



# A synergy measurement model to support the pre-deal decision making in mergers and acquisitions

Stefano Garzella and Raffaele Fiorentino  
*Department of Accounting, Management and Economics,  
University Parthenope, Naples, Italy*

## Abstract

**Purpose** – The purpose of this paper is to develop an effective synergy measurement model to support the decision-making process in mergers and acquisitions (M&A).

**Design/methodology/approach** – Relevant literature is reviewed and critically assessed. An interpretive methodology is used to analyse empirical data from a questionnaire survey and interviews of M&A experts. A framework is provided with the objective to support the process of synergy measurement and the success of pre-deal planning.

**Findings** – The authors find several mismatches in synergy measurement practices. The strategic factors, which are considered very relevant to generating reliable forecasts, are surprisingly not adequately quantified. On the contrary, a synergy measurement model may integrate the assessment of these factors: the type of synergy, the size of synergy, the timing of synergy and the likelihood of achievement.

**Practical implications** – The paper offers interesting implications for firms, advisors and consultants, pointing out that synergy measurement issues are related to the analysis of strategic factors affecting synergy. These findings suggest that the pre-planning process should integrate people and tools from different backgrounds, from strategy to accounting, to effectively measure the synergy value. The authors also suggest the development of new tools in response to the needs of practitioners for best practices in M&A.

**Originality/value** – This paper highlights that the effective use of synergy measurement models are critical to improve the success of M&A due diligence.

**Keywords** Performance measurement, Forecasting, Decision making, Synergy, Mergers and acquisitions, Due diligence

**Paper type** Research paper

## 1. Introduction

Mergers and acquisitions (M&A) are a fundamental growth strategy for firms (Collis and Montgomery, 1997). Despite the advances in M&A research, scholars do not show any meaningful difference in M&A failure rate (Cartwright and Schoenberg, 2006). Most of announcements with high expectations are often followed by disappointing performance.

Previous studies have exposed potential explanations for these failures in different theoretical approaches. Overall overconfidence, hubris, inappropriate integration process and mispricing appear as the main potential causes. The hubris and the market efficiency theory argue that M&As are related to hubris or overconfidence of CEOs (Hayward and Hambrick, 1997; Roll, 1986). The hubris hypothesis argues that firms engage in acquisitions even when no synergy exists and the takeover premium merely reflects a random error (Berkovitch and Narayanan, 1993). In this hubris-based view managerial over optimism systematically leads to overly good synergy expectations. This happens even if the strong-form assumption of the hubris hypothesis by the market efficiency theory reject any synergy hypothesis. The managerialism hypothesis, a key tenet of agency theory, posits that takeovers are primarily motivated by the self-interest of the acquirer's executives (Malatesta, 1983; Jensen, 1986). Agency costs



resulting from management decisions imply more difficulties in the integration process (Mueller and Sirower, 2003). This happens because CEOs may engage in M&As to increase their own power, because managers maximize their own utility at the expense of the firm's value, or because managers are overly optimistic and their interest diverges from those of their stakeholders (Black, 1989; Lubatkin, 1987). Finally, based on organizational behaviour and change management studies, M&A failures happen after inappropriate integration processes that lead realized synergies to be lower than expected synergies. Not to achieve expected synergies may depend on the retention of the top management of the acquired firm, on the under evaluation of the HR relevance, on the change inertia, on the firm's acquisition experience and on the wrong management of cultural differences (Buono and Bowditch, 1989; Datta, 1991; David and Singh, 1994; Haleblian and Finkelstein, 1999; Hambrick and Cannella, 1993; Hayward, 2002).

In the overpayment and misevaluation approach, the commitment, the complexity, the speed and the secrecy of the due diligence step can lead to synergy overpayment (Kiymaz and Baker, 2008). Moreover, distorted information processes push the executives to pursue objectives which do not totally or partly fit with the firms' objectives (Haspeslagh and Jemison, 1991; KPMG, 1999; Simon, 1964). Other times, the management overestimates due to the competition among several acquiring company to secure the deal. Furthermore, as Gort's (1969) theory suggests, economic disturbances could affect individual expectations and increase uncertainty. Scholars underline the role of problems in synergy measurement among these causes (Accenture, 2007; Damodaran, 2005; Mukherjee *et al.*, 2004; Rappaport and Sirower, 1999; Sirower, 1997). Eccles *et al.* (1999, p. 136), emphasizing that "many failures occur, though, simply because the acquiring company paid too much for the acquisition". This suggests the inaccurate assessment of synergy as one of the possible reasons for M&A failures (Cartwright and Schoenberg, 2006). Ambiguity of expectations represents one of the main decisional problems in M&A because "if there are no true synergies between the merging firms in the first place, then even to high quality, low-cost implementation of the merger may lead to only negligible benefits" (Zollo and Meier, 2008, p. 60). In this respect, Sirower (1997) observes that synergies are often promised but seldom realized, albeit without reporting detailed findings on potential synergy assessment. Furthermore, research shows that two-thirds of the executives involved in M&A agreements believe that they have overestimated the value of synergy expectations and that their error has substantially driven the failures of the deals (Harding and Rovit, 2005).

Prior research underlines the importance of the pre-acquisition planning, when the M&A's contribution to the overarching corporate strategy and its price are still under evaluation (Epstein, 2005). One of the main challenges in M&A is developing a pre-acquisition decision process that indicates which acquisitions are "right", even under conditions of incomplete information, rapidity and secretiveness (Cullinan *et al.*, 2004; Evans and Bishop, 2001; Zaheer *et al.*, 2013). In other words, to find true value-creating acquisitions, firms must avoid "false positive" acquisition opportunities that are generally accepted when they should have been rejected. Consequently, in this step it is fundamental to assess the risks of a bad valuation of synergy (Haspeslagh and Jemison, 1991; Rappaport and Sirower, 1999). In respect of this, the measurement of synergy value is a very relevant issue in M&As: it could affect, first, the conclusion and, then, the success of the deals (Slusky and Caves, 1991). Not surprisingly, managers and M&A advisors find the process of synergy assessment a challenging task.

Put simply, the process of planning and strategic analysis builds on the assessment of synergies, which therefore demands effective models and tools (Colombo *et al.*, 2007;

Kode *et al.*, 2003). However, the M&A literature seldom focuses on this topic (Sirower, 2003) and the results are often divergent and measurements incomplete (e.g. Bruner, 2002). Although the assessment of the value of synergy expectations is regarded as one of the most critical points in M&A performance (Larsson and Finkelstein, 1999), scholars often investigated the causes of differences between the realized and the expected synergy, focusing on realized synergy (Bekier and Shelton, 2002; Gates and Very, 2003; Haspeslagh and Jemison, 1991; Zollo and Meier, 2008). The measurement of synergy is a rather underexplored topic in the literature (Bruner, 2002; Mukherjee *et al.*, 2004; Villalonga, 2004). Theoretical and empirical research still lacks a common understanding of the effectiveness of synergy measurement in M&A. Therefore, it is necessary to extend previous models to further the measurement of synergy expectations in the pre-acquisition phase of M&A agreements, which are a key element for the success of M&A deals (KPMG, 1999). As Evans and Bishop (2001, p. 83) argue, "Synergies must not be mythical. They must be hardly contested, accurately forecasted, and appropriately discounted net cash flows that reflect their probability of success under carefully constructed and reviewed time schedules".

This paper aims to develop an effective synergy measurement model to support the decision-making process in M&A by providing evidence from a survey questionnaire and interviews with M&A experts. The paper focuses on the following main research questions: what are the practices in the measurement of synergy value in M&As? What models are the most appropriate? How to measure the synergy value in an effective way?

In an attempt to answer these questions, we developed a research project based on a interpretive approach: first, we reviewed the literature on synergy, M&A, and synergy assessment to develop an early model for measuring synergy value, based on the integration of main theoretical streams; second, we used a questionnaire survey and interviews to analyse the validity and applicability of our early model; third, by integrating theoretical insights and empirical findings, we advance a framework proposal for the synergy measurement process to avoid common mistakes in M&A.

The next section reviews the literature on synergy measurement in M&A. Section 3 discusses methodological issues, providing a detailed description of the research methods used to address the research questions. Section 4 presents and discusses the findings. Section 5 provides a proposal of synergy measurement model to support the measurement of synergy value.

## 2. Literature review

### 2.1 Synergy in M&A studies

The idea of synergy was introduced in management literature to explain the additive value created in M&A (Ansoff, 1965; Steiner, 1975; Salter and Weinhold, 1979). Based on this perspective, synergy is widely defined as "the increase in performance of the combined firm over what the two firms are already expected or required to accomplish as independent firms" (Sirower, 1997, p. 20).

In recent decades, the word "synergy" has enjoyed a very quick diffusion in most of the strategic management, finance and accounting studies (Gruca *et al.*, 1997; Zhou, 2011) until it affects M&A performance measurement studies (Zollo and Meier, 2008). These studies were engaged in performance metrics (e.g. Zollo and Meier, 2008), performance drivers in M&A (e.g. Epstein, 2005; Teerikangas and Very, 2006), frameworks for measuring the progress of M&A integration (e.g. Colombo *et al.*, 2007) or the selection of measurement approaches (e.g. Gates and Very, 2003). Over time more complete

performance models have replaced narrow definitions of M&A success and failure, taking into account several factors such as company goals and the economic and industry context. However, although the literature broadly underlines their importance, the measurement models of synergy expectations in M&A deals has been surprisingly overlooked in previous research. Many of the frameworks that integrate different perspectives on M&A utilize the degree of synergy realization, related to synergy expectations, as a measure of the deal's success (Larsson and Finkelstein, 1999). Nevertheless, despite the essential role of synergy expectations, theoretical and empirical studies mostly highlights the value difference between synergy realization and synergy expectations (KPMG, 1999; Gates and Very, 2003). Analysing this difference, scholars generally ask why the value of realized synergies was lower than expectations, rather than investigate whether the expectations were correct. However, in the decision-making process, it is fundamental to assess the risks of a bad assessment of synergy expectations (Haspeslagh and Jemison, 1991; Rappaport and Sirower, 1999). Expectations ambiguity represents one of the main decisional problems in M&A because "if there are no true synergies between the merging firms in the first place, then even to high quality, low-cost implementation of the merger may lead to only negligible benefits" (Zollo and Meier, 2008, p. 60).

The whole process of planning and strategic analysis builds on the study and the assessment of synergies and therefore is in strong need of effective models and tools (Colombo *et al.*, 2007; Kim and Finkelstein, 2009; Kode *et al.*, 2003; Zaheer *et al.*, 2013).

### 2.2 The measurement of synergy value

Because a strategy may be evaluated through the potential modifications of firm value that it generates, it is suitable to reference the "value creation theory" (Copeland, 1994; Rappaport, 1986) in the synergy assessment.

Based on value creation theories (Rappaport, 1986; Demirakos *et al.*, 2004) and synergy studies (e.g. Damodaran, 2005), it is possible to argue that the value of synergy expectations depends on the financial flows related to the potential M&A synergies, on their temporal distribution, and on the discount rate. Consistently, the improvement of the performance delivered by synergies is the present value of net additional financial flows generated by the deal that firms could not produce without the merger itself (Damodaran, 2005; Demirakos *et al.*, 2004). The synergistic effects could produce an improvement in the performance of the merged firms through increased revenues, cost savings, risk reduction and an abatement of financial needs. The value creation theory suggests to give autonomous importance to each type of forecasted synergy (Gupta and Gerchak, 2002) in order to represent specific dimensions of strategy and organizational structures. According to this approach, the synergy value is the present value of the expected synergy flows deriving from the deal, discounted back at a rate that reflects the riskiness of these flows. Valuations may be based on prior strategic analysis of the deal that requires forecasting post-merger cash flows according to the planned post-merger strategy (Cullinan *et al.*, 2004). On the other hand qualitative analyses would be reduced to mere discursive exercises without the support of quantitative measurements (Barker, 1999).

Performance measurement systems require the assessment of strategic factors affecting the value of synergy. These factors must be evaluated analytically to assess the individual synergy flows in a deal by calculating specific future synergy flows, and the effects of M&A on both risk levels and financial needs. In line with this discussion, starting from a review of the existing literature, the analysis presents many open

questions, such as: what is the expected form of the synergy? What is the expected size of the synergy? When does the synergy start affecting cash flows? What is the likelihood of achievement of each synergy type? (e.g. Damodaran, 2005). Both the qualitative and quantitative assessments of synergies are based on the answers provided to such questions.

*2.2.1 The expected form of synergy.* Since scholars categorize synergies in many ways, the starting point of the analysis of the expected form of synergy is therefore an in-depth review of studies in M&A, integrating the most relevant articles published in leading management, accounting and finance journals over the last 30 years, to identify the most relevant synergy categorizations (see Table I).

By integrating the insights from prior studies, it is possible to identify three main approaches: one, widespread in Anglo-Saxon studies, where synergies are analysed based on cost-saving expectations and on revenue growth opportunities; a second, common in European studies, where, although categorizations are rarely coincident, a common matrix can be detected in the research of synergy nature; and a third that constitutes a mix of the other two approaches.

In the “European approach”, which adopts a managerial perspective based on the typical statements of accruals and financial flows, the nature of synergies and their related flows may be analysed in relation to three areas: operations, synergies that allow firms to increase their operating income; finances, synergies that decrease the financing costs; taxation, synergies that produce tax benefits. In the “Anglo-Saxon approach” synergies are analytically correlated with the issues of “cost savings” and “revenue enhancements”.

It is worth noting that there is low standardization among the categorizations in the literature, with only few sub-categorizations that are rarely discussed.

However, despite of the explicit differences, these approaches show some areas of convergence (Porter Liebeskind, 2000). The European approach provides – in particular with reference to the operating synergies – a cost saving/revenue enhancements categorization, typical of Anglo-Saxon studies. Similarly, the financial synergies, which represent a specific category in the European approach, are individually analysed in the Anglo-Saxon model. Indeed tax synergies, other independent category in the European model, are included into financial benefits in the Anglo-Saxon way.

*2.2.2 The expected size of synergy.* Prior academic research has focused on the different sizes of the various synergy types with reference to the several features of M&A (Chatterjee, 1986; Gupta and Gerchak, 2002; Harrison *et al.*, 1991; Kim and Finkelstein, 2009). The practitioner literature includes several studies based on surveys and mainly performed by advisors and consultants (e.g. Accenture, 2007; KPMG, 1999; Bekier and Shelton, 2002). However, the topics and results of these contributions are not always consistent, making comparisons difficult.

For instance, an empirical investigation by Accenture (2007) showed that synergy expectations are not adequately valorized because they are usually only generally identified and described. Another survey by KPMG (1999) concluded that “direct operational cost reductions” are the most important type of synergy with a rate of 39 per cent; “revenue benefits” have an importance of 36 per cent; “indirect overhead cost reduction” represents 9 per cent of the overall value of the synergy expectations; and the other types of synergies together account for the remaining 16 per cent. Finally, McKinsey’s research in the IT sector found that, on average, the revenue growth decreases following a M&A deal (Bekier and Shelton, 2002).

Anyhow, an accurate analysis of expected size, not only of total synergy but also with reference to each synergy type, is fundamental in any synergy assessment in M&A.

Authors	Approach	Categorization	Sub-categorization
Bruner (2004)	Revenue/costs	Cost saving Revenue enhancements Financial synergies	
Chatterjee (1986)	Managerial	Collusive Operational Financial	
Damodaran (2005)	Managerial	Operating synergies	Growth synergy Economies of staircases Tax synergy Financing synergy Debt capacity Tax benefit Debt capacity increase Excess cash or cash slack Accretive acquisitions Quick growth
Eccles <i>et al.</i> (1999)	Revenue/costs	Cost savings Revenue enhancements Process improvements Financial engineering Tax benefits	
Evans and Bishop (2001)	Revenue/costs	Revenue enhancements Cost reduction Practice improvements Financial economies	Higher unit sales Selected price increases Positions Overhead Related fixed asset Technology Process Cost of capital Tax benefits
Goold and Campbell (1998)	Mixed	Shared know how Shared tangible resources Pooled negotiations power Coordinated strategies Vertical integration Combined business creation	
Harding and Rovit (2005)	Mixed	Elimination of the duplications of business functions Sharing of the operational costs Rationalization installs Synergie of proceeds	Existing products through new channels New products through new channels
Haspeslagh and Jemison (1991)	Mixed	The common use of the operational resources Transfer of the functional competences	

**Table I.**  
Synergy categorization in selected M&A studies  
(continued)



MD 52,6	Authors	Approach	Categorization	Sub-categorization
<b>1200</b>	Larsson and Finkelstein (1999)	Managerial	Transfer of the competences of general direction Due benefits to the combinations Operational	Production Marketing R&D Administration Market power Purchasing power
			Collusive Managerial Financial	Applying complementary competencies Replacing incompetent managers Risk diversification Coinsurance
	Mukherjee <i>et al.</i> (2004)	Managerial	Operating economies Financial economies Increased market power Differential efficiency	

Table I.

*2.2.3 The timing of synergy.* Two factors make timing particularly important in the measurement of synergy expectations: its impact on the likelihood of achievement (Angwin, 2004; Harding and Rovit, 2005) and its influence on the discount value (Evans and Bishop, 2001; Deloitte, 2007).

With regard to the former, several studies have found that synergy achievement becomes increasingly difficult over time (Bert *et al.*, 2003; Haspeslagh and Jemison, 1991; Hinthuber, 2002). Whereas some of them suggest that the temporal lag between closing and the start of integration “has the strongest and most negative effect on the acquisition performance” (Colombo *et al.*, 2007, p. 215), other studies argue that the speed of the integration can positively or negatively influence the success of M&A deals (Homburg and Bucerius, 2006). In this context, some trade-offs may generally emerge between the possibility of realizing lower short-term synergy flows and the opportunity for higher but long-term benefits. With reference to the latter reason for the importance of timing, value creation theory argues that, if all other conditions are equal, the value of synergies is negatively correlated to the timing of their realization (Copeland, 1994; Rappaport, 1986).

Notwithstanding these contributions, the effect of timing on synergy value is not always adequately considered in M&A research (Sirower, 1997). This topic seems to be neglected in managerial practices as well. Indeed, as Eccles *et al.* (1999) suggest, firms often underestimate the time needed for the realization of synergies.

*2.2.4 The likelihood of achievement.* Ambiguity of expectations, representing one of the main decisional problems in M&A, make the likelihood of synergy achievement a relevant factor for the depth of synergy measurement (Cullinan *et al.*, 2004; Damodaran, 2005; Evans and Bishop, 2001).

In the literature, the likelihood of achievement of a synergy is generally related to the ease of its realization. In academic research, many studies have measured the degree of synergy achievement with reference to the features of both the firms involved and the realized M&A, although their results have not always been consistent.

For example, some scholars have suggested (Bradley *et al.*, 1988) that the success of a deal is positively correlated to the degree of relatedness of the involved firms; however, others have found that the likelihood of success is greater in unrelated mergers (Lubatkin, 1987; Harrison *et al.*, 1991). Finally, a few studies have analysed the likelihood of achieving different types of synergies based on specific characteristics of M&A deals, such as horizontal/non-horizontal, related/unrelated or complementary/similar (Chatterjee, 1986; Zaheer *et al.*, 2013).

On the practitioners' side, surveys conducted by advisors and consultants have demonstrated different levels of achievement between revenue growth and cost-saving synergies. Specifically, the likelihood of success of each type of synergies depends on both the difficulty of assessment and the intensity of implementation efforts. However, the evidence remains ambiguous. For instance, Harding and Rovit (2005) argue that cost-saving synergies are easier to realize. However, in a survey by Accenture (2007), only half of the respondents affirmed that their expectations on revenue growth synergy had been achieved and only 45 per cent of them declared that their expectations for cost savings had been met (Accenture, 2007). Similarly, the results of McKinsey's study found that more than the 40 per cent of M&A deals do not meet expectations in terms of cost-saving benefits (Bekier and Shelton, 2002).

Surprisingly, despite the number of contributions, the literature presents no empirical evidence on the likelihood of achievement of each synergy type. Furthermore, studies have generally overlooked the analysis of "how" the likelihood should be estimated.

In conclusion, the factors relevant for the measurement of synergy value are as follows (Accenture, 2007; Barker, 1999; Damodaran, 2005; Evans and Bishop, 2001; Harding and Rovit, 2005):

- type of synergy;
- size of synergy;
- timing of synergy; and
- likelihood of achievement.

Therefore, to identify the synergy value that will be achieved, using an analytical approach, the type, weight, timing and ease of realization of each synergy must be considered.

### 3. Methodology and research design

#### 3.1 Methodological issues

The measurement of synergy value in M&A is a relatively unexplored area of research. Some studies focus on practices of valuation models in M&A (Mukherjee *et al.*, 2004; Villalonga, 2004) and other recent research focuses on methodological issues in M&A performance measurement (Zollo and Meier, 2008).

There is a lack of studies attempting to provide both a comprehensive comparison of a range of different measurement models and an in-depth investigation of strategic factors affecting the assessment of synergy value.

In order to overcome this gap, we adopt a interpretive methodology (Hopper and Powell, 1985; Lukka and Modell, 2010; Orlikowski and Baroudi, 1991). The interpretive approach is already an accepted method, putting emphasis on lived experience, in management and social studies. We use survey and semi-structured interview data together with prior literature review to observe experts' measurement model preferences



and suggestions. Thus, we do not rely on statistical analysis of our survey's results to test specific hypotheses about the expert's use of synergy measurement models: empirical data from a questionnaire survey are used to indicate patterns of valuation models and related strategic factors; additional interview data are used to provide further evidence on the appropriate interpretation of these patterns.

Our research provides insights into the ways experts use synergy measurement models to generate valuation primarily of synergy value and, then, of M&A value (Imam *et al.*, 2008). Most importantly, we fill a gap in the synergy assessment literature by describing the views of non-managerial figures.

First, we use a questionnaire to ask M&A experts what synergy measurement models they use. Motivated by academic and practitioner interest in versatile synergy measurement, we check for consistency among several models. Qualitative data analysis derived from several readings and iterations, highlighting frequently occurring themes (and patterns). Specifically, we identify the extent to which alternative models are used.

Second, we address the question of what model is the most appropriate and the related question of why experts use particular measurement models. We ask them to rate the adequacy of the different models in a questionnaire and semi-structured interviews, providing both quantitative and qualitative data. In investigating the relative appeal of different models, we ask in interviews why certain decisions might be of greater or lesser practical use for M&A experts. This approach enables us to explore theoretical, technical and contextual reasons for the differences in relative usage of the various models.

Our analysis of how synergies are measured makes use of both survey and interview data. Survey data were used to identify respondents' perceptions of M&A actors' behaviours regarding the use and features of strategic factors when assessing synergy value. The following interviews are used to validate previous data and to provide insight into the role of synergy measurement process.

Our approach therefore allows us to check for consistency between what experts consider as the most appropriate models for synergy measurement and the models actually used. Our data analysis is motivated by the widespread academic and practitioner interest in the relevant factors for the measurement of synergy value and their strategic analysis. Specifically, using survey and interview data, we identify the extent to which alternative measurement models are used, including the ways to effectively use those.

### 3.2 Research methods

Building on the previous literature review, we designed a research project using two complementary research methods. The first, a survey questionnaire distributed to Italian practitioner-professors, is used to provide an in-depth understanding of the issues. The second, involving interviews with international experts and executives, is used to validate and extend questionnaire data. Validation by research participants is common in interpretive methodology, and involves presenting the results to the original informants or others like them in order to obtain feedback and correction.

*3.2.1 Survey questionnaire research.* We conducted a survey of a unique type of M&A experts, usually administrators, CEOs, advisors and consultants. We selected our key informants from the community of full professors of accounting, finance, management, organization and strategy at AIDEA, the Italian Academy of Business Administration and Management. These key informants are relevant because of their direct experience with M&A deals as a part of their career. All of the respondents were involved in synergy measurement, in research, practice or in both. In this way, we were able to target experts with both business and academic experience.

We utilized a survey because it is a common and accepted method in research on M&A (Bruner, 2002; Mukherjee *et al.*, 2004; Villalonga, 2004). We aimed to answer the following questions:

- (1) What are the practices in the measurement of synergy value in M&As?
- (2) what models are the most appropriate?
- (3) how to measure the synergy value in an effective way?

AIDEA has 462 members, but we included only 442 members with an available e-mail address. Due to legislation that allows professional development, most AIDEA members are administrators, CEOs, advisors or consultants in Italian and foreign companies.

The sample reflects the different views among the several research areas of M&A and between those respondents who were involved in this topic for academic research reasons, professional reasons or both. Our findings can be compared with those of similar studies addressed to senior executives (Eccles *et al.*, 1999). In total, 56 questionnaires were returned, giving a 12.67 per cent response rate, consistent with similar research (Gates and Very, 2003; Mukherjee *et al.*, 2004). Of these, we specifically excluded 23 questionnaires due to a lack of direct experience with M&A or incomplete answers. The final sample was therefore comprised of 33 respondents who were directly concerned about synergy measurement. We checked for non-respondent bias. We did not find significant differences compared to the values of respondents (Table II).

The survey questions were included in a more comprehensive questionnaire on synergy in M&A. The development of the questionnaire followed Dillman's (2000) method. In the first step, the questionnaire was developed and adapted from existing literature. Second, the first English-language version was circulated among the members of the research project group and underwent several revisions. At the same time, an Italian-language draft version was developed and submitted to the scrutiny of five academics. They provided critical comments on both the items and the layout and sequence of the questions. The e-mail contained a letter of introduction and the English draft version of the questionnaire. Approximately one month later, a reminder e-mail with the Italian draft version was sent to those who had not responded.

**3.2.2 Interview research.** The empirical research included a second step to compare and validate prior results with the opinions of international experts and executives and to deepen the investigation of synergy measurement models (Hodgkinson *et al.*, 2001). We interviewed five respondents to the previous questionnaire survey and 11 managers and international M&A experts (six practitioners and academics from European, Mexican and US business schools, and five executives from Italian, Irish and English firms that were listed or controlled by listed groups and involved in M&As).

	Main reason for M&A involvement		Synergy involvement			Accounting and finance	Academic area		Total
	Academic	Professional	Both	Yes	No		Strategic management	Organization and management	
<i>N</i>	6	9	18	29	4	10	12	11	33
(%)	18.18	27.27	54.55	87.88	12.12	30.30	36.36	33.33	100

**Table II.**  
Summary of survey questionnaire respondents

The choice was driven by pragmatic concerns. Experts were selected among those who were involved in prior steps of the research or consented to participate following a request by e-mail. Specifically, we interviewed the five AIDEA experts among the 18 respondents involved in synergy measurement for both academic and professional reasons, of the prior questionnaire survey. Indeed managers and international experts were selected in two ways. First, we asked willingness to interviews to academics of the top rating world business schools involved in synergy assessment for research and professional reasons. Second, we asked willingness to interviews to managers of firms involved in M&As listed on the London Stock Exchange (Italy and UK). The final sample of interview respondents includes experts from six countries, with different roles, and working in 12 sectors. Respondents were involved in two to 200 deals in the five years before the interviews (Table III).

The interviews included open-ended questions about synergy measurement and strategic factors affecting synergy value. During the interviews (five face-to-face and 11 telephone), which lasted 30 to 60 minutes, we asked for their opinions about our previous results, their perceptions, their suggestions and their practices.

The respondents were asked about their past and current M&A experiences, specifically their most relevant experiences during the previous five years. Furthermore, the interviews conducted in person were developed around interactive discussions (Huff and Jenkins, 2002).

After transcribing the interviews, qualitative data were analysed through several readings and iterations to highlight frequently occurring themes and patterns and to retain illustrative quotations (Miles and Huberman, 1994).

#### 4. Results and discussion

Our explorative research aimed to provide a comprehensive view on the practices of synergy measurement and the adequacy of synergy measurement models in M&A.

We have asked for the path, the relevant factors and other relevant features of measurement models. We would like to analyse the extent to which alternative models

Industry firm	Respondent's role	Country
Banking	CFO	Italy
Recruitment	CFO	UK
Real estate	Director equity capital Market and IR	Italy
Insurance	CFO	UK
Building material	Chairman	Ireland
Consulting	Strategic consultant	UK
Consulting	Strategic consultant	Netherlands
Manufacturing	Executive director	Mexico
Biotechnology	Executive director	US
Financial advising	Financial advisor	US
Financial advising	Independent advisor	US
Manufacturing	Financial consultant	Italy
Banking and manufacturing	Statutory auditors board member, executive officer	Italy
Logistics	General manager	Italy
Banking and manufacturing	Statutory auditors board member, independent director	Italy
Energy and publishing	Chairman of the Statutory Auditors Board, executive director	Italy

**Table III.**  
Characteristics of  
interview respondents

are used and we wish to understand the suitability of models used to assess the synergy value in M&A.

First, we have asked what is, in respondent opinion, the most appropriate model to measure synergy by an open-ended question.

The findings suggest that the effectiveness of the synergy assessment process depends mainly on the measurement of strategic factors. The following quotations are representative:

The most useful models are the models that offer a more analytical representation of factors that can potentially lead to synergies (Strategic management professor).

Second, we have investigated the relevant factors for the measurement of synergy value. We have asked what types of information should be of greater or lesser practical use to the measurement and how their estimation affects the effectiveness of synergy measurement. We would like to know how important are the strategic factors affecting the synergy assessment: type, size, timing and likelihood of achievement. Furthermore, we would like to acquire information on ways in which strategic factors are used and converted into synergy value.

Specifically, the experts' answers provide interesting insights into the relationships among the factors and the results for each factor.

Type of synergy. We asked in the e-mail questionnaire if the analysis of synergy form is useful to the synergy measurement process. We have asked what is the most appropriate categorization of synergy in respondent's opinion. At the following stage we have asked whether the categorization into operating, financial and tax synergy types, developed in our early model, is the best approach in practice. The respondents' answers confirmed that the proposed categorization system is the most useful in M&A deals. The opinion of survey respondents was validated by interview's respondents since interview data substantially confirm the questionnaire results (Table IV).

However, this categorization is not sufficient; respondents suggested that sub-categorizations be used, especially for operating synergy. Synergy categorizations generally vary based on the respondents' background. Strategic management scholars and some managers give great importance to such types as "strategic synergy", "knowledge synergy" or "cultural synergy". Different categorizations were advanced such as the value-chain approach, the Medcoff's (1997) criteria, the model of Goold and Campbell (1998), the model of the external constraints.

These categorizations are primarily based on strategic models and tools. For example, two experts argue:

All of the categorisations based on value chain features are useful for the synergy assessment process (Strategic management professor).

In contrast, accounting and finance experts, such as chief financial officers, give autonomous relevance to different synergy types, such as "investment synergies"

	Synergy categorizations		
	"Operating, financial, tax"	Others	Total
Most appropriate	25 (75.76%)	8 (24.24%)	33 (100%)

**Table IV.**  
Results on the synergy categorization

or “discount rate”. Their categorizations are based primarily on finance and accounting models, such as “cash flow categorisations”, “performance measurement systems” dimensions, “external constraints” or repetition. An illustrative quotation is:

Categorisation as a one-time or on-going synergy is very useful (Chief financial officer of banking firm).

1206

Interview data generally confirm the results from the survey questionnaire and provide evidence of the great relevance of information on this strategic factor and ways to categorize and assess synergy (Table V).

In the experts’ opinions, firms, advisors and consultants seldom integrate accounting, finance and strategy approaches. On the contrary, they suggest the need to integrate different approaches available in the literature to make synergy assessment more effective.

One generally overlooked categorization that was discussed as relevant in many interviews is the “area” where the synergies are allocated: at the corporate, the division or the Strategic Business Unit (SBU) level. The respondents felt this categorization to be relevant because it affects the magnitude and the likelihood of achievement of synergy. Although synergies develop at the corporate level, operating synergies can be observed, and consequently measured, at various levels. The market, manufacturing and supply synergies are generally created at the business level, but they could also develop at the corporate level; in the reorganization of mixed structures, operating and infrastructural activities are placed and centralized at the corporate level (e.g. purchasing, research, technology, some manufacturing steps and advertising); in multidivisional organizations, some of the prior operating synergies generally show up at divisional level (e.g. the cost savings from sharing a plant between two SBUs). The infrastructural synergies are generally placed at the divisional or corporate level.

It should also be highlighted that operating synergies, in particular, can occur in several SBUs, but if they are not infrastructural, they cannot be assigned to each SBU exclusively. Instead, their value is created by the firm as a whole after the M&A. The following quotation reinforces this point:

In order to develop an effective and complete synergy assessment, the main challenge is to find synergies in the financial flows related to revenues and costs, which are often too simply allocated to SBUs, and extrapolate them from the SBU, giving them autonomous properties (Strategic consultant).

Accordingly, we felt that it was necessary to develop a new system for categorizing synergies, built on a managerial approach, that may overcome the nearly mutually exclusive distinction between cost-based and revenue-based synergies (Capron, 1999) and develop appropriate sub-categories.

Size of synergy. This section analyses the weights of different synergy types and the relevance of this factor in the synergy assessment process. The survey questionnaire data show that the operating synergies are the most important type (Table VI).

**Table V.**  
Results on synergy  
sub-categorization

	Synergy sub-categorizations		Total
	“Used”	Not used	
Use	26 (78.79%)	7 (21.21%)	33 (100%)

Our results underline that the operating synergies are among the main determinants of M&As, consistent with the previous literature. Bhide (1990), examining the motives behind 77 acquisitions, argued that operating synergy was the primary motive in one-third of these takeovers. Similarly, Mukherjee *et al.* (2004) found that synergies that we defined as “operating” are the main source of synergy value, observing that “operating economies” were selected as the main source by 89.9 per cent of respondents and “increased market power” by 4.35 per cent.

The interviews confirmed the weights of several synergy types and, mostly, shed light on the synergy value assessment process. The interviewees underlined that value is created primarily through the realization of operating synergies, supported by financial synergies, which are also an important managerial lever. Tax synergies appear to be almost entirely unimportant for value creation, if only for the increasingly compelling reason of avoiding evasion; however, tax synergies seem to have a remarkable impact in turnaround strategies. The following responses describe some aspects of the process of assessing synergy size:

Operating synergies are the more relevant. However, they, and especially revenue synergies, are generally too high. Buyers tend to underestimate the future expenses required in order to achieve their expected synergy sales. In this way they overestimate real synergies. They find it difficult to forecast operating expenses and often underestimate time and costs needed to implement operating synergies (Chief financial officer of manufacturing firm).

In summary, it is not misleading to argue that synergy value is created primarily in the operational businesses and in their interrelations. However, the financial and tax synergies are able to supplement the operating synergies, but they are not the main strategic aim.

Timing of synergy. We have asked what is a time horizon generally framed for the realization of synergies and whether the time frame horizon is generally respected. When analysing the practices regarding the assessment of the amount of time needed for synergy achievement, we find a substantial inconsistency among the time frames for synergy realization and whether they are respected. These findings provide evidence that firms underestimate the time needed to realize synergy (Eccles *et al.*, 1999) (Table VII).

The most common average expected timing of M&A operations obtained in our survey was between three and five years. Respondents argued that if the timing is a remarkable factor *ex ante* when synergies are assessed during the decision process, the deadlines of the deals are not respected; moreover, the synergies take longer to achieve than expected.

	Weight of each type of synergy			
	Operating	Financial	Tax	Total
Mean (%)	52.174	29.522	18.304	100
SD (%)	21.470	12.128	11.764	
Variance (%)	460.968	147.079	138.403	
Median (%)	50	30	15	
Number	23	23	23	
Confidence interval <sup>a</sup>	43.399 < Mean < 60.948	24.565 < Mean < 34.478	13.496 < Mean < 23.112	

Note: <sup>a</sup> $\alpha = 0.05$

**Table VI.**  
Weight of each type of synergy in the assessment process



The timing of the deal is not respected not only because of the integration process but also because of an ineffective assessment process, as summarized by the interviewees as follows:

Deals do not end within scheduled deadlines because during the integration the management will find hundreds of exceptions. They never consider that in the due diligence so that they can estimate a shorter time (Independent advisor).

The interviewees argued that the assessment of the time is a very relevant factor related to the synergy types and able to affect both the likelihood of achievement and the synergy size. The following quotation illustrates this view:

For the success of the deal and to respect the deal's aims, it is important to achieve short-term results in each synergy type (Strategic management professor).

However, the assessment of the timing of the synergy is sometimes affected by contextual factors and external pressures. Valuation processes assume short durations that imply a lower discount rate and a higher synergy value. One expert provided the following summary of the effect of timing on synergy value:

The best timing never coincides with the assessed timing due to the pressure from the stakeholders, who are interested in seeing results immediately. This pushes the firm to base choices on a short-term horizon in the assessment process and then to reformulate the delayed time into the integration process (Strategic management professor).

Indeed, the assessment and the respect of deadlines are related to the synergy types, as in the following respondent's opinion:

Scheduled deadlines are respected with reference to financial and tax synergies. However, when deadlines for operating synergies are respected, firms give up "gap analysis" (Finance professor).

Because the timing affects the value creation of the deal, timing itself may be one cause of the reduced creation of value by M&As demonstrated in several previous studies.

Likelihood of achievement. We asked respondents to the e-mail questionnaire about the likelihood of achieving synergy in M&As by asking respondents to rate the ease of realization of different synergy types. Indeed, the ease of realization is the reciprocal of the likelihood of achievement. In the respondents' opinion, operating synergies have the lowest likelihood of achievement, and tax synergies have the highest (Table VIII).

The interviewees confirmed that the differences between the real and expected costs and revenues of synergy depend on the categorization of operating, financial and tax synergies. In this vein, two experts argued as follows:

Buyers often tend to underestimate the transition times to implement operating synergies. At the same time, the related risk is not adequately captured, for example, by taking into account the synergy likelihood of achievement for the discount rate (Statutory auditors board member of a banking firm).

Cost synergies are more likely to be achieved than revenue synergies:

As of today, I would be able to corroborate the value generated by the operation only with reference to cost synergies (Director of equity capital market of real estate firm).

	Timing of synergy		Total
	Yes	No	
Assessment	28 (90.32%)	3 (9.68%)	31 (100%)
Respect	8 (29.63%)	19 (70.37%)	27 (100%)

**Table VII.**  
Results on the  
timing of synergy

Therefore, evidence from the interviews lend more support to the results from practitioners' research (Accenture, 2007; Bekier and Shelton, 2002; Harding and Rovit, 2005), arguing that different types of synergy have different likelihoods of being achieved (Bradley *et al.*, 1988; Chatterjee, 1986; Cullinan *et al.*, 2004; Lubatkin, 1987).

On the contrary, the operating synergies, which carry the greatest weight in M&As, are also the category of synergies that is most difficult to realize. Tax synergies, which have a smaller absolute magnitude, are much more easily realized:

The likelihood of synergy achievement is not assessed because optimistic approaches reign during the deals in order to conclude the merger (Financial advisor).

For the operating and tax synergies, an inverse relationship seems to emerge between size and likelihood of synergy achievement. For the financial synergies, there is no substantial misalignment between size and likelihood of achievement.

The interviewees argued that these findings are related mainly to the optimization of a trade-off between the accuracy and quantity of data and the time needed for M&A integration. Thus, it is necessary to decide between an objective and quick analysis with limited significance or a highly subjective and time-intensive analysis using more meaningful data. These findings are consistent with prior studies demonstrating that this choice is very important in the exploitation of the synergies because they are not all equally identifiable, achievable and evaluable (Eccles *et al.*, 1999; Hamel and Prahalad, 2005).

### 5. Towards a synergy measurement model to support the pre-deal decision making

Our empirical findings show the need to warn firms of the potential risks of inaccurate synergy estimations and, at the same time, suggest that an effective synergy measurement model have to be developed to increase the likelihood of M&A success. This model needs to analyse together four factors: synergy form, synergy size, synergy timing and synergy likelihood. Based on these findings, we advance a model useful to support the pre-deal decision making. The measurement process should start from the analysis of synergy form. First, an examination of "what" is the synergy nature is useful, distinguishing operating synergies from financial and tax synergies and providing suitable sub-categorizations. A pure operating logic aiming to increase market power and the efficiency of manufacturing processes is the basis of operating synergies (Sirower, 1997). Financial synergies are created to reduce financing costs by

	Ease of realization of each synergy type			Total
	Operating	Financial	Tax	
Mean (%)	25.889	35.788	38.333	100
SD (%)	10.959	7.092	12.833	
Variance (%)	120.104	50.301	164.706	
Median (%)	22.5	37	40	
Number	18	18	18	
Confidence interval <sup>a</sup>	20.826 < Mean < 30.952	32.501 < Mean < 39.054	32.404 < Mean < 44.262	

Note: <sup>a</sup> $\alpha = 0.05$

**Table VIII.**  
Ratings of the likelihood of achievement of each type of synergy

sharing financial resources and exploiting possible cash flow asynchronies between involved firms (Porter Liebeskind, 2000). The final sub-category consists of tax synergies that aim to decrease taxation pressures on firms (Copeland, 1994) by reducing the taxable income and the tax band. Second, executives should forecast “how” these synergies will arise with reference to the financial exhibition of synergistic flows. Each prior type or sub-type of synergy should produce higher revenues or lower costs. Third, the measurement process should clarify “where” synergistic flow may be allocated: at one SBU, at one division or at the corporate level. The organizational level of synergy allocation should help the observation and the measurement of synergy. Some synergies are most likely to occur at the corporate level more than within SBUs or “intermediate” divisions, which groups SBUs. On the contrary different synergies will be far fewer in number and more difficult to identify at the corporate level.

It is advisable to develop the analysis of synergy form in an initial stage because the type of synergy differently affects the other three factors: the size, the timing and the likelihood of achievement (Hayward, 2002; Ahuja and Katila, 2001). Operating synergies generally have broader effects than financial and tax synergies. Cost, financial and tax synergies generally require less time than operating and revenue synergies do. Indeed, the timing of synergy affects its size and likelihood of achievement. These reflections suggest to simultaneously analyse the size, the timing and the likelihood of achievement in the second stage of the synergy measurement process. The examination of synergy size should push to the quantification of synergistic flows related to each synergy type. The investigation of timing and likelihood of realization should support the assessment of the discount rate of prior synergistic flows (Figure 1).

Executives should place the values of the various synergies, thus promoting the correct estimation of the size of each type of synergies and the assessment of the total synergistic flow. In order to improve the analysis and the measurement of synergies, it should be useful to assess the timing, measuring the synergies for each step of the implementation process. In this way, the specific synergistic flows are allocated over time to the year/period in which the integration process is structured and the synergies will be realized. The measurement model is completed by the consideration of the likelihood of realization since it affects the measurement process by its rationalization in the

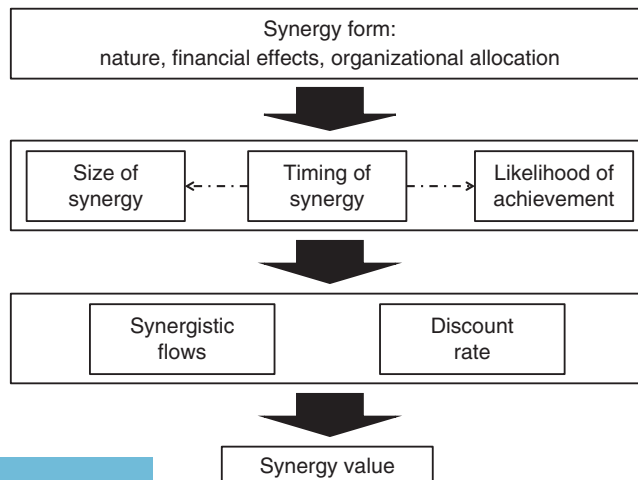


Figure 1.  
Towards a synergy  
measurement model

assessment of the discount rates of the synergistic flows of each synergy statement (Cullinan *et al.*, 2004). The issue of “likelihood’s measurement” should be achieved by two main alternatives ways. The first method is to develop the analysis decreasing synergistic flows consistently with their probabilities. The second way is to develop the expected value analysis by increasing the discount rate of synergistic flows.

The synergy value will be achieved through the actualization of the results arising from the various synergy statements of the interim periods. It is possible – based on the complexity of the deal, the information needs and data availability – to use more than one rate in the discounting process in order to reflect the different likelihood of realization of each type and timing of synergy.

The determination of the synergy value presupposes awareness and comprehension of what are the fundamental assumptions and the key variables about the growth strategies of involved firms. The validity of the strategic analysis, the understanding of what are the main success factors of the integration process, the awareness of the strengths and weaknesses of companies are the inevitable premise of a good quantitative analysis of synergy. Therefore, all of the tools that are useful to facilitate the passage from the qualitative to the quantitative analyses should be used, articulating the connection between the strategic analysis and the measurement model. The potential synergies should be translated into financial forecasts identifying the changes that the deal will produce on the cash flows of the companies involved (Rappaport, 1986).

These tools should lead researchers and practitioners to analyse the main dimensions of synergies, developed and tested in the model, by understanding what are the specific synergistic flows related to each type of synergy and what is the overall amount of synergy in a defined period of the integration process.

## 6. Conclusions

This paper investigates the synergy measurement models in M&A processes to respond to the need for a comprehensive view of synergy assessment. As far as we know, this is the first time that a comprehensive investigation of synergy measurement models in M&A has been developed. The M&A experts who were surveyed and interviewed conveyed both the academic and practitioner views while decreasing the response bias.

Thus, our research on synergy assessment in M&A extends current knowledge in several ways: previous studies have not described a survey specifically focused on the synergy measurement process; research has seldom related performance measurement issues to strategic management issues as strategic factors affecting synergy; and our survey was addressed to a sample that subscribed to both the academic and the practitioner views. Despite the possibility of non-response bias, our findings offer useful preliminary evidence to improve both academic and practitioner knowledge. The findings, which are consistent with the insights of prior studies (Eccles *et al.*, 1999; Larsson and Finkelstein, 1999), show that the synergy assessment process and the effective use of synergy measurement models are critical to reducing the M&A failure rate (Cartwright and Schoenberg, 2006).

We find several mismatches in measurement practices. We find evidence that all of the information on strategic factors affecting the synergy value is very relevant. However, the strategic factors are often inadequately quantified.

There are several ways of categorizing synergies, and operating synergies are the most relevant and the most difficult to realize. The theoretical approach to synergy categorization does not generally match its effective use in practice. This result suggests the need to use a more structured approach to synergy types in future research to capture

all of the dimensions of analysis that are required in practice. Timing is an influential factor in synergy assessment, but synergies take longer to achieve than expected. In addition, the time estimated for synergy to be realized is not respected. This result implies that more rigorous estimation of the time needed for synergy achievement would be beneficial. Finally, the difference between the importance of each type of synergy and its likelihood of achievement suggests that future studies should consider the risks of synergy achievement and their increased relevance to the M&A process. This finding suggests that firms should integrate workers and tools from different backgrounds, from strategy to accounting, to effectively assess the synergy value, consistent with the call for cooperation between strategy, accounting and valuation (Damodaran, 2005).

By addressing empirical findings, we advance a model for synergy measurement in response to the needs of scholars, managers and advisors for best practices in pre-deal decision making. The use of the suggested synergy measurement model could facilitate the pre-acquisition decision process that indicates which acquisitions are “right”.

To conclude, this study suggests useful implications for both scholars and practitioners, but it also raises many questions for future research. Our results could be the starting point of extended future research on the performance of M&As. It will be important: to test the relation between the effective use of factors affecting the measurement of synergy expectations and the success of M&As; to analyse the use of measurement models in the corporate reports tied to the deals; to expand framework on the performance of the M&As, able to integrate strategic factors affecting the synergy value; to develop new tools to measure the main dimensions of synergies.

### References

- Accenture (2007), “Strategy in action. The synergy enigma”, Accenture, available at: [www.accenture.com](http://www.accenture.com)
- Ahuja, G. and Katila, A. (2001), “Technological acquisition and the innovation performance of acquiring firms: a longitudinal study”, *Strategic Management Journal*, Vol. 22 No. 3, pp. 197-220.
- Angwin, D. (2004), “Speed in M&A integration: the first 100 days”, *European Management Journal*, Vol. 22 No. 4, pp. 418-430.
- Ansoff, H.I. (1965), *Corporate Strategy*, McGraw-Hill, New York, NY.
- Barker, R.G. (1999), “The role of dividends in valuation models used by analysts and fund managers”, *European Accounting Review*, Vol. 8 No. 2, pp. 195-218.
- Bekier, M.M. and Shelton, M.J. (2002), “Keeping your sales force after the merger”, *The McKinsey Quarterly*, Vol. 12 No. 4, pp. 106-115.
- Berkovitch, E. and Narayanan, M.P. (1993), “Motives for takeovers: an empirical investigation”, *Journal of financial and quantitative analysis*, Vol. 28 No. 3, pp. 347-362.
- Bert, A., MacDonald, T. and Herd, T. (2003), “Two merger integration imperatives: urgency and execution”, *Strategy and Leadership*, Vol. 31 No. 3, pp. 42-49.
- Bhide, A. (1990), “Reversing corporate diversification”, *Journal of Applied Corporate Finance*, Vol. 3 No. 2, pp. 70-81.
- Black, B.S. (1989), “Bidder overpayments in takeovers”, *Stanford Law review*, Vol. 41 No. 3, pp. 597-653.
- Bradley, M., Desai, A. and Kim, H.E. (1988), “Synergistic gains from corporate acquisitions and their divisions between the stockholders of target and acquiring firms”, *Journal of Financial Economics*, Vol. 21 No. 1, pp. 3-40.
- Bruner, R.F. (2002), “Does M&A pay? A survey of evidence for the decision maker”, *Journal of Applied Finance Theory, Practice and Education*, Vol. 12 No. 1, pp. 48-88.

- Bruner, R.F. (2004), *Deals from Hell: M&A Lessons that Rise Above the Ashes*, John Wiley and Sons, New York, NY.
- Buono, A.F. and Bowditch, J.L. (1989), *The Human Side of Mergers and Acquisitions*, Jossey-Bass Publishers, San Francisco, CA.
- Capron, L. (1999), "The long-term performance of horizontal acquisitions", *Strategic Management Journal*, Vol. 20 No. 11, pp. 987-1018.
- Cartwright, S. and Schoenberg, R. (2006), "Thirty years of mergers and acquisitions research: recent advances and future opportunities", *British Journal of Management*, Vol. 17 No. S1, pp. s1-s5.
- Chatterjee, S. (1986), "Types of synergy and economic value: the impact of acquisitions on merging and rival firms", *Strategic Management Journal*, Vol. 7 No. 2, pp. 119-139.
- Collis, D.J. and Montgomery, C.A. (1997), *Corporate Strategy*, McGraw-Hill, New York, NY.
- Colombo, G., Conca, V., Buongiorno, M. and Gnan, L. (2007), "Integrating cross-border acquisitions: a process-oriented approach", *Long Range Planning*, Vol. 40 No. 2, pp. 202-222.
- Copeland, T. (1994), "Why value value?", *McKinsey Quarterly*, Vol. 4, pp. 97-109.
- Cullinan, G., Le Roux, J. and Weddigen, R. (2004), "When to walk away from a deal", *Harvard Business Review*, Vol. 82 No. 4, pp. 96-105.
- Damodaran, A. (2005), *The Value of Synergy*, Stern School of Business, New York, NY.
- Datta, D.K. (1991), "Organizational fit and acquisition performance: effects of post-acquisition integration", *Strategic Management Journal*, Vol. 12 No. 4, pp. 281-297.
- David, K. and Singh, H. (1994), "Sources of acquisition cultural risk", in Von Krogh, G., Sinatra, A. and Singh, H. (Eds), *The Management of Corporate Acquisitions*, Macmillan Press, London, pp. 251-292.
- Deloitte (2007), "Strategic Acquisitions Amid Business Uncertainty", Deloitte, available at: [www.deloitte.com](http://www.deloitte.com)
- Demirakos, E.G., Strong, N. and Walker, M. (2004), "What valuation models do analysts use?", *Accounting Horizons*, Vol. 18 No. 4, pp. 221-240.
- Dillman, D.A. (2000), *Mail and Internet Surveys: The Tailored Design Method*, John Wiley & Sons, New York, NY.
- Eccles, R.G., Lanes, K.L. and Wilson, T.C. (1999), "Are you paying too much for that acquisition?", *Harvard Business Review*, Vol. 77 No. 4, pp. 136-146.
- Epstein, M.J. (2005), "The determinants and evaluation of merger success", *Business Horizons*, Vol. 48 No. 5, pp. 37-46.
- Evans, F.C. and Bishop, D.M. (2001), *Valuation for M&A: Building Value in Private Companies*, John Wiley and Sons, New York, NY.
- Gates, S. and Very, P. (2003), "Measuring performance during M&A integration", *Long Range Planning*, Vol. 36 No. 2, pp. 167-186.
- Goold, M. and Campbell, A. (1998), "Desperately seeking synergy", *Harvard Business Review*, Vol. 76 No. 5, pp. 131-143.
- Gort, M. (1969), "An economic disturbance theory of mergers", *The quarterly journal of economics*, Vol. 83 No. 4, pp. 624-642.
- Gruca, T.S., Nath, D. and Mehra, A. (1997), "Exploiting synergy for competitive advantage", *Long Range Planning*, Vol. 30 No. 4, pp. 605-611.
- Gupta, D. and Gerchak, Y. (2002), "Quantifying operational synergies in a merger/acquisition", *Management Science*, Vol. 48 No. 4, pp. 517-533.
- Haleblian, J. and Finkelstein, S. (1999), "The influence of organizational acquisition experience on acquisition performance: a behavioral learning perspective", *Administrative Science Quarterly*, Vol. 44 No. 1, pp. 29-56.



- Hambrick, D.C. and Cannella, A.A. (1993), "Relative standing: a framework for understanding departures of acquired executives", *Academy of Management Journal*, Vol. 36 No. 4, pp. 733-762.
- Hamel, G. and Prahalad, C.K. (2005), "Strategic intent", *Harvard Business Review*, Vol. 83 No. 7, pp. 148-161.
- Harding, D. and Rovit, S. (2005), *Mastering the Merger: Four Critical Decisions That Make or Break the Deal*, Harvard Business School Press, Boston, MA.
- Harrison, J.S., Hitt, M.A., Hoskisson, R.E. and Ireland, R.D. (1991), "Synergies and post-acquisition performance: differences versus similarities in resource allocations", *Journal of Management*, Vol. 17 No. 1, pp. 173-190.
- Haspeslagh, P.C. and Jemison, D.B. (1991), *Managing Acquisitions*, Free Press, New York, NY.
- Hayward, M.L.A. (2002), "When do firms learn from their acquisition experience? Evidence from 1990-1995", *Strategic Management Journal*, Vol. 23 No. 1, pp. 21-39.
- Hayward, M.L.A. and Hambrick, D.C. (1997), "Explaining the premiums paid for large acquisitions: evidence of CEO hubris", *Administrative Science Quarterly*, Vol. 42 No. 1, pp. 103-127.
- Hintherhuber, H.H. (2002), "Taking time to integrate temporal research", *Academy of Management Review*, Vol. 27 No. 2, p. 170.
- Hodgkinson, G.P., Herriot, P. and Anderson, N. (2001), "Re-aligning the stakeholders in management research: lessons from industrial, work and organizational psychology", *British Journal of Management*, Vol. 12 No. S1, pp. s41-s48.
- Homburg, C. and Bucerius, M. (2006), "Is speed of integration really a success factor of mergers and acquisitions? An analysis of the role of internal and external relatedness", *Strategic Management Journal*, Vol. 27 No. 4, pp. 347-367.
- Hopper, T. and Powell, A. (1985), "Making sense of research into the organizational and social aspects of management accounting: a review of its underlying assumptions", *Journal of Management Studies*, Vol. 22 No. 5, pp. 429-465.
- Huff, A.S. and Jenkins, M. (2002), *Mapping Strategic Knowledge*, Sage, London.
- Imam, S., Barker, R. and Clubb, C. (2008), "The use of valuation models by UK investment analysts", *European Accounting Review*, Vol. 17 No. 3, pp. 503-535.
- Jensen, M.C. (1986), "Agency costs of free cash flow, corporate finance, and takeovers", *The American Economic Review*, Vol. 76 No. 2, pp. 323-329.
- Kim, J.-Y.J. and Finkelstein, S. (2009), "The effects of strategic and market complementarity on acquisition performance: evidence from the US commercial banking industry, 1989-2001", *Strategic Management Journal*, Vol. 30 No. 6, pp. 617-646.
- Kiyamaz, H. and Baker, H.K. (2008), "Short-term performance, industry effects, and motives: evidence from large M&As", *Quarterly Journal of Finance & Accounting*, Vol. 47 No. 2, pp. 17-44.
- Kode, G.V.M., Ford, J.C. and Sutherland, M.M. (2003), "A conceptual model for evaluation of synergies in mergers and acquisitions", *South African Journal of Business*, Vol. 48 No. 1, pp. 27-38.
- KPMG (1999), *Unlocking Shareholder Value: The keys to Success*, KPMG, London.
- Larsson, R. and Finkelstein, S. (1999), "Integrating strategic, organizational, and human resource perspectives on mergers and acquisitions: a case survey of synergy realization", *Organization Science*, Vol. 10 No. 1, pp. 1-26.
- Lubatkin, M. (1987), "Merger strategies and stockholder value", *Strategic Management Journal*, Vol. 8 No. 1, pp. 39-53.

- Lukka, K. and Modell, S. (2010), "Validation in interpretive management accounting research", *Accounting, Organizations and Society*, Vol. 35 No. 4, pp. 462-477.
- Malatesta, P.H. (1983), "The wealth effect of merger activity and the objective functions of merging firms", *Journal of financial economics*, Vol. 11 Nos 1/4, pp. 155-181.
- Medcoff, J.W. (1997), "Why too many alliances end in divorce", *Long Range Planning*, Vol. 30 No. 5, pp. 718-732.
- Miles, M.B. and Huberman, A.M. (1994), *Qualitative Data Analysis: an Expanded Sourcebook*, Sage, Thousand Oaks, CA.
- Mueller, D.C. and Sirower, M.L. (2003), "The causes of mergers: tests based on the gains to acquiring firms' shareholders and the size of premia", *Managerial and Decision Economics*, Vol. 24 No. 5, pp. 373-391.
- Mukherjee, T.K., Kiyamaz, H. and Baker, K. (2004), "Merger motives and target valuation: a survey of evidence from CFOs", *Journal of Applied Finance*, Vol. 14 No. 2, pp. 7-24.
- Orlikowski, W.J. and Baroudi, J.J. (1991), "Studying information technology in organizations: research approaches and assumptions", *Information Systems Research*, Vol. 2 No. 1, pp. 1-8.
- Porter Liebeskind, J. (2000), "Internal capital markets: benefits, costs, and organizational arrangements", *Organization Science*, Vol. 11 No. 1, pp. 58-76.
- Rappaport, A. (1986), *Creating Shareholder Value: The New Standard for Business Performance*, Free Press, New York, NY.
- Rappaport, A. and Sirower, M.L. (1999), "Stock or cash? The trade-offs for buyers and sellers in mergers and acquisitions", *Harvard Business Review*, Vol. 77 No. 6, pp. 147-158.
- Roll, R. (1986), "The hubris hypothesis of corporate takeovers", *Journal of Business*, Vol. 59 No. 2, pp. 197-216.
- Salter, M. and Weinhold, W.A. (1979), *Diversification Through Acquisition: Strategies for Creating Economic Value*, Free Press, New York, NY.
- Simon, H.A. (1964), "On the concept of organizational goal", *Administrative Science Quarterly*, Vol. 9 No. 1, pp. 1-22.
- Sirower, M.L. (1997), *Synergy Trap: How Companies Lose the Acquisition Game*, Simon & Schuster, New York, NY.
- Sirower, M.L. (2003), "Becoming a prepared acquirer", *European Business Forum*, Vol. 16 No. 4, pp. 55-59.
- Slusky, A.R. and Caves, R.E. (1991), "Synergy, agency and the determinants of premia paid in mergers", *Journal of Industrial Economics*, Vol. 39 No. 3, pp. 277-296.
- Steiner, P.O. (1975), *Mergers: Motives, Effect, Policies*, University of Michigan Press, Ann Arbor, MI.
- Teerikangas, S. and Very, P. (2006), "The culture-performance relationship in M&A: from yes/no to how", *British Journal of Management*, Vol. 17 No. 1, pp. 31-48.
- Villalonga, B. (2004), "Diversification discount or premium? New evidence from the business tracking series", *Journal of Finance* Vol. 42 No. 2, pp. 943-963.
- Zaheer, A., Castaner, X. and Souder, R. (2013), "Synergy sources, target autonomy, and integration in acquisitions", *Journal of Management*, Vol. 39 No. 3, pp. 604-632.
- Zhou, Y.M. (2011), "Synergy, coordination costs, and diversification choices", *Strategic Management Journal*, Vol. 32 No. 6, pp. 624-639.
- Zollo, M. and Meier, D. (2008), "What is M&A performance?", *Academy of Management Perspectives*, Vol. 22 No. 3, pp. 55-77.

---

**Further reading**

- Goold, M. and Campbell, A. (2000), "Taking stock of synergy. A framework for assessing linkages between business", *Long Range Planning*, Vol. 33 No. 1, pp. 72-96.
- Laabs, J. and Schiereck, D. (2010), "The long-term success of M&A in the automotive supply industry: determinants of capital market performance", *Journal of Economics & Finance*, Vol. 34 No. 1, pp. 61-88.
- Seth, A., Song, K.P. and Richardson Pettit, R. (2000), "Synergy, managerialism or Hubris? An empirical examination of motives for foreign acquisitions of US firms", *Journal of Business Studies*, Vol. 31 No. 3, pp. 387-405.

**About the authors**

Stefano Garzella is a Full-Time Professor of Strategic Management at the University Parthenope. He received his PhD in Business Administration from the University of Pisa in 1998. He is also a Visiting Professor at the University of Rome "La Sapienza". He is a Member of the Board of SIDREA (Italian association of Professors in Accounting and Management), AIDEA (Italian Academy of Management) and EURAM. His research focuses on strategic management, green management, M&As and valuation approaches.

Dr Raffaele Fiorentino is an Assistant Professor at the University Parthenope, where he teaches Strategic Management and Strategic Planning and Management Control. He received his PhD in Business Administration from the same university in 2008. He was also a Visiting Professor at the University of Pisa in 2008 and 2009. He is a member of SIDREA (Italian Association of Professors in Accounting and Management) and EURAM. His research interests include strategic change, green management, performance measurement and M&As. Dr Raffaele Fiorentino is the corresponding author and can be contacted at: [fiorentino@uniparthenope.it](mailto:fiorentino@uniparthenope.it)

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.