Weber's concepts of rationality in relation to fair value and prudence

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Abstract

In this paper we analyse Weber's concept of capital accounting and its relation to fair value from their common assumptions of exchangeability, calculability and continuity in the highest degree. From this characterisation, we derive the consequences of the current orientation in accounting and its relation to organisations and society. Furthermore, we apply Weber's distinction between formal and substantive rationality to the concept of prudence and overcome the present duality in the concept and misunderstandings related to this duality.

Keywords

Rationality, Max Weber, fair value, prudence

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1 Introduction

This paper provides a conceptual analysis of Weber's distinction between formal and substantive rationality in relation to concepts of fair value and prudence. We will identify mutual conceptual requirements of formal rationality and fair value. If strong similarities exist, then the consequences of formal rationality that Weber identified could also be relevant for fair value and this could reveal insight into the current orientation in accounting and its relation to organisations and society. Furthermore, we will apply Weber's distinction to the

concept of prudence and thereby provide insight into current developments related to prudence and its organisation in society.

Sociologists like Weber are important for accounting and economics because they wrote in a time when these areas of science were not as differentiated and specialised as they are now. Mainstream economics nowadays has lost interest in the analysis of social institutions, and sociology has conceded the study of socio-economic phenomena to economics. However, at the beginning of the twentieth century, these areas were more united. Also, around that time and before the First World War, a strong influence of internationalisation on the state economies can be identified that has similarities with current developments. An analysis of the ideas of these economists/sociologists is therefore important for the current understanding and position of financial accounting in modern society. Weber's sociology could contribute to the research efforts devoted to the study of accounting situated within the context of economic and social institutions (Burchell et al., 1980; Hopwood, 1987).

1.1 **Overview**

Section two discusses Weber's concepts of rationality, firstly looking at the characteristics and requirements of capital accounting, which is the fundamental form of accounting essential for formal rationality. It then examines the distinction between formal and substantive rationality. In the third section, we look at Weber's concept of market and provide insight into the consequences of formal rationality that Weber identified for society and its members. In the fourth section, we analyse the concept of fair value, by starting with a short description of the definition's evolution and by analysing the general assumptions of the concept. We are subsequently able to compare Weber's concept of formal rationality with the concept of fair value. The fifth section explores the concept of prudence, its current dual nature, and introduces the distinction between formal prudence and substantive prudence. The paper ends with a conclusion and discussion.

2 Weber's concepts of rationality

The notions of rationality and rationalisation are of great importance in the work of the German sociologist Max Weber (1864-1920). He characterised the historical development of particularly the Western world by a process of rationalisation that first of all occurred within the areas of economy, law and political administration. In this process, legal-rational organisation and action are advanced at the cost of traditional and charismatic organisation and action. Weber was one of the first major sociologists to acknowledge the social significance of accounting within this development for economic decision-making and economic action.

Because of Weber's early recognition of the importance of accounting, many academics have investigated his ideas on the subject. In their overview of the roles of accounting in organisations and society, Burchell et al. (1980) discuss Weber in relation to the social significance of accounting. Covaleski and Aiken (1986) concluded that Weber's classical sociological perspective explicitly recognised the centrality of issues of social control and coordination in organisations, which could provide a meaningful approach by which to study accounting. Based on this study, Colignon and Covaleski (1991) provided a Weberian framework for examining accounting practices in their socio-historical context and investigated the relations of accounting to society. In their view, financial accounting is the embodiment of Weber's formal rationality.

Carruthers and Espeland (1991) discussed the relationships that Weber and Sombart, another German sociologist and friend of Weber, identified between capitalism, rationality and the development of financial accounting. More recently, Bryer (2000), in his overview of the history of accounting in England, criticised Weber's theory of the transition to capitalism and his understanding of modern accounting.

This paper does not aim to provide an extensive overview of the appropriation of these concepts by these subsequent accountancy scholars, but is mainly concerned with the way Weber used these concepts in his own analysis of rationalisation.

In the next two sections, Weber's concepts and ideas in relation to economic rationality and capital accounting are discussed in detail. Although rationalisation was a general theme in all of Weber's work, we will primarily concentrate on Economy and Society (1978 [1920]) and on The Protestant Ethic and the Spirit of Capitalism (2006 [1920-21]). Where useful, we will also refer to the work of Georg Simmel (1858 - 1918), a German sociologist and contemporary of Weber. According to Frisby in his preface to the second edition of Simmel´s book The Philosophy of Money, Weber drew a great deal from it, although he also expressed major reservations with regard to certain elements (Simmel, 2006, p. xlviii).

2.1 **Weber's concept of capital accounting**

In this section we discuss Weber's concept of capital accounting, which he formulated as a specific kind of accounting based on economic calculation with money as the basic unit of account. Financial accounting should not be confused with this concept as we will clarify below; not every development in financial accounting advances the process of rationalisation. Weber formulated three requirements for the form of calculations for economic ends (capital accounting): continuity, calculability and marketability. We deal with these three properties below, but let us first look at money as a means for capital accounting.

In a much-quoted paragraph of his work, Weber (1978) noted, "… from a purely technical point of view, money is the most ´perfect means´ of economic calculation. It is formally the most rational means of orienting economic activity" (p. 86). He argued that if one leaves all non-technical points of view (such as political, ethical and irrational points of view) then money is the basic unit of account of economic calculation. With the use of the word formally Weber in this quotation already revealed a hint of what he understood by formal rationality; it

is rationality from a purely technical calculative point of view. Presumably, Weber also meant to imply that the reverse is true; orienting any form of economic action requires a formal rational means of calculations in terms of money. Available resources, represented by quantities, cannot be used for economic action without any form of calculation. Defining qualitative measures of efficient use of resources seems logically impossible.

Weber explicitly used the term economic activity, and it is important to know that he distinguished economic activities from economically oriented activities. When Weber identified money as the most perfect means, he referred to economic action and not to economically oriented action. The latter is not necessarily shaped by calculations in terms of money and, although taking economic considerations into account, it is primarily oriented to ends other than economic. Economic action, on the other hand, is any (peaceful) exercise of an actor's control over resources, which is in its main impulse oriented towards economic ends, and this kind of action requires calculations in terms of money. The distinction of economic action and economically oriented action is very important in Weber's sociology; the distinction lies at the basis of two different kinds of rationality, as will be discussed below. For now, it is important to keep in mind that only economic action requires calculations in terms of money and not economically oriented action.

The identification of money as a perfect means for economic calculation by no means implies that any calculation in money is a formal rational means to orient economic activity. Weber formulated specific requirements of the form of calculations for economic ends of profit making by introducing the term capital accounting (′Kapitalrechnung′, which can also be translated to ′calculations in terms of money′). Capital accounting is the form of accounting that is peculiar to profit making. It involves the valuation and verification of opportunities for profit and of the success of profit making activities by means of a valuation of an enterprise's total assets and liabilities enterprise at the initial and final state of a reporting period. In the

case of profit making activities on markets, Weber (1978, p. 91-92) identified three requirements for capital accounting: high degrees of continuity, marketability and calculability. Weber elucidated on these requirements in several parts of his work.

A high degree of continuity requires "… that the means of carrying on the enterprise, such as the potential means of production and the services of labor, are also available in the market at costs which can be estimated with an adequate degree of certainty" (p. 92). There is also a strong relation between the use of money and continuity, because any act of exchange involving the use of money is acceptable only if there is an expectation that in the future money will be desirable, and can be further used as a means of payment.

What Weber meant by marketability, he makes clear in a number of slightly different but not inconsistent definitions: "… that there exists, subject to estimate beforehand, adequately extensive and assured opportunities for sale of the goods which the enterprise procures" (p. 92), "… the possibility that income and wealth consists either in money or in goods which are at any time subject to exchange for money" (p. 87), and "… the degree of regularity with which an object tends to be an object for exchange on the market" (p. 82). These definitions, with their focus on exchange, show that instead of the term marketability we could also use exchangeability.

The concept of exchangeability is one of the central elements in Simmel's philosophy of money, which influenced Weber in many ways. Simmel argued that exchangeability is the essential relation between individuals in the objective economic world and "… has acquired in money (…) its technically perfect means" (Simmel, 2006, p. 128). Weber's notions of exchangeability and money are certainly influenced by Simmel.

The third requirement of capital accounting, calculability, is obviously strongly related to the use of money because money yields some of form of calculability. However, it does not mean that, if something is expressed in terms of money, it is in effect calculable to the highest

degree. Many prices can be employed and for accounting purposes many valuations methods have been and can be applied. This does not come under Weber's definition of calculability: "Rational money-accounting presupposes the existence of effective prices and not merely of fictitious prices conventionally employed for technical accounting purposes. This, in turn, presupposes money functioning as an effective medium of exchange, which is in demand as such, not mere tokens used as purely technical accounting units" (p. 93). This means that the highest form of calculability can only be obtained where money is an effective medium of exchange and where, in effect, effective prices exist. This directly shows that Weber assumed that not all forms of technical accounting are by definition indications for formal rationality.

We must not forget that the German word for capital accounting, Kapitalrechnung, can also be translated to calculations in terms of money. One should therefore not overestimate the significance of Weber's concept of capital accounting for the profession of preparers and auditors of financial information. In Weber's work, Bryer could not find the social motivation of preparers from their accounts and he claimed that Weber's understanding of modern accounting is ambiguous (Bryer, 2000). Given our analysis above, we seriously doubt whether Weber had preparers and auditors of financial information in mind when he used the term capital accounting.

Having introduced the concept of capital accounting, Weber turned to the users of capital accounting, i.e. economic enterprises, which he defines as "… autonomous action capable of orientation to capital accounting" (p. 91). Other users of capital accounting, such as market participants, could be identified if one assumes disclosure of reports on capital accounting. This orientation takes place by means of calculation. At the beginning of the reporting period ex-ante calculations of probable risks and chances of profit are needed and at the end of the reporting period ex-post calculation for verification of the actual profit or loss resulting. Weber then identified double-entry bookkeeping as "… the most highly developed" form of

profitability accounting "… from a technical point of view" (p. 92). For through double entry bookkeeping the fiction is created that "… different departments within an enterprise, or individual accounts, conduct exchange operations with each other, thus permitting a check in the technically most perfect manner on the profitability of each individual step or measure" (p. 92-93). Economic enterprises monitor their profitability by means of double-entry bookkeeping, an accounting device whereby prevailing market prices are attached to internal, non-market transactions between separate business activities of the enterprise (Poggi, 1983, p. 20). This does not imply that double-entry bookkeeping as such contributes to estimating profitability, just like not every form of financial accounting contributes to formal rationality. The point made by Weber is that only where double-entry bookkeeping is based on exchange transactions does it introduce a technique of estimating the profitability of an enterprise.

If such a situation of capital accounting is possible, then economic enterprise and other users of capital accounting are able to evaluate the consequences of their past decisions in a formal rational way. They are able to calculate the resources currently available to them and those that will be forthcoming in the future, and they can use the information provided by financial reports based on capital accounting to assess and compare various alternatives for investment. The situation of calculability in the highest degree does not imply that forecasts of future transactions and events can be made because the occurrence of these transactions and events are known in advance; it only indicates that their estimates can be calculated.

Weber characterised such a system of economic activity, with the highest degree of continuity, exchangeability and calculability, as formal rationality and opposed this to substantive rationality.

2.2 **Formal and substantive rationality**

Weber's distinction between formal and substantive rationality has given rise to many differences of opinion and many diverging interpretations by sociologists, economists and

accountants can be found in academic literature. It has been argued that, although Weber himself intended to introduce the distinction to secure "… a greater consistency in the use of the word rational", the distinction only obfuscated where it meant to clarify, and that it "… stands as perhaps the most confused and confusing concept in all of Weber's work on rationalization" (Eisen, 1978). According to Kalberg in his detailed discussion of Weber's types of rationality, Weber's scattered and fragmented discussions and his contorted style of writing are more likely to mystify than to illuminate (1980).

Before clarifying the distinction in Weber's terms it should be noted that it was introduced around the time that Weber attempted to function as a neutral methodologist for, and a central arbiter of, the ´Methodenstreit´ in the emerging discipline of German sociology (Wilson, 2004). Weber's reason for introducing the distinction was to formalise and achieve a greater consistency and conceptual precision in the concept of rationality. In doing so, we may assume that he aimed to formulate mutually exclusive alternatives of concepts of rationality.

The concept of formal rationality is related to the notions of economic calculations and capital accounting we described previously. A system of economic activity is called economically rational in a formal way according to the degree in which assets and liabilities are capable of being expressed in numerical, calculable terms and are so expressed. The possibility of complete formal rationalisation, of which capital accounting is one element, depends on the possibility that all elements in financial statements consist either in money or in goods which are in the highest degree marketable or exchangeable. In the previous section, we have seen that Weber opposed economic action, based on calculation, to economically oriented action. Not all economic enterprises, which are capable of orientation to capital accounting, need to orient to profit making. Weber also formalised these notions into his concept of substantive rationality.

Substantive rationality is the degree to which decision-making of enterprises and market participants (no matter how delimited) is shaped by economically oriented action under some criterion of ultimate values, regardless the nature of these ends. This form addresses the substance of values of specific groups and the institutions that promote them. It directly orders action, not on the basis of a purely means-end calculation but in relation to a past, present, or potential value postulate (Kalberg, 1980). Substantive rationality of an economic system refers to the degree to which it provides to these values. Economically oriented action is substantively rational if it is consistent with the values of specific groups and institutions.

The ultimate values, which are used as criteria for economically oriented action, can be of great variety, and the concept of substantive rationality is full of ambiguities. It conveys only one element common to all "substantive" analyses: namely that they do not restrict themselves to note the purely formal and (relatively) unambiguous fact that action is based on "goal-oriented" rational calculation with the technically most adequate available methods, but apply certain criteria of ultimate ends, whether they be ethical, political, utilitarian, hedonistic, feudal, egalitarian, or whatsoever, and measure the results of the economic action, however, formally "rational" in the sense of correct calculation they may be, against these scales of "value rationality" or "substantive goal rationality"" (Weber, 1978, p. 85-86). These values acquire rationality merely from their status as consistent value postulates and are thereby not intrinsically rational or fixed.

Weber introduced this distinction to describe economic and economically oriented action in general, and he thereby formalises and generalises it from its historical context in order to delimit and define more properly the things and processes he is describing (Wilson, 2004). Formal and substantive rationality are from this point of view both formal concepts in an abstract and theoretical manner. Weber acknowledged this by stating: "There is no question in this discussion of attempting value judgements in this field, but only in determining and

delimiting what is to be called “formal”. In this context the concept substantive is itself “formal”; that is, it is an abstract, generic concept” (p. 86).

By using these descriptive concepts, he made a difference between the actual action taken by economic enterprises and market participants and the description of this kind of action. The purpose of all rational action, whether it is economic action or economically oriented action or any another kind of action, is to achieve a good, which is desired by the actor. They are based on particular preferences and values of the actor. The concepts of formal and substantive rationality are, on the other hand, both value-neutral because they are purely descriptive.

If they are both formal concepts in an abstract generic manner, how do formal and substantive rationality relate to each other? The difference is that formal rationality is not only an abstract, generic concept but at the same time a technical calculative one, whereas substantive rationality is an ethical concept. The dichotomy that is created is therefore more related to the distinction between technical and ethical action than any other distinction. Concluding, we can represent Weber’s concepts in the following schematic figure.

Economic action ↔ **Economically oriented action** (concrete)

↓ ↓

Formal rationality ↔ **Substantive rationality** (abstract)

(technical) (ethical)

In this discussion, we must distinguish concrete action from a description of that action. By arguing that the concept of formal rationality is in itself a value neutral concept and by

distinguishing economically oriented action from economic action as action under some criterion of ultimate value, we do not mean to imply that economic action or formal rationality are in effect value neutral. Furthermore, the sometimes-heard statement that relations in a rational market imply no moral approval of these relations does not necessarily prove that economic action is value neutral. What are the consequences of an orientation toward formal rationality and the emergence of rational markets?

3 Weber's concept of market

The previous sections were based on the first part of Economy and Society, which contains the conceptual framework required for the second part of Weber's work. The second part, for which Weber in a projected table of contents used the title "The economy and the arena of normative and de facto powers", remained unfinished because of his death in 1920. However, Weber wrote a fragment for chapter VII, which the editors called "The market: its impersonality and ethic". The fragment is a brief sketch and presumably Weber postponed writing it because he was waiting for other contributions to the series he was preparing. What he did write was sufficient to distinguish the market from the more natural groups and the political community before discussing economy and law in chapter VIII.

Weber's concept of the market is important in relation to our discussion of formal rationality, because for Weber a system of formal rationality, with the highest degrees of calculability and exchangeability, becomes real in the market; it is based on the most rational kind of social action: association through exchange.

How does Weber characterise the market? As such, the market community (those who participate in the market) is "… the most impersonal relationship of practical life into which humans can enter with one another" (p. 636). The reason for this impersonality of the market lies in its "matter-of-factness": its sole orientation to exchangeable goods. Its participants do not look toward those who are involved in market transactions. There are no obligations of

any substantive value and none of those "… spontaneous relationship that are sustained by personal unions" (p. 636). In effect, the market is indifferent to all substantive values that are sustained by organised groups, whether political, cultural, religious or otherwise. They might even obstruct the free development of rational market relationships and the market could in turn, to serve its specific interests, weaken the sentiments on which these obstructions rest. The depersonalisation of the market is for Weber absolute and contrary to all the elementary forms of human relationships in a society.

In other words, Weber creates a dichotomy between group formation through the use of money and any association based on a legal order, voluntary or imposed. He requires this dichotomy for his subsequent discussion of economy (with the market as de facto power) and law (with the legislator as normative power). A formal rational system is the system where the market is the ultimate de facto power, leading to the suppression of substantive values, such as solidarity, equality and justice, desired by the legislative normative power.

Such a strong dichotomy may not be obtained. The existence of a completely rational market is of course a theoretical situation, which never occurs in practice, just as an absolute vacuum is never obtained. Any exchange is social action, as Weber also acknowledged, and neither the use of money nor the impersonality of exchange prevents the eventual rise of a market ethic binding on those who continually trade. Such exchange partners develop expectations of reciprocity which make them abide by the rules. Occasional traders on the other hand are most likely to ignore the principle of pacta sunt servanda. Also, some market participants, for example long-term investors, pursue an investment policy to maintain their investments and are thus concerned with the continuity of particular companies. They could also measure their investment policies against scales of ethical or political values such as environmental concerns or favouring specific regions, and act accordingly. The identification of these market participants with substantive values and their activities would then not involve pure economic

action, but economically oriented action. This identification will depend upon their actual role in society.

However, Weber points out that a market will weaken any obstruction for the development of free rational market relationships. In the process of rationalisation, all market participants become global market participants, and all act rationally without hindrance by any substantive value. In effect, there will be an increasing inability of political communities to influence global market participants. In a formal economic order, everything is oriented toward the unconditional objectification of estimated economic value. Thus, everything that is 'valued' is actually deprived of its substantive value, its worth.

The availability of exchangeable goods that are valued in formally rational terms is in many cases beneficial for members in a society and their institutions, and it plays an important role in achieving economic goals and securing stability. The situation of formal rationality could actually provide the best for all in society, and Weber's concern might be inappropriate, because what he saw as technical and formal could in fact be a society's specific social interest. The advance of technical rational reason could very well become the instrument of man's liberation, as Eisen (1978) formulated it. Formal rationality and substantive rationally need not be in conflict. Assuming that money is a means of formal rationality, this conclusion is also drawn by Simmel. He argued that money supports the independence of the individual person and his freedom. Money is that form of property that most effectively liberates the individual from the unifying bonds that extend from other objects of possession (Simmel, 2006, p. 354).

However, Weber argued that formal rationality is not solely instrumental for organised groups and its members. Any social group that is organised under some substantive value is challenged by this process, and its members must continuously be aware that the replacement of substantive rationality by formal rationality is actually taking place. Weber was particularly

negative about the increasing rationalisation of human life which he experienced as a trap of rules-based rational control for individuals in "a shell as hard as steel" (2006, p. 123).

4 Formal rationality and fair value

In this section we analyse the similarities between the situation that Weber described as capital accounting and the orientation in accounting standards towards fair value measurement. We characterise fair value as the objectified agreement of the estimated economic value, where objectivity is achieved by establishing a distance between exchangeable assets and market participants.

In this conceptual analysis, we are not concerned with the practical aspects of fair value measurement and fair value accounting, such as whether it exists in practical situations, how it should be measured and when assets have to be recognised. We investigate the relation between formal rationality and fair value as a valuation principle. We restrict ourselves to the theoretical concept of fair value.

4.1 The evolution of the definition of fair value

The term fair value was mentioned as early as in 1953, although at that time the term was not yet defined properly. The earliest definition of fair value appeared in FAS 13, issued by the FASB in 1976: "Fair value is the price for which a property could be sold in an arm's length transaction between unrelated willing parties". The earliest definition in the IASB standards appeared in IAS 16, issued in 1982, where fair value was defined by "… the amount for which an asset could be exchanged between a knowledgeable, willing buyer and a knowledgeable, willing seller in an arm's length transaction" (paragraph 6c). It is a straightforward definition that fair value is the price at which two autonomous parties would agree to exchange a particular asset in a market without information monopolies. In the revised version of IAS 16 the fair value definition became more general in terms of parties

involved in a transaction. In IAS 18, 21 and 22, liabilities were included in the definition and the resulting definition was used in subsequent accounting standards, including IAS 32, 33, 17 and 19.

Guidance on fair value measurement was not given until the issue of the revised version of IAS 39, issued in 2000. Under IAS 39, the price quoted in an active market is considered as the best evidence of fair value measurement. Where such a price quotation does not exist, IAS 39 suggests several generally accepted valuation techniques for fair value measurement, which "… should incorporate the assumptions that market participants would use in their estimate of fair value".

4.2 **The nature of the concept of fair value**

A comparison of fair value with, say, a physical property such as mass reveals some of the similarities and differences between these two properties and sheds light on the fundamental nature of the concept of fair value. Mass is a physical property of matter that quantifies the amount of matter and energy it is equivalent to and is measured in kilograms, or an equivalent unit of mass. A kilogram is defined as being equal to the mass of the international prototype of the kilogram, which is kept in Paris. How would we similarly define ´economical property´ fair value?

An important and straightforward difference between physical properties and a property such as (economic) value is that a value is never a quality of an object, but a judgement on them which remains inherent in the one who judges. In Simmel´s words, value is "… an addition to the completely determined objective being, like light and shade, which are not inherent in it but comes from a different source" (Simmel, 2006, p. 60). A proper concept of economic value must therefore be based on certain requirements for those who judge that economic value.

The previous section showed that an important element in the definition of fair value is the idea of hypothetical market transactions. A market transaction, or an exchange, is a form of agreement of interests on the part of market participants in the course of which assets are passed as reciprocal compensation. Assets and liabilities offered are media of exchange in so far as they are accepted because the recipients estimate that they will be able to utilise them in another exchange to procure other assets at an acceptable exchange ratio. Recipients estimate the economic value, which will normally depend on uncertain future developments. Therefore, an asset is a medium of exchange as a result of the recipient's estimations, and these estimations are based on the specific and concrete, real or imagined advantages in the present or future, thus reflecting a belief about future developments. The hypothetical market transactions are based on estimations of the economic value of assets. What are the requirements for those who are involved in making those estimations mentioned in the definition of fair value?

The requirements for those who perform hypothetical market transactions within the definition of fair value state are that they must be knowledgeable and willing parties. By using these hypothetical parties who attribute the estimated economic value, the concept of fair value is based on the hypothetical belief of market participants who have an established distance towards assets, which is represented by exchange. This distance has an objectifying effect on the valuation. We can therefore say that fair value is empirically grounded in exchange as the objectified agreement on the estimated economic value. This does not imply that all market participants measure and valuate assets in the same way. It merely says that in distance, and in the detachment of assets from any relationship to the market participant, pure economic objectivity is achieved.

If the value of exchangeable assets depended on the outcome of uncertain future developments, then the use of hypothetical knowledgeable willing parties aims to objectify

the market opinion on these future developments, i.e. it aims to rationalise speculation. Exchange carried out by knowledgeable and willing parties presupposes a judgement by objective standards.

It should be noted that the concept of fair value is not intended to accurately describe or represent real empirical interests of market participants. It refers to an ideal, hypothetical situation which must be understood in the sense of Galileo's ´absolute vacuum´. It is however not purely theoretical since it is partially based on characteristics of economic phenomena. Instead of a theoretical instrument to describe economic phenomena, the concept is practically used as a means for orientation. Within this view, social and economic phenomena are deliberately simplified and certain elements are exaggerated by, for example, excluding the influence of political, ethical and other extra-economic factors.

4.3 **Formal rationality and the concept of fair value**

This section identifies a strong relationship between Weber's concepts of capital accounting and formal rationality and the concept of fair value by analysing the two mutual requirements of the situation they refer to: high degrees of exchangeability and calculability. As argued below, these two requirements are themselves strongly related.

First of all, fair value is by definition measured in money as a medium of exchange, i.e. cash or other resources that can be converted to cash, which implies a high degree of calculability. This implies a strong reference to Weber's concept of capital accounting. Recall furthermore that Weber noted that calculability did not refer to the capability of being expressed in terms of money alone, but that it also presupposes the existence of ´effective´ prices and not merely of fictitious prices employed for technical accounting purposes. These effective prices must also be related to the requirement of exchangeability.

Secondly, the concept of fair value, defined on the basis of hypothetical market transactions and exchange parties, presupposes a high degree of exchangeability. There is no requirement

that exchange actually takes place. Weber also presupposed hypothetical market transactions instead of actual transactions because he explicitly stated "… calculation in terms of money, and not its actual use, is the specific means of rational economic provision" (1978, p. 86). He also stated that marketability refers to the possibility that income and wealth consist either in money or in goods which are at any time subject to exchange for money. Furthermore, the existence of effective prices presupposes money is an effective medium of exchange.

There is, more conceptually, a strong similarity between calculability and exchangeability. Weber argued, as we have seen in the previous section, that market participants in a formal rational economic system apply a logical reasoning regardless of whom or what is involved in a particular transaction; they only have regard for what is exchanged. A precondition of both calculability and exchangeability is the possibility to disassociate an asset from the enterprise where it originated; otherwise no meaningful exchange can take place. The effects of this disassociation are that the asset itself is detached from all forms of substantive rationality that were related to the (origin of the) asset and that the influence of ultimate values is restricted to the extent that they can be made calculable and therefore can be reflected in the price of the asset. However, the ultimate values themselves cannot be made calculable and the substance of value of specific groups and the institutions that promote them cannot be disassociated from them. Therefore a high degree of exchangeability necessarily implies a high degree of calculability.

By arguing that the concept of fair value has strong similarities with Weber's capital accounting we do not mean to imply that other accounting methods, for example methods based on historical cost valuation, are not rational. The point made here is that any accounting method other than fair value accounting is not formally rational in the sense that it does not imply calculation in the highest degree. However, other accounting methods can be perceived as a preliminary stage of fair value measurement because they always represent some degree

of calculability. Therefore they differ from fair value measurement in degree and not in kind. The highest degree of calculability is an end in itself within the framework of financial accounting.

The fact that, in practical situations, an accurate calculation or estimate may not exist, and that the procedure is sometimes pure guess-work, or simply traditional or conventional, are points only affecting the degree of calculability and measurement of fair value. It does not limit or criticise the concept itself in any way, and it does not imply that there is an empirical relation between financial reports based on fair values and rational economic decision-making.

It is furthermore interesting to note that, according to Weber, formal rationality has no direct relation with economic theories and concepts such as marginal utility and complete markets. Many economic theories approach the problem in terms of relative marginal utilities of goods. However, instead of utility, Weber and Simmel perceived exchange as the primary source of economic values, because only exchange transforms empirically subjective feelings into objective valuation. And exchange is to be understood as a purely social phenomenon. Whether a subjective feeling of need can be satisfied depends on its place in the scale of relative urgency and on the goods that are needed to be actually or potentially available. This satisfaction does not take place if the utilities needed cannot be procured at all, or if they are applied to other more urgent uses. According to Simmel "… utility as such is never able to bring about economic processes unless it leads to demand, and it does not always do so" (Simmel, 2006, p. 91). Marginal utility is not the source of the orientation of economic action. Weber argued that "… the capital accounting and calculations of the market entrepreneur are not oriented to marginal utility, but to profitability" (Weber, 1978, p. 92). They both were critical towards economic theories based on relative marginal utilities as descriptions or explanations of observed exchange rates. An investigation of the inner nature of an exchangeable product will not reveal economic value. This value, they argued, resides

exclusively in the reciprocal market relationship arising between members of the market community. It is obvious that to the extent that the similarities between capital accounting and fair value hold, the remarks concerning the relation between economic theories and formal rationality also hold for fair value measurement.

5 The future of prudence

In the previous section, we identified strong similarities between Weber's concept of capital accounting and the concept of fair value and we argued that the concept of fair value is used as a means of orientation towards an economic system of formal rationality. The concept of fair value is characterised by an orientation towards objectively estimated economic value. The objectification implies exchangeability and calculability and is realised by the organisation of a market with autonomous market participants without information monopolies. Weber observed that a market of this kind is depersonalised and that substantive values have a decreasing influence upon the market community.

In this section we look more closely at one important substantive value, namely prudence, which is at first sight closely related to rationality. It has been argued that the application of prudence in global markets ultimately leads to rational choice and rational decision-making and that prudence is nothing more than the older term for what is nowadays understood as rationality (Hariman, 2003). Both concepts are explained with reference to reason, foresightedness and the absence of emotions and rashness. However, from its historical roots, prudence has connotations as an ethical virtue, and it can be argued that something of the older concept is lost in the technical calculations of rational acting agents. What is the effect of the fair value orientation upon the position of prudence?

In the first part of this section, we investigate the concept of prudence and show that it is used in two different ways. In order to explicate this difference, we then apply Weber's distinction between formal and substantive rationality to prudence.

5.1 **The current dual nature of prudence**

The word prudence is derived from the Latin prudentia (possibly a contraction of providentia, ′foresight′), which has, if one ignores the language barrier, an equivalent in phronēsis in Greek. This word was already used in the writings of the pre-Socratic philosophers. The verb phronizo, with the same stem, means ′to care (for)′ and ′to be concerned (about)′.

For Aristotle, phronēsis means common sense and practical wisdom. It is the right disposition of a calculating or practical wisdom, and thereby the intellectual property, which makes someone take action according to his or her own insight of what is right and wrong (Nicomachean Ethica, VI, 5, 1140a 15-1140b 30). Someone who has the virtue of phronēsis is known to be wise (phronimos). According to Aristotle, it is not possible to be known as wise if one is only concerned with oneself. Furthermore, "… it is impossible for the same person to have practical wisdom and be morally weak at the same time" (VII, 10, 1152a 7-8).

In Roman times, prudentia was typically associated with age and experience. It involved knowledge of practical matters, law and custom as well as proper speech, including rhetoric and behaviour. Imprudence on the other hand was associated with youth, recklessness and impropriety. Prudence for Cicero was much more than simply knowing how things work: it was ultimately the extended performance of justice on the public stage (Cape in Hariman, 2003).

After the decline of the Roman Empire, Latin remained the universal language of the Christian world. Around the year 1240, Aristotle's books were rediscovered by the scholastics. In Christianity, prudence became one of the cardinal virtues (among justice, temperance and fortitude) and important philosophers have expressed opinions on the concept of prudence. In their appropriation of the word prudence, they made however a decisive adjustment. Thomas Aquinas wrote in Summa Theologiae (1-2.61.5) "… thus prudence, by

contemplating divine things, counts all worldly things as nothing and directs all thought of the soul to what is divine". Thus, prudence became the virtue of contemplation rather than action.

The Roman relation between prudence and foresight is accentuated by the seventeenth century English political philosopher Thomas Hobbes. According to Hobbes, prudence is closely related to experience and aims at forecasting future events. He defines prudence in his Leviathan as "… a Praesumption of the Future, contracted from Experience of time Past" (Leviathan) and, elsewhere, it is "… the wisdom that proceedeth from … [experience and it] is that ability to conjecture by the present of what is past, and to come" (The Elements of Law). Prudence for Hobbes is an ability to conjecture about the future and what course events are likely to take given some initial set of conditions. It also helps us to see whether some course of action conduces to some end, or what end it serves. It is also deeply rooted in individual experience, as experience provides much of the raw material we use to reason about the future. Finally, Hobbesian prudence is linked inextricably to one's capacity for good judgement (Vanden Houten, 2002).

At the end of the nineteenth century the word prudence was appropriated by the accounting profession (we will assume that prudence in accounting coincides with conservatism). Several reasons and explanation have been given for the introduction of prudence and conservatism in accounting. Parker (1965) related conservative accounting to the accounting profession's experience with insolvency practice and with company failures during the economic depression at the end of the nineteenth century. The accountant had to withstand the business men who had a natural tendency to overstate the value of their business. This line of reasoning is also adopted by Sterling (1967), who argues that conservatism contrasts the archetypes of the "effervescent" entrepreneur. The conservative accountant was the steward personifying the ultimate in solidity who understated to ensure that the value he reported was not greater than the actual one.

Bryer (1993) argued that prudence offered a rationale for the deliberate understatement of profits in the interest of investors. The "labour danger" posed by trade-unionism, as it was perceived at the end of the nineteenth century, made companies wary of disclosing high profits and distributing high dividend. The generalisation of these procedures in terms of prudence and conservatism made accountants comfortable in certifying the resulting figures as true and fair. Maltby (2000) showed, in following Bryer's line of reasoning, that around the end of the nineteenth century in the UK, as a reaction to some court decisions of dividend payments, company management found themselves required to defend themselves against short-term shareholders and speculators to avoid over-distribution of capital. The accounting profession put forward conservatism as a special professional competence that promoted the interests of the limited company, which were identified with those of its large long-term investors. A special characteristic of this kind of conservatism was the deliberate understatement of profits and assets in public financial reports and, consequently, the creation of hidden reserves. This policy favoured long-term investors who got their information privately from directors. Abbott (1988) argued that, for the accounting profession, an association with prudence was beneficial because it provided a justification; it identified accountants not only with technical expertise but also with culturally approved value. Prudent accounting was the discharge of professional duties to society.

Nowadays, the principle of prudence is said to hold that preparers and auditors of financial information should be prudent in their estimates and in their opinions of procedures, choosing those that neither unduly understate nor overstate the situation. Currently, the principles of prudence are said to be applied in a number of areas in financial accounting, for example in the recognition and valuation of assets and liabilities, in obtaining adequate assessments of situations of particular risk and in dealing with profits and losses. The application of the principle might result in not recognising certain expenditures as assets, in attributing a lower

value to assets on the balance sheets than their historical cost and in not recognising profits. Balance sheet conservatism has been considered the first (Pyle et al., 1978), fundamental (Sterling, 1967) and oldest (Chatfield and Vangermeersch, 1996) principle of accounting. For a long time this conservatism in itself was seen as commendable, but in due course it was argued that often the mechanical application of this principle was carried too far and resulted not only in the misstatement of balance sheet values but also in conservative income statements.

The short historical overview of prudence, the explanations given for its use within the accountancy profession and its resulting application towards valuation of balance sheet elements show that prudence in accounting has been a dual concept. Prudence is not only abstractly defined as a set of principles and rules but also dynamically as a set of roles. It has been justified as a principle and as an ethical standard at the same time. On the one hand, it referred to an accounting principle (understood as a generalised rule) and, on the other, as a distinctive attitude of mind or virtue of a preparer or auditor of financial information.

This duality caused misunderstanding between defenders and criticasters of prudence. Those who criticised prudence and conservatism referred exclusively to the quality of the content of financial information and not to prudence as an ethical standard. Sterling (1967) attacked conservatism as misinformation and rates it as the most influential principle in valuation in accounting. The Trueblood Report (1973) condemned conservatism as a dogma because it was likely to prevent good decision-making. In these statements, prudence as a property of financial reports was condemned and not the attitude of accountants. It is hard to find evidence that prudence as an ethical standard was being criticised. Proponents of prudence, on the other hand, seem to interpret prudence as an attitude and stress the advantages of this attitude for accountants. Imprudence in accounting would make it all too easy for certain

managements to not act in a prudent manner. Defenders and criticasters of prudence often disagreed with each other because their underlying concept of prudence differed.

The conceptual frameworks of several accounting standards setting organisations seem to point in the same direction regarding the dual nature of prudence. The FASB in their Concepts Statement (1980) redefined and restricted conservatism - meaning prudence - in such a way that it remains a sub-quality of reliability (paragraph 92 to 97). According to this Statement, conservatism is a characteristic of accounting information and therefore not necessarily a characteristic of an accountant. The British ASB maintained in 1999 a broader concept of prudence, accepted that there are unwanted applications of prudence and solves this by restricting the application of prudence (1999, paragraph 3.18 - 3.20). Because prudence is mentioned in the statement of financial reporting and is defined as a characteristic in the exercise of judgement, we are inclined to conclude that prudence within the UK conceptual framework is a required attitude of an accountant. Finally, the Australian AASB makes an explicit distinction between prudence and conservatism and restricts prudence in such a way that it is subsumed to reliability and that conservatism is not (paragraph 25 - 26). The AASB on the one hand listed prudence as a characteristic of accounting information, and thus as a rule or principle, but on the other hand interpreted prudence as the need to exercise care in dealing with uncertainties, which would imply an attitude of an accountant.

5.2 **Formal and substantive prudence**

In recent years, a conceptual shift of the prevailing interpretation of prudence as an ethical standard toward a technical rule has been observable. It has been argued that this development caused in effect the current diminished existence of prudence as “degree of caution” (Maltby, 2000). This would presuppose that prudence is understood as a technical property and not as an attitude of prepapers and auditors of financial information.

Contrary to this approach, it might be more useful to make a clear distinction between two different kinds of prudence, similar to Weber's response to the inconsistencies in the use of the word rationality. In this way, the concept of prudence is formalised and generalised and taken from its historical context. A clear distinction between two kinds of prudence could provide insight and contribute to discussions on its role and position within the accounting profession and the accounting standards.

The formal element of prudence is by its definition a technical calculable property of an exchangeable product. It will therefore coincide with the inclusion of a sufficient degree of caution. The formal element of prudence will presumably continue to exist within the measurement of assets and liabilities, although it will probably adopt other names such as degree of caution, risk margin or uncertainty margin. This is the underlying concept of prudence for most accounting standard setting organisations. The determination of the required degree of caution, formal prudence, requires the exercise of a technical skill where no ethical considerations have to be taken into account. It can be quantified, and agreements between market participants can be established on the required level, and they can be standardised and codified. In the process of rationalisation, the emphasis will increasingly lie on the objectification of the degree of caution, i.e. the valuation of uncertainty in assets and liabilities is oriented toward the objectified opinion of a rational market on the required degree of caution. It can be expected that the conceptual frameworks and subsequent accounting standards will be adjusted in such a way that they will reflect this kind of prudence (although the word prudence will presumably not be adopted).

Because it is a technical calculative concept, formal prudence does not cover prudence completely and a substantive element has to be identified to provide a complete account of the original concept of prudence.

Substantive prudence is the degree to which decision-making of users, preparers and auditors of financial information is shaped by action under the virtue of prudence. This form addresses the substance of prudence as a value of specific groups and the institutions promoting them. This definition does not aim to define what, in specific situations, prudent conduct actually is, but it emphasises that economically oriented action under the value of prudence is true action and not a quantitative choice on the degree of caution. It implies that economically oriented action under the value of prudence takes place in an open existing network of relations with others. In this open network, interaction and communication with other individuals takes place by using words and not by using money. This field of action is therefore intrinsically discursive. In contrast to the field of technology, there are no general terms to define action and the words that we use to communicate cannot be defined by general definitions. Consequently, economically oriented prudent action can never be free from ambiguity. It is done in plurality and its results are unpredictable and, because an act cannot be undone, irreversible.

Weber's analysis of the market implies that in the process of rationalisation, prudence changes from a substantive concept to a formal concept. In the tendency to formal prudence it seems that the fundamental unpredictability of action is overcome because of the basic assumption of continuity of formal prudence. The shift orients to the negligence of the unpredictability of action, which cannot be made formal and calculable in any way. As in due course the market weakens any obstruction for the development of impersonal market relationships and thus substance prudence, it should be the aim of individuals and the institutions promoting them to anticipate the consequences of the replacement of substantive by formal prudence. The replacement taking place calls upon individuals and social groups to take action.

Prudence as a substantive value is needed to the extent that the basic requirements of continuity, exchangeability and calculability are not met. There are fundamental limitations to the degree in which financial accounting can be made formally rational in practice. Presumably substantive prudence will find a place within the process of preparing and auditing financial information and the required attitudes of accountants.

The things that are exchangeable and calculable change over time and the extent to which substantive prudence is applied in practice also changes accordingly. But then there remains the question of what prudence as a substantive value actually constitutes in the long run. Can we conclude that what humans value can always ultimately be quantified and that, in this sense, we can say the rational market advances the interest and values of all humans, or does this kind of prudence ultimately constitute something that is rational and at the same time unquantifiable, which is desired by social groups but not by the rational market?

Maybe the answer lies in one of the earliest Greek conceptions of prudence, namely ‘care’. To say that prudent action coincides with care means that preparers and auditors of financial information understand care in terms of what they can and cannot do. In the openness and plurality of action, there always exists a choice of future possibilities. It matters that preparers and auditors can act, and each time they must choose among the possibilities that are available to them. In doing so, they will choose themselves, and the meaning of their (prudent) action unfolds in every resolute act.

Concluding, we expect in the near future a more explicit distinction in the way that formal and substantive prudence are addressed within the conceptual framework and accounting standards and within the accounting organisations. As we have argued in this paper, these concepts are essentially mutually exclusive and have to be secured separately in a manner appropriate to their nature.

6 Conclusion and discussion

In this paper, we argue that Weber developed an idea of capital accounting that conceptually corresponds to fair value accounting because they are both based on similar requirements of exchangeability, calculability and continuity.

Weber's concept of capital accounting is often interpreted by accountants as an early recognition of the importance of financial reporting and the accounting profession, but that is not entirely the case. His concept functions within a general philosophy of rationality, where capital accounting is necessary to the existence of a system of economic activity which is formally rational. If all economic activity can be expressed in terms of money then formal rational decision-making is possible. This line of reasoning coincides with fair value measurements, which in this paper is defined as the objectified agreement, by means of exchange in a market, in terms of money on the estimated economic value. Neither capital accounting nor fair value identify any substantive values which could exist within social groups or organisations such as the accounting profession. However, this does not imply that, in an existing market, the impersonality of exchange prevents the eventual rise of a binding market ethic.

On the basis of this analysis, we are able to identify the current dual nature of the word prudence within the accounting profession, accounting standards and conceptual frameworks; on the one hand an ethical standard, a role embodied by accountants, and on the other a technical accounting principle resulting in a certain margin. These two meanings will, within the process of formal rationalisation, increasingly diverge. Formal prudence will be known by other names such as uncertainty or risk margins. How the accounting organisations will deal with this divergence is still unknown, but formal prudence does not provide a sufficient coverage of prudence.

In this paper, we did not provide a complete account of what substantive prudence constitutes, although we sketched some of its requirements. Prudence as a substantive value is needed to the extent that the basic requirements of continuity, exchangeability and calculability are not met. It exists in the realm of action, in plurality and the results of its action is unpredictable. A possible answer might lie in explaining prudence as the care by which preparers and auditors of financial information choose among their possibilities.

Another question that remains is the significant difference of opinion between Weber and Simmel on the influence of money and formal rationality on Western societies. The process of formal rationality that Weber experienced as severe restriction was seen by Simmel as a source of liberation. How could such a different evaluation of this kind occur between two men who were in close contact with each other? A close textual comparison of Simmel's study and Weber's concept of formal rationality is required for this question, which has not yet been undertaken, as Frisby notes in his preface to the second edition of The Philosophy of Money (Simmel, 2006, p. xlviii).

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