PROCEEDINGS

1979 ANNUAL CONFERENCE
THE CANADIAN ACADEMIC ACCOUNTING ASSOCIATION

May 1979

Saskatoon, Saskatchewan

L'Association Canadienne des Professeurs de Comptabilité
The Canadian Academic Accounting Association

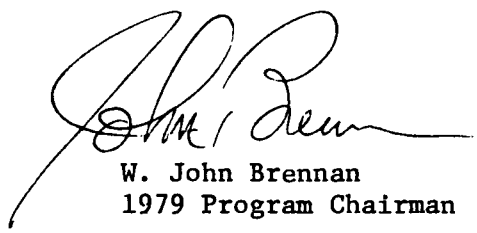
October 12, 1979

The Members
The Canadian Academic Accounting Association

The 1979 Annual Meeting of The Canadian Academic Accounting Association was held in Saskatoon, Saskatchewan. The proceedings of that meeting are enclosed in this volume for the convenience of members and others.

Peat, Marwick, Mitchell & Co., Chartered Accountants, have generously provided their services and resources to make this volume possible. On behalf of The Canadian Academic Accounting Association, we wish to thank them for their continued support of this publication which encourages Canadian Accounting Research.

The authors of research papers presented at the Conference were required to adhere to certain limitations as to length and style and these were somewhat restrictive. A number of the conference papers were, at the decision of the author, not included.



W. John Brennan
1979 Program Chairman

P R O C E E D I N G S

1979 ANNUAL CONFERENCE

THE CANADIAN ACADEMIC ACCOUNTING ASSOCIATION

May 1979

Saskatoon, Saskatchewan

CANADIAN ACADEMIC ACCOUNTING ASSOCIATION

1979 Conference
May 26, 27, 28, 1979

The University of Saskatchewan
Saskatoon, Saskatchewan

Saturday, May 26

8:00 - 10:00 P.M. Welcoming Reception hosted by the Institute of Chartered Accountants of Saskatchewan (Park Town Motor Hotel - Maple Room)

Sunday, May 27

9:00 - 12:00 Noon Plenary Session "Accounting Education in Canada: An Evaluation" (Commerce Room)

Address By: Professor Daniel McDonald
Simon Fraser University

Comments By: Mr. K.S. Gunning
Thorne Riddell & Co.

Mr. Gordon Stark
Jeffrey, Stark, Blenner-Hassett & Kushner

Mr. Jim Spinney
Winspear Higgins Stevenson & Co.
M.Sc. Student
The University of Saskatchewan

Chairman: Professor J.D. Blazouske
University of Manitoba

12:00 - 2:00 P.M. CAAA Luncheon* Cash Bar (St.Thomas More Cafeteria)

Address: Dean Max Clarkson
The University of Toronto

Chairman: Professor John Waterhouse
The University of Alberta.

*Supported by a grant from the Certified General Accountants Association of Canada.

2:15 - 3:45 P.M. Plenary Session "The Canadian Accountant's Body of Knowledge" (Commerce Room)

Panel Participants:
Mr. Gordon Richardson
Staff Member CICA

Mr. Gordon Cummings
Professional Development Committee
Chairman SMA of Canada

Mr. Herb Perry
Executive Director CGA's of Ontario

Chairman: Professor George Baxter
The University of Saskatchewan

3:45 - 4:00 Coffee

4:00 - 5:30 Plenary Session "Canadian Accounting Research and Publications" (Commerce Room)

Panel Participants:
Professor Gary Sundem
The University of Washington

Mr. Howard Lyons
Deloitte, Haskins & Sells

Dean Don Shaw
The University of Regina

Chairman: Professor George Murphy
The University of Saskatchwan

5:30 - 7:00 Reception - Government of Saskatchewan
(Education Building - Room)

Monday, May 28

9:00 - 10:00 A.M. Business Meeting - CAAA Annual Meeting and AAA - Canadian Section Annual Meeting

Chairman: Professor L.S. Rosen
York University

10:00 - 10:15 Coffee

10:15 - 12:00 Noon — Plenary Session - Research Papers (Commerce Rm.)

"An Inventory of Accounting Courses and Programs in Canadian Universities: An Interim Report"

Professor Thomas Beechy
York University

"Accounting and Corporate Survival: An Open System's Approach to Organizational Effectiveness"

Mr. Gerald H.B. Ross
Institute of Social Research
The University of Michigan

"The Professional Schools of Accountancy Proposals: Reaction by Educators and Students"

Professor Art Guthrie
Simon Fraser University

12:00 - 1.30 P.M. — Informal buffet lunch sponsored by the Society of Management Accountants (Education Building Student Lounge)

Concurrent Research Papers

1:30 - 4.00 — Session A - (Commerce Building - Room)

"A Framework for Examining the Relationship Between Accounting Information and Human Behavior"

Professor V. Bruce Irvine
The University of Saskatchewan

"Interactive Tools for Teaching Managerial Accounting"

Professor Len Fertuck
The University of Toronto

"Transfer Pricing - Implications for Design of Management Control Systems"

Professor George Baxter
The University of Saskatchewan

"Accounting for Industrial Disputes: Issues and Implications"

Professor M. Nelson & C.T. Lau
The University of Windsor

Chairman: Professor Michael Gibbons
The University of British Columbia

1:30 - 3:00 Session B - Commerce

"An Empirical Investigation Into the Understanding of the Funds Statement by Nova Scotian Manufacturers"

Professor Dick Chesley
Dalhousie University

"Earnings Per Share: American vs. Canadian Pronouncements"

Professor C.T. Lau
The University of Windsor

"Pioneer Examinations at the ICAO"

Professor P. Creighton
York University

Chairman: Professor Wayne Hopkins
The University of Regina

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Concurrent Research Papers

*Note: This paper was mistakenly not included in the proceedings of the 1978 Conference. To correct this error it is included this year.

ACCOUNTING EDUCATION IN CANADA: AN EVALUATION

Comments by Daniel McDonald

1.0 INTRODUCTION

When I started work on this paper it was going to be very factual and analytic. It has turned out to be very personal and impressionistic. As I look back over the gestation period for this paper two points stand out above all others. The first is that there is a dearth of facts. Hard data relating to accounting education is almost non existent in publicly available form. The second point is that there has been and continued to be a dearth of personal commitment to accounting education.

1.1 Theme: Facts and Commitment

1.11 Facts

There is no readily available data base relating to accounting education in Canada. Consider a few broad questions.

- How many first degrees with an accounting major are granted in Canada each year?
- What proportion of those with accounting first degree find suitable employment within 6 months of graduating?
- What proportion of those with an accounting first degree embark on professional level studies? Of those, what proportion are successful?

Consider a few questions which accounting academics might ask with respect to their own institution.

- The three questions above can be asked with respect to each university.
- What is the average class size in our accounting courses? How

does it compare with our university-wide class size?

- What is the turnover rate of accounting faculty? How does it compare with university-wide faculty turnover?

- What is the average salary of accounting faculty? How does it compare with university-wide average salary (or rank by rank)?

Consider a few questions which practitioners might ask with respect to their own firm.

- What is the pass rate on professional level exams of our employees broken down by university from which they obtained their first degree?

- What portion of our students stay with the firm for more than (say) five years after qualifying? Does the proportion differ depending on where they obtained their first degree?

What is needed, University by University, firm by firm, and in some summarized aggregation are basic facts relating to accounting education. In section 1.13 I return to this need and how it might be filled.

1.12 Commitment

Accomplishment is a direct function of commitment. Despite the similarity in spelling commitment has nothing to do with committees. Only persons can have commitment in the sense of deep involvement and binding oneself to a task or an ideal.

Accounting education in Canada has grown out of, is controlled by, and will be changed by, committees. A camel has been described as an animal designed by a committee. Accounting education in Canada fully reflects its committee heritage. Here I am commenting more on the design and plan and less on the implementation. Implementation is more personal and is less subject to the failings of committees.

As I have been writing this section I have reflected on the various committees I have been on over the last few years. On reflection the following two operating rules seem optimal for me.

1. I will not accept the chairmanship of any committee unless I am prepared to do all the work. The task must be important enough to warrant that level of personal commitment on my part. In this sense a committee of one is ideal. Other committee members at minimum are a valuable sounding board and at maximum will in fact do all the work.

2. I will not agree to be a member of any committee unless the Chairman has a high level of personal commitment to the task and I reach a firm agreement with respect to my role on the committee.

1.13 A Factual Data Base

We badly need a factual data base. Without data we will never know whether or under what circumstances small classes are better than large ones, a five-year degree is better than a four-year, experience with a small firm is better than a large firm, etc.

Of course there are difficulties in defining terms, specifying the measurement rules and ensuring uniformity of reporting. These are exactly the difficulties that the accounting profession grapples with all the time. However well we do it, we do do it for others (e.g., we have defined earnings per share). For our own profession we simply don't do it (e.g., we have no definition of pass rate by firm on the Chartered Accountants Uniform Final Examinations).

In section 1.11 I argued for a comprehensive data base with respect to accounting education in Canada. Further aspects of the usefulness of the data base will be dealt with in subsequent sections. Unless someone argues vigorously with me on this I will assume that you also perceive the need. In section 1.12 I argued that personal commitment was an essential ingredient often lacking in accounting education. So I now ask the question: Is there anyone here who regards the task of designing, creating and maintaining a data base for accounting education sufficiently highly that (s)he would be prepared to undertake the task. It is a task that would require much time and prodigious efforts over an extended time period (say 10 years). It would require finding funding, liaison with numerous institutions and the inevitable frustrations and delays. There might be rewards through publications and through the prestige attached to thorough knowledge and expertise in an area.

The Canadian Academic Accounting Association could play an important role through funding, publication, and securing co-operation from universities, firms and professional associations.

The CAAA can't do it. It can persuade an individual to do it or to head up a task force. People persuaded to undertake a task seldom have the high degree of personal commitment necessary for success. The ideal is someone who already has the high degree of personal commitment and who then convinces the CAAA to lend their institutional support.

So my first challenge is this: do some of you regard this task as sufficiently important that you will say, "I will undertake to see to it that it gets done."

2.0 PRE UNIVERSITY

2.1 Perceptions of the Field of Accounting

Perceptions, attitudes and beliefs are formed very early. By the age of about twelve many important beliefs and attitudes are well entrenched. By that time children have been exposed to a wide range of experience largely through the medium of television. How many of them have any idea of what an accountant or an auditor is?

Our profession's stance on advertising has certainly contributed to this lack of awareness of the profession. It has also failed to counter the image of accountants as timid, retiring, and drab that is sometimes encountered in fiction. Have you ever read an engrossing novel in which the central character is an accountant? The profession's stance on advertising is entirely inexplicable to me. I do not see it as serving the public interest. I do not see it as serving the interest of the profession. Strangely enough the courts in British Columbia are presently rescuing the legal profession from itself (Law Society vs Jaboor). If the outcome in that case affirms the lower court decision it is likely public accountants will feel less constrained by the existing professional rules.

2.2 Pre University Coursework

Most high schools offer one or more bookkeeping or accounting courses. Whether or not these are an advantage for those students continuing on into university level accounting courses is debatable. More important, though less debated, is the observation that the profession itself and the university instructors in accounting have had virtually no interest in, nor impact on, the content of those high school courses. We have been uninterested in that level. This ignores the important fact the impressions of the subject are often crucially influenced by the first course. If the first course is repetitious, routine, tidy with "right answers", some students will be attracted and some will be turned off. If the first course is fast paced, perplexing in its variety, and full of questions with no very definite answer, some students will be attracted and some will be turned off. The real issue is which of these caricatures is closest to the field as it is, and which of these is closest to the first courses that are being given. There is a real need for thoughtful professional and academic level concern with high school courses.

This then is my second challenge: do some of you regard this task sufficiently important that you will say, "I will undertake it."

The timing of career choices is closely related to both high school coursework and early university coursework. Whenever I meet a young person (16-20 years) who is crystal clear on their chosen profession I am still amazed. I admire their certainty. It is something I never experienced. Given my own experience I have great difficulty identifying with young students who come to university and enrol in accounting courses because they wish to become professional accountants. My fear is that in later life if they find themselves unsuited for the profession they will look back upon their university years, and perhaps even some of their high school years, as wasted. It is possible to study accounting simply as an interesting subject which challenges the mind and imagination, which forces an emphasis on methodology, which continues to question its usefulness in the world and which provides important insights into the world around us. It is possible to study other subjects in that way also. If at the end of such a program the individual wishes to continue into professional level study well and good. If not (s)he has received a solid education valuable in its own right.

In this sense I view the accounting education and training as means

and not ends. Carried one step further I view professional qualification as a means not an end. The end, if there is one, is very personal and has to do with being all of who you are. If an individual obtains a professional accounting qualification that is simply a new beginning. A means, a means to practice publically, alone or in partnership; a means to become a member of management in either the public or private sector; a means for commencing an academic career; a means of financial support while becoming whatever (s)he chooses.

3.0 UNIVERSITY LEVEL

3.1 General Education or Specialist Education

I have already commented (in section 2.2) that I regard a subject (such as accounting or history or philosophy) as a mechanism for gaining an education. The subject itself is not the end. If it were the end then once "known" nothing remains to be done. The subject itself expands and changes. The "continuing to know" depends upon a capacity to detect relevant changes, anticipate their impact, critically evaluate alternative action plans and viewpoints, and integrate all of this into the previously "known". The university years should be focused on this "capacity to continue to know". If it does so the prolonged, and I think fruitless, debate over generalist vs specialist education becomes pointless.

Some people choose to be concerned with a broad range of knowledge. They will apply their education to this broad spectrum. During their university years a variety of subjects will assist in developing the perceptions and analytic capacity which will serve those broad interests.

Others choose to be concerned with a narrower range of knowledge. They will apply their education to a more specific aspect of life. During their university years a more limited set of subjects will assist in developing the perceptions and analytic capacity which will serve those broad interests.

Most important, both approaches have value to the field of accounting. Some individuals should be concerned with how to account for foreign exchange gains and losses (a fairly narrow concern). Others should be concerned with whether exchange rates should be fixed or float freely and the impact of the alternatives on the economy (a broader concern). I argue later for a variety of approaches to accounting education in part because of this variety of personal interests and of societal needs.

My personal hunch on the specialist vs generalist issue is that undergraduate education will become more specialist. Twenty years ago the dominant route into the work force was high school; university was a broadening education for a relatively small percentage of the high school graduates. Increasingly the route into the work force is now through post secondary institutions of various sorts, including universities. The pressure for specialist-type programs will be enormous and the institutions will succumb. That will leave graduate programs to fill the role once filled by undergraduate programs.

3.2 Programs and Content

The concept of zero-base budgeting has an interesting parallel in university programs. I would call it zero-base curriculum. University curricula, like traditional budgets tend to be built up year by year through a series of incremental changes. We add a course here, drop a course there and shuffle some subject matter from one course to the next. Seldom is there sufficient pressure from anyone to stop and design a new program as if it were being done for the first time and in the light of our society and our profession as they are now operating. This is understandable since major changes in today's university setting is a discouragingly long and painful process. Perhaps institutional linkages such as transfer credit with junior colleges, exemptions from professional association courses, etc., are now so complex that the idea is not feasible. Yet it should not be dismissed.

We don't even have available to us a comprehensive view of the accounting programs which exist in Canadian universities. The idea of accreditation of accounting programs warrants serious consideration. The main virtue is that some outside group at least takes a look at the programme and expresses an opinion. I prefer the term academic audit to accreditation. Perhaps the first step would simply be a collection of program descriptions and related statistics for the accounting programs in Canada. This would include simple factual material such as which courses are required, which are optional, what courses are available, number and qualification of full time faculty, average class size, etc. Much of the information could come directly from university catalogues. Subsequent steps might include developing guidelines for accounting programs and later still on-site reviews of operations. If this were to be undertaken the CAAA would undoubtedly play a major role.

Here then is my third challenge: do some of you regard this task as sufficiently important that you will say, "I will undertake to see to it that curriculum information[1] is readily available and that an academic audit routine is established.

Some comment on the subject matter to be contained in the curriculum is in order. I confine myself here to the general nature of the subject matter and specifically to whether accounting should be viewed as a process of measuring economic phenomena or a discipline that reports events selected by a political process. Consider the current controversy with respect to foreign exchange gains and losses. No one argues about whether or not exchange rates fluctuate; they do. No one argues about whether or not such fluctuations have an economic impact on firms; they do. The argument is about whether or not, and when, such changes should effect net income. It seems to me that this issue is being settled by a largely political process based on who is most vocal with respect to their self interest. An even more blatant example is the recent series of events in the U.S. dealing with oil and gas exploration costs. Both the F.A.S.B. and the S.E.C. were

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1 The C.A.A.A. now has a reserach project under way dealing with "An Inventory of Accounting Courses and Programs in Canadian Universities".

subject to pressure from self-interest groups and at the same time were engaged in a subtle power play with one another. It is not surprising that the resulting official standards do not result in a cohesive set of measures. One further example. The concept of assets, central to all of accounting is still not well defined. The conceptual framework study in the U.S. is still grappling with whether assets are "economic resources" or "economic resources and other items that do not represent economic resources."

3.3 Students

It is easy to complain about poor students, and I hear that complaint frequently. I think the complaint is misplaced. There are just too many. The best of our students are as good as they ever were. In my judgement better. A higher proportion are going on to university so on average they may be less suited for university programs. Given the large student body the demand for accounting courses and the shortage of accounting faculty, there is a pressing need for a mechanism to limit enrolment. In most universities this mechanism does not exist. The critics of enrolment limits have one particularly powerful argument. Students considered competent enough to be in the university should be considered competent enough to enrol in any course for which they have the necessary prerequisites. They deserve a chance at the course. It is the responsibility of the course instructor to ensure that standards are maintained and that only those qualified for further coursework in the field are permitted to do so. Realistically, this is not taking place nor is it likely to. Grade escalation is a fact of university life. Student evaluations of courses and of instructors are a fact of life and a fact that is playing an increasing role in salary, promotion and tenure decisions. The solution I support is an entrance examination for admission to the university.

Lest I be considered anti-student, I now argue for more and relevant information for students with respect to university courses and programs. Each university should make available comprehensive data with respect to course and program completion percentages. How else can a student rationally assess the odds of success in undertaking a course or a program? In a sense this is the academic equivalent of earnings per share. The completion percentage may be high because of strict entrance standards, superior teaching or low completion standards. Regardless of the reason students should know the odds. Later I will argue for similar disclosure by public accounting firms with respect to their trainees.

Here is one more challenge: do some of you regard this task as sufficiently important that you will say, "I will undertake to see to it that it gets done for the accounting courses in my university."

There are no long-term projections with respect to the demand for graduates from university programs in accounting. Without such projections neither universities nor students can make rational plans. A study is now underway by the Technical Service Council covering trends in graduates from professional programs. The results are expected in June and should be of some assistance in planning the capacity of university programs.

3.4 Faculty

The supply of accounting academics remains critical. Best estimates are that there are 10 available positions for every available Ph.D. in accounting. This is not just a Canadian phenomena. It is true in the U.S. as well. It is not just a short run phenomena. It has held for at least the last 10 years.

Some have argued that the Ph.D. is not really essential for teaching and research in the accounting field and that an M.B.A. plus a professional qualification is adequate. Whether that is or is not true in any absolute sense is almost beside the point. A Ph.D. is now a standard requirement at universities and we are not going to change that. Universities may countenance a departure in a department if Ph.D.'s are not available but I cannot ever see them regarding it as an acceptable norm. The real solution is to increase the number of Ph.D.'s in accounting. It continues to baffle me to see numerous Ph.D. programs throughout Canada in other disciplines where the need is less and yet have only 3 Ph.D. programs in accounting.

The problem of faculty shortage is partially concealed by the extensive use of part-time lecturers. They add an important element of "real world" freshness to courses and they are usually committed to their teaching role. The problem is that they are seldom on campus long enough to adequately serve needs of students for counselling and for course assistance. They do not share the committee work and administrative load. Let me use my own university as an example. The average class size in accounting is twice as large as the university wide average. About 50% of our courses are taught by part-time instructors. This means that the full time accounting faculty teach twice as many students and counsel, advise, etc. almost four times as many as do their colleagues in other departments. This in part explains the next problem; faculty turnover.

Faculty turnover in accounting is high. Universities lose faculty to the profession and to industry and there is turnover to other universities. In my university in the last 5 years we have experienced 100% turnover (average 20% per year). I have no data from other universities but I believe we are not alone.

Large classes, heavy administrative and counselling loads are not conducive to extensive research. Insufficient research slows rank and salary increases. All of these factors contribute to low morale and high turnover. All this forms part of a vicious circle which is illustrated in Figure 1.

With insufficient faculty there is an understandable reluctance to begin new Ph.D. programs. With few Ph.D. programs, few Ph.D.'s are produced and the vicious cycle continues.

I have just described the situation as a vicious circle. Is it really vicious or is that merely one point of view? An alternative point of view can regard the same situation as one filled with opportunities. That view is represented in Figure 2. The choice of point of view is yours and is mine.

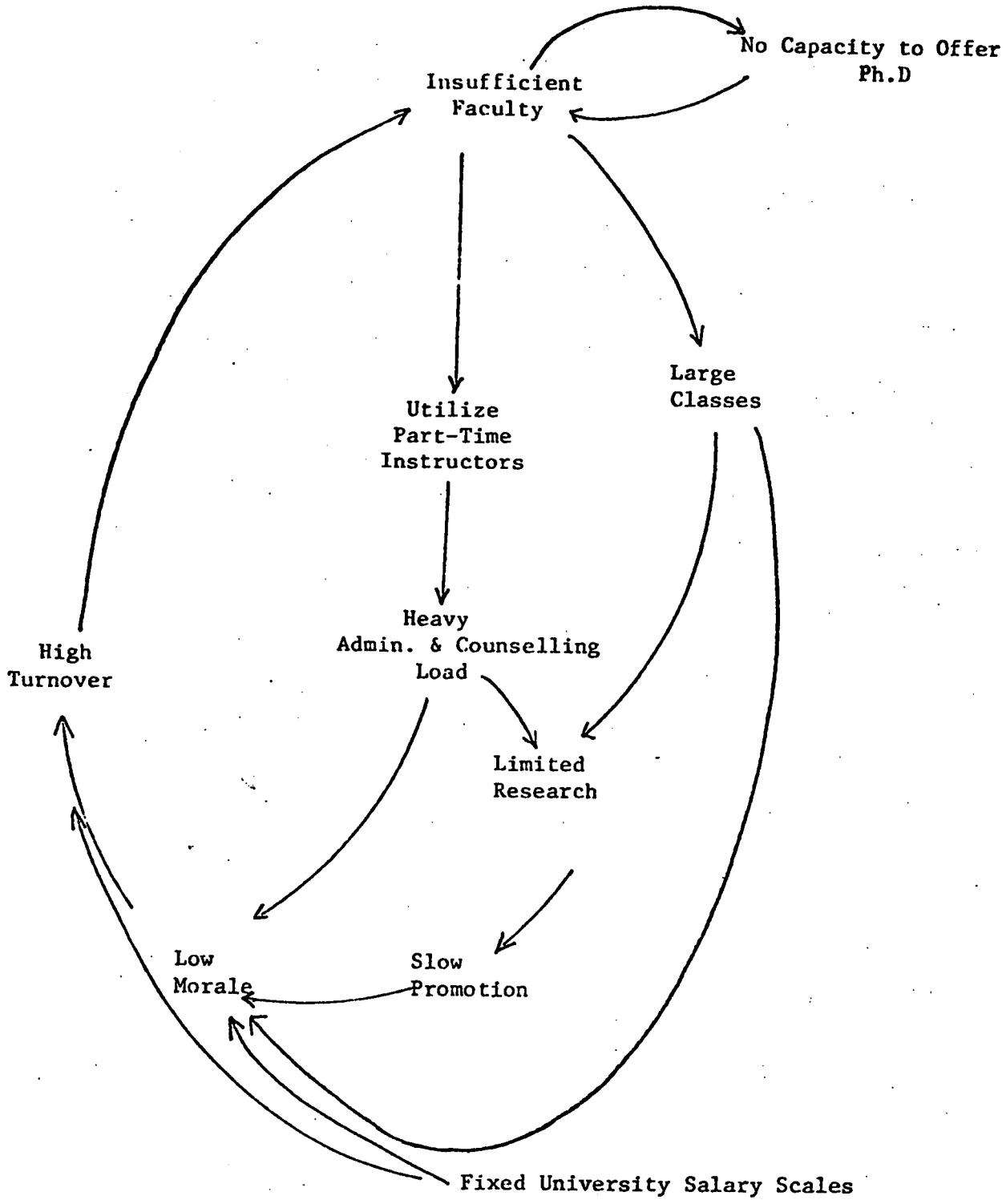

Figure 1. The Vicious Circle in Accounting Education

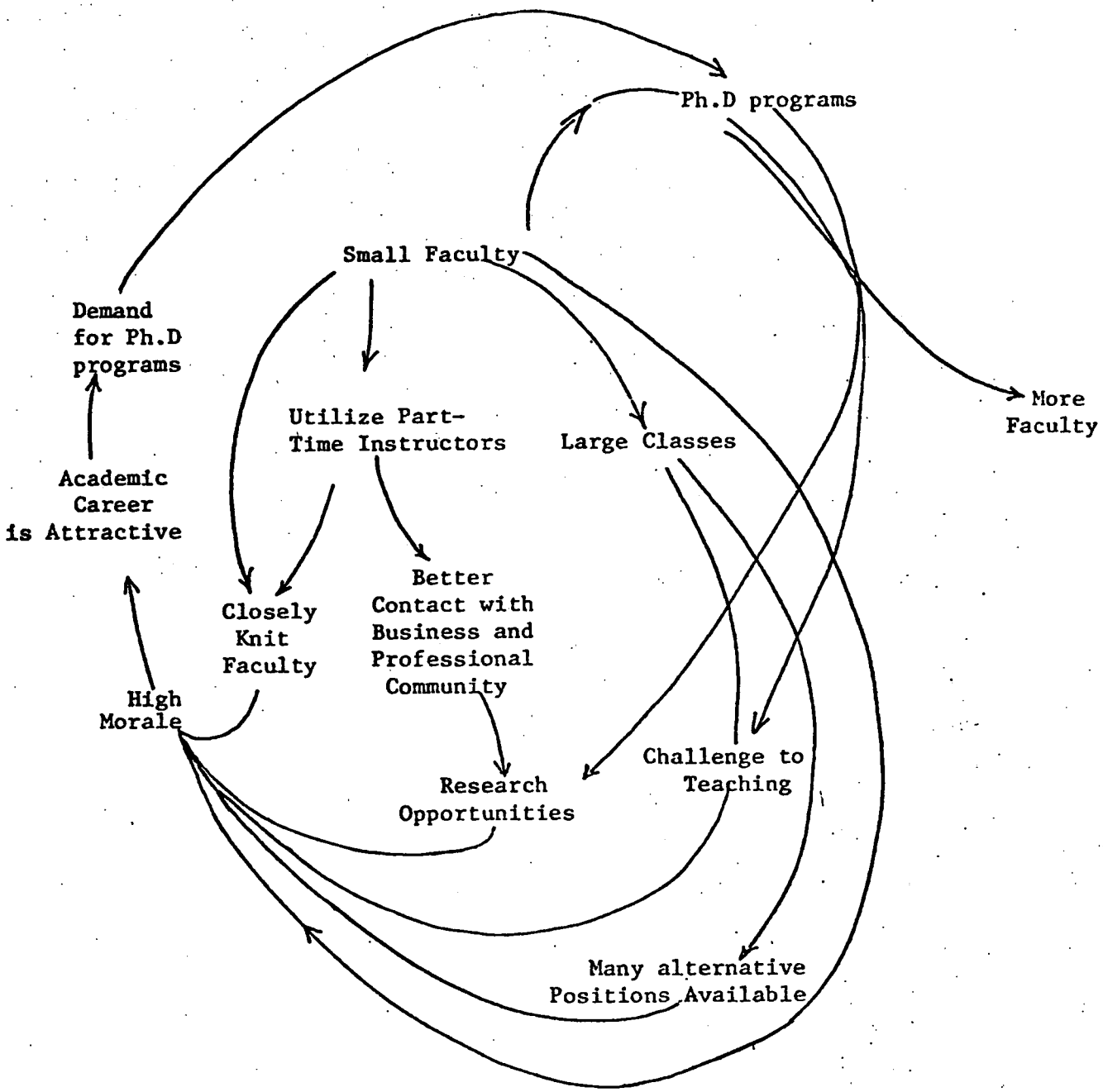

Figure 2 The Circle of Opportunities in Accounting Education

3.5 Institutional Setting

Universities are facing a difficult time. Enrolment is no longer growing as it once was.[1] Budget allocation, often based on enrolment, is sparse. Unionization on campuses is increasing with the faculty usually the last to do so. The faculty salary scale is usually uniform across all departments regardless of conditions in the academic market place. In this setting, departments that face increasing enrolments[2] are in difficulty. They will not be allocated more faculty positions except as positions become vacant elsewhere, for the total size of the faculty cannot be allowed to grow any faster than total enrolment. Reallocating positions is slow because it depends on vacancies and is painful and acrimonious since it is a zero sum game. If those growing departments find few qualified applicants, even those few posts they are allocated may remain unfilled. Accounting departments face both difficulties. I see no easy way out of this bind. We need more capacity to produce Ph.D.'s in Canada. Budget constraints and overextended faculty inhibit the solution.

Facts relating specifically to accounting departments in Canadian universities are not available. Here are some facts relating to business administration.

All Canadian Universities	75/76	76/77	77/78
Business enrolment as % of total university enrolment[1]	10.6	11.1	12.5
Business operating budget as % of total university operating budget[2]	N/A	3-4%[2]	N/A
Full-time business faculty as % of total full-time faculty[3]	4.1	4.4	N/A

N/A: Not Available

1 Von Zur-Muehlen 1978b, p. 18
2 " " " 1978b, p. 24
3 " " " 1978a, p. 42

I believe the disparity is even greater if the accounting area is considered separately from commerce and business. The only data I have relates to my own university.

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1 Canada-wide preliminary 78-79 enrolment is down 1.4% from 77-78 (University Affairs, February 1979).

2 Enrolment in business administration was up 7% in 76-77 and 9% in 77-78, 78-79 not yet available (Von Zur-Muehlen, 1978b, p. 7).

Simon Fraser University	Total University	Accounting
Average class size	34.5	72.9
Portion of undergraduate student credit hours	100%	3.8%
Portion of full-time faculty	100%	.9%
Enrolment growth	3%	30%
Proportion of classes taught by full-time instructors	Not Available	45%

(Data covers 6 semesters 74-3 to 78-2.)

In my view a professional school or a separate accounting faculty at the University has both administrative and academic advantages. Let me emphasize that I am not advocating this for all universities. Indeed it is for the very reason that our existing programs and administrative structures are so similar that I advocate an alternative. Academically there would be fewer institutional constraints and more frequent modification of the curriculum would be possible. I do not see over specialization as a problem. The coursework requirements specified by the various professional associations are in many cases more broad than are the degree requirements in a typical commerce faculty. Administratively the universities would be forced to face up more directly to the resource allocation issue. New administrative arrangements may be the only route to more adequate financing of accounting programs.

In the long run the most encouraging institutional feature is this new Canadian Academic Accounting Association. As I looked through the long list of associations as part of the Learned Societies meeting here in Saskatoon, I was once again struck by how incongruous it was to not have had such an association a long time ago. I have high expectations of this association and I know it will take a considerable length of time for it to be firmly operational. I view one important step to be the establishment of a permanent headquarters for the Association with a small and perhaps part-time staff to manage the day to day activities.

3.6 Research

The main constraint that I see with respect to research in the accounting field is the capacity and will. Part of this is related to the vicious circle of insufficient faculty, large classes, etc. Part is related to insufficient publication outlets particularly for research dealings with strictly Canadian problems or data.

The concern I would like to discuss in more detail is the lack of input from the academic community to the Accounting Research Committee. The A.R.C. is creating generally accepted accounting principles and will do so whether or not there is academic input. There is little incentive

for academics to make the time to prepare thoughtful comments on exposure drafts. Here is my proposal. Either the A.R.C. itself or the CAAA undertake to publish a low cost "journal of comments on A.R.C. exposure drafts". At least initially this would be a non-refereed journal. The objectives would be to

a) encourage thoughtful comment.

b) expose the comments to the academic community. This should ensure a reasonable level of quality.

c) influence the A.R.C.

d) provide a resource base for teaching and research.

4.0 PROFESSIONAL LEVEL

4.1 Professional Associations

I view the moves toward unification (merger) of the various societies, orders, associations and institutes as detrimental to education in the field of accounting. I would similarly view any proposal that there should be only one university in Canada authorized to grant a degree in accounting.

The professional associations and the universities need more structured linkages such as advisory boards. Ideally each university with a program in accounting would have an advisory board containing practicing professionals and other community representatives. Similarly each education committee of the professional associations would have some members from the academic community. Certainly in this aspect the professional associations have done more reaching out than the universities.

Professional associations have been loath to become involved in any activity that borders on political. Technical comments on proposed tax legislation is about the limit of their involvement.

So here is a challenge directed at the professional associations. Are any of them willing to even write to their Provincial Minister of Education urging more support for Ph.D. level study in Canada? Would they write to the Canada Council with respect to the need for more fellowships in the area? If any such letters do get written, I am sure the CAAA would be willing to reproduce them in their newsletter.

4.2 Professional Firms

Professional or other firms which offer experience toward professional qualification have an obligation to give their trainees relevant data with respect to completion odds. Such data would include pass rates on professional examinations and drop our rates. This is nothing more than an earnings per share type calculation for the selection and training process. Yes, there will be difficulties in defining terms and specifying the measurement rules. The difficulties are less than those surrounding earnings per share. It can

be done if we want it done.

Here I have two challenges. First to the firms: prepare and disclose such data immediately. Don't wait for the institutes and associations to mandate it. Disclose the definitions and measurement rules used. Second, a challenge to the professional associations: prepare formal definitions and measurement rules, mandate their calculation by approved training firms and publish the comparative data.

The training costs incurred by professional firms are indeed high and I appreciate their concern with costs. One danger is a belief that more can and should be done by universities. Some visualize as ideal a situation in which the universities do all of the education - a turnkey concept. I would prefer a means of minimizing such costs by more cooperation among firms. One mechanism is a marketplace for in-house course material. Other modes of integrating education and experience such as through co-op (work-study) programs could also reduce training costs.

4.3 Professional Examinations

Considering the high failure rate on professional level exams, I continue to marvel at the optimism of students. One part of me argues for a very free market where, with full knowledge of the odds, individuals are given the maximum range of alternative routes to reach the examination. Another part of me argues for much earlier screening out so that as each stage is successfully completed the odds of completion improve. Perhaps the first step is simply better information in a more understandable format.

4.4 Rule Making and Standard Setting

I have already proposed a journal for the free expression of responses to A.R.C. exposure drafts. In this connection the role of academics as critics must be accepted. If the criticisms are constructive that is an added bonus. Devastating and seemingly distructive criticism is a valid contribution and should not be lightly dismissed whether it be from academics or practitioners. For example, more of such criticism of the recent recommendations with respect to foreign exchange gains and losses would perhaps have mitigated the difficulties already detected and, I suspect, the many more still to be revealed.

I do not see the CAAA directly taking positions or making comments on A.R.C. exposure drafts. To add a committee response to a committee proposal is to add compromise to compromise. In my view a readily accessible and open public forum for individual responses is far preferable.

4.5 Professional Development

The profession itself is moving toward compulsory professional development. In this the academic community lags behind the professional

community. We do not even talk of monitoring our academic updating activities. To consider making such activities compulsory is an anathema. It might even be considered a violation of academic freedom. After all we are academic professionals and as such we automatically keep sufficiently abreast of new developments as a part of our professional duty. That argument also applies to practicing professionals. In fairness, many universities require comprehensive reports on teaching, research, publications and other related activities. These reports form part of the basis for salary and promotion decisions. This too could be considered as part of the vicious circle of large class sizes, heavy administrative load and insufficient time for personal growth and development.

As to the universities' role in professional continuing education, I see this as an unexplored region. With more than enough to cope with, accounting departments are loath to propose new courses and programs. My view is that particularly while faculty is in short supply, the emphasis should be on credit courses. Thus, professionals without a first degree may wish to take degree courses to meet their professional development targets and possibly work toward a degree. Those with a first degree may similarly enrol in graduate level courses. This holds some real potential for gradually expanding the graduate level course offerings in accounting. I view the narrow and more specialized aspects of professional development as more suited to sponsorship by the professional bodies. This leaves the universities to concentrate on degree-related courses.

5.0 THE FUTURE

Let me summarize by briefly restating the challenges I have issued. They are what I want for accounting education in Canada.

1. Facts. For a profession devoted to factual data for decision making, we have a dismal record of self-reporting. We need facts regarding the educational process at both the university and the professional level.

2. High school accounting courses that fully reflect the challenges and the opportunities of the field.

3. University budget allocations to the accounting departments consistent with the student credit hour load.

4. Some professional schools of accounting at the university level.

5. A strong and well-organized Canadian Academic Accounting Association.

6. Increased capacity for producing Ph.D.'s in accounting here in Canada.

7. More open and vigorous discussion of A.R.C. exposure drafts. One means would be a publication devoted to opinions and viewpoints on the exposure drafts.

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ACCOUNTING EDUCATION IN CANADA: AN EVALUATION

Comments by K. S. Gunning

I appreciate the opportunity to be here to offer my comments for the consideration of this distinguished and important group on Dan's interesting and thought-provoking paper. I am particularly pleased to be here as a practitioner, because as Dan observed, and as every other writer on the topic or every other speaker at a gathering such as this has observed, it is vital that closer linkages and better understanding between the practising profession and accounting and auditing educators be established and maintained. Hopefully, this session will forge another link in those connections.

Having listened, if you did, to my introduction, you will already have reached some conclusions about my interests and biases. It would be stupid to deny their existence, but neither do I offer any apologies for them. You should be aware, though, that my B.A. at the University of British Columbia was a pre-planned general education with a pre-planned end objective of becoming a professional Accountant. Accordingly, I took every accounting option available for Arts credit, and an extra course in second year so that if I did so choose at the end of that year, I would switch into the Faculty of Commerce. I did not make that choice, and I have no regrets. My subsequent involvements with research responsibilities in both a major accounting firm and in the CICA have really only acquainted me on a very superficial basis with pure accounting or auditing research, since most of those responsibilities were directed towards practical and usually pressing problems.

My present responsibilities in a major public accounting firm obviously very much influence my views and shape my concerns, and I am sure you will recognize these things in some or all the comments I have for you now.

But we all have our biases, and John was certainly aware of mine when he asked me to take on this chore - isn't that right John? I can only assume that you have anticipated that mine will complement or offset someone else's.

Anyway, the past is prologue. Time to get down to business.

Perhaps before I comment on Dan's paper I should remind us all of the long term goals of the CAAA, as set out in its Statement of Objectives, and I quote:

"The long-term goals of the CAAA are:

1. To improve the quality of accounting and auditing education in Canada and to assist in making it available in a desirable quantity.

2. To further the quantity and quality of accounting and auditing research, with emphasis where possible on Canadian issues."

These commendable objectives are important to us all, and are pertinent to my comments on Dan's paper.

Dan, I find myself in agreement with the major part of your analysis and recommendations. I am personally not prepared, at least at the present time, to respond to any of the stirring challenges which you so openly throw out, but I do hope you may find some in the room here who will answer the call.

I should perhaps start by listing a number of the points which I do find wholly supportable.

1. I was more than pleased to see your recommendation that both specialist and generalist career paths must be available to the profession. Bias Number One, obviously. I will have something strong to add later, though, about access of the generalist candidate to the specialist courses.

2. You have given us an excellent picture and have given me a much better appreciation of university level problems, particularly those faced in the business schools and more particularly in their accounting departments. Funding problems, class sizes, faculty turnover, tenure and advancement, and serious morale problems all have taken their toll on the quality of accounting education at university, and your analysis confirms the grading recorded in Al Rosen's report card in last June's CA Magazine. The profession and the universities must take this problem seriously, and while it can probably never be rectified short of some basic restructuring, it could be somewhat alleviated with greater assistance from the profession and some concerted action by groups such as this.

3. I agree with you that there is a need for a better understanding at the high school level of what accounting and an accounting career is all about. I will have something to add later about course content at this level where I don't quite agree your emphasis.

4. You have taken a brave and commendable stand on the entrance examination for admission to the university. I don't want to sound like too much of an elitist, because I certainly believe that anyone who demonstrates the ability should have the opportunity to attend the university. It is just those who have the opportunity but not the ability that I take exception to. Our society just will not be able to afford the luxury of entertaining this group for four or five years largely on the public purse when their numbers seriously impede the quality of education for those who can really benefit from it. Fortunately, current university enrollment statistics reflect to a degree changing norms of social acceptability, and as you noted we now also have a much better range of community colleges and trade schools to usefully train and educate those who would not likely benefit to the same extent at the university. Incidentally, Dan, I take somewhat the same position with respect to entry into the profession, and I will have a few comments on that later.

5. As I noted at the outset of this talk, I am in full agreement with the aim of establishing structured professional and academic linkages in as many ways as possible. Accounting education has suffered significantly through this lack of liaison, and I would refer you (for addition to your reference list) and our audience (for their information) to the excellent article appearing in the CPA Journal of March 1979 by David Ricchiute and David Campbell, entitled "A need to bring educators and practitioners together". The authors identify the proposition that, and I quote:

> "The greater the rate of change in the education and practice environments, and the greater the uncertainty of information about conditions in either environment, and the greater the timespan of feedback from the practice to the education environment, then the greater the incongruence between accounting educators and practitioners."

   They go on to make the case that the factors mentioned are such as to have caused serious congruity.

6. There is no doubt from your analysis that, given the continuance of the present accounting educational system, we will continue to suffer seriously at the universities from a lack of PhD level educators. Further, we will suffer from this shortage even if other educational models which I will mention later are adopted.

Having been so agreeable up to this point, Dan, I am sure you won't mind me mentioning a few specific points of disagreement with some of the conclusions you have reached.

1. First, I don't really believe it a high priority item to attempt to restructure bookkeeping courses at high school.

These programmes, generally speaking, are not university entrance routings, but are rather introductory courses for those who will seek employment after high school as bookkeepers. They may have relevance when considered in conjunction with the question of "para professionals" which I will touch on later. However, I don't think that high school is the place to design a course for the purpose of teaching a person what a profession is really like, or for convincing him that it would be an interesting vocation to pursue. Other means, such as junior achievement programmes, career days, and a new seminar programme for presentation at high schools developed by the Canadian Chamber of Commerce which describes the operation of business and the free enterprise system generally, seem to me to be much more appropriate ways of achieving those aims.

2. While I applauded your position on specialist vs. generalist training, I was a bit disappointed in your hunch that university level education would become more and more specialist oriented. I tend to hope that that won't happen, and that specialist training in education will be received mainly on a post-university basis. But I guess my biases may be showing again here.

3. I do not applaud your view that responses to Exposure Drafts of the CICA should be published. In fact, I wish to give it the old-fashioned raspberry. (Raspberry). I think it would have a bad, not a good effect on the quality of responses, because many respondents would be far less candid on controversial issues. I don't see how it could influence the ARC, since the Research Committee carefully considers all responses already. I am sure it would be useful to the academic community as a means of increasing understanding within the accounting profession and to provide a resource base for teaching and research. However, the process of developing and finalizing research pronouncements is so important that any impediment to that process just should not be allowed to exist. More of my personal biases showing.

4. Final points of specific disagreement. Publication of Uniform Final Examination passing rate percentages by firm and by office. (Raspberry). I know this is a favourite tum tum of yours, because I read your letter to the Editor of the CA Magazine last year, so I am sorry to give it this treatment. But I just don't believe it would be either useful to the students or fair to the firms concerned.

   We of course keep such averages for our firm, and receive them from most of the other big firms, and tabulate and compare them. We make no secret of them. We publish them in our firm newspaper, and we generally use them as a "selling" argument to prospective students. Insofar as they reflect the training our students receive, and the assistance we provide

them in exam preparation, they have validity when applied to a large enough sample, such as would be obtained in a large firm where there are 50 or 100 finalists or more. However, there are other factors hopelessly intermixed and significantly affecting examination results. The one overwhelming influence, of course, being the intelligence and industry of the students hired. The correlation between high marks at university and success in the final CA examinations would be high, and this factor surely grossly outweighs any influence of the firm concerned.

When numbers are reduced to 2 or 3 or 4, or even 10 on an office basis, passing percentages, except on a long term trend basis, are meaningless.

Finally, is it fair to those firms who have been unable to attract students out of the top quartile to put a further impediment in their path by discouraging students from going to them?

Tabulate passing percentages on a uniform basis, by all means; report them to the Institute, by all means; let the Institute make enquiries or take action as it deems appropriate where passing percentages are not adequate, by all means; but publish them? Not by the hair on my chinny chin chin.

Well, Dan, those are the specific disagreements I find with your conclusions, and I promise there are no more raspberries in my remarks. But I do want to comment on what I believe to be some substantive areas where you have either declined to take a position on important issues considered, or where you have failed to address such issues at all.

First of all, a few issues where you seem to have come down with one foot on each side of the fence - not necessarily the best position to be in if the fence is of any significant height.

1. Earlier screening in the CA programme, to minimize waste of resources by the profession and of time by its unsuccessful candidates. You have confessed to some schizophrenia on this one, where everyone else who has considered the question has opted for some form of earlier screening. Consistent with my views on university education, I think we definitely need some.

2. Continuing education in the profession. You noted the trend towards compulsory professional development, and you particularly slapped the wrists of the academic community in this regard. But you didn't issue one of your stirring challenges, and I wonder why. Both the Adams Report and the Rosen article last year emphasized the importance of consideration of the issue of mandatory continuing education. The Institutes are cautiously moving in that direction, and it deserves the support of our profession.

3. Professional schools. Dan, I believe that you only mentioned this term within your paper once, though you take the position in your summary that some professional schools within the universities should exist. I think the issue of professional schools is a very fundamental and important one requiring real consideration, and I am sorry that my own time schedule doesn't permit me to stay and hear the discussion on it tomorrow afternoon.

I will have a few more remarks on this topic in a couple of minutes, as I now turn to review some fundamental issues which I feel should warrant an important part in the consideration of accounting education in Canada, but do not appear to be sufficiently evaluated in your paper.

1. Demand and supply factors for accounting professionals

When I opened your paper, Dan, to the remark that there was a serious dearth of hard data, I said "right on". But I soon saw that the data you referred to didn't include some very important data that I had in mind. You make no mention here of the market needs for professional accountants - present and future - and the present and potential supply of accounting graduates available to meet those needs. While the latter is touched on briefly at the end of Sec. 3.4, I frankly feel that there is a serious need for such a data base to be developed by our profession and I doubt whether the Technical Services Council, and I confess to my ignorance as to what that is, is going to supply that need.

There are some very fundamental current and long-range problems to be assessed here, including the following:

(a) Rapid changes in technology and in demands upon the accounting profession.

(b) Present and future patterns of university enrollments.

(c) The capacity of business schools to supply students for the profession.

(d) The potential need for a class of "para professionals".

All these issues must be carefully considered in assessing the long range plans for accounting education in Canada. It is vital to consider the needs of the market, and what in fact the "market" consists of. The Rosen article pointed up this fact, and the Ontario Institute Report on Educational Planning did a half a job - on the supply side only. I have some serious reservations about the capacity of the business schools to supply adequate numbers of trainees in the future, but that's only a guess, because of the lack of data. And that guess also brings me to my next point.

2. Part-time access to specialist accounting education

The Ontario Report noted in your bibliography raises as one of the most serious problems needing detailed study, the ensuring of availability of appropriate degree credit courses to CA students on a part-time basis. It makes seven separate recommendations to help alleviate this problem, one of which is the creation of separate professional accounting schools. The report does not accept confining entry to the CA ranks to business undergraduate students only, and my bias, of course, leaves me in full agreement. I also believe that under present university structures there is insufficient availability of accounting courses for undergraduate credits in other facilities.

Some way must be found to ensure that capable entrants to the profession from other than business schools have access to academic courses presently locked within the business school curriculum. If it cannot be solved within the present framework of university curriculum and financing, then some other way must be found.

Surely this is a matter of legitimate concern to the CAAA, falling as it does squarely within its first stated objective which I quoted earlier. How about a challenge on this issue, Dan?

3. Professional education at the post graduate/pre qualification level

Dan, I feel that this is a very important educational level in the profession, which has many problems, and is one which has not been adequately addressed in your paper. This is the level where all the following disconcerting things are happening at the same time:

- graduates learn how little their university education has prepared them for the "real world"

- professional accounting organizations, meeting their obligation to test in core subject areas, learn of the deficiencies and knowledge gaps in their students, and are forced back into the education business to remedy them

- professional firms and entrepreneurs similarly provide training courses and instruction to fill those knowledge gaps, in the aggregate a costly and inefficient process

- graduates with subject deficiencies attempt to find part-time registration in undergraduate credit courses

- registered students are subjected to the severe pressures of demanding employment workloads, combined with employment training programmes and constant study for mock exams, provincial exams, or uniform final exams.

Many of these problems were graphically raised in the Ontario Institute Study, and while I recognize that problems at the university level are serious and important, surely the pressing problems after university

graduation and before qualification as a professional accountant warrant much more consideration than you were able to give them in your paper.

It is at this post graduate level that I would advocate serious and immediate consideration be given to separate accounting schools. The Adams Report and the Rosen article outlined some specific suggestions for consideration. I think such schools would help a great deal in solving many of the problems I just listed. I was also very much impressed with the article by Herbert Miller entitled "The Separate Schools Issue" included in your reference list which makes a very strong case for professional accounting schools. Of course, the matter needs a great deal of study. I hope that the paper on this topic tomorrow will cover the views in all those items.

4. Generally speaking, I believe that there was sufficient attention paid to the practical experience component which must be included in accounting education. Again, the Ontario Study, the Adams Report and many other articles have focused on the importance of inter-relating concepts, theories, and technically oriented training with the experience of practical application in the user market. I have serious doubts that the present overall design of our accounting education system effectively relates either theory to practicality or practicality to theory. If we are to improve our report card on accounting education in Canada, we have got a lot of homework to do here.

Incidentally, Dan, if I may be excused, I do think Section I of the Adams Report, which deals with educational matters, deserves a spot on your reference list. Even though it is only two pages long, it is a distillation of considerable study, and does make some significant recommendations, particularly in the two areas I have just mentioned.

5. My final point, Dan, should perhaps be addressed to the Association as well as to you. What is happening in auditing education in Canada? We are sitting here at a conference of the "C triple A". Should it really be the "C quadruple A", in order to serve a reminder of our Association's objectives, to which I would again make reference?

I was very pleased indeed to see from the President's notes last year that the CAAA had established as one specific objective of the 1978/79 year an empirical study on "...some aspects of the state of accounting/auditing education in Canada". However, I was disappointed to see from his last letter that this is described as "a study of accounting courses". I can only hope that the word "accounting" is being used more broadly to include auditing, and that we will hear something about auditing, if not in Dan's paper at least in that presentation and that study, and maybe even in the odd spot elsewhere on this conference agenda.

I direct your attention to the topic of auditing because my biases lead me to believe that if accounting education in Canada is perceived to have earned a grim report card, surely auditing education in Canada has flunked its year completely. I don't believe that any assessment of accounting education should ignore the very closely inter-related matter

of auditing education. Independent auditing is an essential element in our economic system, and there is a tremendous need for upgrading and uniformity in both educational and performance standards. So my last challenge, Dan, is this: Do some of you regard this task as sufficiently important that you will say "I will undertake to see to it that it gets done?" I hope so.

Mr. Chairman, I have overstayed my welcome on the podium, and it is obvious from my remarks that no paper spanning twenty or twenty-five minutes can do justice to the important topics we have been trying to cover. I hope that Dan's interesting study, together with the contribution of the remarks of your three commentators, will lead to some fruitful questioning and discussion, and more importantly, to early consideration of and action upon the important issues in education which pose such a significant challenge to our profession.

Thank you, Mr. Chairman.

ACCOUNTING EDUCATION IN CANADA: AN EVALUATION

Comments by G. Stark

INTRODUCTION

I was pleased to accept the opportunity of participating in your review of the status and problems of accounting education in Canada. I have a number of reasons to be extensively concerned about this question:

> First and foremost of course is my status as an accountant engaged in public practice for some 37 years.
>
> Secondly was my involvement as a member of the Council and later as President of the Institute of Chartered Accountants of Saskatchewan.
>
> Next has been my involvement as a Board member and Chairman of one of the pilot Colleges in the relatively new Saskatchewan Community Colleges system.
>
> And finally came my involvement in University affairs as a member of the Saskatchewan Universitites Commission.

The first two of these involvements has given me some insight into the needs of the accounting profession for academic and practical training while the latter two have apprised me of the many problems in providing those educational opportunities.

As a practicing accountant over a relatively long period I have had the opportunity of observing the transition of the training system from one that was predominantly based on High School graduation leading to pure 'on the job' apprenticeship; through apprenticeship backed by University operated extension courses; to the present procedure, by my association, of requiring university graduation as prerequisite to on the job training with a uniform examination for final qualification.

I have noted, with concern ranging from satisfaction through to sheer dismay, the effect these developments have had on the practice of the accounting profession at the level of the relatively small independent office. In the earliest days, knowledge and skill was passed to a relatively small number of students through a close 'one to one' relationship between the principal and his apprentice. Later, with the assistance of the extension division of Queen's University, a substantial portion of the academic training was off-loaded from the principal. This factor, along with the increasing demand for professional accounting services, resulted in a distinct upsurge in the number of students participating in the program. However, when the phenomenon of the 1960's arrived, wherein the participation rate in university programs leaped dramatically, the supply of appropraite people for the old accounting program almost dried up. Finally, with the advent of the so called '1970 concept' we, in the small semi-rural practice, saw a virtual end to the supply of the type of trainee who saw professional qualification as his ultimate goal.

Seen only from the point of view of the small independent practice this was nothing short of a disaster. Fortunately for me my involvement with my Institute did broaden my perspective. I soon realized that with the newly increased participation rate in University programs and the rapid development of technology in nearly every field, it was encumbent on us, as professionals, to ensure that our members could cope effectively with these new conditions particularly in regard to the personal relationships with clients of greatly enhanced capabilities.

In subsequent experience with the Saskatchewan Community College concept I become very much aware of the potential for versatility in providing educational opportunities by conscious avoidance of excessive structure in the techniques of an educational institution. Many of the problems of meeting the exigencies of changing conditions in the world that these institutions are serving, could be avoided if their objectives were spelled out in terms of meeting educational needs and less oriented to providing an institution to house, nurture and protect a faculty.

Finally, the enormously complex institution that is the present day University system has been brought to the forefront of my attention by my work on the Universitites Commission. I have become increasingly aware of the crippling lead time needed for every change proposed and the staggering pressures to maintain the status quo.

My comments on Professor McDonald's talk will therefore be biassed by the distinct point of view of a representative of the small independent dispenser of accounting services augmented, I hope, by some slight insight into the broader objectives of accounting education. If the comments tend to be somewhat colloquial I will not apologize because I feel certain that those who have arranged for the seminar have seen to it that other points of view are well represented.

The Major Problem

Professor McDonald has pointed out in several ways in his discussion

the need of recognizing the significance of the difference between studying a subject as an educational objective versus studying the same subject as part of occupational training.

It seems to me that when the educational system was developed in Canada, the British model had a great deal of influence. Basic education has been reasonably well developed through our primary and secondary levels. Our University level system has a fine reputation for carrying on the general educational objectives at a high intellectual plane. I have the feeling however that we have not been so vigorous in developing the equivalent of the British trade schools. As a consequence high schools have been required to bend their objectives of general education to try to accommodate one end of the spectrum of vocational training while the Universities have tended to do the same by partially fulfilling a role as a 'factory' outputting 'vocationally ready' graduates.

It is my opinion that both have suffered somewhat in the process. We continually hear complaints about secondary schools failing to produce students sufficiently imbued with educational basics to cope with the demands of high quality post-secondary general education. We similarly hear of the problems of providing education and research of suitably high level at the university because of the high volume of students working in a job oriented stream. Each of the educational levels has been forced into operating as a split personality with neither personality having sufficient importance to dominate.

It would seem that a College system with a totally job oriented program, given equal importance and resources as the High Schools and Universities, would permit the basic education institutions to return to their single purpose roles and thereby upgrade their capabilities and results significantly.

Is reversion to such a trend possible? At first thought it would seem highly unlikely because the present mode has developed over a relatively long period of time and may be deeply entrenched. However, we are hearing more and more from the Ontario scene about University grads attending Colleges to augment their general education with vocation oriented courses and College graduates of higher quality broadening their perspective and capabilities by proceeding to University. It may be that a slow trend is emerging which could ultimately provide the more logical design of the system by more clearly defining and refining the objectives of each type of institution. It does seem however if that trend is logical and a better system, then it should be so recognized and positive steps be taken to implement it.

Let us try to relate these contentions to the accounting profession. I do not hesitate to suggest that despite the rapid growth and influence of national accounting firms the major proportion of accounting based services are still provided by the smaller independent firms at the professional level and by totally unaffiliated individuals at the commercial, industrial and institutional level. To provide graduates in the quantity needed to meet that demand is something the Universities were not and should not be designed to do.

The implementation of schools of accounting may be a solution but in my opinion continues to demand that the University operate with a split personality. I suggest that something in the form of the Colleges should provide high quality courses that teach the prevailing methodology of the profession subject to continual influence of the findings of the University in its search along the frontiers of knowledge. This would leave the University to teach and practice the finer art of study of trends and appropriateness of accounting techniques and to the development of new methodology.

I suppose that I have to admit that I have satisfied myself that a decentralized College system with a sole objective of producing vocationally oriented graduates, according to the needs of the market, can be more versatile and, from a professional accountant's point of view, produce graduates more amenable to the requirements of that very large market represented by relatively small independent firms and more particularly, small industry and commerce.

Having expressed the main thrust of my concern as a representative of a particular aspect of the accounting profession I would like to take a moment to comment on one or two specific items mentioned in Professor McDonald's discussion.

The professor has expressed a justifiable concern about the lack of statistical data concerning various aspects of the accounting profession. I agree immediately that a complete data base is an important element in making sound decisions. I would warn however that there should be an equally positive commitment to use that data base for constructive decisions. Too often great effort is expended to gather a wide variety of data which is looked at, analysed and possibly found to be interesting and revealing but may never result in any positive action because there is no dedicated desire for meaningful change.

More often than not the data produced can and will be used as a basis for proof of invalid points. Regardless of the quality of rules established for the production of data if the public reporting of results is not confined to independent unbiased analysts it can become the basis of inaccurate or misleading information. For instance during my tenure as a member of the council of the Saskatchewan Institute of C.A.'s we were confronted by concerns about the relatively low level of success on examination results. However the assessment was based on comparisons with results in other jurisdictions. Close examination showed that some jurisdictions had fairly restrictive prerequisites to qualify even to attempt the final. Inevitably the pass/fail results under such conditions presented a more favorable picture than for a province who gave unrestricted access to the exam for everyone who completed the course material.

I have no argument with the concept of imposing restrictive prerequisites on the right to take the exam. In fact it may be a fair way of ensuring that inappropriate candidates do not waste time getting to the point of certain failure. I do however object to unqualified comparisons of end results when <u>different</u> prerequisites have prevailed in the jurisdictions being compared.

That same condition could apply if some accounting firm had a prerequisite that all their students must have attained a certain minimal mark in University to qualify as a student of that firm. As a consequence the firm could have very good results from participation in the exams. This may very well be a good policy but if the results give the impression that the firm has a good training policy it could further perpetuate their ranking by encouraging a greater number of applicants and hence a better range of choices while another firm with a more generous policy and possibly a better training program would suffer by the invalid comparison.

Privately acquired data used for private decision making is good business. Published statistics gathered on a public basis more often than not suffer improper usage.

In what was almost an aside, Professor McDonald commented on the low profile attitude of accountants' professional organizations. It was virtually suggested that failure to have a wide open advertising policy is the reason why accountants are never displayed as romantic heroes in fiction. It is then presumed that this lack of romanticism is an explanation for failure to attract enough students of suitable quality to the profession. I suggest the facts belie those contentions.

Both the medical and legal professions have advertising policies that are similar to ours and yet the public perception of their work is entirely different because of the exposure to books and plays depicting exciting tests of wits and oratorical skill in court cases involving the very freedom of some pathetic character or the life and death scene in a medical operating room.

I suggest that anyone attracted to a profession because of such conceptions is not really very useful to the profession. The best student is the one who ultimately realizes that the satisfaction of providing a difficult and complex service to a grateful client is the most valued compensation of any true professional.

The fact that our Colleges of Commerce are virtually turning away students because of inability to handle the volume suggests that the advertising policy has no real part in attracting people, that is, with the possible exception of the volume of ads indicating the job market available.

If the current wave of consumerism demands that we eliminate the advertising restrictions I wouldn't recommend any great resistance on our part, but the suggestion that open advertising is to the consumer benefit is a contention that I personally deny. I say without reservation that advertising is inevitably designed to mislead. Truly informative advertising simply does not exist.

Consider the content of an advertisement that might truly be of assistance to a consumer - It may say:

I am a public accountant.
I acquired a B.Comm. from University X.

I trained for my certificate with Accountant Y.
I offer services in auditing, accounting and income tax.
I have been in practice for six months.
I charge $20 to $30 per hour depending on work type.
I take about twice as much time to do a job as you would expect.

Of course this is somewhat of an exaggeration but does demonstrate what would be useful to the consumer. I am prepared to guarantee that in real life the advertiser would simply drop the very revealing information about relative inexperience and time taken to do a job and merely leave the basic information and the real come on - the relatively low charging rate.

Another accountant might simultaneously advertise and would draw attention to his long term of experience but would not mention his $50 - $75 per hour rate. Both ads, being incompete, are misleading or at best designed to tell only favorable things.

Let me suggest that if it is important to obtain a high profile and public attention then it can best be achieved by teaching new accounting and auditing standards that might point out to shareholders and others that the executives of a company are living high off the hog at company expense or that poor decisions in particular areas have been made with operating results adversely affected. You know we really don't do that. We merely certify that a business is where it is and have very little to say about the effectiveness of procedures that got it there.

If every accountant's statement and very audit report revealed the value returned for expenditures made, as is being attempted by our Auditor General, we would soon have a high profile if indeed that is what we need.

No, gentlemen, the past advertising policy has not been detrimental to the public or the profession, nor will the still somewhat restricted new policy which is being developed by the various institutes. But I suggest that a totally unrestricted policy would be a disservice to both the profession and its clients.

I must admit that some of the comments have been made with tongue in cheek but nevertheless were designed to suggest that your deliberations should be tempered by the concerns of a variety of points of view and they all must be considered carefully before establishing any new directions for accounting education in Canada.

May I take this opportunity of congratulating Professor McDonald on the significant and pointed challenges that he has placed before your Association. Best wishes for your deliberations at this conference and thank you again for the pleasure of being with you.

ACCOUNTING EDUCATION IN CANADA: AN EVALUATION

Comments by Jim Spinney

INTRODUCTION

I appreciate the opportunity to comment on Professor McDonald's address on "Accounting Education in Canada: An Evaluation". Preparing my comments has been a challenge as a number of the issues raised today have been previously discussed and debated in the literature by very capable academics and practitioners, some of whom are sitting among you. I have no desire to stand here and repeat the issues as they have been raised in the literature, or to offer my personal opinions upon those issues. Rather, as a recent undergraduate student and as a relatively new member of the accounting profession, I would like to relate to you some of my personal experiences and observations particularly in the areas of the lack of an awareness of the profession, the process of accounting education, and the need for a commitment to accounting education.

In listening to my comments, I would like you to keep two things in mind. First, I will be commenting on accounting education in Canada from a very broad perspective. We must understand the problems we face before we concern ourselves with specific issues or the implementation of change. Second, you must appreciate my comments come from a narrow frame of reference. I am a product of Saskatchewan. My formal education and my practical experience (chartered accountancy profession) have all been received in Saskatchewan. While I am familiar with accounting education in other provinces, my direct exposure has been to the environment in Saskatchewan

LACK OF AWARENESS

Professor McDonald indicated a general lack of awareness of the accounting profession in Canada. I tend to agree with that statement and, based on personal experience, I believe the statement to be particularly true if we limit 'lack of awareness' to the student population. Actually, we can separate lack of awareness of the accounting

profession into two parts - lack of awareness of accounting and lack of awareness of the profession.

Accounting

I was a product of a secondary education system which, apart from required class offerings, emphasized the sciences - physics, chemistry and biology. Students with no academic inclinations were encouraged to take classes such as bookkeeping. When I graduated from high school in 1968, my view of accounting was synonymous with bookkeeping and I viewed an accountant as a bookkeeper. I have observed that the majority of students in similar positions today hold the same view.

From 1968 to 1972, I spent four years at university enrolled in various courses which were basically an extension of my previous education. By 1972, I had a problem. I was 21 years old with no chosen career path and no identifiable path on my horizon. My educational experiences to that time, although of value to me now, had not prepared me for a career with which I could feel comfortable. For a number of reasons, I decided to continue my university education. Given the alternatives available to me, I made a decision which I considered to be a last resort. I registered in a business college. My reasons for selecting a business college are important particularly in light of my previous educational background. I registered in a business college because the majority of my friends were in that college.

I spent the years from 1972 to 1975 learning about, what I would term, the real world of accounting. As I look back now on my secondary and university education, I consider myself fortunate. I was introduced to accounting through an irrational decision-making process. I wonder how many rational people currently in non-accounting careers might today be contributing members of an accounting profession had they only been informed of, or made aware of, the reality of accounting?

The Profession

While I developed an awareness of accounting at the university, I developed little awareness of the profession. Prior to entering the profession as a student in a public accounting firm, I knew very little about the activities of a professional accountant. Even today, my awareness of professional accountants is limited primarily to chartered accountants. I know very little about the other professional accounting bodies and what I do know has been obtained through professional relationships with members of those bodies. I am willing to accept part of the responsibility for my previous and current lack of awareness of the profession, but some of the responsibility must also rest with the various accounting bodies.

I can recall talking to a graduating accounting major from a business college who was seeking employment with a chartered accountancy firm. The student indicated to me that he learned most of what he knew about the profession through the interviewing process on campus. That

bothers me! The point I am trying to make is that there are a large number of young men and women investing substantial amounts of time and money to obtain an education that focuses on a profession which they know very little about.

Professor McDonald has a fear - a fear for students who have chosen a career path in accounting and then find themselves unsuited for the profession. I have the same fear. Does not the accounting profession have a responsibility to develop an awareness in students about the professions such that a student's education is not, as Professor McDonald says, wasted? Professor McDonald views professional qualification as a means and not an end. But, if students are not aware of the profession, does not professional qualification in fact become the end? If professional qualification does become the end, how many professionals cease to become contributing members of the profession once they have achieved the end?

THE PROCESS OF ACCOUNTING EDUCATION

When I use the term accounting education, please keep in mind that I am using the term in a very broad sense to encompass all the education and training a student receives from post-secondary education to the time that student receives a professional qualification. The term therefore includes education and training in financial accounting and reporting, managerial accounting, auditing, tax, information systems and other relevant subjects.

A Traditional View of the Process

I have always tended to view the process of accounting education as a continuous sequence of events or a step-by-step progression through which a student must move in order to achieve, at the end, membership in a professional accounting body. The sequence of events might be viewed as secondary education, post-secondary education, admission as a student member of a professional accounting body, education sponsored by a provincial organization, practical training and finally professional qualification. (We could extend this sequence of events to include professional development, but that issue is outside the scope of what I wish to comment on here.) I have always, however, had trouble with this view of the process because it lacks clarity - it is a 'blur'. I believe that within the process there are overlapping responsibilities where two or more different groups are attempting to accomplish the same thing. I also believe that within the process there are undefined responsibilities or responsibilities which should be met by one group, but are not currently met. As well, I am not sure of the proper sequence of events that should exist within the process.

Before we consider changes to the process of accounting education, we must clearly understand the process as it exists today. We must identify and understand our problems before we attempt to correct them. To achieve what I hope will be a clearer understanding of the process, I have developed an analogy which I would like to present to you. This

material will not likely be new to you, but hopefully the form in which I present it may identify and clarify some of the problems we currently face in accounting education.

The Apple Pie Analogy

Imagine, if you will, a whole apple pie in front of me. This apple pie represents the total sum of accounting education and training a student must consume to be admitted as a member of a professional accounting body. You could view this apple pie as the body of knowledge a student requires for entrance to the accounting profession. You could view this apple pie as the standard profile of a new entrant to the profession.

Let us assume that for a student to achieve professional qualification, the apple pie must be consumed according to the following rules:

- The student must start with a small piece and move to progressively larger pieces; the pie must be consumed in a systematic order.

- The student must consume the pie according to good eating habits.

- Responsibility for serving each piece of pie to the student rests with a different group.

- The student must consume all the pie.

If I limit my analogy to the chartered accountancy profession, then the different groups noted above might be identified as the university (academics), the individual firm that employs the student, the appropriate provincial institutes and possibly the C.I.C.A. and individual members within the profession.

To use the apple pie analogy to explain the current process of accounting education, the first thing we have to do is to forget our visualization of the pie as a whole. We cannot imagine the whole pie. Rather, we have to imagine various pieces of the pie spread randomly throughout this room including a piece directly in front of me. Next, we have to visualize a single student. Now we can observe the process of accounting education as the student travels around the room and the different groups provide the student pieces of the pie which the student simultaneously consumes.

As we follow the student around the room, a brief and simple summary of the process might be visualized as follows:

- We can observe the academics and the provincial institutes, unknown to each other, attempting to provide the student with the same piece of pie.

- We can observe that the student's employer is force-feeding

the student or literally 'cramming a piece down the student's throat'; it comes as no surprise to us as we watch the student 'gag' on that piece.

- We can observe the provincial institutes providing the student with a piece of pie which looks rather large for the student to be consuming at this time.

- We can observe the student consuming a piece in the corner of the room. I can't see who is providing the piece to the student, but we can observe that it is a piece of cherry rather than apple pie.

- We can observe that the different groups responsible for providing the pieces to the student have now fulfilled their responsibilities and the process is termed complete. We can also observe, however, that the piece of pie originally in front of me is still there.

My analogy of the current process of accounting education leads me to the following conclusions:

- We must identify the whole pie.

- We must identify the parties involved in providing the pie to the student.

- Each party involved must determine what it is capable of providing to the student.

- We must look at those capabilities, identify the pieces of the pie and assign the responsibility for those pieces to the parties most capable of providing the individual piece(s) to the student.

- We must ensure that the pieces are provided to the student in a proper sequence.

- We must ensure that the student has proper time to consume each piece.

- We must ensure all the pieces are consumed.

- We must understand that each piece is only one part of a whole pie.

Apart from identifying the pie, I believe it is extremely important that each party determine its own capabilities, particularly with respect to the universities. We cannot assume that various parties are fulfilling or can fulfill certain responsibilities. We must know.

Size of the Pie

The apple pie analogy can be used to illustrate a further problem. The pie grows larger each year. A point in time will come, if it has not come already, when the student will simply not be able to consume the whole pie given the current time span for educational and practical experience requirements. These requirements will have to change or the pie will have to cease to grow if not, in fact, decrease in size.

If you accept that the pie represents the required body of knowledge of an entrant to the accounting profession and if you accept that the pie is already too large, then an interesting conclusion can be formulated with respect to the chartered accountancy profession. The pass rate on the Uniform Final Examinations, rather than being too low, may well be too high simply because students are being force-fed the pieces of the pie and/or students are either not able to consume all the pieces of the pie or are not being provided all the pieces of the pie. In any case, the pass rate should be irrelevant as long as the pie has been identified and the successful candidates on the Uniform Final Examinations have properly consumed the whole pie.

A Note on Implementation

I have presented you my apple pie analogy and you might very well ask: So what? You may have a very valid question. As I stated before, we must identify and clarify our problems before we attempt to correct them, but the more general or broader the problems are, the more difficult it is to find practical solutions. We can, however, use the apple pie analogy to address some of the specific issues of accounting education. For example, if we consider the problems of identifying the pie, identifying the responsible parties, determining their capabilities and assigning responsibilities to those parties, we may come to the conclusion that there is a part of the pie that, within our current institutional framework, cannot be assigned to responsible parties. But the pie is a 'given' and the responsibilities must be met.

In a situation such as that described, we might then seriously consider various alternatives or combinations of alternatives to ensure the whole pie is provided to and consumed by the student. Some of the alternatives normally considered would include post-graduate programs, professional schools, co-operative programs and an extended term of service. Consideration of these alternatives could possibly lead to a reassignment of responsibilities for various pieces of the pie. The key is to first identify the pie and then identify the part of the pie where responsibilities are not met.

In Perspective

I don't believe we have the luxury in accounting education of viewing it in isolation from other issues facing the accounting profession. When issues such as advertising, professional development and peer review arise, we must determine the extent of their impact on accounting education.

Issues which raise concerns about the possibilities of increased costs to firms or call for increased efficiencies of operations or call for increased disclosure of information about the firms, particularly the chartered accountancy firms, will cause firms to reconsider the costs and efficiencies of accounting education. Debate surrounding recognition of accounting technicians and specialist designations may be more real than fictitious. Any discussion of technicians and specialists cannot be held separate from a discussion of accounting education. We must be prepared now and in the future to fit our institutional framework to reality.

FACTUAL DATA BASE

I would like to comment briefly on Professor McDonald's plea for a factual data base in accounting education. As Professor McDonald noted, there will be difficulties in defining terms, specifying the measurement rules and ensuring uniformity of reporting. If you hold a similar view to the process of accounting education as the one I have presented, then I think we will agree that the difficulties of obtaining a factual data base in this area are immense. For example, if we obtain measures of the pass rates on the Uniform Final Examinations for students of national C.A. firms, what are we really measuring? We must keep in mind that we are dealing in an area of overlapping, poorly defined and perhaps undefined responsibilities. We must be cautious in how we use the data we obtain.

COMMITMENT

I entered the decade of the 70's with no identified career path; I will enter the 80's as a member of what some people might justifiably argue is an occupation, but which I would like to believe is a profession. Receiving a professional qualification provides us with both psychic and financial benefits. For accounting to be a true profession, I believe one of our obligations, as members, is to reinvest some of those benefits in the public who has conferred those benefits upon us. We can do so directly or we can do so indirectly by improving our profession and by educating and informing the future members of our profession.

What I speak of now is a different version of what Professor McDonald termed commitment. In common with Professor McDonald, I believe a person's commitment can only exist in the sense of deep involvement and binding oneself to a task or an ideal. I believe we are obligated to make a commitment. We can do so in two ways - time and/or money. By making such a commitment, we can fulfill the obligation I spoke of earlier. The commitment, however, must be real and not illusory.

A time commitment is usually associated with the contribution of our services to the public and the profession. I believe you all know what I speak of here. This commitment, however, can be an illusion. For academics and those professionals outside public practice, the contribution

of time often bears a personal cost in terms of opportunity cost. For firms engaged in public practice, an opportunity cost is often associated with the contribution of time by members of the firm, but I am not sure to what extent this cost may in fact be eventually recovered through higher fees or new engagements. For professionals working as employees in public practice, I believe their contribution of time tends, to some extent, to be reimbursed by their employers.

A financial commitment is usually associated with the contribution of funds to the public and the profession. This commitment is somewhat more direct than a time commitment, but could also be in some instances an illusion, particularly if the motives for the commitment are known.

I believe we, as professionals, must make a commitment in one way or another. Some of us can best make the commitment by contributing services; others, by financial contributions; others, by a combination of both. Both types of commitment are required and both are equally valuable. But the commitment, to fulfill our obligations, must be real.

The C.A.A.A. is a unique body in Canada. Today, it has brought together representatives of various professional bodies and, within those bodies, representatives from academe and practice. I feel, as I believe Professor McDonald feels, that there must be a closer linkage of professional bodies and of academics and practitioners within those bodies. A closer linkage is required for purposes of professional development, research, standard setting and accounting education.

For the C.A.A.A. to achieve its ideals, it requires a commitment from professional accountants. The C.A.A.A. is an association in which we can make a real commitment. As the C.A.A.A. represents a co-ordinated effort to identify and resolve the problems of accounting education, a commitment to the C.A.A.A. is a commitment to accounting education. Not only is it a commitment to accounting education, but it is a commitment involving: (1) efforts to co-ordinate the various professional accounting bodies, (2) efforts to co-ordinate academics and practitioners, and (3) efforts to overcome the general apathy and resistance to change which so often exists in our professionals.

The progress and success of the C.A.A.A. in the area of accounting education will provide an interrelated benefit to the public and to the profession because it will provide better educated and trained students, better educated and trained professionals, increased efficiencies and reduced costs.

CONCLUSION

In conclusion, I would like to make a personal observation in the form of a quotation. This quotation comes from a person by the name of Arnold from a work titled The Folklore of Capitalism. The quotation was cited by R. J. Chambers in Accounting, Evaluation and Economic Behavior (page 379). Arnold wrote:

> Public debate is necessarily only a method of giving unity and morale to organizations. It is ceremonial and designed to create enthusiasm, to increase faith and quiet doubt. It can have nothing to do with the actual practical analysis of facts.

Let us ensure that in the area of accounting education in Canada we are not guilty of 'public debate'. Given we are in the process of taking action, let us ensure that we have identified and understand the facts or the problems we face in accounting education before we seek to evaluate alternatives and reach decisions. Given we are in the process of taking action, let us ensure we continue to act now and in the future. Let us search for change or evolution in accounting education before it searches for us.

THE CANADIAN ACCOUNTANT'S BODY OF KNOWLEDGE

Comments by Herbert H. Perry

I think one must begin any discussion of the Canadian accountant's Body of Knowledge with the clear realization that, if it does exist, the Body is metapsychical, by which I mean that it results from mental action and has no physical basis or explanation. Because of this nature of the Body of Knowledge, it defies any easy definition.

Is the Body of Knowledge what the average accountant knows, or is it, perhaps, what he should know; and, if the Body of Knowledge is what the average accountant should know, then as determined by whom?

Is the Body of knowledge what is currently taught and, again, by whom?

What is the repository of the Body: is it the academic institutions or the professional organizations, and if this can be determined, should the repositor be a reactor or a leader?

An entire series of questions concerning the Body of Knowledge must deal with its generality or exclusiveness. Some viewers believe that the Body of Knowledge should include all the things that an accountant should know, while others feel that it is only those things that he needs to know as distinct from other professions. An example might help. Presumably, the accountant should have the professional's ability to use language, should have a good sense of right and wrong, should be honest and bondable and well-groomed; and yet these same criteria can be applied to the members of virtually every other profession. A sub-question is, are these things something that should be taught by the profession, or something that the entrant must have acquired and bring with him, prior to beginning his specialized study of accountancy?

Because the profession has failed to answer this question of generality and exclusiveness, we have seen some strange phenomena in the last twenty-five years. We have added courses in report writing,

and moved them from first year to final, and then dropped them. I have long suspected that these courses were added in a vain attempt to screen out the immigrant student whose real problem was elocution.

Report-writing courses have been followed in some places with courses in communication skills, and the latest fad is public speaking -- which begs an interesting question. Can a deaf-mute become an accountant?

Another large area of the problem concerns the mechanics of change: who has the authority to add to or delete from the Body of Knowledge and on what do they base their decision?

I believe that the Body of Knowledge does not change as often or as rapidly, in fact, as it does in the perception of those sitting on the Boards of Directors or Councils of Governors of the professional accounting bodies. I think, further, that this observation holds true for the other professions: law, engineering, architecture, and so on. The fact of the matter is that it is not the average member who moves upward and into the governing bodies of the professions. Generally, it is the more successful and perhaps more extroverted members who, some twenty or more years after graduation, find themselves sitting on Boards and Committees charged with reviewing curricula.

Very often these people have moved out of the main stream of their profession and are either specializing in some portion of it or are holding down top-management positions calling for a markedly different set of skills. All too often they confuse the demands of their present position with the needs of the average practitioner. An illustrative example might be a person such as the late General Douglas MacArthur, a West Point graduate, who became the pseudo-emperor of Japan. Had he, in his latter years, returned to West Point as a Board member, he might well have argued that both Japanese and oriental government were necessary parts of the Body of Knowledge of an American serviceman.

This just-mentioned tendency to have additions to the Body of Knowledge made by specialists not quite in the field anymore, coupled with the changes brought about by such things as computers and modern calculators, has introduced additions to the Body of Knowledge or curriculum so that many courses have become longer and thereby more demanding.

While I do not claim to be an expert in paleontology, I do believe that the dinosaurs are reputed to have become so large and unwieldy that they brought about their own extinction. As Winston Churchill might have said, if it isn't true, it should have been. In any event, I see a similar danger facing accounting. We have been much quicker to add than to delete.

Seemingly, our powers of observation and our detection of change have told us what subjects to add without telling us what subjects to delete. If we were in the transportation business, we would probably equip all of our new cars with buggy whips. You can, I think, build a good case for not teaching or requiring mathematics (and I know this will horrify purists), but, rather simply, teaching the operation of the modern mini-pocket calculators which can be programmed to provide

amortization rates, returns on investments, and other things that the average accountant might need to know. I would remind critics that only seventy years ago it was widely believed that one needed to know motor mechanics in order to have a driver's or chauffeur's licence. Similarly, medical doctors are no longer instructed in the care and feeding of leeches.

One of the obvious solutions to the dinosaur syndrome, and a solution adopted by my own Association, Certified General Accountants, is to create options and to recognize that in today's environment no accountant can really be all things to all people. Some will wish to be financial managers; others, government mandarins; some, tax specialists; and others, auditors; and it may be that our option choices will grow with the passage of time.

However, in a world where virtually no working accountant would leave home without his pocket calculator, we have only recently allowed these devices to be brought into the exam room. To me this is not an amusing observation about the profession, rather it is the symptom of an attitude that could contain the seeds of our destruction.

As a profession, we seem to want to leap into the future while keeping one foot firmly tied to the past. A medical friend has assured me that this is an almost-certain way to obtain a hernia.

Consider, if you will, two more subjects, one which has already been added and one which will probably be added.

I refer to Organizational Behaviour, which could also be called Corporate Psychology and has already been added, and Social Responsibility, which I see as likely to be added. I question whether either of these subjects has any justifiable place in the accountant's Body of Knowledge.

Organizational Behaviour <u>may</u> be important to those accountants working in large corporations. Similarly, the quirks of the senile and geriatric behaviour patterns may be essential to anyone who specializes in estate planning. Do these subjects, however, need to be part of the Body of Knowledge? I think not. In the case of Organizational Behaviour, why is the accountant's need for knowledge any more acute than the needs of anyone else in the organization?

Social Responsibility is a good example of a subject likely to be added with no justification. There is much talk today about social responsibility, which probably is a corporate responsibility. I personally have very severe doubts as to whether it is an accountant's responsibility. I say this because it is not within the normal range of subjects of interest to the average accountant. I would suppose that the subject would include and embrace morality, social customs, motivation and behaviour, some political science, and perhaps even theology. I think to suggest that this is the auditor's role is presumptuous to say the very least, nor is it practical from an applied viewpoint. For example, I am aware of one of Canada's major petroleum companies that has developed a large and all-embracing code of ethics to which its employees and managers are expected to adhere. The firm expects, quite reasonably, that its internal auditing

staff and also its external auditors will monitor or police this policy, but I submit to you that this does not make the auditor either the conscience or the judge of the firm's social responsibility. Rather, he is simply acting as the eyes of management to see whether an established policy is followed in accordance with intentions and instructions.

Suppose that these same auditors were to accept an engagement from the oil company across the street. Do they have an obligation to report to these shareholders that the firm is lacking a code of ethics, or has a code less embracing, or less complete than their neighbour who happens to be the auditors' other clients? If you suppose that they do have this obligation, then you must wrestle with the morality of the auditors' taking knowledge from one client and using it in a competitive way in a subsequent engagement.

By what reasoning process does the accounting profession make itself the judge of non-monetary matters?

Our peers judge us more harshly than we judge them, and possibly more fairly also. People in production, marketing, and personnel see the accountant as the narrowest person in the management group. If we now, by some magical process of self-elevation, pronounce ourselves to be the corporate conscience, we run a serious risk of being seen as the most pompously ridiculous members also.

Before we add anything more to the Body of Knowledge, we must do two things. First, we must decide what to drop. Second, we must be certain that the proposed addition is really necessary and that it is indeed within the realm of accountancy. I submit to you that the double danger is that we either add something that is only a fad or something of lasting value that should belong as part of some other profession.

CAAA 1979 Conference
Symposium on Canadian Accountant's
Body of Knowledge
University of Saskatchewan
May 1979

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Canadian Institute of Chartered Accountants

THE LAG IN THE TRANSFER OF NEW KNOWLEDGE FROM EMPIRICAL RESEARCH TO ACCOUNTING EDUCATION AND PRACTICE

The Nature of the Problem

In the last two decades the thrust of accounting has moved away from data collection and earnings measurement towards communication with users. The Trueblood Committee [14] and later the FASB Objectives Study [8] both affirmed this communication orientation. The difficulty is to determine what the information requirements of users are. According to Bedford [1], in the 1940's and 1950's our knowledge of user needs was largely based on intuition and a priori reasoning. In the mid 1960's and through the 1970's, Bedford notes, our observation and data measurement techniques matured and empirical accounting research added to our knowledge about the "real world". It follows that empirical research in accounting is still relatively new, and it is perhaps not surprising that new knowledge arising from this research has had only a limited impact on accounting education or practice. However, any dynamic profession should draw on and implement such new knowledge and maintain close contact with researchers.

This paper examines new knowledge arising from empirical research in accounting as a subset of all new knowledge available for implementation in practice. The thesis of this paper is that empirical research in accounting has not had a significant impact on education or practice.

With respect to practice, a case can be made, for example, that the profession could have avoided recent setbacks for its standards on foreign currency translation and exploration and development costs by first gathering empirical evidence on the "economic consequences" to various users of these pronouncements, something which the profession now appears to be doing after the fact. Another case in point is the delay with which some form of current value accounting is being adopted. While part of this delay is surely explained by unresolved political differences between users and preparers, one can make a case that too little empirical evidence has been gathered as to what benefits might accrue to both users and preparers from this information.

With respect to education, one of the problems explored is the failure of accounting education in Canada to transfer this new knowledge to students for later implementation in practice. This paper will argue that the syllabi of professional accounting bodies, university course content, authoratative standards, accounting textbooks, and professional magazines all contribute to this educational problem by failing to incorporate empirical research findings on a timely basis.

The author is grateful to the helpful comments of Dr. L.S. Rosen, FCA and Dr. T.H. Beechy, CPA of York University, and those of Professor L.J. Brooks, CA and Dr. D.B. Thornton, CA of the University of Toronto. The comments herein do not necessarily reflect their views or those of the Board of Examiners.

The paper will attempt to balance this view by exploring (i) legal and environmental constraints in Canada which explain why education and practice are slow to implement some of these findings and (ii) whether the quality of this research itself is one contributor to lack of implementation.

Examples will be drawn primarily from recent empirical research in the behavioural and efficient markets areas. The paper will conclude with recommendations which may facilitate the implementation of such new knowledge in accounting education and practice.

Previous Literature Concerning The Problem

In his award winning article in the Journal of Accountancy [16], Sterling stated in 1973 that:

> "Education and practice seem to be complementary in that educators teach accepted practice and practitioners accept and practice what they are taught. This complementary relationship excludes research from the chain of events that determine what is taught and what is practiced. Research is an isolated activity in accounting."

This author will refer to the closed loop between practice and education as the 'Sterling loop'. This idea may be illustrated with a simple diagram:

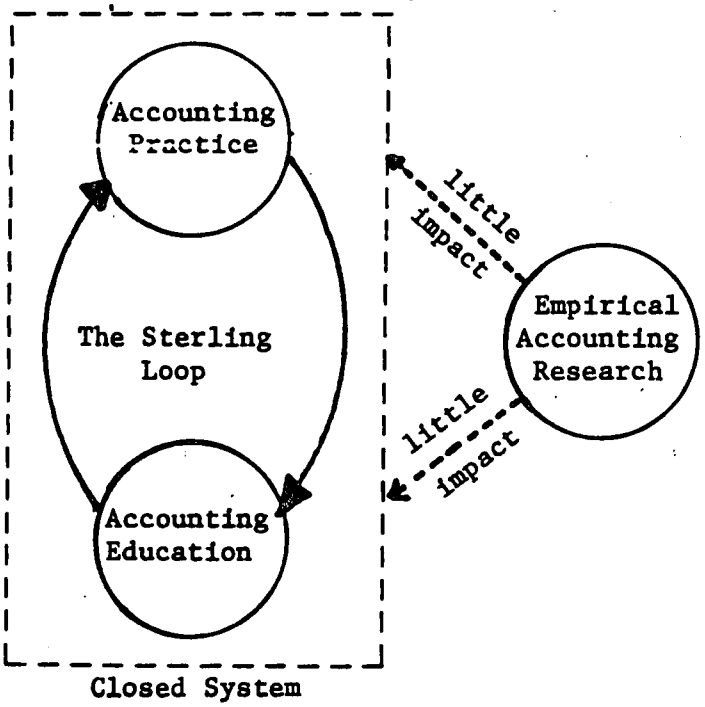

Figure 1

The Sterling Loop Problem Illustrated

Sterling used marketable securities as an example where accounting research (advocating valuation in financial statements at market) was persistently ignored by practice and, as a result, the lower of cost or market was advocated in most textbooks, as this was (and still is - see FASB #12) current "GAAP".

The Sterling loop idea is perhaps oversimplified. There are no doubt valid reasons why this gap exists. Empirical research is often not geared to solve immediate problems facing standard setters. Standard setters are often concerned with the "art of the possible" rather than "scientific truth". Educators must strike a balance between the demands of students and others for a practical education and the desire to teach new but unimplemented findings. This author does find Sterling's idea to be useful as a guide to analysis, but will keep these considerations in mind.

The Efficient Markets Research

An Illustration Of The Problem

Research on the implications of efficient capital markets for accounting (EMH) has been going on for at least 15 years and intensively so for the last 8. Accounting education has been slow to respond. Only in 1979 did this topic find its way into the Uniform Final Examination (UFE) Syllabus for CA's. The first full article on the topic in the CA magazine is likely to appear in the April 1979 Education Column. Only slowly is the material finding its way into major accounting textbooks used in Canada.

There are, no doubt, some Canadian universities who sensitize their students to EMH ideas. But the strength of this exposure might be questioned. In at least two major schools this author is aware of, students are given one or two articles on EMH from professional journals but the students are not strongly encouraged to read the EMH studies at first hand or assess for themselves the methodology used. The resulting impressions students gain about such studies is diluted accordingly. Granted, the short sequence of courses offered at most universities may not permit enough time to explore such papers at first hand. Perhaps the answer is a capstone course in current empirical research (this is <u>not</u> the same as a "theory" course or a "current articles" course) offered in the final year. This suggestion might need to be re-inforced by a stronger emphasis on this material in the syllabus (to be discussed later), and perhaps by the requirement for such a course by provincial institutes. See Appendix 1 for an outline of such a capstone course.

Practice has been equally reluctant to accept the (semi-strong) EMH idea, that some markets react in a prompt and unbiased fashion to publicly available information (eg., that security prices promptly "reflect" public information). According to a recent survey reported in the Accounting Review [13]:

> "One in 20 responding accounting academics accepted the research findings related to the EMH in its weak, semi-strong, or strong forms. The corresponding figures for chartered financial analysts are one in 25, and for partners in Big Eight firms one in 100."

This may point to the need to get the message across a little better, if indeed there is a message.

Kaplan, in a 1975 survey paper [1], summarized some of the findings of EMH as follows:

- significant price reactions are associated with the release of interim reports;
- the market does not respond to (is not fooled by) earnings increases which are caused by cosmetic changes in accounting policy (eg., no impact on cash flows);
- The information used by the market to assess performance of companies is broader than reported earnings, and includes information reported in footnote disclosure;
- segment disclosure may assist investors in anticipating changes in earnings which otherwise would be unexpected if only consolidated data were disclosed.

To be fair, one should consider the point of view of those who are skeptical of the importance of EMH findings for accounting. Mautz [1] claims that such EMH research only proves with hard evidence what practitioners have known for many years. This argument has validity for some of the findings. However, this author senses that many practitioners feel secure in assuming a naive investor, when in fact this may not be the case. Bierman [2] notes that the EMH (semi-strong) merely suggests that markets react in an instantaneous and unbiased fashion to available public information; hence, EMH may give little guidance as to what additional information accountants should furnish. Again, there is validity to this, but the above implications as noted by Kaplan seem to be important notwithstanding.

This author does not necessarily believe that the findings summarized by Kaplan are valid in the Canadian setting. More empirical work is needed to establish whether the markets for some securities in Canada are efficient.[1] There are probably pockets of efficiency and inefficiency. In addition, the above findings will need to be replicated before standard setters can act upon them.

The message for Canadian standard setters, if these findings are shown to be valid in Canada, is as follows:

- earnings measurement considerations are important but not necessarily more so than disclosure considerations. Disclosure of otherwise unavailable information (eg., 'soft' measures such as forecasts) may suffice if it is not possible to incorporate this information into the general measurement model;
- reporting should be timely (eg., quarterly) and should include information not otherwise available to the market (eg., segmented data);
- policy deliberations involving a choice between accounting methods which do not affect cash flows of the firm (eg., whether to capitalize and amortize research and development costs) may not be productive from the market's point of view.

Admittedly, there are reasons why the implementation of any valid EMH findings (if they exist) may be slow in practice. The costs of expanded disclosures at present fall on the firms and their shareholders, who will require persuading that such disclosures will produce benefits (eg., lower cost of capital) equal to such costs. In addition, legal liability constraints in Canada may not permit auditors to defend their judgements based on assumptions about market efficiency. Finally, users in Canada are not represented by a strong central securities commission similar to the S.E.C. and therefore regulatory pressure for expanded disclosures may not be as intense.

Perhaps as a start we can transfer EMH findings as they are confirmed to students, and ensure students will be motivated to learn such by including EMH material in the syllabus (discussed later). In this way, the subsequent implementation may be facilitated.

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1 The possible efficiency of credit markets in Canada is an equally important issue with implications for the reporting of many small businesses. The EMH issue is not restricted to equity markets.

Research On User Behaviour

Another Illustration Of The Problem

In a 1975 survey of behavioural research to that date, Dyckman, Gibbins and Swieringa [1] summarized certain findings on user decision models as follows:

> "Financial statements appear to be of limited value in making investment decisions...investors consider factors concerned primarily with expectations to be relatively more important than financial statement data in making decisions...they tend to rely on stockholders and advisory services for their investment information and to attach only minor importance to financial statements as a source of information."

The extent to which financial statements play an important part in the information set used by investors is an empirical question.

This author sees little evidence that standard setters are consulting empirical findings about users prior to setting standards (it may be that they are simply not making their references explicit). As a result, the investor seems to be an artifact and, for example, we have unsubstantiated statements in the FASB Objectives Study [8] like the following:

> "thus, although investment and credit decisions reflect the expectations of investors and creditors about future enterprise performance, those expectations are commonly (emphasis added by author) based at least partly on evaluations of past enterprise performance."

This lack of empirical bases in authoritative standards, if it exists, may have an impact on accounting education. Students studying such pronouncements may themselves come to view the investor as an a priori artifact and the circle goes on because students are not encouraged to think objectively (another example of the Sterling loop idea).

Another example of possible misconceptions about user decision models concerns the question of what a user would find material. Current research by L.S. Rosen on materiality judgements[2] indicates that many students and practitioners believe that materiality is measured as a simple percentage of income or assets, regardless of varying objectives/facts/constraints presented, including loss situations.

Research has been going on since at least the 1950's as to what users would find material, in what circumstances, and the overall conclusion of this research as cited in 1975 by Dyckman, Gibbins and Swieringa [1] is that

> "several factors operate, often in combination, to influence user materiality judgements. The use of quantitative criterion such as a simple percent of net income may err on the side of underdisclosures."[3]

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2 This author recently (1979) attended a seminar where Dr. Rosen presented some preliminary findings from a research project on materiality decisions using a variant of the Brunswik Lens model.

3 The 1975 FASB Discussion Memorandum on materiality [7] does discourage the use of simple quantitative criteria, and represents a step forward in this education task.

The foregoing seems to suggest that, as noted also for the EMH area, the message from research is not getting through to students or practitioners. One reason for this may be the lack of reliance placed on such studies due to quality problems.

Dyckman et al [1] in 1975 noted several factors common to all behavioural research they surveyed which raise questions as to the quality of behavioural research in accounting: a lack of theoretical emphasis, lack of ties to the work of others, and lack of experimental rigor. To elaborate on these 3 criticisms, Dyckman et al state that much behavioural research consists of collecting data with little guiding theory; studies that are done tend not to be replicated by others and differences between findings of various studies are not resolved; and extensive use of natural settings and survey methods results in loose experimental control jeopardizing internal validity.

This author has personally been exposed to recent (as yet unpublished) behavioural research currently being conducted in Canada.[4] An improvement in methodology, since Dyckman et al reported, has been observed. Attempts were made to build on theory (say, the Brunswik Lens model of judgement formation or Vroom's model of expectancies) in the discipline of behavioural science. Also, findings were reconciled with previous work. Perhaps behavioural research in Canada has matured since the 1975 survey by Dyckman et al. However, it can be said that the dictum "reader beware, lest thou place undue reliance" probably still applies today to some of this research. This points to the need to give some accounting students training on the way through as to what might be good versus bad methodology. This could be part of the capstone research course suggested earlier.

The Lack Of Impact Of Empirical Research

On Education And Practice

Other Examples

The above argument, that empirical research has had little impact on either accounting education or practice, can be tested by thinking of other examples which either support or refute the argument. Figure 2 (which follows on page 7) contains several such examples (no doubt the reader can think of others).

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4 At a recent seminar on current research in accounting in Canada (hosted by the Faculty of Administrative Studies at York University under the auspices of Dr. Tom Beechy) this author was exposed to several current research projects in the behavioural area.

FIGURE 2

THE IMPACT TO DATE OF EMPIRICAL RESEARCH

ON EDUCATION AND PRACTICE

Area Of Empirical Research	Impact On Canadian Accounting Education	Impact On Canadian Financial Accounting Practice
1. Evidence on the timing and patterns of deferred tax drawdowns.[5]	1. Some	1. Little
2. User preferences regarding general price-level adjusted and CVA measures.[6]	2. Some	2. Some
3. User preferences for forecast data.[7]	3. Some	3. Little
4. Studies on the economic consequences of financial accounting standards.[8]	4. Little	4. Little
5. EMH studies (discussed above).	5. Little	5. Little
6. Behavioural studies on materiality judgements and user decision models (discussed above).	6. Little	6. Little

5 Research papers by Price Waterhouse & Co. (1967 [10]), Davidson (1958 [3]) and Lantz et al (1978 [12]) all suggest that deferred tax drawdowns may be postponed almost indefinitely by the majority of companies reviewed, thus strongly pointing to the need for some sort of discounting of such credits. These studies, on U.S. companies, are currently being replicated and extended in Canada and tentative findings support those cited above.

6 Rosen (1972 [15]) and Hanna (1974 [9]) both surveyed users in Canada and observed that there was a preference for current value measures over general price-level measures. These findings appear to be consistent with the recommendations of the upcoming CICA Research Study on Current Value Accounting (1980).

7 Dyckman et al in 1975 [1] surveyed the behavioural studies concerning user attitudes towards forecast data. Users were found to favour forecast data but generally held a perception that such forecasts would be precise with forecast errors not exceeding 10%. This author then reviewed the excellent CICA Research Study on Earnings Forecasts by R.H. Kidd (1976 [11]) whose references to users' needs were a priori ones (page 85). This Study did consult empirical work in other areas.

8 The FASB (1978 [5]) hosted a conference on economic consequences at which empirical papers were presented. In the same year, FASB Research Reports appeared by Dukes [4] and Evans, Folks and Jillings [6] on the impact of FASB #8 on corporate cost of capital and practices. Such studies have yet to be replicated in Canada.

Figure 2 would suggest that empirical research has had more impact on accounting education than it has on practice, and that in either case the impact has not been great. Assessments of impact are made on a judgemental basis by this author. The reader is invited to form his/her own conclusions.

Another interesting observation (see footnote 8) is that the Financial Accounting Standards Board has recently shown an interest in empirical studies, particularly on economic consequences. This is an important development, which may begin to close the gap between empirical research and practice. The author is hopeful this trend will occur in Canada.

The Syllabi Of Professional Accounting Bodies

Do They Delay The Trasnfer Of Knowledge

From Empirical Research To Practice?

This author has reviewed the syllabi of several accounting bodies in the world, and is confident these comments apply to most of them. Specific examples will be drawn from the UFE Syllabus of Chartered Accountants in Canada [17], the one most familiar to this author.

The UFE Syllabus is primarily concerned with a "readiness to practise public accounting" and rightly so. It embodies the expectations of new entrants to the CA profession. The Syllabus Sub-Committee faces constraints concerning the inclusion of new research in the Syllabus, due to the many pertinent topics concerning accounting as it is practised today. The comments below keep these constraints in mind.

One can argue that, due to the above constraints, new topics less central to today's practice tend not to receive strong emphasis in the Syllabus. This problem may be increased by a lack of familiarity of practitioners with some of these topics (eg., EMH, behavioural), since practitioners strongly influence content of the Syllabus. This tends to help close the "Sterling loop". Instead of new knowledge changing practice, changes in practice must take place before new knowledge can have an impact.

The Syllabus Sub-Committee is no doubt aware of this problem, and sought to get around it with an open-ended "current literature" requirement in Financial Accounting and Auditing. However, the scope of that literature is restricted to two professional journals and publications of standard setters. One can make a good case that such professional journals have tended to screen out academic research, perhaps due to the perceived needs of a lay readership.

Educators are no doubt also aware of the problem, and many this author has talked to would like to include academic research journals in their required readings, but certain constraints prevent them from doing so. One constraint is the difficulty students have reading these journals. Another is that, if they know they won't be tested on these journals on the UFE (since excluded from Syllabus), students tend to lack a motivation to read such. In addition, course content tends to be devoted largely to teaching the current accounting model used in practice (Sterling loop), and little time or resources tend to be left over for other endeavours.

To return to the Syllabus, this author can support the argument that new research topics do not receive strong emphasis in the Syllabus with some examples from the behavioural and EMH areas.

The inclusion of behavioural topics in the UFE Syllabus is very limited. The closest one gets in Section I, Financial Accounting and Reporting, is "decision-making uses of financial statements". Students tend to interpret this line as the investment decision, the loan decision, performance appraisal, tax etc., and the connection in their minds to user decision-making processes is tenuous and probably lost. In Section II, Auditing and Professional Practice, there is no reference at all to behavioural topics, (eg., the judgement process of auditors). Section III, Managerial Accounting and Control, does have a line item "behavioural considerations in accounting information system design" but this is at the lowest of three knowledge levels, requiring only a general appreciation of the idea involved. An ability to apply the concept in-depth is not implied by this knowledge level.

Similarily, the inclusion of capital market topics in the UFE Syllabus is very limited. While research in this area has gone on for many years, only in 1979 did EMH find its way into the UFE Syllabus, and again only at the lowest of three knowledge levels in a one line item. Such a knowledge level hardly constitutes an incentive for the student to master the material. Of course, he/she may not need to master such material to practise today (the Sterling loop idea), and there are many important practical topics to master. However, this lack of strong Syllabus emphasis probably does slow the implementation of such ideas in practice.

Suggestions for Change

This author's suggestions for change are as follows:

1. A Canadian academic journal (perhaps edited by the Canadian Academic Accounting Association (CAAA)) may be needed to transmit the results of recent Canadian research in terms the practitioner and student can understand. Methodological references might be restricted to an appendix. The use of symbols might be avoided where words would be as efficient. This journal might be included in the required reading for candidates (current literature) in the Syllabus. In this way, the "Sterling loop" is opened because students learn new knowledge and might later implement that knowledge in practice.

2. Provided 1. is implemented, professional syllabi might incorporate on a timely basis new knowledge arising out of research in the behavioural and capital market areas. In order to ensure this, the CAAA might present annual briefs to the Syllabus Committees in Canada. This puts an onus on the CAAA to assess the quality of research (whether conducted in Canada or elsewhere) and decide which findings might be relevant for practice. Once again, the "Sterling loop" is opened to new knowledge from academic research.

3. In setting standards, authoratative bodies in Canada might more closely co-operate with academic researchers. Authoratative pronouncements and studies might include explicit reference to empirical fact to bolster intuitive judgements about the real world. One important area where policy analysis should be preceded by empirical research is in the area of economic consequences, as discussed earlier.

4. Canadian standard setters might increase their sponsorship of longer term empirical research projects, as the FASB is doing. Suggestions relevant to Canada are the statistical behaviour of deferred tax credits, social accounting research, the efficiency of Canadian capital markets, and behavioural studies on user needs in Canada. In this way, research might have a more effective impact on practice. It may also affect practice indirectly as students study pronouncements which are more firmly based in empirical fact, thus once again opening the "Sterling loop".

5. A capstone research appreciation course might be added to the courses offered at those Canadian universities which do not already have such. To put some teeth into this proposal, provincial accounting bodies might add such a course to their semester hour requirements. Moreover, students would expect to be tested on some of this material on the UFE, if suggestions 1. and 2. were implemented. See Appendix 1 for an outline of such a capstone course and its objectives. The "Sterling loop" is thus opened as students get <u>firsthand</u> exposure to research findings. Such a course is to be distinguished from "current literature" or "advanced theory" courses.

Summary Comments

The comments above should not be construed as critical of any particular university or professional accounting body. Most of the observations are, in this author's opinion, applicable to the accounting world in general. However, action for change should start close to home and for that reason comments have been specific to the Canadian scene.

In order to continue to hold its place in the professions of the world, the accounting profession must, in this author's opinion, endeavour to speed up the transfer of new empirical knowledge to learning and practice. The supply of this type of knowledge, still relatively new to accountants, will be encouraged by the sponsorship of empirical studies by accounting standard setters in Canada, who are urged to examine the precedent the FASB appears to be setting in this regard.

Appendix 1

Suggestions for a capstone course in research appreciation

The objectives for such a course would be:

(i) to encourage students to look at accounting problems objectively and to gather facts before resolving such problems;

(ii) to give students the skills to assess research methodology, particularly to facilitate firsthand reading of empirical studies;

(iii) to give students some exposure to current findings and their implications from a broad source of empirical research in accounting. Topics might include research in the capital markets, behavioural, quantitative methods areas and in areas like social accounting.

Such a course would require previous exposure to statistics and, ideally, econometrics. Students should be sensitized to such research in earlier courses.

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THE CANADIAN ACCOUNTANT'S BODY OF KNOWLEDGE

Comments by Gordon E. M. Cummings

In attempting to project future directions for the accountant's body of knowledge, it is necessary to look at some of the accounting research that is currently underway in Canada and the United States. As you know, there have always been strong links between research and curriculum. In fact, much of the major philosophical directions of today's university and professional accounting curricula have come about as a result of research undertaken in the early 1960's which suggested that the accounting curriculum be broadened to include such subjects as: organizational behaviour, management processes, quantitative methods, information systems, etc. This was done while retaining a specialized knowledge in accounting, and was intended to show how accounting integrated with these other disciplines so that the accountants could better appreciate the needs of these other individuals when preparing financial information.

This change has also had the effect of forcing many practicing accountants to become more aware of the overall process of organization behaviour, and the role of accounting. I suggest this is one of the reasons that more people with a financial background are assuming senior line management roles in recent years.

Current research is focusing more and more on determining the needs of users of accounting information. For example, in external reporting there are an increasing number of questions being asked about the usefulness of financial statements to <u>predict</u> such events as future profitability and risk of the enterprise.

As a result of these developments, there is an expanding amount of research to determine what accounting and reporting alternatives are best in terms of forecasting the future performance of the firm. This viewpoint represents a new concept for financial reporting as the focus of presentation shifts from presentation to historical events to one of future horizons. This change will be accompanied by the realization that one set of financial statements cannot simultaneously satisfy the underlying

information needs of many different users.

Thus, the type and form of accounting information that will be prepared will be contingent upon the decision that the reader wishes to make. At the present time the decision maker must adjust his or her thought processes to fit the historical cost information found in the external financial statements. The financial statements of the future will provide the necessary information in a usable format. Therefore, it is the view of the society's research committee that there will be a series of additional financial statements prepared on a basis other than historical cost, and these will most likely include financial forecasts.

On the internal reporting side, the trend to providing financial information to meet decision makers needs is even more pronounced, primarily because it is relatively easier to isolate who these people are and to identify their needs, and because this philosophy is inherent in the management accounting discipline.

Some of the decisions that management accounting information is being generated for is in the areas of pricing decisions, acquisition decisions, lease-purchase decisions, channel distribution decisions, manpower planning decisions, etc. Of particular note here is that these decisions do not relate specifically to manufacturing concerns but to all enterprises. Thus, another important environmental change is that management accounting concepts are being applied more extensively to the non-manufacturing sector. This expanding role is a reflection of the shifting in relative importance of the manufaturing and service sectors. This growth in the so called "white collar" work force, and the emergence of service industries, has required a more sophisticated approach to management planning and control.

One result of these environmental changes is that the society's research committee is actively seeking to undertake more empirical research into the development of accounting information systems that would integrate with the decision making requirements.

Thus, it is apparent to everyone that accounting information plays a crucial role in decision making, both internally and externally. Our present knowledge of that role, however, is fragmentary and incomplete. With the increasing amount of research being done by the society and others into the decision process, the time is approaching when accounting curricula can be based on a philosophy which dictates that all accounting systems should be designed to yield information that is more consistent with, and more helpful in, the decision making process. It is our hope that as a result of this change the whole decision making process will be improved.

Specific Changes in Curriculum

If we accept the above framework then the next step is to look at some of the specific changes in curriculum. The following are some opinions that we would like to put forward for consideration:

1. Courses On Decision Making. The non-accounting courses that

are in present curriculum will disappear as they now are structured. Instead only background knowledge will be given separately. The major content of these courses will still be covered but it will be integrated with courses on specific decision processes such as pricing, make-buy, capital budgeting, acquisition decisions, etc.

2. No Distinction Between Management Accounting and Financial Accounting. With this increasing emphasis on decision packages there will be an elimination of the distinction between management accounting and financial accounting. Instead there will be a merging of these two disciplines, and a new dichotomy of accounting courses will appear. On one end of the spectrum will be courses that look at the decision process and the role accounting information can play - at the other end will be courses that deal with the quasi-legal aspects of accounting as published by the various standard setting bodies.

   The quasi-legal courses will be covered after the student has completed the accounting/decision making courses. At the present time the reporting and disclosure requirements are intertwined with material on the accounting process and at times it seems that this process is following the determination of accounting standards. This order should be reversed so that the student can better grasp the reasons for certain standards (i.e.: to provide relevant information to the external decision maker).

3. Specialization of the Audit Function. With the presence of the Cohen and Adams Reports, there is a real possibility that the auditing of public accounting profession may very well become a much narrower and specialized field (i.e.: increasing emphasis on auditing the information system rather than the annual report), in reaction to the criticism that has been leveled at the public audit profession from various sources. As a minimum, this will mean a more prominent role will have to be played by the audit committee, and the management accountant in preparing external financial information. A result may also be that more and more students will be enrolling in accounting programs and their objectives will be to become accountants rather than auditors.

4. Analysis Rather Than Procedure. The accounting field is fast approaching the point where there will be more writers than readers, and the amount of material available to read will far exceed the time or absorption ability of all readers. The result of this will be that the accounting content of the curricula will put less emphasis on description and procedures, and more selecting the appropriate accounting techniques to match decisions and then analyzing the results for no student will be capable of "knowing" the full body of knowledge.

> This trend will also mean that the skill of finding, selecting and then using the relevant information from data bases will receive a more prominent role in the accountants education. Specifically this requirement will translate into compulsory courses on data base design and management. Such change would also impact examination.

Let us now look at Figure 1. This is a schematic diagram of a possible sequencing of subjects within an accounting curriculum which the above changes could result in.

At the entrance level the student is exposed to some of the basic courses needed to gain an appreciation of the technical and environmental framework within which business decisions are made.

The second level deals with courses on specific decisions. These courses will be designed so that the accountant will be required to take the perspective of the decision maker so as to understand the accounting information requirements for the decision. Some of the disciplines covered in each of the courses are listed on the right.

At the third level the student will be given the option of specializing in the management accounting area or the external audit function. If the option is made for management accounting, the student will be required to take courses in planning and control systems, external reporting and disclosure standards, data base design and operational auditing.

If the student selects the external audit area he will be required to take courses in auditing and accounting standards, and the evaluation of control systems.

To put the above hypothesis into perspective, let us now look at a specific decision. This slide presents the process for a pricing decision and if we follow this flowchart through it can be seen that the following accounting matters could be discussed:

1. Return on investment
2. Full versus variable product costs
3. Historical, replacement, and current market costs
4. Cost allocations
5. Cost/volume/profit analysis
6. Forecasting

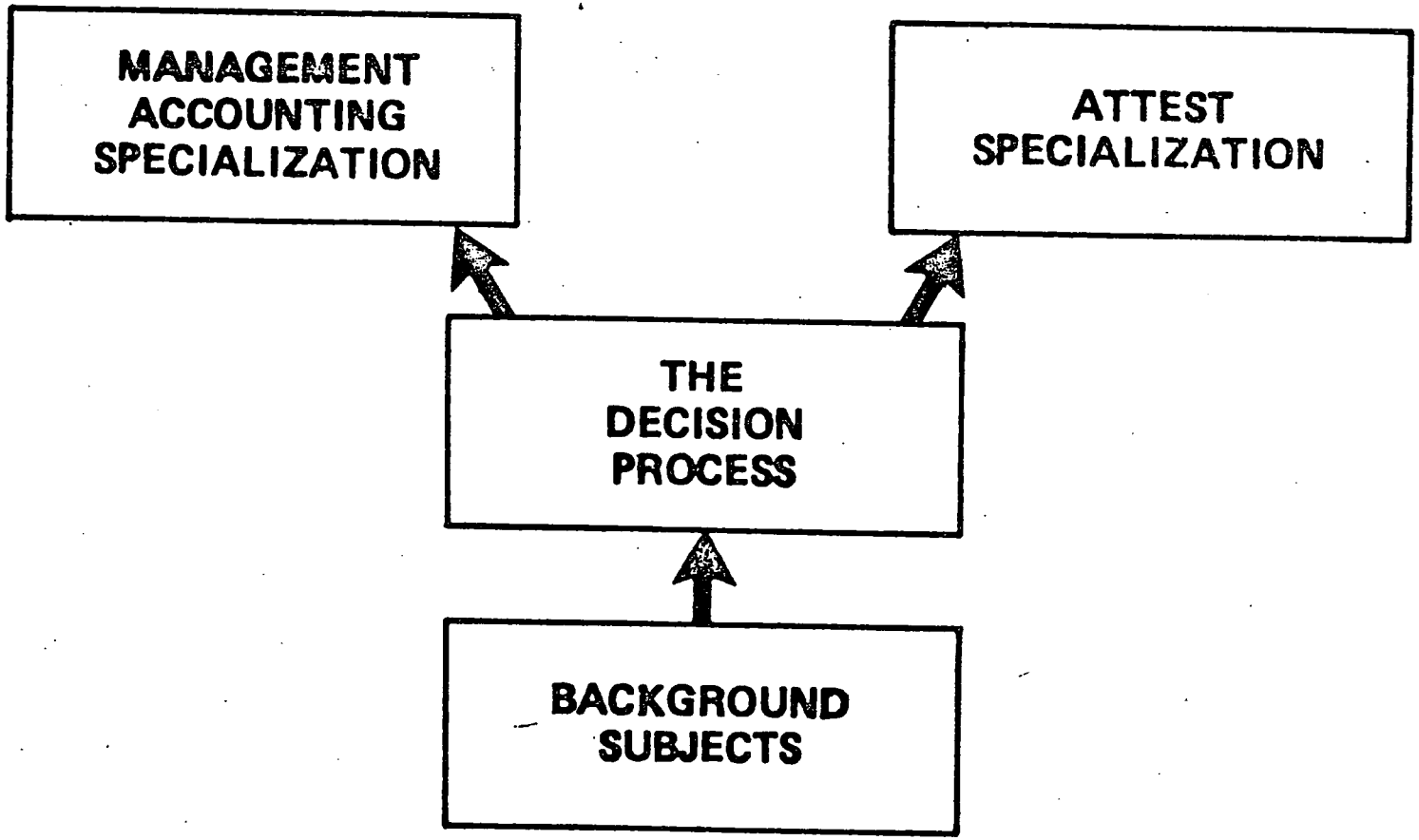
These factors would be presented within the context of the economic (i.e.: product life cycle, business cycle, etc.), technological, marketing and political factors that the product or firm would find itself in at that particular moment.

The other decision packages would provide a whole new set of factors in areas such as tax planning, financial management, etc.

Conclusion

In summary, the future accounting curricula will be substantially different in structure than that found presently. Although this change will not be without its implementation problems, it will be a period of stimulating research activity particularly in the areas of decision processes and the role of accounting information plays in these decisions. The end result of these various forces will be students that complete their business courses trained specifically for the management accounting function or the attest function.

STRUCTURE OF FUTURE ACCOUNTING CURRICULUM



BACKGROUND SUBJECTS

COURSES:

- APPLIED ECONOMICS
- QUANTITATIVE METHODS
- DATA PROCESSING
- ORGANIZATIONAL BEHAVIOUR
- LEGAL AND TAX ENVIRONMENT
- INTRODUCTORY ACCOUNTING
  - FINANCIAL
  - MANAGEMENT

THE DECISION PROCESSES

COURSES:

- NEW PRODUCT DECISION
- PERFORMANCE APPRAISAL
- DISTRIBUTION CHANNELS
- ACQUISITION/DIVESTMENT
- CAPITAL EXPENDITURE
- LEASE-BUY
- MAKE-BUY
- PRICING
- MANPOWER

TOPICS COVERED INCLUDE:

- ACCOUNTING (MANAGERIAL/FINANCIAL)
- FINANCE
- TAX PLANNING
- OPERATIONAL AUDITING

MANAGEMENT ACCOUNTING SPECIALIZATION

COURSES:

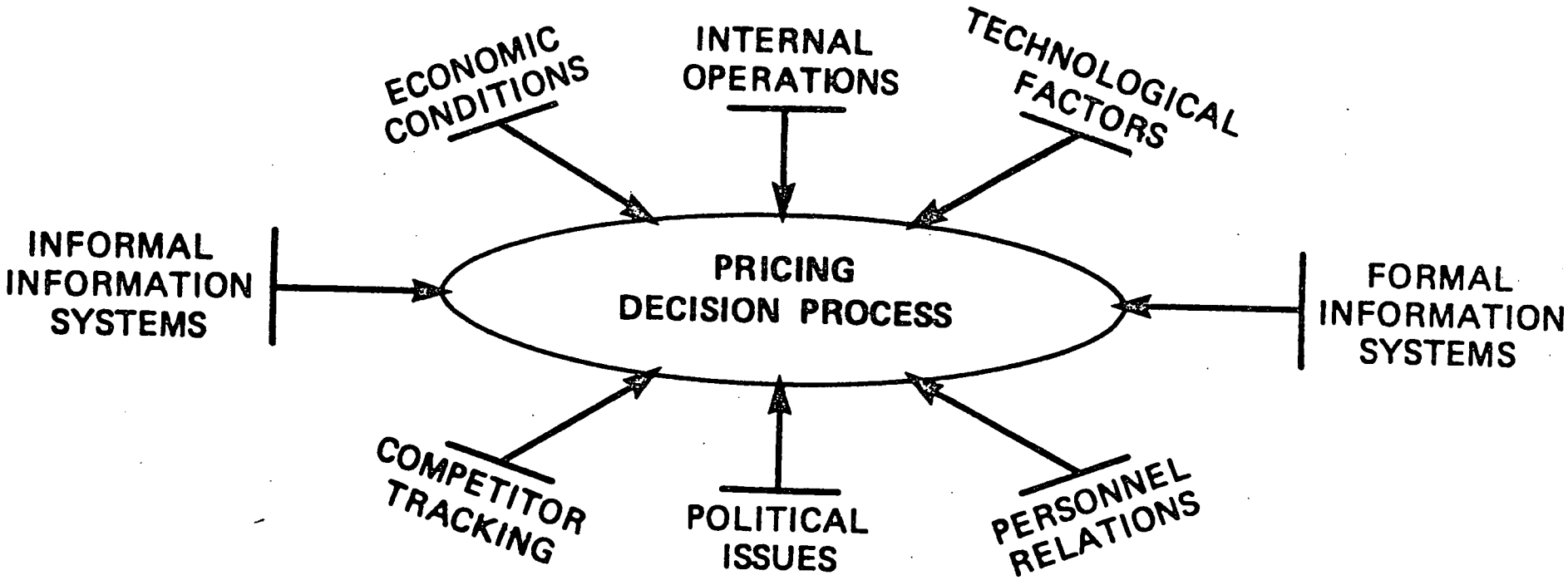
- MANAGEMENT PLANNING AND CONTROL
- EXTERNAL REPORTING AND DISCLOSURE
- DATA BASE DESIGN AND MANAGEMENT

ATTEST SPECIALIZATION

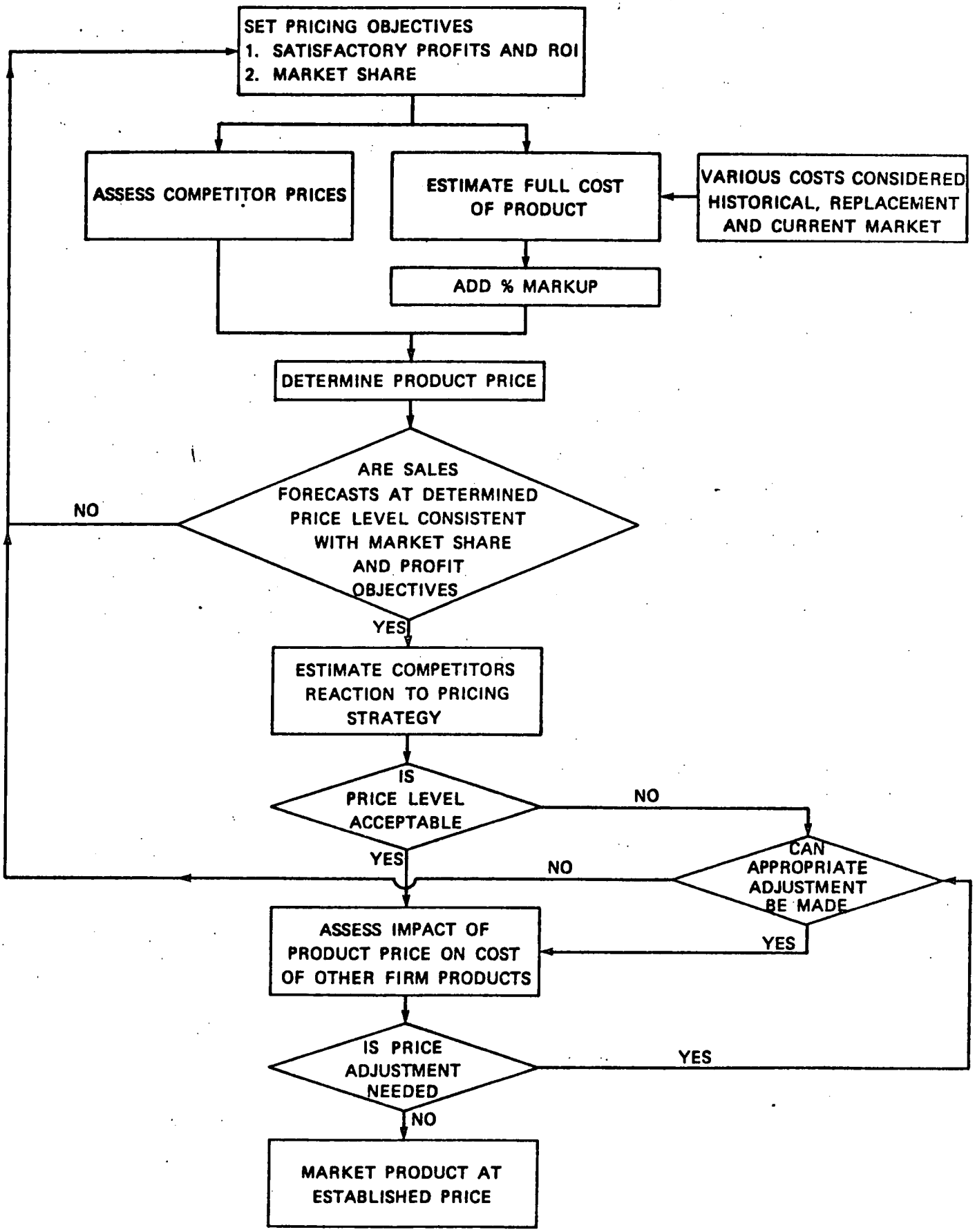
COURSES:

- AUDITING STANDARDS
- EXTERNAL REPORTING AND DISCLOSURE
- EVALUATION OF THE CONTROL SYSTEM

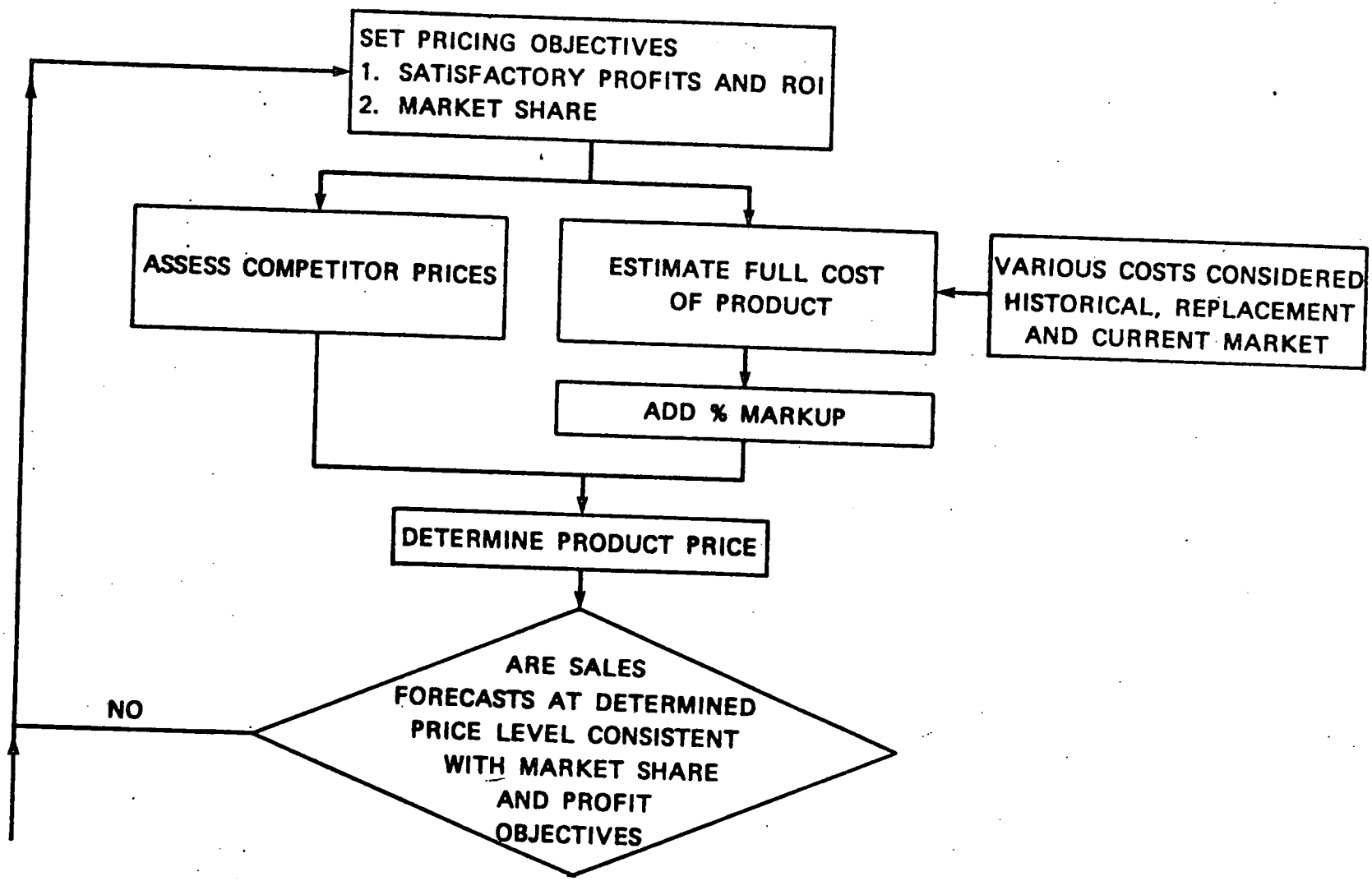
FACTORS WHICH IMPACT ON THE PRICING DECISION

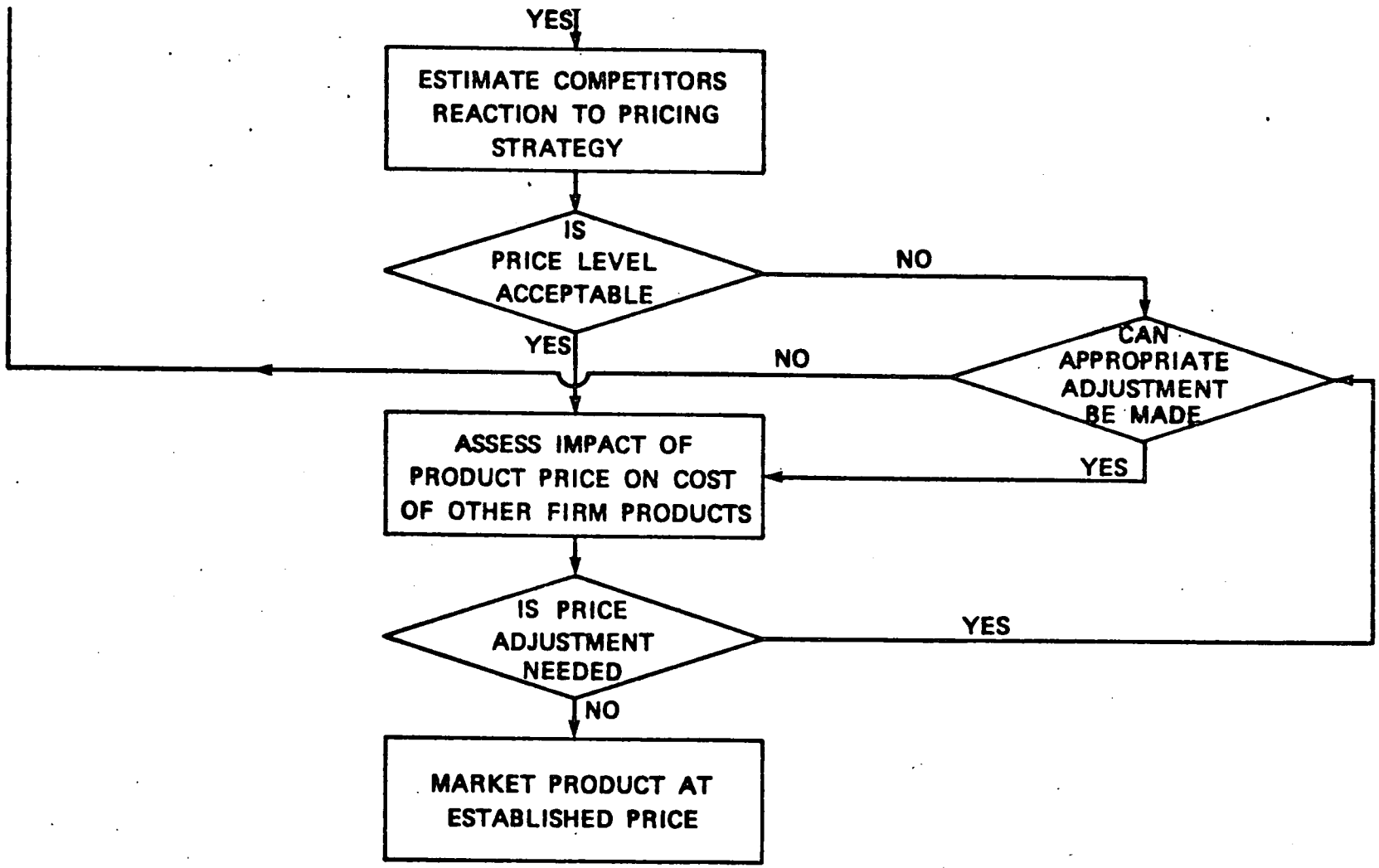


THE PRICING DECISION MODEL



THE PRICING DECISION MODEL




YES
ESTIMATE COMPETITORS REACTION TO PRICING STRATEGY
IS PRICE LEVEL ACCEPTABLE
NO
YES
NO
CAN APPROPRIATE ADJUSTMENT BE MADE
YES
ASSESS IMPACT OF PRODUCT PRICE ON COST OF OTHER FIRM PRODUCTS
IS PRICE ADJUSTMENT NEEDED
YES
NO
MARKET PRODUCT AT ESTABLISHED PRICE

CANADIAN ACCOUNTING RESEARCH AND PUBLICATIONS

Comments by Gary L. Sundem

It is a pleasure to address you on the subject of Accounting Research in Canada. However, I stand before you with some trepidation-- it is always uncomfortable knowing less than one's audience about the subject being discussed. I'm certain that is the case today, but I comfort myself in the hope that as an outsider I can approach the subject from a perspective that is different than that of most individuals in this room. I have never attended or taught at a Canadian university and I am not a regular reader of the Canadian accounting journals (though I occasionally read articles in the CA Magazine and especially in Cost and Management when they are recommended to me). Therefore, when I started my preparation for this talk I had no preconceived notions as to what my conclusions would be. I maybe should qualify that statement a little, in that I know and respect several Canadian academicians. One was a valuable member of my dissertation committee, I have interviewed several excellent faculty candidates when they were looking for an academic position after graduating from a Ph.D. program (and we have found it difficult to get a Canadian citizen to stay in the U.S.), and several of our University of Washington Ph.D. graduates (including 15 percent of those graduating since I arrived) are now in Canadian universities. Thus, I knew there were good accounting researchers in Canada. But I had never drawn a line along the border of the U.S. and Canada and examined accounting research output on the north side of that line compared to that on the south side. My purpose today is such a comparison.

I should also preface my remarks with some indications of my biases regarding accounting research. First, I differentiate between applied and basic research. For purposes of my presentation today I will define basic research as that published by The Accounting Review and Journal of Accounting Research; applied research is that published by the Journal of Accountancy, the CA Magazine Management Accounting, and Cost and Management. Though this is by no means a perfect division, it will suffice for today's discussion. I feel more qualified to judge basic research because that is

where I have put most of my research effort, and I have had exposure to a greal deal of this kind of research as Associate Editor of The Accounting Review. On applied research, I further subdivide the field into managerial and financial accounting. (I feel such a division usually is not appropriate for basic research.) Such a division is especially relevant when a U.S. Citizen views Canadian research; applied financial accounting research is often unique to Canada while that in the managerial area is generally applicable across borders. I feel much more comfortable evaluating managerial accounting research in Canada than financial accounting research; not only is managerial my area of interest but it is also less dependent on uniquely Canadian phenomena.

With these preliminaries out of the way, let me begin by assessing basic Canadian accounting research. Such research seems to be doing quite well. It is relatively new, and it is in the midst of an explosive growth cycle. I have examined The Accounting Review and the Journal of Accounting Research over the past 12 years, and I was surprised by the proportion of articles in the two journals authored by Canadians as well as by the growth in Canadian articles over the 12-year period. In The Accounting Review, 5 percent of the main articles in 1975 through 1978 were authored by Canadians, compared to 3.5 percent in 1971 through 1974 and 2 percent in 1976 through 1970. (If this linear trend continues, Canadians will completely take over The Accounting Review in the year 2231.) Since only 4 percent of the membership of the American Accounting Association is Canadian, you are currently publishing slightly more basic accounting research per capita than your colleagues in the United States (or you have a smaller proportion of accounting academics belonging to the American Accounting Association).

Statistics from the Journal of Accounting Research are even more favorable to Canadian research. Before 1975 publication figures were similar to those of The Accounting Review; 2 percent of the articles published between 1967 and 1970 and 4 percent of those between 1971 and 1974 were authored by Canadians. But in the period from 1975 through 1978, fully 11 percent of the JAR articles were written by Canadians. Included in this period were two issues in which over 30 percent of the issue was Canadian authored. So if the status of basic accounting research in Canada were judged solely on the basis of the number of publications in the two major basic accounting research journals, there is no question that it is doing quite well.

Another measure of quality of basic research might be the American Accounting Association's competitive manuscript award. Since 1966 there have been twenty-six manuscript awards given. Of the 26 award winners, four (or 15 percent) are now teaching in Canada, though only two (or 8 percent) were in Canada at the time of the award. Yet, it is interesting to note that the two winners who were at Canadian schools at the time of the award were winners in 1976 and 1977, while winners in 1967 and 1968 were subsequently attracted to Canadian universities after spending the initial parts of their academic careers in the U.S. This further reinforces the growing research competence and output in Canada.

At this time let me give some of my subjective impressions of basic accounting research in Canada and speculate briefly on possible reasons

for its growth over the past decade and prospects over the next decade. As I mentioned earlier, Canadian universities have a large number of highly qualified researchers, and the basic research output that has been generated is about what I would expect from those persons. Therefore, the major reason for the upsurge in basic research has been the ability of Canadian universities to attract highly talented and well-trained faculty who are in the midst of their most productive years for research. In the 1978-79 Prentice-Hall Accounting Faculty Directory, 53 percent of the Canadian faculty listed have Ph.D's compared to 54 percent of the U.S. faculty. This percentage has grown much faster in recent years in Canadian universities than in U.S. universities. Thus, one reason for the growth in Canadian research has been the growth in research training among the faculty. Because of this growth, more Canadians are recent Ph.D. graduates than is the case in the U.S.; about 75 percent of the Canadian faculty with Ph.D.'s received them since 1970, compared to under 60 percent of U.S. Ph.D's. Because the years immediately after a Ph.D. program tend to produce more published research than later years in one's career, this has contributed also to the growth in Canadian research output. Finally my personal experience tells me that Canadian universities have attracted more than their share of the top Ph.D.'s from U.S. doctoral programs. From the University of Washington's perspective, not only have 15 percent of our graduates gone to Canada, but we have tried hard to hire several outstanding prospective faculty members who have ended up in Canadian universities. This ability to hire quality Ph.D. graduates has added to the growth in research.

Accepting the fact that Canada has attracted some excellent individuals in the prime of their research careers, another ingredient for research output is the incentive and stimulation for creative research. This is one area of concern I have regarding basic accounting research in Canada. It may be a concern because of lack of knowledge on my part, but at least it warrants mention. Of the Ph.D's in Canada, 89 percent have their degrees from U.S. universitites. Much of the increase in accounting research has come from young faculty with U.S. research-influenced training. Several of the major publications by Canadian faculty have been drawn from their doctoral research stimulated by the U.S. Ph.D. program. Past growth in Canadian creasing number of Canadian faculty members with recent Ph.D. training in the U.S. I don't think this increase will continue. With fewer new faculty publishing the results and spin-offs of their Ph.D. research, it may be difficult to maintain growth (or even the status quo) in basic accounting research in Canada. Development of more internal stimuli may be necessary. Doctoral programs in Canada are currently few in number and small in size; expansion of these may be warranted to provide stimulus for research. Teaching loads must be kept within bounds to allow the time for research. And to continue attracting and motivating top quality faculty, the control system must support and reward basic research. All in all, basic accounting research in Canada has the proper momentum; I hope this momentum can be maintained, and with proper stimulus, support, and rewards I think it can. But if the pressing problems of the day direct attention away from research and toward only staffing classes to meet the increasing demand for accounting instruction, the momentum could easily be lost.

I have already warned you that I have less basis for judging applied research, so I will take just a few moments to summarize my feelings. I see little difference in quality between applied research in Canada and the

U.S.; there is less in absolute quantity in Canada, but proportionate to the population or to the number of accounting researchers there is probably more applied accounting research in Canada than in the U.S. In managerial accounting, Cost and Management publishes only about one-third as many articles as Management Accounting, but more of them are by academicians than are those in Management Accounting (59 percent to 46 percent in 1977-78). Canadian academicians must compete with U.S. academicians for publishing in Cost and Management; in fact, there are slightly more articles by U.S. than Canadian academicians in Cost and Management. Of the total articles in Cost and Management and Management Accounting, 7 percent are by Canadian Academics, 42 percent by U.S. Academics, 1 percent by other academics, and 50 percent by practitioners. This seems to be a reasonable percentage for Canadian academics. An additional factor indicating the common quality of applied managerial accounting research in the U.S. and Canada is the increasing trend toward joint sponsorship of research projects by the Society of Management Accountants in Canada and the National Association of Accountants in the U.S.

Applied financial accounting research in Canada is also comparable in qualtiy and only slightly less in quantity than that in the U.S. The CA Magazine is quite comparable to the Journal of Accountancy, though it tends to have fewer articles by academcs. This may be due to the institutional framework of financial accounting that to some extent is unique to Canada and therefore not as easily researched by accounting faculty who have their basic training in the U.S. A lower volume of applied financial accounting research in Canada is part of the price paid for importing Ph.D. graduates from U.S. universities. The research that I have seen by the Canadian Institute of Chartered Accountants, though not as voluminous as that by the AICPA in the U.S., is nevertheless of quite high quality. The Canadian Institute seems to work quite closely with some Canadian faculty, providing great opportunity for this applied financial accounting research to have an impact.

In summary, I judge accounting research output in Canada to be in a healthy state. The challenge is to keep up the level of output in the face of a possible lessening of the direct stimulation of U.S. Ph.D. programs. If Canadian universities can create the necessary internal stimulus and reward for research, if they can continue to make research time available to those faculty with the ability to do good research, and it they can continue to attract the highly talented young faculty they have been attracting, my prognosis is for continuing health in the years to come. But these are large "ifs," and without attention to these matters, accounting research in Canada could easily retreat to the state it was in a decade ago.

GS.ek

CANADIAN ACCOUNTING RESEARCH AND PUBLICATIONS

Comments by Don E. Shaw

Expertise in the accounting area is not one of my claims to fame. My comments are not to be taken as representative of the viewpoints of other deans, of deans of Canadian schools collectively, or as typical of what a dean might think of accounting research activities. My comments represent personal viewpoints, expressed for the purpose of generating discussion.

This paper will raise some questions about the objectives of accounting research in Canadian schools; the dean's role, as I see it, with respect to accounting research; and, finally, the relationship of a school's objectives to its reward system. The focus will be on personal views which are intended to be descriptive of one dean's feelings on the subject, and are not to be considered prescriptive for other people.

Spectrum of Professors' Activities

Accounting professors engage in one or more of four kinds of activities: basic research, applied research, professional consultancy, and dissemination of accounting knowledge. The dean's job is to build on the strengths of individual professors. I do not accept the proposition that every professor should be deeply involved in all or most of the activities listed above. The dean's job, as I perceive it, is not to try to fit every professor into the same mold; rather, it is to pursue the appropriate mixture of objectives for the accounting unit by careful selection of professors and by seeking to build on individual strengths in order to achieve the overall objectives of the unit. It follows from this perception that the same mixture or range of outputs is not required from each accounting professor. Rather, what is required is that the accounting group, collectively, possesses and exercises the desired capabilities in basic and applied research, consulting activities, and teaching effectiveness.

The professors' job can be considered in terms of a spectrum of activities with basic research at one end and the dissemination of knowledge at the other end.

Basic Research	Applied Research	Consulting	Dissemination of Knowledge
Pure	Improve current practice		Best of current
Esoteric	Mundane		theory & practice
Seminal	Empirical		Extend audience
Theoretical	Pragmatically idealistic		Pragmatic
Idealistic			

The spectrum concept helps us to avoid dichotomizing research as basic vs applied. Basic research and applied research are not mutually exclusive. Note the terms on the spectrum that are associated with basic research: "pure," "esoteric," "seminal." "theoretical," and "idealistic." If we consider applied research to fall toward the center of the spectrum the terms that apply there might include: "empirical," "proven current practice," and "pragmatically idealistic." At the right end of the spectrum, dissemination of knowledge is described by terms such as "the application of the best of current theory and practice," "the desirability of extending the knowledge to as wide an audience as possible," and "pragmatic." Basic and applied research are not mutually exclusive activities; they are complementary, rather than competing, activities.

There is a close relationship between basic research and applied research. Basic research performs the functions of initiating new ideas, suggesting innovative approaches to problems, and developing testable hypotheses about the relationships among accounting variables. Basic research is concerned with the generation of new concepts. Applied research is concerned with testing the hypotheses developed by the seminal researchers in ways that will provide new inputs and additional refinements for the basic research process, and improve professional practice in the future. Moreover, some so-called consulting is really applied research. The difference between the two is primarily one of immediacy and degree rather than one of substance. As one moves from the left end of the spectrum -- basic research -- through applied research toward the right end of the spectrum, the tendency is for the time horizon to become shorter. The application of the concept to practice has more immediacy as one moves toward the consultancy/teaching end of the spectrum. In addition to the compression of the time horizon, there is also a tendency for the idealism of the basic researcher to give way increasingly to the pragmatism of the practitioner.*

The key point is the necessity for balance among the various objectives of accounting professors and of accounting units in this country. For

*The terms "idealistic" and "pragmatic" do not connote a heirarchy of values, but are descriptive of different phases in the process of new knowledge generation.

example, if every school in Canada were to give top priority to basic research in accounting, our total resources of accounting professors would be misallocated. Indeed, it may well be that some smaller schools (and possibly some larger ones as well) should attach a low priority to basic research. For example, should five or six full-time accounting professors in Regina be encouraged or required to devote a good deal of their energies and abilities to the development of new concepts in accounting? Or should they be devoting their time and energies to testing concepts that have been developed by others, and to improving the practice of accounting through more effective consulting and teaching activities?

Collectively, perhaps we should be thinking in terms of individual centers of excellence in a limited range of accounting professors' activities. There are relatively few accounting professors who have the appropriate mix of interests and competence to devote most of their time to seminal research, just as there are relatively few who are outstanding teachers of accounting. Indeed, those who are outstanding teachers have some obligation to extend their excellence to wider audiences. They may be able to contribute most effectively by writing good textbooks, thereby extending significantly the number of beneficiaries of their outstanding teaching abilities.

There is a potentially synergistic relationship among the activities carried out by university professors of accounting, which relationship may be realized by encouraging individuals and schools to devote more time and effort to the kinds of activities in which they have the most interest and competence.

The Dean's Role in Research

The dean's role in research, as I view it, is to assist professors individually and collectively in clarifying their objectives; to harness the efforts of individuals and groups to reach their personal or group objectives in a manner that will contribute most effectively to the achievement of the objectives of the faculty; to create and maintain an environment which is conducive to the attainment of specified goals; and to relate the reward systems to the degree of attainment of the results that are being sought.

There are many ways in which the environment in which professors carry out their duties can be improved. The environmental factor that offers the greatest promise of increasing the effectiveness with which we use our professorial resources is a type of management by objectives and results. Under this management style the dean (or other appropriate person) negotiates an individual "contract" with each professor concerning the individual's objectives and the results that he or she hopes to achieve. This agreement reflects the wishes of the individual tempered, if necessary, by the need for balance in the activities required to achieve the objectives of the faculty or other organization unit.

Environmental Conditions

Several environmental conditions are necessary for implementation of this approach:

1. a high degree of mutual confidence and trust among the academic staff;

2. flexibility in the assignment of duties, which means rejection of the notion of a "standard teaching load";

3. rejection of a value-system that rates publication of basic research findings in the "better scholarly journals" more highly than publication of applied research findings in "professional" journals, or publication of textbooks; and

4. a reward system based on objectives and results for individuals, rather than a preconception of the ideal accounting professor.

The establishment of these environmental conditions is difficult, since some of them contradict the traditional value and reward systems of universities. My experience at the University of Regina attests to the difficulty, but it also demonstrates that the environment can be changed significantly if one has the conviction and persistence to pursue the changes in the face of sustained opposition from the traditional arts and science faculties. The decentralization of career progress decisions from the President's Office to the Dean's Office can facilitate the process of change, provided that an effective consultation and appeals system exists to prevent capricious actions by the dean.

The management by objectives and results approach is not necessarily appropriate to all -- or even most -- management or business schools, and it is essential that one consider carefully its implications. Its means, for example, that the truly outstanding university teacher of accounting must be rewarded equitably as compared with the outstanding researcher/ publisher.

Conclusion

Given the constraints of professioral resource endowments, the objectives -- results -- rewards model as sketeched out in this paper is one approach that can be employed in some environments to achieve an improved allocation of those resources in the pursuit of specified organizational objectives. The main strength of the system is that it builds on the strengths of individuals in pursuit of the collective goals of the organizational unit.

CANADIAN ACCOUNTING RESEARCH AND PUBLICATIONS

Comments by P. Howard Lyons

Nine years ago Al Rosen stood before a group of accounting educators in Banff, Alberta and said "There is no accounting research being done in Canada today." You will not be surprised to hear that he successfully defended this thesis, although there was some conflict over the definition of "accounting research".

Regardless of what we mean by "research", I believe there is more of it now than then. However, I suspect Gary Sundem has today been overly generous to us in the statistics he has quoted. Our story would be less encouraging if we were able to isolate the purely Canadian content in the writings to which he has referred. As it stands, we have been credited with the overflow from a U.S. education, set down in writing by a repatriated, or even newly patriated, Canadian scholar.

But if we should not praise Canadian research effort unduly, neither should we bury it. Why not think about how we could do better?

I start with many assumptions, mostly unstated. One that is explicit is that the accountant outside of academia wants applied research, not basic.

I believe the staff of the CA Magazine has a pretty good handle on the market. The new editor has made the policy of that magazine very clear:

> "If we have an editorial bias, it is toward the practical - to concise articles of immediate relevance or applicability."

and further

> "... although we recognize the value of theoretical discussions and research findings, we tend to favour only those that will be of some practical value to a

significant number of our readers."

Whether or not you agree with that policy, it is clear that the CA Magazine is not intended to be the Accounting Review of Canada. However, within this general policy there should be space for an occasional article that is academically rigorous - and there might be more room if third rate U.S. rejects were excluded. But even if an article is practical and down to earth, it should be academically sound.

So there does seem to be a market for such writings. A warning - they should be in plain accountants' language and the research work should include practical exposure to the accounting mill.

On the language aspect, I've selected two anecdotes. In 1972, an article in the CA Magazine contained two footnotes, each of which contained a formula, sigma and all. The two formulae were not necessary or useful. The text in essence said, quite simply, "Add column 4 and divide by the number of years," and secondly, "Do the same thing, but ignore the minus signs."

My second example of non-communication leads to more serious consequences. In September, 1978 an AAA subcommittee sent to the International Accounting Standards Committee a response to its Exposure Draft 13, "Accounting for Taxes on Income".

First you must know that the exposure draft was 12 pages long. The response was 79 pages, not counting the bibliography of 20 pages. The first page of the response acknowledged what we all know - that the IASC has the job of publishing basic standards of sufficient generality that they can be accorded worldwide acceptance.

Nevertheless, the response goes on to survey the literature; to summarize, evaluate and interpret relevant conceptual and empirical research; and on from there. It must be evident that the document had not been designed with its intended audience in mind.

In case it is not evident, I'll ask you to visualize the IASC Board, with its members from France, Germany, USA, Canada, Netherlands, Mexico, Japan, and elsewhere. Now try not to smile as you think of them mulling over things like this:

> "However, the adjustments ... utilized for changes over time in relative risks for non-stationarity have been criticized ... as ad hoc." p. 63

I would guess this AAA response had zero impact. In view of the investment of time by a distinguished committee, and out-of-pocket cost for travel and meeting expenses, plus paper and the like, the cost/benefit ratio appears to be rather low.

Even if research results are in plain language, behind it should be exposure to the real world - not using undergraduate students as surrogates for partners in accounting firms or hamsters for business decision makers. I would like to see more academics spending summers and sabbaticals in the

offices of accounting firms. How problems arise and how they are resolved would be marvelous input to the research process. More to the point, this background would make published results more plausible to the accountant in the street.

Are there really opportunities to do this? Do the firms open their doors and files - do they open their pocketbooks? Yes they do, but perhaps not often enough. What prevents more frequent cross-fertilization? I can only guess.

Some firms may be reluctant to expose their internal machinery to the gaze of an outsider. I hope this reluctance will diminish as the machinery becomes more attractive, and also as some academics come back to the firms as full-time employees and partners. It is surprising how well these strange people behave. They're just like real people. Familiarity may help.

More than that, though, I think you must sell them a product of some kind. This can occur through negotiation and, I suggest, compromise. The firm shouldn't expect to be able to tell a mature academic much about researching. On the other hand, they will have to be interested in the subject of the research - they may even want to prescribe it.

Why not? It is unlikely their needs will be trivial. So the academic should relax the constraint of his academic freedom a little - at least as far as subject is concerned. For one thing, more of you could take on auditing as a subject of serious study. It is complex, deep and full of unresolved questions - and the preponderance of problems in firms have strong auditing implications.

I believe I can give you another good lead. I believe many firms have unsatisfied needs for research related to specific industries. Although we have always heard from clients that each industry has special problems, we are more and more coming to believe it. Even in firms with well-developed industry specialization, the need is there. The more you learn, the more you find there is yet to learn.

Don't ignore another kind of specialization. I was pleased to note in the informative CAAA Survey on Research Interests, put out recently by Professor Prentice of the University of Calgary, such items as "Small Business MIS", "Financial Reporting for Small Business" and "Auditing (particularly as applied to private businesses)". This is a growth market for the accounting firms and it should be for researchers as well. A significant unresolved question of current interest is whether there should be different GAAP for small business and whether it makes a difference if the business is not publicly owned. I believe we need to get together on this.

What I've said about research in firms applies partially to work for the CICA and other accounting organizations. If they are confident that you will perform well for them, producing timely and relevant work, they will fight to give you assignments.

A current example of an excellent combination of resources is the

work Ross Archibald is doing on pension accounting. He has been working at Price Waterhouse on a CICA study.

Another warning, however, many worthwhile projects need more than a year of concentrated effort. Thus, it is essential to plan carefully to provide for completion after your return to campus.

In all of this, I don't want to suggest that basic research is not needed. On the contrary, it must be in place before applied research can start. If the market for applied research expands, it is reasonable to expect that for basic research will do so also.

Unfortunately, we don't have a regular outlet for research results in Canada, and the magazines available have a particularly limited capacity to absorb basic research reports. Can't we afford a journal?

Even if we can't, is there some way that research results can be made more easily retrievable in this country? One solution might be a repository of such results, regardless of where they may have been published. Perhaps some of this already exists, but I don't know about it. Another solution might be a Canadian Abstract of Accounting and Auditing Literature If this included working papers and progress reports, as well as unpublished material, it would be possible to find out something of what is going on. What we need is a way of delving into the research we have. At present it seems to me that it would be a research project just to find out what research is going on.

My last words pick up a thread from Dean Shaw's remarks. When reports appear on applied research, give them a chance. Give them the same serious study you would basic research. Accord them the same status, and of course, attack them just as hard.

ASAC 1979 Conference
University of Saskatchewan

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THE PROFESSIONAL SCHOOLS OF ACCOUNTANCY PROPOSAL: REACTION BY PRACTITIONERS, EDUCATORS AND STUDENTS.*

There is a continuing debate within the Canadian accounting profession over the pros and cons of following the United States lead in establishing professional accounting faculties in our universities. The importance of this issue is evident from the Adams Report (1), wherein (item 14, p.62) it is suggested that there be established "a number of professional schools of accountancy, each attached to a university". The issue is raised again by Rosen (8) when he recommends (#10, p.34) that the profession "ask itself whether it might be a good idea to establish several professional schools of accountancy across the country" and then goes on to imply that it might indeed be a good idea. This is a report on a brief study of one aspect of the professional schools question. I do not weigh the theoretical (or practical) pros and cons of a professional accounting school (accounting faculty in Canadian terms), nor do I explore the alternate organizational and program structures of such a school. Rather, I report on the attitudes and opinions of accounting educators, recent C.A. finalists, articled students, and "non-C.A." professional accountants concerning the establishment of professional faculties of accounting in Canada. The results, though limited in nature and scope, should be useful data for any thorough study of professional accounting education in Canada.

Background: What We Know Now

In the Summer of 1977, a study was conducted to obtain opinions from accounting practitioners on the advisability of establishing a separate, professional Faculty of Accounting in British Columbia (5). At that time, the accounting education situation in other countries was examined; in particular, the move to professional schools of accounting by some U.S. universities. Based on the apparent key factors from other countries, an interview questionnaire was developed and interviews conducted with nineteen practicing B.C. Chartered Accountants. Although the number of interviews was small, the individuals contacted represented the firms who hire the majority of B.C. students seeking the C.A. designation.

It was clear from the 1977 interviews that there was not an articulated demand for the establishment of a Faculty of Accounting in B.C. Although there were criticisms of the existing processes of preparation of students for the profession, it was not deemed necessary, by most of the responding firm representatives, to move to a professional Faculty of Accounting. The reasoning behind this general opinion was explained in the research report by reference to the apparent critical issues which would have to be resolved before a professional faculty could be established. (These issues will be

* This study was financed by the B.C. Ministry of Labour, Summer Employment Program (1978) and researched by Judy Wone. Derrick Smith read the original paper and made valuable comments.

described below.)

In analysing the 1977 interview data, a disturbing anomaly was identified. Firm representatives expressed widely divergent opinions on the technician versus generalist goals of accounting education programs. On the one hand, a number of complaints were expressed about the poor practical and technical accounting preparation gained by students graduating from Simon Fraser University, the University of B.C. and other universities with which the respondents were familiar. On top of the demand for more technical "drill", there were suggestions that the course-work and examinations then undertaken by the Institute be shifted to the universities. On the other hand, many requests were made for a broad-based, generalist training for students. In particular, a need for students who could communicate well was often articulated and many complaints were expressed about university graduates' poor communication skills. It was apparent to the researchers that there was considerable confusion among the respondents as to the real role of the university education as preparation for the profession. In true academic fashion the researchers called for more research to resolve the "objectives of education" issue. This present study is only a modest contribution to an in-depth study of accounting education; a study that is so necessary for Canada.

Before presenting the details of the present study, brief reference should be made to two U.S.-based academic studies on professional schools of accounting. The study by Bremser, Brenner and Dascher, published in 1977 (2), reported on the attitudes and perceptions of accounting department chairpersons and college of business deans regarding the advantages and disadvantages of a professional school of accountancy at their respective institutions. The rationale for exploring such attitudes was that, since the professional school concept would alter the departmental relationships within colleges of business, it was important to measure the "efficacy of the concept from those directly involved in existing and proposed administrative hierarchies" (p.466). As might be expected (and as predicted by the researchers), the accounting chairpersons favored the professional school concept and the deans did not. One conclusion drawn was that those desiring to establish professional schools at universities can expect "considerable administrative resistance" and, accordingly, "serious commitment of support" (p.473) would be essential. That is, deans and others in positions of power in the established universities would resist the change.

Rayburn and Bonfield's more recent study (7) employed the semantic differential technique. The report supported the Bremser et al findings that deans were unfavorable and that accounting chairpersons were favorable to the professional school concept. In addition, Rayburn and Bonfield tested four other groups, with the following results:

(1) Accounting faculty members: favorable;

(2) Non-accounting business school faculty members: unfavorable;

(3) Practitioners from the eight largest (U.S.) public accounting firms: favorable;

(4) Students from three (U.S.) universities in non-accounting junior-level courses: favorable.

The Rayburn and Bonfield study was published after our Canadian study was in progress and, therefore, had no impact on the design or methodology of the present project.

To summarize, the U.S. empirical data presents the following (intuitively obvious?) picture:

- Accounting practitioners, faculty and students favor the establishment of professional schools.
- Deans and non-accounting faculty of business schools do not favor the establishment of professional schools.

It is by no means evident that attitudes in Canada will be the same. On top of all the other national differences, the professional school is an established fact in the U.S.A., but only a vague proposal in Canada.

What This Study Does

Data was gathered from Canadian accounting educators, professionals, and students using the same survey instrument as that used by Bremser et al. The questionnaire is not attached, because the questions are reproduced in the study report, and reader can refer to the original source (2). In the questionnaire, issues concerning professional accounting schools are grouped into four categories:

(1) Autonomy over the accounting program,

(2) Academic identity of the accounting program,

(3) Relationships with practitioners,

(4) Factors deterring from the establishment of faculties of professional accounting.

For each category, a number of statements were presented and respondents were asked, first, to indicate their agreement or disagreement, as measured on a five point scale:

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
5	4	3	2	1

Secondly, respondents were asked to indicate the importance of each statement, again on a five-point scale:

Important	Somewhat Important	Undecided	Somewhat Unimportant	Unimportant
5	4	3	2	1

The decision to replicate the Bremser et al methodology in a Canadian setting was made on two counts. First, the method and instrument had a certain face validity (published in The Accounting Review!) and adoption saved much time and money. Second, the factors concerning professional accounting schools which are measured by Bremser et al are consistent with factors found to be relevant in the 1977 B.C. study (5). These factors will be explained below, when the responses are analysed.

As has been mentioned, responses were gathered from four separate groups: accounting educators, practising C.A.'s, articled students, and non-C.A. accounting professionals. Accounting educators were chosen for the study because they are directly involved in the process and the professional school concept would most directly affect their lives. Also, Canadian results could be compared to the U.S. results discussed above. Questionnaires, accompanying letters and return envelopes were sent to each person on the roster of the Canadian Academic Accounting Association (CAAA) who appeared to be a full-time university or college instructor. (See the study report for a tabulation of the mail-out and responses.) Although I have no figures to verify my position, I feel that the proportion of educators reporting a professional accounting designation (87%) is much higher than that in the population of accounting educators as a whole; that is, faculty responding to the survey tended to be those with professional designations. Accordingly, summarized educator opinions should be interpreted with care.

In contrast to the cross-Canada coverage of accounting educators, the survey of the other three groups was confined to British Columbia. The B.C. Institute office provided names and addresses of C.A.'s who had received their designation in 1976 and 1977 and who still resided in British Columbia. The rationale for surveying recent "graduates" was that they would be familiar with the current education process and, having just come "through the mill", would be sufficiently interested in changes to the process to make the effort of responding.

Also, the B.C. Institute office supplied information to enable the drawing of a random sample of 125 articled students. Articled students were chosen for study because they had an established commitment to the institute, a current knowledge of the university situation, and yet were still "in the mill" of the C.A. education process. However, the commitment and interest expected of the articled students was not demonstrated because, of the 125 students surveyed, only 34 returned completed questionnaires!

Finally, a small number of B.C. C.G.A.'s and R.I.A.'s were surveyed. The reason for including C.G.A.'s and R.I.A.'s in the study was because their opinions might well influence the university accounting education picture in Canada. All of the foregoing discussions on professional faculties of accounting at universities are couched in terms of C.A. education, because the C.A.'s have the university degree prerequisite and the C.G.A.'s and R.I.A.'s do not. If it were decided that professional schools would upgrade a C.A.'s education, it could be concluded that professional schools would downgrade a C.G.A.'s or R.I.A.'s education, relatively speaking. If such were concluded, then it might

seem reasonable that C.G.A.'s and R.I.A.'s would operate as a negative influence on the establishment of professional schools. To gather C.G.A. and R.I.A. attitudes, it was decided to survey the B.C. Board or Council members and members of the provincial education committees. These select C.G.A.'s and R.I.A.'s could be expected to have a knowledge of and interest in professional accounting education in Canada. The B.C. offices of the C.G.A.'s and R.I.A.'s supplied the relevant names and addresses. The C.G.A.'s and R.I.A.'s were grouped together because of the small number of responses and, of course, due care should be taken in generalizing from their responses.

To summarize, the survey mail-out and responses were as follows:

Respondents	Mailed out	Response	Response Rate
Educators	145	68	46.9%
C.A.'s	185	74	40.0%
C.A. students	125	34	27.2%
C.G.A.'s & R.I.A.'s	41	17	41.5%
Total:	496	193	38.9%

In the analyses which follow, these four groups are discussed separately for comparison and evaluation.

What the Respondents Said

The following analyses are broken down into two sections. In the first section, the respondents' agreement-disagreement with the professional faculty issues covered under the four categories is examined. In the second section, the respondents' assessment of the importance of the issues is discussed.

Section I: Agreement with Issues

(1) Autonomy

In discussions favoring the establishment of professional faculties of accounting, autonomy over the accounting program is often cited as a key reason for the move. The first section of the questionnaire presented statements about autonomy (over accounting curriculum, admissions and staffing). The results were analyzed and are discussed both as a percentage distribution of the number of respondents in each of the agree-disagree classes, and as the average score for all responses, using the 5 to 1 scale explained above. Using the chi-square test[1], the distributions of scores of the groups were tested and the differences were found to be insignificant. (That is, the average scores for the groups were essentially the same as simple inspection seemed to indicate). The average score of close to four indicates general agreement with the statements that a professional faculty will provide for more autonomy.

1 Because of small cell sizes, two concessions were made in the chi-square testing: (1) the C.G.A.'s and R.I.A.'s were not included in the test, and (2) the two extremes of the scale were merged with their adjoining classes, so that the scale tested was "agree", "undecided", "disagree".

(2) Identity

A unique identity for accounting as an academic discipline is often cited as the main advantage of a professional faculty. Identification with a faculty (as in Law, Medicine, Engineering, etc.) is said by proponents to engender advantages to the education and research processes, and to the faculty and the students. Certainly this identity factor was often mentioned in the 1977 B.C. interviews discussed above. The second section of the questionnaire listed five factors related to identity and, respondents tended to be undecided to slightly positive about the statements. Again, the differences between the the groups were not statistically significant. Respondents had some troubles answering this section of the questionnaire. The first statement (2a) was difficult to answer unless the respondent believed that accounting as an academic discipline was declining. The second statement (2b) probably had little meaning to non-educators and (like 2a) was difficult to answer unless the respondent agreed with the statement. The scores are presented for completeness, but I believe that the results for 2a and 2b were relatively meaningless. Also, comments made on some questionnaires indicated that, by part 2 of the form, some educator-respondents were becoming upset at an apparent bias in the statements (favoring professional faculties). These comments will be discussed below.

(3) Relationships with practitioners

It has often been said that closer relationships between practitioners and academics should be established (for example, see Adams [1] and Rosen [8]). A potential route to these closer relationships could be the establishment of professional faculties of accounting. The third section of the questionnaire contained two statements on the relationships between practitioners and academics and one on the impact of professional faculties on student attitudes. The results were analyzed as above and, for this section, the differences between the groups is statistically significant (at the .05 level). The average scores indicate that the educators agree that a faculty of accounting would improve practitioner-educator relationships and student attitudes. The C.A.'s and students also tend to agree, but significantly less strongly. The answers to the third statement (3c) are probably not useful because the statement is so poorly worded.

(4) Deterring Factors

The last section of the questionnaire contained three statements which have been identified as deterrents to the establishment of professional faculties at universities. The results, are discussed below but are subject to an important qualification. The questionnaire sent to the educators contained an error in that "determining" was used in place of "deterring". It is unclear as to how many noticed the error or were mislead by it, but the educators' agreement on all three statements is suspect. The chi-square test indicated that the educators' scores were significantly different (at the .05 level) from the accountants' and students' scores. The educators seemed to believe that the organizational structure of the university would have a deterring effect on the establishment of professional faculties, whereas the

other groups did not believe this was a problem. All four groups tended to agree that financial consequences and the possible decrease in interaction of accounting with other business disciplines were factors which could deter a professional faculty. However, the educators' level of agreement was significantly stronger than the C.A.'s and students' levels.

To summarize this section, the respondents' views of the issues seem to be somewhat favorable towards professional faculties of accounting. On the autonomy issues, the average scores were close to four (i.e., "agree") and, on the identity and relationships issues, the average scores were close to three (i.e., "undecided") but slightly in the "agreement" direction. The respondents (at least, the professionals) on the average tended to be undecided as to whether the three deterring factors were important. In general, all the Canadian scores were very similar to the scores given by the U.S. accounting chairpersons in the Bremser et al study (2).

Section 2: Importance of Issues

The respondents' perception of the importance of a factor is of interest because whether one agrees or disagrees is only relevant if the factor is of importance. The level of importance can be imputed from the five point scale by concluding that, if 3 is "undecided", then an average score below 3 denotes an unimportant item and an average score above 3 denotes an important item. On that basis, only item 4b (effect on the organization structure of the university) was judged to be unimportant by the C.A.'s, students, C.G.A.'s and R.I.A.'s. No items were judged unimportant by the educators. Each group scored several items as "somewhat important" (i.e., an average score of 4 or over). The absolute importance analysis can be carried only so far and the relative importance or priority ranking is more useful for analysis. Analysis was by a ranking of the importance scores for each questionnaire item, with "1" being the most important (i.e., the highest overall score). The items are sequenced in the educators' priority (for the simple reason that the educators were the first group tabulated). Before discussing these rankings, it should be noted that at least the first five items for each group were scored as "quite important" (i.e., average scores of close to 4).

There is a surprising agreement among the four groups on the most important item, "A closer relationship with practitioners". This Canadian result is interesting, because the Bremser, et al U.S. results placed this item low in rank. The second item, "Decreased interaction among disciplines" is ranked as much less important by practitioners and students than by educators. This result is not surprising because only educators would be directly concerned with interdisciplinary interaction. The 4th educator item, "Generous support of practitioners", is ranked as relatively unimportant by practitioners and students. Whether professionals do not appreciate universities' financial needs or whether the educators are engaging in "wishful thinking" is unclear. Wishful thinking perhaps explains why the students ranked "Attracting higher quality faculty" first!

Another interesting difference between professional and educator rankings is found in the eighth item, "Autonomy over curriculum". The educators' lower ranking may be explained by their perception that they

already have considerable autonomy in curriculum matters. The U.S. rankings were similar to the student and professional rankings for this item. The tenth item, "Autonomy over admissions", is ranked relatively low by all four groups. However, in the Bremser et al study, this item was ranked as most important by the U.S. accounting chairpersons. Apparently, the U.S. respondents feel more strongly about screening and admissions than do the Canadian respondents. This result is interesting because some Canadian writers (see Rosen [8]) maintain that poor screening is a serious problem in accounting education.

Respondents' Comments -- Professorial Paranoia?

A number of respondents wrote interesting comments on the questionnaires. Fifteen practitioners commented on the accounting education process, three recommending some form of intermittent work-study system (similar to the Waterloo University model). Nine practitioners commented on the need for a broad, liberal education and generally felt that a professional faculty might move education in the wrong (technical) direction.

Perhaps characteristically, the educators made no comments on the issues but tended to critique the study methodology. Al Rosen (previously referenced) dropped a note to point out that his research indicated that answers would vary according to the respondents' perception of what form the professional school program might take (five-year school, graduate school, etc.). His contention was supported by three academics who claimed that they could not complete the questionnaire unless the specifics of the professional faculty program were explicitly given. At least eight educators did not like the questionnaire format, making uncomplimentary remarks like:

- "I don't think much of your questionnaire!"

- "Can't answer importance because I don't know importance to me. My own view is strongly opposed to creation of prof. schools of accountancy."

Finally, and most interesting, were the expressions of concern that the study questionnaire was biased; expressions which ranged from the reasonable:

- "The designer of this questionnaire seems biased toward professional schools, and I doubt the validity of the results."

- "I have a feeling also that the questionnaire is somewhat 'loaded' towards preference for a professional school of accountancy."

to expressions which seemed almost paranoid in their intensity:

- "I have no interest in participating in a biased survey."

- "This questionnaire is completely biased towards a professional school of accounting. The position of remaining within the Fac. of Bus. is not presented. I simply cannot fill out the questionnaire due to such extreme bias."

These comments should be evaluated in the context that the questionnaire was a direct replication of the U.S. study, published in 1977 and quoted in the letter which accompanied the questionnaire. There is no evidence of such reactions by respondents or readers of the U.S. study and article. Certainly, some of these comments are reinforcement for Bremser et al's previously noted warning that any move to professional faculties of accounting will encounter some institutional resistance.

Summary and Conclusions

The recent surge of interest in the establishment of professional faculties of accounting indicates that the topic is worthy of investigation. The study described here was a "quick and dirty" attempt to gather data by simply replicating a recent U.S. study. Data on attitudes was sought from accounting educators, recently qualified C.A.'s articled C.A. students and some non-C.A. accounting professionals.

Analysis of the survey results indicates a general agreement with statements about autonomy of programs, identity with the profession, and practitioner-educator relationships; statements which are favorable to the establishment of professional faculties of accounting. The levels of agreement about factors which would deter such faculty establishment indicate that the deterring factors are not considered too important. These results are consistent with the 1977 B.C. interviews which indicate that, among C.A.'s there is no widespread resistance to professional faculties of accounting. This study extends the conclusion to cover educators and C.A.students. While there is no widespread resistance, neither is there any compelling demand for professional faculties. Perhaps the relatively low response rate to the survey is indicative of a lack of excitement about the issue.

Analysis of the relative importance of issues reveals considerable diversity among the four groups (educators, C.A.'s, students, non-C.A.'s) surveyed. All groups agreed that "A closer relationship with practitioners" is a most important factor in the professional faculty issue; however, subsequent rankings vary between groups. Educators ranked as the second most important factor, "decreased interaction among disciplines", but for the other groups, this deterring factor is rather low in importance. Practitioners rank "Autonomy over curriculum" as relatively very important, but educators do not.

Comments on the questionnaire are (as usual) indicative of extreme views. Comments by some educators suggest that any move to professional faculties of accounting will meet serious resistance in some quarters of the university establishment. Couple these institutional constraints with the "luke-warm" attitudes of practitioners, and my prognosis as to the likelihood of professional faculties of accounting in Canadian universities would be, "Don't hold your breath!"

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A FRAMEWORK FOR EXAMINING THE RELATIONSHIP BETWEEN ACCOUNTING INFORMATION AND HUMAN BEHAVIOR

by Professor V. Bruce Irvine

The past decade may be characterized as one in which accountants have become increasingly interested in the usefulness of behavioral sciences concepts as a mechanism for addressing many important accounting issues. The growing concern by accountants over the impact of their information on the behavior of users has served as a primary impetus in the search for theories and research that will help to better understand, describe and predict the consequences of our measurement, identification and reporting activities. Many conceptual and empirical publications have appeared in the accounting literature which utilize behavioral sciences concepts to examine such phenomena as the effect on investment decisions of switching from an historical cost to a current replacement cost base of reporting, the relationship of budget pressure to management behavior, the impact of tax incentives on investment decisions and the consequences of audit committees on the behavior of operating management. From the growing number of behavioral based studies, it is evident that an understanding of relationships between accounting activity and behavior has relevance regardless of whether we are concerned with financial, management, or tax accounting issues.

The purpose of this paper is not to add to the number of empirical studies on the behavioral implications of accounting, rather the intention is to present a conceptual framework drawn from the behavioral sciences that can be of use to accountants in:

(1) understanding the linkage between accounting information and behavior,

(2) assessing the potential impact of accounting information on behavior of users,

(3) deriving a comprehensive basis for assessing and understanding the results and implications of behavioral research in accounting,

(4) formulating research studies on the effect of accounting information on behavior,

(5) understanding why legitimate theories and alternative measurement bases may not quickly find their way into practice, and

(6) improving instructing in accounting.

This will be accomplished by examining the relationship between accounting and behavior, identifying a conceptual framework based on motivation theories and utilizing this framework to assess some particular accounting issues.

THE RELATIONSHIP BETWEEN ACCOUNTING AND BEHAVIOR

The linkage of accounting and behavior may be derived by examining the definition of each.

There is not a consensus among psychologists as to an exact definition of behavior although it is generally concluded that behavior may be broadly defined as ways in which an organism (person) acts to satisfy its own needs and to meet the demands of the environment (Wolman, 1973).

Accounting has been defined as:

> ... the process of identifying, measuring and communicating economic information to permit informed judgements and decisions by users of the information (American Accounting Association,page 1)

Given that behavior is activity of an organism it is clear that decisions would be included as behavior. Within the definition of accounting there are two loci of behavior. First, the accountant makes decisions with regard to what is to be identified, how it is to be measured and what and how it is to be communicated. Second, the user makes decisions as a result of the impact of the information communicated. Indeed, a legitimate interpretation of this definition of accounting would be that its purpose is to influence the behavior of the users. If there were no users of accounting information, there would no longer be any need for accounting.

Having established that behavior is an important aspect of which accountants should be aware, it is reasonable to address the question of what is the process by which accountants and accounting information can influence behavior. An answer may be found by considering some behavioral models.

One such model proposes that behavior may be explained as being a consequence of stimuli acting on the individual (Skinner). A basic representation of this behavioralist approach is given below:

Stimulus ⟶ Response (Behavior).

Consequently, accounting information would serve as a stimulus and would be expected to elicit behavior of some sort. For example, we may wish to investigate whether a change from historical cost to current replacement cost accounting would influence the decisions (behavior) of investors. We may then provide one group of investors with historical cost information on two or more companies and another group of investors with current replacement cost data on the same companies and see if their investment decisions differed. If a difference existed, we may conclude that the accountant's decision of which measurement base to use can influence the behavior of the user of the information. Seldom, however, would the results be clear cut as it is likely that different individuals in different groups would make different decisions. To explain this possible result, it is desirable to consider an alternative behavioral model which is referred to as the social learning theory approach (Bandura).

A crude representation of this alternative model is:

Stimulus (Accounting Information) ⟶ Organism (Person) ⟶ Response (Behavior)

The addition of the organism indicates that there is a cognitive process within an individual which mediates any relationship between a stimulus and response. There are many factors affecting the cognitive process (other environmental and social stimuli, self controls, personality, cultural background, experience, etc.) which will affect the individual's perception of the accounting stimulus (whether pays any attention to it or not) and its influence on his or her behavior.

It is the writer's opinion that this latter model has greater applicability to examining the relationship between accounting and behavior. This, however, creates the need for a far more complex approach to analysing the impact of accounting information on behavior. Specifically, it means that one must consider other stimuli in an individual's environment and have some ideas about the cognitive process by which individuals put all of these things together when deciding what to do. Motivation theories provide some insights into the nature of this cognitive process and can be used fruitfully to assess the behavioral aspects of accounting activities.

MOTIVATION

Motivation has been defined as:

> ... an inner state that energizes, activites, or moves ... directs or channels behavior toward goals. In short, a motive results in and hence can be inferred from purposive means- end behavior (Berelson and Steiner, page 240).

Motivation, therefore, refers to a process that is internal to the individual.

The consequence of motivation is the individual's behavior.

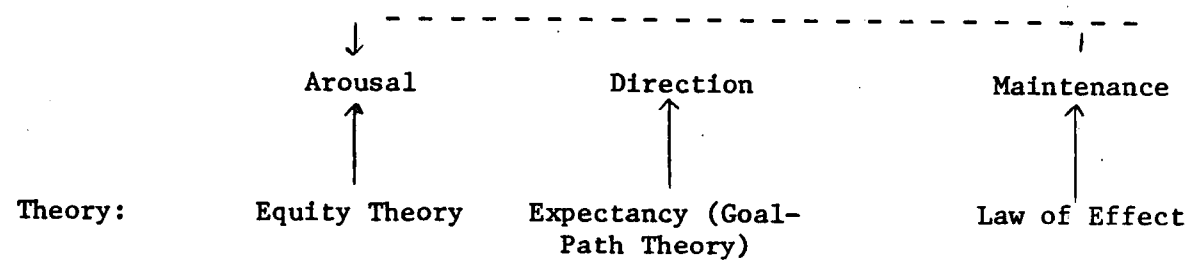
Many theories exist which deal with various aspects of motivation (meaning that no one theory adequately covers all aspects of motivation. Campbell et al. have classified these theories into two types; content and process. Content theories examine what it is within the individual or his environment that energizes and maintains behavior. As such they concentrate on specifying variables (needs, rewards) or importance to motivation rather than describing interactions among these variables. Examples of content theories are needs theory (Murray; McClelland and Atkinson), the human needs hierarchy(Maslow) and two-factor theory (Herzberg). Process theories attempt to explain and describe the process (ways in which variables interact) of how behavior is energized, directed and sustained or eliminated. Examples would be drive x habit theory (Hull), equity theory (Adams), expectancy (or goal-path) theory (Vroom; house) and the law of effect (Thorndike).

In understanding motivation as it relates to accounting stimuli, it is necessary for accountants to be aware of the importance variables (content aspects) being dealt with and the process by which these variables may influence behavior. It is probable that accountants have a fairly good understanding of content aspects but to be less familiar with the process theories. Therefore, it will be useful to examine this latter group and determine their usefulness in assessing accounting and accountants' activity.

Motivation has to do with three aspects of behavior: arousal or energizing, direction and maintenance (Campbell et al., page 340). Arousal occurs when there is a discrepancy between a condition an individual perceives to exist and one that should or could exist. This discrepancy creates tension and the individual is motivated to reduce the tension. For example, a supervisor may believe he is performing his job adequately but accounting measures of performance suggest otherwise thereby creating a state of anxiety. Given this state of arousal, the individual then chooses from alternative courses of action perceived as being capable of reducing the tension. As a result of this choice, behavior is directed. In the example, the supervisor may identify such alternatives as working harder, ignoring the performance report or quitting. After assessing these, his behavior would be directed by the choice made. Whether the behavior chosen will increase, remain stable or decrease over time is related to the maintenance aspect of motivation. Quite obviously, the arousal, direction and maintenance stages are sequential. For example, one cannot choose a course of action if there is no arousal to do so.

The process theories are of use because they suggest the cognitive process that an individual goes through with respect to these three aspects. Although most of these theories have something to say about all three aspects, each can be associated primarily with one aspect as depicted below:

Motivational Aspects of Behavior



In addition to the sequential relationship among the three aspects, the broken line indicates that the process is repetitive in that future behavior is influenced by what has happened in the past.

Equity Theory

A primary contribution of equity (or inequity) theory is that it specifies a general framework to help explain and understand those situations which create tension within an individual. As such, its basic contribution lies in the area of arousal. The theory states that arousal occurs when an individual perceives a discrepancy between a condition that should or could exist and the condition that is perceived to exist. Specifically, an individual conceptually constructs a ratio of perceived outcomes to perceived inputs regarding a state or situation. This ratio is compared to a similarly constructed ratio of outcomes to inputs based on what the individual perceives should or could exist. This later "comparison" ratio is established by assessing some "relevant other" person, from past experience, or by some self-belief or suggestions of others as to what should be. If the existing ratio is not in equilibrium with this comparison ratio, tension or anxiety exists and the individual is motivated (aroused) to do something to reduce the tension. The theory goes on to suggest the choice of behavior will be based on an assessment of which alternative behaviors will most likely reestablish a state of equilibrium. The process of assessment (direction aspect of motivation) is, however, not explained.

The implication of this theory is that for arousal to occur, it is necessary to have a state of perceived inequity. Accounting information can play a role in creating such a situation. An example is in the area of setting budget goals. A budget establishes managements' statement to an individual as to their expectations. A tight budget (compared to last year's actual performance for example) will create disequilibrium within the individual (to maintain last year's outcome/input ratio the individual will have to increase inputs in order to gain equilibrium given the new standard for outcomes). If, however, the new budget is perceived as being too tight, the individual may not accept it (ie, can change his basis for constructing the comparison ratio from one of accepting managements' standards to one of ignoring them). If the budget is too loose, it may not result in any behavioral modification because it does not create a state of inequity. Consequently, in setting a budget, care must be exercised to provide an acceptable level of challenge (compared to too

much or too little) if a desirable modification of behavior is to occur. The results of Stedry's classic study on level and means of setting budget objectives and realtionships to performance may be assessed in terms of the likely arousal impact of the goals on his subjects.

Expectancey (Goal-Path Theory)

Given arousal, expectancy theory offers a model indicating the cognitive process that an individual may go through in selecting a course of behavior from among alternatives. The model indicates the individual will assess alternative courses of action in terms of intrinsic (non-material) and extrinsic rewards and penalties that may result from exhibiting such behavior and accomplishing what was set out to be done. The individual then chooses the course (path) of behavior which offers the greatest perceived return. The model is expressed symbolically as follows:

$$M - IV_b + P_1 \left[IV_a + \sum_{i=1}^{n} (P_{2_i} EV_i)\right]$$

where

M = motivation to behave in a particular way,

IV_b = intinsic valence (worth) associated with the behavior,

IV_a = intrinsic valence associated with accomplishing what set out to do,

EV_a = extrinsic valence associated with accomplishing what set out to do,

P_1 = path instrumentality (individual's probability estimate) that behavior will lead to accomplishing what set out to do, and

P_2 = path instrumentalities that accomplishing what set out to do will result in obtaining extrinsic valences.

Essentially, choice rests on a subjective assessment that an alternative behavior provides the greatest return in terms of intrinsic values associated with attempting and accomplishing a task and the extrinsic rewards of accomplishing the task.

Continuing the example regarding the level of budget tightness, the model may be used to assess a choice of whether to work hard to accomplish a budget or to ignore the budget as an influence on behavior (of course many other levels of budget oriented behavior may be possible). The effect of having a very tight budget would have its greatest impact within the model in terms of the individual's probability estimate that hard work will accomplish the budget (P_1). Consequently, if the alternative behavior of hard work is seen as having a low probability of leading to accomplishing the budget target and the realted intrinsic and extrinsic rewards, there is a greater probability that such a budget will not result in desired budget-directed behavior.

While it is likely that accountants and accounting information can be incorporated within the other variables in the model (accounting

reports that are favorable may affect IV_a and be a basis for first level extrinsic rewards, accountants may congratulate those who accomplish the budget or make punitive comments if not accomplished such as circling unfavorable variances in red), the basic role of accounting would appear to be in terms of influencing the probability parameters. Consequently, awareness of this aspect of accounting in terms of influencing behavior may be very useful in assessing various issues such as degree of participation in budgeting, frequency of reports, levels of aggregation and amount of jargon in reports and the importance of concentrating on controllable items.

Expectancy theory has begun to receive attention in the literature as a means of assessing and understanding a variety of accounting issues (Ronen and Livingstone; Ferris; Rockness).

Law of Effect

Given that a behavior has occurred, the maintenance aspect of motivation deals with what can be done to promote its continuance if it is desirable or stop it if it is undesirable. The law of effect states that when desired behavior is reinforced (rewarded), such behavior will recur when an individual is faced with a similar set of circumstances and when behavior is not as desired it can be reduced or eliminated if it is not rewarded or is penalized. Such rewards and punishments may be of the intrinsic or extrinsic variety.

Within the budgeting example, management is primarily responsible for the assignment of rewards or penalties (although some intrinsic rewards or penalties may be associated directly with accountants and accounting information as suggested previously). However, accounting based information such as variances, profit, and return on investment are often important variables in these management decisions. Under such situations, it is clear that such measurements must realistically reflect the consequence of desirable and undesirable behavior so that the reward system is congruent with organizational objectives. Unfortunately, several limitations exist that prevent accounting measures from accomplishing this in a completely satisfactory manner (particularly identification and measurement problems).

DISCUSSION AND SOME OTHER ACCOUNTING RELATED EXAMPLES

The author fully appreciates that attempting to reduce a complex issue (linking accounting to behavior) to a general framework is somewhat unrealistic. Particularly, when one attempts to utilize such a framework in a specific situation, the conversion often results in a number of loose ends. However, by having a framework it provides a way of thinking about problems that may not have previously existed. As such, it may lead to identifying alternatives and solutions that may not have previously been considered or at least lead to asking the right kind of questions and related follow-up research.

The framework presented suggests the following approach to considering behavioral aspects of accounting:

(1) recognize the behavior that accounting information is to influence,

(2) assess the alternative means of identification, measurement and communication available in terms of their effect on arousal, direction and maintenance aspects of motivation, and

(3) by such an assessment, determine where and how accounting activity should be concentrated so that the desired influence on behavior is accomplished (for example, if arousal has occurred but the desired behavior has not resulted, then perhaps the influence of the information on the direction aspect of motivation is unsatsifactory and needs to be changed).

The usefulness of this approach may be shown by examining a decision regarding establishing the level of tightness of next year's budget. Suppose that it is decided that management wants to increase the work effort of employees. It is considering the options of (1) a very tight budget (expected to be reached only by 10 percent of the employees), (2) a more "realistic" budget (50 percent success rate), (3) a "loose" budget (90 percent success rate), and (4) a dual budget system in which communicated goals are "tight" but actual performance will be evaluated on more "realistic" standards. Within the framework established the following analysis would be appropriate:

Impact on Motivation

Alternative:	Arousal	Direction	Maintenance	Conclusion
Tight	High	Low - fewer will accept	Low - fes get rewards, but rewards could be high	Risky, works only fof few
Realistic	Medium	High	Medium - half get but amount for each is lower	Most desirable to accomplish behavioral objective
Loose	Low	Low in terms of increasing effort	High - many rewarded but low in amount. Not rewarding increased effort however	Not likely to be effective

Dual Budgets	Same as tight	Same as tight	Same as realistic	Risky like tight. Dangerous if find out two budgets. Not understood

This analysis indicates that the effect of a decision should include examining all pertinent aspects of motivation when considering behavioral consequences.

The framework may also be useful to assess the state of the art regarding other types of accounting issues. Current replacement cost (CRC) accounting has received much attention in the literature. The mechanical and theoretical problems associated with such a reporting base have been adequately addressed. The belief by many academicians is that such a system could lead to better decisions (behavior) by potential users. However, seldom do we see CRC being presented in traditional financial statements. The answer as to why this is so may be that an arousal state has not occurred in terms of management and/or investors. Recent and considerable inflation has served somewhat of a role in creating such arousal. If the Canadian government allowed CRC for determining taxable income, there is little doubt that sufficient arousal would occur and we would see many CRC based financial statements.

Social responsibility accounting is emerging as a significant accounting issue. Management has probably experienced arousal in that business has received considerable criticism in terms of lack of social responsibility when, in fact, management may believe they are doing their part. Consequently, the possibility of providing information on financial statements reflecting this responsibility is being pursued with some vigor. How to do it is as yet undetermined although considerable alternative directions are being investigated. Whether such activity will continue will depend on the payoff received for engaging in such activity (a maintenance issue), a phenomena that may not be able to be assessed for some time.

A final example of usefulness of the framework may be in terms of teaching accounting students. Although we like to think that our students are strongly motivated to learn accounting, our classroom experiences and exam results might suggest otherwise. The framework suggests that we may be able to do some things to alleviate the situation. Perhaps, for some topics of fundamental importance, we could introduce the lecture with the phrase: "This material is important and has a high probability of appearing on an exam." No doubt this would serve to arouse and direct students to be entirely familiar with the subject matter. For students to accept our attempt at arousing and directing them, we must put such questions on exams from time to time so that desirable student behavior is justly rewarded. Also, examples from past exams would be an effective mechanism to show we mean business.

CONCLUSION

This paper has proposed that a major objective of accounting information is to influence the behavior of users. The nature of the relationships between accounting stimuli and behavior were illustrated. Accepting the more complex social learning theory approach to behavior, it was argued that it would be useful for accountants to have some knowledge of motivation theories to describe, understand and predict the consequences of various identification, measurement and communication decisions on behavior. A general framework believed to have usefulness was then derived based on interpretation of some process theories of motivation. Illustrations of the framework providing a way of thinking about some accounting related issues were given. These illustrations were fairly simplified and were by no means all-inclusive as the framework has application whenever there is consideration of the influence of accounting and accountants on behavior.

In addition to being knowledgeable in the technical facets of accounting, the accountant must be cognizant of the behavioral ramifications which emanate from the policies, procedures, activities, events and interactions with which he or she deals and is involved. Perhaps this paper may arouse some additonal interest in the area, provide some direction as to how accounting issues with which you are concerned may be examined in a behavioral framework and yield both intrinsic and extrinsic payoffs to the accounting disciplines.

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AN INTERACTIVE TOOL FOR TEACHING MANAGERIAL ACCOUNTING

Introduction

Modern managerial accounting texts such as those of Bierman[1], Horngren[4], and Shillinglaw[6] make use of a wide variety of mathematical techniques. Linear Programming, Critical Path, decision trees, payoff tables, simultaneous equations, and multiple regression are commonly used as analytical techniques. In addition, financial calculations such as discounted cash flows, internal rate of return, and various methods of depreciation are needed.

A computer is needed to implement these techniques for any but the most trivial of problems. Since suitable computer packages are usually unavailable, students are commonly assigned trivial problems which make manual solution possible, but provide very little understanding of the practical problems of implementing these techniques. Graphically, solving a simple linear programming problem with two or three constraints does not really illustrate the practical problems of identifying the correct constraints and parameters and interpreting the results of a complex analysis to determine the accounting implications of the results. Similarly, a problem based on a simple linear regression may illustrate the calculations, but does not let the student grapple with the more realistic problem of selecting one or more predictor variables from a set of variables which are available in a database.

It is not completely fair to say that computer packages for these operations are unavailable, since there are many statistical analysis packages available on the market and attempts have been made to collect sets of other programs suitable for student use[2,3,5]. The problem is not so much that programs are unavailable, but that they are inaccessible. The available programs have usually been developed in different places, often on different computers and in different programming languages. For each one there is a startup cost that may include learning how to access the program, how to enter the data, and how to modify the data to investigate the effect of changed assumptions. If the programs come from different sources, these rules may be very inconsistent and therefore take a long time to learn.

Computerized packages for solving managerial accounting problems could be very useful in the classroom, but they must not require an inordinate amount of time to learn how to use them, or they will unduly reduce the time available for learning the accounting applications which are the main purpose of the class.

Computer Software

The TREE (Toronto Research and Education Environment) System has been designed to make a wide variety of computing capabilities easily available to business students. The system is a set of integrated conversational modules implemented in the APL language. The user is prompted for commands and data which are immediately checked for legality. If an error has been made, the user is immediately reprompted for the correct input. If the user does not know what to enter, several levels of on-line help are available. The rules for entering data and commands are the same throughout the whole system. Datafiles can be provided by the instructor and entered problems can be saved for future use. They can also be modified to correct input errors or perform a sensitivity analysis.

The TREE system contains a comprehensive statistical modelling module and a collection of modules to solve problems in linear programming, critical path, decision trees, payoff tables, simultaneous equations, and transportation or assignment problems. Each module has commands for entering a problem, changing the problem specification, printing the problem specification, saving it on a file, getting it from a file, and solving the problem.

The statistical modeling module is designed to perform a wide variety of operations on a table or spreadsheet of numeric data. The usual operations and tests found in an introductory statistics course have been augmented with forecasting, financial, and accounting techniques. The module that performs regressions and hypothesis tests is also able to compute present and future values; straight line, sum of years digits and diminishing balance depreciation; payback period and internal rate of return; accounting consolidations and variance reports; and breakeven charts. These commands can be chained together by the user to produce financial planning models or accounting models and reports.

The scope of the system makes it possible to minimize the amount of relearning by using the same system in statistics, finance, and management science courses. On the other hand, the modular nature of the system makes it possible to quickly learn how to use selected components in a single class. Students who had not previously seen the system have been able to logon, get a file of data, manipulate the data, use regression for forecasting, and print an accounting variance report within the first 2 to 3 hours of use.

Case Material

It is just as important to coordinate the case material in a course as it is to coordinate the computer support facilities. A coordinated group of cases set in the same organizational framework helps the student in two ways. First, it reduces the amount of preparation needed to understand the case since previous preparations provide some of the necessary environmental knowledge. Second, such a structure implicitly illustrates the fact that a single organization can profitably use many of the techniques being studied. Thus the tools are less likely to be considered as exotic methods of rare applicability.

A sequence of cases has been developed to illustrate problems in budget forecasting, variance analysis, revenue maximization using linear programming and scheduling using critical path. Further cases are being developed to illustrate the use of payoff tables in setting maintenance policy and the use of simultaneous equations in overhead allocation. The cases occur in a department which is responsible for providing storage and office space for a large organization performing functions which are primarily clerical. The situation is typical of governments, financial institutions and many retail operations.

The forecasting and variance analysis cases use a database consisting of 4 tables, one for each of actual cost, actual space, budget cost, and budget space. Each table contains 15 years of annual data for 26 variables. Six variables can be used as potential predictor variables, twelve contain disaggregated data, and eight contain data aggregated into four types of need and three sources of supply as well as a grand total. Old data is unavailable for some variables to reflect improvements in data gathering as the organization progressed through stages emphasizing space records, cost records, aggregate budgets and detail budgets. Detail budgets are available for only the last four years.

Functions are provided to allow easy transformation of portions of the datafile. New datafiles containing actual minus budget, actual as percent of budget, cost per square foot, detail as a proportion of total, and many others can be easily created. These transformations make it easy to experiment with alternate ways of comparing actual deviations from budget which is the basis of one of the assignments. They can also be used for aggregating divisional datafiles to produce corporate reports.

A wide variety of mathematical transformations are available for manipulating single variables and performing financial evaluations such as depreciation, present value, and rate of return. These can be coupled with smoothing operations, seasonal analysis, plots, regressions, and other statistical tools to provide a variety of forecasting techniques. Thus, by using the power of the computer, the student can explore a variety of alternate formulations and techniques in the time normally required to perform a single analysis by hand. Furthermore, more complex problems can be assigned so that the student is elevated to considering the merits of alternate strategies of analysis rather than struggling with the mechanics of a single analysis. The cases have been designed to include a variety of qualitative considerations to illustrate the limitations of the quantitative techniques.

The linear programming case is also designed to illustrate both formulation problems and analysis problems. The problem is one of allocating space among a variety of users. Different types of space have different efficiencies in different applications. The objective is to minimize costs and maximize revenues under about 12 constraints in an environment where users can choose to lease outside space if it is cheaper. The full costs are the same as those used in the previous forecasting case, but variable cost data are also provided. If full costs are used, the optimal solution is to lease some space while leaving owned space idle. Thus, it is necessary to use a goal programming

framework to determine a set of prices which will use all owned space while charging the maximum that the market will bear. The computer module for solving linear programming problems makes this reformulation relatively easy.

The critical path problem is one of scheduling the development of an information system for managing the space inventory. It must be completed by the fiscal year end so that data will be complete for the new year. Since the estimated times have probability distributions, the student must make some tradeoffs between extra costs to complete early, and the extra risk of an over-run.

The software used in this system has been implemented using APL*PLUS from I.P. Sharp Ass. It would require some conversion for other dialects, but care has been taken to minimize incompatibilities. Interested readers should contact the author about installation on their system.

A sample session on the computer is included in Appendix A. User input has been underlined to distinguish it from computer output. Entries following)NOTE are explanatory comments and are not used by the computer. On-line helps are available for new users, but have not been used.)END is used to move back up the hierarchical tree of commands.

Acknowledgement

Part of this work was supported by a University of Toronto Educational Development Grant.

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4. Horngren, Charles T., Cost Accounting: A Managerial Emphasis, Fourth Edition, Prentice-Hall, 1977.

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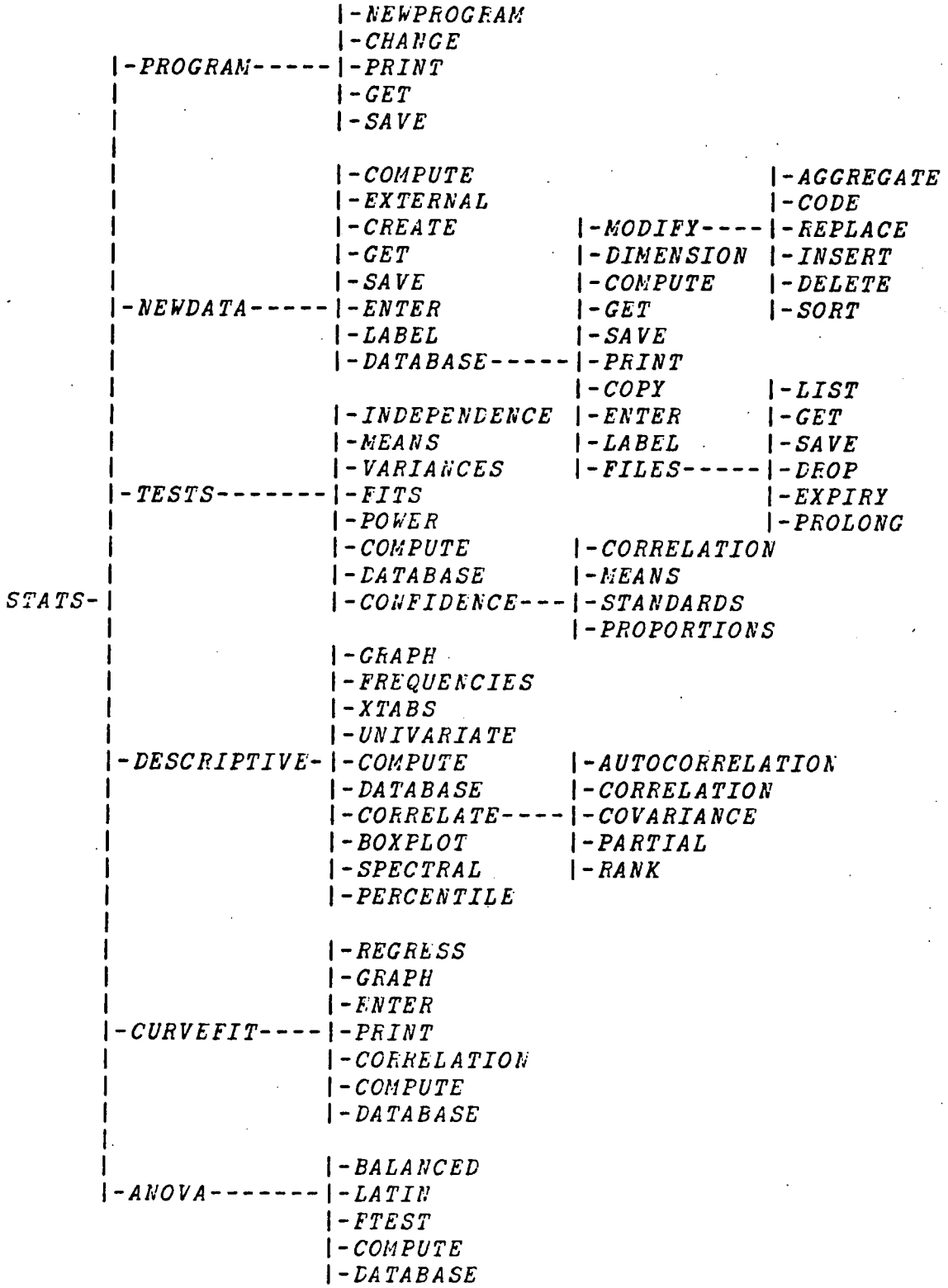
STATS COMMAND:)HELP TREE /)NOTE DIAGRAM OF AVAILABLE COMMANDS

TREE (TREE DIAGRAM OF STATS MODULE):

DATABASE SUBCOMMANDS ARE ALWAYS THE SAME BUT SHOWN ONLY ONCE.
GET, SAVE, AND PRINT IN PROGRAM ARE NOT THE SAME AS ELSEWHERE.



```
*STATS COMMAND: CURVEFIT   /)NOTE THIS GIVES ACCESS TO OTHER COMMANDS
*CURVEFIT COMMAND: DATA
*DATABASE COMMAND: GET
*FILE, PASSNO, ACCOUNT: 2 0 57114
RETRIEVED FILE 2: ASIS BUDGET SPACE IN MILLION SQ FT
*DATABASE COMMAND: )HELP COPY  /)NOTE TYPICAL ON-LINE DOCUMENTATION
COPY     (COPY AND MANIPULATE SELECTED VALUES FROM A FILE):
 THIS COMMAND IS USED TO GET SELECTED CASES AND VARIABLES FROM A SOURCE
 AND COPY THEM INTO THE CURRENT DATAFILE REFERRED TO AS THE TARGET.  THE
 SUBMATRIX FROM THE SOURCE MUST HAVE THE SAME NUMBER OF CASES AND
 VARIABLES AS THE TARGET SUBMATRIX BUT THE ORDER DOES NOT HAVE TO BE
 THE SAME. THUS THE DATA CAN BE REARRANGED OR DUPLICATED. SOURCE AND
 TARGET MATRICES DO NOT HAVE TO BE CONFORMABLE.
 EXAMPLE: TO COPY VARIABLE 1 INTO VARIABLE 5 AND DUPLICATE VARIABLE 2
 INTO VARIABLES 2 AND 3, SPECIFY SOURCE VARIABLES 1 2 2 AND TARGET 5 2 3
 THE SAME RULES APPLY TO CASES.
 ARITHMETIC OPERATIONS CAN BE PERFORMED DURING REPLACEMENT.
 ADD IS USED FOR ACCOUNTING CONSOLIDATIONS. SUBTRACT, DIVIDE, AND LOGIC
 COMPARISONS CAN BE USED TO PREPARE ACCOUNTING VARIANCE AND EXCEPTION
 REPORTS. THE OPERATION IS INSERTED BETWEEN THE TARGET AND THE SOURCE.
 THUS SUBTRACT PERFORMS (TARGET-SOURCE) FOR EACH CORRESPONDING PAIR.
 MISSING VALUE CODES ARE INSERTED IF EITHER SOURCE OR TARGET DATA ARE
 MISSING.

*DATABASE COMMAND: COPY
*SOURCE FILE: 1 0 57114 /)NOTE WE WILL COMPUTE BUDGET MINUS ACTUAL
ACCESSED FILE 1: ASIS ACTUAL SPACE IN MILLION SQ FT
*SOURCE CASE(S): ALL   /)NOTE ABBREVIATION
*SOURCE VARIABLE(S): 7→26   /)NOTE ABBREVIATION FOR 7 TO 26
*TARGET CASE(S): ALL
*TARGET VARIABLE(S): 7→26
:*OPERATION: SUBTRACT
145 MISSING VALUES INSERTED
*DATABASE COMMAND: PRINT
:*CASES OR VARIABLES IN COLUMNS? V   /)NOTE ANSWER MAY BE TRUNCATED
:*CASE NUMBER(S): 10→16
:*VARIABLE NUMBER(S): 6→9
:TITLE FOR TABLE: SAMPLE LISTING
:*DECIMAL PLACES:    /)NOTE A DEFAULT OF 2 IS AUTOMATICALLY INSERTED
```

SAMPLE LISTING

VARIABLE/	6	7	8	9
CASE	SPACE INDEX	TOTAL	DELUXE	OFFICE
10 1972	4.08	¯0.14	0.16	¯0.12
11 1973	4.43	¯0.11	0.14	0.01
12 1974	4.78	0.23	0.16	¯0.26
13 1975	5.20	¯0.15	0.17	¯0.15
14 1976	5.68	0.23	0.22	¯0.07
15 1977	5.83	0.10	0.22	¯0.11
16F1978	5.93************	************	************	************

```
*DATABASE COMMAND: )NOTE CASE 16 IS USED FOR FORECASTS
*DATABASE COMMAND: )NOTE ************ STANDS FOR MISSING DATA
```

```
*DATABASE COMMAND: )END    /)NOTE THIS MOVES BACK UP THE HIERARCHY
*CURVEFIT COMMAND: )END    /)NOTE WE WANT TO FIND T-TEST ON MEANS
*STATS COMMAND: TEST
*TEST COMMAND: MEANS       /)NOTE PERFORMS T OR F TEST AS NEEDED
VARIABLE(S): 8             /)NOTE THIS MEANS VARIABLE 8
:THEORETICAL MEAN: 0       /)NOTE NEEDED SINCE WE GAVE ONLY 1 VARIABLE
CASES EXCLUDED BY MISSING DATA: 1  2
FORECAST CASES EXCLUDED

 VARIABLE        COUNT       MEAN       VARIANCE  STD DEVIATION
 8 DELUXE         13        0.107        0.006        0.076
T(  12)            =        5.054
SIGNIFICANCE       =        0.000
*TEST COMMAND: )NOTE MEAN IS SIGNIFICANTLY DIFFERENT FROM ZERO
*TEST COMMAND: )END
*STATS COMMAND: DESCRIPTIVE
*DESCRIPTIVE COMMAND: )    /)NOTE ) GIVES A LIST OF LEGAL COMMANDS

 ENTER 1 OF THE FOLLOWING:
 UNIVARIATES GRAPHS FREQUENCY XTABS CORRELATES BOXPLOTS SPECTRAL
 PERCENTILES COMPUTE DATABASE
 ) )HELP )END )NOTE )TREE )OFF )DO
 HELP AVAILABLE FOR ABOVE

*DESCRIPTIVE COMMAND: GRAPH
:*X-AXIS VARIABLE(0 FOR CASE NO.): 0
*Y-AXIS VARIABLE(S): 8
:*PRINT SPACES ON X-AXIS: 40
:*PRINT LINES  ON Y-AXIS: 20

VARIABLE LABEL     SYMBOL
    8  DELUXE         *
CASES EXCLUDED BY MISSING DATA: 1  2  16  17  18

     0.3I
        I
        I
        I
        I                                  * *
     0.2I
        I                              *
        I                        *     *
        I                           *
        I
        I
     0.1I                  *
        I
        I                     *
        I          * * * *
        I
     0.0I     I*    I     I     I     I     I
        0          5          10         15
 DESCRIPTIVE COMMAND: )END
*STATS COMMAND: )END
```

```
*TREE COMMAND: )HELP MATH    /)NOTE TO SHOW WHAT IS AVAILABLE
MATHMODELS(MODULE FOR SOLVING MANAGEMENT SCIENCE MODELS):
 THIS COMMAND PROVIDES ACCESS TO SEVERAL  SELF-CONTAINED  MODULES.  EACH
 MODULE REQUIRES A DIFFERENT TYPE OF DATAFILE AND CONTAINS  COMMANDS  TO
 ENTER A 'NEWPROBLEM', 'PRINT' IT, 'CHANGE' IT,  'GET'  IT,  'SAVE'  IT,
 AND 'RUN' IT. 'NEWPROBLEM', 'PRINT' AND 'CHANGE' HAVE  THE  SAME  RULES
 FOR MANY OF THE MODULES. THE FOLLOWING MODULES ARE AVAILABLE:
 MODULE        PROBLEM TYPE
 ------        ------------
 DECIDE        DECISION TREE WITH EXPECTED VALUES AND ANNUITIES.
 LP            LINEAR PROGRAMMING WITH SENSITIVITY ANALYSIS.
 NETWORKS      NODE ORIENTED CRITICAL PATH.
               SPANNING TREES.
               MAXIMUM FLOW PROBLEM.
               SHORTEST PATH.
 PERTCPM       ACTIVITY ORIENTED CRITICAL PATH WITH 3 TIMES AND CRASHING.
 QUEUE         GENERALIZED QUEUING SIMULATION.
 SIMULTANEOUS  SOLVE SIMULTANEOUS LINEAR EQUATIONS.
               STEPWISE HIERARCHICAL OVERHEAD ALLOCATION.
 TRANSPORT     ASSIGNMENT PROBLEM.
               CAPACITATED TRANSPORT PROBLEM.
               UNCAPACITATED TRANSPORT PROBLEM.

*TREE COMMAND: MATH
*MATHMODELS COMMAND: LP

-> LINEAR PROGRAMMING MODULE <-

*LP COMMAND: GET    /)NOTE THIS IS THE PROBLEM DESCRIBED IN THE PAPER
*FILE, PASSNO, ACCOUNT: 5 0 57114 /)NOTE PROBLEM WAS STORED PREVIOUSLY
RETRIEVED FILE 5: ASIS LP PROBLEM
*LP COMMAND: PRINT
:*LINE NUMBERS: ALL
 [1] MIN
OBJECTIVE:
 [2] 5.1PUU+5.1PUO+5.67POU+5.67POO+6.20PDD+5.98PFU+5.98PFO+5.98PFD+6.77T
       UU+6.77TUO+7.36TOU+7.36TOO+5.20LUU+5.20LUO+6.12LOU+6.12LOO+6.53LDD
       +7.10LFU+7.10LFO+7.10LFD
SUBJECT TO:
 [3] UTILITY:.95LFU+.95PFU+PUU+LUU+.8POU+.8TOU+.8LOU≥20
 [4] OFFICE:POO+TOO+LOO+.95PFO+.95LFO+.7PUO+.7TUO+.7LUO≥12
 [5] DELUXE:PDD+LDD+.9PFD+.9LFD≥5
 [6] PU:PUU+PUO≤12
 [7] PO:POO+POU≤8
 [8] PD:PDD≤4
 [9] PF:PFU+PFO+PFD≤3
 [10] TU:TUU+TUO≤3
 [11] TO:TOO+TOU≤5
```

```
*LP COMMAND: RUN
UNIQUE SOLUTION
BASIC FEASIBLE SOLUTION OPTIMAL
OPTIMAL VALUE OF OBJECTIVE FUNCTION        = 203.97

VARIABLE        VALUE       FROM LINE
PUU             1.2000E1
POO             8.0000E0
PDD             4.0000E0
LUU             8.0000E0
LOO             4.0000E0
LDD             1.0000E0
SLACK  9        3.0000E0          9
SLACK  10       3.0000E0         10
SLACK  11       5.0000E0         11
:*PRINT CONSTRAINT SENSITIVITY? YES

CONSTRAINT  SHADOW      LOWER         CURRENT      UPPER
            PRICES      BOUND         BOUND        BOUND

3 UTILIT    5.2000E0    -7.2370E75    2.0000E1     2.8000E1
4 OFFICE    6.1200E0    -7.2370E75    1.2000E1     1.6000E1
5 DELUXE    6.5300E0    -7.2370E75    5.0000E0     6.0000E0
6 PU        1.0000E-1    0.0000E0     1.2000E1     2.0000E1
7 PO        4.5000E-1    0.0000E0     8.0000E0     1.2000E1
8 PD        3.3000E-1    0.0000E0     4.0000E0     5.0000E0
9 PF        0.0000E0     0.0000E0     3.0000E0     7.2370E75
10TU        0.0000E0     0.0000E0     3.0000E0     7.2370E75
11TO        0.0000E0     0.0000E0     5.0000E0     7.2370E75
:*PRINT PRICE SENSITIVITY? YES

PRICES                   LOWER         CURRENT      UPPER
                         BOUND         PRICE        BOUND

PUU                     -7.2370E75     5.1000E0     5.2000E0
PUO                      4.1840E0      5.1000E0     7.2370E75
POU                      3.7100E0      5.6700E0     7.2370E75
POO                     -7.2370E75     5.6700E0     6.1200E0
PDD                     -7.2370E75     6.2000E0     6.5300E0
PFU                      4.9400E0      5.9800E0     7.2370E75
PFO                      5.8140E0      5.9800E0     7.2370E75
PFD                      5.8770E0      5.9800E0     7.2370E75
TUU                      1.9984E-15    6.7700E0     7.2370E75
TUO                      4.2840E0      6.7700E0     7.2370E75
TOU                      4.1600E0      7.3600E0     7.2370E75
TOO                      6.1200E0      7.3600E0     7.2370E75
LUU                      5.1000E0      5.2000E0     6.2947E0
LUO                      4.2840E0      5.2000E0     7.2370E75
LOU                      4.1600E0      6.1200E0     7.2370E75
LOO                      5.6700E0      6.1200E0     6.2947E0
LDD                      6.2000E0      6.5300E0     6.6444E0
LFU                      4.9400E0      7.1000E0     7.2370E75
LFO                      5.8140E0      7.1000E0     7.2370E75
LFD                      5.8770E0      7.1000E0     7.2370E75
*LP COMMAND: )OFF
```

ACCOUNTING FOR INDUSTRIAL DISPUTES: ISSUES AND IMPLICATIONS

by Professor M. Nelson,
Professor C. T. Lau

ABSTRACT

The paper addresses some of the issues in accounting for labour disputes and describes the economic models of collective bargaining and the factors to be considered. The managerial accounting considerations are delineated within a pre-strike, during the strike, and post-strike time frame and the type of accounting information used by management and unions in the process of negotiating a settlement is described.

During the past decade, strikes have occurred in the Canadian economy with increasing regularity. The recent economic problems we face and the ongoing removals of wage and price control suggest even more troublesome times to come in labour-management relationships.

Given the significant effect which labour disputes have on our society, it is surprising that we find little or no reference in the accounting literature pertaining to this topic. Since the major contentious issue often centres around economic factors, it is inconceivable that management and labour could reach rational decisions without proper accounting information. This paper will address some of the issues involved in accounting for strikes. Specifically the discussion will include a brief review of the economic theory of labour disputes and a delineation of the managerial accounting considerations.

Economic Theory of Labour Disputes

Most of the research done to date regarding the theory of industrial disputes is found in the economic literature which provides a variety of models. It is sufficient for the purpose of this paper to cite two of the most quoted models, namely that of Hicks (1974) and that of Chamberlain (1954).

Hicks perceives two major forces (as depicted in Figure 1) typical

of all collective bargaining. Strikes are costly to the employer. Some of these costs include lost profits, unavoidable fixed costs, customer dissatisfaction, discontinuity in the firm's labour force, etc. These costs are a function of the duration of the strike. The employer is presumably indifferent between a given wage increase and a strike duration of some length if the present value of their costs are equal. The length of the strike which would equate strike costs with costs associated with a given wage in excess of B (B being a wage below which the employer could not attract or keep his labour force) is traced along a path called the "employer concession curve".

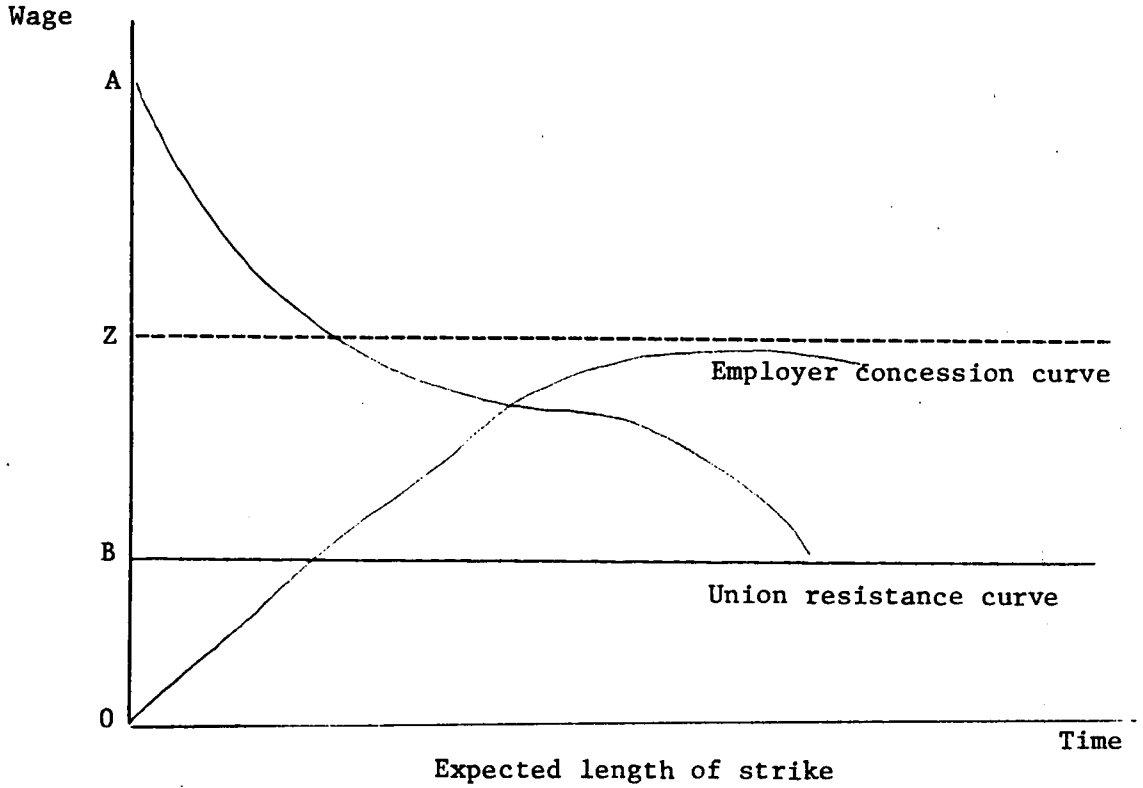
If the union expected that no strike would be required to secure any wage increase, it no doubt would seek the largest wage that is consistent with the employer's ability to pay which is indicated as point A. The union membership suffers possible lower wages if it settles for a wage less than A. On the other hand, the members incur the cost of lost income when they strike, and the longer the strike, the greater the loss of income. This loss reduces the net present value of the benefits derived from the successfully obtained wage A. The union membership would likely find it more beneficial to accept a wage less than A rather than to participate in a strike which is longer than some specified duration. In other words, for each strike of a given duration, there is a wage at which the union is indifferent between the strike and the wage. The path that traces the willingness of the union to strike for a period of time rather than accept a reduction in their wage demand is measured by the "union resistance curve".

The point at which the "union resistance curve" intersects the "employer concession curve" represents the wage which both parties will accept.

It should be pointed out that each curve is a composite of many factors -- economic and non-economic -- although the economic tend to dominate. Moreover, it is acknowledged that a family of both curves is necessary to explain the bargaining process.

Figure 1

Hick's Model of Wage Bargaining



Chamberlain views labour disputes as a conflict between the two parties based on their respective bargaining power. This can be expressed in terms of two ratios as follows:

$$\frac{\text{Bargaining Power of A}}{\text{Bargaining Power of B}} \gtrless \frac{\text{Cost to B of disagreeing on A's terms}}{\text{Cost to B of agreeing on A's terms}} \Big/ \frac{\text{Cost to A of disagreeing on B's terms}}{\text{Cost to A of agreeing on B's terms}}$$

Holding B's bargaining power constant, the higher the cost to B of disagreeing on A's terms, the stronger the bargaining power of A vis a vis B. Conversely, the higher the cost to B of agreeing on A's terms, the weaker the bargaining power of A. The bargaining power of B may be viewed similarly while holding A's bargaining power constant. Conceptually, agreement will be possible when the bargaining powers of A and B are in equilibrium.

Chamberlain includes both economic and non-economic factors in his concept of "cost" although rational behaviour would suggest that economic factors again would dominate.

Factors Affecting Management's and Labour's Decision

As mentioned earlier, both economic and non-economic factors affect the negotiating process. Economic variables deal with the costs and revenue aspects of the dispute. For example, wages, hours, fringe benefits, costs of losing customers and revenue. In general, these economic variables are quantifiable.

Non-economic factors, on the other hand, are more diverse and difficult to quantify. These factors may be included in the following classifications: political, psychological, ethical, climatic, technological. A detailed discussion of these factors is beyond the scope of this paper. An excellent discussion of these may be found in Stagner (1956).

While the non-economic factors are important they are often given a disproportionate weighting in the decision. This is due to the failure of the parties involved to properly identify and analyze the economic factors. Consequently, emotions often assume the guise of economics. The accountant's role, therefore, is to ensure that the economic factors are properly identified and measured so that the negotiators are able to arrive at a good decision based on a proper weighting of economic and non-economic factors.

The accounting considerations will necessarily revolve around the economic factors since they are measurable. By focusing on these topics, we hope that the range of the family of curves perceived by Hicks and the span of the two bargaining powers described by Chamberlain can be narrowed and thereby provide a better basis for arriving at a more rational and speedy resolution of the dispute. The next section will focus on these accounting considerations.

Managerial Accounting Considerations

The Firm's Perspective

The managerial considerations deal with the type of accounting information used by management in making decisions in the process of settling industrial disputes. The factors will consist of historical as well as opportunity costs/benefits and will involve both short and long range forecasting. Forecasting is by nature uncertain and difficult. The feasibility of estimating strike costs is a function of the maturity of the firm's accounting system and is highly situation specific. It is, therefore, not possible to provide a set of accounting standards applicable to all situations. However, it is possible to suggest certain economic factors of which the accountant can be called upon to provide a fairly accurate estimate.

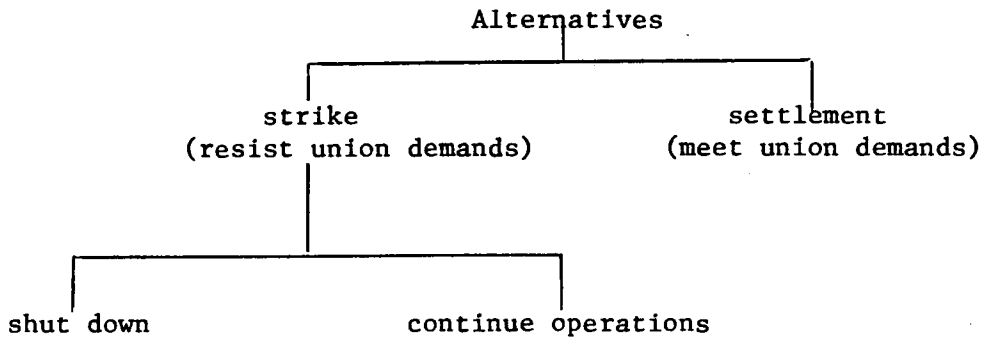
These factors can be placed within a time frame consisting of three

periods -- prestrike, during the strike, and post-settlement.

(1) Prestrike

In the period prior to the strike, management must decide on whether or not to meet the union demands. This decision will largely be based on a cost/benefit analysis of a strike vs. non-strike outcome which will set the bargaining limits for the negotiators.

Management's choices may be depicted by means of the following diagram.



The accountants' function would be to identify and estimate the cost/benefit factors relating to the alternatives.

Settlement -

The most obvious cost under this outcome is the increased wages, which can be easily estimated, to be paid over the term of the contract. Other costs, more difficult to estimate, include

- a compounding effect of the current wage increase beyond the current contract
- increased demands for wages from other unions
- reduced profit margins due to higher wage costs or due to lower sales if selling prices are increased to maintain margins
- a possible effect on the cost of capital of the firm

Benefits of the settlement would include the following:

- maintenance of cash flows and contribution margins
- avoidance of costs such as post-strike start up and loss of markets

Strike - continue operations

The added costs connected with this alternative would include

overtime pay and training costs for non-striking and management personnel used to maintain operations. The company may also incur extra expenses in maintaining shipments of raw materials and protection against possible vandalism. The benefits would include possible lower future labour costs, maintenance of some cash flow, partial contribution to fixed costs, and avoidance of shutting down and starting up costs as well as the avoidance of the wages of the striking labour force.

Strike - plant shut down

The company, in shutting down the plant, would incur the shut down and, eventually, the start up costs. In addition, it could suffer spoilage of work-in-process, penalties for non-performance of contracts, disruption of cash flows, lost contribution margins, and/or demurrage and warehousing costs. Generally, fixed costs would be unavoidable and, therefore, irrelevant. However, those of a make work nature, that is, work assignments designed to provide continuity of employment and not because the task is necessary, should be included as additional strike costs.

The obvious benefit of this outcome would include the probable savings in future labour costs. An additional benefit is the avoidance of wages to the striking labour force.

When discussing the costs and benefits indicated in the above situations, it may be necessary to segregate them into two groups. The first group would include those items which are relatively definite and easier to determine, such as out-of-pocket costs. The second group are those which must be estimated and are less definite, such as opportunity costs. A major item in the latter group would be lost contribution which presupposes some level of "normal" operation so that a comparison may be made against the actual level of operations in order to determine the loss attributable to the dispute. The determination of a "normal" level of operations is obviously an estimate and will affect the amount of the loss which may be calculated as the difference between the revenues that the firm would normally receive and the variable costs that it would normally incur during the strike period. These amounts may be estimated from previous records of sales and variable expenses for similar time periods in the past.

Present value concepts should be used to reduce all costs and benefits to a common point of time in order to facilitate comparison.

(2) During the Strike

Once the strike outcome becomes obvious, management must begin preparations for a strike situation. One of the first decisions is whether to continue operations or to shut down for the strike period. The factors involved in this decision have been discussed above.

If the decision is to continue operations, management must arrange for stockpiling of inventories and alternate sources of finished products. Other managerial actions may include the arrangement for an alternate labour force, use of supervisory personnel, negotiations with customers regarding shipping schedules, conservation of cash resources, and short-term financing.

The above action will result in costs which are different from normal operating costs. The differential costs may be identified as part of the strike costs and a method of accumulating and segregating these costs must be devised. Opportunity costs such as lost revenue must also be included as strike costs, even though these will be difficult to determine accurately.

The above discussion may be made clear by a simple example.

Assume that during a particular strike period, a company's normal activities would be to produce and sell 200 units at a selling price of $20 per unit. The variable cost is $10 per unit and fixed costs $1,000. However, because of the strike, the actual level of sales was only 150 units, of which 100 units were produced by the use of temporary workers and supervisory personnel, and 50 units were purchased from outside suppliers at $18 per unit. Other out-of-pocket expenses directly attributable to the strike were $200. There were no other opportunity costs or benefits. The following is an analysis of the strike costs.

Normal operation if the strike did not occur:

Sales 200 units @ $20	$4,000
Variable costs 200 units @ $10	2,000
Contribution margin	2,000
Fixed costs	1,000
Net income	$1,000

Actual operation because of the strike:

Sales 150 units		$3,000
Variable costs 100 units @ $10	$1,000	
Purchase costs 50 units @ $18	900	
Out-of-pocket strike costs	200	2,100
Contribution margin		900
Fixed costs		1,000
Net loss		$ (100)

The costs of strike therefore is equal to $1,100, the difference in the contribution margin between the two outcomes shown above or $2,000 minus $900 and composed of the following:

Differential variable costs ($1,900 - $2,000)	$ (100)
Out-of-pocket strike costs	200
Lost revenues 50 @ $20	1,000
Strike costs	$1,100

If the decision to shut down for a duration of the strike the above considerations with the exception of arranging for an alternative labour force would be relevant and the estimation of strike costs can similarly be made.

(3) Post Settlement

Management will be required to evaluate the decisions taken before and during the strike, if any, by comparing the actual costs with the projected costs. An accounting system should be devised to generate the necessary data to achieve this evaluation.

The Union's Perspective

In order for the union membership to make a rational decision on a strike vote, they should be supplied with a proper analysis of the economic factors relevant to the decision. The analysis should include the cost and benefit between the two outcomes, i.e., strike vs. non-strike.

The cost of an immediate settlement is the opportunity cost of the foregone increased wage package while the benefit is the avoidance of lost wages due to a strike. The cost of a strike is the actual loss of wages during the strike period while the benefit is the present value of the additional wages and fringe benefits which may be gained over the initial offer by the company.

After the settlement the union should prepare and report to the membership the actual net benefit of the decision taken earlier. Again, an accounting system is required to accumulate the relevant data for this purpose.

Conclusion

This paper outlines an area of opportunity in which the accountant may play a positive role. A general approach together with a consideration of some of the issues pertaining to industrial disputes has been presented.

The accountant's role centres around the identification and quantification of economic factors which, in general, should be the most dominant ones influencing both the strike decision and the operating decision. This is not to suggest that one should discount the pervasive importance of non-economic factors which may indeed exert a critical, perhaps dominant, influence on particular negotiations. An economic analysis for a situation in industrial disputes should therefore be accompanied by a listing of the non-economic factors involved. If the parties in a dispute should reach a

decision on the weight of certain non-economic factors, they would at least do so with a good knowledge of their economic consequences.

The intention here is to provide a framework for future research and discussions. Because the issue is sensitive and the details are in all likelihood situation specific, an appropriate avenue of attack would appear to be case studies of a carefully selected small sample of firms and unions and to deduce a general model from these studies, which may be helpful in dealing with other situations involving industrial disputes. A research project along this line is currently under way.

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AN EMPIRICAL INVESTIGATION INTO THE UNDERSTANDING OF THE "FUNDS" STATEMENT BY NOVA SCOTIA MANUFACTURERS

The Statement of Changes in Financial Position - hereafter referred to by its more common title, the Funds Statement - has been the subject of much controversy since its popularization in the 1920's by H.A. Finney in his textbooks and his writings in the Journal of Accountancy (Rosen and DeCoster, 1969, p. 128). Formal acceptance of the funds statement by A.P.B. Opinion number 3 in 1963 and again by A.P.B. Opinion number 19 in 1971, or by C.I.C.A. in section 1540 of the Accounting Recommendations in 1974, does not seem to have abated the controversy.

Two recent articles in the Journal of Accountancy (Heath, 1978; Heath and Rosenfield, 1979) based upon A.I.C.P.A. Research Monograph number 3 (Heath, 1978) have questioned the relevance and usefulness of the funds statement and advocated, among other things, dropping the current emphasis upon working capital as the definition of funds and adopting a cash receipts and payments format. As far back as 1951, a similar cash approach was advocated (Day, 1951) to promote greater clarity in financial reporting. In addition, a great deal of empirical evidence existing on the topic suggests users of the statement would prefer to have cash flows, rather than working capital flows, reported (NAA, 1961; Bradish, 1965; Wriston, 1974; Forbes, 1975; SEC, 1977).

CURRENT REQUIREMENTS

Paragraph 1540.07 of the Accounting Recommendations states that:

> the term "funds" refers to working capital where current assets and current liabilities are segregated on the balance sheet. Where such segregation does not appear or where working capital is not considered to be an appropriate definition of "funds", the term refers to either cash and cash equivalents or cash, cash equivalents and such other assets less liabilities which constitute current resources (CICA, 1974).

Similarly, the International Accounting Standards Committee recommends the definition of funds as either cash or cash equivalents or working capital as appropriate (IAS number 7, 1979).

REPORTING PRACTICES

Despite the latitude in the official pronouncements permitting the use of a definition of funds other than working capital, and the support in the literature referred to previously for adopting a cash basis, empirical evidence indicates that "funds" continues to be defined as working capital in the overwhelming majority of cases cited. For example, Accounting Trends

and Techniques reports that out of 600 companies sampled in 1977, 557 used a working capital definition of funds (AICPA, 1978). Similarly, Financial Reporting in Canada reveals that out of 325 firms surveyed in 1976, 317 defined funds as working capital (CICA, 1977). Spiller and Virgil (1974) report in their study of the effectiveness of A.P.B. 19 that 131 of 143 annual reports sampled from those contained in the 1971 compustat listing used working capital as the definition of funds.

REPORTING OBJECTIVES

A.P.B. Statement number 4 lists understandability as one of the fundamental objectives of financial reports. In order to satisfy this criterion, the statement must be prepared in such a manner that it "can be understood by users of the information and expressed in a form and with terminology adapted to the users range of understanding" (APB, 1970). In a similar vein, section 1500 of the C.I.C.A. Handbook states:

> Financial reporting is essentially a process of communication of information... Financial statements should be prepared in such form and use such terminology and classification of items that significant information is readily understandable. (CICA, 1974)

THE QUESTION

In light of all the doubts which have been expressed concerning the relevance and understandability of the funds statement prepared on a working capital basis, and given the fact that the official bodies emphasize but do not absolutely require the working capital basis, it is interesting to ponder why the working capital definition of funds is used so extensively. Perhaps a partial explanation can be found in the fears expressed by accounting authorities that cash flow figures might confuse the readers of financial statements or discredit accrual income figures (Mason, 1961; APB, 1963 and 1971; CICA, 1974). Maybe the accounting profession has become too preoccupied with earnings, while neglecting solvency considerations (Heath and Rosenfield, 1979).

OBJECTIVES AND METHODOLOGY OF THIS RESEARCH STUDY

Our primary objectives were to determine the extent to which the working capital definition of funds is used in reports for a defined set of small businesses, to assess the perceived usefulness of the funds statement, and to test the understanding of the working capital definition of funds.

To attempt to achieve our objectives, a questionnaire and personal letter were sent to 246 manufacturing companies listed in the Nova Scotia Department of Development's Directory (1978). The letters, addressed to the chief executive officer listed in the directory, indicated that the purpose of the study was to assess their needs, and that they should either complete the questionnaire to the extent possible or turn the questionnaire over to another person in the firm who was familiar with the financial statements (excluding their public auditor). In selecting the random sample of 246 firms from the 750 listed, we excluded public companies and branches of national companies to the extent discernible.

The first request was mailed approximately two weeks before Christmas with a followup second request mailed between Christmas and New Years. Stamped addressed envelopes were included with both mailings. Each questionnaire contained eight demographic questions concerning the respondent and his company, five questions designed to assess perceived and apparent usefulness of the funds statement, and ten questions designed to directly test the respondents understanding of their statement and the included sample statement. The questionnaire was pretested on a second level financial accounting class before mailing.

RESULTS [1]

Ninety-five responses were received giving a response rate of 38.6 percent. The number of employees listed for both first and second responses were compared using a Wilcoxon Rank Sum test. The 63 first responses had a mean of 33 employees while the 32 second request responses had a mean of 24 employees. The two-tailed significance level was .2614. Comparing respondents and non respondents the significance level was .1130 with the respondents mean being larger. We attempted to telephone all 22 non respondents with 40 or more employees and a random sample of 28 of the smaller companies. For those we could reach, personnel changes, refusals or stalls were the usual results. Analyzing the gaps in the responses received suggested persons with significant difficulties would likely not respond at all to the questionnaire. Therefore, it would appear non responses would be biased toward persons with difficulties in interpreting the working capital funds statement.

Profile of Companies and Respondents

Insert Table 1 About Here

Table one summarizes the size of the respondent companies and some background of the respondents. From this table, it can be seen that 77 percent had 40 or fewer employees, only 19 percent were accountants while 67 percent had high school or on-the-job training in accounting. Fifty-seven percent had assets of $500,000 or less. Sixty-six percent reported receiving financial statements including the funds statement, while 42 percent of the respondents stated they received statements more frequently than quarterly. Analysis of the frequency of reports and the use of professional accountants suggests both of these increase for larger companies. Therefore, most respondents are small companies with executives who did not have formal accounting training who were using annual statements and internal informal information.

Usefulness of Funds Statement

Insert Table 2 About Here

Table two presents some of the data concerning the perceived usefulness of the funds statement. Sixty-four percent of the respondents stated they found the funds statement very useful or quite useful while only 8 percent indicated it was not useful at all. Eighty-nine percent indicated the format

of the statement was satisfactory the way it was. Chi square comparison of usefulness between professionally trained accountants and others suggested very little difference in these perceptions. When asked what definition of working capital is most useful or appropriate, 30 percent said cash, 34 percent cash and other assets, 28 percent working capital and 8 percent a multiple of responses. It is interesting to note that none of the companies with assets less than $100,000 indicated working capital was appropriate. Sixty percent of the professional accountants indicated working capital was the most useful while only 21 percent of the non accountants made the same statement. The chi square comparison for professional versus non professional responses to this usefulness definition was significant at the .0119 level indicating the accountants and the non accountants did not respond the same way. The answers to questions concerning usefulness indicate that if direct questions were asked the replies would correspond to what was already familiar to the user. Accountants appear to find working capital a useful concept; non accountants, on the other hand, reply that working capital is useful but their other responses indicate that they really do not understand the concept.

Understandability

Insert Table 3 About Here

Table three presents some of the data used to ascertain the understanding of the funds statement. Ninety-nine percent of the respondents said they were familiar with the term working capital. When asked the definition of funds used in their audited statements, only 39 percent stated working capital while 22 percent stated multiple responses or that they were unable to determine. Sixteen percent provided no response to this question. Seventy-three percent suggested their statement was similar to the sample enclosed in the questionnaire. Eighty-one percent of the answers equated an increase in funds to an increase in liquidity. Fifty-six percent of the answers stated funds from operations equalled cash from operations. Comparing professionals and non professionals on these questions indicated the non responses were larger for the non professionals than the chi square expected frequencies, while the better answers were higher than the expected frequencies for the professional accounting respondents. Other questions suggest similar patterns in responses. The general pattern of responses indicates the non professionals in large measure either do not understand funds or equate the term with cash or near-cash assets. The professional accountants are more likely to pick up the conceptual difference between working capital and cash but they also would likely provide an initial equality when responding spontaneously.

CONCLUSION AND EXTENSIONS

The ninety-five responses of the 246 small Nova Scotia manufacturers indicate a problem for the accounting profession. Internal statement users receive funds statements they, in large measure, do not understand even though they often think they do. If asked, they would say this statement is satisfactory because they either do not know of the alternatives or they project their own incorrect interpretation of funds onto the statement. Using the term working capital in the statement does not help to avoid many of the difficulties with the term funds. Confusion still remains.

An interesting extension of this study would be to test the usefulness and understanding of this statement by loan officers.

Footnote

1. A full data analysis and a copy of the questionnaire will be supplied upon request.

Table 1

Profile of Respondents

Total Assets	Number	Percentage of Responses
$0 - $50,000	7	8
50,000+ - 100,000	14	15
100,000+ - 500,000	31	34
500,000+ - 1,000,000	16	18
1,000,000+ -	23	25
No answer	4	-
Total Respondents	95	100

Employees *	Respondents		Non Respondents	
	Number	Percentage	Number	Percentage
0-10	44	46	71	47
10+ - 40	29	31	58	39
40+ - 100	19	20	11	7
100+ -	3	3	11	7
	95	100	151	100

* Source: Nova Scotia Directory of Manufacturers, 1978.

Job Classification **	Number	Percentage
President/General Manager	50	53
Vice President	8	8
Secretary/Treasurer	16	17
Comptroller/Accountant	18	19
Other	3	3
	95	100

Table 1 (continued)

Profile of Respondents

Accounting Education **	Number	Percentage of Response
Professional (C.A., R.I.A., C.G.A.)	15	17
University	14	16
High School or Vocational	31	36
On-The-Job	27	31
No answer	8	-
	95	100

** Multiple responses classified according to highest level reported.

Frequency of Statement Presentation

Inverval	Professional Number	Professional Percentage	Non Professional Number	Non Professional Percentage
Bi-weekly	-	-	3	4
Monthly	11	73	21	26
Quarterly	2	13	3	4
Semi-annually	-	-	4	5
Annually	2	14	49	61
	15	100	80	100

Table 2

Analysis of Usefulness

Opinion of Usefulness of Funds Statement

Opinion	Professional Number	Professional Percentage	Non Professional Number	Non Professional Percentage
Very	6	43	19	30
Quite	4	29	21	33
Slightly	3	21	19	29
Not	1	7	5	8
No Response	1	-	16	-
	15	100	80	100

Definition of Working Capital Most Useful

	Professional Number	Professional Percentage	Non Professional Number	Non Professional Percentage
Cash	2	13	26	33
Cash + other C.A. except inventory less C.L.	2	13	30	38
C.A. - C.L.	9	60	17	21
Multiple Response	2	14	6	8
No Response	-	-	1	-
	15	100	80	100

Table 3

Understandability of Funds Statement

Familiarity with Concept of Working Captial

Answer	Number	Percentage of Responses
Yes	91	99
No	1	1
No Response	3	-
Total Returns	95	100

Concept of Funds Used in Audited Statement

Category	Number	Percentage of Responses
Cash	7	9
Cash + Other Current Assets (except inventory) - current liab.	23	30
Current Assets - Current Liab.	30	39
Multiple Responses	13	17
Unable to Determine	4	5
No Response	18	-
Total Returns	95	100

Similarity of Enclosed Statement With Firm's Statement

Response	Number	Percentage of Responses
Yes	58	73
No	21	27
No Response	16	-
	95	100

Table 3 (continued)

Understandability of Funds Statement

Assessment of Effect on Solvency of
$2300 Working Capital Increase For Year

Response	Number	Percentage of Responses
Increase	59	81
Decrease	5	7
Can't Tell	9	12
No Response	22	-
Total Returns	95	100

Understanding Funds From Operations

	Number	Percentage* of Responses
Yes - "Funds" equals Cash	39	56
No	22	32
Don't Know	8	12
No Response	26	-
Total Returns	95	100

* Easier question on difference between net income and funds from operations yielded 52 percent satisfactory response versus 44 percent above.

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EARNINGS PER SHARE:
AMERICAN VS. CANADIAN PRONOUNCEMENTS

Prior to the beginning of this decade, the differences between generally accepted accounting principles (GAAP) in America and Canada were minimal. Canadian pronouncements generally reflected mere restatements of the American position. The differences that existed mainly dealt with the extent of disclosure required. However, in recent years the Accounting and Auditing Research Committee of the Canadian Institute of Chartered Accountants (CICA) has made pronouncements (which are contained in the CICA Handbook) that are quite distinct from those in America and the gap is expected to widen in the future.

Needless to say, any significant differences in reporting can pose problems of interpretation for investors and users of financial statements across the border of the two nations. Given the close economic tie between America and Canada and substantial American investments in Canada, it is useful that the implications of these differences in GAAP be investigated. This paper attempts to empirically examine one area of the differences, the pronouncements on earnings per share (EPS).

The EPS statistic is perhaps the single most important ratio of financial reportings. It forms the denominator of the price-earnings multiple, another heavily quoted ratio in security analysis. The investment community apparently ascribes substantial informational content to pre-audited estimates of EPS (Foster, 1973). The AICPA and CICA both show deep concern for the EPS ratio by establishing rules to govern its computation and disclosure. The official pronouncements in America and Canada are contained in APB Opinion 15 and Section 3500 of the CICA Handbook respectively.

The purpose of this paper is twofold: first, to compare and contrast APB Opinion 15 and Section 3500 of the CICA Handbook and in the process to review the controversy surrounding the computation of EPS as appeared in the literature; and second, based on a random sample of 55 firms drawn from the Moody's Industrial Manual, to infer whether the American and Canadian pronouncements lead to significantly different EPS reportings between the two countries and to draw some implications from the results.

APB Opinion 15

Under APB Opinion 15, companies with potentially dilutive securities are required to report two EPS figures: Primary EPS and Fully Diluted EPS (par. 20). The numerator of Primary EPS is the result of taking the reported income reduced by the amount of dividends relating to senior equity, and increased by the amount of interest (less applicable income taxes) on convertible debts that are classified as common stock equivalents. The denominator of Primary EPS is the sum of

the weighted average number of common shares outstanding (after adjusting for stock dividends and stock splits), and the number of common stock equivalents. Common stock options and warrants are always considered to be common stock equivalents (par. 35), while convertible securities are so classified only if at the date of issue their cash yields are less than 2/3 of the then current bank prime interest rate (par. 33). It is important to note that common stock equivalents are included in the calculation of primary earnings per share only if the effects of the assumed conversions or exercises are dilutive (par. 30). With respect to common stock options and warrants, if the number of common shares involved is 20% or less of the number of common shares outstanding at the end of the period the "treasury stock" method is used, under which the proceeds from the anticipated exercise thereof are assumed to be used to repurchase common shares at the average market price during the period (par. 36). Whereas if the number of common shares issuable upon the exercise of stock options and warrants exceeds 20% of the number of common shares outstanding, the proceeds are assumed to have been applied in two steps: to the repurchase of common shares at the average market price but not to exceed 20% of the outstanding shares; and to apply the balance of the proceeds first to reduce short term and long term borrowings and then to reinvest the remaining proceeds, if any, in U. S. Government securities (par. 38).

The purpose of Fully Diluted EPS is to show the maximum potential dilution of current EPS on a prospective basis (par. 40). Consequently, all the convertible securities, not just the common stock equivalents, are to enter into the EPS computation. Moreover, in applying the "treasury stock" method if the closing market price of common is higher than the average price, the closing market price should be used (par. 42).

Controversy in the Literature

Frank and Weygandt - F & W (1970):

F & W were concerned with the 2/3 rule for determining common stock equivalency and argued that the appropriate test of the effectiveness of any proposed criteria should be in terms of predictive accuracy on the basis of ultimate conversion. They noted three theoretical weaknesses inherent in the 2/3 rule: (1) it matches a short term prime rate with long term yields on convertible securities and this is contrary to the knowledge that short term and long term interest rates have not exhibited a stable relationship over time; (2) it has a built-in bias against low risk companies by increasing the likelihood of having their convertible securities classified as common stock equivalents because the prime rate is basically a risk-free rate and companies with poor credit risk would bear high rates; and (3) it forces a permanent classification at the time of issuance regardless of future changes in economic conditions. To test the effectiveness of the 2/3 rule, they took a non random sample of 28 convertible bonds issued in 1965 and found that through 1968 only one issue was classified as a common stock equivalent but none of these bonds had actually been converted into common stocks. On the other hand, for the 27 other issues not so classified significant amounts of conversion (defined as at least 25%) occurred in 13 cases. Lowering the definition of significance to 15% made little difference to the results. They concluded that the Board's yield test is an ineffective indicator of subsequent conversion. As F & W's sample is non random no statistical inference can be made from their results.

Hofstedt and West - H & W (1971):

Following F & W, H & W further noted the deficiency of using the cash yield method to calculate a convertible's return instead of the yield to maturity which equates the discounted value of the maturity value plus interest payments with the market value of bonds (i.e., takes account of the amortization of premiums and discounts). Using F & W's sample, H & W tested four measures for determining common stock equivalency (1) cash yield vs. prime rate; (2) yield to maturity vs. prime rate; (3) cash yield vs. Moody's Baa bond index; and (4) yield to maturity vs. Moody's Baa bond index. Measure 1 is that advocated by the APB. H & W were prevented from matching measure 3 and 4 with the Moody's bond ratings assigned to each of the convertibles because the ratings on most issues in the sample (Ba) were below the lowest Moody's bond yield index (Baa) and so they used the yield level on Moody's bond index that was closest to the rating of the convertible being studied. Based on the statistics of Kendall Coefficient of Concordance and Spearman Rank Correlation Coefficient, H & W found that the relative ranking of a given bond varied little between the four measures and that the four measures were equally poor as predictors of ultimate conversion, although on the basis of theoretical merits, one would expect the degree of association between the four measures to improve in ascending order. As in the case of F & W's study, no statistical inference can be made from H & W's results.

Arnold and Humann A & H (1973):

A & H extended F & W and H & W's empirical studies to include two additional methods for determining whether a convertible security should be considered a common stock equivalent: the "Investment Value" method and the "Market Parity" method, both of which were considered but rejected by the APB Opinion 15. Under the "Market Parity" method, a convertible is considered to be common stock equivalent if its market value and conversion value (which is the market value of the common shares that would be obtained if the conversion privilege is exercised) are substantially equivalent and in excess of its redemption value. On the other hand, the investment value method considers a convertible to be common stock equivalent if its market value is greater than its investment value, the latter being the value of an identical security except without the conversion value.

A & H also used F & W's sample to test the predictive ability of the "Market Parity" and the "Investment Value" method in terms of ultimate conversion. Four different Market Parity ratios were used which were based on the offering price and the market prices on the first day, two weeks after and two months after the date of listing. The latter two dates were chosen to permit the market to seek its own level.

In implementing the "Investment Value" method, two investment values were used: the investment value listed in the Moody's and the present value at the interest rate associated with the risk rating of an issuer as published in the Moody's. As Moody's listed interest of bonds with rating Baa or higher and most convertible issues in F & W's sample having ratings of Ba or less, A & H took, as did H & W, the closest rating available, the Baa. For each convertible four ratios of Investment Value to Market Value were used, resulting from the combinations of two investment values noted above and two market prices (i.e., offering price and the market price on the date first listed on exchanges).

In analysing the ratios of investment value to market value, they observed that the 50% cut-off value considered by the Board appears unrealistic and accordingly, they used four cut-off values ranging from 75% to 90%. They concluded that the results show that the "Investment Value" Method did not generate any predictive power for the 1965 issues, while there was some indication of predictive power when using the "Market Parity" method. However, this indication was only slight considering that the significance was found in only one of the 16 combinations of cut-off values and prices used. As in the case of F & W's study, no statistical inference can be made.

Frankfurter and Horwitz - F & H (1972)

F & H thoughtfully argued that in order to evaluate the full impact of the Board's opinion on Primary and Fully Diluted EPS, it is necessary to go beyond the conversion index which was the sole concern of the three preceeding studies, and examine the circumstances under which the exercise of options and warrants will occur and the subsequent use of the assumed funds. They then conducted simulation study to evaluate the Traditional, Primary and Fully Diluted EPS figures under the impact of changing economic conditions, changing interest rates and changing stock prices on three hypothetical companies with different capital structures. From the results of their simulation model, they concluded that, over the long run and for firms having different debt structures, the method of calculating EPS prescribed by the APB Opinion 15 and the traditional method will not produce statistically different results. They went on to say that because the traditional calculation is more easily understood, APB Opinion 15 will succeed only in adding unnecessary burden on management over the traditional method of calculation.

Bierman and Liu (1968) and Kutson (1970) also wrote forcefully on the subject. Their work will not be reviewed here in order to reduce the length of this paper.

In summary, despite the criticisms against APB Opinion 15, the authors cited above fail to show that their suggested modifications would lead to significant different EPS figures than those computed under the Board's recommendation.

Section 3500 of the CICA Handbook

Like the APB Opinion 15, Section 3500 of the CICA Handbook also prescribed two EPS figures: Basic EPS and Fully Diluted EPS (par. 7). The Canadian pronouncement avoids the common stock equivalent concept and the arbitrary 2/3 rule. As a result, the Basic EPS is computed by dividing the reported income (before and after extraordinary items) less the amount of dividends relating to senior securities, by the weighted average number of common shares outstanding, after adjusting for stock dividends and stock splits, etc. (par. 16 and 17).

On the other hand, the Canadian Fully Diluted EPS closely parallels the calculation of the American Fully Diluted EPS but with one major difference. Under the Canadian pronouncement, the "Treasury Stock" method is not used in the treatment of common stock options and warrants. Instead, the numerator of the Fully Diluted EPS is increased by the amount of imputed earnings after tax

on the proceeds from the potential exercise of common stock options and warrants while the related number of common shares is included in the denominator. The appropriate rate of return for imputed earnings is left as a matter of managerial judgment in each case (par. 37). Like the American Fully Diluted EPS, only diluted convertible securities, options and warrants are to be considered (par. 34).

The Canadian version of EPS figures is thus simpler and less arbitrary than the American counterparts. In effect, the Canadian Basic and Fully Diluted EPS figures attempt to provide an optimistic and pessimistic point within the range of EPS numbers and can be seen as another variant of a host of alternatives contained in the literature.

Methodology and Results

A random sample of 55 firms that reported both Primary EPS and Fully Diluted EPS was drawn from the 1976 Moody's Industrial Manual. For each firm in the sample, the Primary and Fully Diluted EPS figures were obtained directly from the Moody's. Based on the information given on the capital and debt structure, the Canadian Basic and Fully Diluted EPS numbers were then computed for each firm in the sample.

It can be seen from Table 1 that there is no clear pattern to indicate whether the Canadian Basic EPS will always be greater or lesser than the American Primary EPS. The same observations holds for the American Fully Diluted EPS (AMERFD) vs. the Canadian Fully Diluted EPS (CANFD). The various descriptive statistics in Table 2 shows that the differences in EPS reporting caused by the American and the Canadian pronouncements are quite small.

Table 3 gives the tests of association between the American and Canadian EPS figures. Two non parametric statistics are used; Spearmen Rho and Kendall Tau. The former is commonly used in the literature while the latter provides a readily interpretable estimator and is more useful (Holland et al., p 194). Essentially, both tests involve the ranking of two variables (e.g., Basic vs. Primary EPS) in the order of magnitudes and determining whether the two sets of ranks are similar. For comparison purpose, the Pearson Product Moment Coefficient, a parametric statistic, is also included. As shown in Table 3, the measures of association are all high and all are statistically significant at a level of no greater than .001. It can thus be inferred that the reporting differences in EPS under the American and Canadian pronouncements are not statistically significant and that the EPS figures of the two nations can be taken as substantially equivalent.

An interesting point observable from the results of the sample is that only 8 firms out of a total of 55 firms (about 15%) had issued common stock options and warrants, suggesting that these forms of equity are not too common in a firm's capital structure. As the treatment in common stock options and warrants is a major source of differences in the computation of the American and Canadian EPS figures, a stratified random sample of 18 firms which had common stock options and warrants in their capital structure were chosen. The previous analyses were then repeated as shown in Tables 4 through 6. The results are similar to those of Tables 1 through 3. Thus, the presence

of common stock options and warrants will not likely alter the finding of insignificant differences in the reporting of EPS between the two countries.

In calculating the Canadian Fully Diluted EPS, the proceeds from the potential exercise of common stock options and warrants were assumed to have been invested at a rate of return of 8% before tax and 4% after tax. Net of tax rates of 3%, 5%, 6% and 7% were also tested and the results indicate that the finding of this study is not sensitive to the choice of this factor. Bierman and Liu made the same observation in their study.

In summary, the finding of this study is consistent with the general conclusion reached by the various authors cited previously, that is the computation of EPS figure is sufficiently robust to a wide range of refined formulations.

Implications and Conclusion

Two implications can be drawn from the results of the study. First, the investor can generally accept the American and Canadian EPS figures as being substantially equivalent. Second, the preoccupation by the accounting profession over the different ways of reporting EPS has not been very productive as they do not in the final analysis provide significantly different results.

Given the existing institutional requirement of EPS reporting, one can conclude that the APB prescription is unnecessarily complicated and burdensome to the management and that a simpler and less arbitrary approach such as the one taken by the CICA would be sufficient.

Table 1

Distribution of differences - First Sample

	Number of firms
Primary greater than Basic	16
Primary equal to Basic	26
Primary less than Basic	13
Total	55
AMERFD greater than CANFD	22
AMERFD equal to CANFD	11
AMERFD less than CANFD	22
Total	55

Table 2

Descriptive Statistics - First Sample

	Primary	Basic	AMEFD	CANFD
Mean	3.299	3.317	2.991	2.969
Standard deviation	1.964	1.991	1.765	1.737
C. V. (%)	59.53	60.03	59.01	58.52
Variance	3.858	3.966	3.116	3.018
Skewness	.7083	.7281	.8263	.9244
Kurtosis	-.216	-.137	+.254	+.565

Table 3

Tests of Association - First Sample

	Pearson Product-Moment	Spearman Rho	Kendall Tau
Primary vs. Basic	.993*	.991*	.958*
AMERFD vs. CANFD	.994*	.993*	.954*

* Significant at a level of no greater than .001 (Siegel, pp. 210 and 220).

Table 4

Distribution of Differences - Second Sample

	Number of Firms
Primary greater than Basic	7
Primary equal to Basic	7
Primary less than Basic	4
	18
AMERFD greater than CANFD	9
AMERFD equal to CANFD	3
AMERFD less than CANFD	6
	18

Table 5

Descriptive Statistics - Second Sample

	Primary	Basic	AMERFD	CANFD
Mean	2.003	1.999	1.788	1.763
Standard Deviation	1.659	1.670	1.428	1.326
C.V. (%)	82.85	83.56	79.88	75.19
Variance	2.754	2.790	2.040	1.758
Skewness	.7028	.7498	.5434	.4958
Kurtosis	-.953	-.813	-1.425	-1.353

Table 6

Tests of Association - Second Sample

Variables	Pearson Product-Moment	Spearman Rho	Kendall Tau
Primary vs. Basic	.999*	.998*	.987*
AMERFD vs. CANFD	.990*	.954*	.898*

* Significant at a level of greater than .001.

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PIONEER EXAMINATIONS AT THE ICAO

by Professor P. Creighton

John J. Mason was the fourth president of the Institute of Chartered Accountants of Ontario and the first to have time and energy to devote to an objective of the Institute other than the recruitment of members or the obtaining of provincial incorporation. He initiated the educational policies of the Institute. In his inaugural speech to the members on May 15, 1884, he discussed the objectives of the Institute and the methods that might be employed in achieving them. These were: firstly, to promote accountants and accountancy. Secondly, to establish standards for membership. And thirdly, to grant certificates and diplomas to attest to the competence of the members.

As to means to obtain these objectives he said:

> "The means we employ must be most carefully thought out, for upon them will in great measure depend the value to ourselves and to the public of the certificate it is intended to grant. The Standard of efficiency should be high, the tests severe, and the examinations thorough, in order that the fortunate possessor of a diploma of the Institute may feel that his qualifications entitle him to any position he may seek and to the utmost confidence on the part of those by whom he may be employed. These tests moreover should not be limited to mental requirements, important though the latter undoubtedly are."

He continues:

> "These considerations lead me to the conclusion that thorough integrity and good moral character should form the foundation stones on which to build the mental qualifications necessary to secure the valuable certificates we are empowered to grant."

He then goes on to discuss at some length why the Institute's standard setting would be important.

> "Not one of our colleges recognizes bookkeeping in its course; it has been dropped from the teachers' course and it occupies so inferior a position in our public schools and is confined to such narrow bounds as to be almost valueless. It is true that we have amongst us several private commercial schools and that they are doing a good work, but after all, they can only cover a very limited ground and cannot possibly occupy a field that should be open to every student in our public schools, to whom a thorough knowledge of accounts, of financial and political economy would be I think, of greater practical benefit than can be derived from some of the studies in which they are engaged.
>
> The importance to the public of having a corporation like our own to examine as to proficiency in the knowledge of accounts cannot I think, be overestimated and its certificates will be an invaluable passport to employment, whilst at the same time it will go far to set the employer's mind at ease as to the character and ability of his employee and will, at the outset tend to establish that confidence between them which is so necessary and so pleasing and which acts as an incentive to the latter to go beyond mere routine in the daily discharge of his duties -- to be ever on the watch in order that he may guard his employer's interest -- to study the detail of the business and to contribute to its success.
>
> These it is the aim of the Institute to send forth, in their own interests as well as the interests of those by whom they are employed."

And finally he concludes:

> "It is most important that we should be in a position to confer certificates at the earliest possible date and the difficulties will no doubt, at first present themselves in working out the necessary details, yet I feel confident that the Council will enter upon the task with a determination to speedily overcome all difficulties and be ready to receive applications during the ensuing summer."

On May 29, 1884 the Council of the Institute of Chartered Accountants of Ontario met and appointed a subcommittee to consider how best to achieve the Institute's objectives of promoting accountancy testing for competency and the granting of diplomas and certificates. Specifically, the subcommittee was to implement By-law No. 28 which dealt with examinations and diplomas. The subcommittee consisted of the officers of the Institute and about half the Council. The president for that year was J. J. Mason

of Hamilton, a public accountant prominent in masonry. He was an alderman and would shortly become mayor. The vice-presidents were John Hague of C. S. Gzowski & Company, a Toronto financial firm and William McCabe, the manager of the North American Life Insurance Company of Toronto. The secretary was H. W. Eddis, a public accountant from Toronto. The Toronto members of the Council were represented by W. A. Douglass, of a savings and loan company, E. R. C. Clarkson, a public accountant, and the founder of the Clarkson, Gordon firm, and William Robins, a public accountant. Robins is believed to be the catalyst in the formation of the Institute of Chartered Accountants of Ontario. The rest of the province was represented by W. F. Findlay of Hamilton, G. F. Jewell of London, both public accountants, J. W. Johnston of Belleville who founded the Ontario Business College and G. H. Wilkes, an industrial member of Waterous Manufacturing Company in Brantford.

The committee held its first meeting on June 3, 1884. J. J. Mason, the president, could not come so he sent the indefatigable S. B. Harman, the past president, in his place. Douglass and Robins as two of the Toronto members were not there, but everybody else was. The subcommittee decided that "the following points should form the basis of the Deliberations ...

1. The diploma -- its scope, etc.
2. The certificate of competency, its scope.
3. The fees.
4. The examiners, and how appointed.
5. The examinations -- how conducted and subjects.
6. How far experience is to be taken as evidence of professional efficiency.
7. Who should be the applicants for diplomas."

The meeting was adjourned to June 17, 1884. At that time seven members of the subcommittee read formal presentations on the seven points. There was no further discussion at that time and the papers were printed and distributed to all the members of the subcommittee. The meeting further adjourned to June 27, 1884.

On that day it was discovered that there were no significant differences of opinion among the subcommittee members on points 1 to 5 inclusive. The subcommittee reached the following conclusions.

1. The diploma of fellowship, its scope, etc., "the requirements shall be such high qualifications and recognized efficiency as would warrant the Council in endorsing the candidate for the practice of a public accountant."

2. Certificate of competency "the candidate must be familiar with the principles which govern all accounts in common and must exhibit good methods in his own individual department. He will not, however, be expected to be conversant with the special modes of recording and distributing which prevail in lines

of business foreign to his own experience."

3. Fees. The diploma was $50, of which $20 was to be paid on entrance and $30 on delivery. The certificate was $20, on a $10 and $10 basis. There was some provision for lower fees for the later re-entry of unsuccessful candidates. A very interesting provision provided for travel expenses, at the discretion of the examiners, up to the amount of the entrance fees paid by the candidate.

4. Examiners - how to be appointed. "The president, two vice-presidents and five persons elected by the Council shall constitute the examining board who may appoint a subcommittee of their number to prepare the examination papers and conduct the written examinations. Such papers shall be submitted to the full board, and approved or amended by them."

5. Examinations - how to be conducted? "The examinations shall be held when and where directed by the examining board and shall be conducted upon the model of the government and other public examinations with a view to secure perfect fairness."

This was the condition of the subcommittee's findings at the close of its meeting on June 27, 1884. There were some further editorial revisions but the subcommittee's views prevailed and were generally adopted by the Council.

However the obstinate problems of Items 6 and 7 remained. These were how far experience was to be taken as evidence of professional capability and who should be allowed to apply for the diploma. The views of the members of the committee were so far divergent that the committee despaired of getting a consensus. It therefore appointed a special subcommittee, that is a subcommittee of the existing subcommittee to consider how the opposed views might be reconciled. The membership of this subcommittee was Samuel Harman, William McCabe, W. H. Eddis and William Robins.

The subcommittee of the subcommittee met on June 27, 1884 and adjourned without having reached a decision. The subcommittee of the subcommittee did not meet again until January 27, 1885. At that time the special subcommittee of the subcommittee adopted a proposed standard of competence for the granting of the fellowship designation.

> "All candidates for diplomas of fellowship shall pass before a board of examiners, but in the case of public accountants of known standing and reputation, the examining board shall have the power to exercise its discretion either in dispensing with or in modifying the examination as they may deem advisable after due consideration of the facts of each individual case."

This motion was supported by three members of the four man special subcommittee of the subcommittee, that is McCabe, Eddis and Harman. Robins voted against the proposal. Robins' position was that he and the other founding member of the Institute should be given the F.C.A. designation by right. He appears to have had a "grandfather" approach. Robins was very strong in his views it appeared. He resigned rather than accept the majority position.

The definition of the educational standards of the Institute, and, in particular, the conflict over the F.C.A. occupied the available time of the officers and Council for, virtually, the entire 1884 year. In fact, so little was achieved that Council decided not to charge fees for that year. The Council did not meet between May 29, 1884 and March 28, 1885.

The special subcommittee of the subcommittee tried to give its report to its parent, the subcommittee, on February 20, 1885 but there was not a quorum. A more successful attempt was made approximately a month later on March 21st. The report of the subcommittee's subcommittee was adopted and a letter of protest received from Robins. Both the report and the protest were forwarded to Council. A week later, on March 28th, Council accepted the report and filed Robins' letter of protest.

Now why the controversy? The majority of the Council and in particular the officers and the members of the special subcommittee were simply trying to do, what the president had called them to, in his stirring speech at the annual meeting of the previous year. That is, to discharge their obligation to ensure that a person granted the designation of "Fellow the Chartered Accountants" would be qualified to deserve the trust of the general public and to be a source of pride to his associates.

To understand Robins' position, on the other hand, requires one to know a little of his background. Robins was youngish (mid-thirties) at this time and very abmitious. He had been born of a large family in England, the son of a poor, dissenting minister. Robins had the advantage of neither capital nor education. He had come out to Canada in the seventies with his brothers in hopes of a better life. It seems likely that Robins was the real catalyst of the movement to form the Institute of Chartered Accountants of Ontario. He wanted material success, to be sure, but it seems reasonable that he, like so many upwardly mobile persons, hungered perhaps even more for social respectability. The F.C.A. would give him that. Robins was an obstinate, difficult man, certainly, but it is difficult to believe that he would ever have had serious doubts about the probability of his passing whatever modest examination the board might prepare for the fellowships. What he appears to have resented violently was the affront to his dignity and standing implied by the examination process.

The decision of the Council then, subsequently confirmed by the membership at the annual meeting, was to insist that all candidates for the fellowship designation should be subject to an examination. The nature, extent and quality of that examination were left to the discretion of the board of examiners.

At the annual meeting J. J. Mason, the president, summed up the

majority position very neatly when he said:

> "The act of incorporation having been obtained upon the distinct understanding that every qualified member of the Institute could obtain a diploma or certificate at his discretion, it is quite clear that neither the diploma nor certificate can be confined to any particular class, but that both are open to all, the examining board having proper discretionary powers as to the qualifications in each individual case.
>
> The examination will be oral, or written, or both, as the board may think fit. To pass, two thirds of the marks are essential, and to pass with honours four fifths."

The report continues in relation to the diploma of the Institute which gave the holder the right to use the initials F.C.A. after his name.

> "The requirements and subjects of examination for the diploma of the Institute are:
>
> 1. Known standing and established reputation as an accountant, or the holding of a responsible position in a financial or other corporation.
>
> In addition to questions on the subject prescribed for the certificate applicants may be examined in the following subjects, namely: --
>
> 1. sources of public revenue,
>
> 2. the origin and the use of money, and the principles which determine its value,
>
> 3. different employment of capital,
>
> 4. the circumstances which regulate the rate of interest and profit,
>
> 5. principles of banking,
>
> 6. the law of arbitration and awards.
>
> An approved thesis on any of the above subjects, excepting the first two in the examination for the certificate, or on any subject cognate thereto, will also be required from applicants for the diploma."

At its next meeting the board of examiners decided to hold the first set of exams on the Wednesday and Thursday of the first week of November of 1885 and approved the draft of an advertisement to be placed in the newspapers. This announcement was certainly not a formality as it appeared in four of Toronto's papers. The board also approved the form of the application which, to the modern eye,

seems excessively simplistic as there were no numbers on it at all. Or indeed space for any such numbers. Really other than name, address and occupation, the only thing that the candidate was asked to provide was references as to character, complete with testimonials. Further, the candidate was to supply details as to the length and nature of his accounting business service.

The board, at the same meeting, divided up responsibility for the setting of the examinations and their conduct among themselves. Routh seems to have been the least used examiner, he was only involved in two exams, whereas Harman was on over half of them. The date for receipt of the application was set at October 1, 1885 for the certificate and October 15 for the diploma.

On October 22, therefore, the board got around to weighting the various subjects in the syllabus. The meeting started at 7:30 p.m. For the certificate the following weights were to be used.

50	marks for dictation and correspondence
150	marks for arithmetic
300	marks, of which 250 was for bookkeeping and 50 for commercial forms
50	marks for accounts of partners and executors
100	marks for auditing
100	marks for promissory notes and the law generally
50	marks for accounting for joint stock companies
800	

As to the diploma a 900 mark base was used. 300 of these were for known standing and reputation, 300 for the thesis and 300 for questions on the subjects prescribed for the certificate and political economy, principles of banking and the law of arbitration and awards.

> "The Board decided to distribute the several theses among the members for Examination, one to at least two members the reports of such sub-examiners to be reported to the full Board and considered and valued by the members, excepting the writer of same, if a member of the Board."

The board then went on to deal with that critical question which has plagued it ever since, -- the preparation of examination questions. The members of the various subcommittees were asked to "prepare and report examination questions on the subjects for the certificate ..." These would be considered at a meeting on October 27, 1885 in the evening.

October 27, 1885 came and went and as the minutes tersely quote "the Board continued their preparation for the examinations." On November 3, 1885 the board of examiners met yet once again. Seven members of the board were present, of whom five submitted their theses in anticipation of applying for their F.C.A. designation. The conflict of interest problem apparently did not concern any of the participants. The president, William McCabe, submitted a thesis on Negotiable Instruments,

J. W. Johnston, the principal of the Ontario Commercial College in Belleville one on Joint Stock Companies and George F. Jewell of London one on Auditing. Henry William Eddis, the secretary-treasurer, had a thesis on Balance Sheets, and E. R. C. Clarkson one on Bookkeeping. The only non-member of the board to send in a thesis was Henry Derby of Hamilton who supplied Different Employment of Capital. Eddis, when he got a good look at the competition decided that his Balance Sheets was not up to the standard and received permission to withdraw his thesis.

The board discussed the requirements under section 1 of the marking scheme for the diploma. This, you will recall, was for known standing and reputation in the community. The board decided that all its members were entirely acceptable to it for the purposes of assessing standing. Henry Derby, on the other hand, was another problem, and he was required to "furnish evidence of his standing and reputation as an accountant".

The board then proceeded to the assessment of the theses themselves. William McCabe retired from the chair while his thesis was considered, under the direction of E. R. C. Clarkson. The McCabe thesis received 292 marks of the possible 300. Unfortunately we do not have the marking scheme. We don't know the weights attached nor do we know how the marks were assigned. McCabe got back in the chair and the thesis judging proceeded. J. W. Johnston's Joint Stock Companies got 290 marks. Auditing, that big work by George F. Jewell, 292 marks. However, the triumph of the night was undoubtedly E. R. C. Clarkson's Bookeeping which got 300 marks. Hendry Derby's Different Employment of Capital was simply outclassed and was withdrawn to avoid the ignominy of failure.

None of these theses exist in the form that they were presented to the board of examiners in 1885. Clarkson's Bookkeeping was eventually published in pamphlet form. It is a useful, short treatise of the subject. However, it is not now known how much revision was made to the text before it was printed. George F. Jewell used his thesis on Auditing as the basis for a lengthy speech he gave on the night of the examinations. It was fully reported in the Toronto newspapers. It seems likely, therefore, that he just read his thesis and that the newspaper report is, probably, an accurate rendering of the original. Clarkson's Bookkeeping and Jewell's Auditing could best be described as popularizations. Taking ideas which had been developed in the early literature of accounting and auditing in Great Britain and applying it to the Canadian situation. No trace has been discovered of Johnston's Joint Stock Companies or McCabe's Negotiable Instruments. Johnston went on to become a considerable author in the field of management and financial accounting.

On the following day the exams began at 8 a.m. with Clarkson, Jewell, Johnston and McCabe presenting themselves for examination for the diploma and Henry Derby and C. T. Smyth, both of Hamilton, as candidates for the certificate. The examination ended at 6 p.m. and no record exists of the questions asked. There is some reason to believe that they were largely oral.

The two candidates for the certificate, that is Henry Derby and C. T. Smith, both achieved second class. And even to secure that the board had to be a little free with its own rules. To pass, the notice had said,

the candidate must obtain two thirds of the marks. There were 800 marks available and two thirds of that is 533 1/3. Henry Derby got 520 and C. T. Smyth only scraped up 506½. "Commercial Forms" seems to have been the gift paper, both contestants did well there. C. T. Smyth came adrift in "Law" where he got 20 out of 100. Henry Derby had a similar success in the "Formation and Liquidation of Joint Stock Companies" where he got a 22 out of 50.

There is no record of the rationalization that the board went through to convince itself that candidates who had scored fewer marks than the board itself had determined as necessary, were, in fact, suitable as passing candidates. But one can certainly have sympathy for the board's dilemma. However, as is all too common in such cases, politics won hands down over the examination standards. Neither Derby nor Smyth remained long as members of the ICAO.

In February of 1886 two more candidates attempted the certificate, a Robert McCullough of Belleville and Charles Grant Begg of Toronto. McCullough of Belleville and Charles Grant Begg of Toronto. McCullough failed but Begg received a first class certificate.

On May 7, 1886, the mayor of Toronto presented the certificates to the successful candidates. The minutes of the meeting record that he

> "remarked that he had received his practical training in the profession of accountantship and took a pride in keeping a good set of books. There had been a great advance of late years in the system of bookkeeping and accountantship. As the profession itself had risen and attained a scientific and intellectual character, it had attracted men who had a natural faculty to achieve success in the profession."
>
> "He expressed himself as strongly in favour of the system, and thought that every man should fit himself for the profession by passing the examination required by the Institute."

The examinations setting up process in 1886 was apparently not an easy one. The following updated, unsigned, terse report from the minute book demonstrates:

> " This meeting was called for the purpose of enabling the examiners to finally arrange for the examination. The secretary announced two candidates, one for the certificate, one for the diploma."

Total report of the examinations committee for the year.

On November 3, 1886 the board of examiners met again and E. V. R. Young of Peterborough was examined for the diploma and failed. However, George T. Mickle made it through the certificate, with a first class standing. He scored 565 marks out of the possible 800. Those of my readers who can do simple arithmetic will realize that 3/4 of 800 is 600 and either the board was still playing politics or, alternatively,

it had changed the rules and not bothered to leave a record of it.

Early in 1887 the Council decided that it had simply been too ambitious. It was concluded that examinations need only be held once in the year. The end of November was the time selected.

1887 was not a particularly good year for the Institute of Chartered Accountants of Ontario. In the spring and early summer the Council consistently failed to attract a quorum. Perhaps the end of the first decade marks the occasion when the original members began to run out of enthusiasm. The membership declined steadily from the peak of 210, which had been generated for the purposes of securing the incorporation. The 1884 year was perhaps the worst disaster. That was the year in which the Council and the board of examiners were so involved in the standard setting process that they neglected to do any of the regular work of the Institute at all. So badly was this latter responsibility handled that the Council of the year did not think it suitable to charge fees to members.

Further, all the principal members of the Institute had addressed at least one meeting of the group. One paper seems to have been the limit for the members, at that time. The Institute was, in fact, in urgent need of a second generation of leadership. While this need went unsatisfied the membership continued to dwindle. New members were certainly recruited but the attrition rate was three to four times that of the members attracted.

The general malaise came to a crisis in the fall of 1887 when the Institute's exclusive right to the designation "Chartered Accountant" was openly challenged for the first time. This challenge led some of the members to consider what benefits they received from membership in the ICAO. Finally, this questioning forced the Council to restate the ways in which it might examine for the designation "Chartered Accountant" and to develop a clearer definition of who might use that designation.

During 1887 the Toronto firm of McCuaig and Manwarring of Toronto called themselves "chartered accountants". Neither McCuaig nor Manwarring were members of the Institute nor had they been ever. However, they claimed to be C.A.'s. The basis of their right is not, now, known. Further there was the continuing problem of resignations from the Institute. At one meeting in the fall of 1887 five prominent accountants of the Toronto area resigned. The Institute's secretary was instructed to write to those who were not members advising them that they could not call themselves "chartered accountants". These vents forced the Council to its first real, hard look at the nature and purposes of the Institute. A special committee composed of the senior officers was appointed to enquire into and consider "the future operating of the Institute and notably the nature of its memberships ...".

Later in the fall the special group reported and the Council did pass a number of resolutions setting out its intention in the area of public accounting in the province and defining the right of the various classes of members of the Institute to use the term "chartered accountant". The first resolution was really a motherhood one.

Every facility was to be given to competent bookkeepers throughout the province to encourage them to apply for membership and to obtain certificates of competency.

The second was rather more interesting. It was really designed to ensure that the Institute maintained its hold on the C.A. designation. The resolution read in part

> "That with a view to secure a more effective body of members holding the diploma of the Institute ... (the original members who were still members and others) whose competency and character shall be affirmed by a resolution of the Council to that effect and who are members of the Institute ... (these be encouraged to seek the fellowship degree)."

In its third resolution the Council decided that the designation "chartered public accountant" shall belong exclusively to the fellows of the Institute practising as public accountants. And as such they would have the right to the initials F.C.A. after their name.

Finally, just so there should be no doubt, the Council presented a list of thirteen senior chartered accountants to the board of examiners in order that the board might report on the candidates' fitness and eligibility to receive the degree of fellowship. There were only four fellows existing at this point. These had been created in the first fellowship exam in the fall of 1885. Numbered among the thirteen potential candidates were the seven members of the board of examiners who did not have their F.C.A.'s already. With that the Council adjourned and proudly went home with the feeling that a good day's work had been done. Two days later, at 4:30 in the afternoon, the board of examiners met to receive Council's instructions and to enquire into the fitness and eligibility of the thirteen senior members to receive the degree of fellowship. This they were readily able to do. Shortly thereafter the board's decision was confirmed by Council.

The total number of fellows in the Institute was raised, therefore, from four to seventeen. And certainly a sizeable body of influential accountants had been selected to secure the F.C.A. designation to the Institute of Chartered Accountants of Ontario. But there had been no examination, there had not even been a pretence of an examination. The syllabus and body of knowledge for the fellowship designation was quite well defined. But in order to obtain an immediate political objective the standards had simply been abandoned. There were some years ahead of equivocation and vacillation before the F.C.A. designation settled into what it is today, that is a purely honorary degree. It proved easier to maintain the standards in the certificate of competency. Or perhaps it is fairer to say that the political rewards for lowering the standards were never so obvious.

There was a childlike simplicity and a spontaneity to the early examination process which must excite the envy and admiration of any of the current examiners, caught up as they are in endless committee meetings and drowned in a sea of candidates and papers. Consider the 1888 examinations. At a meeting of the board of examiners held

November 24, 1887 it was decided to hold the examination on Thursday, January 19, 1888 in the Council Chambers of the Board of Trade in Toronto. Application for the examination were to be received up to January 1. On December 1, late in the afternoon, the board of examiners met again and began setting the exams to conform to the curriculum prescribed by the Council. Each member of the board of examiners was exhorted to start providing questions. It was agreed, further, that the board would meet on December 15 following the monthly general meeting to

> "consider the same (that is the questions submitted) and apportion such further work of preparation as may be deemed necessary to cover the subjects embraced."

The board of examiners also decided to go outside the Institute and ask for questions from responsible and competent individuals. Unfortunately we don't know how successful this process of soliciting questions outside the group was. Or what the result of the meeting after the regular monthly meeting in December. However, it appears not to have been till January 12, 1888 that the board of examiners got down to serious work on the examinations. This was a scant week in advance of the set date, and there were five candidates committed. Of the five, three were from out of town, from London and Windsor, Ontario and interestingly enough from Saint John in New Brunswick.

A three man group, drawn from the board of examiners, met at the home of one of the members. They worked from 7:30 to 10:30 p.m. preparing questions. William Powis, the paid secretary of the Institute, was asked to get the questions into print by Saturday, January 14. The same group was back at it at one of the members' offices on January 14 from 2 to 9 p.m. Revising the existing questions and preparing additional ones. The secretary was again asked to get the examinations printed and ready for the next Wednesday at 4 p.m., at which time the full board of examiners would approve the examinations. As the examinations were due to start the following morning at 10 a.m. it would seem that the approval of the full board was little more than a formality. At that meeting the examinations were formally approved as expected. The examinations for the certificate subjects were then printed. For the diploma, where the board had only two candidates, the exams were handwritten. By modern standards the exams are unusual in that they contained neither the time allotted to the exam nor the marks values of the individual questions. In fact, they exhibit no instructions to the candidate at all.

The board of examiners planned a full day for the candidates on January 19, 1888. The board was in session in the Board of Trade's Council Room from 10 o'clock in the morning, when the exams started, to 10:30 that night and the board recessed and reconvened the next day, Friday, at 2 p.m. By this time the whole process of grading had been completed and the board sat down to prepare its report to Council. Both the candidates for the diploma passed. From the three for the certificate, one first class certificate was awarded, one pass one and one candidate failed. The board awarded $20 to the candidate from Saint John, New Brunswick, $10 to the one from Windsor and $5 to the one from London on account of travelling expenses. The other expenses of the board, by

modern standards, seem pretty reasonable. Printing the examination questions cost $4.50, renting the Board of Trade's Council Chamber was $3.00, other expenses of the board of examiners amounted to $8.30, the secretary for his Trojan services received an additional $50 (his annual honorarium otherwise was $150) and three of the members of the board who had acted as examiners had their fellowship fee remitted as payment for their services.

As to the examinations themselves they represent a respectable level of technical competence. Heavy emphasis was laid on the ability to handle the practice of bookkeeping and accounting. For example, the bookkeeping paper, which accounted for 1/6 of the available marks for the certificate, consists of one question in two parts. Part A is a Trial Balance of a mercantile business and Part B the Trial Balance of a joint stock company. The instructions are to "convert the following trial balance sheets into final balance sheets and show revenue accounts". The questions asked are quite specific. Question 1 on the Banking paper reads:

> "If your account were overdrawn at your bankers and you paid in a sum of money to provide for certain cheques you are about to issue how would you insure that such money was so applied by the bank and not held by him to cover your overdraft?"

But even the most hardened examinee must surely blanch at the prospect of having to write in the expert accountancy paper (worth 150 out of the 1,000 marks available for the diploma, and scheduled between 5 and 6 in the evening). The paper consists of one question.

> "Take the bank returns for 31st October, 1887, and from it give evidence that the central bank was getting into a difficult position on showing improvement."

Some of the marking seems a little peculiar. For example, both the candidates for the diploma scored 100 out of a possible 100 marks on the auditing exam while on the expert accounting exam one person got 150 out of a possible 150 marks and the other one 75. This leads one to suppose that the examiners were getting tired by the time they got to those two papers.

The board of examiners went through the solemn procedure of assigning identifying letters V through Z to each of the candidates as pseudonyms in order to ensure their anonymity. One might question how effective such measures were as all the examiners were present while the exams were being written. Further, there is little doubt that, in order to get through when they did, the examiners must have marked the early exams during the writing of the later ones.

What moral can we take from all this? Surely, it is a simple one. The members on the board of examiners and the Council of the Institute of Chartered Accountants of Ontario, during the period 1885 to 1888 were quite willing to put immediate political advantage ahead of the maintenance of standards of competence. Their conduct cannot be excused on the grounds that they did not know how to define and maintain such standards. Manifestly,

they did know how, but for all J. J. Mason's ideals the ICAO was really not committed seriously to the maintenance of its standards. At least, not to the extent that it would explore other possible ways of obtaining a desired goal rather than a reduction in standards.

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REGRESSION ANALYSIS: AN INTERNAL CONTROL EVALUATION TECHNIQUE

An integral part of the audit decision sequence is the linking of the information generated from the internal control review with the determination of appropriate sample sizes for those accounts audited via statistical sampling. But the determination of the appropriate linkage has proved to be a major problem for the auditor. Several authors, including Knoblett (1970, p.429), Smith (1972, p.260) and Scott (1973, pp.304-5), have recognized this problem and suggested a Bayesian approach to the incorporation of the internal control evaluation into the audit model. Smith (1972, p.260) compared the two methods advanced in the accounting literature for formally incorporating internal control information into the audit process:

> (1) arbitrary variation of confidence levels of a sample design as a function of the state of internal control, and
> (2) utilization of a Bayesian approach to sample design.

The above authors argue that the latter approach is preferable because it permits the linkage of sample information and internal control information. The prior information obtained from the internal control review takes the form of an a priori distribution on the particular states of nature possible, namely the error rate possibilities or values of account balances. However, as Smith noted, the Bayesian approach does not eliminate the subjectivity of the derivation of the prior distribution.

This paper presents an analytical framework describing an inferential linkage auditors can use to reduce the subjectivity in relating the internal control evaluation to the estimation of the prior distributions on the variable of concern and suggests the use of a well established analytical technique (regression analysis) to assist in quantifying the parameters of the necessary linkages. The approach has application to both attribute and variable sampling; however, for purposes of illustration, the discussion will be restricted to sampling of account balances.

The approach presented is unique in the inference literature related to the auditing process. Ashton (1974) utilizes an analysis of variance

experimental design model to test the consistency of internal control judgements among a group of auditors involved in a payroll system judgement. The practising C.P.A.s were asked to make six point ratings of the strength of various internal control systems as characterized by a simplified set of internal control questionnaires. In addition to consistency tests among auditors, he also tested the consistency of each auditor by using a second exposure to the questions. Correlations were used to evaluate consistency. Average correlations indicated a reasonable high consistency on both dimensions. The analysis of variance weightings for each subject were used to assess the relative importance attached to each internal control point by each auditor compared to his subsequent response and to other participants. The approach used by Ashton is a straight application of paradigm used in psychology to study information processing characteristics called the regression or lens model approach. For a review of a large part of this literature see Slovic and Lichtenstein (1973). Joyce (1977) followed a similar approach to study judgements about time allocations provided by auditors to a set of steps involved in the audit of accounts receivable. This study again manipulated internal control and used five audit steps as the dependent variable. The correlation results were somewhat lower than Ashton but by in large the conclusions were consistent. Joyce was also able to test the self insight displayed by each subject by comparing self weights attached to each internal control point with those provided by the analysis of variance model. The difference in the tasks assigned in the two experiments was used to explain the differences in results. Zeleny (1976) presents some examples which show the dangers in using the regression approach as the basis for judgements. He demonstrates three situations where problems arise: 1. the prominence of a particular alternative implies that the choice of weights on a random basis would yield the same prediction as those developed by regression analysis. 2. Even minor changes in the alternatives used to develop the model can yield an incorrect prediction from the original weightings. 3. In an ever changing environment, a decision maker can only be consistent by being inconsistent with the model because the model is constantly behind the environment.

Deakin and Granof (1974) present an approach similar in some ways to that advocated in our paper. They use multiple regression on company data, industry statistics and/or general economic indicators to ascertain an out of line condition on an account. They suggest the regression prediction can be used to ascertain α and β risks for an account or to specify sample sizes in order to achieve a desired confidence level on the possibility of a material misstatement in an account. As we note later in our paper, the Deakin and Granof approach can be characterized as being a step prior to what we present. Similarily Curry and Santi (1975) suggest regression analysis as a means of ascertaining out of line accounts and estimating accounts using relations with other accounts.

We first present a model used to characterize the audit inference process in order to provide a framework for our discussion. This is

followed by the application of regression analysis in estimating the parameters of a model used to represent an aspect of this process.

Inferential Model

The audit process is divided into two steps: internal control review and account balance review. The internal control investigation evaluates the adequacy or inadequacy of aspects of the information processing system generating the final values appearing in the general ledger accounts. This evaluation normally includes a questionnaire or checklist device which guides the auditor in his evaluation process. In addition, procedural audit tests are performed to disclose the actual presence or absence of controls and to ascertain error rates for aspects of the system. From these tests and evaluations, conclusions are drawn as to the adequacy of controls which are in turn used to decide upon the extent of the sampling process for related accounts used to determine the acceptability of the reported values for these accounts.

This audit process is described in the following framework. Let r_i $(i=1,\ldots,m)$ be the percentage of lack of control present in the system for a given aspect i of the information processing system. For example, an internal control questionnaire of a large Canadian Chartered Accountant Firm includes seven points under the aspect of control, "can goods or services be ordered without authority." One r_i which might be defined is the percentage of the absence of control for this aspect with r_i assigned a value of 100% if there is an absence of control for all seven points. A second aspect (represented by another r_i) is whether liabilities can be set up if services are not performed. Eleven points are listed under this aspect. If controls are lacking for five of those points, the value or r_i will be (5/11 x 100)%. In addition to information provided by the questionnaire, other information is obtained in the audit via attribute sampling, an auditor's subjective evaluation of error rates for various aspects of the system, etc. Let r_i $(i=m+1,\ldots,n)$ be these observed error rates or variable values.

The information contained in the r_i's $(i=1,\ldots,m,m+1,\ldots,n)$ is used by the auditor to derive a prior distribution on the probability of material misstatement in the account of concern. Letting M be the amount of error in the account balance, the prior probability distribution (density) on M given the observations on r_i is represented by:

$$f(M|r_1,\ldots,r_m,r_{m+1},\ldots,r_n)$$

This distribution is revised as a result of the audit procedure sequence of outcomes $(A_1,\ldots,A_p)$ for testing whether a material error exists in the reported value of the account under consideration. Bayes Theorem is used to revise the probability of the material misstatement given the results of the audit sequence as follows:

$$P(M|A_1,\ldots,A_p) = \frac{P(A_1,\ldots,A_p|M)f(M|r_1,\ldots,r_m,r_{m+1},\ldots,r_n)}{P(A_1,\ldots,A_p)}$$

The probability distribution (density) $P(M|A_1,\ldots,A_p)$ represents the posterior probability on the material error of an account balance given the audit results. Various authors have explored examples of the use of this revision process under different model assumptions (see for example Smith (1972) and Scott (1973)). It is the assessment of the prior probability $P(M|r_1,\ldots,r_m r_{m+1},\ldots,r_n)$ which is the topic of this paper.

While it is conceivable that the auditor may be able to subjectively specify this probability (Chesley, 1975a; Chesley, 1975b; Corless, 1972), complex situations providing a significant amount of data may pose special problems to the auditor in correctly incorporating all available information into the probability estimates. A Bayesian framework can again be used to represent the auditor's intuitive approach to the specification of this prior probability. This framework cannot only describe formally the auditor's inference process but illustrates the further decomposition possible, indicating the complexity of the problem facing the auditor.

Two states of nature are defined. The first, denoted by θ_1, is a state where the overall internal control system is assumed acceptable for a given account. The second, denoted by θ_2, represents the system being considered unacceptable. The range of possible values for each r_i is divided into two defined intervals. An observation in one interval is considered a report that the system is acceptable while an observation in the other interval is a contrary report about the system. This is illustrative of the case where the r_i's represent questions having yes/no answers. The superscripts "a" and "u" are used to denote an observation of a value in the acceptable and unacceptable intervals, respectively. By Bayes Theorem, the auditor's prior probability may be written as:

$$f(M|r_1,\ldots,r_m,r_{m+1},\ldots,r_n) = \frac{h(r_1,\ldots,r_m,r_{m+1},\ldots,r_n|M)P(M)}{P(r_1,\ldots,r_m,r_{m+1},\ldots,r_n)}$$

The prior probability $f(M|r_1,\ldots,r_m,r_{m+1},\ldots,r_n)$ has now become a posterior probability with $P(M)$ being the prior probability. If it is assumed that the r_i's are mutually independent, the likelihood function h may be written as:

$$h(r_1,\ldots,r_m,r_{m+1},\ldots,r_n|M) = \Pi_i \frac{K_i(r_i^a|\theta_1)}{K_i(r_i^a|\theta_2)} P(\theta_1|M) + \Pi_i \frac{K_i(r_i^u|\theta_1)}{K_i(r_i^u|\theta_2)} P(\theta_2|M)$$

for i = 1, 2, ..., m, m+1, ...,n

where Π represents the product operator (Schum and Kelley, 1973). Schum (1975) discusses the application of this model to medical, legal, and military situations.

The implication of the formulation is that reports do not give perfect knowledge of the acceptability of the system, i.e., the likelihoods

$K_i(r_i^a|\theta_1) \neq 1$ or 0, and $K_i(r_i^u|\theta_2) \neq 1$ or 0. This is consistent with the auditor's experience that a yes or no on an internal control questionnaire does not give an absolute answer as to whether the system is acceptable or unacceptable. Also, attribute sampling tests being statistical in nature yield uncertainty concerning conclusions about the state of the system.

Two results are directly evident from the above description. First, the informational impact of a given observation on r_i is not solely a function of $K_i(r_i^a|\theta_1)$ but rather of its ratio to $K_i(r_i^a|\theta_2)$, thus requiring specifications of both likelihoods. Second, the framework relates questionnaire results and audit tests to the state of the system and then to the materiality of the difference between the reported value of an account and its true value. This is representative of the actual audit inferential process and describes the usual division of the audit duties. Typically, a staff member specifies $K_i(r_i^a|\theta_1)$ and $K_i(r_i^u|\theta_2)$ which represent the relationship between the report and the state of the system, while the manager specifies $P(\theta_1|M)$ and $P(\theta_2|M)$ which represent the probability of a material misstatement of an account.

The framework also provides insight into the complexity of the audit inference process. The distribution P(M) must be defined. The auditor might use a subjective evaluation based upon his knowledge of such factors as previous audits, the current economic environment, and reported values of the accounts. A less subjective approach has been suggested by Deakin and Granof (1974) and Curry and Santi (1975). Past data on the above factors is used by these authors to derive a predictive function for an account balance given the use of the current values of the factors as values for the independent variables. The distributions on the account balance can then be translated into a distribution on the error level. However, problems, such as errors in variables, limited data, and changing functional relationships, arise and must be addressed in such an approach. Another alternative is to assume no prior information on the distribution in which case a uniform distribution on M would be appropriate. However, this tends to eliminate valuable information currently used by the auditors.

A second problem is the specification of the likelihood distribution h. If the r_i's are assumed to be independent, the K_i must still be subjectively specified or derived from past data which is currently unavailable. If the r_i's are not independent, a complex multivariate distribution must be used. Again the auditor is faced with a complex specification. The question of independence of the r_i's must be left for empirical research. If dependence does exist, one possible approach is the use of factor analysis as a means of reducing the set of r_i's to a group of independent variables.

The components of the model are currently subjectively determined and calculated with the auditor relying upon his own experience for the subjective evaluation. While it is possible for the auditor to subjectively specify $f(M|r_1,\ldots,r_m,r_{m+1},\ldots,r_n)$, its relative complexity requires

an experienced auditor to aggregate the information contained in the report $(r_1,\ldots,r_m,r_{m+1},\ldots,r_n)$, which is a difficult task (Chesley, 1975b). Studies involving simplified problems requiring a two stage inference process similar to the one described for the audit process indicate subjects tend to be optimistic in their inference (Schum 1973, provides a review of some of the research on this problem). Studies on inferences requiring aggregations of various diagnostic situations indicate problems with the aggregation process (Sawyer, 1966). Unfortunately, auditors have not been tested in this type of two step inference process except where guide data was provided (Chesley, 1975b). This latter study, while not explicitly concerned with the problem at hand, shows the feasibility of having staff auditors intuitively aggregate three variables and five distributions with guidance provided. It is the provision of this guidance that we propose to address.

Given this complexity in the inference process and the limitations of an auditor's own isolated experience as input, this paper suggests the use of a well known quantitative tool (regression analysis) to aid the auditor in his formulation of $f(M|r_1,\ldots,r_m,r_{m+1},\ldots,r_n)$ using a firm-wide data base as the basic input. The next section contains a formulation of the problem within the framework of the technique and a discussion of the practical problems which might arise in its application.

The Regression Model

A linear regression model is advocated for initial use in estimating $f(M|r_1,\ldots,r_m,r_{m+1},\ldots,r_n)$. Other functional forms are available but will not be discussed here. Also we implicitly assume when presenting this model that a uniform prior on M is specified. Bayesian linear regression (Lindley and Smith, 1972) would allow us to assume otherwise but we deem this to be outside the scope of this paper. The linear model may be formulated as follows:

$$M_i = \sum_{j=1}^{n_i} a_{ij}\, r_{ij} + \xi_i$$

where: M_i is column vector of the degrees of error for account i expressed in percentages.

a_{ij} is the coefficient on the report r_{ij} in the linear functional form.

r_{ij} $(j=1,\ldots,n_i)$ are vectors of the various report values observed related to different aspects of the control system affecting account i. There are n_i of these reports.

Upon determination of the regression coefficients a_{ij} using a regression algorithm (e.g., Dixon, 1971), a distribution on M_i may be derived under certain assumptions. Letting $\hat{M}_i$ represent the prediction of the derived equation and M_i be its actual value, ξ_i is defined as $M_i-\hat{M}_i$. Least squares regression analysis which minimized $\sum_{m=1}^{N} \xi_m^2$ (N is the sample size) is used and the following five assumptions are made:

1. ξ_i is a random variable with mean zero and variance σ_i^2.
2. ξ_{ij} and ξ_{ik} are uncorrelated for $j \neq k$.
3. ξ_i is normally distributed.
4. Each vector r_{ij} is nonstochastic.
5. The number of observations used to develop the estimates for each account must exceed the number of coefficients to be estimated.

Under these conditions M_i is normally distributed with mean $\hat{M}_i$ and a variance which is easily calculated in the regression algorithm (Draper and Smith, p.24) given a set of reports $r_{i1},\ldots,r_{in_i}$ for account i. This distribution may be used directly as the prior distribution on M_i or it can be further modified by the auditor with additional information not included in the report set before it is used with the audit sequence $A_1,\ldots,A_S$ for account i.

The assumption that the r_{ij}'s are nonstochastic implies that there is a need for a lack of measurement errors in the report values observed. Since we propose only the use of answers to internal control questions and attribute tests of various control points, this should not be a major problem. Errors in the measurement of the degree of misstatement of an account (M_i) may exist depending on the exact specification of M_i. Ideally one might wish to use the point estimates of errors made by auditors involved in the audit of this account. More likely, however, past audit results on the account in question would likely be used because of its availability and its concreteness. Given that past results over or understate this error amount, errors in measurement of the dependent variable will exist. These errors, however, do not affect the estimates of the coefficients in the regression but they will increase the variance of the distribution about the material misstatement amount. This, however, is realistic in terms of the distribution of the true misstatement amount.

Dawes and Corrigan (1974) review the predictive robustness of the linear model in inference situations. They suggest that under conditions where each variable r_{ij} is conditionally monotone in its relationship to M_i the linear model performs well even when the situation is non-linear. Conditional monotonicity would apply in most audit situations since it occurs when higher values on each r_{ij} predict higher values on the M_i independently of the values of the remaining r_{ij}'s. Model selection is a difficult problem and in practice involves intuitive appeal, empirical data review, and a variety of theoretical considerations (Gaver and Geisel, 1974). Empirical review of the appropriateness of the model proposed in this study must await future research.

Care must be taken in the selection of the clients included in a data base and thus the application of the derived function to a set of clients to which the function can apply (Heimann, 1972). A tradeoff

exists between the collection of a sufficiently large group of clients to obtain the necessary data base and the decrease in the explanatory power of the independent variables. Accounting processes will vary across clients so that certain questions or tests may not be applicable to certain firms. Even if a particular r_{ij} is applicable to several clients, the relationship between the distribution on M_i and the values which r_{ij} may have may differ across clients. Including firms unlike as to these relationships or sets of reports applicable to a particular account may reduce the explanatory power of the report variables.

It will therefore be necessary to cluster firms into groups on the basis of similarity in their accounting systems. The clustering may be accomplished on the basis of general system characteristics or characteristics of segments of the control system. Thus, a client might belong to one group and its associated regression function for one account and another group and its associated regression function for another account. Techniques for the grouping process are available in the literature of various disciplines (Heimann, 1972).

The regression model contains least squares estimates of the weights a_{ij} used to combine the various reports r_{ij} in order to develop the predictive distribution on M_i. It should be noted that regression analysis does not require independence of the r_{ij}'s. Interpretation of the coefficients of the r_{ij}'s is difficult under conditions of dependence but predictive ability is not affected so long as data sets remain consistent and elimination of non significant predictors is not undertaken. Thus, in contrast to the intuitive approach of the previous section, a complex multivariate distribution does not have to be specified. Einhorn and Hogarth (1975) discuss the possibility and relative accuracy of using a regression formula in which each weight is equal. This would imply a simplified aggregation process where a simple addition of the r_{ij}'s percentages would be used instead of a weighted addition. Einhorn and Hogart explore two models:

$$M_i = \alpha_i + \sum_{j=1}^{n_i} r_{ij} + \xi_i \qquad (1)$$

$$M_i = \alpha_i + \gamma_i \sum_{j=1}^{n_i} r_{ij} + \upsilon_i \qquad (2)$$

In the first model (1) each weight is one, while in the second (2) each weight is a constant γ_i. To operate the models, one assumption is needed, namely, the auditor must <u>a priori</u> be able to specify the sign of the weight, thereby entering the r_{ij}'s as positive or negative members. Two main advantages are attributed to these unit models: 1) simplicity and 2) no loss of degrees of freedom as the number of r_{ij}'s increase. To see this latter point, the expected mean squared error for predictions from the original model is

$$\sum_{m=1}^{N} \frac{\xi_{im}^2}{(N-n_i-1)}$$

where N is the sample size. Model 2 above has a mean squared error of

$$\sum_{m=1}^{N} \frac{\upsilon_{im}^2}{(N-2)}$$

These formulae indicate that accuracy trades sample size for variables. A variety of trade-offs are studied suggesting that unit weighting models perform as good as or better than weighted models when the coefficient of determination is low or moderate, i.e., $R^2 < .80$ unless sample sizes are very large, $n > 200$. While the results of this research are only tentative, they do suggest the need for future research to explore the predictive accuracy of unit weighting models in audit situations.

Summary

This paper has explored the inferential information processing sequence of the auditor and the use of regression analysis as a means of developing a prior distribution on the error magnitude in an account being audited by statistical sampling. The model presented provides a practical approach to obtaining a prior distribution for the Bayesian sample size determination methodology proposed in the literature as a means of representing the account audit process. Whether or not the resulting distribution is actually used as the Bayesian prior is irrelevant since it at least provides a guide to the nature of a prior which at present is not available. The complex inference process contained in the aggregation of internal control information to achieve a prior probability distribution on the statement account errors can be at least checked against the regression predictive distribution. This paper represents only a part of the beginning stages of a research effort into the quantification of the linking of information flow between different steps of the audit process. As research proceeds, a unified structure must be developed to incorporate the research developments in this area.

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