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The (mis)measurement of M&A performance

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Abstract:

This paper seeks to provide a different explanation to the claimed inconsistency in M&A performance research findings. While many M&A scholars contend that the problem lies in the variety of M&A performance measures, we believe that the reason for multiple ways to measure performance is that performance, like most organizational constructs, lacks universality. The variety of measures reflects the variety of the scholars' constructions of performance and of the measurement techniques adopted. The problem is not the variety of measure, but the comparison of different measures as if they were measuring the same feature of the organization. This could be a reason for the claimed inconsistency in M&A research findings. In this article, we therefore aim at answering "How do M&A scholars measure M&A performance"? To achieve this end we conduct a systematic literature review of empirical M&A research to understand how M&A scholars measure the M&A performance construct and how they construct this measure.

Keywords: M&A, organizational performance, construct measurement, performance measures

Introduction

How do mergers and acquisitions (henceforth M&As) perform? This is a leading question in much M&A research from the 1960s to date. The academic community often claims that research on M&A performance to date is inconsistent and fragmented as there are no coherent research findings (e.g., King et al. 2004; Larsson and Finkelstein 1999). Scholars explain this inconsistency in different ways. Some claim that each M&A is unique and therefore findings are not comparable across typologies/settings (Bower 2001; Lubatkin 1987). Others posit that yet unidentified variables would better explain variance in acquisition performance (King et al. 2004). Still others state that the construct measurement is poor (Zollo and Meier 2008). M&A scholars search for methods to overcome the fragmentation and inconsistency. Although most would acknowledge that M&As are unique (Lubatkin 1987) and complex phenomena (eg., Zollo and Meier 2008) many seek to find a universal performance measure (e.g., Lubatkin and Shrieves 1983; Zollo and Meier 2008).

In this article, we present an analysis of 101 articles on M&A performance. We found a large numberof indicators, 169, for M&A performance. Some scholars (Zollo and Meier 2008) would find this large variety of measures in the M&A performance research a problem for the field, which would explain the quest for a universal performance measure. In our view the reason for multiple ways to measure performance is that performance, like most organizational constructs, lacks universality (Suddaby forthcoming). The variety of performance measures reflects the variety of the scholars' constructions of performance and of the measurement techniques adopted (Corvellec 1997). Hence, the variety of performance measures is not a problem. The problem arises from the comparison of different measures as if they were measuring the same general feature of an organization. This is what we believe could be a reason for the claimed inconsistency in M&A research findings. In this article, we therefore analyze M&A performance research by asking "How do M&A scholars measure M&A performance"? To achieve this end we conduct a systematic literature review of empirical M&A research in narrative form (cf., Huff 2008) to understand how M&A scholars measure the M&A performance construct and how they construct this measure. Through our analysis we elicit the variety of meanings attached to the label "M&A performance", and examine the construct measurement process. In this way we provide a different explanation to the perceived inconsistency of M&A performance findings

and contribute to an alternative understanding of performance measurement in the M&A literature.

The remainder of this paper is structured as follows. In the next section, we briefly describe the organizational performance measurement process. In the third section, we present the method for the study and thereafter, we analyze and discuss findings and their implications for M&A scholars and practitioners.

Measuring organizational performance

Organizational performance is a recurrent focus in management, organization, and strategy research since it is conceived as a benchmark to gauge the effectiveness of managerial decisions. Most empirical studies define organizational performance as the dependent variable (March and Sutton 1997) to identify what variables may explain or predict its variance. Like in M&A performance studies the results from performance research are far from conclusive and there is an ongoing disagreement about how to measure organizational performance. To get an understanding of what one does when measuring M&A performance we will briefly describe the measurement process of organizational performance.

Van de Ven (2007: 185) tells "Fundamentally, measurement represents a problem of conceptualization. Typically, it begins by descending the ladder of abstraction to recast theoretical construct into observable variables, and select procedures and indicators to measures these variables in ways that are reliable (i.e., replicable) and valid (i.e., capture their intended meaning)". This process is generally described in two steps. The first step is to conceptualize, which is about providing a meaning to the construct that one wants to measure. The second step is to operationalize, which is about linking the meaning of the construct to measurement procedures and operational indicators. Measurement procedures make it possible to assess the constructs' degree of presence in the unit of analysis. An operational indicator represents a single observable measure. Constructs are not as easy to measure as the conventional discourse describes. Typically they have ambiguous meanings that cannot be captured in terms of closed or fixed quantities such as indicators that are used in M&A performance measurements. These empirical indicators are designed to be specific and exact, but as Zeller and Carmines (1980) point out, indicators can never fully duplicate the meaning of a concept.

In our example of M&A performance, the construct can be conceptualized as financial performance or as non-financial performance. Financial performance in turn, can be measured with accounting- or market-based indicators, whereas non-financial performance can be measured with non-financial indicators.

There is no consensus on the meaning of organizational performance and performance literature is filled with different definitions of performance that "live side by side in utter ignorance of their divergence, nay, of their contradictions" Corvellec (1997: 27). Studies analyzing how organizational performance is defined and used in existing management research (e.g. Carton and Hofer 2006; Venkatraman and Ramanujam 1987) have found meanings of performance ranging from rather narrow definitions of performance, in terms of financial performance, to broader definitions, in terms of organizational effectiveness. One can discern patterns in these conceptualizations depending on the scholar's field of study. Strategic management scholars more often adopt the narrower concept of financial performance (Venkatraman and Ramanujam 1987) or operational performance (Carton and Hofer 2006) whereas organizational scholars generally focus on the broader concept of organizational effectiveness. Venktatraman and Ramanujam (1986) label the latter business performance, which includes both operational performance and financial performance. Besides all these different conceptualizations, there is, at the same time, often a lack of conceptualization in performance research as management scholars often do not define the construct (March and Sutton 1997).

Organizational performance is often defined as a multidimensional construct. Multidimensionality refers to several distinct, but related, dimensions treated as a single theoretical concept (Law et al. 1998). Venkatraman and Ramanujam (1986), for example, argue that it is necessary to measure performance on many dimensions to capture it. If most scholars agree that performance is multidimensional, the meaning of multidimensionality and its implications for performance measurement are nevertheless ambiguous. Some scholars equate the multidimensionality with multiple indicators within one dimension (e.g., Venkatraman and Ramanujam 1987) while other scholars claim the multidimensionality can only be captured with multiple indicators across different domains (e.g., Woo and Willard 1983 in Venkatraman and Ramanujam 1986). In addition, organizational performance scholars disagree upon how to categorize performance domains, dimensions and indicators (cf. Carton and Hofer 2006). The same indicators are sometimes categorized under different dimensions. Market share, for instance, has been categorized as accounting

(Richard et al. 2009) and as operational performance (Venkatraman and Ramanujam 1987). So while performance is labeled a multidimensional construct the relations between the dimensions and the construct are often left out. There seems like M&A performance scholars often neglect to clearly define what they mean by M&A performance and along how many dimensions they intend to measure it. Measuring a construct does however not end there. The measurement process also implies spelling out the scope conditions where it does or does not apply (Suddaby forthcoming). That means defining the setting and the geographical area where it applies, the time scale and the unit of analysis. Let us provide some examples of how the scope conditions may affect the M&A performance measure. In the case of M&A performance the measure would be different in a merger between two north-american public companies compared to a merger between two european family-owned businesses. The time that has passed after the M&A will affect the M&A performance. Consequently there will be different values if the performance is measured three days or three years after the deal has taken place. In a similar manner will the unit of analysis affect the performance. If the unit of analysis is the acquiring company the performance will be very different compared to if the unit of analysis is the target company. The scope conditions of the measurement construct are accordingly important for how one will understand the performance measure.

The study – a narrative literature review

This is a review type article, with the aim to analyze how management scholars measure M&A performance. The adoption of a single disciplinary focus – management – is deliberate since a multidisciplinary perspective is unlikely to move the discussion on performance measures beyond differences in terminologies and assumptions, as argued by Venkatraman and Ramanujam (1986). We have therefore focused the review on articles published in management journals. We used a three-stage approach to identify the sample of articles.

First stage: range of journals to include in the sample. We searched management journals that are defined as top-tier journals according to the Thomson ISI Journal Citation Report[1] to find articles to include in the review. These journals represent the cutting edge of research in this field and, as such, they heavily affect knowledge production in the academic community of M&A scholars. As we want to account for both American and European perspectives we searched in the following journals: *Academy of Management Journal* (AMJ), *Administrative Science Quarterly* (ASQ), *British Journal of Management* (BJM), *Human Relations* (HR), *Journal of Management* (JM), *Journal of Management Studies* (JMS), *Management Science* (MS), *Strategic Management Journal* (SMJ), *Organization Science* (OSc) and *Organization Studies* (OSt).

Second stage: search criteria and time frame. We made a Boolean search, using the keywords merger *or* acquisition *and* performance, in each journal database. As we wanted to capture the evolution of M&A performance measures, the time span of our search covers 38 years, from 1970 to 2008. The search resulted in an initial list of 184 articles.

Third stage: criteria for inclusion in the sample. We decided to include empirical articles with post-acquisition performance as an explanatory variable. Articles that discussed M&A performance without measuring it were not included in the sample.

We further included articles from special issues but left out research notes as they rarely present empirical findings. Based on the above criteria, we first read, checked the adherence to the selection criteria, and discussed which articles to include and take out until we reached a complete agreement. This produced a final sample of 101 articles, with no article from the '70s (see Table 1 below) that can be probably explained by a prevailing interest by financial scholars (Mandelker 1974). Moreover, the journals included in our sample have been issued in different decades: for example, SMJ started in 1980 while OSc in 1990. Therefore the different distribution of articles across decades is not surprising. A complete list of articles is available from the authors upon request.

[1] We performed a Journal Citation Report of management journals by Impact factor, and found our 10 journals among the highest ranked general management journals.

Insert Table 1 about here

The record sheet

We developed a record sheet to take notes while reading the articles. The categories in the scheme were chosen so that we could analyze what is measured (how performance is conceptualized and operationalized), where it is measured (the research setting), how it is measured (the method), when it is measured (the time scale) and the unit of analysis. The first step in our analysis was to code each article according to the record sheet. For each article we wrote down the *authors' names*, the *journal outlet* and *the year of publications*. We also wrote down if performance was the *dependent variable or not* in the study. In addition we coded the articles according to the following categories:

Research setting – records what kind of M&As is under scrutiny in terms of industries and geographical areas. Industries are categorized as MMI (manufacturing and mining), high-technology, service and miscellaneous. This latter categorization was used when it was impossible to clearly identify the industries under investigation. As for the geographical area we categorized research settings as Domestic North America, Domestic European and Cross-border.

Research method – the used method is classified as quantitative, qualitative or mixed method.

Definition of the M&A performance construct – here it is recorded how M&A scholars define M&A performance and which domain M&A performance measures can be placed in: financial, non-financial, or both.

Dimensions – here it is recorded if M&A scholars rely on a single dimension or on several distinct dimensions, within or across different domains.

Indicators – this section contains the observable measure(s) employed in the study. We also categorize articles as relying on single or multiple indicators.

Mode of assessment (as used by Venkatraman and Ramanujam 1987) – here the measures are categorized as

objective (based on some established systematic system such as internal accounting) or perceptual (judgement made by executives, employees, or analysts). According to conventional performance studies an objective measure is a measure that remains constant no matter what measurement instrument is used or who is doing the measurement. Moreover, it is already available as it has been collected for other purposes. A perceptual measure, on the other hand, is a measure that may change according to who is asked, when one asks, and what instrument is used. These categorizations provide us with more information about the indicator M&A scholars use and their understanding of M&A performance.

Temporal dimension – under this label we categorize articles according to the size of temporal intervals of measurement (Zaheer et al. 1999), that is how long after the deal (closed or announced deal) the performance is measured. In addition we record whether articles test the convergence between short and long-term measures.

Unit of analysis – here we arrange articles according to the unit of analysis, that is the acquiring, the target, the combination of the two firms, or any other unit of analysis.

The next step in our anlaysis was to categorize our data according to a classificatory scheme presented in Figure 1. The scheme is inspired by Venkatraman and Ramanujam's (1986), Venkatraman and Grant's (1986) and Carton and Hofer's (2006) classificatory schemes of organizational performance domains, dimensions and indicators. As the scheme is based on the findings from our review so we have only included those dimensions that we have found in the reviewed articles. The scheme aims at clarifying what dimensions and indicators of performance were used in the reviewed articles.

Insert Figure 1 about here

Our scheme categorizes performance measures in terms of two domains within which we place the different M&A performance measures. For each M&A performance measure, we further identify what dimensions M&A scholars account for while measuring performance. Finally we give some examples of what indicators M&A scholars rely upon for each measure. Worth noticing, the indicators we mention in our classificatory scheme are just a few as compared with the huge number we found in our study (169).

The scheme takes as its starting point in two performance domains that indicate how the M&A scholars

conceive M&A performance: as of financial or non-financial nature. The financial domain comprises market and accounting measures of performance. Market performance measures reflect two different dimensions: the market value of the company, either at the time of announcement of the deal or at the time of the closing, or of the risk the company faces. The former is generally measured in terms of CAR or CAAR, while the latter in terms of Jensen's alpha or Beta coefficient. Market performance measures are available for public companies only.

Accounting measures are those that rely upon financial information from the companies' accounting records and can be expressed as values, ratios, or as percentages. Accounting measures can refer to three different dimensions. The first dimension is labeled as profit and it is measured by ROA, ROS or net income. The second dimension refers to growth and it is measured, for example, by sales growth. The third dimension accounted for is liquidity, leverage and cash flow. In this latter case, we found that the only indicator used was cash flow.

The non-financial domain comprises operational performance and overall performance. Operational performance measures can refer to three dimensions. The first is the marketing dimension, which can be measured in terms of market share. The second dimension refers to innovation and is generally accounted for by the number of patents or patent frequency. The third dimension is productivity and is, for example, measured as cost synergies. Overall measures of performance refer to two dimensions; success and survival. Success can be measured as the degree of attainment of M&A goals. Survival is often measured as divestiture within a chosen time interval. Having explained how we coded our data and conducted the analysis we will proceed with presenting our results.

Results

Our findings present a rather complex picture showing that M&A scholars measure different things, in different settings, using broad or narrow definitions, relying on a wide array of indicators reflecting different time scales and units of analysis. In the following sections we discuss our findings according to a) M&A performance as the dependent variable, b) where, c) how, d) the unit of analysis, and e) when M&A performance is measured. Thereafter we analyze what it is that M&A scholars label as M&A performance.

M&A performance as dependent variable

M&A performance is the dependent variable in 88 out of the 101 reviewed articles (see Table 2). In HR, JOM, and OSc all articles treat M&A performance as the dependent variable whereas in JMS and OSt this is done in 50% of the articles. This indicates that M&A scholars consider performance as one of the most important gauges to assess the outcome of acquisition strategies. Such a posture is also embraced as a code of conduct within the Academy of Management, whose primary goal is to improve the effectiveness of organizations (Academy of Management Ethical Code of Conduct, 1995). In line with this M&A scholars, like other management scholars, strive to seek the ultimate independent, moderating, and mediating variable that can explain or predict performance in M&As as a way to identify managerial tools to execute successful deals (Meglio and Risberg 2010).

Insert Table 2 about here

Where is M&A performance measured?

To understand where M&A performance is measured, we coded the articles according to what industry and what geographical area the studied M&As took place in. One article, Weber and Camerer (2003), was not coded as it is based on a laboratory experiment. The research seettings per journal are presented in Figure 2.

Insert Figure 2 about here

The US is the most commonly occurring geographical area in our sample. Domestic North American M&As are studied in 74 articles, and domestic European deals are studied in 17 articles. Cross-border M&As are relatively under-investigated in our sample as only 11 articles study cross-border M&As. A closer examination of the data used in the article and the affiliations of the authors can help us to understand why. The majority of the articles in our sample employs secondary data from large American databases (for example, the Standard and Poor's COMPUSTAT database, or the Federal Trade Commission's merger series) that collect information from US-based companies. Another reason for the geographical bias could be that many M&A scholars work at North American universities, and therefore tend to study US companies. M&A research can be described as rather US-hegemonized (Meglio and Risberg 2010).

The high reliance on databases could also help to understand the focus on certain industries. Manufacturing and mining industries (MMI) were well researched during the ‘80s. During the 1990s and 2000s there was a shift to more studies of high-technology industries. Service industries seem to have attracted less interest. In 63 articles it was impossible to clearly identify the industries under investigation. That could mean that M&A scholars do not consider the industry to influence the performance measurement. With these observations at hand, we move to the next step in our analysis, to understand how M&A scholars measure M&A performance.

How is M&A performance measured?

In this section, we present and discuss which methods M&A performance scholars use. In Figure 3, we categorize articles as using quantitative, qualitative or mixed methods . We found that quantitative studies dominate the sample, being the chosen method in 91 articles (e.g., Beckman and Haunschild 2002).

Insert Figure 3 about here

Quantitative studies refer to different kind of statistical analyses employing secondary data as well as primary data. The primary data is generally gathered through surveys, one case survey (Larsson and Finkelstein 1999) being an exception. We also found a laboratory experiment (Weber and Camerer 2003) as well as a field experiment (Schweiger and Denisi 1991). Of the remaining articles, eight used a case study method (eg., Vaara 2003) while two used mixed methods (e.g. Birkinshaw et al. 2000).

The vast majority of the reviewed articles employs structural equation techniques or other statistical analyses to find correlations between variables. The use of such methods is however inconsistent with how M&As are usually described. Let us exemplify. M&As are generally depicted as as processes. This notion implies that M&As unfold over time, are affected by inherent ambiguities (Jemison and Sitkin 1986), and that value creation takes place during the post-acquisition phase also (Haspeslagh and Jemison 1991). Yet, the methods used in the majority of studies assume the constructs do not vary over time (c.f., Suddaby forthcoming). So, despite claiming that M&As are processes many M&A scholars reproduce cross-sectional research designs that measure performance in a short window around the announcement of the deal.

Even longitudinal M&A research (e.g., Ahuja and Katila 2001) is often based on secondary data and performs the same statistical analyses as earlier criticized. These studies fail to account for the generating mechanisms and the hidden arrangements that produce M&A outcomes (see Meglio and Risberg 2010). Within our sample, we found some examples of longitudinal process studies that account for how M&A processes unfold over time (e.g., Yu et al. 2005) and that unravel irrational features (e.g., Vaara 2003) that would have remained hidden in a cross-sectional statistical study. This indicates that the time for measurement may influence the results of the study, which leads us to the temporal issues of M&A performance studies.

When is M&A performance measured?

In order to understand the performance of a specific M&A one needs to know when the performance is measured. We have therefore categorized the time scales in the reviewed articles. The reason for doing so is that same performance indicator, for example ROA (return on assets), may show very different values one, three or seven years after a merger. Moreover, the same time scale can be used for both objective and perceptual measures, producing performance measures of different kinds.The time scale used for objective measures is usually chronological time. The time scale for perceptual measures, on the other and, often refers to and individual's subjective experience of time. This means that perceptual measures can be affected by time and that the resulting performance account "is likely to become a product fashioned from consciousness of the present and framed by currently conventional story lines" (March and Sutton 1999: 702).

In Figure 4 we have grouped the time scales used in the sample articles into three categories; short- (≤ 1 year) medium- (> 1 year≤ 3 years), and long -term intervals (> 3 years). We use this categorization for the sake of simplicity although we recognize that such a distinction may appear as rather artificial..

Only 88 of the reviewed articles provide a clear indication of the time scale for measurement. That means that in 13 articles M&A scholars did not account for or were ambiguous about the time scale. Capron (1999), for example, claims that she measures long-term performance but she does not provide any indication of how long the long-term is in her study. Considering that a performance indicator will show different values depending on when it is measured we find it quite noteworthy that not all authors account for the time scale.

Insert Figure 4 about here

Before we conducted the review, we expected event studies to dominate the field and hence assumed short-term performance measures would prevail. Our assumptions were proven wrong as 48 articles employ a medium- or long-term time scale, while 35 employ a short-term time scale. Five articles test convergence between short-term and long-term measures (e.g., Chatterjee and Lubatkin 1990; Sudarsanam and Mahate 2006).

As expected, SMJ accounts for the majority of articles employing the event study method. Event studies generally test the convergence of results across different time intervals, referred to as event windows. In many articles, especially those published in SMJ, measurements were repeated within 3, 5, 9, or 11 days event windows around the announcement date (e.g., Kroll et al. 1997; Mcdonald et al. 2008; Shelton 1988). This practice is widespread over the whole review time period. Yet, the reasons to measure event windows so close in time are not clear. Like Oler et al. (2008) we doubt that financial markets would react very differently three days after a M&A announcement than they would five days after.

Performance is measured on a medium-term scale (between one and three years) in 21 articles. Many M&A scholars seems to consider three years as an average period of time for the integration process to be executed and, therefore, a suitable time scale for performance measurement (e.g., Hitt et al. 1998; Zollo and Singh 2004). This time scale appears to be taken for granted though. We have not found many studies where the authors discuss the time interval appropriate to attain M&A goals. One reason could be that it is difficult to decide when the integration process is over. In Levinson's (1970), by now classic, study the organization was negatively affected as long as up to 20 years after the deal. The difficulties to put boundaries on an acquisition process imply that it is important for scholars to justify the choice of time scale for each studied M&A.

In 27 of the reviewed articles scholars measure performance on a time scale longer than three years and up to 15 years (e.g., Birkinshaw et al. 2000; Côté et al. 1999). The use of a long-term time scale is probably due to the increasing number of processual case studies from the '90s within the M&A field.

Lubatkin (1987) made a thorough analysis of M&A performance time scales in previous studies. According

to him, in M&A empirical research market reactions (measured as abnormal returns) are estimated over a short time period around a merger's legal transaction date. Lubatkin claims that to assess the M&A performance fully it is necessary to extend the measurement over the long run and to control for extraneous factors. To this end he discusses the introduction of two new measures of abnormal performance [APD (Average Pair Difference) and CPD (Cumulative Pair Difference)], that serve both purposes. To conclude, while Lubatkin points towards the use of market-based measures, he does not favor the common (short) time scale of measurement generally adopted by scholars using the event study method.

In many cases, M&A scholars do not justify the choice of time scale. In other cases, they do. A common way justification is to cite earlier studies. For example, Uhlenbruck et al. (2006) perform an event study and refer to McWilliams and Siegel (1997) to justify the choice of an 11-day window (five days prior to the event and five days after the event). Citing earlier works is a way to position one's research within an accepted academic tradition. In citing certain texts, the author is making an assertion about her own opinion concerning the validity of the findings of the cited paper. By citing the selected papers, the authors also contribute to a consensus of the selected research area.

Another common, and understandable, way to justify for the chosen time scale is the availability of data. Kapoor and Lim (2007), for example, measure the productivity of inventors after an acquisition. They justify their choice of a five-year time scale with the availability of patent data for the chosen time period. Saxton and Dollinger (2004), on their hand, argue that one year after the merger is a reasonable time to collect perceptual performance measures and that two years represent the necessary time for respondents to judge the quality of a post-acquisition process. Nevertheless, they do not discuss what they mean by "reasonable time" or for whom it is reasonable. Is it the authors who have decided the time is reasonable, or have the respondents identified this time as reasonable, or who else?

What is the unit of analysis for M&A performance?

As M&A involves two different companies, we deem it important to distinguish the unit of analysis where scholars measure M&A performance. By doing this one will understand if the M&A performance refers to the acquiring company, the acquired or the combination of merging companies. The findings from the analysis are presented in Figure 5.

Insert Figure 5 about here

We found that the acquiring firm is the most common unit of analysis in the sample. In 47 articles scholars measure performance from the perspective of the acquiring firm (e.g., Carper 1990; Hopkins 1987; King et al. 2008) and in 16 articles from the perspective of the acquired firm (e.g., Brush 1996; Paruchuri et al. 2006). We found 37 articles (e.g., Flanagan 1996; Hitt et al. 1991) with both the acquiring and the acquired firm or the new combined firm as the units of analysis. The combined firm being the unit of analysis in so many studies suggests that longitudinal studies are becoming more common in this field, as in general, it is not possible to distinguish the performance of the acquiring firm from the acquired firm after the legal combination has taken place.

The three units of analysis mentioned above are the most common ones in M&A studies. We found however one case with another unit of analysis. Shipilov and Li (2008) analyzed the investment bank involved in the deal . This unit of analysis indicates that there are other stakeholders having an interest in the deal than the merging companies and the owners .

The findings discussed above allow us to understand what factors may impact the M&A performance construct. In the following section, we will analyze what M&A scholars measure as M&A performance.

What is measured as M&A performance?

The goal of this section is to thoroughly analyze what is measured as M&A performance in terms of domains, mode of assessment, number of dimensions and number of indicators. As discussed in the method section, we have categorized our measures according to the classificatory scheme of Figure 1. In analyzing our data we have therefore classified our measures as financial, non financial or mixed measures. The first step in our analysis is therefore to account for within which domain/s M&A scholars place M&A performance measures, across journals (see Figure 6) and over time (see Figure 7).

Insert Figure 6 and Figure 7 about here

Our findings show that M&A scholars often measure M&A performance within the financial domain (e.g. Cording et al. 2008). The comparison of the journals reveals that measurements within this domain are

dominating in most journals, with the exception of HR, MS and OSt. In these outlets M&A scholars measure M&A performance either within the non-financial domain or across financial and non-financial domain (e.g., Yu et al. 2005). Looking at the evolution of M&A performance measures over time, it appears that non-financial measures came in use in the 1990 and are becoming more and more common . One reason for this incresing trend could be the interest in technology-driven M&As where performance is frequently measured as innovative performance rather than financial performance. Still, the use of financial measures prevails in each decade investigated in our analysis. The use of mixed measures shows a decreasing trend over time.

We have earlier mentioned that M&A scholars commonly depict M&As as complex and multidimensional (Meglio and Risberg 2010). This led us to analyze the articles in our sample according to the number of dimensions and indicators and the evolution of the use over time. As specified above, we consider the performance measures that account for dimensions within or across different domains as multidimensional (Venkatraman and Ramanujam's1987). Figure 8 provides a comparison of findings across journals, while Figure 9 depicts the evolution over time.

Insert Figure 8 and Figure 9 about here

The findings presented in Figure 8 indicate that studies measuring performance on one dimension and using single indicator dominate in AJM, BJM, JM and SMJ (eg. Barkema and Shijven, 2008; Capron 1999; Hitt et al. 1998). In HR, Osc and Ost on the other hand, we found that most M&A performance studies measure performance on multiple dimensions with multiple indicators (eg. Greenwood et al. 1994). We also found some cases where M&A scholars measure performance on a single dimension relying on multiple indicators (e.g. Lubatkin and O'Neill, 1987 in AMJ). As mentioned before most M&A scholars agree upon that M&As are complex phenomena. There is however no agreement on what is meant by this complexity and how to capture it. Some would argue that in order to capture the complexity one must measure M&A performance on more than one dimension, using several indicators. Others would mean that it is enough to measure it with multiple indicators in order to capture the complexity. We can conclude from our findings that the measurement method that dominates the field seemt to be to measure M&A performance on one dimension using a single indicator. We don't know if these methods are able to capture the complexity or not.

In Figure 9 we account for how the use of M&A performance dimensions and indicators has evolved over time. We found that that the use of single dimensions and single indicators in measuring performance has increased over time compared to the use of multiple dimensions and indicators.

The next step in our analysis was to analyze on how many dimensions M&A scholars measure performance linked to the domain. It means that we count the number of dimensions used for each domain across journals. We do not account for each dimension but label them single- or multi-dimensional studies. For this analysis we took 83 out of 101 articles into account, as 18 articles use mixed measures. This is by definition a multidimensional and multidomain measure meaning it is not possible to link the dimensions to a single domain. The findings are presented in Figure 10.

Insert Figure 10 about here

Within the financial domain that M&A scholar often measure performance on a single dimension. We found single domain studies in in 50 articles, with most of them published in SMJ. The use of M&A financial types of measures along a single dimension is widespread across the journals in our sample. In 14 articles M&A scholars still define performance as financial performance but measure it along several dimension. We found these types of studies in four journals,AMJ, JM, OSc, and SMJ. In studies where performance is measured along multiple dimensions the M&A scholars frequently compare market and accounting types of measures and test the convergence of results across the measures.

When we analyze the use of dimensions for the non-financial domain we find that there is not such a clear-cut difference between single and multiple dimensions as for the financial domain. In 10 articles M&A scholars measure performance on a single dimension. These articles were published in AMJ, JM, MS, and SMJ (e.g., Kapoor and Lim 2007). In eight articles published in AMJ, JMS, OSc, OSt, as well as SMJ (e.g., Puranam and Shrikanth 2007), M&A scholars measure non financial performance on multiple dimensions. We will proceed our analysis by linking M&A performance domains to the categorized modes of assessment (perceptual, objective and perceptual and objective as well). The findings are presented in Figure 11. Figure 11 is a 3 × 3 matrix where we in each cell indicate the number of articles per outlet.

Insert Figure 11 about here

Findings show an overwhelming use of financial objective measures (in 62 articles of 101). Financial perceptual measures are rarely used (2 articles). Within the non-financial domain we find a prevalence of objective measures (11 articles) as compared with perceptual, (six articles, eg. Schweizer 2005). Mixed measures generally rely on objective, perceptual and a combination of objective and perceptual measures as well with no significant difference between the three modes of assessment, which is the case in 18 articles out of 101. In sum, our findings suggest that the label M&A performance is linked to many different indicators and dimensions, using many different types of measures placed in different performance domains. If we should locate our findings in our figure 1, we would find contributions under each label.

We now start to get an understanding of what it is that M&A scholars measure as M&A performance. But, we are also interested in understanding why M&A scholars measure performance the way they do. To properly answer such a question we should get into the researchers' minds, something we cannot do. Yet, we believe that a way to understand why they do the way they do, is to closer examine how they *justify* their methodological and empirical choices. Lubatkin and Shrieves (1986), for example, justify their use on market-based measures by that they are direct and objective measures of stockholder values compared to accounting measures. We can, from this justification, understand that there is a belief that one type of measures are closer to a true perfromance than other types of measures. Market-based measures have almost become taken for granted over time as many M&A scholars justify their choice of method by referring to past studies. This is a way to argue for that this type of measure has passed the test of time – if previous studies have used it, it must be reliable measure. This habit of citing earlier studies is as also a way to position the current study within a certain research tradition. Although, as Corvellec (1997) contends, it is a self-referring justification, where the past justifies the present and the present enhances the status of the past.

We have found that accounting-based measures are less frequent. Many scholars justify their choice not to use them by arguing that these measures are inherently flawed since they are backward looking, they do not account for change in risk and they can easily be manipulated by managers (Boyd et al. 2005). Scholars often justify their use of accounting-based measures with the unability to rely on clean market-based data. For instance, Zollo and Singh (2004) measure acquisition performance as the variation in the acquiring firm's ROA. They wanted to measure how the performance was affected by post-acquisition decisions and learning

processes, but they found it impossible to observe this from the financial market's standpoint. Sometimes market-based data are not used even though they are considered to be the best option. Calori et al. (1994), for example, argue for their use of perceptual measures because secondary market-based data about acquired units was not available.

Not everybody consider market-based measures to be the optimal ones to measure performance. According to Côté et al (1999) M&A performance should neither be taken as a simple set of market-based nor accounting-based measures only. They posit that one can also understand M&A performance as a set of interpretations made by the acquirer in its attempts to understand the generating mechanisms of M&A performance.

Discussion

While presenting our results we have dealt with a lot of numbers. In this section we want to further our interpretations of what the findings presented above may say about M&A performance research.

Most of the studies in the sample use M&A performance as the dependent variable. This leads us to conclude that this is regarded as one of the most important gauges to assess the outcome of acquisition strategies. This view of M&A performance is consistent with the primary focus of the management research domain, that is, to predict, understand and improve performance according to the Academy of Management code of conduct (1995).

Another way to interpret this interest in measuring M&A performance is to acknowledge the political meaning of measuring performance. M&As are not neutral events for the parties involved; in most cases, they imply closing plants, firing employees, and executives. Putting the spotlight on performance could be read as a means to legitimate such a painful strategy shifting the attention from the costs to the benefits of M&As.

While looking into where M&A scholars study performance we could conclude that the US mining and manufacturing industry is well studied, until the 1990s. We could also conclude that many of these studies took their data from a number of databases. We believe that a reason for this concentration of data source is

that scholars simply use data that is available and accessible. Doing research is, to some extent, about pragmatism and one needs take the opportunity when it comes. Another side of that coin could be to say that using existing databases is to look for the key under the lamp post and not where you lost the key. That would mean that using a set of data (as in a database) that someone else have collected for another purpose limits what kind of questions you can answer with the data. The accounting or market figures from the data set might point in a certain direction leading the scholar to draw conclusions about problems in the M&A process. But, relying on databases means that the scholar has not observed himself what problems organizations involved in M&A experienced. From secondary data it is thus impossible to understand what happens during the M&A process but only try to provide a plausible interpretation.

The frequent use of databases brings with it that hypotheses-testing statistical studies dominate M&A performance studies. The vast majority of these studies are cross-sectional. These studies often measure the M&A performance in a short event window after the acquisition announcement. They therefore fail to capture the hidden and, often political, arrangements generating certain performances. The prevalence of cross-sectional research designs point to a sort of methodological conformity within the M&A field, which leaves method and methodological matters unquestioned (Meglio and Risberg 2010).

The analysis of the time scale of M&A performance measurement shows a huge variety of, and a lack of account for, time scales. Our findings indicate there is no consensus among scholars about how long an acquisitive process is. This is probably because the length of acquisition processes cannot be predetermined depending on several factors. One is the motive behind the M&A, another is how the process is managed and how it unfolds. We would also like to point out that there are usually multiple goals for M&As, each of them may require different time intervals to be attained. The time interval to gauge the capability of the merger to attain a single goal depends, therefore, on which of these goals you are measuring, be it the task integration, a synergy exploitation, or a new identity building, just to name a few. We also believe that the time scale must be decided upon depending on the research question at hand. Therefore, the time scale for the study must be carefully accounted for and we find the lack of discussion about the choice of time scale quite remarkable.

Examining the unit of analysis allows us to claim the M&A scholars were mainly interested in measuring

M&A performance from the acquiring firm's perspective. This is consistent with the claimed interest of management scholars in providing tools for predicting the performance and improving the effectiveness of strategic decisions. From our findings one can also assume that the shareholders are the main stakeholders and especially the owner of the acquiring firm, as shareholder value was a common measure of performance. A reason for this focus could be the classical claim that the acquiring firm's shareholders lose value from acquisitions and the acquired firms' shareholders gain (Jensen and Ruback 1983), and that the studies aim to verify or falsify this claim.

Analyzing what M&A scholars measure as M&A performance we can conclude that they conceptualize it as financial performance and operationalize it along a single dimension, using a single, often objective, indicator. With this result at hand we can argue that the presumed objectivity of market-based measures and their availability are the main reasons for their widespread use. The increase in the use of operational type of measures could signal an interest within the M&A community in measuring other types of M&A performance than the market reactions.

Before the conclusion we would like to mention some issues we found and recorded during the review but we could not account for in numbers. The first important finding is that M&A scholars do not always devote great attention to the conceptualization and operationalization of M&A performance. This lack of attention brings with it that scholars either jump into the operationalization phase without defining M&A performance or that scholars do not clearly spell out its boundary conditions. The former case takes place when the indicator is the same as the definition of performance. This implies a tautology that makes the definition of the construct a hollow conceptualization (Suddaby forthcoming). CAR and ROA as used in some studies (e.g., Barkema and Schijven 2008; Kroll et al. 1997) are examples of when scholars omit conceptualization and the operational definition is the same as the indicator. Example of unclear boundary conditions is, as we found in some studies (Capron 1999; Homburg and Bucerius 2006), when the time scale is ambiguous, or even omitted, as if it would not influence performance measurement. This behavior among M&A performance scholars leads us to conclude that the M&A performance construct lacks clarity and has become a taken for granted label.

A second finding worth discussing is the tendency among M&A scholars to use ambiguous labels to

conceptualize M&A performance. Scholars need to define a theoretical construct clearly, as the meaning of words rarely are fixed. Subbady (forthcoming) points out that constructs often acquire multiple meanings simply because they are given names used in common speech. Organizational performance, Suddaby writes, has many meanings because it is used in literature, advertising as well as in everyday use. This has of course an impact on organizational performance research. If the scholars are not precise in their definition of the construct, each reader will interpret the label in different ways. In our analysis, we found M&A performance defined in terms of success as an example of this. Such operational definition has ambiguous meanings if one looks at the range of dimensions and indicators linked to it. We have found cases where success refers to financial indicators such as CAR (see example above), to perceptual assessment of accounting indicators such as ROS (Homburg and Bucerius 2004), or to overall expectations of success (Shanley and Correa 1992). If one compares the results of these different studies, the meaning of success becomes unclear.

A third finding is the tendency of when one scholar or a team of scholars measure M&A performance differently in different studies. Let us exemplify with the studies developed by Hitt and two partly different teams of scholars (1991; 1998). In Hitt et al. (1991) the purpose is to "examine one aspect of the relationship between acquisitions and performance – the effects of acquisitions on R&D inputs and outputs" (1991:694). Innovation is in this study defined as an important indicator for organizational performance and it is operationalized as R&D intensity, and as numbers of patents/annual sales. In the later study, Hitt et al (1998), the purpose was to understand how to succeed and avoid failure in acquisitions, that is, what the attributes that affect performance are. Here the authors define performance as accounting performance and rely on a single indicator, which is ROA, for historical performance and R&D intensity as a signifier for future performance. This indicates that even though the label M&A performance is used as a generic label, it is defined differently in different studies, even by the same scholars. In the first study performance as defined as R&D and in the latter as R&D and ROA. We claim that this is symptomatic for much M&A performance research: the label M&A performance is used as a generic label including different types of conceptualizations, operationalizations, measures, domains and indicators. In other words there is no such a thing as a general M&A performance and one study cannot rarely be compared to another because they talk about different M&A performances.

Conclusions

How do M&A scholars measure performance? This was the research question we aimed to answer. What M&A scholars measure under the label "M&A performance" is guided by the research question the scholar intends to answer. Under this regard, M&A performance is subjectivley constructed by each scholar depending on what he is analyzing in terms of research setting, unit of analysis and time scale. If we look at the output of such a process and we focus our attention on the indicators scholars rely upon to measure M&A performance, we overlook how such a process unfolds. While the conventional discourse found in methodology textbooks depicts the measurement process as neutral or mechanical we found in our review that M&A performance measurement is a process constructed by the opportunities and constraints of the scholar's daily life. It is also constructed by the research tradition the scholar define him or herself to belong to, where the scholar work and many other issues that any one who claim to be an objective researcher would claim should not affect the research process. In our review we found many cases where scholars claim that the availability, or lack, of data determined the indicator(s) or the time scale of measurement. In some cases the lack of objective data lead the scholar to choose perceptual data. In other cases, a consensus in the academic community towards certain measures leads the scholars to choose certain types of measures. In addition the heavy reliance on past studies can be interpreted as a construction of M&A performance. Taken all these findings into consideration we would claim that M&A performance is socially constructed.

Some notions from Weick's article from 1989 where he discusses theorizing can help us make sense of how such an academic community consensus develops. In his article, Weick observe that social scientists, and among them organizational scholars, tend to think homogeneously. They do so because they tend to work strictly within their own paradigm and heterogeneous thought trials are not encouraged. This observation can be useful to understand why M&A scholars seem to converge toward some measures for M&A performance. Also Wicker (1985) reflects upon this phenomenon and claims that human beings show a tendency to think recurring thoughts, which limit theories and research. The tendency to think homogeneously within a paradigm or in this case a specific academic field is thus not limited to strategy and management scholars, but seems to be a trend in academia in general, if we are to believe Weick (1989) and Wicker (1985). In our

case, the convergence towards the use of measures located in one domain points to homogenous thinking among M&A performance scholars.

We also found in our analysis that M&A performance scholars make use of and, also compare, a large variety of indicators. This tendency can be understood if we take Weick's (1989) observation on selection criteria into consideration. He writes that theorists keep changing criteria in order to fulfill their own specific agenda, and confirm conjectures they have invested a lot in. His point is that it is important that selection criteria must be applied consistently because "if criteria are altered each time a conjecture is tested, few conjectures will be rejected and little understanding will be cumulate" (p. 523). Hence, the results become very marginal and will not contribute to general theories.

Implications for the academic community

Our study suggests that M&A performance measurement deserves further attention. We do not believe, however, that M&A performance research lacks more precise indicators, better methods, models or data. Instead, along with Corvellec (1997:26) we argue, "performance appears to coincide with what authors' measure as being the organization's performance". The multiplicity of indicators should not be understood as a method problem. Like most organizational constructs, M&A performance is a construct that has not general connotation and therefore, one should not seek for a best measure that would work in all situations but for clearer measures that actually spell out what is measured.

A clear definition of M&A performance, along with its boundary conditions, is essential to prevent the common mistake of comparing different measures as if they were measuring the same thing. It does not make sense, in the name of a generic performance, to compare CAR – which is a prediction of possible future company performance – with accounting measures – which are measures of historical performance – with management perceptions – which, besides being historical, usually depict non-measurable aspects. In addition, the same indicator provides a different measure depending on the time scale of measurement the investigator adopts. The different measures all say something about the performance of the M&A, but they are different stories told for different audiences, often by different narrators (cf., Corvellec 1997).

Implication for practicing managers

The conventional wisdom about M&As is that we know very little about how to make them succeed (Bower 2001). Therefore, the academic community seems to be of little help to executives in pursuing successful deals.This is in our opinion the result of a belief that managers can base their decisions on making new M&A deals by knowing how M&As perform on average. We deem this belief not to be true. Even though M&A scholars would find THE ultimate performance measure, for whom would it be of any use? Managers get no help in their decision-making by knowing that on average M&As perform x, when that means some companies perform y and others perform z. That M&As on average perform x does not say anything about how that company's specific deal will perform and, above all, how to make it successful. What manager would need to know is how to reach good results in a certain type of performance. That is, they want to know how to become successful. Quantitative studies, when one tests the effect of different independent variables on a certain dependent performance variable, does not help us understand how and why M&As perform the way they do, as each variables effect is so marginal to the general knowledge on M&A performance (Meglio and Risberg 2010). Other concerns are that the variables tested are usually not relevant for all companies or that statistical significance does not necessarily imply organizational significance (Van de Ven 2007).

To conclude, we believe that this paper contributes to further our understanding about the variety of meanings M&A scholars attach to the label "M&A performance", explaining the inconsistency of M&A research findings. Through our analysis we have also showed how many factors may shape the measurement process.

Table 1. Composition of final sample. (Number of articles per outlet)

Journal	1970-79	1980-89	1990-99	2000-08	Total
AMJ		3	8	11	22
ASQ			2	2	4
BJM			1	2	3
HR			1		1
JM		1	7	3	11
JMS			3	7	10
MS				1	1
SMJ		6	17	19	42
OSc			2	3	5
OSt			1	1	2
Total	0	10	42	49	101

Table 2. M&A performance as dependent variable. (Number of articles per outlet)

Journal	1970-79	1980-89	1990-99	2000-08	Total
AMJ		3	8	8	19
ASQ			2	1	3
BJM				2	2
HR			1		1
JM		1	7	3	11
JMS			1	4	5
MS				1	1
SMJ		5	17	17	39
OSc			2	3	5
OSt			1	1	1
Total	0	9	39	40	88

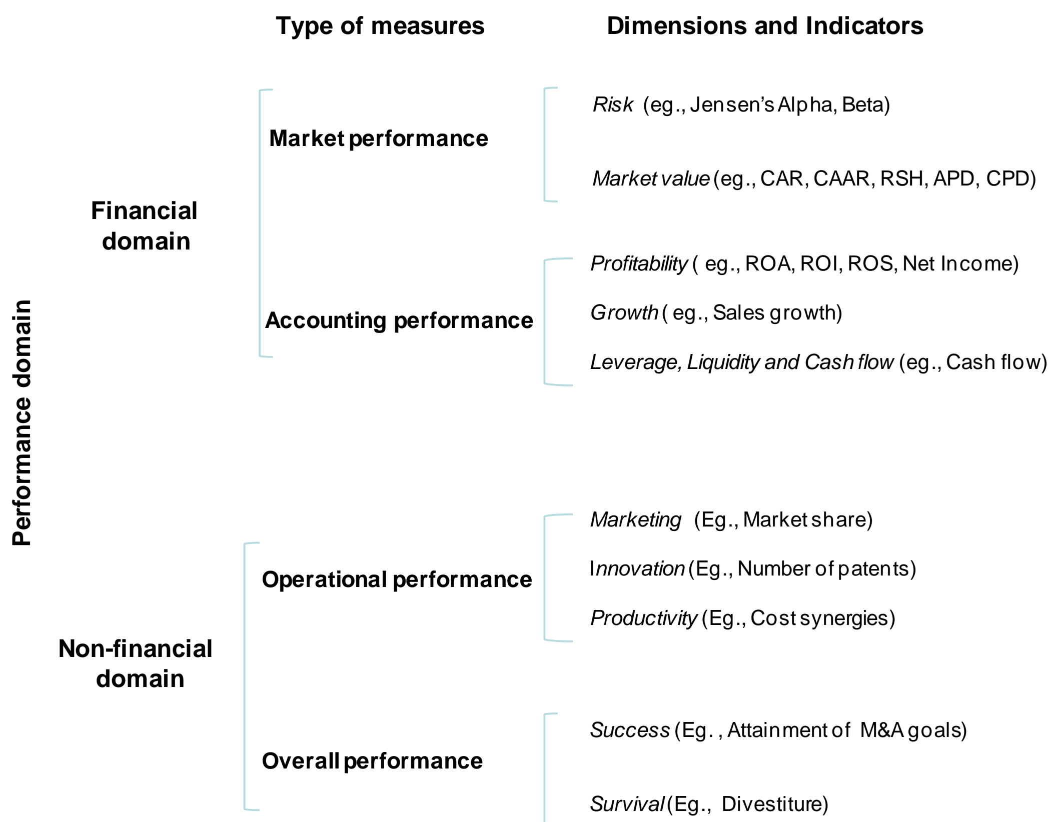


Figure 1. A classificatory scheme of M&A performance measures

	Domestic North America	Domestic Europe	Cross Border
Miscellaneous	AMJ:12 JM: 8 ASQ: 3 JMS: 3 BJM: 1 SMJ: 19 HR: 1 OSc: 1	AMJ: 3 SMJ: 3 BJM: 2 JMS: 2	AMJ: 1 OSc: 1 JM: 1 OSt: 1 SMJ: 1
Manufacturing and Mining	AMJ: 1 JM: 2 SMJ: 6	JMS: 2 SMJ: 3	SMJ: 2
Services	AMJ: 2 OSc: 1 JMS: 1 OSt: 1 SMJ: 3	ASQ: 1 JMS: 1	
High Tech	AMJ: 2 SMJ: 5 OSc: 2		AMJ: 1 JMS: 1

Figure 2. Research Settings (industries and geographical areas)

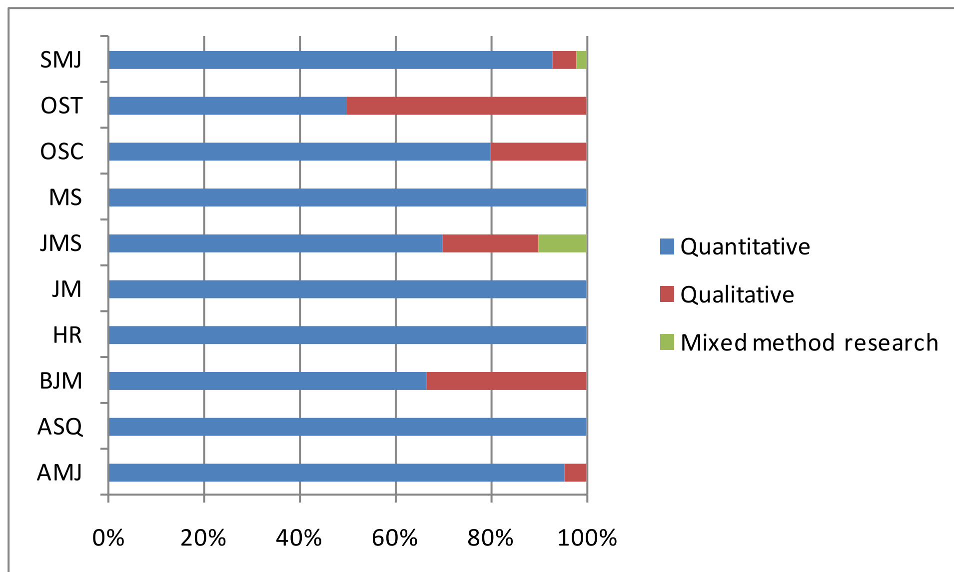


Figure 3. Research methods per journal

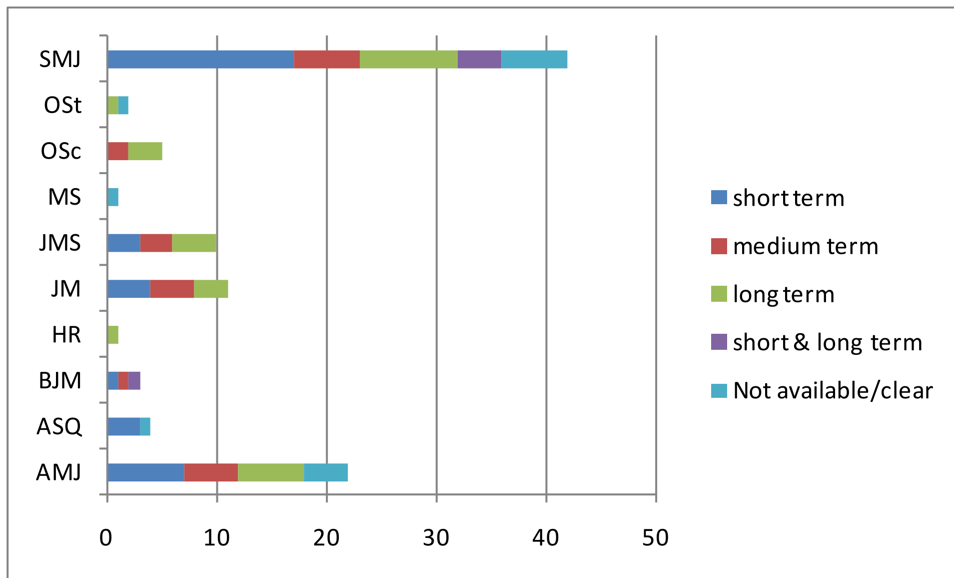


Figure 4. The time scale of M&A performance measures per journal

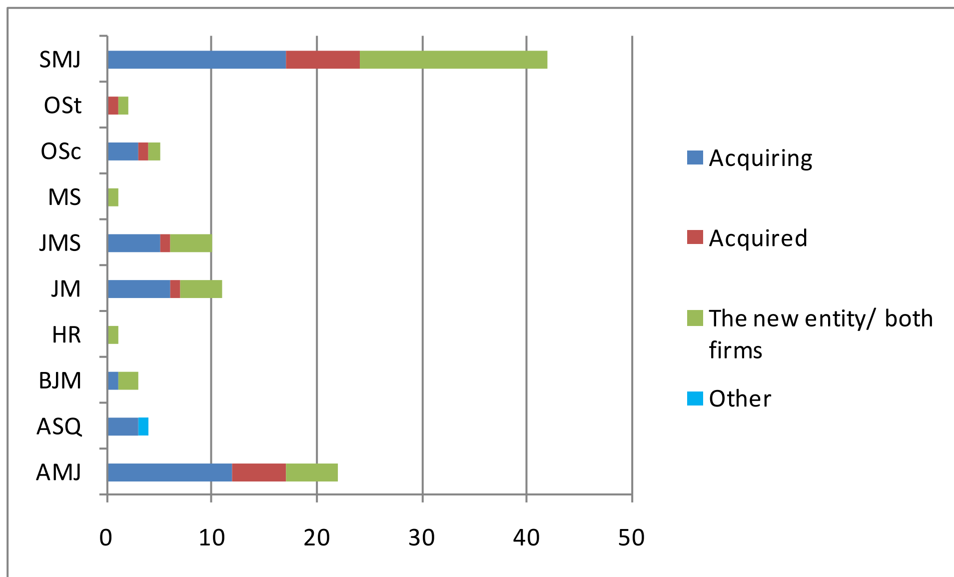


Figure 5. The unit of analysis of M&A performance measure per journal

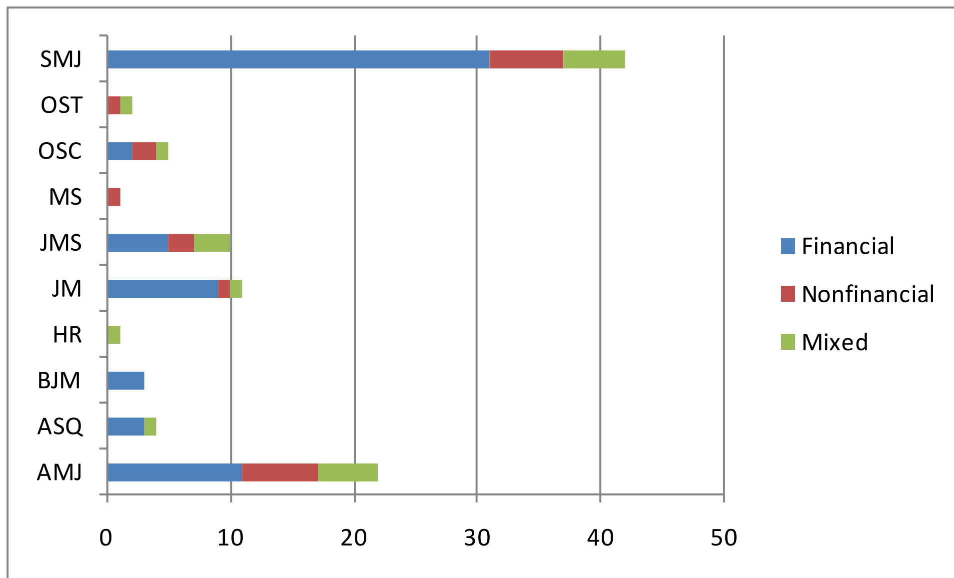


Figure 6. Domain/s of M&A performance measures across journals

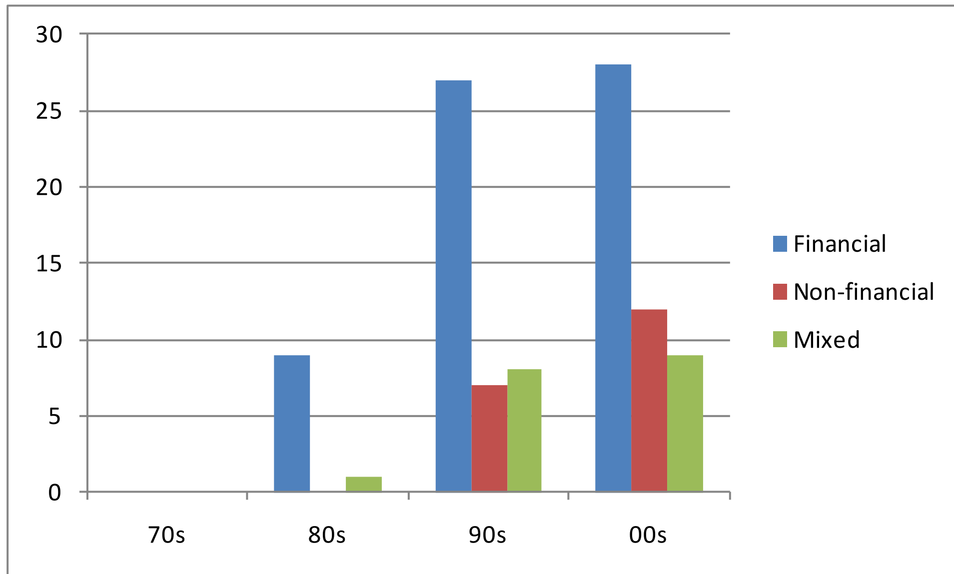
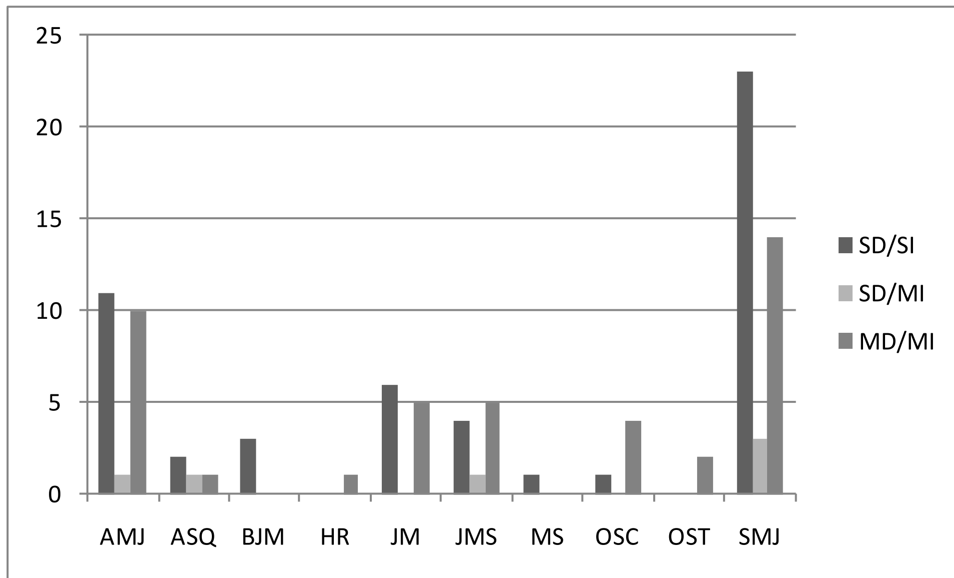


Figure 7. Domain/s of M&A performance measures over time



Abbreviation: SD: Single dimension; SI: Single indicator; MD: Multiple dimensions; MI: multiple indicators

Figure 8. Dimensions and indicators of M&A performance measures across journals

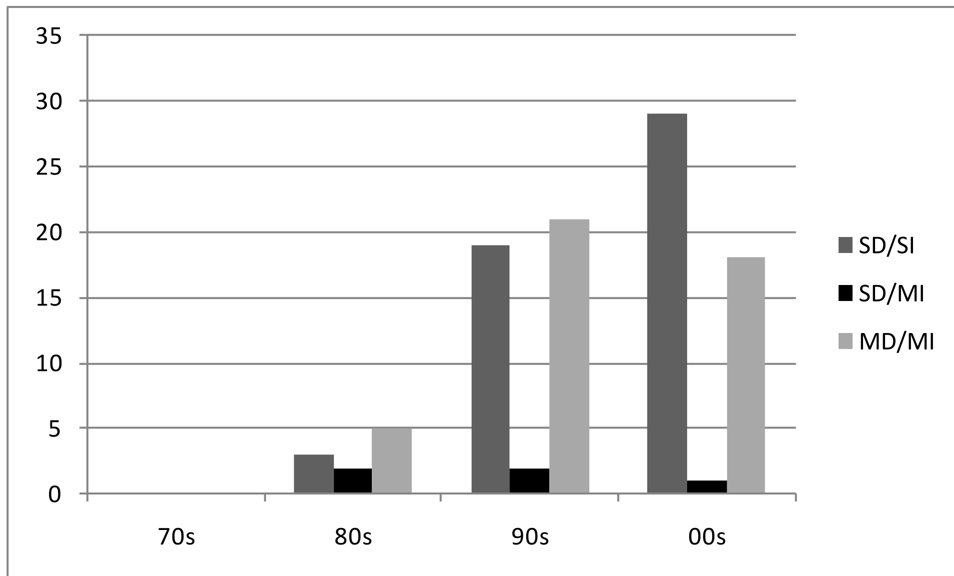


Figure 9. The evolution of M&A performance measures in terms of dimensions and indicators

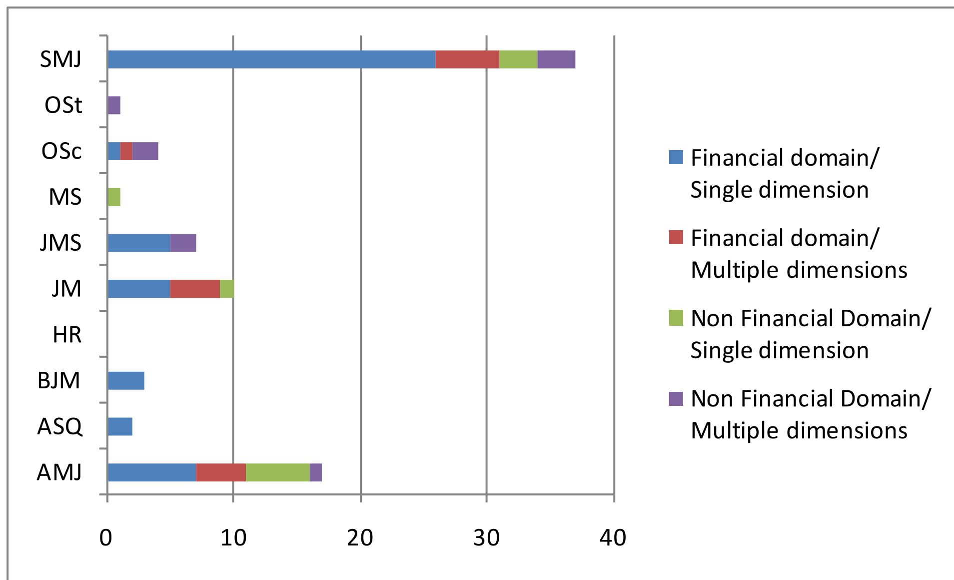


Figure 10. Domains and dimensions across journals

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Mode of assessment

Performance domain	Objective	Perceptual	Objective & Percpetual
Financial	AMJ: 11 JMS: 5 ASQ: 3 BJM: 3 OSc: 2 JM: 8 SMJ: 30	JM:1 SMJ: 1	
Non Financial	AMJ: 4 SMJ: 5 JM:1 OSc: 1	AMJ: 1 OSc: 1 JMS: 2 OSt: 1 MS: 1 SMJ: 1	AMJ: 1
Financial & Non Financial	AMJ: 3 SMJ: 2 ASQ: 1 OSt: 1	AMJ: 2 JM:1 SMJ: 2	HR: 1 SMJ: 1 JMS:3 OSc: 1

Figure 11. Domain/mode of assessment of M&A performance measures

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