



**MONTCLAIR STATE**  
UNIVERSITY

Montclair State University  
**Montclair State University Digital  
Commons**

---

Department of Accounting and Finance Faculty  
Scholarship and Creative Works

Department of Accounting and Finance

---

8-1-2012

## **A Case Study on the Determination of Lost Profits for the Forensic Accountant**

James Digabriele

Montclair State University, digabrielej@mail.montclair.edu

Follow this and additional works at: <https://digitalcommons.montclair.edu/acctg-finance-facpubs>



Part of the [Accounting Commons](#), [Corporate Finance Commons](#), and the [Finance and Financial Management Commons](#)

---

### **MSU Digital Commons Citation**

Digabriele, James, "A Case Study on the Determination of Lost Profits for the Forensic Accountant" (2012). *Department of Accounting and Finance Faculty Scholarship and Creative Works*. 15.  
<https://digitalcommons.montclair.edu/acctg-finance-facpubs/15>

This Article is brought to you for free and open access by the Department of Accounting and Finance at Montclair State University Digital Commons. It has been accepted for inclusion in Department of Accounting and Finance Faculty Scholarship and Creative Works by an authorized administrator of Montclair State University Digital Commons. For more information, please contact [digitalcommons@montclair.edu](mailto:digitalcommons@montclair.edu).

# A Case Study on the Determination of Lost Profits for the Forensic Accountant

James A. DiGabriele

**ABSTRACT:** This paper illustrates a teaching case study for use in a forensic accounting course. The case study requires students to prepare and/or present their findings for the valuation of lost profits in the framework of a business interruption. Readers obtain requisite financial and qualitative information to complete a valuation of lost profits due to a business interruption.

**Keywords:** forensic accounting; lost profits; business interruption; sales projection method.

## CASE SUMMARY

Forensic accounting experts are often utilized to present and defend lost profits damages in the context of a business interruption.<sup>1</sup> In a commercial dispute of this type, damages are estimated using accounting concepts, measurements, and assumptions to obtain a reasonable valuation. The focal issue in this case is the preparation of a calculation for the value of lost profits during a short-term loss period. A business interruption setting usually involves an insurance contract that is in place and coordinates the recovery a claimant receives. The preparation is important from a settlement standpoint since this avoids expensive litigation. However, to avoid any reliability issues regarding the valuation methodology, the calculation should be prepared under the same assumption as if the case would end up in court.

The facts of the case are as follows: ABC Pest Control is in the business of providing services for all aspects of pest management in residential, commercial, industrial, and institutional settings. ABC Pest Control provides general pest management services such as termite control, rodent control, and real estate inspections. The company owns and utilizes three service vehicles to service its customer base. On June 20, 2010, one of ABC Pest Control's service vehicles was involved in an automobile accident. The service vehicle was out of service from the date of the accident through the date that it was placed back in service, July 19, 2010. During the one-month downtime period,

---

*James A. DiGabriele is an Associate Professor at Montclair State University.*

---

I thank Richard (Dick) Riley (associate editor) and two anonymous reviewers for their extremely helpful comments and recommendations.

*Published Online: March 2012*

---

<sup>1</sup> Business interruption is the loss of profits and the continuation of fixed expenses resulting from an interruption in commercial activities due to the occurrence of a peril.

the service vehicle was being repaired. ABC Pest Control continued business operations during the loss period by employing the two remaining vehicles. However business continued to operate at a lesser capacity due to reduced business volume. Prior to the loss date, the company had an office staff and three drivers/servicemen.

A clause in the insurance policy allows ABC Pest Control to be reimbursed for professional fees incurred to prepare a claim of loss. As a result, the company hires a forensic accountant to prepare a claim of loss for the period of June 20, 2010–July 19, 2010 (one month) to calculate the lost profits and the continuing (unavoidable) expenses during the downtime.

### ASSIGNMENT

You have been retained as the forensic accountant by ABC Pest Control Company to prepare a calculation of lost profits as a result of a business interruption. Please note the following assumptions and guidance for use in your assignment:

- (1) Examine fixed and variable costs to determine the percentage of lost gross receipts that should be reimbursed. Expenses that are “fixed” continue during the loss period. Those expenses that are “variable” must be examined to determine their behavior during the loss period. Professional judgment is needed for each expense line item, deeming it either “fixed” or “variable”; for variable expenses you must determine whether to disallow completely or pro-rate the expense. Provide justification for all expenses continued/discontinued.
- (2) Calculate the gross receipts lost during the period of interruption to the business utilizing the information provided in Enclosure (b). Several methods may be used to project gross receipts during the period of interruption. ABC Pest Control did continue to operate at a limited capacity and generated some income during the loss period. Please provide justification for all assumptions and calculations.
- (3) Calculate the loss due to the business interruption combining the results of (1) and (2) above.
- (4) In consideration of the below-referenced enclosures as guidance, please utilize these documents in a confirmation analysis of the results obtained in step 3.
  - (a) 2009 Profit & Loss Statement
  - (b) Sales Detail
  - (c) Summary Calculation
  - (d) Assumptions
  - (e) Insurance Policy Excerpt
- (5) Report the results in a written report using the ensuing outline of sections: Introduction, Scope of the Assignment, Procedures Performed, Opinion on Findings, Support for Opinion, Conclusion. (The percentages in Enclosure (a) do not sum exactly, due to rounding.)

<b>Enclosure (a)</b>			
	ABC Pest Control Income Statement 2009	As a % of Gross Receipts	Unavoidable Expenses as a % of Gross Receipts
Gross Receipts	\$ 313,291	100.00%	
Cost of Goods Sold	65,010	20.75%	
Gross Profit	\$ 248,281	79.25%	
Expenses:			
Salaries - Office	15,896	5.07%	
Salaries - Drivers	41,286	13.18%	
Rents	11,333	3.62%	
Licenses	10,661	3.40%	
Depreciation	3,650	1.17%	
Advertising	38,589	12.32%	
Auto & Truck Expense	16,665	5.32%	
Bank Charges	1,829	0.58%	
Dues & Subs	300	0.10%	
Gifts	104	0.03%	
Insurance	7,637	2.44%	
Internet	608	0.19%	
Legal & Professional	2,780	0.89%	
Meals & Entertainment	1,041	0.33%	
Miscellaneous	909	0.29%	
Office Expenses	630	0.20%	
Payroll Services	988	0.32%	
Telephone	10,050	3.21%	
Tolls Parking	10,522	3.36%	
Training	1,200	0.38%	
Uniforms	643	0.21%	
Utilities	3,600	1.15%	
Total Expenses:	\$ 180,921	57.75%	
Net Profit	\$ 67,360	21.50%	

*Business Interruption Value - Net Profit plus Unavoidable Expenses:*

**Enclosure (b)**
**Income Data per General Ledgers**

Period	Gross Receipts
04/20/08 - 05/19/08	\$ 33,675.00
05/20/08 - 06/19/08	\$ 59,143.00
06/20/08 - 07/19/08	\$ 32,101.00
04/20/09 - 05/19/09	\$ 34,580.00
05/20/09 - 06/19/09	\$ 29,143.00
06/20/09 - 07/19/09	\$ 32,862.00
04/20/10 - 05/19/10	\$ 37,302.00
05/20/10 - 06/19/10	\$ 30,677.00
06/20/10 - 07/19/10	\$ 14,781.00

**NOTES**

Since the loss period is considered short term, the use of the sales projection method is more appropriate and practical. Within the structure of this methodology, several techniques may be used to support a claim of lost profits due to a business interruption.

One method of projecting sales for a short-term loss period may be based on historical income trends (year over year growth rates should be considered as well as period averages).

Examples for calculating projected sales:

- (1) Compare sales from April 20–June 19, 2010 to sales from April 20–June 19, 2009. Apply the growth rate to sales from June 20, 2009, to July 19, 2009, to see the expected level of sales during the downtime.
- (2) Calculate the average sales during the period immediately preceding the downtime (April 20–June 19, 2010) and rely on that monthly average as the expected level of sales during the downtime.
- (3) Rely on the sales that were experienced during the same period as that of the loss period from the prior year using a flat or zero growth rate.
- (4) ABC Pest Control generated sales during the loss period.

<b>Enclosure (c)</b>		
<b>ABC PEST CONTROL</b>		
<b>SUMMARY LOSS</b>		
		Ref
Lost Gross Receipts	\$	Enclosure (b)
<i>Multiplied by Business Interruption Value</i>	<u>                    </u> %	Enclosure (a)
Loss Due to Business Interruption	<u><u>                    </u></u> \$	

**Enclosure (d)**

- (1) Despite the downtime, the entire office staff continued to work and operate the business.
- (2) Due to the downtime the driver was *not* paid during the business interruption.
- (3) The rent and utilities expense is specifically for office space.
- (4) The licenses are required and based on fixed fees.
- (5) The vehicles are fully depreciated; the depreciation expense is related to computer equipment and office fixtures that remain in use.
- (6) ABC Pest Control has various annual contracts to advertise with Yellow Book, local channels, and the *Star Ledger*. The fixed monthly portion of the contracts is \$2,000. Due to short-term cash flow concerns, the company expects to spend approximately two-thirds of the remaining variable portion consistent with prior cost behavior.
- (7) The vehicles are fully depreciated; the auto and truck expense is a variable expense that relates to repairs and other types of vehicle maintenance.
- (8) The bank charges fixed service fees despite the increase/decrease in activity in the accounts.
- (9) Dues and Subscriptions represent annual magazine subscriptions and organizational dues that are prepaid and fixed despite any downtime.
- (10) Gifts, entertainment, and miscellaneous expenses are all discretionary charges that can be curbed due to lesser activity resulting from the downtime.
- (11) The annual insurance premiums are prepaid and fixed despite any downtime.
- (12) Internet is a fixed cost. Telephone expense has a fixed component for line charges of \$500 per month. Usage charges are based on volume of calls. Each truck operator has a separate phone line on his/her desk to properly offer personalized customer service. Since the company expects the driver to be down for a month, telephone volume for the variable portion of this expense is expected to be reduced by 25 percent based on prior history.
- (13) ABC's accountant and attorney charge a fixed quarterly fee to prepare the company books and provide any necessary legal advice, whether or not the service is called upon.

- (14) ABC's office expense (supplies, postage, etc.) is reduced by 10 percent due to the limited operations during the downtime.
- (15) The payroll company charges a fixed fee to prepare payroll; the fee only changes if the payroll company has to process additional payroll, *not* if it has to process *less* payroll.
- (16) Tolls and parking expense are semi-variable expenses. The company services municipal and county buildings and pays an annual fixed fee \$400 per month for parking privileges. The tolls are volume based.
- (17) No new employees are hired, therefore the training expense and cost of new uniforms are not incurred during the downtime.
- (18) Cost of goods sold includes everything from running the vehicles (oil, diesel, etc.) to the materials and supplies necessary to perform the service of controlling pests.
- (19) The trucks ABC Pest Control operates are customized with specialized pest control sprayers, dusters, vacuums, and other unique equipment. The modifications generally take between 45 to 60 days to install in each vehicle. Most insurance policies require the insured to mitigate the loss of income during a period of restoration. An analysis of lost profits due to a business interruption should consider mitigation. A claimant needs to establish that reasonable measures were taken to mitigate or reduce the damages caused by the business interruption. If these practical actions are not taken, the defendant could make a case that the loss should be abated accordingly.

Due to the restricted circumstance, renting a box van or similar truck is not an option for ABC Pest Control. The damaged truck does not service contractual customers. Accordingly, deferral of service and income is not achievable.

**Enclosure (e)**

**BUSINESS OWNERS SPECIAL PROPERTY COVERAGE FORM**

**BUSINESS OWNERS  
BP 00 02 12 99**

*Various provisions in this policy restrict coverage. Read the entire policy carefully to determine rights, duties and what is not covered.*

*Throughout this policy the words "you" and "your" refer to the Named Insured (ABC Pest Control). The words "we", "us" and "our" refer to the Company providing the insurance.*

**f. Business Income.**

We will pay for the actual loss of Business Income you sustain due to the necessary suspension of your "operations" during the "period of restoration". The suspension must be caused by direct physical loss of or damage to property. The loss or damage must be caused by or result from Covered Cause of Loss.

We will only pay for loss of Business Income that you sustain during the "period of restoration" and that occurs within 12 consecutive months after the date of direct physical loss or damage. We will only pay for ordinary payroll expenses for 60 days following the date of direct physical loss or damage.

Business income means that:

(i) Net Income (Net profit or loss before income taxes) that would have been earned or incurred if no physical loss or damage had occurred, but not including any Net Income that would likely have been earned as a result of an increase in the volume of business due to favorable business conditions caused by the impact of the Covered Cause of Loss on customers or on other businesses; and:

(ii) Continuing (unavoidable) normal operating expenses incurred, including payroll. Variable expenses that do not continue are not remunerated as the purpose of the coverage is not to place the insured better off than had the loss not occurred. i.e., cost of goods sold CANNOT continue if there are no goods to be sold.

**g. Professional Fees.**

We will pay up to \$5,000 for professional fees to prepare a claim of loss.



## CASE LEARNING OBJECTIVES AND IMPLEMENTATION GUIDANCE

The purpose of the case is to expose students to a practical learning exercise in the determination of lost profits due to a business interruption. Rezaee et al. (2006) suggest forensic accountants should be proficient in litigation support services such as the valuation of lost profits. DiGabriele (2008) identified specific competencies significant to forensic accountants. This case integrates several identified aptitudes requisite for successful completion of this analysis. Unstructured problem solving, investigative flexibility, and deductive analysis (DiGabriele 2008) are assimilated in the case as necessary elements for students to adopt within a visceral setting. This case allows students to apply analytical judgment by investigating a fact pattern using problem-solving capabilities in a new business environment. Students will disseminate income and expense behavioral patterns within the context of a business interruption. A discussion of student findings should ensue upon completion of the analysis.

### Implementation

This case is flexible in utilization. The case can be administered as an individual or a group project. The group assignment should feature a subsequent presentation of the findings. Instructors should develop a discussion of the methodology each group utilized in their lost profits calculation with a corresponding application of plausible theoretical assumptions to support the findings. The intended audiences for this case are undergraduate and graduate students in a forensic accounting course. This case has been used at the graduate level in a university setting for four years.

### Students' Classroom Learning Experience

The data received from students can be seen in Table 1. The frequency of the responses are illustrated using a five-point Likert scale, 1 = strongly agree, 2 = agree, 3 = neither agree/disagree, 4 = disagree, 5 = strongly disagree. The students have embraced the unique thought process of combining investigative accounting with the traditional skills of financial analysis. The perceived benefits from a teaching aspect are that students are introduced to a unique way of analyzing and interpreting financial information.

Sample comments from faculty are as follows:

1. Case brings real application of forensic accounting practice to the classroom.
2. Case studies of this nature are important to expose students to an unfamiliar, but natural thought process.

The cost of implementation is seamless using a quality forensic accounting textbook as the backdrop. It is recommended that this case be prepared in groups for class presentation, with corresponding discussion on particulars.

## TEACHING NOTES

Teaching Notes are available only to full-member subscribers to *Issues in Accounting Education* through the American Accounting Association's electronic publications system at <http://aaapubs.org/>. Full-member subscribers should use their usernames and passwords for entry into the system where the Teaching Notes can be reviewed and printed. Please do not make the Teaching Notes available to students or post them on websites.

If you are a full member of AAA with a subscription to *Issues in Accounting Education* and have any trouble accessing this material, then please contact the AAA headquarters office at [info@aaahq.org](mailto:info@aaahq.org) or (941) 921-7747.

**TABLE 1**  
**Results of Student Survey**  
**(n = 78)**

	1. Strongly Agree		2. Agree		3. Neither Agree/ Disagree	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
1. This case required a range of traditional and nontraditional business skills to solve the case.	56	71.79%	22	28.21%	0	0
2. This case has helped me understand the concept and application of lost profits.	48	61.54%	30	38.46%	0	0
3. Presenting case findings and working in groups help me grasp case concepts better than working alone.	61	78.21%	17	21.79%	0	0
4. My understanding of the role of forensic accountants in lost profits matters is better understood as a result of completing this case.	65	83.33%	13	16.67%	0	0
5. This case was an effective learning assignment.	43	55.13%	35	44.87%	0	0
6. This case should be used in future forensic accounting classes.	69	88.46%	9	11.54%	0	0
7. My understanding of the difference between forensic accounting skills and traditional accounting skills is clearer as a result of this case.	61	78.21%	16	20.51%	1	1.28%
8. Overall, this case has met my expectations.	61	78.21%	16	20.51%	1	1.28%

Scale: 1 = strongly agree; 2 = agree; 3 = neither agree/disagree; 4 = disagree; 5 = strongly disagree.

## REFERENCES

- DiGabriele, J. A. 2008. An empirical investigation of the relevant skills of forensic accountants. *Journal of Education for Business* 83 (6): 331–340.
- Rezaee, Z., L. D. Crumbley, and R. C. Elmore. 2006. Forensic accounting education: A survey of academicians and practitioners. *Advances in Accounting Education Teaching and Curriculum Development* (6): 193–231.

Copyright of Issues in Accounting Education is the property of American Accounting Association and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.