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Quantitative Research and the Critical Accounting Project

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Abstract

The critical accounting project has largely shunned quantitative methods. While this is partly justified on philosophical grounds, the potential for quantitative methods to contribute to the critical accounting project is significant. This paper reviews the position of quantitative methods within critical theory and attempts to reclaim quantitative methods as a legitimate form of critical accounting research. The paper then identifies some aspects of the untapped potential of quantitative methods for the critical accounting project including exploring the vast unexplained variance in market models, developing alternative dependent variables for analysis, providing descriptive baselines for the assessment of social transformations, and the potential for mixed methods studies.

The critical accounting project is relatively amorphous drawing on a host of theoretical perspectives ranging from Marxism and the critical rationalism of Jurgen Habermas to literary theory and deconstruction (Lodh and Gaffikin 1997; Laughlin, 1999). A common trait of the critical accounting literature, however, is its focus on qualitative methods and eschewing conventional, i.e. commercial, data sources. Some have in fact claimed that qualitative methods define the critical accounting project[2]. For example, Laughlin (1995: 80) describes empirical work associated with critical accounting theories as “invariably qualitative.” Similarly, Lodh and Gaffikin (1997: 435) suggest that the critical accounting project has “the primary objective of challenging ‘positivist’ epistemology” and Gaffikin (2006: 5) describes “alternative” research in accounting as employing “qualitative rather than quantitative research methodologies and this is sometimes taken as a defining characteristic”.

This essay makes three arguments seriatim: first, that the critical accounting project, and *Critical Perspectives on Accounting* (CPA) in particular, has emphasized qualitative methods to the point of making the rejection of quantitative methods an article of faith; second, that this methodological preference is not an inherent aspect of critical theory more broadly which is aligned with pragmatism in its willingness to use any method that advances the principles of critical theory; and, finally, that there is significant potential to advance the critical accounting project using quantitative methods. The methods bias of the critical accounting project has opened the door for “critical” topics to be addressed in the “mainstream” literature using quantitative methods but the approach to framing questions and the interpretation of these results may not meet the objectives of the critical accounting project or the basic postulates of critical theory (Ciancanelli, 1998). It may be time for critical accounting researchers to reconsider the use of quantitative methods or at least to adopt mixed methods, i.e. combining qualitative and quantitative methods, to sustain and expand the critical accounting project.

Defining critical accounting research

The concept of “critical accounting” emerged from the interdisciplinary approach to accounting research in the 1970s that attempted to incorporate non-economic theories and non-positivist methods into the exploration of “the behavioural, organizational and social aspects of accounting” (Hopwood, 1976: 4). The interdisciplinary approach is closely associated with the Interdisciplinary Perspectives on Accounting Conference and the journal *Accounting,*

[2] To the extent that the critical accounting project is based on ontological rather than epistemological claims, it has been suggested that critical accounting should **not** be defined as this would require an essence that would violate the underlying assumptions of the project. From this view, a definition could *construct* the critical accounting project in a particular instance but never *define* it as an objective entity (Laughlin, 1999). My concern is with the practice of critical accounting researchers, not the definition of the critical accounting project.

Organizations and Society. The critical accounting project emerged in this same time period drawing on Marxist social theory as a basis for critiquing accounting practice and the modes of research that dominated North American academic accounting journals (Lowe and Tinker, 1975; Lowe *et al.*, 1983). A commonality of the interdisciplinary and critical accounting projects is a relative openness to a wide range of theories and methods. This openness makes both the interdisciplinary and critical accounting projects difficult to define or to put boundaries around (Lodh and Gaffikin, 1997) but Roslender and Dillard (2003: 325) suggest that critical accounting can be seen as:

> "a subset of the interdisciplinary project and provides a focus for those who wish to devise an approach that consciously privileges the linkage of knowledge to the pursuit of a radical political process".

The idea of a "radical political process[3]" reflects the intent of early "critical theory" and it is less common to see this aspect in more recent critical scholarship particularly in accounting (Moore, 1991). The original meaning of "critical theory" derives from the "Frankfurt School" of social studies and philosophy (notably the work of Horkheimer, Adorno, Marcuse and Habermas) and refers to studies that seek human emancipation in the face of systematic oppression or domination. The revised use of the term "critical theory" refers to a broad group of studies that focus on identity-based oppression/domination associated with race, religion, gender etc. Unlike the original version of critical theory that had a normative agenda focusing on the achievement of pluralism, democracy and communicative rationality, the broader critical literature focuses on exposing the contradictions and interests inherent in social institutions without explicitly tying these observations to a process of social change or a normative model of society[4].

In spite of the variations in the definition of "critical theory," and differences between generations of scholarship, certain basic principles of critical theory may be identified. Critical theory assumes that society is a human construction that can be consciously (reflexively) changed to achieve certain normative ends: knowledge of what currently exists in society says nothing about what might be. Critical theory privileges the perspective of the actor in the construction of knowledge; i.e. it is concerned with the meaning of events, not just their material characteristics, and it emphasizes the practices that reproduce society and the individual's experience within it. Critical theory asserts that knowledge is context and value contingent (Ngwenyama, 1991; Kinchloe and McLaren, 1994).

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[3] I use the term "critical accounting project" but this literature has also been referred to as the "critical accounting movement" which perhaps better reflects its connection to an agenda of social change.

[4] This was a key aspect of the rancorous debate between Habermas and Derrida but at the turn of the century they reconciled and engaged in some joint work that bridged this divide (Habermas and Derrida, 2003); at least with respect to certain specific social issues.

The creation of *Critical Perspectives on Accounting* in 1990 reflects these themes with several references to the importance of practice, morality and emancipation in its inaugural editorial. But what also comes through is a distinct concern with method. The editorial, for example, highlights the "fetish for COMPUSTAT and statistical intricacy" in the mainstream literature, the "disingenuous pretensions of positivism" as a replacement for normative thought, and the "fog of statistics" that makes academic work inaccessible. The editors suggest that:

> "…the mainstream now pursues an impoverished and value-laden notion of science that elevates empiricism and technique as "objective," and denigrates ethical and social concerns as "normatively biased." A currency of arcane and incomprehensible trivia has driven out of the academy many thoughtful and reflective students and researchers. The relentless objective testing and a neurotic parrot learning of rules have frequently made "judgement," "reason," "common-sense" and "morality" anachronisms in university and professional education". … "Most of all, we reject methodological secularism and academic obscurantism, and support new forms of dialogue and tolerance that encourages catholic, electic [*sic*] and interdisciplinary approaches. The only methodological endorsement we will make is that "anything and everything" should be open for "Critique."

Given this framing of the critical accounting project, it is not surprizing that *CPA* should show little interest in papers using quantitative methods (or perhaps more accurately, there is a self-selection of papers based on quantitative methods to other journals).

Quantitative Methods as the Absent Presence in Critical Accounting

Derrida (1982) developed the concept of "différance" to capture the idea that the presence of something often implies the absence of something else and that to understand the presence of something, one must also understand what is submerged or "deferred" in order to provide a space for what is present.

> "Whether in the order of spoken or written discourse, no element can function as a sign without referring to another element which itself is not simply present. This interweaving results in each 'element' – phoneme or grapheme – being constituted on the basis of the trace within it of the other elements of the chain or system. This interweaving, this textile, is the text produced only in the transformation of another text. Nothing, neither among the elements nor within the system, is anywhere ever simply present or absent. There are only, everywhere, differences and traces of traces" (Derrida, 1981: 26).

In many ways *Critical Perspectives on Accounting* is a reaction to forms of research that are missing from or deferred in the "mainstream" literature (Baker and Bettner, 1997) but the “différance” has been reversed in *CPA* such that quantitative methods have become the absence that defines the presence of qualitative research.

A search[5] of 1584 entries on the web site of *Critical Perspectives on Accounting*, for example, found only 4 results for the search term COMPUSTAT, zero examples of CRSP and I/B/E/S (standard sources of market data and analyst data respectively), 14 references to “experimental design,” 5 results for the search term “ANOVA”, 25 examples of “regression” and 46 results for “correlation.” The term “statistical significance” appears only 4 times in this database. Even the small number of uses of “correlation” and “regression” may overstate the frequency of quantitative methods since these terms are frequently mentioned in review articles or articles on methodology rather than in the context of a particular study.

To reinforce these findings, I reviewed all papers (567) published in *CPA* over the last decade (Issues 15-24) to identify the method used. I classified articles across four main categories: commentaries (including introductions to special issues, editorials, comments on other work and responses), non-empirical (including theoretical articles and literature reviews), qualitative methods (including case studies, ethnographies and historical work) and quantitative methods (including archival data analysis, surveys, and experiments). Where multiple methods were used, I classified the paper according to the dominant method. The pattern of articles over this decade is shown in Figure 1.

[Figure 1]

The data clearly show the minority position of quantitative studies in *CPA*; the “mainstream” of the critical accounting project emphasizes case study methods and/or historical qualitative data (see Figure 2, Panel A). The data also show the importance of commentaries and non-empirical work in *CPA*. These articles capture a sense of community in the critical accounting project and reflect the commitment of the journal to ongoing discussion and self-criticism of research philosophy and results.

Quantitative articles made up about 6% of the total articles published in CPA in this decade. The vast majority of these were survey-based empirical papers (69%); 25% of all quantitative papers (i.e. 9 papers over the full decade making up about 1.5% of the total articles published) were based on archival market data (see Figure 2, Panel B). The distinction between the sources of data and type of data used in CPA and the norm in traditional mainstream journals is beyond doubt (Baker and Bettner, 1997).

[5] Conducted April 5, 2014.

[Figure 2]

The data above support the premise that *CPA,* and by proxy the critical accounting project, has focused on qualitative methods. The question posed in this essay is what role quantitative analysis might play in the critical accounting project and why quantitative methods are largely absent from the critical accounting project.

The caricature of the "mainstream"

The critical accounting project is in some ways defined in opposition to the "mainstream" accounting literature (Chua, 1986). This is common among authors attempting to change the dominant approach to research in a field; even positive accounting theory initially positioned itself in opposition to the "mainstream" (e.g. Watts and Zimmerman, 1990: 149). In drawing the distinction between the old and the new, however, there is always a risk of caricature to make a point. For example, the critical accounting project went beyond stating that the mainstream **was not** investigating certain problems to claim that it ***could not*** investigate those problems because of the ontological and epistemological lens with which it approached the world.

> "The mainstream world-view has produced benefits for the conduct of accounting research with its insistence on public, intersubjective tests and reliable empirical evidence. However, it has limited the type of problems studied, the use of research methods, and the possible research insights that could be obtained. Such limitations only become clear when they are exposed to the challenge of alternative world-views" (Chua, 1986: 602).

> "We argue that the type of research prevalent in mainstream accounting journals, which is characterized by a positivist methodological perspective and an emphasis on quantitative methods, is incapable of addressing accounting's complex social ramifications" (Baker and Bettner, 1997: 203) .

While it is certainly true that any research paradigm has its limitations, some of the issues that have been at the core of the critical accounting project have been co-opted by the mainstream literature. Issues such as earnings management (Healy and Wahlen, 1999), earnings opacity (Bhattacharya *et al.*, 2003), and the negative environmental externalities of business (Patten, 2013) are now the subject of "mainstream" research.

The earnings management literature is concerned with the manipulation of accounting numbers to achieve rewards ranging from survival of the corporation and freedom from social consequences of actions, to managements' personal remuneration. In principle, the concerns of this stream of research are consistent with the critical accounting project in seeking to make visible the ways in which accounting and accountability are subverted to achieve the ends of a managerial elite. Typically in mainstream literature these incidents are presumed to be idiosyncratic rather than systemic although this is changing particularly given the recent banking crisis (Plantin *et al.*, 2008; Barth and Landsman, 2010). The earnings opacity literature moves this concern from an individual company level to a societal level and investigates whether earnings management is a systemic phenomenon that affects the allocation of capital across different societies. This work ties to a broader concern in the "varieties of capitalism" literature with the effect of institutional structures on economic development and the distribution of social goods within society (Hall and Soskice, 2001). The mainstream literature on environmental and social consequences of business seeks to incorporate externalities into valuation models assuming that society, in the long run, is seeking to internalize these externalities as direct costs to those who create the problem. The question from an accounting perspective then becomes whether or not the disclosure of social and environmental performance affects the firm's cost of capital (Richardson and Welker, 2001). While it could be argued that the emergence of these topics in the mainstream literature reflects a hegemonic cooptation of areas that challenge the legitimacy of the academic enterprise (Richardson, 1987; Shamir, 2005), none-the-less, these examples demonstrate the potential of quantitative approaches to topics important to the critical accounting project.

If the mainstream accounting literature is beginning to take on board the research questions that the critical accounting project had claimed as theirs and uses quantitative methods to address these issues, why has the critical accounting project rejected this approach?

Emancipation and the rejection of sense data

One important aspect of the critical accounting project is to contribute to the emergence of "what could be" rather than focus on "what is". This entails a rejection of any interpretation of current empirical regularities as revealing how society must be or that current outcomes are "natural" consequences of immutable laws. As Arrington and Francis (1989: 25) argued: "no amount of data or evidence can dictate the conditions of, say, fairness to humans." Philosophically the concern, evident in a wide range of literatures since the enlightenment, is that "man is an animal suspended in webs of significance he himself has spun" (Geertz, 1973: 5) and these webs, or institutions, limit the life possibilities of people: "Man is born free; and everywhere he is in chains. One thinks himself the master of others, and still remains a greater slave than they" (Rousseau, 1762). The critical accounting project contributes to the emancipation of society by providing evidence of the way that accounting limits or distributes "life-chances" (Dahrendorf, 1979), the role of accounting in systems of surveillance and control, and the way that accounting connects to social identities and subjectivity. Certainly some of these concerns reflect ontologies that many in the mainstream accounting literature would reject and gaining knowledge of these concerns may require an epistemology that allows for intersubjective differences in the meaning of events. But a concern with "what could be" requires a baseline in "what is" (even if from the perspective of specific actors). However, it is clear that current empirical regularities should not be interpreted as immutable laws of nature within a critical perspective. What is not clear is why the critical accounting project should require the rejection of quantitative methods (as opposed to a rejection of positivism[6])?

It bears repeating that research methods are tools (Richardson, 2011, 2012). It is how those tools are used that determines their value in research. The concern with "methodology" as a strategy of research as opposed to "methods" as procedures for carrying out research captures this important distinction. The debate about methods in the critical accounting literature is often framed in terms of the influential Burrell and Morgan (1979) typology of research paradigms. Burrell and Morgan emphasized the empirical clustering of ontological, epistemological and methodological assumptions that helped them to organize and summarize the literature. They translated this into a four-quadrant model of sociological analyses consisting of functionalist, interpretivist, radical structuralist and radical humanist paradigms. The critical accounting project adopted this model to differentiate between "functionalist" research and the interpretive and emancipatory research that was being promoted (Dillard, 1991; Gallhofer and Haslam, 1997). In using this typology, however, there was a tendency to objectify the empirically identified clusters of traits as if they were necessary conditions for undertaking a particular style of research. Thus the quantitative methods that were associated or correlated with functional research were rejected alongside functionalism itself.

The critical accounting project was introduced to the mainstream literature by Chua (1986). Chua (1986), although critiquing Burrell and Morgan (1979), follows a similar strategy and identifies clusters of assumptions regarding ontology, epistemology and praxis in accounting research that she describes as mainstream, interpretive and radical accounting research paradigms. Although she also identifies the methods associated with each paradigm, her language provides subtle indicators of the weak correlation between paradigms and methods. Under Mainstream accounting she observes (in point form, p. 611): "Quantitative methods of data analysis and collection which allow generalization favored"; under the interpretive accounting perspective she notes (p. 615): "Ethnographic work, case studies, and participant observation encouraged"; and under the radical accounting perspective (p. 622): "Historical, ethnographic research and case studies more commonly used". In the cited descriptions of each paradigm's methods Chua

[6] This essay is NOT a contribution to the extended and continuing debate about the social and moral implications of "positivism" (e.g. Malsch & Guénin-Paracini, 2013). My concern is purely with methods regardless of the ontology and epistemology within which they are employed.

(1986) uses “favored”, “encouraged” or “commonly used” rather than “required” or some other term that would signal the normative limitation of methods within paradigms. This is a more appropriate view of the connection between methods and various paradigms.

As Morgan (1983) made clear in subsequent work, his intent in Burrell and Morgan (1979) was to encourage critical reflection on how research was undertaken rather than to provide templates for research: “the call for reflective conversation to improve social research is not a call for uniformity so much as to promote improved diversity” (Morgan, 1983: 406). The question is how researchers engage with their subject matter and the choices they make in doing their work. Methods are not uniquely related to specific research paradigms but must be used consistent with a paradigm’s ontology and epistemology (Bryman, 1984).

The original critical theory work in the 1930s was carried out as part of the Institute for Social Research under the direction of Max Horkheimer. Horkheimer rejected both the idea of a fixed ontology and universal truths but none-the-less was able to recognize the value of “scientific” findings[7].

> “Static ontology and a universalistic concept of truth have become untenable. For it is just as certain that all our ideas the true ones as well as the false depend upon conditions that may change, and that the notion of an eternal truth which outlives all perceiving subjects is unattainable. None of this affects the validity of science”. (Horkheimer, 1931/1993: 140)

The rejection of a fixed ontology allows for the existence of concepts that are historically contingent and hence subject to change so, for example, the idea that markets achieve socially optimum capital allocations is not, from this point-of-view, the “discovery” of a stable truth but a claim that must be understood in the historical and social context in which that claim is made. The rejection of universal truths allows for the possibility that a claim to truth about markets will be evaluated differently depending on the social and historical position of the observer. The validity of science, then, is socially and historically contingent but within that context of interpretation empirical observations remain useful. This pragmatic vein of critical theory became more explicit in later work of the group.

In his remarks on opening the Institute for Social Research in 1931, Horkheimer emphasized the value of using archival materials (e.g. government records) and surveys to document existing

[7] This point was reinforced by Hayek (1979:15) in work rejecting the use of quantitative methods in the social sciences: “It need scarcely be emphasized that nothing we shall have to say is aimed against the methods of Science in their proper sphere or is intended to throw the slightest doubt on their value”.

conditions. This is a continuation of the empirical approach common in Marxist studies since Engles' (1892/1987) statistical profile of the conditions of the working class in England. But Horkheimer did not, naturally, suggest the uncritical use of quantitative methods:

> "Each of these methods [archival data and surveys] alone is completely inadequate. But all of them together, in years of patient and extensive investigations, may be fruitful for the general problem if the permanent colleagues, in constant connection with the material, understand that their views must be developed not according to their own wishes, but rather according to the matters at hand, if they decisively reject all forms of transfiguration, and if we are successful in protecting the unified intention both from dogmatic rigidity and from sinking into empirical-technical minutiae". (Horkheimer, 1931/1993: 14)

Moore (1991) provides a perspective on the critical accounting project based on his involvement in critical legal theory. He notes that the critical accounting project does not reject accounting per se: "Critical Accounting has come to praise accounting, not to bury it" (Moore, 1991: 784). The basic practice of assigning numbers to transactions and states-of-being is not fundamentally challenged by the critical accounting project. The key problématique of critical accounting includes what categories are used in financial reporting and performance management, the (in)completeness of accounting (and hence the missing categories of contemporary practice), and the social consequences of accounting; but the meaningfulness and utility of the social practice of assigning numbers to business transactions (i.e., accounting) is not fundamentally at issue. If quantification per se as a social practice is not rejected by the critical accounting project, then why would it be rejected in critical accounting research?

Quantitative methods are thus not inherently antithetical to the critical accounting project either within the philosophy of science, within the specific institutional context that gave rise to critical theory, or within the set of social practices that are critiqued by the critical accounting project, but it is recognized that quantitative research methods must be complemented with a broader theoretical and critical concern with asking the right questions, interpreting empirical results in their historical and social context, and combining empirical results with a moral philosophy that safeguards against a superficial scientism[8].

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[8] The concept of "scientism" was introduced into the literature by Hayek (1943). It refers to the misapplication of natural science methods to social phenomena. Some elements of scientism relevant to this discussion include limiting investigations to that which can be measured, assuming the equivalence of things that are to be measured, ignoring the over-determination of social phenomena, treating historically and institutionally contingent relations as context-independent, and using the results of such studies as a basis for action without further moral and practical consideration.

The Potential for Quantitative Methods in the Critical Accounting Project

If quantitative methods are not theoretically ruled out of the critical accounting project, then a range of potential contributions are opened. My intent is not to provide detailed prescriptions for work that can or should be undertaken, rather to suggest some broad strategies for the use of quantitative methods in the critical accounting project. These comments focus on three aspects of quantitative methods: first, how the critical accounting project can affect the independent and dependent variables that are used in quantitative modelling; second, the need to establish descriptively the scope and magnitude of the problems that motivate a critical perspective on accounting; and, finally, how quantitative methods can be combined with the existing emphasis on qualitative research in critical accounting.

The seven percent solution[9]

It is widely recognized that models of the effect of disclosure on stock prices explain very little of the variation (r-squared in the 5-9% range are common) (Ball and Shivakumar, 2008). With the availability of large data sets, it has become possible to find statistically significant relationships between variables based on small effects. When the purpose of empirical work is to test theory, this approach is fine (although a strong inference model would suggest additional procedures, Platt, 1964); but if the point is to explain observed phenomenon, then obviously much remains to be explored. It is in this space of unexplained variance that the critical accounting project could make a contribution.

Different explanations for standard dependent variables

One of the interesting developments in sociology and organizational theory has been the recognition that social phenomenon are conditioned by the institutional environment in which they are embedded and which they reproduce. The institutional environment, however, is pluralistic with multiple logics competing for attention and managers struggling to negotiate their way through potentially conflicting demands to maintain the flow of resources and social legitimacy (Annisette and Richardson, 2011; Thornton *et al.*, 2012). This implies that even stock prices are conditioned on multiple logics and not just the market logic on which most "mainstream" research is premised. This is important as it means that the use of quantitative methods in critical accounting does not need to directly challenge "mainstream" results to make

[9] "The seven percent solution" title is a parody of the Sherlock Holmes novel of this title by Nicholas Meyer (1974) in which Holmes' addiction to cocaine is revealed. I will leave it to the reader to decide if capital market researchers' continued explanation of 7% (+/- 2%) of the variance in their studies is an addiction.

a contribution to our understanding, i.e. it is not necessary to show that market logic does not exist to show that accounting and market phenomenon are affected by other logics. The role of alternative logics and the way that accounting facilitates and transmits these logics into prices could be gainfully explored using market data and quantitative methods.

The move to "fair value" accounting standards also provides an opportunity for quantitative critical accounting work. As Macintosh *et al.* (2000) argue, fair value accounting makes accounting numbers contingent on market values but market values, historically, were contingent on accounting numbers. The reversal of the relationship leaves (some) accounting values devoid of any referent (or embedded within a self-referential system). But fair value accounting also implies that accountants must be concerned with the processes of price formation and the logics that drive that process if they are to incorporate such information into the accounts. They must also be concerned with the effect on "fair value" accounting numbers of "distorted" market processes, i.e. both traditional market failure issues and the political economy view of markets that links markets and social structures (Cooper and Shearer, 1984; Tinker, 1980). These types of issues favour a quantitative approach but based on research questions that are more likely to be formulated within a critical accounting perspective.

One problem with expanding the right-hand side of the equation to incorporate a wider range of explanatory variables is that there must be theory to support the variables included, otherwise we end up with "kitchen sink" models with known limitations. These limitations include a lack of stability across different time periods or contexts, the need for large samples to operationalize (which becomes problematic when some of the variables are not part of standard databases), the reduction of variance in the sample in order to find firms that provide all the data required, inadvertently including endogenous variables (as a former professor of mine described the "problem", behaviours are just the froth on the economic beer – it needs to be blown off to see the "real", i.e. exogenous, causes), and unclear expectations against which the model can be tested. The use of institutional logic theory and post-structural perspectives may guide the construction of variables that are required but I do not underestimate the difficulties of expanding the range of explanatory variables in a meaningful way.

The use of commercial and/or public databases must also be done carefully within a critical perspective. The categories used to populate these databases are derived from a particular institutional logic and must be used and interpreted within that context. For example, standard measures of "profit" ignore negative externalities but that implies that there should be a positive correlation between profit and the extent to which a company or industry has been able to externalize or socialize their costs. This is most likely to be evident in longitudinal studies as industries fall in and out of favour with political agents who control the regulatory agenda (for example, the stability of the Canadian Banking industry during economic downturns has been shown to rely on regulatory forbearance rather than the inherent economic or competitive strength of the banks in Canada, Kryzanowski and Roberts, 1993). The construction of models and interpretation of results must be sensitive to these institutional details. This skepticism about the nature of these databases also opens additional research opportunities that are sketched below.

Reimagining the dependent variable

I believe that the real potential for quantitative methods in the critical accounting project is on the left-hand side of the model. A key aspect of the critical accounting project is to understand how accounting information is related to injustice in society whether this is the unfair treatment of labour, the creation of negative environmental externalities or the relationship between accounting and social order (e.g. Tinker, 1980). If accounting is implicated in these social processes, then it should be possible to demonstrate that these relationships exist on an aggregate basis in addition to the case based examples that are often provided. It would seem to me that if the issues raised by the critical accounting project are systemic, then they should be evident within broad samples. For example, if profit as currently measured incorporates the gains from socializing costs (i.e. creating negative externalities that are paid for by society at large rather than the company) then one should be able to demonstrate this relationship statistically. This would be directly parallel to the idea that stock market values reflect intangible assets that are not recorded in accounting numbers (this was captured in Tobin's q, Brainard and Tobin, 1968). If according to critical accountants, accounting is an "interested rhetoric" (Moore, 1991: 786) that is connected to particular values at the expense of others, should we not be able to demonstrate this in large samples?

The concern to reimagine the dependent variable may extend beyond simple regression models to other quantitative techniques such as social network analysis. Richardson (2009), for example, uses network analysis to better understand potential patterns of influence of various actors on accounting standards. The use of network analysis is particularly interesting because of its potential to use a variety of measures of interaction ranging from interview-based identification of advice or reputation networks to archival identification of interactions based on market transactions. As will be discussed further below, this approach allows the meaningful combination of qualitative and quantitative data. Social network analysis is also useful to identify structural relationships that may not be obvious to participants in the process.[10] While there is great value in understanding practice and the meanings attributed to events by participants, this

[10] This is in answer to a common qualitative research response to quantitative methods: "why didn't you just ask someone?" The question presumes that individuals have complete insight into the conditions of their own existence, are willing to share those insights, and are only affected in their behaviour by those influences that are liminal.

should not be done at the cost of ignoring emergent properties of social systems or the effects of structure on agency.

A final way in which quantitative methods may reimagine the dependent variable in critical accounting is to withdraw from model building (even the historically and institutionally contingent type described above) and focus on description and categorization. The critical accounting project has not done enough to establish the magnitude and scope of the issues with which it deals. Engles' work on the condition of the working class in the UK was powerful because of its demonstration of the number of people affected by industrialization and the consequences for this large group of people in terms of infant mortality, disease and longevity. It seems at times that the critical accounting project revels in finding obscure and rare situations in which to demonstrate important processes but fails to establish the contemporary relevance of these processes or the costs to society of not engaging in transformation (cf. Sikka and Willmott, 1997; Neu *et al.*, 2001). We do not have in the critical accounting literature basic estimates of the extent and social consequences of insider trading, fraud or the externalities of business. There is a need to reengage with basic descriptive work to establish the importance of the critical accounting project. For a literature dedicated to praxis, there is insufficient attention to establishing the baselines against which a transformation can be gauged.

The types of quantitative data at issue were recognized by Horkheimer and others as different in kind compared to those mentioned in the *CPA* inaugural editorial. Hayek[11] (1943: 51-52), for example, went to great lengths to reinforce the importance of categorical and descriptive data in effective analysis and policy development even if it could not be used to establish generalizable results.

> "Most of the economic statistics which we ordinarily meet, such as trade statistics, figures about price changes, and most time series, or statistics of the "national income", are not data to which the technique appropriate to the investigation of mass phenomena can be applied. They are just "measurements"… If they refer to significant phenomena they may be very interesting as information about the conditions existing at a particular moment. But unlike statistics proper, which may indeed help us to discover important regularities in the social world (though regularities of an entirely different order from those with which the theoretical sciences of society deal), there is no reason to expect that these measurements will ever reveal anything to us which is of significance beyond the particular place and time at which they have been taken. That they cannot produce

[11] In spite of the differences between critical theory and Hayek's economic and social theory, there is remarkable convergence on the concerns about using quantitative methods to yield generalizable knowledge on which to base public policy and on the relevance of "statistics" to capture local conditions. I use Hayek in this context to further illustrate the separation between method and epistemology, ontology and axiology.

> generalisations does, of course, not mean that they may not be useful, even very useful; they will often provide us with the data to which our theoretical generalisation must be applied to be of any practical use. They are an instance of the historical information about a particular situation…"

If, as is often claimed, the categories of mainstream research reproduce the systems of domination against which the critical accounting project struggles, then alternative ways of categorizing social facts with which we deal are needed. There has been some work towards this end, for example, in considering the accounting based on a labour theory of value (Tinker, 1980; Webber, 1987; Toms, 2006) or based on a "deep green" perspective on economics (Gray, 1992) but considerable work remains to be done.

It is important to reinforce that the suggestions above do not claim or support the view that there is an objective reality or that quantitative methods will create generalizable knowledge. These suggestions rely only on the historical and institutionally contingent stability and consequences of the organization of human activity according to accounting signs. The construction of models and interpretation of results must be linked to a theory of systemic domination and interpreted within a normative theory of society.

Mainstream research has benefitted from its ability to specify theoretically consistent dependent variables. This encourages the development of a cumulative literature in which results and methods may be challenged and refined. While these methodological refinements may become arcane (as CPA's initial editorial suggests), it is also part of the process of critique within the academic literature that contributes to the "value" (conventionally defined) of academic work to individuals and the community. Given the critical accounting project's commitment to critique, this approach should not be seen as anathema. If quantitative methods are adopted within the critical accounting community, they will evolve in the same way that rigorous qualitative research has generated its own arcane lexicon of ethnomethodology, phenomenology, discourse analysis, deconstruction etc. It will however be critically arcane which perhaps makes the problem bearable.

Mixed Methods and the Pragmatism of Critical Theory

Given the commitment of the critical accounting project to qualitative methods, it may be easier and more productive to introduce quantitative methods as part of a mixed methods research strategy. Sven Modell has written a number of papers on mixed methods in accounting both from the perspective of the potential gains for accounting research and the barriers that stand in the way. His commentary is primarily concerned with the management accounting literature where he concludes that "the barriers to mixed methods research as a way of stimulating dialogue between the ‘mainstream’ and ‘alternative’ paradigms are particularly entrenched in the former” (Modell, 2010: 125; see also Davila and Oyons, 2008 who suggest management accounting research as a fertile ground for cross-paradigm work). Contrary to Modell’s conclusion, as the discussion above suggests, the use of mixed methods in the critical accounting literature may face its own barriers due to the reluctance by the critical accounting project to use quantitative methods. The rationale for mixed methods in the critical accounting project can be justified in terms of the, at times uneasy, connection between critical theory and pragmatism (Mertens, 2003).

The link between critical theory and American pragmatism (i.e. the pragmatism of Dewey and Pierce) is complex (Shalin, 1992; Aboulafia *et al.*, 2002). Early participants in the Frankfurt School denounced pragmatism as scientism (experimentation without theory) but Habermas (1985: 198) acknowledges that he “for a long time identified … with that radical democratic mentality which is present in the best American traditions and articulated in American pragmatism.” At the same time, writing on pragmatism has differentiated between “vulgar pragmatism” and the “critical pragmatism” that brings more of a political agenda into the concept (Cherryholmes, 1992; Ulrich, 2007). At heart, since pragmatism is concerned with the consequences of concepts, i.e. how knowledge affects human values and needs, there is a kinship with critical theory although without foundationalism. The key connection in terms of methods, perhaps best brought out in Rorty (1979, 1982), is the focus on action and practices rather than philosophy as a basis for legitimating knowledge claims. In essence, pragmatism and critical theory are both concerned with achieving certain normative outcomes and knowledge is justified by cultural practices rather than by reference to transcendent criteria. This approach undermines attempts to limit methods choice on ontological or epistemological grounds and adopts a consensus basis of truth which links the process of generating knowledge to communicative action. It is not coincidental that most mixed methods practitioners identify themselves as pragmatists (Bryman, 2007).

Qualitative methods have often been presented as a tool for “theory development” (George and Bennett, 2005) which implies that “theory testing” is done with other methods. In part this is driven by the need for qualitative researchers to legitimate their work within a system of criteria dominated by quantitative researchers but it also signals a concern for “substantive theory” (Glaser and Strauss, 1965), which is theory that holds within well-defined boundary conditions as opposed to a context-free or formal theory. Mixed methods work attempts to bridge this divide (Modell, 2010). Typically the use of mixed methods is regarded as a form of triangulation (i.e. multiple perspectives on a single reality) but the more interesting applications of mixed methods use one approach to construct, elaborate and interpret the other (Grafton *et al.*, 2011). For example, the point has been made by qualitative researchers that most quantitative research has an implicit qualitative background in institutional details, concept, variable definitions, etc. The qualitative researcher would like to see those background assumptions formalized and explored as a topic of research rather than remaining as a set of unstated assumptions or being developed based on naïve qualitative work. Similarly, the interpretation of quantitative results is a hermeneutic act that is not fully explored as a distinct research act. Quantitative researchers will often use discussions with practitioners in the field as a basis for understanding what the correlations are indicating. This re-embedding of research results in practice is made explicit in qualitative research.

So when the statement was made above that we must be cognizant of the institutional context in which commercial databases construct their variables, this becomes a question to be answered by research. Any critical accounting work that makes use of these databases must interrogate the process by which data is collected and categories constructed so that the results of using these data can be properly interpreted. This is reminiscent of the literature in sociology and political science that questions the nature of "official statistics" while still using those statistics to understand macro phenomenon (Hindness, 1973; Bulmer, 1980). Savage and Burrows (2007) note that with the increasing capture of social (transactional) data (not to mention the increasing use of social media which creates a digital archive of moment-by-moment thoughts) failure to develop methods to use these data will undermine the credibility of sociological research. The rise of "big data" in modern society is captured in such concepts as Thrift's (2005) concept of "knowing capitalism" and Lyon's (2001) "surveillance society." While I would not go so far as suggesting that since the data is there, it should be used, but I would argue that if it is there, someone will use it and that use will frame public policy debate. If the critical accounting project does not engage with these data, the mainstream literature certainly will.

Mixed methods provide a way to allow quantitative methods to enter the critical accounting project without abandoning its roots in qualitative methods. The use of mixed methods also ensures that quantitative methods are not used as "empirical-technical minutiae" (Horkheimer, 1993: 14). When used to its theoretical potential, mixed methods may be the most appropriate way for the critical accounting project to (re)engage with quantitative methods.

Conclusion

To conclude, this brief essay makes three points. First, the critical accounting project, and *Critical Perspectives on Accounting* in particular, have emphasized qualitative methods to the point of making the rejection of quantitative methods an article of faith. This stems, in my mind, from a failure to separate "method" as a conceptual category from the way that methods are used as a research practice. Second, this methods preference is not an inherent aspect of critical theory either in terms of its underlying philosophy or its institutional origins. Rather, critical theory is aligned with pragmatism in its willingness to use any method that advances the principles of critical theory. Finally, there is significant potential to advance the critical accounting project using quantitative methods to explore the unexplained variance in "mainstream" models of accounting phenomenon, to explore specific social and individual outcomes of concern to the critical accounting project, or to provide descriptive baselines on the scope and scale of the issues of concern to the critical accounting project.

If quantitative methods are to be used within the critical accounting project, this use must be consistent with the key principles of critical theory. Specifically, these methods must be complemented with a broader theoretical concern with asking the right questions, interpreting empirical results in their historical and social context, and combining empirical results with a moral philosophy that safeguards against a superficial scientism. Given the strong tradition of using qualitative methods in critical accounting, it is possible to introduce quantitative methods as part of mixed methods designs. The concerns of the critical accounting project also suggest the need for research into the process of creating the categories and collecting the data that become institutionalized as representing market and social phenomenon if quantitative methods based on commercial data are adopted.

References:

Aboulafia, M., Bookman, M. O., & Kemp, C. (Eds.). (2002). *Habermas and pragmatism*. Psychology Press.

Annisette, M., and Richardson, A. J. (2011). Justification and accounting: applying sociology of worth to accounting research. *Accounting, Auditing & Accountability Journal*, 24(2), 229-249.

Arrington, C. E., and Francis, J. R. (1989). Letting the chat out of the bag: deconstruction, privilege and accounting research. *Accounting, Organizations and Society*, *14*(1), 1-28.

Baker, C.R. and Bettner, M.S. (1997) "Interpretive and critical research in accounting: A commentary on its absence from mainstream accounting Research" *Critical Perspectives on Accounting* 8(4), 293 – 310

Ball, R., and Shivakumar, L. (2008). How much new information is there in earnings? *Journal of Accounting Research*, *46*(5), 975-1016.

Barth, M. E., and Landsman, W. R. (2010). How did financial reporting contribute to the financial crisis? *European Accounting Review*, 19(3), 399-423.

Bhattacharya, U., Daouk, H., and Welker, M. (2003). The world price of earnings opacity. *The Accounting Review*, *78*(3), 641-678.

Brainard, William C.; James, Tobin (1968). "Pitfalls in Financial Model Building". *American Economic Review* 58(2): 99–122.

Bryman, A. (1984). The debate about quantitative and qualitative research: a question of method or epistemology? *British Journal of Sociology*, 35(1), 75-92.

Bryman, A., (2007). Barriers to integrating quantitative and qualitative research. *Journal of Mixed Methods Research* 1(1), 8–22.

Bulmer, M. (1980). Why don't sociologists make more use of official statistics? *Sociology*, *14*(4), 505-523.

Burrell, G., and Morgan, G. (1979). *Sociological paradigms and organisational analysis* (Vol. 248). London: Heinemann.

Cherryholmes, C. H. (1992). Notes on pragmatism and scientific realism. *Educational Researcher*, 21(6), 13-17.

Chua, W.F. (1986). Radical Developments in Accounting Thought. *The Accounting Review* 61(4): 601-632.

Ciancanelli, P. (1998). Survey research and the limited imagination. *Critical Perspectives on Accounting*, 9(3), 387-389.

Cooper, D. J., and Sherer, M. J. (1984). The value of corporate accounting reports: arguments for a political economy of accounting. *Accounting, Organizations and Society*, *9*(3), 207-232.

Dahrendorf, R. (1979). *Life chances: Approaches to social and political theory*. London: Weidenfeld and Nicolson.

Davila, T., and Oyon, D. (2008). Cross-paradigm collaboration and the advancement of management accounting knowledge. *Critical Perspectives on Accounting*, *19*(6), 887-893.

Derrida, J. (1981) *Positions*. Chicago: The Chicago University Press.

Derrida, J. (1982) “Différance” translated by Alan Bass, *Margins of Philosophy*. Chicago: University of Chicago Press, 3-27.

Dillard, J. F. (1991). Accounting as a critical social science. *Accounting, Auditing and Accountability Journal*, *4*(1), 8-28.

Davila, T., and Oyon, D. (2008). Cross-paradigm collaboration and the advancement of management accounting knowledge. *Critical Perspectives on Accounting*, *19*(6), 887-893.

Engels, F. (1892/1987). *The condition of the working class in England*. Penguin UK.

Gaffikin, M. (2006) “The critique of accounting theory” http://ro.uow.edu.au/cgi/viewcontent.cgi?article=1040andcontext=accfinwp accessed April 2014.

Gallhofer, S., and Haslam, J. (1997). Beyond accounting: the possibilities of accounting and “critical” accounting research. *Critical Perspectives on Accounting*, *8*(1), 71-95.

Geertz, Clifford (1973). *The Interpretation of Cultures*. Basic Books. p. 5.

George, A. L., and Bennett, A. (2005). *Case studies and theory development in the social sciences*. Mit Press.

Glaser, B. G., and Strauss, A. L. (1965). Discovery of substantive theory: A basic strategy underlying qualitative research. *American Behavioral Scientist*, *8*(6), 5-12.

Grafton, J., Lillis, A. M., and Mahama, H. (2011). Mixed methods research in accounting. *Qualitative Research in Accounting and Management*, *8*(1), 5-21.

Gray, R. (1992). Accounting and environmentalism: an exploration of the challenge of gently accounting for accountability, transparency and sustainability. *Accounting, Organizations and Society*, *17*(5), 399-425.

Habermas, J. (1985). "Questions and Counterquestions." In Richard J. Bernstein (ed.). *Habermas and Modernity*. Cambridge, MA: The MIT Press.

Habermas, J., and Derrida, J. (2003). February 15, or what binds Europeans together: a plea for a common foreign policy, beginning in the core of Europe. *Constellations*, *10*(3), 291-297.

Hall, P. A., and Soskice, D. (Eds.). (2001). *Varieties of capitalism: The institutional foundations of comparative advantage*. Oxford University Press.

Hayek, F. A. (1943). Scientism and the study of society. Part II. *Economica*, New Series, 10(37), 34-63.

Hayek, F. A. (1979). *The counter-revolution of science*. Indianapolis: Liberty Press.

Healy, P. M., and Wahlen, J. M. (1999). A review of the earnings management literature and its implications for standard setting. *Accounting horizons*, 13(4), 365-383.

Hindess, B. (1973). *The use of official statistics in sociology: A critique of positivism and ethnomethodology*. London: Macmillan.

Hopwood, G. A. (1976). (Editorial). The path ahead. *Accounting, Organizations and Society*, 1(1), 1-4.

Horkheimer, M. (1993). *Between Philosophy and Social Science: Selected Early Writings*. MIT Press.

Kincheloe, JL and McLaren, PL. (1994). "Rethinking critical theory and qualitative research." In NK Denzin and YS Lincoln (eds.) *Handbook of Qualitative Research*., 138-157.

Kryzanowski, L. and Roberts, G. S. (1993). Canadian banking solvency, 1922-1940. *Journal of Money, Credit and Banking*, 361-376.

Laughlin, R. (1995). Empirical research in accounting: alternative approaches and a case for "middle-range" thinking. *Accounting, Auditing and Accountability Journal*, 8(1), 63-87.

Laughlin, R. (1999). Critical accounting: Nature, progress and prognosis. *Accounting, Auditing and Accountability Journal,* 12(1), 73-78

Lodh, S and M J R Gaffikin (1997), "Critical Studies in Accounting Research, Rationality and Habermas: A Methodological reflection", *Critical Perspectives on Accounting*, 8(5), 433 – 474.

Lowe, E. A., Puxty, A. G., and Laughlin, R. C. (1983). Simple theories for complex processes: accounting policy and the market for myopia. *Journal of Accounting and Public Policy*, *2*(1), 19-42.

Lowe, E.A. & Tinker, A.M. (1975) "Sighting the accounting problematic: towards an intellectual emancipation of accounting." *Journal of Business Finance and Accounting* 4(3), 263-276.

Lyon, D. (2001). *Surveillance society: Monitoring everyday life*. McGraw-Hill International.

Macintosh, N. B., Shearer, T., Thornton, D. B., and Welker, M. (2000). Accounting as simulacrum and hyperreality: perspectives on income and capital. *Accounting, Organizations and Society*, *25*(1), 13-50.

Malsch, B., and Guénin-Paracini, H. (2013). The moral potential of individualism and instrumental reason in accounting research. *Critical Perspectives on Accounting*, *24*(1), 74-82.

Mertens, D. M. (2003). Mixed methods and the politics of human research: The transformative-emancipatory perspective. *Handbook of mixed methods in social and behavioral research*, 135-164.

Modell, S. (2010). Bridging the paradigm divide in management accounting research: The role of mixed methods approaches. *Management Accounting Research*, *21*(2), 124-129.

Moore, D.C. (1991). Accounting on trial: The critical legal studies movement and its lessons for radical accounting. *Accounting, Organizations and Society, 16*(8), 763-791.

Morgan, G. (Ed.). (1983). *Beyond method: Strategies for social research*. Sage.

Ngwenyama, O.K. (1991) "The Critical Social Theory Approach to Information Systems: Problems and Challenges," in H-E. Nissen, H.K. Klein, R.A. Hirschheim (eds.), *Information Systems Research: Contemporary Approaches and Emergent Traditions*, NorthHolland, Amsterdam, pp. 267-280.

Neu, D., Cooper, D. J., & Everett, J. (2001). Critical accounting interventions. *Critical perspectives on accounting*, 12(6), 735-762.

Patten, D.M. (2013) “Lessons from the Third Wave: A reflection on the rediscovery of Corporate Social Responsibility by the mainstream accounting research community” *Financial Reporting* 2: 9-26.

Plantin, G., Sapra, H., and Shin, H. S. (2008). Marking-to-Market: Panacea or Pandora's Box?. *Journal of Accounting Research*, 46(2), 435-460.

Platt, J. R. (1964). Strong inference. *Science*, 146 (3642), 347-353.

Richardson, A. J. (1987). Accounting as a legitimating institution. *Accounting, Organizations and Society*, 12(4), 341-355.

Richardson, A. J. (2009). Regulatory networks for accounting and auditing standards: A social network analysis of Canadian and international standard-setting. *Accounting, Organizations and Society*, 34(5), 571-588.

Richardson, A. J. (2011). Myth, paradigms and academic accounting research: A comment on “Reading and understanding academic research in accounting” (Gordon and Porter, 2009). *Global Perspectives on Accounting Education*, 8, 67-77.

Richardson, A. J. (2012). Paradigms, theory and management accounting practice: A comment on Parker (2012) “Qualitative management accounting research: Assessing deliverables and relevance”. *Critical Perspectives on Accounting*, 23(1), 83-88.

Richardson, A. J., and Welker, M. (2001). Social disclosure, financial disclosure and the cost of equity capital. *Accounting, Organizations and Society*, 26(7), 597-616.

Rorty, R. (1979) *Philosophy and the Mirror of Nature*. Princeton, NJ: Princeton University Press.

Rorty, R. (1982) *Consequences of Pragmatism*. Minneapolis: University of Minnesota Press.

Roslender, R., and Dillard, J. F. (2003). Reflections on the interdisciplinary perspectives on accounting project. *Critical Perspectives on Accounting*, 14(3), 325-351.

Rousseau, J.J. (1762) The social contract or principles of political right. (Translated by G. D. H. Cole, public domain) http://www.constitution.org/jjr/socon.txt. Accessed April 2014

Savage, M., and Burrows, R. (2007). The coming crisis of empirical sociology. *Sociology*, *41*(5), 885-899.

Shalin, D. N. (1992). Critical theory and the pragmatist challenge. *American Journal of Sociology*, *98*(2), 237-279.

Shamir, R. (2005). Corporate social responsibility: A case of hegemony and counter-hegemony. Chapter 4 in de Sousa Santos, B., & Rodríguez-Garavito, C. A. (Eds.). *Law and globalization from below: Towards a cosmopolitan legality.* Cambridge University Press, 92-117.

Sikka, P., and Willmott, H. (1997). Practising critical accounting. *Critical Perspectives on Accounting*, 8(1), 149-165.

Tinker, A. M. (1980). Towards a political economy of accounting: An empirical illustration of the cambridge controversies. *Accounting, Organizations and Society, 5*(1), 147-160.

Toms, S. (2006). Asset pricing models, the labour theory of value and their implications for accounting. *Critical Perspectives on Accounting*, *17*(7), 947-965.

Thornton, P. H., Ocasio, W., and Lounsbury, M. (2012). *The institutional logics perspective: A new approach to culture, structure, and process*. Oxford University Press.

Thrift, N. (2005) *Knowing Capitalism*. London: Sage.

Ulrich, W. (2007). Philosophy for professionals: Towards critical pragmatism. *Journal of the Operational Research Society*, 19(10), 1109-1113.

Watts, R. L., and Zimmerman, J. L. (1990). Positive accounting theory: a ten year perspective. *The Accounting Review*, 65(1): 131-156.

Webber, M. J. (1987). Quantitative measurement of some Marxist categories. *Environment and Planning A*, *19*(10), 1303-1321.

Figure 1: Research methods in CPA articles 2004-2013

Year	Comments[12]	Non-empirical[13]	Qualitative Methods[14]	Quantitative Methods[15]
2004	15	22	22	1
2005	10	17	24	4
2006	4	14	23	5
2007	6	11	24	2
2008	10	12	40	5
2009	1	11	29	7
2010	2	23	86	4
2011	11	8	34	0
2012	4	7	21	4
2013	15	12	12	5
Grand Total	**78**	**137**	**315**	**37**
Percentage	13.8	24.2	55.6	6.5

[12] "Comments" include editorial comments, introductions to special issues, comments on previously published work and responses to those comments.

[13] "Non-empirical" include theory development work (without an explicit empirical component), methodological discussions and literature reviews.

[14] "Qualitative methods" include case studies, historical methods and narrative interview-based papers. The separation of case studies and historical methods is arbitrary: work focused on short-duration events were classified as case studies while longitudinal work was classified as historical.

[15] "Quantitative Methods" include surveys, (some) interview based work and statistical analysis of market data.

Figure 2: Qualitative and Quantitative Methods in CPA articles 2004-2013

Panel A: Qualitative Methods

	Year										
	2004	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**Total**
Case Studies	4	10	9	8	27	16	48	20	11	6	159
Interviews	2	7	4	7	6	3	16	9	7	4	65
Historical	16	7	9	8	7	10	22	5	3	2	89
Other	0	0	1	1	0	0	0	0	0	0	2
Total	**22**	**24**	**23**	**24**	**40**	**29**	**86**	**34**	**21**	**12**	**315**

Panel B: Quantitative Methods

	Year										
	2004	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**Total**
Survey	0	4	4	2	3	3	3	3	3	4	26
Interview	0	0	1	0	0	1	0	0	0	0	2
Archival Market Data	1	0	0	0	2	3	1	1	1	1	9
Total	**1**	**4**	**5**	**2**	**5**	**7**	**4**	**4**	**4**	**5**	**37**