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# Capital budgeting practices in Indian companies

Roopali Batra <sup>a,\*</sup>, Satish Verma <sup>b</sup>

<sup>a</sup> Department of Management, I.K. Gujral Punjab Technical University, Kapurthala, Punjab, India

<sup>b</sup> RBI Chair, Centre for Research in Rural and Industrial Development (CRRID), Chandigarh, India

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**Abstract** The volatility of the global economy, changing business practices, and academic developments have created a need to re-examine Indian corporate capital budgeting practices. Our research is based on a sample of 77 Indian companies listed on the Bombay Stock Exchange. Results reveal that corporate practitioners largely follow the capital budgeting practices proposed by academic theory. Discounted cash flow techniques of net present value and internal rate of return and risk adjusted sensitivity analysis are most popular. Weighted average cost of capital as cost of capital is most favoured. Nevertheless, the theory-practice gap remains in adoption of specialised techniques of real options, modified internal rate of return (MIRR), and simulation. Non-financial criteria are also given due consideration in project selection.

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## Introduction

India's rapid and growing integration into the world economy has made Indian companies subject to the volatility of global financial markets. Increasingly, the country is exposed to impending risks from various international developments. ([http://rajyasabha.nic.in/rsnew/publication\\_electronic/glob\\_eco\\_crisis2009.pdf](http://rajyasabha.nic.in/rsnew/publication_electronic/glob_eco_crisis2009.pdf)). The year 2008 was a witness to this wherein the global financial crisis affected the Indian economic situation and curtailed the level of investment activity (Indian Economic Survey, 2013–14).

Post-reforms, in the 1990s, India chose greater integration with the global economy as a part of its development

strategy. However, despite the deepening integration, the rates of growth of the economy did not change much. This trend sustained until the first decade of the 21st century, when growing integration accelerated the economic growth with rising investments and exports. Nonetheless, this integration had its own pitfalls. It led to a structural increase in the import intensity of the economy consequent of its dependence on hi-tech imports. The global economic slowdown as a result of the financial crisis of 2008 uncovered these gaps with decelerated growth of Indian economy accompanied by a sharp widening current account deficit. (<http://werdiscussion.worldeconomicassociation.org/?post=india-globalisation-and-growth>).

The Indian business environment today has become highly turbulent with companies being exposed to a multitude of risks such as business cycle risk, slowdown in demand, unanticipated actions of competitors, interest rate risk, inflation rate risk, unexpected technological developments, government policy changes, and above all, exchange rate risks. As per RBI report (2013–14), the Indian economy is facing serious chal-

\* Corresponding author.

E-mail address: [roopalibatra@rediffmail.com](mailto:roopalibatra@rediffmail.com) (R. Batra).

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allenges emanating from a sinking rupee, stagnating economic growth (low GDP), depleting forex reserves, decreasing foreign institutional investments (FIIs), mounting inflation, and a high fiscal and current account deficit (<https://www.rbi.org.in/scripts/AnnualReportPublications.aspx?Id=1119>). This economic slowdown and demand destruction have led to companies facing dwindling profitability, shrinking market capitalisation and escalating debts which have made the investment scenario even more risky. Only globally competitive and professionally managed companies can be expected to thrive in such an unstable environment. Amidst a weak Indian economy, where companies are struggling with sales slowdown, sound financial management practices and effective investment decision making are the only keys to the survival and long-term success of these companies.

The high rate of change in the economy and business practices, and the developments in the academic literature, have led to the need to re-examine the extent to which the newer theoretical developments have affected Indian corporate capital budgeting practices. The prime aim of this research is to present evidence on the current Indian investment practices and to determine how far these practices reflect the latest financial theories. We submit that this study goes beyond other Indian surveys on capital budgeting because of its breadth, in the sense that it is a comprehensive survey that examines in detail various aspects of corporate investment practices. The research considers a number of strategic investment issues that have received little attention in previous Indian investigations of capital budgeting practices.

The study investigates the extent to which the relatively superior nascent techniques of net present value (NPV) adjusted with real options analysis, modified internal rate of return (MIRR), earnings multiple approach (EMA), economic value added (EVA) and sophisticated risk techniques like Monte Carlo simulation analysis, discounted cash flow (DCF) break even analysis, decision tree analysis, and probability theory are being applied by Indian companies in practice.

It explores the impact of different organisational variables on the usage of capital budgeting techniques. It focuses on issues of net present value (NPV)-internal rate of return (IRR) contradiction, discount rate used for domestic and overseas market, and current cost of capital practices of Indian Companies. It also investigates risk measurement, different risk factors considered and formal risk analysis techniques being used by companies. It analyses not only the traditional financial approach but also the non-financial /qualitative factors that can affect the evaluation and the success of a project. A survey of existing literature reveals that in India, in recent times, no major study has been conducted which focuses in detail on this, with the exception of a study by Singh, Jain, and Yadav (2012) which is based on a sample of 31 companies. The present study is based on a comprehensive primary survey of chief financial officers (CFOs) of 77 companies, randomly selected from the companies listed on the Bombay Stock Exchange. A structured questionnaire was used to obtain the relevant information regarding capital budgeting practices from these CFOs. This study addresses the following research questions specifically:

RQ1. What is the extent to which newer theoretical developments in capital budgeting (as advocated by aca-

demical theory) have been adopted by Indian corporate practice?

RQ2. What are the main risk factors considered by Indian companies and incorporated in capital budgeting decisions?

RQ3. What is the degree of association of organisational variables (firm size, CEO education and age of the company) with the level of capital budgeting sophistication?

RQ4. What are the non-financial considerations most relevant in the firm's capital budgeting decision?

The study has sound implications for academicians as it helps them better understand the capital budgeting practices being followed by Indian companies in actuality and re-define the theory accordingly. Besides, it may be useful to practitioners to reassess their own capital budgeting practices in light of the latest advanced investment methodologies being followed by the more efficient and innovative companies.

The paper is organised as follows: the next section exhibits a review of past literature on the topic addressed above, followed by an explanation of research methodology, after which discussions of the survey and the empirical results are presented and evaluated. Lastly, conclusions are drawn, recommendations are made, and ideas for further research are presented.

## Literature review

Over the past half a century, a paradigm shift in the investment practices of companies is evidenced by numerous global researches. A review of the past studies, of the 1960s and early 70s, asserts the dominance of non discounted technique of payback period, followed by accounting rate of return (ARR). Most studies during this time reported DCF models to be the least popular method of capital budgeting (Baker & Beardsley, 1972; Istvan, 1961; Mao, 1970).

Nonetheless, a transformation was witnessed by the end of the 1980s wherein surveys reported a changing trend towards adoption of DCF methods of IRR and NPV and decline in the usage of payback period as a primary method, while it remained highly popular as secondary criteria (Blazouske, Carlin, & Kim, 1988; Brigham, 1975; Gitman & Forrester, 1977; Kim & Farragher, 1981; Klammer & Walker, 1984; Klammer, 1972; Oblak & Helm, 1980; Petry, 1975; Petty, Scott, & Bird, 1975; Stanley & Block, 1984). Conversely, a review of Indian researches conducted by Chandra (1975), Porwal (1976), Pandey (1989) and Sahu (1989) in similar time periods indicated the supremacy of payback as a primary criteria though a gradual trend towards usage of DCF methodologies of NPV and IRR was witnessed.

An examination of research of the 1990s provides evidence of continuous increase in usage of DCF techniques, primarily NPV and IRR (Bierman, 1993; Chadwell-Hatfield, Goitein, Horvath, & Webster, 2011; Drury, Braund, Osborne, & Tayles, 1993; Gilbert & Reichert, 1995; Jog & Srivastava, 1995; Kester & Chang, 1999; Parashar, 1999; Petry & Sprow, 1994; Sangster, 1993). Indian studies by Ken and Cherukuri (1991); Babu and Sharma (1996); and Cherukuri (1996) also recognised a rising preference for NPV and IRR as project evaluation techniques, moving in concurrence with the global investment methodologies.

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