

Book review

Principles of Project and Infrastructure Finance

Willie Tan, Taylor & Francis, Abingdon, UK, 2007,
ISBN 978-0-415-41577-4, **£33-50, 296 pp.**

Willie Tan's *Principles of Project and Infrastructure Finance* treats project finance from a project manager's perspective. The book is well written, academically rigorous and yet highly readable. The book is aimed at postgraduate students, senior undergraduates and researchers. Practitioners involved in project finance will also benefit from the book including corporate executives, project managers, bankers, lawyers, architects, contractors, engineers, quantity surveyors, regulators, suppliers, insurers and investors. Following an informative introduction in chapter 1, the book covers the time value of money and the discounting process in chapter 2. Distinction is made between nominal and real interest rates. The concept of term structure of interest rates is explained. Projects and infrastructure are ultimately brought to realisation by organisations to fulfil public or private sector organisational goals. Chapter 3 covers the various functions of management, corporate strategy, business strategy and functional strategies in the context of project delivery including the role of the state.

The key features of corporate financial statements including the balance sheet, income statement (profit and loss account) are explained in chapter 4. Procedures for calculating key financial ratios, for example operating ratios, market ratios, profitability ratios and liquidity ratios are explained and illustrated using examples. Chapter 5 discusses the main sources of corporate finance including ordinary shares, preference shares, bonds, mezzanine finance, bank loans, etc. The concept of weighted average cost of capital is explained. The very interesting question of whether capital structure actually matters is covered including the optimal capital structure of a firm. For those coming from a non-technical or engineering background, chapter 6 on project development explains the role and responsibilities of project finance in the context of the project life cycle. Procedures for assessing project feasibility using principles of net present value (NPV) or internal rate of return (IRR) are explained. Determination of the project hurdle rate is covered. Key features of procurement methods including traditional procurement, design and build, turnkey contracting and management contracting are explained. Contractor selection methods are also covered in the chapter.

Net present value and internal rate of return methods tend to consider economic feasibility of infrastructure projects from a private sector perspective. Cost-benefit analysis methods that can

be used to evaluate the economic feasibility of public sector projects to capture the wider social benefits and costs are evaluated in chapter 7. Chapter 8 covers characteristics of project finance. Project finance and corporate finance are compared and contrasted. The role of various stakeholders including governments, contractors, lenders, suppliers, operators, off-take purchasers, sponsors, and bond holders, etc. are discussed including the various direct and indirect roles that governments can play to ensure successful delivery of project-financed infrastructure.

Chapters 9 and 10 cover the scope, contexts and methods of risk management. The role of insurance in the management of risk is explored. Of particular interest are the mechanisms that have been developed to create insurance markets to overcome the problems of adverse selection, moral hazard and non-diversifiable risks. The concept of degree of risk aversion is derived from first principles as a function utility. Types of bonds that provide security are explained including tender or bid bonds, performance bonds, retention bonds, advance payment bonds and supply bonds. Cash flow risks are outlined in chapter 11 including value at risk and risk assessment methods using scenario analysis and Monte Carlo simulation. Chapter 12 explains the use of derivative products including forwards, futures, swaps, caps and floors in financial risk management. The use of real option pricing models in valuation of managerial flexibility and options in the context of project development is explained. The role of agreements, contracts and guarantees in risk management in project finance are discussed in chapter 13. Finally, case studies from the electric power, airport development, office and real estate development and chemical storage projects are covered in chapters 14 to 17 to illustrate some important principles in project infrastructure finance. End of chapter questions are included to provide readers with the opportunity to reflect on the principles learned and to test their understanding.

Having reviewed the book proposal for the publishers, it was a pleasure to see the book in print. I have read the book several times and enjoyed reading it on every occasion. It is a solid textbook, succinct and informative. It is rigorous and yet covers difficult concepts in a manner that is reasonably straight forward for readers to understand. I thoroughly commend the textbook. It is for this reason that I have recommended it as one of the essential textbooks for postgraduate students on the MSc Construction Project Management course at Edinburgh Napier University.

Sam Wamuziri