ACCOUNTING 26:010:652
ADVANCED TOPICS IN MANAGEMENT ACCOUNTING
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COURSE OBJECTIVES

In recent years my colleagues and I have noticed that when we are recruiting we come across newly minted PhD students who are usually highly technically proficient in terms of being able to run regressions, do statistical testing, solve analytic models or whatever, but they often fail to demonstrate that they have thoroughly thought about their papers—in other words, when you push them about the implicit and explicit assumptions and implications of their research models, it appears that they haven’t really given these matters much thought at all.\(^1\) Too often they fall back on saying that they are doing what they are doing because that is the way it is done in the prior literature, which is more of an excuse than a answer. (Of course, once a researcher reaches a certain age, they all feel that youngsters aren’t as good as they were in the good old days!)

Therefore, in this class we shall go beyond simply studying research in managerial accounting. For half of you, this is your first introduction to accounting research and to PhD level class. Hence, in these classes we shall also learn how to solve business problems systematically and to understand what it means to have thoroughly “thought through” a paper. We begin not with academic research, but with some real world cases, because we should never forget that ours is an applied research field: accounting research is a means towards the end of understanding business and is not an end in itself, in the way pure

\(^1\) Our own hires excepted!
science research is. Developing a systematic procedure for solving a real world business problem is the starting point for developing a research model that generalizes insights gained from practice about how businesses operate—which is a fairly good definition of what research in accounting is trying to accomplish.

Furthermore, we shall also act as referees of several research papers, to learn what makes a good paper and what can undermine one. Being a good referee requires not just a command of the literature that underlies the paper being reviewed, but also an ability to explicitly identify and assess the assumptions and economic forces that may be only implicitly revealed in the paper. For all practical purposes you need to understand the paper at least as well, if not better than its own authors, and developing the skill to do that is an excellent way of learning how to be a good researcher in your own right.

Of course, we will not neglect the fundamental concepts of research in management accounting. In particular, we shall examine the principal-agent models that underlies much of that research and we shall work through the solutions to some specific key models. We shall also examine empirical and behavioral research in accounting, as well as criticisms of that work.

COURSE INFORMATION

Textbook: There is no textbook assigned for this class. All papers and cases listed on the syllabus will be available on Blackboard.

Evaluation:

1. Referee’s Report—due October 16th 30%
2. Research Proposal—due December 11th 30%
3. Class Participation 40%
Total 100%

Grading: Grading in a doctoral class serves a different purpose than what you may have been used to in at the undergraduate or masters level. The default grade is an A meaning that you are working at the level expected of a PhD student. Conversely, a B is a signal that you need to be thinking harder and understanding the material better. The only grade given below this would be a F, but that is almost never given for it implies that the student is simply unsuited to being in a doctoral program and either they made a mistake in entering, or the school made mistake in admitting the student. I have never given a grade below a B in this course and if someone does warrant a failing grade, I will endeavor to counsel them out of the doctoral program first.
Given the nature of a PhD class, this schedule only lists topics and not dates. We shall go through the topics at a comfortable pace that ensures that all students understand the material and move on to the next topic only when you feel that all your questions have been answered. Quality of learning, not quantity, is the aim.

**Topic 1: The Accounting Academic Environment**

Any profession has a lot of knowledge that is “taken for granted” by those in it, such as what career paths are, how one succeeds, the criteria for success, what are the areas of research and so forth. Much of this is learnt by “osmosis” during one’s doctoral training and first few years as an assistant professor. I will attempt to speed up that training process by discussing what you need to know when entering the academic accounting profession.

I add that reading academic articles is an acquired skill. The following article may help you learn how to read a paper in order to get the most out of it:


You might wish to practice these skills on the most famous paper in all of accounting research, Ball and Brown (1968). While it is not in the area of managerial accounting, it is a paper that all accounting students should be familiar with:


**Topic 2: From Business Problems to Applied Research**

It is essential to understand that Accounting is an *applied* research area (as opposed to *basic* research, for example, in economics or the hard sciences), meaning that we try to understand accounting practice and develop ways of making it more effective. Hence, the first place to start understanding management accounting research is to be sure to understand management accounting practice. This the first third of the course consists of analyzing a set of cases to help develop our ability as researchers to *systematically* analyze business reality.

1. **Discretionary Cost Center**

Discussion Questions:

1. Define the problem that management is facing.
2. What hypotheses are there for why this problem has arisen?
3. Given those hypotheses, come up with possible solutions. Then explain which solution you will choose to adopt and why.

4. Discuss the pros and cons of the proposed change to the charging system for engineering time.

This short case is extremely rich and shows how management problems that appear to be obvious and superficial often have complex roots that can only be uncovered through a rigorous and systematic approach to decision making.

Let me clarify that for our purposes the object of doing this case is not finding “the solution” to this case, but, rather, in developing a systematic process that will help us to obtain the solution to this or any other business problem. It is that systematic process that we can also then apply to our academic research.

2. **A/S Dansk Minox**

Discussion Questions:

1. Please prepare the questions included in the case. In particular, please make sure that you have prepared numerical solutions to questions 1-5.
2. One of the central issues in this case is the definition of profitability: should it be defined in the short term or the long-term? How does this change the decision problem?
3. Why does Dansk/Minox want to introduce this product in the first place? Does their reasoning make sense to you?

This case brings together the topics of costing, rigorous decision-making, strategy, operations and marketing into one comprehensive case of complex decision-making. It gives you a chance to put your decision-making skills into use on a most challenging real world management problem concerning new product introduction, with great uncertainties about market demand, core competency and pricing.

2. **Mueller-Lehmkuhl GmbH**

Discussion Questions:

1. How much profit does Muller-Lehmkuhl make on the sale of fasteners? On the sale and rental of attaching machines?
2. Exhibit 6 shows the reported product costs for five representative products. How accurate do you think these numbers are? If you think they are inaccurate, what is your best estimate of the product costs?

Note Total budgeted direct labor dollars (including setup) for 1986 were $1.61 million (Exhibit 1). The direct labor dollar content (including setup) of the five representative products is:
S-Spring: $1.32, Ring: $1.43, Prong (B): $0.14, Prong (SS): $0.27, Tack: $0.66
3. What additional information would you like before giving a definitive answer to Question 2?
4. How would you change the firm’s pricing strategy to compete better with the Japanese? Would you implement this change?
5. Should Richard Welkers be worried about the Japanese?

This is an intricate case, which provides practice on doing a complex Activity Based Costing (ABC) calculation. The accounting system at Muller-Lehmkuhl is not exactly opaque, though it was fully in accordance with German law at that time. The question the case poses is why the company chooses to cost in the way that it does, and what the advantages and disadvantages are of the current and proposed ABC cost systems. Pay particular attention to Exhibit 5, which is a market analysis across Muller-Lehmkuhl’s main European competitors. What role do you think such a strategic analysis should play in the firm’s costing problem?

With the Mueller-Lehmkuhl case too, we are not analyzing it for its own sake, but to think about how we would generalize the takeaway from the case into a proper, rigorous research paper. I want you to analyze the case and then get together in a group of three students and to develop an analytic model of the economic forces illustrated in the case. In other words, you are required to undertake applied research. Please write up your analysis of this case and submit it to me in class. Each group should also prepare a 20 minute presentation of their model to present to the rest of the class.

**Topic 3: The Principal-Agent Model: Moral Hazard**

**Readings on Moral Hazard**


The principal-agent paradigm is the most important analytic model in managerial accounting research. We begin with developing our intuition about these models using a highly stylized representation of the moral hazard (“hidden action”) problem in a
principal-agent setting. Then we turn to the seminal papers in the area and work our way through some simple analytic models:

1. **Sally and Ralph’s Problem**

Discussion Questions:

1. Work through each scenario and explicitly state the assumptions that are being made. What is left unsaid in these models?
2. Describe how each scenario can be mathematically modeled.
3. Find examples from the research literature that fits each of the scenarios. Examine those papers carefully and describe the tradeoffs and assumptions that the authors had to make to fit their mathematical models to the scenario they were trying to replicate.
4. Develop new scenarios to extend the ones that you have been given.

Please write up your analysis of this case and be prepared to discuss in class.

2. **Read:** Holmstrom (1979). You should also consult Lambert’s 2001 JAE review paper for a survey of the literature specific to management accounting.

Discussion Questions:

1. Our aim here is to solve the numerical example Holmstrom discusses on page 79 of his paper. He also provides a solution to the problem. Work through the math and verify that his solution is correct.
2. In other words, derive both the first best and second best solutions for the moral hazard model in which the principal is risk neutral with utility function \( G(w) = w \), where \( w \) is wealth. The worker is risk averse, with utility function over wealth given by \( u(w) = 2\sqrt{w} \) and effort aversion measured by \( v(a) = a^2 \), where \( a \) is the worker’s effort input (thus, the worker’s total utility is \( U(w, a) = u(w) - v(a) \)). Output is exponentially distributed with mean \( a \). Hence, the probability density function of output is \( f(x|a) = \frac{1}{a} e^{-\frac{x}{a}} \) for \( x \in [0, \infty) \). Please write up your analysis of this case and submit it to me in class.

3. **Read:** Holmstrom and Milgrom (1987, 1991). The LEN moral hazard model is the most commonly used one in the accounting literature today. Please also see the discussion of the LEN model in Lambert (2001).

Discussion Questions:

1. Derive both the first best and second best solutions for the moral hazard model in which the principal is risk neutral with utility function \( G(w) = w \), where \( w \) is wealth. The worker is risk averse, with utility function over wealth given by \( u(w) = -e^{-\rho w} \), where \( \rho \) is the agent’s coefficient of risk aversion. Effort aversion
measured in terms of wealth is given by \( v(a) \), where \( a \) is the worker’s effort input (thus, the worker’s total utility is \( U(w,a) = u(w-v(a)) \)) and \( v'(a) > 0, v''(a) \geq 0 \).

Output \( \tilde{x} \) is normally distributed with mean \( \mu(a) \) and variance \( \sigma^2 \), with \( \mu'(a) > 0, \mu''(a) \geq 0 \). The workers reservation wage is given by \( \tilde{w} \), and without loss of generality, you can set \( \tilde{w} = 0 \). In the second best case you can assume that compensation is linear, with \( s(x) = \alpha x - \beta \), with \( \alpha \in [0,1] \) and \( \beta \geq 0 \). In your analysis you are seeking the optimal second best values of \( \alpha \) and \( \beta \). Please write up your analysis of this problem and submit it to me in class.

**Topic 4: The Principal-Agent Model: Adverse Selection**

If moral hazard is the model of choice in managerial accounting, the related adverse selection model underlies our understanding of financial accounting disclosures. It is also a very important framework for thinking about organizational design and structure. We begin with developing our intuition about these models using a highly stylized representation of the adverse selection (“hidden information”) problem in a principal-agent setting. Then we turn to the seminal papers in the area and work our way through some simple analytic models:

**Readings on adverse selection**


**Discussion Questions:**

1. Derive both the first best and second best solutions for the adverse selection model in which both the agent and principal are risk neutral. The principal’s objective is to minimize the cost of producing one unit of output, which can either be made by the agent, or outsourced to an external supplier. If the agent is hired, he or she has to be provided with sufficient resources to cover the needs of production, which depend on the level of the worker’s productivity. Assume that the worker’s resource needs are given by \( \theta \) which is known only by the agent. The worker obtains that knowledge before deciding to sign the contract with the principal. The principal does not know what \( \theta \) is, but has beliefs over its value given by the probability density function \( b(\theta) \), where \( \theta \in [\underline{\theta}, \bar{\theta}] \). The per-unit cost of resources is \( c \) and the cost of outsourcing is \( \bar{C} \). The worker gains utility by consuming the excess between the resources provided by the principal and that
needed for production. Please write up your analysis of this problem and submit it to me in class.

**Topic 5: Learning by Refereeing**

Refereeing papers is not just an essential task that accounting professors undertake for the good of the entire academic community, it is also a great way to improve ones own knowledge and skills. Blackboard contains a PowerPoint presentation from the editor of the *International Journal of Accounting Information Systems* on how to be a good reviewer.

Note that 50% of the grades on the comprehensive exam for accounting comes from refereeing paper. To practice this essential skill you will be given a paper to referee. This assignment is worth 30% of your course grade. The report is to be typed in 12 point font with single spacing and can be no longer than two pages (i.e. front and back; no cover sheet is necessary). You will be evaluated on how substantive are your suggestions to the author to help improve the paper, as opposed to nitpicking about spelling and grammatical errors.

**Topic 6: Diverse Strands of the Managerial Accounting Literature**

Depending on the time available, I will cover a variety of papers from the literature showing the range of the topics and methodologies in management accounting research over the last two decades. Papers will be made available on Blackboard later in the semester.

**Topic 7: Writing a Research Proposal**

The first step in completing a doctoral dissertation is coming up with, writing down and defending a research proposal. Such a proposal must demonstrate that you have thought through the conceptual basis of your ideas, that you understand the methodologies that you will need to undertake the proposal and that you can answer any questions your colleagues will have about it.

To practice for this task, you are asked to develop a proposal exploring some aspect of management accounting. This assignment is worth 30% of your course grade. The report is to be typed in 12 point font with single spacing and can be no longer than two pages (i.e. front and back; no cover sheet is necessary). You will be evaluated on how well thought out your idea is, whether you have a clear way forward to conducting the research and have argued your proposal well, anticipating questions a reader may have.

To help you with this task, please read:

While this particular paper is on AIS research, I was motivated to write it by the question of how accounting research can add value to the profession of accounting. The issues raised are equally relevant to managerial accounting.

Before you start doing your own research it is worth considering the opinion of leaders of the profession about its current state. Consider the opinions expressed in these papers and presentations:

3. The Incredible Comfortableness of Being in Modern Accounting Scholarship, 2011, *Presentation to the SET/IS midyear meeting* by AAA President Grey Waymire.