reporting had any future. Research with a positivist epistemology was represented by the contributions from Kurt Auer of the University of Innsbruck with an empirical analysis of the value relevance of earnings figures based on international, EU and Swiss accounting standards and from the University of Amsterdam, Henk Langendijk and Bart van Praag with a comparative study of income smoothing in Europe. A rewarding exchange of ideas and comments followed these presentations, both during the formal meeting and the relaxed atmosphere of the buffet lunch that followed.

Once again the topics of discussion after these papers highlighted some of the fundamental polarity surrounding the ‘accounting’ phenomenon. Is accounting, as Herbert Biemer suggested, for the benefit of the whole community, or, as other participants at the conference insisted, for the benefit of shareholders? Is ‘accounting’ a form of communication or measurement? If it is the former can we meaningfully speak of an international accounting standard, like the metric system, as one participant suggested? If it is the latter, then why should we be concerned with the subjective individual needs of shareholders or the community? Such are the real alternatives still facing the future of research and practice in financial reporting.

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**EIASM’s EDEN Doctoral Seminar on Analytical Accounting Research**

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‘EDEN calls to everyone’s mind the garden of delights to which the Book of Genesis refers. It evokes the attractive and creative environment that EIASM offers to young promising scholars who undertake the exciting doctoral adventure.’

Although the EIASM’s Doctoral Education Network already exists since 1988, it was the first time that an EDEN-seminar was organized in accounting. It was devoted to ‘Analytical Accounting Research’ and held at the headquarters of the EIASM in Brussels, Belgium, on 8-12 October 1996. Twelve PhD students from various European countries participated. The faculty included the following members: Professor John Christensen, Odense University, Denmark; Professor Gerald A. Feltham, University of British Columbia, Vancouver, Canada; Professor Alfred Wagenhofer, University of Graz, Austria. Each faculty member lectured during one day and a half. Their objective was to explore analytical models with which to study accounting problems. During the last few years, analytical models have been used to analyse a variety of problems within financial and managerial accounting as
well as in auditing. The use of analytical models, with regard to the topics
below, was discussed:

- John Christensen: Cost function characteristics and accounting systems;
  Performance evaluation, cost variances, and controllability; Budgets,
  budgeting and participation;
- Alfred Wagenhofer: Cost allocation and transfer pricing; Accounting
  principles and accounting method choice; Disclosure of proprietary
  information;
- Gerald A. Feltham: Impact of public and private information on welfare
  of investors, prices and trading volume, and management incentives;
  Accounting data and market value; Auditing.

The first session of John Christensen dealt with ‘Cost function characteristics
and accounting systems’. The session was organized around the discussion of
a couple of papers on ‘modern costing’. ‘Modern costing’ has created a
renewal of interest in product costing and cost management. It emphasizes
the importance of aggregation, cost drivers, and cost allocation, fine-tuned to
the production environment, in developing useful measures of product cost
and value added. However, in the existing literature, there are only a very
few references made to classical, basic economics. It seems that the exclusive
focus of ‘modern costing’ on the professional side has passed over the rich
heritage of the classical model. This led to the development of a paper by
Christensen and Demski, entitled ‘The classical foundation of ‘modern
costing’’, in which it is questioned how consistent this modern approach to
costing is with the neoclassical theory of the firm. Although there are
similarities (identification of cost pools, appropriate drivers, . . .), the starting
point is different. Classical literature starts from the complete specification of
the technology and moves to the cost function, whereas ‘modern costing’
starts from a simplified cost function.

The central feature additive separability of the cost function was also
identified by Noreen (1991). In his paper, Noreen developed three necessary
and sufficient conditions under which Activity-Based Cost systems provide
relevant costs for decision making.

The session continued with a brief discussion of a paper by Datar and
Gupta (1994), out of which appeared that even though you refine your cost
system, you may be worse off. In other words, Datar & Gupta attack the
literature on its grounds by showing with numeric examples that a new cost
statistic is not necessarily a better one. It may even lead you further away
from the ‘true cost’.

The product costing session was concluded with a discussion of an
empirical paper by Foster and Gupta (1990) in which hypotheses were tested
about volume-based, complexity-based and efficiency-based drivers of
manufacturing overhead costs. Their results, based on cross-sectional data
from a questionnaire of various facilities of an electronics company,
indicated that there is a strong empirical association between volume-based variables and manufacturing overhead levels across facilities. However, after controlling for scale differences, no strong association was found between complexity or efficiency variables and manufacturing overhead levels. John Christensen pointed out that these results may seriously be biased by the fact that all facilities differ from each other which may cause the effect washing itself out, given the research design.

On Tuesday afternoon, John Christensen started with his second session dealing with performance evaluation, cost variances, and controllability. The focus was put on agency models which provide a convenient structure for the study of control problems in organizations. It was made clear that in order to create and study a control problem, you must make sure that there is first of all a conflict of interest. Second, you need to have some uncertainty. Third, you need risk aversion. The discussion went on with a review of a paper by Holmström (1979), entitled ‘Moral hazards and observability’. Holmström derives a necessary and sufficient condition for imperfect information to improve on contracts based on the payoff alone, and gives a characterization of the optimal use of such information. It is interesting to note that Holmström’s work is based on Mirrlees’ work about tax incentives under asymmetric information. Just on the day we were discussing his work, the 1996 Nobel prize for economics was jointly awarded to James A. Mirrlees and William Vickrey. The pair were honoured for their fundamental contribution to the economic theory of incentives under asymmetric information. The complicated and difficult work of Mirrlees was transported by Holmström to management incentives under asymmetric information. The seminar faculty concluded: ‘As you can see although it is not readable, this does not mean that it is not useful . . .’

After having considered the role of imperfect information in a principal-agent relationship subject to moral hazard, the discussion went on with the embedding of the managerial evaluation problem in a principal-agent setting. Antle and Demski (1988) tackled this problem in their paper ‘The controllability principle in responsibility accounting’ and question whether the optimal agency solution bears any logical relation to a casual definition of controllability. The afternoon session was concluded with a brief review of a paper of Dye (1986) dealing with optimal monitoring policies in agencies. It is shown that in a variety of contexts optimal monitoring policies are deterministic and ‘lower-tailed’. Dye attempted to come up with conditions that must be satisfied in order to make a further investigation of the agent’s actions optimal. John Christensen pointed out that this appears to be a very difficult task.

To conclude, John Christensen stressed that it appears that strict conditions are needed on the distribution functions and the likelihood of outcome, given different actions to get intuitive results. In order to apply some of the theoretical insights that were gained during the day, the participants were

Wednesday morning began with a discussion of the exercises. John Christensen then went on with his last formal session on budgets, budgeting, and participation. The first paper reviewed was written by Christensen (1981) and deals with communication in agencies. This paper is often cited in the literature as it is an important sequence of Holmström’s paper on optimal contracting. Christensen has extended the usual agency model by including a communication structure. The discussion continued with considering more profoundly the cost of having communication. Therefore, reference was made to a paper of Demski and Sappington (1993), entitled ‘Sourcing with unverifiable performance information’. This paper shows that information may be used perversely in one part of a control problem in order to help resolve frictions in other parts of the same problem.

The morning session was concluded with a review of a paper on capital budgeting by Antle and Eppen (1985) in which three stylized facts about capital budgeting are brought into relationship with the presence of asymmetric information. The three stylized facts were: the existence of organizational slack, rationing of resources and the fact that the cut-off rate for accepting capital projects in firms is often greater than the market rate of interest.

In the afternoon, Alfred Wagenhofer took over the chair of the seminar. The first formal session dealt with cost allocation and transfer pricing. It was pointed out that in order to create an interesting incentive problem, three ingredients are needed (similar to the control problem): uncertainty, some degree of information asymmetry and a conflict of interest. This, combined with the fact that managers have to make price and effort decisions, makes the link with the agency model obvious. To introduce the problem a paper of Balachandran and Magee (1987) was presented, since the paper gives some basic notions on cost allocation procedures that lead to both short-term (usage) and long-term (capacity) efficiency, which is good for understanding the intuition behind the problem. Wagenhofer pointed out the problem of collusion which may arise when players would discuss the fairness of cost allocation with each other and thereby might reveal their private information.

The discussion then went on with the linkage of the cost allocation rule to the strategic position of the firm vis-à-vis its competitor. Indeed, a key issue in transfer pricing is the strategic playing by the manager and others trying to influence it. Therefore, reference was made to a paper of Gal-Or (1993) on strategic cost allocation. In this paper, it is demonstrated that the sharing rule of overhead costs, selected by firms, depend upon profit as well as strategic considerations.

The session was concluded with a review of a paper by Wagenhofer (1994) on transfer pricing under asymmetric information. More specifically, the paper deals with agency models with pre-contracting information. It is shown that even in a very simple model there is no uniquely preferable
transfer pricing scheme. Depending on the existing conditions, one method is preferable to another. In order to keep the participants ‘entertained’ during the evening, they were asked to solve a transfer pricing problem.

On Thursday, Wagenhofer first discussed the transfer pricing exercise of the previous day and then turned on analytical accounting research with respect to financial accounting issues. The first formal session dealt with accounting principles and accounting method choice. The first question tackled was the choice between discretion and uniformity (Dye and Verrecchia, 1995). In this paper several sufficient conditions were identified that ensure the superiority of expanding discretion. Wagenhofer stressed though that discretion is only useful because it has been audited (with known probabilities), which is a very important assumption in the model.

Another financial accounting issue which could be examined using agency theory is income smoothing. In this respect, a paper by Lambert (1984) was discussed. The paper is concerned with smoothing that arises due to incentive problems.

As a final issue in the accounting principles and accounting method choice session, the LIFO/FIFO choice was discussed. As a research tool signalling models or information transfer models were introduced. In this respect, reference was made to a paper by Hughes and Schwartz (1988) on the LIFO/FIFO choice. Their model provides a justification of why we may observe some firms switching to LIFO, all firms switching to LIFO, or all firms remaining to FIFO, depending on the magnitude of tax benefits and the proportion of good and bad firms. Wagenhofer stressed that in most of these kind of cases you have multiple equilibria, both separate and pooling.

The last formal session of Alfred Wagenhofer dealt with disclosure of proprietary information. In early models, the optimal equilibrium was full disclosure. It appeared that the market forces disclosure because of rational expectations. This is called the disclosure principle. However, this result of full disclosure doesn’t seem to correspond with practice. Indeed, management may have various reasons not to disclose their information. In a paper by Dye (1985), three reasons were considered for management’s failure to disclose their nonproprietary information. Nonproprietary information is information about the firm whose release would affect the prices of that firm, but not the distribution of the firm’s future earnings.

Voluntary disclosure models also need to take into account the costs of voluntary disclosure. In this respect reference was made to a paper by Wagenhofer (1990) on voluntary disclosure with a strategic opponent.

As a final element of the voluntary disclosure problem, the so-called ‘cheap talk’ issue was considered. ‘Cheap talk’ refers to a message which can be communicated at no cost, but which is arbitrary as it cannot be verified. Gigler (1994) has tackled this issue in his paper, entitled ‘Self-enforcing voluntary disclosures’. The afternoon session was concluded with an exercise on ‘cheap talk’ equilibria out of Farrell and Gibbons (1989).
On Friday, Gerald Feltham took over the chair for the last day and a half of the seminar. During the morning session Feltham discussed the impact of public and private management information on investor welfare, prices, trading volume and management incentives. Feltham pointed out that when examining the role of regulation, which affects all firms, you need to turn to general equilibrium analysis instead of partial equilibrium analysis. It could be seen as a kind of social welfare analysis. In this respect, Feltham first considered the welfare implications of public information in efficient markets. Therefore, an analysis was made of the decision-facilitating role of external accounting reports in large capital markets in which managers are costlessly motivated to act in the best interests of investors. It was demonstrated that if those reports provide a means of making better production decisions, they also appear to provide a basis for Pareto improvements. In contrast, reports that reveal future firm specific windfall gains or losses do not seem to have value. They only affect market prices. It was further shown that while resources will be allocated more efficiently if managers have information about the productivity of their firms, the economy can achieve those efficiency gains without reporting firm specific productivity information to investors. The latter holds if investors have well-diversified investment portfolios and are aware of each manager’s information structure and decision criterion.

Feltham then turned to the issue of investor acquisition of private information prior to a public report. In this respect, reference was made to a paper by Kim and Verrecchia (1991). In this paper, it is shown that when the quality of prior information increases, residual uncertainty will decrease as well as the variance of price changes. Feltham pointed out that if one could prevent investors from acquiring private information, everyone would be better off. However, no one trusts another which results in the so-called ‘shoot in your own foot’ phenomenon.

The last part of the morning session dealt with market prices as contractible proxies for private investor information. As earnings information is impounded into the share price, the question arises as to what role earnings, as a separate contracting variable, can play in alleviating agency problems. Feltham referred in this respect to a paper by Bushman and Indjejikian (1993). It appeared that if there is no private investor information, then the market price is ignored and the optimal contract is based strictly on the public report. Feltham pointed out though that comparative statics can significantly be influenced by whether the rational investors’ private information is exogenous or endogenous.

The afternoon session dealt with accounting data and market value. First of all, the relation between market value and future accounting numbers was considered. There has already been substantial empirical research on this issue. However, theoretical fundamentals were lacking. This has led to a joint working paper of Feltham and Ohlson (1996). The basis of this paper was prior research published by Feltham (1996) and Feltham & Ohlson (1995).
The first paper focused on the construction of future accounting numbers. The second paper demonstrates that, under certain assumptions, the value of equity also equals the current book value of the equity plus the discounted value of risk-adjusted expected abnormal earnings. However, the accounting for other equity transactions, like convertible debts and stock warrants, can result in accounting numbers that do not permit the general application of the accounting-value relation. In this respect, accounting procedures for the issuance of equity were classified as being ‘super-clean’, ‘contingently-clean’, or ‘dirty’.

Feltham then turned to a joint working paper with Ohlson (1996) in which the basic theoretical structure of the valuation model is extended by eliminating restrictions on investors’ risk preferences and the behaviour of interest rates.

The afternoon session was concluded with considering the relation between market value and contemporaneous accounting numbers. Reference was made to another joint paper of Feltham and Ohlson (1996), in which certain attributes of classical depreciation theory are extended to nonclassical settings. Much of the analysis dealt with the identification of a depreciation policy such that the market value can be inferred from book value plus an adjustment for the firm’s profitability as measured by abnormal earnings. It was stressed that different models must be applied on the different components of abnormal earnings, namely persistent and non-persistent abnormal earnings.

In the last session of the doctoral seminar on Saturday, Feltham dealt with analytical accounting research in auditing. First of all, the role of audits and audit quality in initial public offerings was considered. In his respect, reference was made to a paper by Datar et al. (1991), in which a model is developed in which audit reports are valuable to entrepreneurs who have private information and seek to share risks with investors.

The auditing session was concluded with a discussion on the impact of litigation on auditor incentives and value. Feltham referred to a paper by Chan and Pae (1996) which examines the economic consequences of alternative legal environments.

By means of conclusion, I would like to thank the EIASM and the seminar faculty for the opportunity that was given to us, doctoral students, to improve our understanding and skills for using analytical modelling to tackle interesting accounting questions.

REFERENCES
