The influence of neo-classical economics on Management Accounting education in South Africa

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"Tis education forms the common mind, just as the twig is bent, the tree's inclined"
(Alexander Pope in Dainteth, J. & Stibbs, A. 1994:221)

ABSTRACT

An analysis of the major sources of influence on management accounting education in South Africa reveals that management accounting education in South Africa is largely based on neo-classical economic theory. Regarding the sources, Faul *et al*. (1997), Redelinghuis *et al*. (1996), as well as the SIACA (1997) and CIS (1999) syllabi implicitly accept neo-classical economics as basis. Drury (1996) does so explicitly but also addresses alternative approaches to the subject. In the CIMA syllabus several of the restrictive assumptions of neo-classical economics are relaxed. Bearing in mind that management accounting is based on the assumption of rationality, ignores the effect of quality and changes brought about by time and inflation, and that it proposes simplistic, determinate solutions in a complex world, it is not surprising that the relevance of the subject has been questioned. It is recommended that authors of management accounting textbooks should clarify the foundation(s) of their texts, and where the texts are based on neo-classical economics, indicate its limiting assumptions. Students should be encouraged to study the alternative perspectives and foundations of management accounting.

Key words:

Economic analysis, Management Accounting, management accounting education, management accounting syllabus, management accounting textbooks, neo-classical economics, perspectives on Management Accounting, South African context.

1. Introduction

The relevance of management accounting was increasingly questioned during the last two decades of the twentieth century (Goldratt and Cox 1984, Johnson and Kaplan 1987, Lovell 1988, Shank 1989), which led to a variety of attempts to rescue the subject. New techniques such as activity based costing (Cooper and Kaplan 1988), backflush accounting (Bhimani and Bromwich 1991), throughput accounting (Galloway and Waldron in Du Plooy 1998) and target costing (Hiromoto 1988), to name but a few, were developed to respond to the challenges.

One of the solutions to the management accounting predicament suggested by Johnson and Kaplan (1987) is that academics involved in management accounting should reconsider their approach to the subject. According to Johnson and Kaplan (1987), the research and textbook traditions of academics had focused on sophisticated approaches to simplistic economics-based models, bearing little relation to the complexities experienced in practice. Similarly, this paper suggests that the root of the alleged problem of irrelevance of management accounting will not be fully understood, until the foundation of management accounting education has been laid bare. In searching for the foundation, this study focuses on neo-classical economics as a possible basis for the subject. Several authors, including Kelly and Pratt (1992), Hopper and Powell (1985), Neimark and Tinker (1986), as well as Cooper (1980) have proposed that management accounting is largely based on neo-classical economics and have sought to explain the shortcomings of the subject by referring to its limiting assumptions.

The aim of this investigation is to assess to what extent management accounting education in South Africa is based on neo-classical economics, and to consider the impact this has on the relevance of the subject. Although the study necessitates a fairly thorough review of neo-classical economics, the aim of the paper is not to criticise theory or neo-classical economics *per se*, but to rather evaluate the implications of using it as a basis for management accounting.

In broad terms the paper is divided into three parts which endeavour to answer three questions. Firstly, what are the main tenets of neo-classical economics? This is discussed in sections 2 and 3 of the paper, with section 2 focusing purely on neo-classical economics, whilst section 3 addresses alternative perspectives on management accounting, to illustrate where neo-classical economics fits in. The second question that the paper addresses is to what extent management accounting education in South Africa has been influenced by neo-classical economics. Section 4 explains the research method applied and section 5 discusses the results of the investigation. The third question addresses the consequences of the influence of neo-classical economics on management accounting education in South Africa, which is discussed in section 6. The approach followed is to identify and analyse the main sources of influence on management accounting education in South Africa.

The term "neo-classical economics" may be interpreted as a positive theory of economic behaviour or a normative theory that prescribes a set of rules for optimal use of economic resources. It falls outside the scope of this paper to investigate the merits of these opposing views (Blaug 1980, Truu 1988, Friedman 1953:3-46), and for the purpose of this investigation it is taken to be a positive theory in accordance with the mainstream approach.

2. An overview of neo-classical economics

2.1 Demand

The essence of neo-classical economics is not perfectly self-evident (Samuels 1990:3, Colander 2000), and it can not be confined to only one set of ideas or a single approach to economic analysis. However, there are a number of recurring, common characteristics and assumptions that are usually referred to as neo-classical economics. These form the focus of this section.

In constructing the demand curve, neo-classical economics makes several limiting assumptions. Decision-makers are assumed to act rationally, i.e. they would be prepared to pay less for the last unit required than the preceding one (Marshall 1920, Barber 1967: 171), and to be pursuing their own advantage, namely maximum satisfaction (Barber 1967:170). Simon (1959) questioned the assumption of rationality and argued that economic agents are only able to exercise "bounded rationality". Individuals are unable to understand the world fully, to identify all possible options and to process all available data. He suggests that decision-makers are content to choose an action that will lead to satisfactory rather than to maximum returns. Similarly, Reisman (1986:19-20) pointed out that Marshall made no allowance for the possibility that "much of human action is irrational or non-rational in nature"

The demand curve also makes no allowance for any change in the character or tastes of the individual decision-maker, due to e.g. changes in fashion or the introduction of competing substitutes. This is in order to ensure that the law of diminishing marginal utility remains intact and is in keeping with the assumptions of the stationary state, where the average general conditions of production and consumption as well as of distribution and exchange remain motionless. The analysis is therefore limited to only a moment in time and assumes constant real incomes (Marshall 1920: 94, 109, 342).

2.2 Supply

Marshall endeavoured to shed some light on the factors underlying the supply price by dividing supply time into four periods, namely the market, short term, long term and the secular periods. The market period is that period during which the quantity supplied cannot be increased or decreased in response to a sudden increase in demand, and production costs will have no direct influence on price. In the short period, firms can vary their production by fully utilising all appliances and even working overtime, but they cannot vary their inputs of skilled labour, the stock of machinery they use or their methods of production. Marshall (1920: 359) divided costs incurred in the short term into prime and supplementary costs, which are referred to in modern management accounting textbooks as *variable* and *fixed* costs. In the long run, all factors are variable and prices should therefore approximate the costs of production. The secular period is long enough to allow for changes in knowledge, population and capital, which have permanent influences on the conditions that affect demand and supply (Marshall 1920: 374,379; Reisman 1986:52, 54; Backhouse 1985:96, Oser and Brue 1988:280).

At the point of intersection between the demand and supply curves, the equilibrium price is established (Barber 1967:174, Roll 1938:460). This is based on the premise that where demand and supply do not equal each other, the price rates, wage structures and required return on capital, will adjust in order to equate supply and demand, and so clear the markets (Marshall 1920:345, Fellner 1960). In the long run the normal equilibrium price tends to balance the quantity supplied and demanded exactly, and is equal to the long-run average cost of production.

2.3 Distribution

Neo-classicists approach the allocation of rewards to the agents of production in much the same way as the valuation of the outputs, namely that they ultimately depend on supply and demand (Barber 1967). Marshall (1920) identified four agents of production namely land, labour, capital and organisation. In essence, each factor is reimbursed according to its net contribution at the margin. The decision-maker estimates how much additional income can be generated after taking into account additional expenses that will have to be incurred or savings that might be caused, upon adding one additional factor of production (Marshall 1920, Reisman

1986:153).

In contrast with the aforementioned view that distribution depends on supply and demand, an alternative school of thought holds that power determines distribution. Whereas neo-classical economists imply that profit is an indication of a firm's efficiency, political economy attributes the division of income, and therefore the rate of profit accruing to capital, to the distribution of power in society, and the social-political and institutional structures that mirror that distribution of power (Tinker 1980:147).

2.4 Abstract approach

Neo-classicists take an abstract and reductionistic approach to economic analysis by removing problems from its context and focusing on a limited number of variables. Marshall (1920:366) explains the application thereof, as follows: "The existence of other tendencies are not denied, but their disturbing effect is neglected for a time. The more the issue is thus narrowed, the more exactly can it be handled: but also the less closely does it correspond to real life". Other influences or variables are thus presumed to remain equal and constant (*cœteris paribus*) and the central nerves of the economic process are isolated.

Reductionist models and deductive reasoning hold a number of benefits. They are ideally suited for to the application of mathematics and particularly to the use of differential calculus, causing economics to become more universally understandable and economic analysis and discussion to be more rigorous and consistent (Heilbroner 1967, Barber 1967:167). The employment of mathematics also makes it possible to develop powerful tools of analysis, resulting in economics becoming a more exact social science, but such "exactness" may not be properly reflecting any social "reality".

In the hands of neo-classical economists, economics was removed from historical times and detached from specific social circumstances (Barber 1967:166-67, Oser and Brue 1988:213). Furthermore, the precise language of mathematics cannot reflect differences in quality, except insofar as it can be translated into differences of quantity (Marshall 1920:545). The principal tendency is to seek determinate and optimal solutions. This presumes the availability of perfect knowledge of the future, including the firm's demand curve and cost functions, at no cost and without uncertainty (Samuels 1990: 9, Ashton, Hopper and Scapens 1991:4). However, Mattesich (1980: 218) reminds us that it is impossible to accurately predict the future and that information is not a free commodity. Another shortcoming of the *cœteris paribus* (reductionist) approach is the arbitrary nature of the choice between the variables that will be included in the analysis ("central nerves") and those that will be ignored or temporarily neglected.

Although some definitions of neo-classical economics include macro-economics it is normally regarded as a micro-economics subject (Samuels 1990:10). Neo-classical economics analyses the functioning of the market system by investigating the economic behaviour of economic agents, i.e. households, firms and industries, rather than at the level of the economy as a whole (Barber 1967:164). This form of micro-economic analysis assumes that a study of the behaviour of the individual economic agent will reflect the behaviour of the collective society, and interrelationships are ignored (Marshall 1920:18). However, Hodgson and Screpanti (in Scapens 1994:307) as well as Neimark and Tinker (1986:370) suggest that human behaviour cannot be reduced to the choices and decisions of isolated individuals, but must be seen in his/her cultural, social and historical context.

Other schools of economic thought, for example the institutionalists and Keynesians returned to macro-economic analysis. The institutionalists proposed a broader perspective in which the economy must be studied as a whole, rather than examined as separate entities isolated from the whole. The Keynesians concerned themselves with the determinants of the total or aggregate magnitudes like total amounts of consumption, savings, income, output and employment (Oser and Brue 1988:413).

2.5 Maximum satisfaction

The general neo-classical doctrine is that a position of stable equilibrium of demand and supply, under circumstances of perfect competition, is also a position of maximum satisfaction for all the parties concerned (Marshall 1920:470, Fellner 1960:201).

Instead of maximising satisfaction or utility, Robinson (in Backhouse 1985:142) suggested profit maximisation as an alternative motive for economic action. According to her "any individual, in his economic life, will never undertake an action that adds more to his losses than to his gains, and will always undertake an action which adds more to his gains than his losses". This principle culminated in the theory of the firm, which accepts profit maximisation as the main aim of the organisation. The way in which the theory of the firm should be interpreted is problematic in cases where management act as agents on behalf of the owners (Samuel, Wilkes and Brayshaw 1995: 4, Drury 1996:317-323). Machlup (1967:5) explains such a situation with the following statement: "whereas owners would run their business chiefly with a view to a maximum of money profits, managers run it with several supplementary and partly competing goals in mind". These other goals may include maximum sales revenue (Baumol 1959:50), maximising their own utility (Williamson 1964:1033) or sales growth (Baumol 1967:89).

The theory of the firm further suggests that if each firm acts to maximise its profitability, then the profitability of the total economy will be maximised. However, the Cambridge school (Harcourt in Kelly and Pratt 1992:226) has developed theories to recognise the difference between individual firm's behaviour and the aggregate effect on the economy.

2.6 No government intervention

Neo-classical economics relies on the market process to ensure an optimal and equitable distribution of resources among all the members of the society, whilst pursuing their own individual interests. This view was inherited from classical economists such as Adam Smith (1993:22) and implicitly supported by neo-classical economists by proposing minimal government intervention in the market system (Oser and Brue 1988:214,272, Marshall 1920:712-3).

The prevalence of monopolies, poverty, depression and waste in the US economic environment during the end of the nineteenth century, resulted in doubts regarding the validity of the doctrine that minimal government intervention produced maximum social wellbeing. One of the responses was that the institutional school of thought *inter alia* advocated a more holistic approach to economics as well as a focus on the role of institutions (or habits) on society (Oser and Brue 1988:362). According to the institutionalists, market prices are inadequate indicators of individual and social welfare, and unregulated markets do not lead to the efficient and just allocation of resources. They propose government intervention in economic and social affairs (Oser and Brue 1988:364). This is also the view of the Keynesian school of economic thought which suggests that the government should intervene actively through fiscal and monetary policies to promote full employment, price stability and economic growth (Oser and Brue 1988:364, 413).

2.7 Competition

The classical, marginalist and initial neo-classical economic model was based on the premise that inefficiencies by organisations would result in other firms entering the market and forcing out inefficient producers (Ashton *et al.* 1991: 7, Oser and Brue 1988:316). Thus it was assumed that perfect competition in the market would correct sub-optimal situations and lead to the optimal and appropriate allocation of productive resources (Oser and Brue 1988:316).

Sraffa (in Backhouse 1985:140, Oser and Brue 1988:317) pointed out that in the long run neither increasing nor decreasing returns to scale were compatible with perfect competition which led him to rejected the assumption of perfect competition (Backhouse 1985: 140-141).

From the amendments to neo-classical economic theory we learn that under monopolistic competition, prices are likely to be higher and output lower than under pure competition. Monopolistic competition describes a situation where each producer has a monopoly but products are very similar (Oser and Brue 1988:319). Chaimberlain (in Backhouse 1985: 138) also pointed out that economic analysis should not be limited to perfect competition and monopoly but should cover a variety of market structures. These structures might include monopolistic competition, oligopoly which is a state of limited competition between few producers or sellers as well as monopsomy, which refers to a situation where there is either a single buyer in a market or a group of buyers acting as one (Oser and Brue 1988:324, Backhouse 1985: 139).

2.8 A summary of the main characteristics and limiting assumptions

From the above overview some of the predominant characteristics and assumptions of neo-classical economics can be identified. They are rationality, maximum satisfaction through the market, reductionism (focusing on a limited number of variables), abstract (removed from context) and ignoring quality, stationary (limited to a moment in time) as well as constant real incomes. Further assumptions include a process of seeking optimal, determinate solutions, the availability of perfect information, and no uncertainty of information as well as information at no cost under conditions of perfect competition.

3. Various perspectives on Management Accounting

3.1 Background

Currently there exists a wide variety of perspectives on the purpose and practice of management accounting. Ideas have been borrowed from several other disciplines in order to facilitate a more complete understanding of the subject. A universally accepted classification of the different views does not exist, but Puxty (1993) manages to classify the various perspectives on management accounting into five frameworks or paradigms. These are the traditional paradigm, the systems movement, the interpretative approach, radical critique and finally, universal abandon. Hopper and Powell (1985) undertook a similar investigation and classified management accounting thought into three frames of reference, namely functional, interpretative, and radical. Their framework is essentially based on the basic Kuhnian sociological framework of Burrel and Morgan (1979), and is reconcilable with that of Puxty. The Puxty (1993) classification is employed here to discuss some of the more prominent views in broad terms. His classification is preferred since it was developed with a classification of management accounting schools of thought in mind, whilst the Hopper and Powell (1985) classification is derived from a sociological framework.

3.2 The traditional paradigm

Most of the contents of conventional management accounting texts fall into this category. This approach has a technical orientation, is problem-centred and takes the organisation as its point of departure, which it also treats as a closed system. It is rationalistic, prescriptive, functionalist, ahistorical, apolitical, reductionist and positivist (Puxty 1993). Several authors have suggested that traditional management accounting is based on neo-classical economics (Neimark and Tinker 1986, Kelly and Pratt 1992, Puxty 1993). The theories and views normally associated with traditional management accounting include scientific management (Hopper and Powell 1985), information-economics (Drury 1996) and agency theory (Jensen and Meckling 1976).

3.3 The systems perspective

One of the key characteristics of neo-classical economics is that it is "reductionist". The Systems approach attempts to overcome reductionism by breaking down barriers among traditional scientific disciplines and by aiming to view every problem as a whole (holism). This approach focuses on the interconnectedness of that which is being considered (Puxty 1993:31). With regard to accounting, the systems approach suggests that it should be viewed in a total organisational context. It is based on holism, but also retains the core neo-classical characteristics in that it is rationalistic, ahistorical, apolitical and has a problem-centred nature. It views human nature as controllable and is designed to increase efficiency through improved understanding and control. Management Accounting theories that are normally classified under this framework include transaction cost theory (Johnson 1983), which explains the role of management accounting as the co-ordination of internal transactions as well as contingency theory which is based on the premise that there is no universally suitable accounting system for all organisations in all circumstances (Otley 1980:413). Two other theories that can be categorised under the systems approach are pluralism and the institutional framework. In terms of pluralism organisations consist of sectional groups, often with mutually inconsistent goals. Common purpose only exists when groups are interdependent (Hopper and Powell 1985). The institutional framework of Scapens (1994) views accounting practices as institutions or routines that enable organisations to reproduce and legitimise behaviour.

3.4 The interpretative framework

In contrast to the traditional and systems approaches which accept that people are formed and constrained by the social world which they inhabit, interpretative theories primarily focus on the peoples' perception of reality and individual meaning (Hopper and Powell 1985: 446, Belkaoui 1992:515). People constantly create their social reality while interacting with others, and the aim of the interpretative approach is to analyse such social realities in the ways in which they are socially constructed and negotiated (Hopper and Powell 1985: 446). This approach is rooted in hermeneutics (Puxty 1993). The interpretative approach is reductionist but rejects rationality, which is one of the core characteristics of neo-classical economics. This approach prefers case studies to broad-based empirical testing in order to achieve deeper understanding and insight (Roslender 1996: 540).

3.5 The radical framework

Radical theories reject the *status quo*. They question the legitimacy of capitalism as a fair system for society and neo-classical economic theory as an appropriate foundation for management accounting. Neo-classical, systems and interpretative theories implicitly accept and support the *status quo, b*y not questioning wider social relationships such as the distribution of power and class relationships, and take the current nature of society as natural and given (Hopper and Powell 1985:450, Arrington and Francis 1989:2).

Since radical theories take the view that the nature of a society as a whole is reflected and shaped in every aspect of society, they also reason that accounting systems are an integral part of the capitalist society, and that capitalism and accounting are interdependent (Hopper and Powell 1985: 450). Management Accounting theories which are normally classified within this framework include the dialectical approach to social analysis (Neimark and Tinker 1986) and the labour process approach (Hopper, Storey and Wilmott 1987).

3.6 Universal abandon

Whilst the radical approach rejects the *status quo*, the writers that fall in this category of "universal abandon" or post-modernism deny the justification for any meta-theories, including capitalism, Marxism, positivism and empiricism. Whereas progress has been envisaged in each of the aforementioned categories, (in the case of traditional, systems theory and interpretative theory by means of improvement of technique or understanding; in the case of radical theories by means of transformation of social structures), post-modernism rejects any possibility of improvement through the exploration of knowledge (Roslender 1996:541, Puxty 1993). It denies the existence of any transcendental truth, and suggests that only localised truth can be found within a particular discourse. Post-modernists also see the role of language as central to the debate and suggest that there is no neutral, objective, scientific language that exists beyond the realm of tradition (Koornhof and De Villiers 1999:150). Further, postmodernists encourage interdisciplinary discourse and research and refutes the possibility of discovering the origins of self, which forms the basis of several modern philosophies including existensialism, psychoanalysis and phenomenology (ibid. 151). Roslender (1996: 542) questions the assertion of post-modernism that there is no link between knowledge and progress. He cites, as an example the progress made through scientific research in the medical field and rejects the notion that scholarly research has no broader significance.

The views associated with universal abandon or post-modernism include the different Foucaldian perspectives (Loft 1991; Miller and O'Leary 1987; Hoskin and Macve 1988), deconstructionists (Arrington and Francis 1989) as well as structuration theory (Giddens 1984).

3.7 Closing remarks

From the above overview it is evident that several opposing perspectives on management accounting exist. Each of these schools of thought has different insights to offer the study of management accounting and can lead to a richer understanding of the subject. Whilst neo-classical economics appears to be the predominant basis of the traditional paradigm, there are a wide ranging number of emergent foundations that warrant consideration as alternative or complimentary foundations for management accounting research, education and practice.

4. Management accounting education in South Africa

This section of the paper addresses the procedure applied to identify the main sources of influence on management accounting education in South Africa and includes a discussion of the selection procedure of the textbooks and the professional institutes. The focus is on the textbooks most widely used by technikons and universities as well as the most influential institutes in respect of management accounting. It is recognised that there are other sources of influences, for instance political influences, the personal opinions and knowledge of lecturers, additional notes as well as the practical experience of students. However, to make the investigation manageable, it was decided to limit the study to the aforementioned sources. Although there are other tertiary institutions that lecture management accounting, universities and technikons were selected on the basis that they normally lecture management accounting on a more in-depth level and over a longer period than the alternative institutions.

In order to identify the most widely used management accounting textbooks in South Africa in 1999, 19 universities and 15 technikons were approached telephonically and requested to provide information regarding the prescribed textbooks and the estimated student numbers for 1999. Where institutions lecture management accounting in more than one department, or at more than one campus, they were approached separately, since they often prescribe different textbooks. Of the 41 departments at institutions which were approached, 22 were reached and responded, representing some 18 671 students. The response comprises 15 university and 7 technikon departments and results in a 54% response rate. The most popular books are:

1) Drury, C. 1996. *Management and Cost Accounting*, Fourth edition. International Thomson Business Press: London (Drury),

2) Faul, M.A., du Plessis, P.C., van Vuuren, S.J., Niemand, A.A. and Koch, E. 1997. *Fundamentals of Cost and Managament Accounting, Third edition*, Butterworths: Durban (Faul), as well as

3) Redelinghuis, A., Julyan, F.W., Steyn, B.L. and Benade, F.J.C. 1996. *Quantitative methods for managerial decision making, second edition,* Butterworths: Durban (Redelinghuis).

These books were much more widely used than the other ten textbooks that were also investigated, and together represent approximately 91% of the management accounting books prescribed in 1999 by the institutions which responded, based on student numbers. Drury alone represents 41% of the prescribed books (7 650 students), Faul 34% (6 300 students) and Redelinghuis 16% (3 000). Of the books prescribed, 14 705 were prescribed to university students and 3 966 to technikon students. It can therefore be accepted that these three textbooks currently play a significant role in management accounting education in South Africa.

There are several professional institutes in South Africa that incorporate management accounting as one of the subjects in their curricula. These include the Association of Chartered Certified Accountants (ACCA), South African Institute of Chartered Accountants (SAICA), the Commercial and Financial Accountants (CFA) as well as the South African Institute of Chartered Secretaries and Administrators (CIS). Further institutes are the Chartered Institute of Management Accountants (CIMA), the South African Institute of Business Accountants (SAIBA) as well as the Institute of Administration and Commerce of South Africa (IACSA). In order to limit the investigation to a manageable size and to focus on the major sources of influence on management accounting, certain criteria were employed to select the most influential institutes. These criteria are whether management accounting is one of the core subjects, whether the institute is a self-examining body, whether the students are at a graduate level and the number of members in South Africa. Although management accounting is not a core subject of the Audit specialism of the SAICA exam, it is a core subject for Part 1, which is a prerequisite for the specialism. The CFA was omitted since it does not have a self-examining body, whilst SAIBA and IACSA were not selected since they are not on a graduate level. The membership of ACCA in South Africa in 1999 of < 500 members does not indicate that it is currently a significant source of influence regarding management accounting in South Africa. Based on these criteria it would appear that SAICA (± 17000 members), CIMA (1076 SA members) and CIS (± 4000 SA members) are the most influential in respect of management accounting education in South Africa. The syllabi of theses institutes therefore form the focus of this examination, together with three aforementioned textbooks namely Drury (1996), Faul *et al.* (1997) and Redelinghuis *et al*. (1996).

5. Results of the investigation: The influence of neo-classical economics on management accounting education in South Africa

5.1 Outline

In this section, the results of the analysis of the six main sources of influence on management accounting education in South Africa, (as identified in section 4), are discussed. The purpose of the analysis is to assess to what extent the main characteristics and assumptions of neo-classical economics (as identified in section 2) impact on these sources of influence.

To guide the investigation, the study material of the six sources is divided into management accounting focus areas, namely planning and control, decision-making, product costing, divisional performance measurement, strategic management accounting and quantitative techniques. The classification is similar to that of Drury (1996) the most widely used textbook, and is also comparable with that of the other sources. Quantitative Methods for Managerial Decision-Making (Redelinghuis *et al*. 1996) only addresses quantitative techniques and is therefore only discussed in that section of the paper.

5.2 Planning and control

Although none of the planning and control techniques can be directly traced to the writings of neo-classical economists, several of the core characteristics of neo-classical economics are applicable. These techniques normally only focus on a limited number of variables affecting the individual person or the individual firm and ignore the effect of specific social or historical circumstances. However, Drury (1996) and the CIMA (1999) syllabi do consider the organisational context of accounting control systems and the interrelationship of management accounting systems and organisational culture.

Another characteristic of planning models (e.g. budgets and capital budgets) is the fact that they are based on the information available on a specific day, ignoring any subsequent information. This is similar to the principles of the stationary state (Marshall 1920:342, 367). In accordance with the neo-classical approach, information for the preparation of budgets and standards is assumed to be available at no cost in all the sources investigated. Only Drury (1996:658) addresses the effect of uncertainty with regard to the objectives and consequences of action. The budgeting and standard costing topics however ignore uncertainty. Faul *et al*. (1997:430) briefly make mention of the importance of the human factor making the budget programme succeed, but in the case of both *Faul et al. (1997)* and SAICA (1997) it would appear as if human nature is assumed to be rational, controllable and predictable. Human feelings are aggregated and the whole is seen as a summation of the parts, while any interrelationships are set aside. CIMA (1999) and Drury (1996) address the behavioural aspects of accounting control systems.

5.3 Decision-making

One of the products of neo-classical economic theory is the distinction between the costs that normally vary over the short term according to changes in output levels, and those that do not. These costs are now normally referred to as variable and fixed costs (Drury 1996, Faul et al. 1997), but were described by Marshall (1920:359-360, 375) as prime and supplementary costs. This distinction is one of the cornerstones of decision-making, and forms the basis for the discussion of cost-volume-profit analysis in all of the sources considered in this study. The costs that are relevant for decision-making are discussed by Marshall (1920:360,374-375, 376) whilst he also touches on some of the aspects of pricing (1920:396) and uncertainty (1920:400).

In all the sources, decision-making techniques focus on the individual firm, which is in accordance with the reductionist approach of neo-classical economics. Specific social and historical circumstances are ignored. The decision models included in this focus area are normally based on the information that is available on a specific day, in conformance with the principles of the stationary state.

5.4 Product costing

The cost of a product as referred to in management accounting is not the same as the value of a product in terms of neo-classical principles. The principles of product costing are largely based on the conventions of external financial reporting, and are an accumulation of materials, labour and overheads that are incurred to transform the product into a saleable condition. It normally excludes any selling, shipping and insurance costs and profit is usually excluded and shown separately (Drury 1996**,** Faul *et al*. 1997: 32,47,65). This approach is not dissimilar to the classical approach where writers such as Ricardo and Smith suggested that value is based on the costs of the product (Backhouse 1985, Smith 1993: 53-54). However, the neo-classical approach does not agree with a simple link between the cost of a product and its value. Marshall (1920:348) suggested that the value of a product is determined by a combination of demand and supply, where market conditions influence demand whilst in turn supply is influenced by the marginal costs of the factors of production. The factors of production include a portion of profit, insurance, selling and shipping costs. All the sources considered use historical information and accept that it is available at no cost. It focuses on the single firm and ignores the effect of specific social and historical circumstances.

5.5 Divisional performance measurement

Although the return on investment and residual income performance measures were developed subsequent to the beginning of the twentieth century in response to the development of large conglomerates (Loft 1991:22, Kaplan 1984:397), these measures are largely based on neo-classical principles. The measures are developed to evaluate the performance of a single firm, and are normally based on financial information that ignores the effect of any specific social and historical circumstances. However, the CIMA (1999) syllabus on performance and management control includes an analysis and interpretation of external information e.g. macro-economic data and agency publications.

The performance measures are based on the income statement that reflects the return for a demarcated period, as well as the balance sheet that gives an indication of the value of the investment in the firm on a specific day. As such it is a reductionism of the continuous results of the firm in accordance with the neo-classical approach, in particular the principles of the stationary state. It is also accepted that information for performance measurement is available at no cost and without uncertainty in all five sources i.e. Drury (1996), *Faul et al. (1997)*, SAICA (1997), CIMA (1999) and CIS (1999).

5.6 Strategic management accounting

None of the techniques referred to as strategic management accounting can be directly traced to the writings of neo-classical economists and their core characteristics are less prevalent in this focus area of management accounting. Strategic management accounting derives its name from its endeavour to generate accounting information which supports attempts of management to achieve and sustain a strategic position in the market (Roslender 1996:536, Shank and Govindarajan 1989:xi). Its focus is per definition not limited to a single firm and is thus, in this respect, a departure from the reductionist neo-classical approach. An example of a technique with a wider focus than the single firm is the cost-benefit analysis (Drury 1996:403), which takes the specific circumstances of the community into consideration. Similarly, target costing is applied to determine a price that will permit an acceptable market share, after taking into account the effect of competition (Drury 1996:333), whilst benchmarking compares the performance indicators of one organisation with that of another (Drury 1996: 521).

Cost-benefit analysis recognises the uncertainty of assumptions related to the future benefits of a decision (Drury 1996:403), but none of the other techniques specifically address uncertainty. In all the models in the sources reviewed, information is accepted to be available at no cost.

5.7 Quantitative techniques

The concepts of the time value of money and compensation for risk, which form the cornerstone of capital budgeting, were discussed by Marshall in 1890 (Marshall1920: 353). Furthermore, linear programming is based on the marginal contribution from scarce resources, which is directly related to the principles of marginal utility and sacrifice.

All the quantitative techniques discussed in the sources under review are reductionist mathematical models that focus on the individual or the single firm and ignore the effect of specific social and historical circumstances. Discounting techniques such as capital budgeting, accept a specific distribution of resources by applying a particular interest rate and by assuming equilibrium in all markets in the economy (Cooper 1980:164). The technique for determining the economic order quantity of inventory allows for uncertainty, by calculating the required safety stock levels (Drury 1996:771, Redelinghuis 1996: 194). Similarly, capital budgeting takes risk into account by means of adjusted discount rates, standard deviations, probability distributions, simulations and sensitivity analyses (Drury 1996: 428-438, Faul 1997: 406). The PERT (programme evaluation and review technique) method also allows for uncertainty by attributing probabilities to the duration of activities (Redelinghuis1996: 361-376), whilst queuing theory allows for unknown waiting costs (ibid. 404). Sensitivity analyses explore how a change in the variables will affect the results (ibid. 192), while simulations are designed to address the uncertainty of information in the decision-making process by indicating how an actual situation can be applied to changes in various conditions (ibid. 414-431).

The learning curve takes into account the effect of an improvement in productivity over the course of time, thus setting aside the limiting assumptions of the stationary state (Drury 1996: 687, Faul 1997: 48-50, Redelinghuis 1996: 438-452). Redelinghuis *et al.* (1996:5) recognise that the use of quantitative methods results in an increase in costs, and that these techniques should only be applied if the expected benefits exceed the expected costs. However, in the other sources under review it is assumed that information is freely available.

5.8 Summary of the results

The results of the analysis are summarised below according to the focus areas of management accounting. Compliance with the neo-classical assumptions is indicated with a 'tick-mark'. Where any or some of the techniques of a focus area deviate from the main assumptions or characteristics of neo-classical economics, the 'tick-mark' has been omitted.

Most of the core characteristics and assumptions of neo-classical economics that were identified in section 2 could be traced to the textbooks and the syllabi of the institutions reviewed. Although assumptions on diminishing marginal utility, perfect competition, as well as maximum satisfaction by means of the market were not always apparent, they were directly or indirectly referred to in some of the sources (Drury 1996: 318-323, Faul *et al.* 1997: 3, 98, 153, 453, Redelinghuis *et al.* (1996:5).

Neo-classical assumptions	Planning & contr.	Decision Making	Product Costing	Perform Measure	Strategic Man. Ac.	Quantit. Techniq.
Rationality	√	√	√	√	√	√
Abstract: removed from historical, cultural and social context	√	√	√	√		√
Reductionism: only some variables are included in the analysis	√	√	√	√		√
Stationary/unchanging tastes, fashions etc.	√	√	√	√		
Constant real incomes	√	√	√	√	√	
Quality ignored	√	√	√	√		√
Perfect information available	√		√	√		√
No cost of information	√		√	√	√	√
No uncertainty (Determinate solutions)	√		√	√	√	

It is clear from the above table that conventional management accounting, as portrayed in the most widely used textbooks and syllabi in South Africa, is largely based on neo-classical economics. The vast majority of the limiting assumptions of neo-classical economics are applicable to management accounting education in South Africa.

However, the extent of this influence differs depending on the focus area being investigated. Whereas planning and control, product costing and performance measurement appear to comply with all of the above neo-classical assumptions, decision-making recognises that perfect and certain information is not available, and that such information is costly. Although the above table creates the impression that product costing is entirely neo-classic in nature, a closer examination of the principles applied in determining value, indicates that product costing is more closely related to classical than to neo-classical economics, in that regard. Although influenced by neo-classical economics, strategic management accounting is not entirely reductionistic in its approach. It has a wider focus than the individual decision-maker or the single firm. The quantitative techniques are largely based on neo-classical economics, however some of the techniques do allow for changes in circumstances, inflation and uncertainty.

The extent of the influence of neo-classical economics also varies according to the source under investigation. Although Drury (1996) recognises that his book is mainly based on neo-classical economics, it is clear that he has made an effort to make students aware of alternative approaches to the subject, including social, organisational and political perspectives. Faul *et al*. (1997) and Redelinghuis *et al*. (1996) do not specifically state whether their texts are based on neo-classical economics, but the analysis of the texts indicate that neo-classical economics does form the underpinning of both these books. The syllabi of the South African Institute of Chartered Accountants and the South African Institute of Chartered Secretaries and Administrators (CIS) are largely based on neo-classical economics. In the syllabus of the Chartered Institute of Management Accountants (CIMA) several of the restricting assumptions of neo-classical economics are relaxed. Most of the CIMA courses suggest an awareness of the influence of the organisational, societal, political and historical circumstances of the organisation, on the relevance of information. It thus breaks away from the reductionistic approach of neo-classical analysis.

6. Conclusion: The implications for Management Accounting

As discussed under section 2, neo-classical economics is subject to a large number of limiting assumptions, which are important for economic analysis, but might reduce the usefulness of management accounting. The prevalence of these assumptions in management accounting is evident in the summary at the end of section 5, where the study material is summarised and analysed according to the six focus areas.

If it is considered that rational decision-making is assumed whilst evidence suggests that in practice decision-making is not rational (Simon 1959) and that most techniques and models are removed from the cultural, social and historical context of the decision, it is questionable whether management accounting can be relevant. The fact that the effect of inflation and quality are ignored and that it is assumed that determinate solutions can be found for complex problems, leads one to question the value of the simplistic answers. Furthermore, no allowance is made for any changes in circumstances and management accounting techniques and models usually accept that perfect information is available at no cost. Bearing in mind the complex and changing nature of the modern-day business environment, one wonders how a subject that is largely divorced from reality has survived until now.

It is possible that the deemed benefits of a more focused, simplified, rigorous analysis outweighs the aforementioned restrictions. Management accounting has long been the domain of accountants who are inclined to understand and place more value on information that can be quantified. When evaluating the merits of techniques and approaches for purposes of decision-making and control for instance, it is likely that accountants will show a preference for the format of information that they are familiar with. The attraction to neo-classical economics might also be ascribed to the fact that it potentially links "rational" decision-making at several levels, including the level of the individual, the firm and the entire economy (Tinker 1980:149).

Another explanation for the survival of neo-classical economics as basis for management accounting might be that change in the academic world takes place very slowly, regardless of the realisation that such change is required. Kelly and Pratt (1994) observed that the content of the most popular management accounting textbooks in New Zealand, remained essentially the same between 1962 to 1991. As they described it current textbooks "presented a well defined body of knowledge that was changing slowly at the edges".

Seen from another perspective, Kelly and Pratt (1992: 242) ascribe the robustness of neo-classical theories to the "pervasive web of neo-classical economic thought which is rooted in western society". Similarly, Cooper (1980) is of the opinion that the assumptions of capitalism have colonised accounting, and that theorists and practitioners alike unquestioningly accept the existence of markets and private property.

Depending on one's view of the reason for the survival of the subject in its present state, there are a number of suitable actions that could be undertaken. The author would like to suggest that at minimum, students should be made aware of the fact that the subject that they are studying is largely based on neo-classical economics. As such it is subject to restricting assumptions and that any deductions or conclusions based on management accounting models and techniques should be interpreted in the light of these assumptions. Neo-classical writers and commentators warn that results derived from the use of simplified methods should not be interpreted with an excessive amount of confidence (Backhouse 1985) and should be presented as tendencies and not as laws (Reisman 1986:13; Marshall 1920:460).

Authors should clarify the foundations of their texts, and students should learn about the alternative foundations and perspectives on management accounting, as described in section 3. By creating an awareness of alternative approaches among the practitioners of the future, one firstly gives them the opportunity to choose the most appropriate route in any given circumstances, instead of making the choice for them. This could also potentially move the debate from academic circles to practice, where ideas and theories can be tested.

In as much as the role of education is to enlighten, management accounting education in South Africa seems to fail. The main sources of influence reproduce traditional material without inquiring about or examining its restricting foundation. If management accounting is to regain its relevance, research should be directed at finding education programmes that will prepare students for continually evaluating the appropriateness of the foundations and assumptions of management accounting in the context of the organisations and societies that they will encounter.

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