constitutes a "reasonable conclusion" that a gift or bequest is not subject to Section 2801.

Let's recap. *Any* U.S. citizen or resident who receives *any* gift from *anyone* must first assume that the transferor is a covered expatriate, which then shifts the liability for the transfer tax and for filing the return from the transferor to the recipient. The recipient can only avoid this result by reaching a "reasonable conclusion" that the transferor is not a covered expatriate. Clearly, in cases where transferor and transferee keep and share the spotless record, this could be a menial requirement, but in all other cases, this amounts to a nearly insurmountable task. The recipient is being asked to prove either that (a) the transferor *was not*, at some point in his/her life, a U.S. citizen or long-term resident, or (b) the transferor *did not* relinquish U.S. citizenship or cease to be a long-term resident after June 16, 2008. There is no document, certificate, or record that a recipient could obtain from any U.S. agency that would conclusively prove a negative: that an individual was never a U.S. citizen or long-term resident or that an individual did not relinquish citizenship or residency. It is unclear under the Proposed Regulations how a taxpayer could prove something which, by definition, is true absent evidence to the contrary.

MISCALCULATION NO. 3. THE DIRE NEED FOR DISCLOSURE.

In an era of ever-increasing identity theft and leak of private information, the IRS is more committed than ever to protecting taxpayer data.[23] Yet, the Proposed Regulations state:

> In certain circumstances, the Internal Revenue Service (IRS) may be permitted, upon request of a U.S. citizen or resident in receipt of a gift or bequest from an expatriate, to disclose to the U.S. citizen or resident return or return information of the donor or decedent expatriate that may assist the U.S. citizen or resident in determining whether the donor or decedent was a covered expatriate and whether the transfer was a covered gift or covered bequest.
>
> Prop. Treas. Reg. 28.2801-7(b).

As previously discussed, the rebuttable presumption establishes a burden on the recipient to prove that the transferor is not a covered expatriate. Therefore, *all* U.S. citizens and residents who receive *any* gift will necessarily need access to confidential information of the transferor to rebut the presumption. There are four consequences that the IRS seems not to have considered:

1. Under a best-case scenario and assuming full voluntary compliance with the Proposed

20. *See* Footnote 15.
21. *See* Footnote 18.
22. Prop. Treas. Reg. 28.2801-7(b)(2).
23. *See* Internal Revenue Manual 10.5.1.

Regulations, the IRS would be unable to respond to the millions of disclosure requests.

2. Under a best-case scenario and assuming full voluntary compliance with the Proposed Regulations, the vast majority of disclosure requests would yield no match on the IRS's database and therefore would not help the recipient rebut the presumption.
3. There is an enormous risk of unauthorized disclosure under the requestor's pretense that he/she received a covered gift or bequest. It would seem that, upon the requestor's assertion that he/she received a cover gift or bequest, the IRS is willing to disclose personally identifiable information about the alleged transferor.
4. There is a substantial collateral burden to other federal and state administrative agencies, most notably U.S. Citizenship and Immigration Services (USCIS) and U.S. Customs and Border Protection (CBP). As U.S. recipients attempt to gather evidence that the transferor is not a covered expatriate, USCIS and CBP, more than the IRS, could be overburdened by millions of disclosure requests.

MISCALCULATION NO. 4. RESIDENTS AND LONG-TERM RESIDENTS CARRY THE SAME MEANING

Section 2801 specifically states that "[f]or purposes of this section, the term 'covered expatriate' has the meaning given to such term by section 877A(g)(1)."[24] Under Section 877A, only "expatriates" can become "covered expatriates."[25] The term "expatriate" refers to (a) "any United States citizen who relinquishes his citizenship, and (b) any *long-term* resident of the United States who ceases to be a lawful permanent resident of the United States."[26]

24. I.R.C. § 2801(f).
25. I.R.C. § 877A(g)(1).
26. I.R.C. § 877A(g)(2). Emphasis added.

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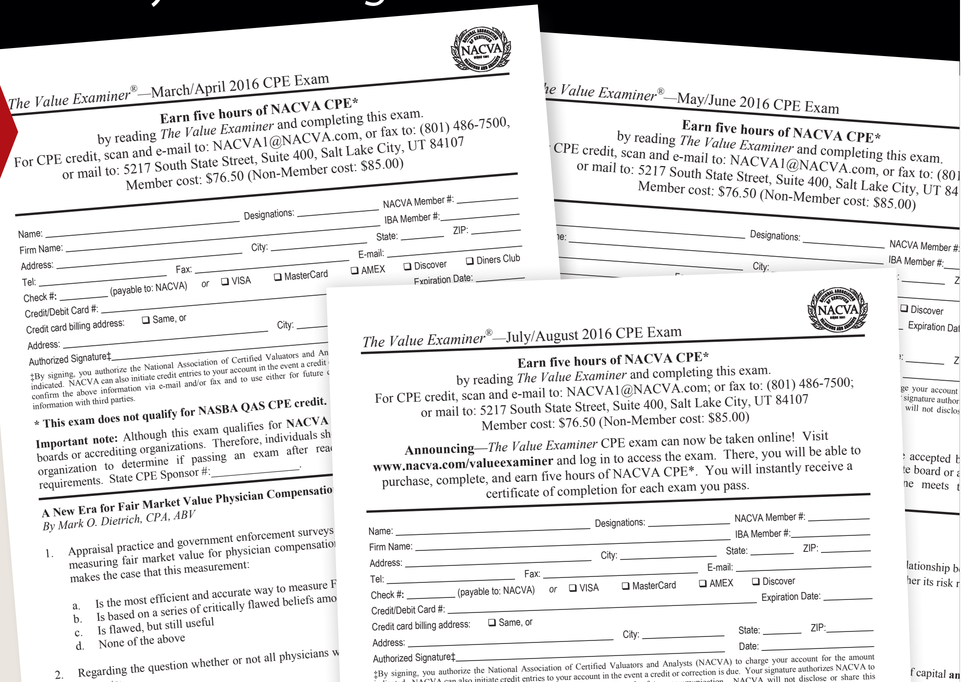

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Generally, the term "long-term resident" refers to a person who was a lawful permanent resident for eight of the fifteen years preceding his expatriation.[27] The term "lawful permanent resident" means "any individual having been lawfully accorded the privilege of residing permanently within the United States as an immigrant.[28] Therefore, while all U.S. citizens who relinquish citizenship could be covered expatriates, not all lawful permanent residents who terminate residency meet that definition. Instead, only those lawful permanent residents who terminate residency after having spent substantial time (eight years) in the United States could meet the definition of "covered expatriate." The Proposed Regulations do not make this distinction, thus ignoring Congress's intent that Section 2801 applies only to gifts or bequests made by former *long-term* residents of the United States, not any former resident.

MISCALCULATION NO. 5. CITIZENS OF U.S. POSSESSIONS ARE FORGOTTEN ONCE AGAIN

Guam, the U.S. Virgin Islands, and the Northern Mariana Islands has been travailed since the estate tax was introduced in the United States by the Revenue Act of 1916.[29 & 30] Chapters 11 and 12 contain special provisions for certain residents of U.S. possessions who acquired citizenship solely by being a citizen of a U.S. possession.[31] Provided that such an individual otherwise meets all qualifying criteria under Section 877A(g), the Proposed Regulations do not state whether he/she would be considered a covered expatriate. The silence contributes to the already extremely complicated transfer tax compliance burden imposed on compatriots from Puerto Rico, Guam, the U.S. Virgin Islands, and the Northern Mariana Islands.

CONCLUSION

The Proposed Regulations require the filing of a return on Form 708 and the payment of a transfer tax under Section 2801 with the receipt of any covered gift or bequest, however small. The lack of a *de minimis* threshold, coupled with the onerous presumption contained in the Proposed Regulations, will affect millions of taxpayers. The IRS should make extraordinary efforts to educate the public on how to comply with Section 2801. Eleven years after it became law, the agency has neither issued a publication nor has it released Form 708. The only IRS guidance to this date remains the Proposed Regulations.[32] Strangely, however, under the Paperwork Reduction Act[33], the IRS estimates that a taxpayer should be able to comply with section 2801 in two hours or less![34] VE

Fabio Ambrosio, JD, LLM, MBA, CPA, PFS, ABV, CFP, EA, CVA, MAFF, CFE, CGMA, is an Assistant Professor of Accounting at Central Washington University. Besides being an attorney and CPA, he is a trained mediator and a recipient of a Fulbright grant in taxation. Fabio is a recurring visiting professor at Swiss and Chinese universities and has published articles in the Journal of Tax Practice and Procedure, The Value Examiner, The Tax Development Journal, The CPA Journal, and The Journal of Financial Planning. *Prior to joining academia, Prof. Ambrosio was an Appeals Officer in the estate and gift tax program at the Internal Revenue Service and legal counsel at Partners Group in Switzerland. E-mail:* fabio.ambrosio@cwu.edu

27. I.R.C. §§ 877A(g)(5); 877(e)(2).
28. I.R.C. § 7701(b)(6).
29. Revenue Act of 1916, U.S. Statutes at Large 39 (1916): 756-801. Accessed January 13, 2019. https://www.loc.gov/law/help/statutes-at-large/64th-congress/session-1/c64s1ch463.pdf
30. See Ambrosio F. (2019) "The Transfer Tax Tale of Disenfranchised U.S. Citizens." The Journal of Financial Planning, 32 J. Fin. Plan. 5 (2019).
31. I.R.C. §§ 2208, 2209, 2501(b),(c).
32. Accessed June 11, 2019. https://www.irs.gov/individuals/international-taxpayers/expatriation-tax#_Expatriation_after_June_17,%202008
33. Pub. L. No. 96-511, 94 Stat. 2812 (December 11, 1980).
34. See Footnote 15.

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PRACTICING SOLO

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By Rod P. Burkert, CPA, CVA, MBA

INTERVIEW: ZACHARY SHARKEY

I hope you enjoyed last issue's interview with Joseph Emanuele. Our interview series continues, with this issue featuring Zach Sharkey. Zach is a former coaching client of mine, and we have collaborated on several business valuation projects. He recently celebrated the one-year anniversary of his solo practice, named appropriately for the Arch that defines St. Louis.

SNAPSHOT:

My credentials: CFA, CPA, ABV (and MBA but that isn't a credential)

I'm located in: St. Louis, MO

On my own since: December 2017

Name of my firm and website url: Gateway Valuation Consulting, LLC (https://www.gatewayvalue.com)

My practice sweet-spot is: manufacturing, wholesale, distribution

Typical size company I deal with: $5 million to $50 million

Zachary Sharkey

Rod: So the BVFLS profession isn't exactly a calling. Tell us about your background and how you got to where you are today.

Zach: I followed a backward path compared to most BV practitioners. After graduate school, I moved to Chicago and worked in finance, eventually landing my "dream job" as a research analyst on the coveted international equity research team at Calamos Investments. My wife is from St. Louis, and her family still lives here. News that our first-born child would be arriving led us to pack up and move to St. Louis to be near her family. I took a position with a regional trust company where I managed closely held investments and performed business valuations. In those roles, I've served as a company president, advised boards, served on boards, advised on M&A as an intermediary or for my company's corporate M&A account, and just about everything in between.

Most BV professionals I've met started as CPAs and moved from accounting into finance. I went the other way, starting in finance and changing my niche when I left equity and convertible debt research on the publicly traded side, and plunged into the private capital markets. My designation route was CFA to CPA to ABV. My "reverse" progression is quite revealing about how little of a calling private-capital BV was to me until I jumped in and found out how much I enjoyed working with private company business owners.

Rod: What was your first year like and what would have made it better?

Zach: I prepared for months before breaking out on my own, and still, the first year was tough in ways I didn't expect. As an employee, I was accustomed to the paycheck mentality. Working for myself, being in the office doesn't always translate into cash flow because there's so much more involved than the actual work itself. Marketing, administrative, and other areas that others took care of when I worked for a firm were now my responsibility. While I knew that would be the case when I started my practice, shifting my mindset was more difficult than I anticipated. On the bright side, it didn't take too long to adjust, and I was very fortunate to have an exceptional mentor. The mental shift from paycheck to eat-what-you-kill

isn't for everybody. Adding a fourth child to my family's clan was a wonderful, yet unexpected, event that made the first year even more challenging.

What would have made it better? Creating my business within a business would have made life much easier in the beginning. As an employee, I was consumed with doing the work instead of getting work, since we had enough business coming in purely through referrals. In hindsight, I would have worked later into the nights to get the jobs done while building referral relationships during the day. Senior partners later in their career often find the transition to a solo practitioner much more comfortable because they've formed multi-decade-long relationships with key referral sources. Having those kind of long-term referral relationships certainly would have made my transition smoother.

Rod: Do you practice in a specialized niche today?

Zach: Manufacturing, wholesale, and distribution. Most of the work is M&A-focused or concerns an area of business planning. My sweet-spot used to be gift and estate tax work but the tax law changes and commoditization of that niche's pricing forced me to pivot. Sell-side intermediary representation in the manufacturing, wholesale, and distribution industries is where I'm spending more time today than last year. I've also positioned my practice to help buyers with identified target companies get a valuation at an affordable price with a hybrid calculation report that includes the meat of what they need at the price of a larger firm's calculation report. The R&D time I invested in creating this product has delivered a nice ROI, and it fills a demand that larger firms have ignored. To date, all of my sell-side intermediary work has come from this product.

Rod: What has been your best marketing tactic?

Zach: My book, Business Valuation for Business Owners, has been a great marketing tool. And having the CFA Charter is another way that I've been able to stand out in a way I didn't expect. Wealth managers, especially, tend to understand and appreciate the rigors of the CFA Charter. Because I once worked for a fund company that creates the investment products that financial planners sell, many wealth managers like to "talk shop" about the process and the fund research world. Consequently, much of my referral work comes from those sources. I got the CPA designation primarily for marketing purposes since it's widely known and respected. I also regularly post to Twitter and LinkedIn about industry trends and topics. And I'm the co-host of the podcast "M&A the Right Way," which has far exceeded our expectations and has led to BV work and sell-side opportunities. For the first few months of my practice, I did daily coffee/breakfast/lunch meetings but found them to provide a marginal ROI and not a good way to build meaningful relationships. Today, if I'm going to lunch with a potential referral partner, there's already an existing relationship of some sort. I've had much more success with a one-to-many approach supplemented with one-to-one meetings.

Rod: How do you price your work?

Zach: Fixed fee with guaranteed customer satisfaction. I'm a huge fan of Ron Baker. His book, Implementing Value Pricing: A Radical Business Model for Professional Firms, is a cornerstone of my firm.

Rod: How do you differentiate yourself from larger firms?

Zach: In no particular order: credentials and experience, fixed-fee pricing structure and guarantee, honesty, and humility. I refer away a good amount of work because it's not in my wheelhouse. While the immediate monetary gratification is muted, the benefits of not doing or doing certain projects have been profound. As a small business, integrity is everything, and one screw up would lead to a storm of bad chatter, so I'm careful to accept only work I excel in. I've been blown away by the response of saying to someone, "I could do the work, but I know somebody better, and I'd be happy to make the introduction." In my first year, it was tough to refer away business, but I knew it would benefit my practice in the long run—and I'd be able to sleep better at night. Plus, I'm doing the best thing for the client, which is what we all should be doing as a profession. It has paid off, too. Some of the people I've referred to other valuation practitioners have referred their advisors and colleagues to me. My fixed pricing is another differentiator since most larger firms charge hourly rates; Gateway bears the pricing risk instead of the client. Finally, my customers know a partner-level professional is doing the work rather than an associate at a price larger firms can't match using their billable-hour model.

Rod: Do you work from a home office or an "office" office? Why?

Zach: An "office" office because it works best for me. No distractions from my home life; I'm able to have office meetings at my building, etc.

Rod: What is your current mobile device?

Zach: Apple iPhone.

Rod: Describe your current computer/workstation set up.

Zach: Laptop integrated with two monitors.

Rod: Besides your phone and computer, what apps, gadgets, or tools can't you work without?

Zach: This may be the worst answer you've ever received, but a Texas Instruments BAII Plus calculator. As a small business, Google's One Drive and G Suite for Business are essential. The backup and support are better than what I had working at large firms. I'm also growing fond of my AirPods with the white noise app.

Rod: What do you listen to while you work?

Zach: White noise or earplugs. If the work is mundane, I'll listen to podcasts, but 95% of the time I need to be focused. Non-repetitive sounds (e.g., podcasts) tend to distract my effectiveness, so I keep them to a minimum.

Rod: How do you keep track of what you have to do?

Zach: My calendar and an Excel spreadsheet that keeps track of jobs.

Rod: Early bird or night owl—what's your sleep routine?

Zach: It depends on the week. I prefer an early-morning routine. When I have hard deadlines and multiple projects, early mornings often turn into late nights.

Rod: Do you have liability insurance?

Zach: Yes, I purchase it through the AICPA.

Rod: Do you have any office/admin staff?

Zach: Yes. The building my office is in has other professional service firms, mostly legal and financial planning. We have shared support staff for administrative help.

Rod: How do you stay technically current with changes in the profession?

Zach: Industry trade journals and publications for general changes. For new concepts in economics and finance, I read the CFA Institute's material.

Rod: What non-BVFLS book have you read most recently or want to get to, and why?

Zach: Non-fiction books. Rob Slee's Private Capital Markets is a must-read. My opinion, from having worked in both the public and private capital markets, is that his book should be required reading for every valuation practitioner. Another favorite from recent memory was Ben Carson's Take the Risk, and it changed the way I approach qualitative cost/benefit scenarios. Most of my non-BV reading is done before bed and is weighted toward history, self-improvement, or religion.

Rod: How do you recharge? What do you do when you want to forget about work?

Zach: I work Monday through Saturday but rarely work on Sunday. Sunday is my recharge day, and it usually involves R&R, practicing sports with my children, and other low-key activities.

Rod: What practice areas do you think offer the most promise to someone going solo now?

Zach: Anything that's consultative and requires human connections that cannot be outsourced by AI or automation in the near-term. One-to-one commoditized valuation work is getting hammered on pricing. Anybody with (or without) a designation is doing the work, and the barriers for some of the designations are low. Litigation remains promising. My practice is more involved with M&A planning and intermediary services than a year ago, and I don't see that area slowing down any time soon.

Rod: What is the best work/life advice you have ever received?

Zach: I can't remember who said it, but the premise is that there is no work/life separation. Most people are content going to work each day, doing their job, and then going home and leaving work where it was. I don't have that "switch" that turns off and on. My peace integrates both work and life. If one of my kids has a game, I go. If my wife needs help during the day, I help. The work gets done, but professional and personal demands are balanced together as opposed to having a disjointed work-life separation. I work significantly more hours now than I ever have and I'm much happier and at peace.

Rod: Finish this sentence: If I knew then what I know now, I would…

Zach: …I would have worked harder on cultivating relationships with referral partners while still receiving a company paycheck. Building meaningful relationships with referral sources takes an enormous amount of time and resources.

That's a wrap! Answers have been lightly edited. Do you have a Practicing Solo issue you would like me to address? E-mail me at rod@rodburkert.com.

I work with BVFLS practitioners and firms who have hit a time or income ceiling and want to grow faster and smarter. If you are feeling frustrated by those limitations, e-mail me at rod@rodburkert.com. VE

Rod Burkert, MBA, CPA, CVA, is a practice development coach who helps overwhelmed BVFLS professionals create more time, money, and freedom in their practices and their lives so they can create the experiences that matter most to them. For Rod, that experience is traveling full time in an RV with his wife and two dogs. What's yours?

PRACTICE MANAGEMENT

Telling Your Story: Editorial Board Members and Contributors to *The Value Examiner* Say Why They Write (Part II)

Compiled by Nancy McCarthy, Senior Editor, The Value Examiner

Mark Twain once wrote that no one but a blockhead ever wrote for anything but money. But, as one of this country's most prolific writers, Twain probably knew that if you like to write, you can't not do it. Our series on "Why I Write" wraps up with these final thoughts.

I only write when I feel the inspiration. I realize this is counter to the ever-popular…Our daily blog, or post to LinkedIn every Tuesday and Thursday. With no "barriers to entry" for publishing and posting, there is so much digital noise. So, I've gone green, by limiting my digital footprint for the benefit of others! Everyone is a thought leader; the question is whether anyone is following and whether that even matters.

I'm not good at writing about nothing. I like to get to the point. Likewise, it takes a lot to capture my attention when it comes to reading digital content, and the same has become true for valuation book reading, probably because of the proliferation of self-publishing.

I like to educate and simplify valuation concepts and discuss what really drives the value of a business. When I see someone's eyes glass over during a valuation lecture, I'm motivated to simplify and explain in layman's terms. When I read a five-page article and only find one sentence that is a gem, I'm motivated to write. I'm not suggesting that what I write is any better, but these are the motivations.

My target audience consists of business owners, attorneys, and other business consultants dealing with appraisers or valuation issues. After all, there is no need to target business appraisers who know everything about everything already… don't we?

Rich Goeldner ASA, CBA, CVA,
FairValue Advisors, LLC

Writing is one of the gifts that allow me the opportunity to reach an endless number of readers. By writing, I have the opportunity to share my story, as well as, share an antidote that may be tremendously more beneficial to the reader than to myself.

I write to share my experiences. I especially like to share those experiences that have been successful and educational with real-time results. That is what makes writing to an audience so impactful. I can share the pitfalls that I have made on my journey, and by doing so, allow the reader to gain insights that may help them to avoid the same or similar pitfalls that I have encountered. The flip side is, I write to share the success stories with a hope that all or some of what I have written can be used or even duplicated for their success. When a reader takes my advice to avoid a pitfall or copies a success story, I take both as a great compliment.

That is why I write

Stephen A. White, CVA, Managing Partner,
Onyx Partners Group

I am compelled to write. When people ask me my genre or my niche, I want to respond, "all of it." I make my living as a business writer. I help other people clarify their thoughts and get their ideas on paper. But, I am always writing about the world as I experience it, or as I want to experience it. I cannot imagine a world where I don't write.

Nancy McCarthy, BA, Journalism, MA Communications,
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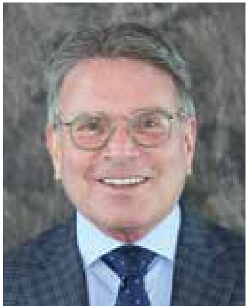

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Surgent CPE: NASBA Qualified Self-Study Courses	Yearly / Monthly§		$240 / $20	$240 / $20	$240 / $20	$240 / $20

Note: Prices are subject to change.

* See website for details, conditions, and upgrading to unlimited BIZCOMPS. EconAssist is free with NACVA membership.

† To receive CPE for attending this course, which awards bonus points for NACVA's recertification, there is an additional annual cost of $225.

‡ Bundle value is a composition based on established retail prices if purchased separately, what competitors charge for the data/service if we do not sell it separately, and estimates of what we would charge on data not found elsewhere if we did sell the data separately.

§ Requires annual commitment.

\# Silver, Gold, and Platinum multi-user contains a one-user license for the Duff & Phelps Cost of Capital Navigator Basic (limited downloads). Titanium multi-user contains a two-user license for the Duff & Phelps Cost of Capital Navigator Pro. Additional users must be added in the shopping cart.

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