Research Essentials

Emerging Trends in Smart Banking

Risk Management Under Basel II and III

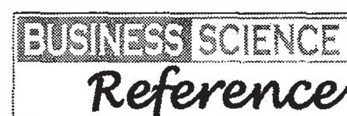
Siqiwen Li

IGI GLOBAL
DISSEMINATOR OF KNOWLEDGE

Emerging Trends in Smart Banking:

Risk Management Under Basel II and III

Siqiwen Li
James Cook University, Australia



An Imprint of IGI Global

Managing Director:	Lindsay Johnston
Production Editor:	Jennifer Yoder
Development Editor:	Allyson Gard
Acquisitions Editor:	Kayla Wolfe
Typesetter:	Deanna Jo Zombro
Cover Design:	Jason Mull

Published in the United States of America by
Business Science Reference (an imprint of IGI Global)
701 E. Chocolate Avenue
Hershey PA 17033
Tel: 717-533-8845
Fax: 717-533-8661
E-mail: cust@igi-global.com
Web site: http://www.igi-global.com

Copyright © 2014 by IGI Global. All rights reserved. No part of this publication may be reproduced, stored or distributed in any form or by any means, electronic or mechanical, including photocopying, without written permission from the publisher.
Product or company names used in this set are for identification purposes only. Inclusion of the names of the products or companies does not indicate a claim of ownership by IGI Global of the trademark or registered trademark.

Library of Congress Cataloging-in-Publication Data

Li, Siqiwen, 1981-
Emerging trends in smart banking : risk management under Basel II and III / by Siqiwen Li.
pages cm
Includes bibliographical references and index.
Summary: "This book discusses some of the latest developments in banking regulations and safeguards to ensure the mitigation of risk and economic collapse"-- Provided by publisher.
ISBN 978-1-4666-5950-6 (hardcover) -- ISBN 978-1-4666-5951-3 (ebook) -- ISBN 978-1-4666-5953-7 (print & perpetual access) 1. Banks and banking--State supervision. 2. Banks and banking--Risk management. 3. Banks and banking, International. 4. Financial institutions--Government policy. I. Title.

HG1725.L52 2014
332.1068'1--dc23

2014001516

British Cataloguing in Publication Data
A Cataloguing in Publication record for this book is available from the British Library.

All work contributed to this book is new, previously-unpublished material. The views expressed in this book are those of the authors, but not necessarily of the publisher.

Table of Contents

Preface vi

Section 1
Bank Behaviour Change and Banking Regulation

Chapter 1
Theories of Financial Regulation 1
Introduction 1
Command-and-Control Mode 3
Self-Regulation 6
Third Way Regulatory Approaches 9
Conclusion 11

Chapter 2
History of Financial Regulation in Australia, United States, and United Kingdom 16
Introduction 16
Pre-Deregulation Period in the US, UK, and Australia 17
Financial Deregulation in US, UK, and Australia 21
Conclusion 29

Chapter 3
Pre-GFC Bank Behaviour Change and Basel Accords 35
Introduction 35
The Shift from Financial Intermediation to Brokerage 36
Structured Finance Products 36
Implications for Regulation of Banking System 38
The 2008 Global Financial Crisis 47
Conclusion 51

Section 2
Are Basel II and Basel III "Smart Financial Regulations"?

Chapter 4
The "Smart" Regulatory Framework 58
Introduction 58
Governmentality 59
The Concept of Reflexivity 65
Responsive Regulation 69
Smart Regulation 75
Conclusion 78

Chapter 5
The "Smart" Regulatory Features of Basel II and Basel III 87
Introduction 87
Evaluation Benchmark 88
Smart Features of Basel II and Basel III 90
Conclusion 95

Section 3
The Solution to the Inadequacies of Risk Methodology of Basel II and Basel III

Chapter 6
The Value-at-Risk Methodology of Basel II and Basel III 100
Introduction 100
Variance-Covariance Approach 103
Historical Simulation 106
Monte Carlo Simulation 107
VaR Backtesting 109
Stress Testing 110
Conclusion 111

Chapter 7
Coherent Risk Measures 115
Introduction 115
Extreme Value Theory (EVT) 116
Copula Methodology 119
"Coherent" Risk Measures 121
Expected Shortfall (ES) 123
Distortion Risk Measures and Choquet Integral 125
Conclusion 130

Section 4
Basel II and Basel III Interviews in Australia: Are They "Smart" in Their Implementation?

Chapter 8
Universal Pragmatics and Communicative Action 144
Introduction 144
Habermas' Universal Pragmatics 145
Theory of Communicative Action 149
Conclusion 154

Chapter 9
Superiority of Basel II over Basel I 158
Introduction 158
Inadequacies of Basel I in Implementation 159
Improved and More Effective Basel II 162
Assessment of the Effectiveness of Basel II in Empirical Risk Management and Prudential Supervision Practices 170
The Organizational Impact on the Banks and Regulatory Supervision Process 188
Conclusion 202

Chapter 10
Potential Issues from Basel II and Basel III: The Australian Case 211
Introduction 211
Competitive Disadvantage and Methodological Burden Relating to Underlying Risk Methods 212
The Issues With External Ratings 228
The Issues With Regulatory Arbitrage 234
The Issues Arising from Cross-Border Supervision under Basel II 241
The Issues With Information Disclosure 249
Issues Relating to Pillar Two Risks 258
Conclusion 263

Compilation of References 275

About the Author 287

Index 288

Preface

The Australian Prudential Regulation Authority (APRA) as the Australian financial regulator began continuous consultations on the proposed policies for the formal implementation of the newer Basel Accord in 2013, after the release of the final regulatory package to implement the Basel III capital reforms by APRA in November 2012. The milestone in the history of the Basel Accords is undoubtedly the Basel II Accord, due to its innovative three-pillar regulatory framework and other reforms. Basel III inherits this regulatory framework with more restrict requirements in terms of regulatory capitals and liquidity.

This book is written with the intention of providing readers an evaluation of Basel II's regulatory framework as carried on in Basel III's design, as well as an evaluation of the effectiveness of its implementation in Australia as adjudged from interviews of bank risk managers, senior analysts and regulatory supervisors who work closely with Basel Accords. More specifically, the book examines a range of economic theories to establish a distinction between risk and uncertainty, explain both the causes and consequences of financial instability, and investigate the structure of, and policy responses to major financial crises.

The design and structure of Basel II and III reflects the intention of policy-makers to improve supervision of the banking system and risk management practices in the banking (and insurance) sectors, so that the stability of the financial system as whole can be enhanced.

The task of evaluating the effectiveness of Basel II and III is informed by an exploration of the diverse aspects of their regulatory frameworks. To this end, two questions have been constructed to inform the analysis conducted in book chapters.

Based on the literature review of four pioneering theories of regulation (governmentality, reflexivity, responsive regulation and 'smart regulation), the first question is whether the Basel II & III frameworks possess certain attributes which enable it to be regarded as an example of 'smart' regulation? The second question is, how effective is the Value-at-Risk (VaR) approach, which forms the core aspects of the underlying risk methodology applied under the Basel II and III frameworks? In this regard, the book evaluates the advantages and disadvantages of the VaR approach

supplemented, where necessary, with a discussion about other prevalent risk assessment techniques. In particular, the book makes a number of suggestions about how techniques of risk assessment can be augmented.

In this context, the author investigates and uncovers the congruence between the three-pillar regulatory framework initially implemented under Basel II and the attributes of Responsive and Smart Regulation. While the author argues that Basel III, which was also based on the same framework, can be regarded as a good example of "smart" regulation, she also highlights areas of weakness and potential danger. In particular, the author raises some concerns related to procedures of risk-management based on internal risk modeling using the Value-at-Risk (VaR) approach, as required under Basel III.

In the evaluation of Basel II and III as guiding frameworks for regulating risk-taking in banking, one crucial fact must be considered: Basel II and III are translated by national regulators into a set of regional prudential policies that reflect differences in regulatory interests, priorities, and concerns and, more importantly, differences in the structure of their banking systems.

Therefore, to assess the effectiveness and performance of Basel II and III in regard to risk management and supervision practices, the second step of this book is to explore and evaluate the responses from Australian practitioners who work in both Basel -related risk management and supervision.

Australia, although not the member of the Basel Committee on Banking Supervision (BCBS), embraced Basel II as well as Basel III at an early stage and encouraged banks to adopt more advanced aspects of this regulatory framework. Empirical analysis was based on interviews undertaken with supervisors from the regulatory authorities (i.e. APRA), risk analysts, risk managers, and directors of the Basel program within banks with responsibility for the implementation and oversight of the policy and risk-management framework.

The author used the Universal Pragmatics methodology developed by Jurgen Habermas for interpreting and understanding both relevant documents and the interview responses of finance and regulatory professionals.

In subsequent chapters of the book the discussions are motivated by the aim of ascertaining whether Basel II is superior to Basel I, and the extent to which Basel II has responded to the acknowledged deficiencies of Basel I. To this end the book addresses the following questions: Does Basel II perform effectively in regard to the purpose of maintaining financial stability? Are there issues or problems arising from the Basel II implementation, and if yes, will these issues or problems have an impact on the effectiveness of Basel II?

In an effort to penetrate beneath the surface of what is presented in interview responses, interpretation is guided by the prospect that divergent strategic interests may be responsible for distorting communicative action in regard to risk management

and supervision practices under Basel II framework. To this end, some of the more radical aspects of Habermas's Universal Pragmatics and Theory of Communicative Action have been drawn upon to provide the readers with useful insights. The results of this Habermasian analysis of interview responses are then reviewed to determine the implications of the current financial crisis for future policy-making, supervision and corporate governance of the banking system.

The interviews responses showed the superiority of Basel III over Basel II, and also helped identify those aspects of Basel III that were deemed more or less effective than Basel II. The interview process revealed a range of problematic issues arising out of Basel III, in regard to risk management and supervisory practices, which will need to be addressed by policy-makers, supervisors, and bank practitioners at some point in the future.

The book is structured by ten chapters. In Chapter One, it is argued that approaches to regulation have typically oscillated between command-and-control and voluntary forms of self-regulation. Influenced by the Keynesian conviction that market failures associated with uncertainty and instability are unavoidable, a stringent "command-and-control" approach is usually embraced by policy-makers of this persuasion. For those working within the Responsive Regulation, Neoclassical, and Austrian economics traditions, as discussed in this chapter, the "command-and-control" approach to regulation has been criticised. While members of the aforementioned economic schools favour self-regulation the proponents of Responsive Regulation favour an approach based on the "regulation of regulation".

Drawing on these various perspectives, Chapter Two traces the transformation of financial regulations in the U.S, UK and Australia during and after the 1980s.As a consequence of this regulatory change, the role of banks in the financial market has been transformed from a simple intermediary role based on the conversion of short term household deposits into long term loans to the corporate sector to one where banks operate as brokers in the structured finance market. The chapter argues that this change in roles raises new regulatory challenges and imposes a requirement for the design of an appropriate new regime of prudential controls.

Under the process of financial deregulation scheme, banking systems in U.S., UK and Australia were exposed to a marked evolution in the nature of capital regulation (from pre-Basel; to Basel I; 1996 amendment; and then to Basel II). Chapter Three reviews this historical change. Moreover, the recent 2007-2008 global financial crisis is used as the context for a preliminary appraisal of the effectiveness of the Basel II implementation in Australia.

Based on the recognition that neither the command-and-control nor the self-regulation mode based regulation can accommodate the growing complexity of the financial market, it is argued that a new regulatory regime is needed. Chapter Four introduces four theoretical concepts—governmentality, reflexivity, responsive

regulation and 'smart' regulation—which are deployed in characterising the nature of frame of this new regulatory regime category.

Chapter Five develops a benchmark derived by weaving together the conceptual frameworks of reflexivity and responsive regulation (with smart regulation viewed largely as an updated version of responsive regulation). In turn, this benchmark is seen to have two components: on one hand, the concept of responsive enforcement and, on the other hand, the notion of spreading the burden of regulation beyond the direct sphere of government. This benchmark is then applied to an exploration of the congruence between Basel II & III and those innovative regulatory approaches in Chapter Five.

In Chapter Six, Basel II and III's underlying risk estimation approach—Value-at-Risk (VaR)—is evaluated. To uncover both its flaws and advantages, three methods of calculating VaR (variance-covariance; historical and Monte Carlo simulation) are discussed. Backtesting and stress testing—techniques that are regarded as necessary complement to VaR analysis—are also examined in this chapter.

Given the failure of VaR to adequately capture tail risks and due to its lack of sub-additivity, the effectiveness of other prevalent approaches to the estimation of risk—Extreme Value Theory (EVT), Copula-based approaches, Expected Shortfall (ES)—are evaluated in Chapter Seven. In addition, distortion risk measures (which are shown to be closely related to coherent risk measures), are also discussed, thus, shedding further light on the limitations of VaR (and ES). The chapter argues that not only risk premia, but also uncertainty premia, should be taken into account in the estimation techniques adopted for regulatory capital assessment purposes. Accordingly, the capacity of the techniques drawn from the literature on risk-sensitive and robust control theory, to accommodate fundamental uncertainty is discussed.

Those chapters serve the purpose of evaluating Basel II and III from a variety of theoretical perspectives. In contrast, Chapter Eight sets out an analytical methodology based on philosophical and methodological notions drawn from Habermas's Universal Pragmatics, the Theory of Communicative Action, and Habermasian Discourse Ethics. The chapter argues that these components of a Habermasian approach provide useful insights into whatever tendencies may exist for communicative distortion in relation to the Basel II related risk management and supervision process that foreshadows the effectiveness of Basel III implementation.

Based on the analysis of the previous chapter, Chapters Nine evaluates the effectiveness of Basel II as implemented in Australia since 2008 by explicitly drawing on the interview responses of bank practitioners and supervisors from the regulatory authorities that work closely with banks to guide the process of implementation of Basel II in Australia.

The last two chapters interpret the analytical findings arising from interviews. Based on interviewee responses, the findings interpreted in Chapter Nine focus on evaluating the superiority of Basel II relative to Basel I by highlighting the inadequacies of Basel I with respect to the risk categories employed, the underlying risk methodology, performance in stressed market conditions and the resulting distortions. While Basel II overcomes many of these limitations, the chapter argues that it also has a profound organisational impact both on banks and the supervision process itself, not least through the building of a reflexive culture of risk management.

Chapter Ten departs from Chapter Nine by engaging in a deeper interpretation of the specific issues and problems raised by interviewees. The problems emerging from Basel II implementation focus on seven aspects: first, implementation burdens including complexity of risk methodology, restricted data requirements, regulatory buffer imposed by national regulators, and the IRB accreditation debate; second, the possibility of competitive disadvantage specifically related to issues of the capital benefits to be derived from adopting IRB, and cross-border supervision; third, issues with external ratings, in which the profit-driven nature of rating agencies and its impact on the quality of ratings and consequently the effectiveness of Basel II are discussed; fourth, securitization with discussion on regulatory arbitrage; fifth, cross-border supervision with issues of different risk approaches adopted in overseas branches and parent banks, dislocation in risk measurement, difficulties in Basel II implementation and the possibility of competitive disadvantage specifically in regard to cross-border supervision; sixth, problems with Pillar Three reporting which involves issues relating to information shortage, the excessive cost burden, the need for education, and the understanding, possible inconsistency with International Accounting Standards, and issues of confidentiality; seventh, Pillar Two risk assessment in regard to relevant quantification difficulties and aspects of liquidity risk management. In this chapter, the underlying conflicts between regulators and bank practitioners, which, it is suggested, reflect their distinct strategic interests (bureaucratic and economic, respectively) that drive decision-making and action, are exposed and critically discussed.

This final chapter concludes the book by summarising the theoretical contributions and empirical analytical findings arising from the interview analysis. In the light of the theoretical discussion and empirical findings, this chapter examines policy implications under three aspects: effective prudential control with enhanced supervision over the entire financial market, and improved corporate governance. The arguments are also exposed to a critical appraised which discusses limitations and suggests potential for improvement.