Applied Economics Journal Vol. 20 No. 2 (December 2013): 96-99
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ISSN 0858-9291

Book Review: Agricultural Finance

Moss, C. B. (2013). *Agricultural finance.* Abingdon, UK: Routledge. 290 pages.

ISBN: 978-0-415-59904-7.

"Moss blends bank theory with agricultural applications. This book serves as a reference for students with limited mathematical background and others trying to work their way through appendices in more technical terms."

Agricultural credit is a crucial input in any agricultural development program. The book is an account of agricultural finance combining traditional commercial banking and consumer's utility theories with analysis of farm financial statements, organization and growth of the farm, time value of money and capital budgeting. Moss discusses accounting for risk in investment decision making, strategies for reducing risk and the cost of capital and the optimal capital structure considerations in agricultural finance. The book prepares students to tackle the enormous job of accounting and money management for farms and other agricultural business. Balancing the bank accounts for an agricultural entity means handling pricing, moving large quantities of money, watching trends in the industry that can lead to financial gains or losses.

This book is appropriate as an upper level undergraduate textbook in agricultural finance. The task of writing this book is made difficult by the diversity and interests of the students. Some would have a general agriculture background and have little concern for the financial technical aspect. But there would be students who are majoring in agricultural economics or agribusiness who would like to gain a better understanding of how the technical aspect of finance works in the agricultural sector. Each segment of this student population requires a somewhat different approach to agricultural finance. In this respect the author has clearly stated his priorities in the preface. He places a strong emphasis on the financial institutions (five chapters), followed by deterministic analysis (two chapters) and risk in investment (two chapters).

The book opens with a discussion of the main issue on agricultural finance. It includes discussion of production as time dependent and how the financial markets affect the production process of a farm. A farm operator has several options to finance his operation, such as use of retained earnings, issue of debt or sale of equity. However, I would prefer to see Appendix C on agricultural credit and monetary policy as a standalone chapter. The material can be reshaped to enable students to understand the role of monetary policy in agricultural finance. The financial institutions and markets are very well treated in Chapter 2. The chapter introduces the concept banking, banks as financial institutions and operation of banks within the agricultural sector. The author applied the Austrian capital theory to discuss real capital versus purchasing power and microeconomic theory to develop the modern theory of capital. However, I have some reservation on the Austrian capital theory, which consists of Bohm-Bawerk's (2007, 2008) works. It would be more logical to focus more on the financial market. Students will appreciate the author's treatment of Robinson Crusoe as a borrower and lender. Chapter 3 presents a broad perspective of accounting theory with emphasis on financial accounting, such as the balance sheet, income statement, cash versus accrual accounting, cash flow statement and owner's equity. The author concludes the chapter with a discussion of accounting issues for farms. This includes the role of the Farm Financial Accounting Standards Council in farmers' financial decisions.

The second part, "deterministic analysis," contains two chapters, devoted to financial ratios and capital budgeting. Chapter 4 is devoted to the DuPont approach to financial ratio analysis and common valued financial statement as tools for the analysis of the farm business. Chapter 5 is a major contribution. It is a fairly detailed discussion on estimating cash flow from potential investment opportunities using capital budgeting technique based on time value of money. The author does an outstanding job showing the mechanics of present value formulas and phobias as a supplement in Appendix D. In addition, the advanced topics in present value analysis are well presented with numerical examples in agriculture.

The third part, "risk in investment," encompasses two chapters. Chapter 6 covers valuing investment under risk and uncertainty focusing on the expected utility hypothesis, capital asset pricing model in portfolio analysis market valuation of risk. Chapter 7 is unique; it constitutes debt choice in agriculture. In general, a firm chooses to increase its asset

holdings by debt or equity. However, such choice is moot in agriculture since the largest sources of capital in agriculture are debt and retained earnings. The author concludes the chapter with a numerical example on a commercial farm in Nebraska. There is no attempt to show the rigorous mathematics in risk; the students are assumed to have minimal knowledge of mathematics, as indicated in the preface. Finally Chapter 8 provides an overall summary and synopsis of the chapters with regards to agricultural finance.

The chapters have many attractive features, such as concise summaries, definitions of terms, references, relevant examples, innovative interpretation and potential area for research in agricultural finance, review questions and numerical examples and exercises at the pre-calculus level and advanced topics (for some chapters). These provide excellent study aids for students. Most of the tables and graphs have lengthy explanations especially the mathematics derivations. However, many of the examples are not in the context of agriculture, and some of the quotes contain language not in an agricultural finance text. This is an attempt to reach students with minimal knowledge of agriculture and finance. The supplemental materials in the appendices are topics which can be skipped. For example, the mathematical model of the financial market in Appendix B and mathematical development of the present value in appendices D and F can be skipped depending on the mathematical background of the students. In addition, some chapters (particularly chapters 6 and 7) present empirical evidences, relevant examples, innovative interpretation and potential area for continued research in agricultural finance. Students who use this book should gain insights into the complexities of finance theory, especially with applications pertaining to capital budgeting and risk in investment. Credit should be given to the author for the attempt to separate the mathematical examples and derivations in the appendices.

Overall, this book is well written and well organized, some parts, particularly Part 1, read easier and are better organized than the other parts. The appendix materials further enhance the book's usefulness in a master of agricultural economics/agribusiness program. A major drawback of the book is that it provides no website links. A website link showing the current trends for the agriculture industry would add value to the book. If possible, the data should be updated. A short section on the yields in the money market and business sector would be useful in understanding the nature of business cycle and its impact on the

agriculture sector.

The book is relatively short at 290 pages. It is a combination of financial theory and application. I am thinking about how I could use various parts of the book in my Rural Finance class. The book can also be used as reference guide. Complementary to this book, I would recommend Gup and Kolari (2004) and Penson and Lins (1980) for students with minimal background and Barry et al. (1999) and Bishoff (2008) for those with a strong background in banking and finance.

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