Classification of Accounting Systems: Its Contribution to Understanding of International Accounting

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Much of the research on international accounting has endeavoured to divide countries into groups with similar features based either on observed practices, or the national regulations in force. The stated objective is to reduce complexity in the description of accounting differences. The differences observed in information disclosure and/or application methods undeniably hinder understanding of financial statements, and in that respect the classification exercise has definite educational value. But it is made difficult by the pace of change in the accounting environment and regulations, together with the fact that the general trend is towards international standardisation. If taken to its logical conclusion, this standardisation could lead to application of a single set of standards for all businesses everywhere, and consequently make classification of different systems obsolete. However, the existence of cultural, legal tax and other differences slows down the harmonisation process; problems related to interpretation of standards, which essentially depend on user judgement, can foster disparity of treatment in different countries due to local recommendations or interpretations. Such practices mean that differences will probably remain, and the classification exercise would be able to identify them.

Study of the classification models also remains highly relevant in a dynamic, critical perspective on such research over time; a recent debate has suggested that the established supremacy of the dichotomy-view classification of accounting systems (Nobes, 1983) dividing systems into 'Anglo-saxon' and 'Continental European' models is to be contested,

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based on both theoretical (Alexander – Archer, 2000) and empirical (D'Arcy, 2001) observation that it is difficult to identify a homogeneous 'Anglo-saxon' group.

No clear-cut conclusion has resulted from the discussions and comments on these results (Nobes, 2003, Nobes, 2004, and D'Arcy, 2004), and this paper sets out to throw more light on the issue by presenting the origins and value of the classification exercise (I), a review of the major studies that have furthered the debate, without claiming exhaustive coverage (II), and placing the exercise in a critical perspective (III) highlighting the precautions required to ensure a certain degree of reliability in results, and therefore in the classification.

1 Classification of accounting systems: origin and value

For Haller and Walton (1997), accounting is a 'social construct reflecting the society in which it has developed'. Every national accounting system is largely the reflection of the country's economic, social and cultural specificities (Raffournier, 2000). The study of these specificities is the basis of any classification (1.1.) and demonstrates all the value of the exercise (1.2.).

1.1 Differences in national accounting systems as the origin of classifications

Differences between national accounting systems are generally explained by economic, legal, political and cultural factors. Meek and Saudagaran (1990), for instance, identify five external environmental and institutional factors for which there is a general consensus:

- the legal system affecting the accounting standardisation process (common law countries versus code law countries[1]);
- business financing practices (whether financing is obtained via the stock market or from financial institutions);
- the tax system, and particularly its connection with accounting;
- the level of inflation likely to influence valuation methods;
- and the political and economic relationships between countries, for example links from colonisation.

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[1] The relationship between legal systems and accounting systems was empirically tested by Salter and Doupnik (1992).

The cultural factor began to be taken into consideration in explaining differences following publication of Hofstede's study (1980) on the influence of culture on management practices, which brought to light four variables, or dimensions, that could be used to describe any culture: individualism, power distance, uncertainty avoidance, and masculinity.

Although quite some time passed before these dimensions were tested to assess their impact on accounting systems, the description of these differences encouraged international accounting researchers to use them as explanatory variables in classifying accounting systems.

1.2 The value and validity of a classification

The purpose of any classification is to show the similarities and differences in various countries' accounting systems, based on a study of either domestic regulations or business practices. International accounting researchers engaged in this exercise borrowed the custom from natural history. The technique has also been used in fields closely related to accounting, for example in the social sciences where it has been applied to political, economic and legal systems (Nobes, 1995).

1.2.1 A description of a complex phenomenon

The first reason, just as in biology or chemistry, is that classification is a way of describing and approaching a complex phenomenon (Roberts et al., 1998). In chemistry for instance, Mendeleev's Periodic Table of the Elements indicates the properties of an element by its position in the table. Transposing this idea to accounting, classification of countries according to their accounting system makes for easier understanding, providing quick access to features typical of a given country's system without the need to consult all of its accounting rules and regulations. This gives an idea of what can be expected from a particular country, so that attention can then be focused on any points that conflict with these expectations, and the reasons for these divergences. Apart from its value for the accountant or investor, this type of classification is also a useful teaching tool.

1.2.2 An instrument for comparison

In addition to providing a description, a classification also offers a means for comparison of accounting systems at national level. Countries in the same category are highly likely to respond in the same way to the same event (Meek – Saudagaran, 1990). Consequently, classifications can enable standard-setting bodies to anticipate accounting issues, and take inspiration from solutions applied in other countries belonging to the same group. A solution is more likely to work in a country if it has already been successfully introduced by other countries of the same group. Monitoring a given classification over time also provides important information on a country's accounting development and the influence that may be exercised by one country over others (Nobes, 1995). Roberts (1995) considers that the terms classification and comparison are indissociable, and argues that it is not 'classification [that] begets comparison but the reverse'.

1.2.3 A tool to guide international harmonisation policies

Finally, on an international level, classification studies are useful in international harmonisation policies, as they can help assess the potential implementation difficulties. The idea is that similar countries will find it easier to harmonise their accounting systems than countries in different groups. But this type of analysis is only possible when the classification was drawn up specifically for the purpose, which means that the features selected must relate to a harmonisation process (Roberts, 1995). Meek and Saudagaran (1990) note that developing countries may also base their system on an existing accounting system, rather than creating their own sets of standards, which can be an expensive process. They also suggest that companies whose financial statement users are not all from same-group countries should provide additional information to improve understanding.

While it is clearly established that classifications are of value, to be credible for users they must also respect certain rules guaranteeing a degree of validity. There was much research in this field in the 1960s and 1970s, and the early 1980s and 1990s. More recent studies have modified their scope.

2 Classification of accounting systems: four stages of development

Looking at classification models chronologically, four stages in their development can be identified. The pioneers were the models developed in the 1960s and 1970s, mainly based on the individual researcher's knowledge and intuition (2.1.). Next came a group of empirical studies at the end of the 1970s (2.2.). The models developed in the 1980s and 1990s are built on original approaches that have remained benchmarks in the field (2.3.). However, recent papers have tended to challenge the accounting worldview conveyed by the previous models and suggest that the reality of the situation is more complex (2.4.).

2.1 The 1960s and 1970s: the pioneering theoretical models

These initial classifications all considered accounting systems indirectly, based on the divergence factors briefly stated earlier. The author's intuition and knowledge of existing accounting systems plays an important role[2]. This is the type of approach used by pioneers in the field such as Mueller, Seidler and the American Accounting Association.

2.1.1 Mueller, 1967: a model based on accounting purpose

Mueller was a pioneer. He based his 1967 study on the purpose of accounting in market economy countries, and proposed four accounting systems (Mueller gives examples of countries for each one):

- the macroeconomic pattern, where accounting serves the national interest. Accounting is there to facilitate government action. This is the case in Sweden;
- the microeconomic pattern, where accounting serves business interests. The Netherlands is given as an example;
- the independent discipline approach, where accounting derives from business practices and the accounting profession plays a vital role. The USA and UK belong to this category;

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[2] The contribution by Hatfield (1911, 1966) is a case apart. His essentially intuitive model of classification is also based on observation of business practices in four different countries. The results led to three groups: the US, the UK and continental Europe, made up of France and Germany.

▪ the uniform accounting approach, where accounting is standardised and used as a control tool by the authorities. This is the case in France and Germany.

This model has come in for criticism. As Meek and Saudagaran (1990) rightly point out, the macroeconomic and uniform models tend to intersect, and there is a risk a country may find itself in both groups. Also, Meek and Saudagaran cannot see what other countries could be added to the second proposed category. Finally, this classification is not based on corporate practices, but on an intuitive approach to the way accounting is perceived in each country and the factors contributing to its development. Despite the examples given by Mueller, Roberts et al. (1998) regret that he did not indicate more clearly what categories other countries should be put into, and are doubtful as to this classification's applicability to all countries. Nobes (1995) considers the lack of hierarchy makes it impossible to judge each country's place in relation to others (is the Dutch system closer to the Swedish system than the British system?), this reducing its usefulness.

Mueller's work was a starting point for other researchers, for instance Oldham (1987) who classified countries along only two lines:

▪ the accounting system (macroeconomic orientation, giving priority to the whole country, or microeconomic orientation, giving priority to businesses alone);
▪ and the degree of flexibility (uniform and relatively static, or independent and flexible).

To take into account the countries' differing stages of development, the author supplied two versions of the same classification, ten years apart.

2.1.2 Seidler, 1967: spheres of influence

Seidler (1967) used 'spheres of influence' to identify three systems: the British system, the American system and the continental European system, influenced by France. This study is radically different from Mueller's approach, in that it focuses solely on external factors of influence and neglects any internal factors (Roberts et al., 1998). For Seidler, the three countries named are those who have most successfully exported their accounting systems. Roberts et al. (1998) reproach this

classification for several reasons: for being non-exhaustive, but above all because they believe that it has little chance of explaining current changes in accounting systems, as the spheres of influence do not accurately reflect reality, which is in fact considerably more complex than the model suggests.

2.1.3 AAA, 1977: morphology of accounting systems

In 1977, the American Accounting Association proposed, to use its own expression, a 'morphology for comparative accounting systems', using 8 variables or 'parameters' likely to have a fundamental influence on accounting systems. Based on this morphology, the AAA identified 4 zones of influence in the world: 1) British, 2) Franco-Spanish-Portuguese, 3) Germanic-Dutch, 4) US, 5) Communist. But these zones were not tested empirically (Meek & Saudagaran, 1990 and Roberts et al., 1998) and more explanation of the reasoning behind the choice of the parameters would have been useful. Nevertheless, this study may be of interest for developing countries whose systems are strongly impregnated with foreign influences (Nobes, 1996).

2.2 The late 1970s: a wave of empirical models

In the late 1970s, certain researchers developed new classifications, which differed from their predecessors in that they were based on the results of empirical testing using statistical methods of varying degrees of complexity. Most of these studies used data from the Price Waterhouse surveys, generally applying factorial analysis in order to bring out several groups of countries with homogeneous accounting practices. Despite the similarity of approach, the resulting classifications differ, sometimes significantly. For instance, two, or more than two groups are identified depending on the study. In some cases, the authors sought to link practices to environmental factors. The work of Da Costa et al., Frank, Nair and Frank is representative of this wave of empirical models.

2.2.1 Da Costa et al., 1978: a textbook case

The study by Da Costa et al. (1978) was the first to empirically identify groups of countries sharing a certain degree of homogeneity in accounting practices. It is based on the Price Waterhouse surveys, which list the accounting principles and accounting treatments used in 38

countries based on responses to questionnaires sent out to correspondents in the audit firm worldwide. Limiting themselves to 100 questions from this questionnaire, Da Costa et al. attribute each answer a score of one to five: 1) the practice is not permitted or found in practice, 2) the practice is followed by a minority of reporting companies, 3) the practice is followed by half of reporting companies, 4) the practice is followed by a majority of reporting companies, 5) the practice is required of, or conventionally followed by, all reporting companies. A principal components analysis is also applied to identify seven factors that can explain practices: degree of financial disclosure, Company Law, income measurement, conservatism, tax law, inflation and stock market orientation.

At first sight, the methodology appears strictly scientific; but in fact the results did not live up to the authors' hopes. Factorial analysis actually led to only two groups of countries: a first consisting of the UK and some of its Commonwealth countries, which could have been guessed at intuitively, and a second presenting certain interpretation issues. It covered countries as diverse as the US, European counties other than the UK, Japan and South American countries. Clearly, these strange results could only relate to methodological problems, or the nature of the data themselves (see above). Despite their best intentions, the authors of this first statistical study supplied a textbook illustration of the problems involved in this kind of survey. They helped other authors to avoid the same pitfalls, and offer more valid results.

2.2.2 Frank, 1979: linking practices to environmental factors

While Frank (1979) works along the same lines as Mueller (1967) and Seidler (1968), his methodology is empirical. This time, all of the 1973 Price Waterhouse data was used (233 questions) and the statistical treatment was careful to avoid the errors of the previous study. Consequently, the results were much more coherent. Frank obtained 4 groups: 1) the British Commonwealth model, 2) the Latin-American model, 3) the Continental European model and 4) the US model. These results are thus similar to Seidler's, although now with a separate Latin-American group.

The originality of this study lay in the author's attempt to link the practices identified for each group to environmental factors. Frank used countries' official languages as a proxy for cultural ties between countries, a set of variables related to the country's economic structure and another

set reflecting trade patterns between the countries. A discriminant analysis showed that a country's economic and cultural environment influenced its accounting practices. However, this study is open to criticism for not supplying any insight into the accounting characteristics of each group (Meek and Saudagaran, 1990). This criticism is also valid for the subsequent study, although it set out to complement the first.

2.2.3 Nair and Frank, 1980: extension of the previous study

This time, data was used from two years, 1973 and 1975, to allow comparison over time and thus assess the stability of results. The authors also introduced an innovation: they separated data concerning accounting measurement practices from data concerning information disclosure practices, arguing that the relevant rules are not always issued by the same body, and may follow different reasoning. For instance, the first might be designed to serve tax purposes and the second to respond to shareholder needs.

While Nair and Frank successfully confirmed the previous classification for measurement practices, the conclusions are less clear-cut when only disclosure practices are taken into consideration, with no real group standing out. The stability of their classification was thus established for measurement practices, with more or less the same countries in each group. In fact, the quality of results was higher the second time, since certain of the previous classification's obvious anomalies were eliminated. For disclosure practices, on the other hand, apart from a group centred around the UK, the other groups were implausible. The authors also observed serious instability in the model over the two years studied, with several countries crossing over between groups. Finally, a further discriminant analysis showed that the environmental variables influencing measurement practices were not the same as those influencing disclosure practices. Nair and Frank thus suggested further studies could usefully keep the measurement/disclosure distinction.

2.3 The 1980s and 1990s: major new models

The 1980s and 1990s saw the arrival of major new models. First, Nobes' model sought to remedy the defects of previous studies and introduced an innovative hierarchical classification. A little later, Gray

developed his culture-based model. Finally, Doupnik and Salter set out to verify the validity of Nobes' hierarchical model ten years after its publication, contributing to its consecration.

2.3.1 Nobes, 1981, 1983: hierarchical classification

When Nobes (1981, 1983) presented his classification model, he intended to fill the gaps left by existing classifications, which were unable to indicate the relative positions of countries in the classification. This raised the issue of hierarchical distance. While the theoretical models lacked precision in their definition of the object of the classification, and provided no empirical proof of the theories put forward, Nobes criticised the purely statistical methods for not supplying a model that could be used as a basis to compare results. His model, presented in two stages, escaped both of these criticisms.

To begin with, Nobes presented a theory of classification (Nobes and Parker, 1981) based on his own knowledge of international accounting systems and the results of previous studies. Taking the deductive approach, he himself used the term 'judgmental classification'; this model could have been included in the theoretical model category alongside its predecessors. Nobes identified two classes of accounting systems, the micro-based and the macro-uniform. These concepts had been developed previously by Mueller (see above). Each class was then divided into subclasses, themselves divided into families, then species, and finally the various countries studied were distributed between these. In the micro-based class, the Netherlands formed one family on their own; a UK-influence species was identified comprising the UK, Ireland, New Zealand and Australia; and another species called US-influence, comprised the US and Canada. The macro-uniform class includes a largely tax-based species, where we find Italy, France, Belgium and Spain. The other species, law-based, comprises Germany and Japan, while Sweden stands alone as a separate family. This matches some of Seidler's spheres of influence (see above).

Two years later, Nobes moved closer to statistical models, testing his classification (Nobes, 1983) based on the practices of listed companies. The choice of the year 1980 was not random; at that date, practices were still unaffected by European directives. Taking only nine factors classified as 'discriminating features' because they were likely to explain

differences over the long term, Nobes' analysis confirmed the existence of the two main classes and their subclasses.

2.3.2 Gray, 1988: a culture-based model

Adapting the cultural dimensions developed by Hofstede (1980, 1983), Gray (1988) hypothesized that there was a link between culture and accounting system development at international level, and regretted the lack of consideration given to the cultural factor in previous studies. The cultural variable was often encompassed in other variables, without explicit individual recognition. Defining four accounting values he believed connected to national cultures, Gray drew up two-dimensional diagrams, on which he mapped out the 9 groups of countries defined by Hofstede (1980). Initially, countries were classified according to their regulation system, depending on type (Professionalism versus Statutory Control) and flexibility (Uniformity versus Flexibility). Then classification was applied on the basis of standards for accounting measurement (Conservatism versus Optimism) and disclosures (Secrecy versus Transparency).

Although Gray's declared aim was not to provide a new classification, it was possible to draw such conclusions from his study. Using the last two values, Roberts et al. (1998) identified two groups of countries. The first covered countries with a high degree of confidentiality and conservatism, while the second was highly transparent and clearly optimistic. Gray's cluster diagrams also have the advantage of showing country's positions relative to each other, and understanding what differentiates them. But these classifications still required validation, and Gray himself suggested as much, seeing his work as exploratory research requiring empirical studies for verification of his hypothesis.

2.3.3 Doupnik & Salter, 1993, 1995: consecration of Nobes' model

The study by Doupnik and Salter (1993) verified the validity of the 1993 Nobes model based on data from 1990 for a much wider sample of countries. The effects of European harmonisation were already making themselves felt at the time, and clearly contrasting results might have been expected. But something very different happened: the results of the study in fact confirmed Nobes' classification ten years after the event, and in a very different context.

Doupnik & Salter built up their own database for their study, taking inspiration from the Price Waterhouse survey while being careful to avoid its errors (see above). The partners of the major audit firms asked to indicate the percentage of companies using a given accounting method were reminded to base their answer on real practices, not the regulations in force in the country. A cluster analysis determined exactly the same two classes as Nobes', with all countries in exactly the same place. More in-depth analysis then identified nine groups, the larger number resulting from the larger number of countries included; two new groups emerged, a Latin-American group (already identified by Frank, 1979) and an Arabic-speaking group. The Netherlands moved into the UK-influence group, tending to reflect the impact of European harmonisation (Roberts – Weetman – Gordon, 1998), while Germany and Japan each formed single-country groups.

Repeating the experiment in 1995 after first testing the robustness of their hypotheses, Doupnik and Salter developed a general accounting development model and once again validated the two 'micro-based' and 'macro-uniform' classes established by Nobes.

Nobes' classification thus proved its validity, and its astonishing consistency, over the years. A benchmark reference in the field, it appeared to have marked the final development in the research into classification of accounting systems that had begun in the late 1960s; until the recent emergence of a debate challenging its supremacy, particularly the dichotomy it suggests in the accounting world. There is apparently some confusion about this issue.

2.4 "Anglo-Saxon" versus Continental European accounting: challenging a 'myth' [3]

Recent research has tended to challenge the accounting worldview conveyed in the previous models, based on both theoretical and empirical observations. The difficulty of establishing a homogeneous 'Anglo-Saxon' group has been highlighted (Alexander and Archer, 2000), and even the traditional contrast with the Continental European model has been challenged (D'Arcy, 2001).

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[3]   To borrow the expression of Alexander and Archer (2000).

2.4.1 Alexander and Archer, 2000: the theoretical challenge

Noting that international accounting writers often used the term 'Anglo-Saxon accounting' to cover countries as diverse as the UK, Ireland and the US, plus English-speaking countries such as Canada, Australia and New Zealand, Alexander and Archer (2000) set out to prove, by theoretical argument, that the existence of so-called 'Anglo-Saxon' accounting is in fact a myth insofar as it implies that among other factors, these countries have similar conceptual frameworks and accounting techniques.

Four 'putative commonalities' generally attributed to 'Anglo-Saxon' approach countries were examined in detail: the concept of the true and fair view or fair presentation, the tendency to develop conceptual frameworks as a guide for standard setting, the use of common law, and active private sector participation in the standardisation process. None of these factors withstand the arguments of Alexander and Archer, who explain how they came to found the basis of a myth. They believe that this view largely stems from the common accounting history of the countries concerned, and a certain shared attitude to financial reporting, seen primarily as providing information for the financial markets.

Nobes (2003) responded to this argument, seeing it as a challenge to his own model, in which an 'Anglo-Saxon' model emerges. His model in fact distinguishes between two branches of the 'Anglo-Saxon' family: UK-influence and US-influence countries. In answer to Alexander and Archer's position, he does not argue with the idea that differences may exist between these countries – a point he himself had made – but considers that Alexander and Archer overestimate some of these differences. In Nobes' opinion, the existence of such differences does not invalidate their belonging to the same family in the context of a classification exercise.

2.4.2 D'Arcy, 2001: the empirical challenge

In the same vein, D'Arcy attempts to prove, this time empirically, that in the international accounting harmonisation debate, it is not necessarily relevant to take a systematically dichotomic view of the accounting world as suggested by previous studies.

In contrast to statistical studies that aimed to classify countries based on a review of accounting practices, D'Arcy argues in favour of a *de jure* classification, i.e. based on the accounting rules governing financial reporting requirements. As she says, only at that level can efficient action be taken, while direct action on environmental or cultural factors is impossible: *de jure* harmonisation forces *de facto* harmonisation into existence when it is taking too long to come about spontaneously. Thus D'Arcy deliberately distances herself from the studies of the 1980s and 1990s, which were mostly based on Price Waterhouse data and generally resulted in an 'Anglo-Saxon' or 'Anglo-American' versus 'continental European' distinction.

D'Arcy uses a sample of 15 countries, including several European countries (one being the UK), the US, Canada, Australia and Japan. IASC rules are also examined. The data source is the TRANSACC base (Transnational Accounting, Ordelheide & KMPG, 1995). A multi-stage cluster analysis leads to a hierarchical classification, identifying four groups: a group of European countries where France, Austria, Germany and Belgium occupy centre stage but also including the UK, a North American group, a third group covering Japan, Sweden and Spain, and Australia out on a limb on its own. D'Arcy considers that it is impossible to bring out a homogeneous 'Anglo-Saxon' group, or a purely 'Continental European' group, and in doing so refutes Nobes' model, using more up-to-date data based on applicable rules rather than observed practices.

In response, Nobes (2004) acknowledged that his model established in the early 1980s could be improved upon, but did not accept d'Arcy's conclusions; in particular, he questioned the quality of the data used, which he argued were unsuitable for the classification exercise and also partly erroneous, and the interpretation of the findings. Applying corrections to the data, he was even able to identify an 'Anglo-Saxon' group including the US and the UK. While acknowledging certain weaknesses, D'Arcy (2004) maintained her position and justified the methodology applied.

This – relatively robust – exchange of comments between the two authors is a perfect illustration of the difficulty of the classification exercise, showing how dangerous it can be to arrive at conclusions, and go on from conclusions to generalisations.

3 Classifications of accounting systems: a critical analysis and perspective

Many authors have proposed classifications of accounting systems throughout the world, as we have seen, and research studying those classifications naturally followed in their wake in the early 1990s (Meek and Saudagaran, 1990, Choi and Mueller, 1992, etc). This research identified the types of classifications (3.1.), but also their weaknesses (3.2.), thus making it possible to define the usefulness of a classification exercise by reference to the requirements for long-term relevance (3.3.).

3.1. Types of existing classifications

There are various different types of classification, although the deductive and inductive approaches remain the most common.

3.1.1. Categories of classification

Roberts et al. (1998) identify 6 categories, which can be illustrated by the models discussed earlier:

- deductive classifications, a priori based on the knowledge and/or beliefs of their developers: Mueller's study is one example;
- inductive classifications, built on data concerning the accounting rules and practices of the countries concerned, which are then tested statistically, like those of Da Costa et al., Frank, Nair and Frank ;
- multidimensional mapping, generally taking in two dimensions. The most famous example is Gray (1988), based on the work of Hofstede (1980, 1983), but the American Accounting Association's morphology of accounting systems (1977) also falls into this category;
- hierarchical classifications showing the relationships between groups, as proposed by Nobes (1981, 1983) and d'Arcy (2001).
- Roberts et al. add two other categories based on the type of variables used:
- discrete classifications (the most easily understood and used) which generally use a binary variable as the classification criteria;
- classification using continuous variables, which can be used to refine discrete classifications, by scaling the variable; for instance,

a classification based on the influence of taxation over the accounting system may be developed using a discrete approach, but its information value will be enhanced if it uses a scale reflecting different degrees of accounting's dependence / independence in respect of tax rules.

This summary of the categories of existing classification shows that there are two main approaches: the inductive approach and the deductive approach.

3.1.2. Deductive and inductive approaches

Deductive approaches have mainly been based on three types of factor: the purposes of accounting, the country's political, economic and cultural environment, and external factors likely to influence accounting systems. The cultural factor was at the core of the classifications developed by Mueller (1967 and 1968) and Oldham (1987), while the external-factor approach, where internal factors played a secondary role, resulted in the classification developed by Seidler (1967) based on 'spheres of influence'.

In contrast, inductive approaches rely on application of statistical techniques to data resulting from a sample of businesses. The oldest classifications of this type used the surveys by Price Waterhouse (1973, 1975, 1979); examples are found in the work of Da Costa et al. (1978), Frank (1979) and Nair and Frank (1980), who classified countries according to measurement and disclosure practices.

Nobes and Parker (1995) keep the same dichotomy, but their terminology is different, as they speak of 'intrinsic classifications' and 'extrinsic classifications'. In the inductive or intrinsic approach category, they add studies that use modes of accounting regulation (Puxty et al., 1987) or auditor competencies (Shoenthal, 1989) as a discriminating variable.

But whatever the methodology applied, all these classifications have certain limitations that must be borne in mind.

3.2 Limitations of accounting classifications

The limitations depend on the approach used in the classification exercise as discussed above: deductive or inductive.

3.2.1 The limitations of the deductive approach

A deductive approach applied by a single author is to be examined with care. According to Haller and Walton (1997), two pitfalls await any researcher studying a foreign country's accounting system:

- approaching it from the viewpoint of his country of origin, for instance asserting that the rules are similar to the rules he knows well, instead of assessing practices on their own merits;
- having only limited understanding of the underlying culture (are there any unwritten rules? Is application of official rules automatic or can it be optional?)

Many factors forming the bases of these studies, which are necessarily subjective as they call on the author's judgement, may also be mutually influential, producing high collinearity (which may explain the similarities between the various deductive studies). Nobes and Parker (1995) consider that the major contribution by this type of study is not the classification itself, but the description of key factors in national accounting systems and the suggestion of factors influencing development.

Inductive approaches are also open to considerable criticism.

3.2.2. The limitations of the inductive approach

Studies based on Price Waterhouse survey data have also been widely criticised. As early as 1981, Nobes accused them of reflecting the regulations in force in countries rather than the actual practices applied by businesses, and considered that US/UK differences were probably exaggerated due to the respondents' in-depth knowledge of accounting specificities in those countries. The Price Waterhouse database was suspected of being a source of inaccuracy and error, partly due to the fact that it placed data of unequal importance on an equal footing, an argument still advanced by D'Arcy (2001).

Raffournier (2000) considered that the study by Da Costa et al. (1978) was of little value, as it only identified one group (see above). Also, presumably because of a methodological bias or errors in data, several results go against what anyone with even only slight knowledge of the realities of international accounting would intuitively perceive. Doupnik and Salter (1993) similarly criticise the methodology in these studies, specifically the transformation of cardinal data into percentages and the use of factor analysis instead of cluster analysis.

For Nobes and Parker (1995), inductive classifications suffer from several failings, principally the inappropriate use of statistical tests and data not specifically collected for such a classification exercise, which are by nature diverse, concerning different countries at different periods. Walton (2000) summed up these criticisms in four comments:

- observations are based on regulations rather than companies' actual practices;
- there is no consideration of the fact that regulations may allow businesses a choice of accounting method;
- the regulations are fast-changing;
- the data used were prepared by a major audit firm, sometimes using the subjective judgement of its members, and may thus principally reflect the work of the firm, rather than corresponding to a highly representative sample of businesses in each country.

Raffournier (2000) believes the major problem with inductive studies is essentially that the results obtained appear to be more representative of existing regulations than actual corporate practices, whereas in certain cases, several regulations are not in fact really applied. By failing to make a systematic, clear distinction between rules and practices, the Price Waterhouse surveys thus have a tendency to underestimate international differences and give the impression that international accounting harmonisation has progressed further than is actually the case. D'Arcy (2001) avoided this pitfall by basing her empirical study solely on the rules applicable.

For Haller and Walton (1997), any classification contains a fundamental flaw: it presumes that accounting uniformity exists within each country, and that is far from the truth. Even more critically, they add, 'the problem of any classification is that it creates artificial distinctions where reality is much more complex' (our translation). These criticisms,

judging accounting classifications too simplistic to describe reality, and therefore of little use except to highlight certain generalities, may be overstated: the final effect is to call into question the very usefulness of the classification exercise.

3.3 The usefulness of the classification exercise: the properties of a relevant classification

It is generally stressed that accounting classifications are difficult to use due to the fast-evolving accounting environment and regulations, and the complexity of the phenomena they seek to describe. Nevertheless, the value of the exercise is obvious, provided it is properly executed. This calls for consideration of whether a classification requires specific properties to be relevant.

3.3.1 The properties of a relevant classification

In 1977, the American Accounting Association considered this question and identified four necessary properties:

- a classification must be established according to its own internal logic; for any given classification, the criteria used for distinguishing one item (here a country) from another must be consistent. One consequence of this is that the criteria applied will vary, depending on the aim being pursued.
- a classification must contain enough subsets to claim a certain degree of exhaustibility.
- the groups must be mutually exclusive; in other words, no country can belong to two at once. Roberts et al. (1998) maintain that the accounting systems of countries belonging to the same group must therefore have the same principal characteristics and be different from other accounting systems; for these authors, minor features must not be allowed to affect the classification, even though they may vary widely from one country to another.
- the classification must follow a certain hierarchy that clearly indicates the position of the item in question.

The AAA considered that respect of all these properties would ensure quality, and should be a minimum requirement for reliability.

Roberts (1995) questions the validity of these properties and their necessity or sufficiency for a "good" classification, and argues that in fact there is no such thing as an objective or natural classification. The simplicity of a classification, while not a quality included in the AAA list, remains vital for description of a complex situation and improvement of understanding. Rudner (1966/1996, cited by Gröjer, 2001) identifies six dimensions of simplicity: two are relevant to our subject, namely objective simplicity covering the concepts of reliability and comparability, and subjective simplicity, covering the concepts of comprehensibility and relevance. For Gröjer (2001), relevance is the most important factor, as it confers all the value of the classification.

It does indeed appear necessary that the classification exercise should not lose sight of what is being classified, why it is being classified and how it is being classified. This raises two issues: the question of the object observed, and thus its underlying concepts, and then the question of the methodology used.

3.3.2 A 3-stage methodology

The care and attention required must apply to all three stages of the exercise: collection, processing and interpretation of the results. Of course, this methodology validly applies for any empirical study, but it takes on a special dimension in the classification exercise, as the recent exchange between D'Arcy and Nobes showed.

Data collection is naturally the first stage; it is also the stage that determines the overall quality of the classification. The data used must have been collected specifically for the purpose; they must be coherent, without, for instance, combining information on regulations and business practices (as companies may find themselves in varying circumstances, even within the same country), or without combining information on consolidated accounts and individual company accounts (not only are the rules different, they may also be based on different corporate policies). These data must also be complete, including possible options concerning regulations (the database can of course never be exhaustive, as one base cannot take all factors into account). They must then be aggregated into a properly structured database.

A researcher who uses an existing database to save time and effort must therefore, in the interests of scientific integrity, verify its

foundations, i.e. the conditions in which it was built up and the methods used for data collection and aggregation. Special attention should be paid to identifying any errors inherent to the methodology, particularly if the base includes both quantitative and qualitative data, possibly without any weighting factor. Weighting, which is necessary when it is intended to use all data collected, is a tricky exercise in itself, requiring in-depth knowledge of the context so as to avoid attributing disproportionate importance to a minor factor. This relates to the difficulties involved in collecting qualitative data, which by their very presence are a source of errors and ambiguity. Qualitative data collection must be explained in as much detail as possible, as again it calls on the subjective judgement of the collector. Even if he manages to avoid having any preconceived ideas on the subject of the collection, his knowledge of that subject can be variable. A researcher who does not intend to use all data from an external base must also explain his choices, to limit the risk of subsequent errors of interpretation.

Risks can apparently be limited by establishing a classification based on countries' regulations alone, as practices may be influenced by a company's international environment and/or its accounting policy, among other factors. While this type of classification ensures a degree of continuity in analysis, independently of any other effect or influential factor and if harmonisation of regulations is the only factor ultimately resulting in harmonisation of practices (D'Arcy, 2001), the exercise does not necessarily prove conclusive or reveal countries' true situations; some methods allowed by the regulations may never be used, while others that are not allowed may be, with varying frequency.

While errors may occur during the collection stage, seriously jeopardising the validity of the classification exercise, other errors may arise in the **choice of statistical methods** – another subjective area – and the application of the corresponding processes. This is the second stage of the exercise, and provides the long-awaited results. These results should also be subject to a consistency check before any interpretation, with particular vigilance regarding the risk of collinearity.

The third and final stage of the classification exercise is **interpretation**, which will lead to the classification itself. Interpretation is always a delicate business, to be undertaken with caution: once again, it involves subjective judgement, and is closely related to the researcher's knowledge and experience.

All of these stages share a judgemental basis, and in fact to guarantee the quality of the study of the object concerned, they all rely on explanations, which actually constitute their true foundations: explanation of the data selected justifying their accuracy and appropriateness, explanations of the statistical methods selected and the interpretations put forward, with comparisons with other studies. If the data are different, the classifications will be different, but processing the same data in different ways can also produce divergent results. Even processing the same data in the same way can give rise to contrasting classifications, due to the range of interpretations possible. Results that are different from previous results, an interesting situation that is always a source of concern and debate, may in fact be due to differing or unusual choices or judgements; if each stage is explained and a proper methodology is used, they can be analysed and their robustness assessed. This makes it easier to determine whether they are simply due to errors in the process.

3.3.3 A constructed, continuous total process

The classification exercise can be compared to a **constructed, continuous total process** whose aim is to provide meaning. It is total because the results obtained depend on all the choices made; it is **constructed** in that it responds to a predetermined objective and constantly calls on judgement as the basis for these choices. This makes it necessarily and naturally subjective and relative, as there are countless ways to classify, and the overall analysis depends on the objective fixed and the choices made, which must always be explained. Whatever the situation, all choices must be based on clearly advanced hypotheses, that will find themselves validated or otherwise by the exercise (D'Arcy, 2004). Using intuitively selected factors is always possible, but much more difficult to justify.

The process is also **continuous and circular**: the classification exercise may be considered first and foremost as continuous, for while the classification makes it possible to compare and describe (see above), comparison and description are incontestably prerequisites for classifying. The comparison and description exercise appears fundamental in making the choices underlying the collection of data for classification. In order to develop a valid classification, the features used, whose sufficiency or necessity is always a concern, must reflect an influential or dependency relationship with the accounting system or accounting culture of the

country concerned, and the type and extent of this relationship must be clearly defined, or better still proven.

The classification exercise is not an end in itself, but a means of advancing knowledge of accounting systems (D'Arcy, 2004). Due to the existence of limits inherent to the three stages, which have their own inherent problems, the results obtained must form a basis for additional research using the same basic data, but with different hypotheses and different choices, or using an expanded database including parameters previously taken into consideration insufficiently or not at all.

Conclusion

While it is necessarily oversimplistic, approximative and ephemeral given the constantly changing environment, the classification of accounting systems undeniably has its attractions. It can provide a means of describing and analysing complex phenomena so as to better understand and compare those systems, provided the researcher undertaking the exercise remains conscious of the limitations of this type of study and avoids unwarranted conclusions.

A study of the classifications proposed since the early 1960s shows a certain continuity, explained by the learning capacity of the researcher, who benefits from knowledge of the contributions and methodological weaknesses of predecessors' models. This is how Nobes' hierarchical model appears as the most successfully complete. Nobes' work helped to impose a dichotomic view of the accounting world, between the 'Anglo-Saxon' and 'Continental Europe' models. Reducing his model to this aspect, which is considered as major, led to the recent controversy, which appeared not to take into consideration the diversity of countries covered. This debate reinforces the value of research into residual differences, using methodology and data appropriate to this type of study.

As Nobes and Parker (1995) point out, although no simple classification can successfully take into account all accounting practices and systems, there is undeniably room for improvement in the relevance of current classifications. A classification is only relevant if it is based on data collected for that specific purpose, with regard to clearly expressed requirements. The use of data collected because they are simple and easy to manipulate, with a view to processing them in a computerized system, for example, can only provide a biased or truncated vision of reality. It is

also necessary to distinguish between the subject and the objective of the classification exercise. While it may be obvious that classifying regulations and classifying practices can of course lead to highly divergent results, the two must not be put together without specification of the type of companies concerned; within a single country, two different systems may cohabit, one for large companies and the other for smaller companies not publicly traded on the markets. Research that takes this factor into consideration would still be very valuable to validate the expected results in the field of international harmonisation.

References

[1] Alexander, D. – Archer, S. (2000): *On the myth of 'Anglo-Saxon' financial accounting*. International Journal of Accounting, 2000, vol. 35, no. 4, pp. 539-557.

[2] American Accounting Association (AAA). (1977): *Report of the American Accounting Committee on international accounting operations and education 1975-1976*. Accounting Review, 1977, vol. 52 (supplement), pp. 65-132.

[3] Choi, F. D. S. – Mueller, G. G. (1992): *International Accounting*. Englewood Cliffs, Prentice-Hall, 1992.

[4] D'Arcy, A. (2001): *Accounting classification and the international harmonisation debate-an empirical investigation*. Accounting, Organizations and Society, 2001, vol. 26, no. 4-5, pp. 327-349.

[5] D'Arcy, A. (2004): *Accounting classification and the international harmonisation debate: a reply to a comment*. Accounting, Organizations and Society, 2004, vol. 29, no. 2, pp. 201-206.

[6] Da Costa, R. C. – Bourgeois, J. C. – Lawson, W. M. (1978): *A classification of international financial accounting practices*. International Journal of Accounting, 1978, vol. 13, no. 2, pp. 73-85.

[7] Doupnik, T.S. – Salter, S.B. (1993): *An empirical test of a judgmental international classification of financial reporting practices*. Journal of International Business Studies, 1993, vol. 24, no. 1, pp. 41-60.

[8] Doupnik, T. S. – Salter, S. B. (1995): *External environment, culture and accounting practices: a preliminary test of a general model of*

international accounting development. International Journal of Accounting, 1995, vol. 30, no. 3, pp. 189-207.

[9]   Flower, J. (1997): *The future shape of harmonization: the EU versus the IASC versus the SEC*. European Accounting Review, 1997, vol. 6, no. 2, pp. 281-303.

[10] Frank, W. G. (1979): *An empirical analysis of international accounting principles.* Journal of Accounting Research, 1979, vol. 17, no. 2, pp. 593-605.

[11] Gray, S. J. (1988): *Towards a theory of cultural influence on the development of accounting systems internationally*. Abacus, 1988, vol. 24, no. 1, pp. 1-15.

[12] Grojer, J. E. (2001): *Intangibles and accounting classifications: in search of a classification strategy.* Accounting, Organizations and Society, 2001, vol. 26, no. 7/8, pp. 695-713.

[13] Haller, A. – Walton, P. (1997): *Différences nationales et harmonisation comptable*. In Raffournier, B. – Haller, A. – Walton, P. (ed.): *Comptabilité internationale.* Paris, Vuibert, pp. 1-32, 1997.

[14] Hatfield, H. R. (1966, reprint from 1911): *Some variations in accounting pratices in England, France, Germany and the United States.* Journal of Accounting Research, 1966, reprint from 1911, vol. 4, no. 2, pp. 169-182.

[15] Hosftede, G. (1980): *Culture's consequences: international differences in work-related values*. Beverly Hills, Sage Publications, 1980.

[16] Hofstede, G. (1983): *The Cultural relativity of organizational practices and theories.* Journal of International Business Studies, 1983, vol. 14, no. 2, pp. 75-89.

[17] Lawrence, S. (1996): *International accounting.* London, Thomson Business Press, 1996.

[18] Meek, G. K. – Saudagaran, S. M. (1990): *A survey of research on financial reporting in a transnational context.* Journal of Accounting Literature, 1990, vol. 9, pp. 45-182.

[19] Mueller, G. G. (1976): *International accounting.* New York, Macmillan, 1967.

[20] Mueller, G. G. (1968): *Accounting principles generally accepted in the US versus those generally accepted elsewhere*. International Journal of Accounting, 1968, vol. 3, no. 1, pp. 91-104.

[21] Nair, R. D. – Frank, W. G. (1980): *The impact of disclosure and measurement practices on international accounting classifications*. Accounting Review, 1980, vol. 55, n°3, pp. 426-450.

[22] Nobes, C. (1981): *An empirical analysis of international accounting principles: a comment.* Journal of Accounting Research, 1981, vol. 19, no. 1, pp. 268-270.

[23] Nobes, C. (1983): *A judgmental international classification of financial reporting practices.* Journal of Business Finance and Accounting*, 1983, vol. 10, pp. 1-19.

[24] Nobes, C. (1988): *Towards a general model of the reasons for international differences in financial reporting*. Abacus, 1988, vol. 34, no. 2, pp. 162-186.

[25] Nobes, C. (2003): *On the myth of "Anglo-Saxon" financial accounting: a comment.* International Journal of Accounting, 2003, vol. 38, no. 1, pp. 95-104.

[26] Nobes, C. (2004): *Accounting classification and the international harmonisation debate: a reply to a comment.* Accounting, Organizations and Society, 2004, vol. 29, no. 2, pp. 201-206.

[27] Nobes, C. – Parker, R. (1981): *Comparative international accounting.* Oxford, Philip Allan, 1981.

[28] Nobes, C. – Parker, R. (1995): *Comparative international accounting.* Englewood Cliffs, Prentice Hall, 1995.

[29] Oldham, K. M. (1987): *Accounting systems and practices in Europe.* Brookfield, VT Gower, 1987.

[30] Puxty, A. G. – Wilmott, H. C. – Cooper, D. J. – Lowe, T.(1987): *Modes of regulation in advanced capitalism : locating accountancy in four countries.* Accounting, Organizations and Society, 1987, vol. 12, no. 3, pp. 273-291.

[31] Raffournier, B. (2001, a): *Comptabilité internationale.* In Colasse B. (ed.): *Encyclopédie de Comptabilité, Contrôle de gestion et Audit.* Economica, no. 28, pp. 371-382, 2001.

[32] Raffournier, B. (2001, b): *La diversité comptable internationale et ses conséquences: une revue de la littérature.* Paper presented at the research seminar of the Fondation Nationale pour l'Enseignement de la Gestion (FNEGE, French Foundation for Management Education), 2000, 13-17 March, La Londe Les Maures, France.

[33] Raffournier, B. – Haller, A. – Walton, P. (1997): *Comptabilité internationale.* Paris, Vuibert, 1997.

[34] Roberts, A. (1995): *The very idea of classification in international accounting.* Accounting, Organizations and Society, 1995, vol. 20, no. 7/8, pp. 639-664.

[35] Roberts, C. – Weetman, P. – Gordon, P. (1998): *International financial accounting – a comparative approach.* London, Financial Times Pitman Publishing, 1998.

[36] Salter S. B. – Doupnik T. S. (1992): *The relationship between legal systems and accounting practices: a classification exercise.* Advances in International Accounting, 1992, vol. 5, pp. 3-22.

[37] Seidler, L. J. (1967): *International accounting – The ultimate course.* Accounting Review, 1967, vol. 42, no. 4, pp. 775-781.

[38] Shoenthal, E. R. (1989): *Classification of accounting systems using competencies as a discriminating variable: a Great Britain – United States study.* Journal of Business Finance and Accounting, 1989, vol. 16, no. 4, pp. 549-563

[39] Wallace, R. S. O. – Gernon, H. (1991): *Frameworks for International comparative financial accounting.* Journal of Accounting Literature, 1991, vol. 10, no. 1, pp. 209-264.

[40] Walton, P. (2000): *Comptabilité internationale et recherche.* Paper presented at the XXIème Congress of the Association Francophone de Comptabilité (AFC, Francophone Accounting Association), 2000, May 18th, Angers, France.

Classification of Accounting Systems: Its Contribution to Understanding of International Accounting

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ABSTRACT

A recent debate has suggested that the established supremacy of the dichotomic classification of accounting systems dividing systems into 'Anglo-Saxon' and 'continental European' models is to be contested. No clear-cut conclusion has resulted from the discussions and comments on these results, and this paper sets out to throw more light on the issue by presenting the origins and value of the classification exercise, a review of the major studies that have furthered the debate, and a critical and dynamic perspective of the exercise highlighting the customary precautions required to ensure a certain degree of reliability in results, and therefore in the classification.

Key words: Classification; National accounting systems; International accounting; Methodology.

JEL classification: M41.