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# The Art of Credit Derivatives

*Demystifying the Black Swan*

JOÃO GARCIA  
SERGE GOOSSENS

**The Art of Credit Derivatives:  
Demystifying the Black Swan**

**João Garcia and Serge Goossens**



A John Wiley and Sons, Ltd., Publication

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John Wiley & Sons Ltd, The Atrium, Southern Gate, Chichester, West Sussex, PO19 8SQ, United Kingdom

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***Library of Congress Cataloging-in-Publication Data***

Garcia, João.

The art of credit derivatives : demystifying the black swan / João Garcia, Serge Goossens.

p. cm.

Includes bibliographical references and index.

ISBN 978-0-470-74735-3

1. Credit derivatives. 2. Securities. 3. Portfolio management. I. Goossens, Serge. II. Title.

HG6024.A3G367 2010

332.63'2-dc22

2009039208

A catalogue record for this book is available from the British Library.

ISBN 978-0-470-74735-3 (H/B)

Typeset in 10/12pt Times by Aptara Inc., New Delhi, India

Printed in Great Britain by CPI Antony Rowe, Chippenham, Wiltshire

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## Acknowledgements

*Choose a job you love, and you will never have to work a day in your life.*  
Confucius

This work could not have been realized without the direct and indirect support of several people. First of all we thank Mathijs Dreesen for his numerous valuable contributions. On the trading side we would like to express our gratitude to Claude Njikam. We are grateful to Igor Toder for many fruitful conversations and for bringing up the credit valuation adjustment for protection bought from a non-collateralized counterparty. His initial work on this problem really got us off to a flying start.

Special thanks go to Pete Baker and the publishing staff at John Wiley and Sons Ltd.

João would like to express his deepest gratitude to Marijke for neverending love and support and dedicate this book to her, Ilya, Hendrik and Elliot.

Finally, Serge would like to reserve his biggest thanks for Katrien and dedicate this book to her and to Elise, Wout and Klara.

João Garcia  
Serge Goossens

# Preface

*Technology has no respect for tradition.*

Peter Lee

Some people say that this book has been written during unusual market conditions. Securitization activity was designed to bring liquidity for the collateral in the portfolio. Investing in securitization instruments is a diversification and it reduces idiosyncratic risk. Combined with credit derivatives, securitization led to increased leverage in financial institutions. The high leverage levels affected liquidity, bringing the financial system to the brink of collapse.

*Innovation* plays a crucial role in society and leverage allows economic activity to be speeded up. However, all leveraged positions need to be carefully managed, as can be seen by the dramatic events that followed the summer of 2007. Standardized credit indices are the instruments to foster the securitization business model, playing a central role in the pricing discovery. Transparency in the pricing algorithms and the underlying parameters is key to the activity.

Our main objective in this book is to present the framework to manage this leverage. Many quantitative analysts and market practitioners have contributed to the development of the toolkit for credit derivatives described here. Despite their enormous contribution, many of them have faced hard times during the dramatic market correction that began in 2007. The quotes at the beginning of each chapter have been selected to honour their work.

Nowadays, the metaphor of the black swan is sometimes used to describe the credit crunch. It is the fruit of the imagination of Taleb (2007). The underlying idea is that the credit crunch was highly improbable and constituted an extreme event. However, highly improbable under the Gaussian distribution does not mean unlikely under other distributions. Moreover, improbable does not mean undetectable. Physicists doing quantitative trading in the foreign exchange and equity markets have been using ideas inspired by the work of Mandelbrot for quite some time. We did so in September 2002 for credit portfolio management and in March 2007 for CPDOs.

Instead of assuming that a process is Brownian motion-driven, one should first get an in-depth understanding of the underlying dynamics. In this book, we show that the ones who had a sufficiently long memory have seen that the alleged *black swan* is in fact *white*. Seek and ye shall find!

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