# A Review of Research Methodologies in Private Equity: *2005–2011*

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In the aftermath of the financial crisis, regulators around the world have looked into ways to promote stability in the financial system. Rightly or wrongly, private equity (PE) has come under the microscope. This has brought to the surface the facts that the field is still very young and the research is in its infancy. Kuhn [1996] suggests that new disciplines have low levels of paradigm development. As a result, like in any other new discipline, research processes are chaotic, having high levels of disagreement regarding both theory and practice, and the quality of research output is usually weak. Critical academic review is required to advance the understanding of private equity, both as a discipline and an industry. The trends observed show that contrary to widely held belief, there is already extensive evidence on private equity and buyouts. This emphasizes the importance of systematic, scientific studies rather than relying on trading anecdotal examples by the different protagonists or on industry studies (Wright et al. [2009]).

At this time, an exploration of the methods and methodology of the research will stimulate and motivate research that is urgently required to better understand the current trends and challenges facing the field. To cater to this specific need for the evolution of this field, this article examines the state of private equity and venture capital research in the past seven years from the standpoint of existing methodologies. The methodological review will provide increased understanding of the current state of research in the discipline. Such a review is arguably needed as there has been a considerable amount of research in the recent past, but there has been no review of research methodology before in the field of private equity.

The review of the research is based on 284 papers published from 2005 to 2011. The state of research is assessed by examining the research design, research topics, strategies, number of hypotheses tested, research methods, data analysis techniques, data sources, region of focus, and country of authors. Based on the results of this review, the article provides reflections on the evolution of private equity research over the past seven years and discusses opportunities for future research. To enable us to explore trends over time in private equity research, we split our analysis for each area of our review (topics, design, methods, data analysis, etc.) by year. Before starting with this review, we give a short description on the state of private equity research prior to 2005. This is not intended as a historical analysis of the antecedents of pre-2005 research; rather the aim is to provide readers with a context of the state of private equity research prior to the period formally reviewed.

## EXHIBIT 1
**Papers Classified by Journals**

| Journal | 2005 (%) | 2006 (%) | 2007 (%) | 2008 (%) | 2009 (%) | 2010 (%) | 2011[2] (%) | TOTAL (%) |
|---|---|---|---|---|---|---|---|---|
| EFM | 0 (0.0) | 0 (0.0) | 1 (2.0) | 0 (0.0) | 1 (1.8) | 3 (8.6) | 13 (38.2) | **18 (6.3)** |
| ET&P | 3 (11.5) | 4 (11.1) | 2 (4.1) | 1 (2.0) | 5 (9.1) | 2 (5.7) | 0 (0.0) | **17 (6.0)** |
| JBF&A | 2 (7.7) | 2 (5.6) | 2 (4.1) | 0 (0.0) | 3 (5.4) | 0 (0.0) | 2 (0.0) | **11 (3.9)** |
| JoACF | 0 (0.0) | 2 (5.6) | 2 (4.1) | 1 (2.0) | 1 (1.8) | 1 (2.9) | 0 (0.0) | **7 (2.5)** |
| JoF | 1 (3.8) | 0 (0.0) | 2 (4.1) | 1 (2.0) | 1 (1.8) | 1 (2.9) | 2 (5.9) | **8 (2.8)** |
| JSBM | 1 (3.8) | 0 (0.0) | 2 (4.1) | 1 (2.0) | 1 (1.8) | 1 (2.9) | 0 (0.0) | **6 (2.1)** |
| RFS | 0 (0.0) | 0 (0.0) | 0 (0.0) | 1 (2.0) | 1 (1.8) | 3 (8.6) | 0 (0.0) | **5 (1.8)** |
| SMJ | 0 (0.0) | 0 (0.0) | 1 (2.0) | 0 (0.0) | 2 (3.6) | 2 (5.7) | 2 (5.9) | **7 (2.5)** |
| JPE | 14 (53.8) | 22 (61.1) | 24 (49.0) | 26 (53.1) | 17 (30.9) | 9 (25.7) | 0 (0.0) | **112 (39.4)** |
| UCLR | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 9 (16.4) | 0 (0.0) | 0 (0.0) | **9 (3.2)** |
| VC | 3 (11.5) | 3 (8.3) | 0 (0.0) | 1 (2.0) | 1 (1.8) | 0 (0.0) | 0 (0.0) | **8 (2.8)** |
| Others | 2 (7.7) | 3 (8.3) | 13 (26.5) | 17 (34.7) | 13 (23.6) | 13 (37.1) | 15 (44.1) | **76 (26.8)** |
| **Total** | **26** | **36** | **49** | **49** | **55** | **35** | **34** | **284** |

*Note: Park and Steensma [2012] has been included under 2011.*

## BACKGROUND

One major change in the world of international business and finance is the growing role of private equity investments in firms in emerging markets (Agmon and Messica [2009]). As the institutional venture capital industry continues to focus on late-stage and larger investments, the private investor market now provides the major source of seed and start-up capital. However, imperfections in the seed and start-up market have led to market inefficiencies for the high-growth firm (Sohl [1999]).

Over the past 15 years, there has been a tremendous boom in the private equity industry. The pool of U.S. private equity funds (partnerships specializing in venture capital, leveraged buyouts, mezzanine investments, build-ups, and distressed debt) has grown from $5 billion in 1980 to about $150 billion in 1997. Private equity's recent growth has outstripped that of almost every class of financial product. While some of this growth was

driven by the easing of federal regulations, it also reflects investors' growing appreciation of the effectiveness of the organizational structures and control mechanism employed by private equity funds (Lerner [1997]).

The emphasis in earlier reviews, until the 1990s, was on U.S. studies that focused primarily on formal venture capital as early-stage finance, frequently with a high-technology aspect (Wright and Robbie [1998]). Findings from earlier reviews of research in private equity, although not strictly on methodology of research, are as follows:

- The private nature of investments means the general absence of publicly available information. This may mean that qualitative in-depth research methods may be appropriate for addressing many of the areas (Wright and Robbie [1998]).
- Other data sources, such as analyses of enterprises that have or have not been financed by venture capital, may be appropriate to avoid saturation and consequent small and potentially biased sample sizes, because of the relatively small number of venture capital firms in most countries (Wright and Robbie [1998]).
- The bulk of research in this area is by scholars in the U.S. and the United Kingdom, within the rational choice tradition (Wood and Wright [2009]).
- Additional studies should consider the effect of different institutional contexts on the types of private equity investors that dominate and the consequent implications for the longevity of investment and performance (Cumming et al. [2007]).
- The increase in private equity activity in continental Europe by the mid-2000s provides a growing body of empirical evidence to understand the uneven and contingent effects of innovations in practices in different contexts (Wood and Wright [2009]).
- Currently, most private equity and buyout research involves hand-collecting datasets. Thus, there is ample room for improving the breadth and depth of the available data (Cumming et al. [2009]).

## METHODOLOGY OF REVIEW

The objective of this article is to look for trends in research methods and to determine implications for future research. The selection of journals inevitably involves the application of some subjective criteria. Our aim is to include journals that have published quality, internationally recognized private equity research. We have included *The Journal of Private Equity* (JPE), which is an internationally recognized journal covering innovative strategies and techniques in private equity and venture capital. In addition, we have reviewed papers from *Entrepreneurship: Theory and Practice* (ET&P), *Journal of Business Finance and Accounting* (JBF&A), *Journal of Applied Corporate Finance* (JoACF), *Journal of Finance* (JoF), *Journal of Small Business Management* (JSBM), *Review of Financial Studies* (RFS), *Strategic Management Journal* (SMJ), *University of Chicago Law Review* (UCLR), *Venture Capital* (VC), and a few more, included under the category of "Others."[1]

These journals form a manageable selection of journals that provide an overview of private equity research. Exhibit 1 provides a list of the number of papers published in each of the journals listed in each year and, in total, over the period of the review.[2]

## SUMMARY OF REVIEW AND DISCUSSION

This section contains the summary of review. As noted, this article presents a review of private equity research by researchers in the above-mentioned journals over the 2005–2011 period. Accordingly, we identified 284 papers for review that were published over this seven-year period. Our review is organized into the following sections: research design, number of hypothesis testing, research methods, research topics, and data analysis techniques used in all the 284 papers.

### Research Design Applied

The research design applied in this report means the type of paper, whether it is based on empirical work or desk research. We have divided this section into five categories. They are

1. empirical quantitative,
2. empirical qualitative,
3. desk research qualitative,
4. desk research quantitative, and
5. empirical triangulation.

Exhibit 2 presents a matrix of research design from 2005 to 2011 of the sample journals. It provides information about the number of papers in each category of

## EXHIBIT 2
**Research Design**

| Research Design | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | Total |
|---|---|---|---|---|---|---|---|---|
| Empirical quantitative | 38.5 | 41.7 | 34.7 | 46.9 | 47.3 | 65.7 | 61.8 | **47.5** |
| Empirical qualitative | 15.4 | 16.7 | 18.4 | 6.1 | 9.1 | 11.4 | 0.0 | **10.9** |
| Desk quantitative | 3.8 | 2.8 | 8.2 | 4.1 | 1.8 | 5.7 | 2.9 | **4.2** |
| Desk qualitative | 42.3 | 33.3 | 36.7 | 42.9 | 40.0 | 14.3 | 32.4 | **35.2** |
| Empirical triangulation | 0.0 | 5.6 | 2.0 | 0.0 | 1.8 | 2.9 | 2.9 | **2.1** |

research design per year. It also provides the percentages of each element. Empirical quantitative is more of mail survey-based study. Desk qualitative (discussions, conceptual models, archival studies, developing propositions for future research, and so on) work is more popular than desk quantitative (mathematical model, fuzzy logic, and so on). The empirical researches conducted are mostly quantitative in nature as there is a lack of survey-based and action research as well as case studies. Empirical triangulation (multi-method approach) has rarely been used in any paper (2%).

### Hypothesis Testing

A hypothesis is a specific statement of prediction. It describes in concrete (rather than theoretical) terms what you expect will happen in your study. According to Popper [1959], all knowledge in the nature of theories and laws has a hypothetical character. In essence, theories are only hypotheses that may not be true. Researchers' task is to test the hypotheses empirically and subsequently remove falsified hypotheses. As such, the development of science can be seen as a sequence of revisions of hypotheses: Rough hypotheses are replaced by more solid hypotheses. Hence, the process of scientific development, and thus our knowledge of reality, involves a sequence of trials and errors. Exhibit 3 presents the table of hypothesis testing.

### Research Methods

Major research methods chosen here are survey, simulation, interviews, math modeling, case studies, conceptual model, and others (literature review, insights from the industry, and so on). Research methods, such as surveys, simulation, and math modeling, come under positivist paradigm. Because one purpose of the report is to observe the shift in the focus of private equity research, each paper is observed and research methods are noted down. Exhibit 4 shows information about the research methods found after surveying the papers.

## EXHIBIT 3
**Percentage of Hypothesis Testing**

| Year | Percentage of Hypothesis Testing |
|---|---|
| 2005 | 38.5 |
| 2006 | 47.2 |
| 2007 | 40.0 |
| 2008 | 28.6 |
| 2009 | 36.4 |
| 2010 | 51.4 |
| 2011 | 52.9 |
| **Total** | **40.8** |

Similar things are found in this survey of papers. The number of survey papers is highest in 2005 and decreases over the later years. Mathematical modeling is the most common research method employed (about 48%). Simulation is often performed to check for validity of the models developed in any paper, to examine the efficiency of heuristics, or to assess model solution times. We also find that many mathematical papers are supported by example to prove their usefulness. However, this method has been used negligibly. The interview and case study methods account for about 12% of the total.

The case study method is used to investigate a specific phenomenon through an in-depth, limited-scope study. Methods such as ethnography and ethno-

## EXHIBIT 4
**Research Methods**

| Research Methods | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | Total |
|---|---|---|---|---|---|---|---|---|
| Survey | 19.2 | 11.1 | 16.3 | 14.3 | 5.4 | 0.0 | 5.9 | **10.2** |
| Simulation | 3.8 | 2.8 | 4.1 | 2.0 | 0.0 | 2.9 | 2.9 | **2.5** |
| Interview | 0.0 | 8.3 | 6.1 | 8.2 | 10.9 | 2.9 | 2.9 | **6.3** |
| Mathematical model | 38.5 | 47.2 | 34.7 | 44.9 | 43.6 | 71.4 | 58.8 | **47.5** |
| Case study | 7.7 | 5.6 | 8.2 | 2.0 | 3.6 | 8.6 | 5.9 | **5.6** |
| Conceptual model | 3.8 | 8.3 | 2.0 | 0.0 | 0.0 | 0.0 | 2.9 | **2.1** |
| Others | 42.3 | 33.3 | 34.7 | 51.0 | 40.0 | 14.3 | 8.8 | **35.6** |

methodology are used by anthropology and some other social sciences. Typically, the breadth is restricted to a single site, which is studied in detail, possibly over an extended duration of time. The attractions of the case study method are that operations can be studied in their natural settings and theories are generated directly from the data. In addition, how and why questions can be included, and most important, the case study method is useful in the early phases of research (description, concept development), when there may be no prior hypotheses or previous work for guidance.

The other methods employed consist of qualitative discussions, insights from industries, literature reviews, etc. They constitute a significant percentage (about 36%) of the total body of research. It is to be noted that out of the 284 papers reviewed, 28 papers used more than one method in their research and have been included in each category.

As illustrated by the percentages shown in Exhibit 5, about 65% of all the papers fall in the highly rationalist paradigms of "axiomatic" or "logical positivist/empiricist."[3] In the positivist method, reality is considered to be objective, tangible, and fragmentable. People are considered to be deterministic and reactive. Usually research findings in this paradigm are considered value free, time free, and context independent. It is interesting to note that most of the interpretive research is based on perception (about 35% of total) rather than on direct observations. We observe that a much stronger movement toward naturalistic paradigms (especially direct observation via case, action, and field studies) and existential, primarily interpretive paradigms (especially conceptual models), is lacking, which is a cause for concern.

The methods are accessible, their legitimacy is proven, and the need is great. If academicians today do not expand their approaches to research, managers will continue to perceive them as irrelevant academicians who address fictitious problems and are not interested in the real world. To make true contributions to both research and practice, we must enlarge our collection of methodologies and apply those that are most appropriate, efficient, and effective for the situations at hand.

### Data Analysis Techniques

Data analysis techniques help the researcher to process large amounts of data in several ways. First, questionnaire data tend to be voluminous, and various data analysis techniques are used to summarize the data. Second, data analysis techniques help the researcher to understand the effects of a number of variables on final outcome. Third, data analysis techniques help the researcher to minimize the confounding effects inherent in most questionnaire data. Finally, data analysis techniques enable the researcher to assess the effects of alternative future scenarios. Exhibit 6 shows information about data analysis techniques used for data analysis in the sample papers. Major techniques used for data analysis are descriptive statistics, factor analysis, regression, discriminant analysis, conjoint analysis, path analysis, structure equation modeling, and data envelopment analysis, among others.

Mentzer and Kahn [1995] suggested that more advanced data analysis techniques are needed to improve sensitivity to detect significant findings of survey research

## EXHIBIT 5
**Research Paradigms**

*Kind of Information Used*

NATURAL ← → ARTIFICIAL

*Rational Nature of Truth*

RATIONAL ↑ ↓ EXISTENTIAL

| | Direct Observation of Object Reality | People's Perception of Object Reality | Artificial Reconstruction of Object Reality |
|---|---|---|---|
| Axiomatic | | | 2005: 38.5%<br>2006: 47.2%<br>2007: 34.7%<br>2008: 44.9%<br>2009: 43.6%<br>2010: 71.4%<br>2011: 58.8%<br>Total: 47.5% |
| Logical Positivist/ Empiricist | | 2005: 19.2%<br>2006: 19.4%<br>2007: 20.4%<br>2008: 22.4%<br>2009: 16.4%<br>2010: 2.9%<br>2011: 5.9%<br>Total: 15.8% | 2005: 3.8%<br>2006: 2.8%<br>2007: 4.1%<br>2008: 2.0%<br>2009: 0.0%<br>2010: 2.9%<br>2011: 2.9%<br>Total: 2.5% |
| Interpretative | 2005: 7.7%<br>2006: 5.6%<br>2007: 8.2%<br>2008: 2.0%<br>2009: 3.6%<br>2010: 8.6%<br>2011: 5.9%<br>Total: 5.6% | 2005: 42.3%<br>2006: 33.3%<br>2007: 34.7%<br>2008: 31.0%<br>2009: 40.0%<br>2010: 14.3%<br>2011: 8.8%<br>Total: 35.6% | 2005: 3.8%<br>2006: 8.3%<br>2007: 2.0%<br>2008: 0.0%<br>2009: 0.0%<br>2010: 0.0%<br>2011: 2.9%<br>Total: 2.1% |
| Critical Theory | | | |

and experimental manipulations in testing hypotheses. Such advance data analysis techniques include discriminant analysis, regression, MANOVA, and path analysis. Out of 284 total papers, 187 employed one or an other kind of data analysis technique out of which half used some form of regression model. This could be one of the reasons for a higher percentage of hypothesis testing in these papers. Other specialized forms of analysis, such as ANOVA/MANOVA, factor analysis, and cluster analysis, have been used less.

### Data Sources

The most prominent sources of data for research conducted in the U.S. and the United Kingdom are the databases of VentureXpert and CMBOR or from government records and reports. Due to the private status of the companies involved, private equity firms do not adhere to the disclosure standards or quarterly filings imposed by the U.S. Securities and Exchange Commission (Knill [2009]), which is evident by the fact that the use of first-hand collected data is in minority. Despite the preciseness of information provided by these methods, however, the sample size remains very small, wherever used. Identifying this fact, a few papers have used both categories of data sources. The papers by Capron and Shen [2007], Clercq et al. [2008], and a few others have used this rich source of secondary data to complement their primary data. However, as stated by Shepherd [1997], those studies investigating the decision making of venture capitalists' profitability assessments using self-reported data are likely biased and have errors. This adds to the problem of finding high-quality and innovative data sources, which is still a major concern.

### Strategies

Exhibit 7 shows information about the strategies of investments in the papers published in last seven years. Examination of the data reveals that the frequency with which the papers operate on the strategies employed by the private equity firm is quite high (111 out of 284), nearly 39% of the total papers. The research in the strategies is heavily biased toward venture capital and leveraged buyouts, being 72% and 16.21%, respectively. Other areas, such as informal investment (business angels, and so on), remain relatively unnoticed by the researchers.

There has been an increased focus on the area of corporate venture capital, and recent research also reflects this focus. For example, a few publicly traded companies, like General Electric and Montreal-based Power Corporation of Canada, have long managed their

## EXHIBIT 6
**Data Analysis Techniques**

| Techniques | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | Total |
|---|---|---|---|---|---|---|---|---|
| Descriptive statistics | 14.3 | 14.3 | 12.9 | 25.9 | 11.4 | 12.5 | 14.8 | **15.0** |
| Regression | 57.1 | 42.9 | 48.4 | 37.0 | 48.6 | 59.4 | 59.3 | **50.3** |
| Factor analysis | 0.0 | 0.0 | 0.0 | 0.0 | 5.7 | 0.0 | 0.0 | **1.1** |
| Cluster analysis | 0.0 | 0.0 | 0.0 | 3.7 | 2.9 | 0.0 | 0.0 | **1.1** |
| ANOVA/MANOVA | 0.0 | 0.0 | 3.2 | 0.0 | 2.9 | 3.1 | 0.0 | **1.6** |
| Correlation | 14.3 | 0.0 | 6.4 | 11.1 | 17.1 | 6.2 | 11.1 | **9.6** |
| Conjoint analysis | 0.0 | 0.0 | 0.0 | 3.7 | 0.0 | 0.0 | 7.4 | **1.6** |
| Others | 14.3 | 42.9 | 29.0 | 18.5 | 11.4 | 18.8 | 7.4 | **19.8** |

business with the rigor of private equity firms—with great success. And recently, a number of other companies have begun to adopt this highly disciplined approach (Rogers, Holland, and Haas [2002]).

In a leveraged buyout, a company is acquired by a specialized investment firm using a relatively small portion of equity and a relatively large portion of outside debt financing (Kaplan and Stromberg [2009]). They have become a major source of financing for private equity firms in the recent past, and this fact is reflected by the amount of research conducted in this area.

### Research Topics

The frequency distribution of papers by topic is presented in Exhibit 8. The most commonly occurring topic is operations and acquisitions (96 papers), followed by legal issues (69 papers) and performance (53 papers). Under operations and acquisitions, we have included all papers that have focused on transactions from the phase of deal sourcing to the phase prior to exit. Legal issues cover company law, employment law, pensions, taxation, policy, debt funding, and competition law. There has been a substantial amount of research on legal issues, dominant in the area of taxation, government policies, and pensions, but still, there is a huge scope of research in other areas, such as employment law, company law, and competition law. Megginson [2004] found that the differences in the design and the degree of development of the PE/VC industry are due to institutional factors, with the country's legal system being paramount. Many studies that have been conducted in emerging economies have focused on legal issues. For example, Ribeiro and de Carvalho [2008] found that Brazilian PE/VC regulation recognizes the inefficiency of the legal system and forces the use of arbitration.

## EXHIBIT 7
**Strategies**

| Strategies | Percent |
|---|---|
| Venture capital | 72.0 |
| Informal investment (business angels, and so on) | 2.7 |
| Growth capital | 0.9 |
| Distressed investment | 1.8 |
| Mezzanine capital | 0.9 |
| Secondaries | 2.7 |
| Leveraged buyouts | 16.2 |
| Other strategies (real estate, and so on) | 2.7 |

Also, studies concerning the syndication of firms have been sparse. As found by Jääskeläinen [2009], the current literature lacks an understanding of how and why syndication affects the performance of VC firms. This suggests that more attention should be directed toward syndication as a component of the overall strategy of VC firms. About 19% of research has focused on the performance and valuation of firms, but most of them rely on methods such as the internal rate of return (IRR), which can be problematic in that it results in multiple measurements in instances of irregular cash flows (Ross, Westerfield, and Jordan [2006]). This problem has been circumvented in some of the papers, such as Knill [2009], but nevertheless, it is a concern that is needed to be addressed by researchers.

## EXHIBIT 8
**Research Topics**

| Research Topics | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | Total Number | Total (%) |
|---|---|---|---|---|---|---|---|---|---|
| Entrepreneurship | 3 | 5 | 1 | 1 | 3 | 3 | 1 | 17 | **6.0** |
| Exit strategies | 3 | 2 | 2 | 2 | 0 | 3 | 4 | 16 | **5.6** |
| Legal issues | 3 | 5 | 10 | 12 | 20 | 12 | 7 | 69 | **24.3** |
| Operations & acquisitions | 10 | 13 | 21 | 16 | 17 | 5 | 14 | 96 | **33.8** |
| Performance | 6 | 8 | 7 | 10 | 10 | 8 | 4 | 53 | **18.7** |
| Socio-economic | 1 | 2 | 2 | 3 | 2 | 0 | 2 | 12 | **4.3** |
| Syndication | 0 | 1 | 0 | 1 | 1 | 2 | 1 | 6 | **2.1** |
| Others | 0 | 0 | 6 | 4 | 2 | 2 | 1 | 15 | **5.3** |

Proponents of leveraged buyouts, like Jensen [1989], argue that private equity firms apply financial, governance, and operational engineering to their portfolio companies and, in doing so, improve firm operations and create economic value. The socio-economic aspect of private equity is another area that has been relatively ignored by researchers. Attention to this area is of even greater significance now, with the globalization of private equity firms, especially in the case of emerging economies.

### Country of Authors

Exhibit 9 gives information about the country of authors in the papers published from 2007 to 2011. Examination of the data reveals that about 48% of the authors are from North America, and of them, about 95% are from the U.S. Europe has the next highest number, with 31.69% of the authors from the continent. The U.K. and Germany are significant contributors, but research from Eastern and Central Europe is marginal. Authors from other continents have far fewer publications. All the authors from Australia worked jointly with researchers from the U.S. and/or U.K., and so have been included under the heading, "Combination." The authors in the South America and Africa categories are from Brazil and South Africa, respectively.

Over the past few years, the global scope of private equity has increased. Studies have emerged to reflect this fact, but major advancement of the discipline is yet to be observed. Ahlstrom and Bruton [2006] contribute to the literature by drawing attention to the impact of networks and changing institutional environments on venture capital during different phases of an economic transition process in emerging economies. It is imperative that more studies of this kind be conducted to understand the variation of private equity in a changing institutional context. Also, the impact of private equity and venture capital on emerging economies needs to be studied in detail. Alternatively, a comparative study of private equity in emerging economies versus developed economies could prove insightful, such as the one conducted by Mariz and Savoia [2005].

## EXHIBIT 9
**Country of Authors**

| Continent | Percent |
|---|---|
| North America | 48.2 |
| Europe | 31.7 |
| Asia | 6.3 |
| South America | 0.4 |
| Australia | 0.0 |
| Africa | 1.1 |
| Combination | 12.3 |

## CONCLUSIONS AND SUMMARY

This article has attempted to provide an overview of the body of the research published in the last

seven years in the field of private equity. The following points present the gaps identified in the research, significant findings of the report, and future directions of the research.

- It is a generally observed fact in private equity that due to the private nature of firms there is a lack of publicly available data. This has limited the scope of research in private equity. Most of the research that has been conducted recently, although good for practitioners, has sometimes been redundant. Much of the theoretical literature on private equity appears stuck in the 1990s (Wood and Wright [2009]). Also, the bulk of the literature has focused on the United States and United Kingdom only, and that too in the positivist paradigm. More case studies and survey-based research is needed to further understand the complexities of private equity. This is reflected by the fact that empirical qualitative papers are only about 11%.
- The method of conceptual modeling has rarely been used in recent years. This lack may prove perilous for theory development, hence, papers using desk qualitative research design should shift focus from simple discussions to more scientific approaches for proper advancement of discipline.
- The majority of research has relied upon secondary sources of data. And even when a study collects and uses first-hand data, the sample size remains small.
- In the empirical papers, extensive analytical research, determining relationships between variables, has largely superseded exploratory research, done using only descriptive statistics.
- The research in the strategies used by PE firms is hugely biased toward venture capital and leveraged buyouts. Significant research is needed in other areas also, specifically the emerging ones, such as infrastructure, energy and power, merchant banking, and real estate.
- There has been tremendous growth in deal size due to the syndication of PE firms and funds of funds (this being the major source of capital for PE firms today). But the studies by researchers on these aspects have not grown at the same pace to complement the practitioners.
- The major focus of research on operations has been on value creation, acquisitions, and deal structuring. Further research on financial engineering, relationships between general and limited partners, and deal sourcing is missing.
- There is a huge scope of research in entrepreneurial development due to venture capital and angel investment in emerging economies, such as China and India.
- Research in such areas as the MENA (Middle East and North Africa) or EMEA (Europe, Middle East, Africa) regions and the emerging economies of South America have been scanty or nonexistent. Increased attention to these regions would open new doors for the expansion and growth of private equity, both as a discipline and for practitioners.

# APPENDIX A

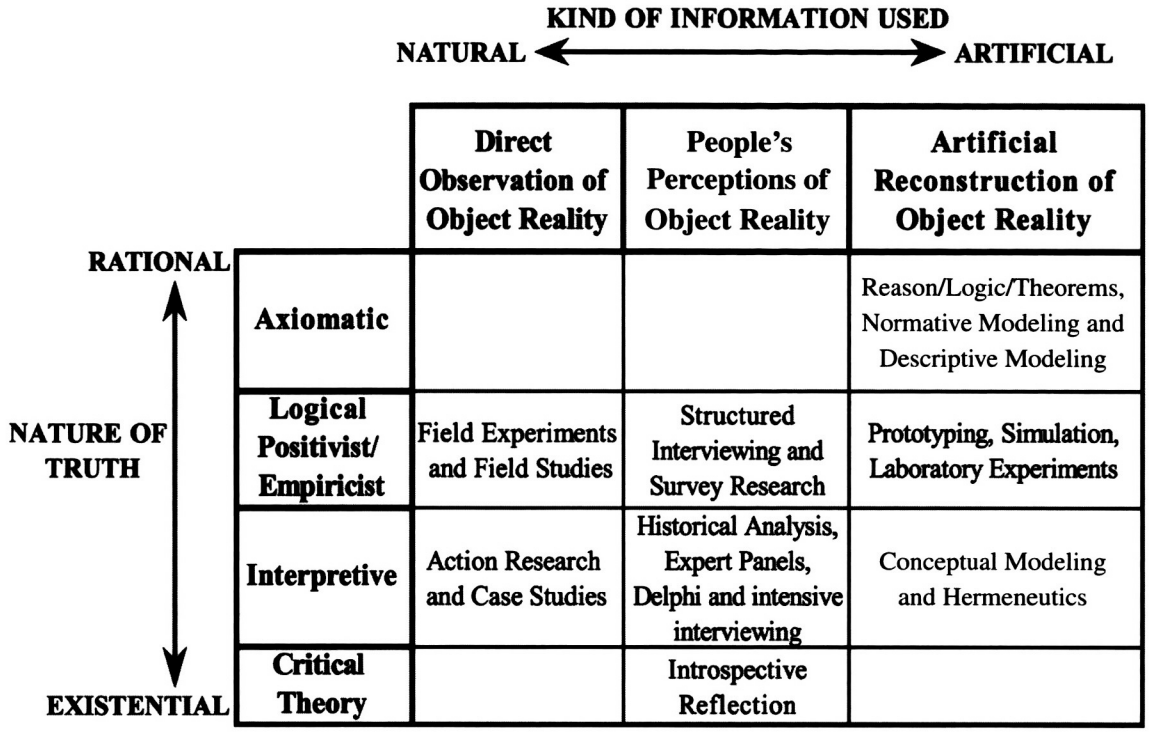
## FRAMEWORK FOR RESEARCH METHODS

The Meredith model has two continuums that enable categorization of research based upon the underlying tenets of its methodology—the Rational versus Existential (R/E) and the Natural versus Artificial (N/A).

At one extreme is *Rationalism*, which uses a formal structure and pure logic as the ultimate measure of truth. At the other extreme is *Existentialism*, the stance that knowledge is acquired through the human process of interacting with the environment. The *Rational/Existential* dimension includes four generic perspectives that structure the research by different degrees of formalism. These four perspectives, in order of degree of formal structure, are axiomatic, logical positivist/empiricist, interpretive, and critical theory.

The *Axiomatic* perspective represents the theorem-proof world of research. The *Logical Positivist/Empiricist* perspective assumes that the phenomenon under study can be isolated from the context in which it occurs and that facts or observations are independent of the laws and theories used to explain them. This is the basis for most survey research. The *Interpretive* perspective includes the context of the phenomenon as part of the object of study. Interpretive researchers study people rather than objects, with a focus on meanings and interpretations rather than behavior. *Critical Theory* is a recent influential contribution to post-positivist thought. The critical theory perspective is an attempt to synthesize the positivist and interpretive perspectives and get past their dichotomy by placing knowledge in a broader context of its contribution to social evolution.

## EXHIBIT A1
**Framework for Research Methods**




*Source: Adapted from Meredith et al. [1989].*

This second dimension concerns the source and kind of information used in the research. At the natural end of the continuum is empiricism (deriving explanation from concrete, objective data), while at the artificial end is subjectivism (deriving explanation from interpretation and artificial reconstruction of reality). *Object Reality* refers to direct observation by the researcher of the phenomenon. It assumes that there is an objective reality and that human senses can detect it. It corresponds to the pure empiricism extreme. As with other categories, the observation may be subjected to formal structured analysis, or axiomatization, as in econometric studies, or to interpretation using critical theory.

*People's Perceptions of Object Reality* relate to research conducted "through somebody else's eyes", as in surveys, interviews, or many laboratory experiments. Thus, the primary concern is with the perception or abstract representation of the reality of individuals exposed to the phenomenon. An *Artificial Reconstruction of Object Reality* approach recasts the object reality, as originally determined from one of the two categories (usually the researcher's own belief concerning the object reality), into another form that is more appropriate for testing and experimentation, such as analytical models, computer simulations, or information constructs.

## ENDNOTES

[1]Other journals include the following: *Journal of Financial and Quantitative Analysis, Accounting and Finance, Briefing in Real Estate Finance, International Journal of Management Reviews, Research-Technology Management Journal, Multinational Monitor, Small Business Economics, Problems and Perspectives in Management, Journal of Real Estate Portfolio Management, Real Estate Economics, Corporate Finance Review, Journal of Business Ethics, International Journal of Disclosure and Governance, Accounting and Business Ethics, Stanford Law Review, The Economist, Policy Review, British Journal of Management, Human Resource Management Journal, Journal of Management Studies, Journal of Asset Management, International Journal of Management, Journal of Management Policy and Practice, Journal of European Real Estate Research, ISM Journal of International Business, Journal of International Business Studies, Hospital Topics, Review of Quantitative Finance and Accounting, The Accounting Review, Delaware Journal of Corporate Law, Northwestern Journal of International*

*Law and Business, Journal of Applied Finance, Journal of Economic Perspectives, Health Affairs, Contemporary Accounting Research, Schmalenbach Business Review, Journal of Accounting, Journal of Deferred Compensation, Real Estate Finance, International Journal of Management Cases, Independent Review, Management International Review, Baltic Journal of Management, Business Economics, Journal of Developmental Entrepreneurship, National Tax Journal, Journal of American Academy of Business, Southern California Law Review, Private Equity and Bankruptcy Risk, International Finance,* and *Corporate Government and International Review.*

[2]For the complete list of articles, refer to Appendix B, which is available online at www.iijpe.com.

[3]See Appendix A for further information on the framework for this discussion.

## REFERENCES


Agmon, T., and A. Messica. "Financial Foreign Direct Investment: The Role of Private Equity Investments in the Globalization of Firms from Emerging Markets." *Management International Review*, Vol. 49, No. 1 (2009), pp. 11-25.

Ahlstrom, D., and G.D. Bruton. "Venture Capital in Emerging Economies: Networks and Institutional Change." *Entrepreneurship: Theory and Practice*, Vol. 32, No. 2 (March 2006), pp. 299-320.

Capron, L., and J.-C. Shen. "Acquisitions of Private vs. Public Firms: Private Information, Target Selection, and Acquirer Returns." *Strategic Management Journal*, 28 (2007), pp. 891-911.

Clercq, D., H.J. Sapienza, and A. Zaheer. "Firm and Group Influences on Venture Capital Firms' Involvement in New Ventures." *Journal of Management Studies*, Vol. 45, No. 7 (November 2008), pp. 1169-1194.

Cumming, D., D.S. Siegel, and M. Wright. "Private Equity, Leveraged Buyouts and Governance." *Journal of Corporate Finance*, 13 (2007), pp. 439-460.

Jääskeläinen, M. "Venture Capital Syndication: Synthesis and Future Directions." Report, Helsinki University of Technology, 2009.

Jensen, M.C. "Eclipse of the Public Corporation." *Harvard Business Review* (September-October 1989), pp. 60-70.

Kaplan, S.N., and P. Stromberg. "Leveraged Buyouts and Private Equity." *Journal of Economic Perspectives*, Vol. 23, No. 1 (Winter 2009), pp. 121-146.

Knill, A. "Should Venture Capitalists Put All Their Eggs in One Basket? Diversification versus Pure-Play Strategies in Venture Capital." *Financial Management*, Vol. 38, No. 3 (Autumn 2009), pp. 441-486.

Kuhn, T.S. *The Structure of Scientific Revolutions*, 3rd edition. Chicago: University of Chicago Press, 1996.

Lerner, J. "Venture Capital and Private Equity: A Course Overview." Working paper, Harvard Business School and National Bureau of Economic Research, 1997.

Mariz, F., and J. Savoia. "Private Equity in Brazil: A Comparative Perspective." *The Journal of Private Equity*, Winter 2005, pp. 74-87.

Megginson, W. "Toward a Global Model of Venture Capital?" *Journal of Applied Corporate Finance*, Vol. 16, No. 1 (2004), pp. 8-26.

Mentzer, J.T., and K.B. Kahn. "A Framework of Logistics Research." *Journal of Business Logistics*, Vol. 16, No. 1 (1995), pp. 231-250.

Meredith, J.R., A. Raturi, K. Amoako-Gyampah, and B. Kaplan. "Alternative Research Paradigms in Operations." *Journal of Operations Management*, Vol. 8, No. 4 (1989), pp. 297-326.

Park, H., and H.K. Steensma. "When Does Corporate Venture Capital Add Value for New Ventures?" *Strategic Management Journal*, 33 (2012), pp. 1-22.

Popper, K. *The Logic of Scientific Discovery.* New York: Harper Torchbooks, 1959.

Ribeiro, L., and A.G. de Carvalho. "Private Equity and Venture Capital in an Emerging Economy: Evidence from Brazil." *Venture Capital*, Vol. 10, No. 2 (April 2008), pp. 111-126.

Rogers, P., T. Holland, and D. Haas. "Value Acceleration: Lessons from Private Equity Masters." *Harvard Business Review* (June 2002), pp. 94-101.

Ross, S., R. Westerfield, and B. Jordan. *Fundamentals of Corporate Finance.* New York: McGraw- Hill Irwin, 2006, pp. 278-282.

Shepherd, D.A. "Researchers of Venture Capitalists' Decision Making, Beware!" In *Journal of Best Papers*, edited by S. Kunkel, International Small Business Conference, San Francisco, CA, 1997.

Sohl, Jeffrey E. "The Early-Stage Equity Market in the USA." *Venture Capital*, Vol. 1, No. 2 (1999), pp. 101-120.

Wood, G., and M. Wright. "Private Equity: A Review and Synthesis." *International Journal of Management Reviews*, Vol. 11, No. 4 (2009), pp. 361-380.

Wright, M., and K. Robbie. "Venture Capital and Private Equity: A Review and Synthesis." *Journal of Business Finance & Accounting*, Vol. 25, Nos. 5-6 (June/July 1998), pp. 521-570.

Wright, M., J. Gilligan and K. Amess. "The Economic Impact of Private Equity: What We Know and What We Would Like to Know." *Venture Capital*, Vol. 11, No. 1 (January 2009), pp. 1-21.

data analysis techniques, data sources, regions of focus, and countries of authors. Based on the results of this review, the article provides reflections on the evolution of private equity research over the last seven years and discusses opportunities for future research.

## How Managers' Compensation, Strategy, and Institutional Environment Motivate Entrepreneurial Financing Choices: *Some Evidence from Venture Capital Firms* 45

Hisanori Fujiwara and Hiromichi Kimura

Using a database combining survey responses and archival data on 32 venture capital (VC) firms, the authors test whether professional compensation, strategy, and institutional environment affect entrepreneurial financing practices, such as contractual term choice and deal source choice. The results suggest that contract design fundamentally depends on the VC manager's compensation system (particularly, carried interest compensation), the investor's leadership in investment syndications, and the institutional environment. VC firms significantly tend to require control rights and liquidation rights in country's with poor investor protection. The results also show that selection of deal sources depends on co-investment options, investment stage preference, leadership in investment syndications, and industry expertise.

## Beyond Capital: *Private Equity and Real Estate Development in India* 62

Thillai Rajan Annamalai and Maulik Doshi

The real estate sector in India has attracted substantial investment from Private Equity (PE) investors since 2006. This study is based on an analysis of 290 PE deals in real estate and investment of $15 billion during 2004 – 10. During the period 2006 – 10, real estate sector accounted for 34% of the total PE investments in India. The characteristics of projects that have obtained PE investment indicate that these are very large projects. 80% of the PE investment in real estate has been from foreign PE firms. Most of the investments have been made at the project or SPV level, to facilitate better monitoring post investment. The diligence and active monitoring that is normally associated with PE investments have brought in the much needed transparency and better corporate governance standards to this sector. Tier 2 cities accounted for as much investment as that of Tier 1 cities. However, the average investment size in Tier 2 cities was much higher than that of Tier 1 cities. By taking top class real estate development beyond the boundaries of Tier 1 cities, the PE firms have in a way contributed to the development of some of the smaller cities.

## The Role of Venture Capital in the Middle East as a Catalyst of Socio-Economic Transformation: *A Post 9/11 Analysis* 77

Kizhakanveatil Bhaskaran Pillai Subhash

Although the occurrence of disasters (either man-made or natural) has an impact on the economy, the impact of 9/11 was completely different from any other man-made disaster, especially in the global venture capital (VC) arena. This article analyzes the impact of man-made disasters from a historical perspective and the impact of 9/11 on the emergence of Islamic venture capital (IVC) in the Middle Eastern region. What makes VC and its variants, including IVC, more attractive in the present situation of financial crisis is that VC has inherent potential to transform the economy, which is the reason VC is preferred as an alternative financial instrument. An overview of the present scenario of IVC grants some insights on the future potential of the Middle Eastern region to become economically self-sustainable and the possibility of becoming an economic giant in the near future. And if in the Middle East, the problem of unemployment slowly dissipates the mind-set of younger generations may change positively, transforming their economy into a welfare economy rather than a warfare economy.