Euromoney Encyclopedia of Debt Finance

Second Edition

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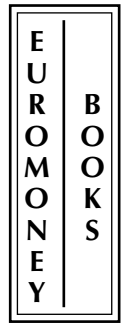
Edited by

Tony Rhodes



Published by
Euromoney Institutional Investor PLC
Nestor House, Playhouse Yard
London EC4V 5EX
United Kingdom

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ISBN 978 1 78137 064 3
First edition 2006

Typeset by Phoenix Photosetting, Chatham, Kent

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Preface

Since the first edition of this book was published in 2006, the tectonic plates of finance have ground together inexorably and the debt markets today bear little resemblance to those of pre-2007. The global financial crisis started in 2007 with the gradual erosion of confidence and losses in the US sub-prime market leading ultimately, in 2008, to the collapse of Lehman Brothers. This, in turn, led to a loss of liquidity in most markets as those institutions having liquid assets chose to hold on to them in the uncertain world where counter-party risk remained largely unresolved due to a lack of portfolio transparency. In late 2008 and early 2009, the window at central banks became the sole source of funding for many banks and in some cases, government intervention and support were essential in order to avoid failure of some leading well-known banks. After a short hiatus, it became evident that transferring the debts of banks to national accounts could seriously affect the ability of the sovereigns concerned to fund the liabilities. This triggered another response from investors who started looking at the overall ability of sovereign nations to finance their debt and the realisation, particularly in the eurozone, that some of the smaller countries were vulnerable. The so-called 'PIGS', Portugal, Ireland, Greece and Spain, were the first to fall under the gaze of the investors and the rating agencies, and a combination of IMF and ECB programmes have been introduced along with austerity programmes designed to reduce the overall level of national debt for Portugal, Ireland and Greece. Austerity programmes to tackle the level of debt have also been introduced in other European countries notably the UK, Italy, Spain and France. At the time of writing the US has just been down-graded by one rating agency from AAA to AA+, not so much because of the inability of the US to service its debt, but more the lack of political will to tackle the structural reforms required to reduce it. Such a down-grading would have been unthinkable a year or two ago.

Despite these significant events, the instruments that have provided the foundation of the debt markets over the years have remained essentially the same. However, the conditions attached to them, and the capital required to support them, are now radically different to the pre-2007 period. The purpose of this book is to provide the reader with an up-to-date vision of these debt products explaining the nature of the instrument and providing some examples of how they can be applied to commercial situations.

The changes in the debt markets over the last few years has forced borrowers to be more flexible on the terms of their financings and to seek a wider variety of investors. There is also a slow revival of investors prepared to accept a greater variety of risks and instruments. For example, pre-2007, non-bank financial institutions became active buyers of loans, particularly high-yielding loans, moving away from the traditional debt capital markets. This appetite virtually disappeared for the period 2008–2009 and it is only in 2011 that it has started to become really significant again.

It is apparent, therefore, that individuals working in treasury departments of borrowers and the bankers providing them with ideas on how to raise funds most cost effectively need to have in-depth knowledge of the entire spectrum of debt products. This means having a comprehensive understanding of the short-term markets such as commercial paper, the medium-term highly flexible loan markets, the long-term US private placement market, the medium-term note (MTN) and bond

markets, the covered bond markets (for financial institutions), the convertible market and ways to use *sukuk* structures effectively. Each of these markets is described in the first part of this encyclopedia where an outline of each product is given, its uses for borrowers and investors specified and the current leaders in the field identified, where possible, by way of league tables. The risks of using these products are also evaluated thereby bringing the reader up-to-speed on the opportunities available from each market, permitting them to assess the relevance of the products for their situation. In Part 2 of this encyclopedia, the reader is provided with some examples of the commercial application of these instruments.

The genesis for the first edition came from discussions I had with Samir Assaf at HSBC. We were discussing the increasing demands being placed on the front office where bankers had historically specialised in one area of the debt capital markets rather than the full range. On the other hand, borrowers, faced with demands for lowest-cost funding from their executive management boards, expected their bankers to be capable of discussing the full range of debt product alternatives relevant to their situation and credit standing. Bankers, being required to meet the needs of their clients in this way, have had to expand their knowledge base. This effort can be supported by this comprehensive book on the debt capital markets.

Sanjeevi Perera, Managing Editor at Euromoney Books has worked tirelessly with me to assemble the world class set of contributors that have provided the content for this book. A key criterion was to choose individuals from institutions whose position in their respective markets makes them *de facto* leaders in their field. They have shared their knowledge and experience for the benefit of the readers and it is for this reason that this book will be essential reading for all who wish to expand their knowledge of the debt capital markets.

Tony Rhodes
General Editor
September 2011

About the editor

Tony Rhodes has been working as an independent consultant since 2004 specialising in directing and delivering training seminars and workshops[1] in syndicated lending and advising clients on business issues related to debt capital markets.

His last full-time employment was at HSBC which he joined in 1998 as Global Head of Syndicated Finance responsible for primary and secondary loan syndication markets. Before this, Tony worked at Credit Suisse for nearly three years where he was responsible for primary and secondary loan syndication in Europe, Middle East and Africa, having previously spent 15 years in a variety of positions in debt capital markets at Bank of America International Limited (BAIL).

Tony started his career in the project finance unit of Shell International Petroleum Company, being based first in London, then in Paris. He then worked for a Paris-based consultancy which specialised in financing projects in the Middle East before moving to Liverpool, England, to join the Treasury Department at Ocean Transport & Trading Limited. His final position prior to joining BAIL was in the project finance unit at Lloyds Bank International Limited.

Tony read Natural Sciences and Business Management Studies at Corpus Christi College, Cambridge, and holds a Master of Arts degree. He has been a regular speaker at conferences on syndicated lending, has been course director of the London-based Euromoney training seminar entitled 'Syndicated Loans for Practitioners' since its inception in 1990, is the Author and General Editor of the book (now in its Fifth Edition) published by Euromoney Publications entitled *Syndicated Lending – Practice and Documentation* and was the General Editor of the first edition of the *Euromoney Encyclopedia of Debt Instruments*.

Tony was one of the founding directors of the Loan Market Association (LMA) in 1996.

Tony is a liveryman at the Worshipful Company of International Bankers and works in the Schools Working Group which is part of the Charities and Education Committee.

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[1] Training courses have been directed and delivered to clients in London, Amsterdam, Hamburg, Berlin, Prague, Vienna, Warsaw, Moscow, Istanbul, Cairo, Dubai, Qatar, Kuwait, Jeddah, Johannesburg, Hong Kong, Singapore and Sydney.

About the contributors

Julien Brune
Julien Brune has worked in Société Générale's Capital Structuring team since 2008, when he joined the Global Capital Markets division. He is responsible for originating and structuring hybrid transactions for financial institutions and corporates across Europe. In parallel, Julien managed several liability management transactions on subordinated instruments. Prior to that, Julien spent four years in SG's Asset-Based Finance team. Julien graduated from Ecole Polytechnique and Ecole nationale supérieure de l'aéronautique et de l'espace.

Monika B. Foryś
Monika B. Foryś was born in Zielona Góra, Poland in 1986. She followed a five year Master's programme in Mathematics and Computer Science in Finance and Insurance at the University of Zielona Góra. During these studies she acquired knowledge in the field of financial engineering and insurances. After three years of studies in Poland, she joined Delft University of Technology in the Netherlands to follow a two year programme in Applied Mathematics. In 2010 she received her Master's degree with a thesis entitled 'A probabilistic model for explosion probability of grey cast iron gas pipelines in Amsterdam'. In 2011 she returned to Poland to present her second Master's thesis entitled: 'Conformity of the return rate distribution for index BEL20 quoted on Euronext Brussels stock market with the selected α-stable distributions'. Afterwards, she decided to continue a scientific career as a PhD student under supervision of Professor Wim Schoutens at the Departement of Mathematics of the Katholieke Universiteit Leuven in Belgium. Her research is focused on developing a method of measuring the market fear (The Fear Index – FIX) and pricing contingent convertible notes (CoCos).

David Gardner
David Gardner is HSBC's Global Head of Project Finance. He joined the bank in 2005 and has helped establish HSBC as one of the premier global project finance houses. The team currently has over 80 live advisory mandates in power, infrastructure, and oil & gas and has received 50 awards in 2010 of which 9 were house awards including The Banker Most Innovative in Infrastructure and Project Finance House, EMEA Finance Best Project Finance House and Best Project Finance Advisory awards and The Asset Best Project Finance House. Previously David was at SMBC and the IFC. He has an MBA from the M.I.T. Sloan School and a Bachelors in Mechanical Engineering from McGill University.

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Alex Griffiths is Head of International Research for Fitch Ratings' EMEA and Asia-Pacific Corporates groups. He is responsible for the coordination and production of cross-sector research reports for the Corporates group in EMEA and Asia Pacific, and the development of the group's research product range. Alex joined Fitch in London in 2005 as a corporate analyst in its TMT (Telecoms, Media and Technology) team, where he specialised in the media sector. Prior to this, Alex spent eight years with Deloitte's TMT practice, where he gained experience ranging from transaction

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Simon Jackson
Simon Jackson has over 30 years' experience in the loan syndication market. He recently established the syndication function for the African Development Bank in Tunis, including an A/B loan co-financing programme with commercial investors, and enhancing the ADB's role in the growing market for syndication between development finance institutions. He was previously head of Syndication for Sumitomo Mitsui Banking Corporation in London, and has also worked for European Bank for Reconstruction and Development, Credit Suisse, The Chase Manhattan Bank, N.A., Morgan Grenfell & Co. and Grindlay Brandts. He is a graduate in Engineering Science from Corpus Christi College, Cambridge.

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Lorenz Jorgensen has 25 years' experience in international banking, most of it spent in syndicated lending and emerging markets. Lorenz joined EBRD in 1993 and is Director and Head of Loan Syndications. Prior to joining the EBRD, Lorenz worked from 1989 to 1993 at Manufacturers Hanover Limited and Chemical Bank (now JPMorgan) in London, where he was a Vice President in the Loan Syndications and Asset Swaps Group. Before this, Lorenz worked at Kansallis Banking Group (now Nordea) of Finland in London, where he worked in Scandinavian corporate finance, and at Creditanstalt-Bankverein of Austria, also in London (now UniCredit).

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Heiko Langer is a Senior Analyst for Covered Bonds at BNP Paribas. Within the bank's London based credit research department he covers the full range of international covered bond markets. Before Heiko joined BNP Paribas in July 2005, he worked for four years as an analyst for the covered bond and agency market at ABN AMRO in Frankfurt. Having graduated from the University of Cooperative Education in Karlsruhe in Germany with a diploma in Business Administration, Heiko joined L-Bank in 1994, where he worked in the international funding division in the field of investor relations and transaction management before joining ABN AMRO in 1996.

Sean Malone
Sean Malone joined RBS in 2005 and is Managing Director, Head of Loan Market and Conduit Origination. He has led RBS Loan Markets team since 2007 and assumed responsibility for the Conduit Origination business in mid 2010. He previously spent seven years in a senior Loan Markets role at Deutsche Bank and prior to that worked at Union Bank of Switzerland. He has approximately 20 years of Loan Markets experience. Sean's team is responsible for the origination and structuring of syndicated loan transactions for all Western European Corporate and FI borrowers, a region where in recent years RBS have been consistent market leaders both in terms of the volume and complexity of transactions completed. Over this period the team has completed financings across a broad range of sectors with particular emphasis on transport and infrastructure; energy and natural resources; industrials; TMT; consumer, retail and healthcare and insurance. Sean has a BSc in Economics and Accountancy and is a qualified Chartered Accountant. He is married to a law lecturer and has two young sons.

Rebecca Manuel
Rebecca Manuel was appointed by RBS in May 2011 to build a coverage business focused on the Sovereign Wealth Fund client base. As Global Head of Sovereign Wealth Fund Coverage, Rebecca is responsible for driving the coordination and strategic interactions between RBS Global Banking and Markets and targeted Sovereign Wealth Fund clients across the globe. Prior to taking this role, Rebecca was responsible for RBS' loan syndicate businesses globally, and co-headed the European loan and bond syndicate business. Rebecca has an MBA in Finance and Marketing from the Kellogg School of Business, Northwestern University, Illinois and a Bachelor of Arts degree in International Economic Relations from the University of Michigan, both in the USA.

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Andrew Menzies is a Director in the Debt Capital Markets team at Société Générale. He has been with the bank since 2003 and is responsible for corporate bond origination across the UK, Netherlands and Scandinavia. Andrew has nearly 10 years experience in the international capital markets. His principal role is to originate and execute public US Dollar, Euro and Sterling transactions as well as US Private Placements for the bank's clients and ensure any financing is complemented with appropriate hedging solutions. Andrew has a Masters in Economic and Political Geography from Edinburgh University.

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Cecilia Park is a Founder and a Managing Partner of Amur Capital Management LP ('Amur Capital') based in New York, NY. Formed in mid 2008, Amur Capital sources and manages opportunistic private equity investments in the Transportation and Commercial industries with focus on assets and cash flows that provide backstop value. Prior to forming Amur Capital, Cecilia was a Managing Director and head of UBS's efforts in Structured Finance for Transportation assets globally. At UBS, she was responsible for origination, structuring and execution of various transportation-related asset-backed transactions, especially in the capital markets, as well as strategic investments in the transportation sector. Prior to joining UBS, she was employed with Morgan Stanley where she focused primarily on aircraft and rolling stock financings in the capital markets utilising various structured finance products. Cecilia has led over US$15 billion in aviation and rolling stock asset-backed capital markets issuances, many of them ground-breaking transactions, and financings for airlines, railroads, manufacturers and lessors in diverse aviation asset classes such as commercial airliners, corporate jets, aircraft engines and spare parts, as well as in locomotives and various freight railcars.

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David Roberts
David Roberts' banking career spans more than 30 years, encompassing a variety of different roles at major international banks. David currently works as Head of Islamic Debt Origination at Eiger Trading Advisers in London. David joined Eiger in March 2011from BNP Paribas where he worked briefly as UK Head of Compliance Services. Prior to the merger with BNP Paribas, David was Global Head of Loan Syndications at Fortis Bank, responsible for the origination and distribution of loans for Corporates, Financial Institutions, M&A, as well as Leveraged and Project Finance. David began his career in retail banking with Lloyds Bank, moving on to work for Union des Banques Arabes et Francaises (UBAF Bank) as an internal auditor. David then joined Lloyds Merchant Bank to work in syndicated loans, where he became Head of Loan Syndications, before going on with his team to set up a new syndications group at Danske Bank in London, which grew to encompass DCM, Securitisation and Structured Finance. David was then hired by Nordea to establish a Loan Syndication group in Stockholm. Prior to joining Fortis, David worked for KPMG Corporate Finance in the Debt Advisory team, advising clients on a variety of different capital raising products. David holds a diploma from the Chartered Institute of Bankers and is a Freeman of the Worshipful Company of International Bankers.

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Wim Schoutens is professor in financial engineering at the Catholic University of Leuven, Belgium. He has extensive practical experience of model implementation and is well known for his consulting work to the banking industry and other institutions. He is an independent expert adviser to the European Commission on 'State aid assessment of valuation of impaired assets and of asset relief measures' and has assessed in that position about €1 trillion of assets. Wim is the author of several books including *Contingent Convertibles (CoCos): Structure and Pricing*, the first book ever on Contingent Capital and CoCo bonds (written with Jan De Spiegeleer). He is Managing Editor of the *International Journal of Theoretical and Applied Finance* and Associate Editor of several quantitative finance journals.

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Zarrar Sehgal is a partner in Clifford Chance's US Banking and Finance Group and Co-Head of the Asset Finance Practice. Mr. Sehgal is also Head of Clifford Chance's Global Transport & Logistics sector group. He has extensive experience representing underwriters, lenders, lessors and governmental agencies in a wide variety of asset finance transactions, including portfolio securitisations, acquisition financing, leveraged leasing, EETC transactions, secured lending, structured financing and credit enhancements. Prior to joining Clifford Chance, Mr. Sehgal was with Milbank, Tweed, Hadley & McCloy LLP. He received his JD from Georgetown University Law Center and his

undergraduate degree from Boston University. Mr. Sehgal was recognised by *Chambers USA* in each of the past six years. In 2009, Mr. Sehgal was named a Young Global Leader by the World Economic Forum (WEF), an award that recognises the most distinguished leaders below the age of 40 from around the world.

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Jan De Spiegeleer is head of risk management at Jabre Capital Partners, a Geneva-based hedge fund. He earned an extensive knowledge of derivatives pricing, hedging and trading while working for KBC Financial Products in London, where he was managing director of the equity derivatives desk. He also ran his own market neutral statistical arbitrage hedge fund (EQM Europe) after founding Erasmus capital in 2004. Prior to his financial career, Jan spent 10 years in the Belgian Army during which he also served in Iraq. He holds a Msc in Civil Engineering (Royal Military Academy, Brussels) and an MBA (University of Leuven). Together with Wim Schoutens he authored *Contingent Convertible (CoCo) Notes: Structure and Pricing* (EuroMoney, 2011) and *The Handbook of Convertible Bonds* (Wiley, 2011).

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Christoph Weaver has 20 years of syndication experience and joined RBS eight years ago. He is Managing Director, Head of Loan Markets Origination in Germany, Austria & Switzerland and Southern Europe. Previously his responsibilities have also covered the Nordic Region. In 2002 he joined HVB to establish and spear-head their Corporate Syndications Team and was also responsible for the financial institutions team, with a major focus on European Borrowers. In 1997 Christoph moved to the Debt finance Division of Bankgesellschaft Berlin where he became Head of Syndications leading an eight-strong cross border team with a particular focus on borrowers in Eastern Europe, the Nordic Region and the Near Middle East. Christoph started his career at WestLB where he focused largely on UK corporates and FIs. Christoph is the Course Director of the Euromoney 'Syndicated Loans for Practitioners' training seminar. Christoph was born in Germany, brought up in Scotland and went to University in Germany and England where he received a Dipl.Betriebswirt and BA in European Business Admininstration. He is married with two children.

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Part 1

Core products

Chapter 1

Commercial paper and medium-term notes

Andrew Ellis
Goldman Sachs

Introduction: what is commercial paper?

Commercial paper (CP) is a short-term debt instrument utilised by a wide range of borrowers in international capital markets to fulfil many of their short-term financing requirements. Light touch documentation standards and regulatory advantages have combined to ensure that the commercial paper market has evolved to become one of the simplest, most efficient, flexible and cost-effective means by which issuers can access one of the most significant and attractively-priced pools of liquidity available to them.

These days commercial paper is issued by corporate, financial and sovereign borrowers generically of investment grade rating and may be issued in either unsecured or secured form. Secured CP is widely referred to as asset-backed CP (ABCP) and is recognised as a stand-alone funding option (generally for financial borrowers) in its own right. In both cases CP is issued, typically via a dealer, at a discount for a fixed rate of interest for a stated tenor, in exchange for cash. At the end of this tenor, the CP matures and is redeemed at par. The buyer will then receive the nominal amount invested plus accrued interest. In the event of issuer default prior to maturity, the CP holder is ranked at the same level as other senior unsecured debt holders of the issuer.

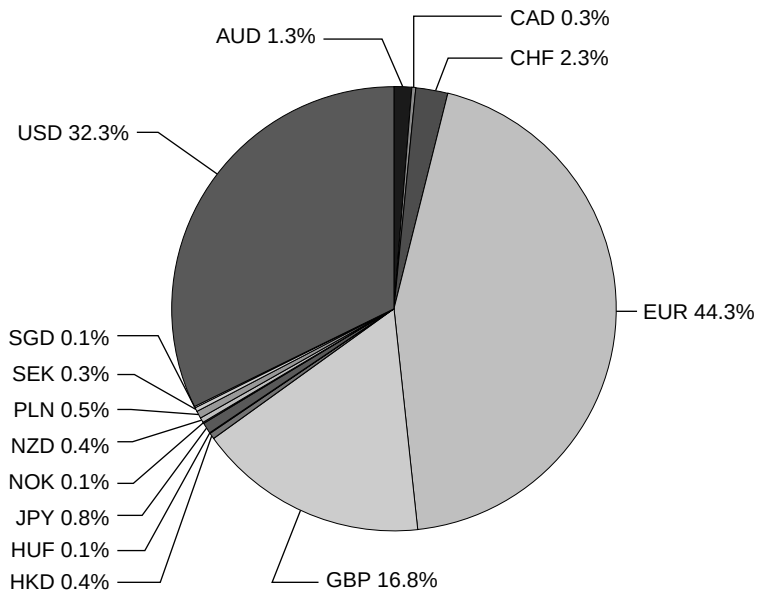
ABCP is issued by special purpose vehicles (SPVs). When the SPV issues CP, the cash it receives is used to purchase securities or to fund pools of assets that are either highly rated or structured in a way that assures at least an A-1/P-1 short-term credit rating for the SPV from Standard & Poors and Moody's respectively. The SPV is structured to be bankruptcy remote, and typically benefits from multiple layers of liquidity and credit enhancement that are intended to protect against market disruption and credit losses.

While many jurisdictions have their own domestic CP markets, the largest and most liquid are the US Commercial Paper (USCP) market and the Euro Commercial Paper (ECP) market, with outstandings of US$1,123 billion and US$514 billion respectively (as of February 2011). While US dollar is the only currency used for the USCP market, the ECP market is multi-currency. At the end of February 2011, approximately 40% of outstanding ECP was euro denominated, 33% was US dollar denominated and 16% was sterling denominated. The remainder consisted of a variety of currencies including Australian dollar, Swiss franc, Japanese yen and the Singapore dollar (see Exhibit 1.1).

Under current conventions, commercial paper can have a maturity of 397 days or less in the case of USCP and 364 days or less in the case of ECP. In practice the effective maturities of

Exhibit 1.1

ECP outstanding by currency



Source: Dealogic CPWare, February 2011

commercial paper when issued are much shorter, with the great majority of paper in either market maturing within a timeframe of 90 days or less.

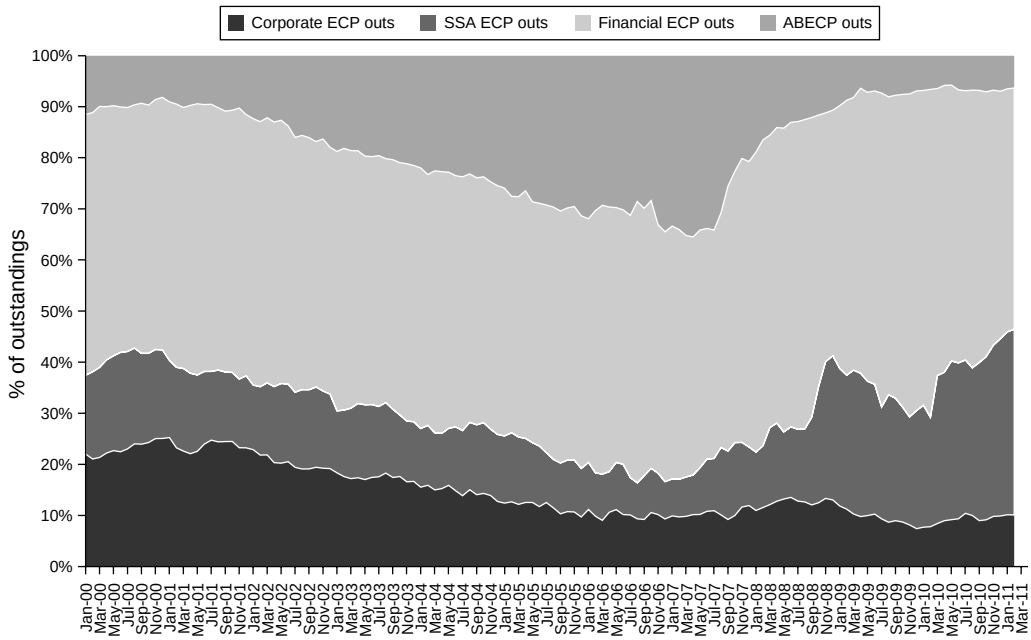
Who issues commercial paper?

In both the USCP and ECP markets the issuance activity of unsecured financial issuers has historically been very high, representing approximately 50% of outstandings. Other borrowers include sovereigns/supranationals/agencies (SSA), corporates, and ABCP issuers. In Europe, financials have consistently been the largest sector of the ECP market since its inception (see Exhibit 1.2). Prior to the onset of the global financial crisis in the summer of 2007, ABCP in Europe had grown to represent 33% of the ECP market, while in the US this sector represented 53% of total outstandings (see Exhibit 1.3).

The destructive consequences of the financial crisis were felt particularly acutely across the entire commercial paper industry, as investors flocked to close out as best as they could any positions or exposures which they felt were capable of contaminating their portfolios; such was the level of

Exhibit 1.2

The evolution of the euro commercial paper market



Source: Dealogic CPWare, February 2011

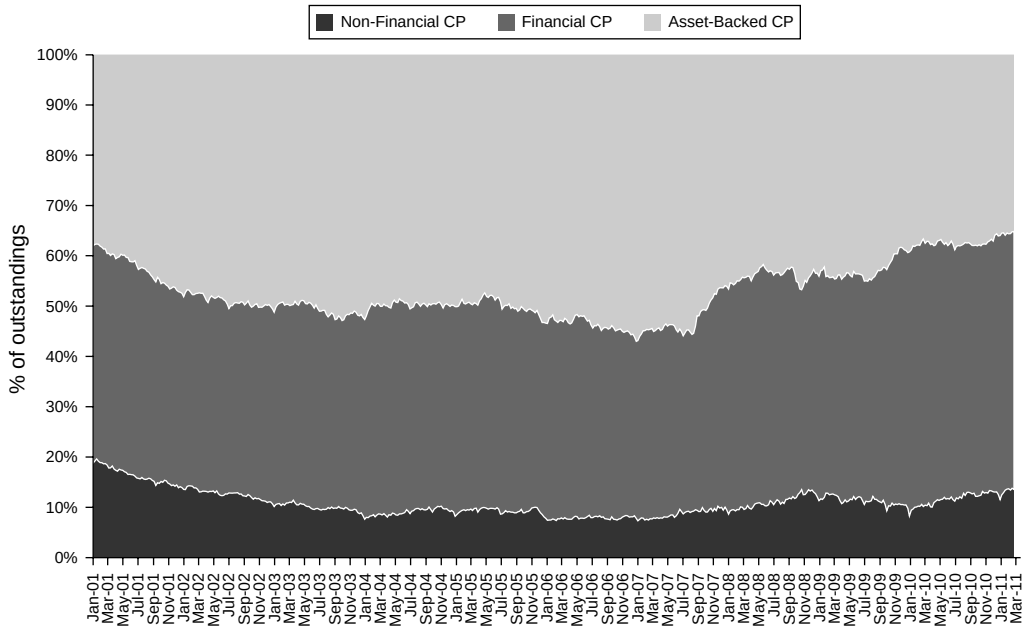
mistrust between banks that the interbank lending markets also froze, precipitating a huge injection of liquidity and coordinated policy measures among the leading global central banks in an attempt to stave off a complete meltdown of short-term funding markets.

The moves by global money market investors to rein in their risk positions had a profoundly detrimental effect on the secured segment of the commercial paper market in particular, which relied more than anyone had really understood before on regular access to cheap short-term financing. With investors pulling back sharply, the ABCP market experienced an unprecedented dislocation – a buyers' strike – as money market funds in particular shunned the sector in droves. As awareness of the sub-prime issue grew investors chose to withdraw support from asset-backed vehicles or structures which contained any form of sub-prime or generic mortgage exposure, and outstandings dropped significantly in this space (see Exhibit 1.4). Much of the cash previously put to work in ABCP space has moved into the perceived safer haven of AAA-rated SSA paper and particularly in Europe there has been considerable growth in this sector.

In addition, the widening of the euro-US dollar FX basis over recent years precipitated sustained interest in SSA issuers, many of whom have been able to offer very attractive US dollar levels,

Exhibit 1.3

The evolution of the US commercial paper market



Source: Federal Reserve, February 2011

while achieving their stated euro funding targets thanks to the benefit of the favourable economics of the basis swap. Corporate and industrial borrowers in CP have been much in demand as well, as investors have looked to diversify away from financial and financial-related exposures.

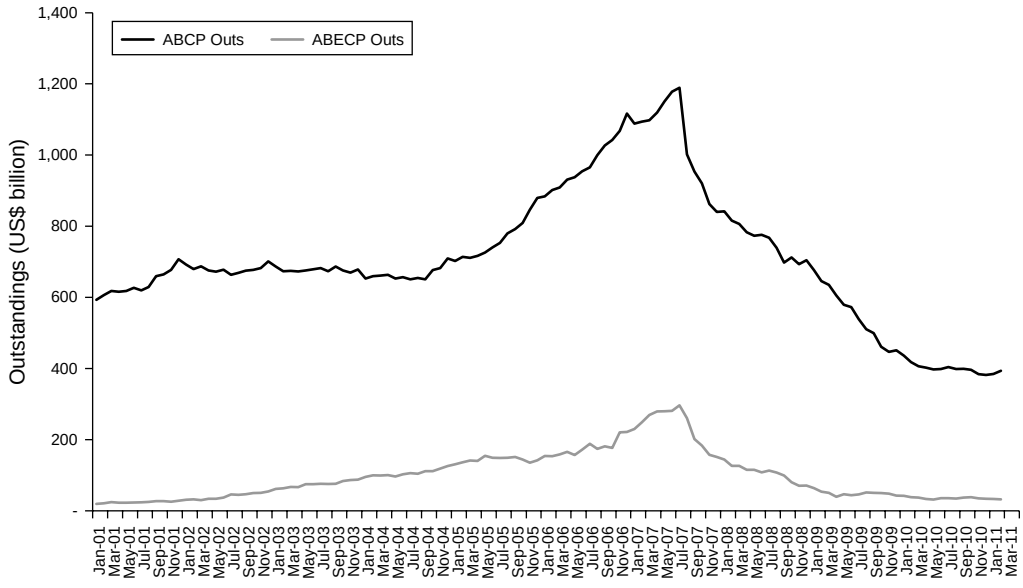
Why use the commercial paper markets?

In its purest format commercial paper offers issuers a great deal of flexibility in providing for attractively-priced, easy to source, short-term funds. For example, eligible commercial paper borrowers have generally enjoyed significant cost savings in comparison with using bank lines for their short-term funding which, for many years prior to the establishment and rapid growth of the international CP markets, was often the only source of liquidity available to many borrowers. It is relevant that CP has often been deployed for strategic debt financings and/or to assist in the completion of highly visible global mergers and acquisitions (M&A) between corporations. This has been especially prevalent among industrial/corporate M&A situations in the US.

Many European and international borrowers have used CP to raise their profile in the US domestic market, reasoning that a foothold in the biggest and most liquid short-term debt market

Exhibit 1.4

The US and European ABCP markets



Source: Federal Reserve and Dealogic CPWare, February 2011

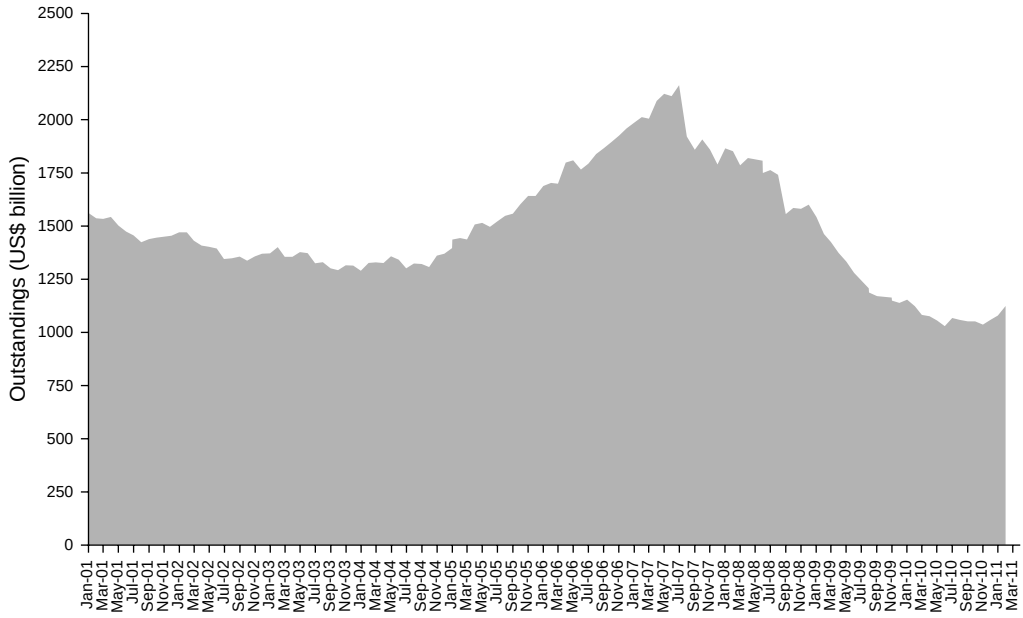
was not just prudent but also a potential source of opportunistic arbitrage funding. If we use market outstandings as the appropriate yardstick for the health of these markets, although these are some way off their record highs seen in July 2007 (when the USCP market stood at US$2,161 billion) (see Exhibit 1.5) and July 2008 (when the ECP market stood at US$878 billion) (see Exhibit 1.6), the global CP market is still very substantial (in aggregate over US$1,637 billion outstanding as of February 2011) and there is still strong investor support and plentiful liquidity available for the vast proportion of eligible issuers.

Who buys commercial paper?

The majority of USCP investors are SEC-regulated, AAA-rated money market funds. These portfolios – in combination a US$2.75 trillion constituency[1] – are also known as 2a-7 funds on account of the rule which governs their activities, originally promulgated under the US Investment Company Act of 1940. In February 2010, the SEC voted to approve amendments to this rule with modifications that include more conservative asset quality limitations, new liquidity and maturity restrictions and changes to portfolio disclosure rules. The rules changes resulted from concerns over the role

Exhibit 1.5

The growth of the US commercial paper market



Source: Federal Reserve, February 2011

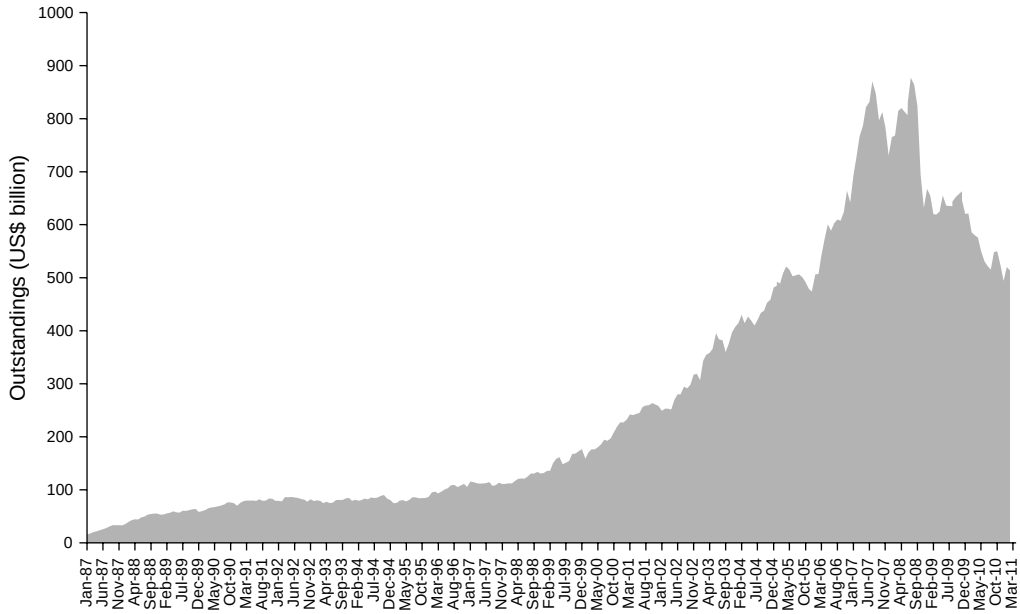
of money market funds in the broader economy after the collapse of a major fund precipitated by the Lehman bankruptcy. As a result the US government offered temporary guarantees and other assistance to the money fund industry in order to reassure investors in these funds that their money was safe. Other investors in USCP include corporates, securities lenders, state and local municipalities, pension funds, insurance companies and banks. Buyers of ECP include corporates, financial institutions (including banks, building societies, insurance companies and brokers), fund managers, money market funds, private wealth managers and family offices, securities lenders, sovereigns and supranational bodies.

Trading and pricing

In a typical transaction, commercial paper is bought from an issuer by one of its programme dealers who then on-sells the paper to an investor. The dealer community consists of many of the leading global investment and commercial banks. Most of these houses are able to deploy dedicated short-term interest rate trading and sales teams, which facilitate the trading of commercial paper among issuers and investors. An increasing amount of CP trades are executed electronically on systems such as Bloomberg and TradeWeb.

Exhibit 1.6

The growth of the euro commercial paper market



Source: Euroclear, February 2011

Investors who buy commercial paper in the primary market are more often than not likely to hold the paper until it matures, rather than look to sell it in the secondary market. Although buybacks are a small feature of the market they do occur when there is a change in the investor's perception of the issuer's risk or when the investor wants to alter the maturity profile of its portfolio. In this instance the investor will generally turn to the dealer through whom they bought the original position in order to facilitate a buyback or other secondary market transaction.

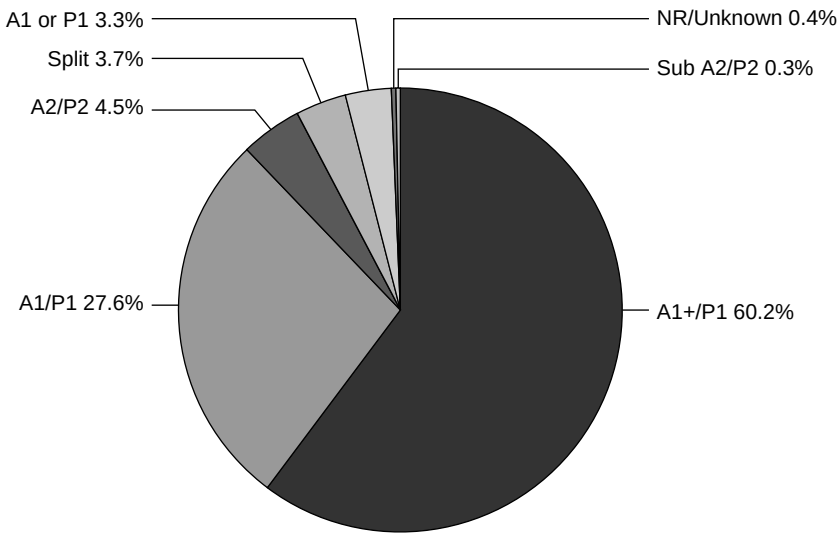
Commercial paper pricing is principally a function of an issuer's credit rating and industry/sector peer comparison. On an absolute basis, the price an issuer must pay will of course also be affected by other factors including the relevant risk-free rate and the trajectory of other generic short-term interest rates. Commercial paper prices are often quoted by market practitioners as a spread to the relevant currency's London interbank offered rate (Libor).

Ratings requirements

Due to the overwhelming importance of the global money market fund investor base to the commercial paper markets, issuers of commercial paper in international markets are almost exclusively required to be high quality in terms of their underlying credit ratings. In terms of long-term credit ratings

Exhibit 1.7

ECP outstanding by rating



Source: Dealogic CPWare, February 2011

this implies a minimum BBB (or equivalent) ratings threshold. Money market funds, especially those which carry AAA ratings from relevant ratings agencies, are themselves required to invest in highly-rated issuers, which means their portfolios are heavily slewed towards credits with a minimum A-1/P-1 short-term credit rating. For example in the ECP market some 90% of outstandings at February 2011 month-end came from issuers rated A-1+/P-1 or A-1/P-1 (short-term) (see Exhibit 1.7). A-2/P-2 rated issuers accounted for more than 4% and split-rated issuers (those rated A-1/P-2 or A-2/P-1) represented less than 4%. Similarly, the most active and liquid part of the USCP market is the Tier 1 sector which broadly consists of issuers rated A-1+/P-1 or A-1/P-1.

Tier 1 USCP issuers accounted for us$877 billion of outstandings at the end of February 2011. Due to the minimum credit quality requirements of many participating investors, financing for issuers rated below A-2/P-2 is much more infrequent in either market, with market access and available liquidity significantly reduced. Investors have historically looked to credit ratings as an indication of the creditworthiness of an issuer. Generically, if we put to one side other considerations such as relative pricing and sector, all things being equal the higher its rating the greater the liquidity available to an issuer. As such, a ratings downgrade will often impact an issuer's capacity in the CP markets. Recent regulatory changes by the US authorities have moved to eliminate over-reliance on

credit ratings by both regulators and investors, to encourage an independent assessment by investors of the creditworthiness of a security.

When assigning short-term ratings to an unsecured CP issuer, the rating agencies require evidence of programme support to meet unforeseen shortages in liquidity. For corporate issuers they would typically expect to see back-up lines in place, often in the form of lending facilities provided by their banks. Depending on the industry and the sector and its perceived creditworthiness, an issuer may be expected to show evidence of back-up of 100% of potential CP programme outstandings, although there are certainly cases where the back-up requirement is materially lower than 100%. For financial institutions, who should have more flexibility over their access to short-term funds, 100% back-up is typically not required; instead the rating agencies might look for other evidence showing that on any given day the issuer could repay or refinance a percentage of its underlying CP obligations. This might include evidence of the existence of a swingline facility, access to liquid/highly-rated sovereign or government securities and/or cash positions.

Additional issuer support

In many instances, unsecured CP issuers are additionally guaranteed by a higher-rated entity (typically the parent institution or a government), or are provided with a keep-well agreement (KWA) by such an entity. In these cases, subject to the terms and conditions of the guarantee/KWA, should the issuer default the debt obligations become the responsibility of the guarantor or the provider of the KWA. If the guarantor/KWA provider is unable to make good on outstanding CP, the holder of the CP is ranked *pari passu* with other senior unsecured creditors of the guarantor/KWA provider. Letters of credit are another form of issuer support that exist but are rarely used today as they have proved to be less cost-effective. Asset-backed issuers may provide protection to their investors in the form of backstop liquidity (provided by one or more financial institutions) and the credit enhancement of the underlying pools of assets.

Documentation, disclosure and regulation

For USCP and ECP issuance there are minimum standards that must be in place, including the establishment of a programme. A CP programme in either of the main markets is rooted in law and provides for minimum standards of protection for all participants in the programme, including the issuer, the dealers, investors and other relevant counterparties. Standard documentation exists in both markets which forms the basis of negotiation between counterparties during the course of the establishment of a programme. Issuers and dealers are often advised by one or more external legal counsels, and typically for ECP programmes one dealer will be appointed as the programme arranger or coordinator by the issuer, to act as the go-between between the issuer, the other programme dealers, external counsels and other relevant counterparties. As part of the programme establishment for the issuance of both USCP and ECP there are a number of documents that must be prepared. These include, *inter alia*:

- *authorising resolutions* from the issuer's board (and guarantor's board, if applicable) authorising the issuance of commercial paper, the execution of documents and empowering certain persons to act on behalf of the issuer;

- *a dealer agreement* between the issuer and the dealer panel that sets out the terms of issue, the form and content of the notes, representations and warranties of the issuer, covenants and agreements of the issuer and the dealer panel;
- *an issuing and paying agent (IPA) agreement* that sets forth the terms of a contract between the issuer and their chosen IPA, which will hold the commercial paper and deliver the notes to the dealer(s) for payment via the central securities depository;
- *ratings confirmation letters* sourced from the credit rating agencies;
- *legal opinions* from each counsel in the issuing jurisdiction regarding authorisations, enforceability of agreements, notes and guarantees; and
- *an offering document* jointly prepared by the issuer, their legal counsel and the dealer panel. In the USCP market this document is most commonly known as a Private Placement Memorandum (PPM) or Offering Circular (OC); in the ECP market it is usually referred to as an Information Memorandum (IM).

Programme documents and investor disclosure need to be updated in the event of a material change to the programme. Examples of changes can include an increase in authorised programme size, amendments to the dealer panel, ratings revisions, and a material development in the issuer's (or guarantor's) business which is of potential relevance to CP investors. There is no legal requirement for issuers to update their programmes on a regular basis. However if a programme is listed on an exchange, the exchange may require that the programme be updated on an annual or bi-annual basis. In the USCP market an update to the PPM/OC is often served by simply changing the date on the front page of the memo, assuming no other material changes. There is no reporting or listing requirement for either ECP or USCP, as CP is considered an exempt (in the case of the US market) or unregulated (in the case of the ECP market) security. Some banking/financial issuers of ECP have nonetheless chosen to list their programmes on a recognised exchange as this is one of the standard criteria for European Central Bank collateral eligibility in its repo operations. USCP is issued pursuant to one of two exemptions under the US Securities Act of 1933: either section 3(a)(3) or section 4(2). The chosen exemption will determine how the proceeds received from issuing the CP are used, the maturity of the CP and to whom the CP can be sold. Under section 3(a)(3) proceeds must be used to finance current transactions and the maturity of the CP must not exceed 270 days. The use of proceeds from CP issued pursuant to section 4(2) is unrestricted. This is instead a transactional exemption based on the way in which notes are placed and to whom they are sold. Deemed as a private placement, 4(2) exempt notes are not offered publically and can only be sold to Accredited Investors as defined in rule 501 of the 1933 Act. In addition participating dealers in a 4(2) programme must limit resale of 4(2) notes either to themselves or to a buyer which qualifies as an Accredited Investor or as a Qualified Institutional Buyer pursuant to Rule 144A sales restrictions.

Medium-term notes

What are they – their relevance – and why use them?

Medium-term notes (MTNs) are debt obligations that are offered on a continuous basis via a debt issuance platform commonly known as an MTN programme. The feature that primarily distinguishes traditional debt issuances from MTNs is that MTNs are offered through agents or dealers typically

on a best efforts basis, rather than on a firm commitment (underwritten) basis as with public bond issuances. Since its establishment in the 1980s as a bridge between funding gaps of an issuer's short-term commercial paper and long-term borrowings in the bond markets, the MTN market has evolved to such an extent that the term 'medium' has become misleading. In fact, today the MTN market is thought to comprise all types of bond issuances from as short as one-month to as far out as 50-year maturities.

Exhibit 1.8

Volume of MTNs issued by final maturity

Maturity period	*US$ (million) equivalent*	*No. MTNs*	*Percentage*
5 – <10 years	708,855	9,540	31.4
3 – <4 years	363,483	7,691	16.1
10 – <15 years	286,382	2,772	12.7
2 – <3 years	225,785	5,184	10.0
1 – <2 years	177,176	12,750	7.8
30+ years	132,199	963	5.9
4 – <5 years	106,197	2,137	4.7
0 – <6 months	95,939	49,929	4.2
6 – <12 months	73,547	5,873	3.3
15 – <20 years	57,721	1,351	2.6
20 – <30 years	30,839	605	1.4
Total	2,258,123	98,795	100.0

Source: mtn-i; as of 1 February 2011

MTNs differ from other term debt products in international capital markets by the fact that an issuer can post funding rates or spreads to Libor on a daily basis for a range of maturities, structures and currencies that it wishes to issue. This means issuers can meet their funding requirements privately without going through the rigorous process of public offerings while investors can structure their investments to match their objectives.

MTN issuance off an MTN programme is divided into two general types: non-syndicated and syndicated. The former is the classic private placement route whereby issuers' bonds are discreetly sold by a single dealer to a single investor. The latter is the traditional public offer of debt securities. The main difference between public and private transactions is that on public deals there are a number of investors brought into the deal, whereas on private non-syndicated deals there tends to be one or, at most, a handful of investors. The use of an MTN programme has become especially

important as it can be used to issue both private non-syndicated deals as well as large public syndicated ones. Such a documentation platform, especially when it comes to public syndicated deals, offers considerable cost savings to an issuer over the execution of trades on a stand-alone basis. As a result, borrowers can issue debt virtually in any market and access investors in any location via their MTN programme. A typical MTN programme will provide a number of options for the issuer, giving access to different investors in different regions, as in Europe or Asia. Issuers may also seek to sell debt securities to US investors by opting to include a Rule 144A option in their MTN

Exhibit 1.9

Volume of MTNs issued by currency

Currency	*US$ (million) equivalent*	*No. MTNs*	*Percentage*
EUR	1,270,506	13,061	56.3
USD	522,656	35,279	23.1
GBP	157,017	2,417	7.0
JPY	85,101	7,705	3.8
AUD	41,982	2,830	1.9
HKD	30,638	27,278	1.4
CHF	29,849	1,064	1.3
SEK	28,308	472	1.3
BRL	19,408	781	0.9
NOK	9,857	204	0.4
SGD	9,250	6,023	0.4
CAD	8,218	161	0.4
TRY	7,926	134	0.4
ZAR	6,458	153	0.3
NZD	6,191	196	0.3
RUB	4,018	96	0.2
IDR	2,945	171	0.1
MXN	2,862	190	0.1
CNY	2,502	49	0.1
Other	12,431	531	0.6
Total	2,258,123	98,795	100.0

Source: mtn-i; as of 1 February 2011

programme, satisfying US requirements for primary resales to US Qualified Institutional Buyers, or may even go a step further by setting up a fully Securities and Exchange Commission (SEC) registered MTN programme, which meets all SEC disclosure requirements for placement into the US.

In recent years, structured issuance has increased considerably over plain vanilla MTNs. This is because structured MTNs can generate lower costs of funding for issuers while better fulfilling the yield targets of investors. The array of structures and products in this segment of the MTN market is becoming ever more complex. Today, MTN pay-offs can be linked to a variety of components, including interest rates, equities, currencies, commodities and credit events.

Issuer profiles – investor profiles – leading players

Typical borrowers accessing the MTN market today include banks and other financial institutions, corporates, SPVs, sovereigns, municipalities, regions, agencies and emerging market issuers. Such borrowers have very different views on how best to utilise MTNs. For instance, the most frequent issuers in the MTN market tend to be borrowers who are in constant need of cash to meet their daily liquidity needs. Typically these tend to be banks and other financial institutions, as well as numerous sovereign, supranational and agency borrowers. Such borrowers tend to be more opportunistic in nature and hence more likely to issue structured MTNs to generate better funding for themselves, assuming they have the means (systems, infrastructure, and so on) to value and price such structured trades. Corporates tend to be driven more by their specific funding requirements. As their needs for funds vary, they tend to issue more plain vanilla MTNs. See Exhibits 1.9 and 1.10.

Exhibit 1.10

Number of MTNs issued by size of issuance

Issuance size US$ million	*No. MTNs*	*Percentage*
<1	47,650	48.1
1 – <5	27,826	28.1
5 – <10	6,939	7.0
10 – <20	6,543	6.6
20 – <50	4,759	4.8
50 – <100	2,183	2.2
100 – <500	2,202	2.2
500+	1,040	1.0
Total	99,142	100.0

Source: mtn-i; as of 1 February 2011

Traditionally, investors' demand for credits in the MTN world has been concentrated on double-A and triple-A rated issuers, with a particular focus on sovereign and supranational borrowers. However, as investors have become more sophisticated, their ability to categorise and quantify different risk profiles has improved. They have started to consider issuers rated further down the credit curve and, as a result, the array of MTN issuers available to them has expanded. The typical investor base today will still reflect specific investor appetite for holding a particular credit or structure. The typical MTN investor ranges from institutional investors such as banks, funds and insurance companies, to retail investors who can purchase MTNs through their local bank branch.

With investors becoming more accustomed to MTNs, there has been greater acceptance of them by big pension funds and mutual funds. Nowadays life insurance companies use MTNs as guarantees on some of their policies. Many investors are increasing their expertise on MTN issuers and structures, becoming more comfortable with structured MTNs in their search for enhanced yield. See Exhibits 1.11 and 1.12.

Sample termsheet – secondary market, trading, investors – methodology for pricing – distribution methods

In the MTN world, the secondary market is an important feature. Usually a dealer on an MTN programme is obliged to provide liquidity for investors. While most MTNs, particularly those privately placed, are bought and held until maturity, most investors will require a secondary market commitment on such trades. On publicly syndicated MTNs, investors are accustomed to seeing good secondary market liquidity from dealers. This is because with a vast array of investors bought into a public deal, securing a bid/ask price through a dealer is usually not particularly problematic. However, on privately placed MTNs a secondary market is not always to the advantage of investors and in some cases it works against them. For example, in a privately placed MTN trade, the note payout may have been tailored towards specific investor requirements, and there is no guarantee that another investor would want to buy that same MTN if it was offered it. As a result, if an investor wants to get out of such a position, in most cases it is obliged to offer the MTN back to the dealer.

Pricing a structured MTN is very different to that of a vanilla MTN, due to the differences between the pay-offs. For vanilla MTNs, simply spotting swap rates for a fixed rate or Libor rates for a floating rate MTN, along with the funding level of the issuer, is already a good enough method to determine approximate pricing. For structured MTN trades it is not as simple. The crucial element in determining pricing on such trades is the swap that hedges the MTN. Many borrowers are unable to provide the payout of a structured MTN coupon to investors due to systems constraints (in part due to the costs associated in developing such capabilities). As a result, in order to issue a structured MTN, an issuer will enter into a separate derivative swap transaction with the respective dealer on the structured MTN. Under this swap the issuer pays the dealer its funding on such a structure and, in turn, the dealer pays the issuer the structured coupons under the MTN, which the issuer subsequently passes on to the investor. The means by which a dealer prices up a derivative swap in the market for such a trade can result in either winning or losing the structured MTN trade. Thus, the pricing methodologies as well as the way different dealers look at pricing certain MTNs can and do vary considerably.

Most dealers will actively promote the distribution of MTNs through their dedicated sales forces which will often specialise in particular market segments – for example, a particular geographic

Exhibit 1.11

Goldman Sachs' EMTN issuance by issuer type and nationality

Issuer type	*Percentage*
Bank	48.7
Agency	21.9
Goldman Sachs	14.1
Corporate	5.6
Sovereign	5.2
Supranational	4.5
Total	100.0

Issuer nationality	*Percentage*
Benelux	18.9
Scandinavia	18.7
France	15.4
Goldman Sachs	14.1
UK/Ireland	11.2
Australia/NZ	6.1
Iberia	4.3
Supranational	4.1
Germany	3.2
Italy	1.2
Austria	0.9
Latin America	0.9
Non-Japan Asia	0.4
US	0.3
Japan	0.3
Switzerland	0.1
Total	100.0

Source: Author's own

Exhibit 1.12

Goldman Sachs' EMTN issuance by investor type and nationality

Investor type	*Percentage*
Insurance	26.6
PWM	21.0
Fund	15.9
Various	14.9
Bank	11.9
Central Bank	4.9
Pension	2.0
Corporate	1.6
Financial	1.2
Total	100.0

Investor nationality	*Percentage*
Germany	18.1
US/Canada	16.4
France	12.4
Various	10.8
Europe – General	8.9
Middle East – EM	5.9
Non-Japan Asia	5.4
Italy	5.0
Japan	4.4
Iberia	2.8
Switzerland	2.4
Scandinavia	2.4
Netherlands	1.9
Kazakhstan	1.9
UK	1.3
Total	100.0

Source: Author's own

or regional focus, or strong retail networks via bank branches. However, most dealers attempt to be full-service providers across all market segments. The key to winning an MTN trade is pricing. This is because the MTN market has evolved to such an extent that investors know exactly how they want to invest, and dealers know exactly which borrowers can issue what form of MTN so that, when the two come together, the dealer who has the best price will win the trade.

Documentation, tax and accounting issues – listing requirements – reporting requirements

An MTN programme's documentation is the key to all MTN issuance. Programmes come in all shapes and sizes and can be altered to fit an issuer's changing needs. Programme documentation has become more standardised, but will still be governed by issuers' objectives. For first time issuers, the amount of documentation work involved can be daunting, due to disclosure requirements and the need for regular updates. For example, if the programme provides for a wide range of currencies and types of notes, more detailed documentation will be needed. The same is also true for an issuer who decides to list its securities on different stock exchanges, requiring them to comply with the listing rules governing each exchange.

The cost of setting up a programme will vary, but will typically include ratings agency fees, auditor's comfort letters, dealers' and issuer's counsel, listing fees and financial printing fees. The trend for MTN programme documentation is towards standardisation of the legally significant elements – such as covenants, representations and warranties – while being flexible on the pricing features and the types of issuances to be undertaken. The base prospectus or offering circular for a programme will also provide a description of the issuer and financial disclosure, as well as various other elements related to an issuer's MTN issuance, such as the number of dealers on the programme, selling restrictions, and so on.

Over time, an MTN programme should generate considerable cost efficiencies when compared with issuing public bonds on a stand-alone basis. As a rule of thumb, if a borrower executes two or three trades off its MTN programme, it will be cheaper than executing the same two or three trades on a stand-alone basis.

Selling MTNs in the US is more complex and potentially more expensive to document because of the more onerous disclosure requirements and due diligence procedures typically undertaken in relation to US distribution. As a result, many non-US issuers do not enter the US market. For those who wish to do so, there are two main avenues for accessing the US market. The first is to establish an SEC registered MTN programme (often referred to as a debt shelf) for which a registration statement is produced, filed and maintained on an ongoing basis with the SEC. The second is to rely on an exemption from registration under Rule 144A, under which securities may only be offered in the US to Qualified Institutional Buyers (QIBs). In connection with either avenue, dealers will typically require legal counsels to undertake detailed due diligence in consideration of the substantive disclosure in the prospectus and to deliver a disclosure or 10b-5 opinion which forms part of a dealer's (and issuer's) due diligence defence in the event that an investor instigates legal proceedings in respect of the MTNs.

The listing of an MTN programme is an important feature of the marketplace. In order to obtain a listing, an issuer needs to meet the disclosure requirements set out in the listing rules of the relevant stock exchange or listing authority, and thereafter meet the ongoing filing, notification

and disclosure obligations to maintain the listing. In Europe the most common listing exchanges for MTN programmes are the London and Luxembourg Stock Exchanges. With the implementation of the EU Prospectus Directive in the summer of 2005, disclosure requirements have been harmonised across EU listing exchanges. Additionally, once an issuer's base prospectus has been approved by its 'home' listing authority, it can apply to have the programme passported into other EU jurisdictions in order to offer MTNs in these markets, in compliance with the EU Prospectus Directive.

Pros and cons

The major advantage of an established MTN platform is the flexibility it provides: borrowers who utilise the MTN market on a regular basis will generally secure access to a wide variety of maturities and currencies. Additionally, a programme provides easier access to their paper for investors: because of the continuous-offering process, the MTN market gives the investor immediate access to an almost unlimited array of fixed income securities in widely varying maturities, currencies and structures, as well as to a broad spectrum of international borrowers. The rapid expansion of the MTN market has attracted the attention of a growing number of dealers, who have contributed to the evolution of the market in recent years and have as a result increased liquidity in this market segment.

However, setting up an MTN programme is certainly a real commitment in terms of time and resource so an issuer should be clear on what kind of programme it wants, how it is going to use it and how much it is prepared to commit to the process. Since the costs and ongoing programme maintenance requirements are certainly considerations an issuer whose projected use of the market is likely to be intermittent or sporadic may decide that a formal MTN platform is not necessary.

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[1] Investment Company Institute, 9 March 2011.

Chapter 2

The syndicated loan market

Sean Malone and Christoph Weaver
The Royal Bank of Scotland

Introduction

> The only constant is change.

When Heraclitus coined this phrase nearly 2,500 years ago he could not have imagined that it would be so appropriate to commerce and the business world, especially regarding the speed with which such changes have reshaped the financial markets. The last five years have seen an extraordinary development in the global financial markets with record levels in many markets in 2007 followed by the global financial crisis starting only a few months later (as witnessed by the Lehman Brothers Holdings Inc. (Lehman) bankruptcy, the emergency sale of The Bear Stearns Companies, Inc. (Bear Stearns) to JPMorgan Chase & Co. (JPMorgan) and government bail outs of European banks to name only a few examples). These events have shown that in the era of globalisation a financial crisis knows no borders. The financial markets are slowly recovering, but a long-term stability still needs to be proven.

The syndicated loan market had also seen record volumes in 2007 with deals done larger, more leveraged, longer in tenor, lower-priced, in a wider range of markets and with more investors than ever before. The financial crisis impacted banks, that is, by way of scarce liquidity and increased funding costs. This also had implications on the syndicated loan market with less banks being active in the market, higher pricing for clients and shorter tenors. Conditions have improved over the last 12 to 18 months and this shows once again that the syndicated loan market is one of the most flexible markets which quickly adapts to change. With this in mind, this chapter will focus on developments in today's loan market showing which regions are growing the fastest, what types of deals are getting done and, importantly, how the deal process works.

Background

Before jumping into the themes in today's loan market, there are two key pieces of background information to discuss.

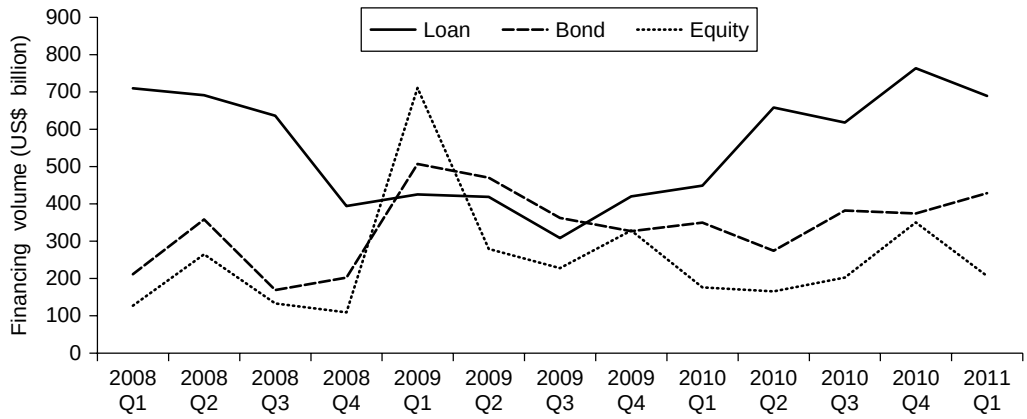
The first is definitional: what is a syndicated loan? In its simplest form, a syndicated loan is a credit facility in which two or more banks (the 'syndicate') agree to provide a loan to a borrower under a single loan document. This sounds very straightforward – at least two banks, one borrower, one document – but, as we shall see, the variations on this basic setup are limitless due to the flexibility of the loan as a financial instrument. Because the loan market is a private market without

formal requirements for standard documentation, public debt ratings, information disclosure or due diligence, it is possible to arrange syndicated loans in very short timeframes and for very large amounts for virtually any credit need that a borrower might have. The only constraints in the issuance of syndicated loans are the creditworthiness of the borrower and the willingness of lenders to provide capital in a particular loan transaction. Thus, syndicated loans are often most effective in areas and at times where other capital markets instruments might not be practical.

The second is contextual: how does the syndicated loan market compare with the broader capital markets in size and type of borrower? In the last years, the issue volume in the loan market was larger than new issuances in the bond and the equity markets (as indicated in Exhibit 2.1).

Exhibit 2.1

Global capital markets volumes 2008 – Q1 2011



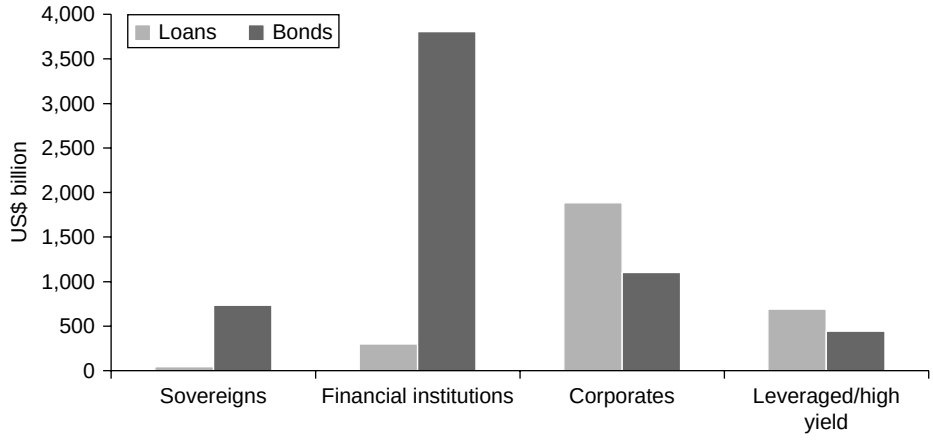
Source: Dealogic

The types of borrowers in the loan market and in the bond market are quite different. As shown in Exhibit 2.2, the loan market tends to be used more for corporate and leveraged issuance due to the more flexible nature of loans, while the bond market is favoured by financial institutions and sovereign borrowers for longer-term, more standardised issuance.

This situation is a natural result of the further development of the public capital markets for longer-term issuance: whereas in the past the only source of capital for all borrowers was banks, as new products have been developed the loan market has come to be used mainly in those areas where it makes the most sense; that is, for those client situations that require customised solutions rather than straightforward long-term funding.

Exhibit 2.2

EMEA debt issuance by market segment 2010



Source: Dealogic, RBS

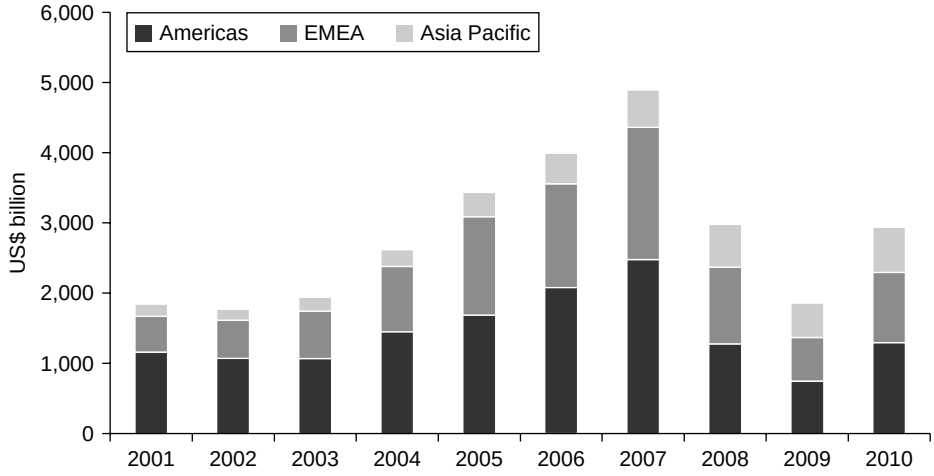
Loan market overview

One of the most obvious changes in the loan market has been the tremendous growth in syndicated loan issuance globally. The increasing prevalence of syndicated loans can clearly be seen in Exhibit 2.3 which shows that on a global basis syndicated loan volumes grew from US$1.8 trillion in 2001 to US$4.9 trillion in 2007 which was the year with historically highest volumes in the loan market; this represents annualised growth of approximately 18% over that period. Following the Lehman bankruptcy and the financial crisis volumes in the loan market decreased massively in 2008 and 2009 to 2001/2002/2003 levels. However, following the stabilisation in the financial markets in 2008–2009, the volume of the loan market issuance in 2010 increased to US$2.9 trillion and in Q1 2011 increased by a further 53% year on year. This volume growth was mainly driven by corporates using the positive market sentiment for early refinancings of transactions with a 2011 or 2012 maturity. This trend is expected to continue throughout 2011.

While each of EMEA (Europe, Middle East and Africa), the Americas and Asia-Pacific experienced growth over the period from 2001 to 2007, the greatest area of growth was in the EMEA region. This was largely due to the increase in acquisition-related activity in Europe and the trend of major corporates to rely less on bilateral funding and instead move into syndicated loans. Following the crisis in the financial markets in 2008, whilst the volumes in Asia-Pacific remained stable the biggest reduction was recorded in the Americas. The volume of syndicated loan issuance as a share of nominal regional gross domestic product (GDP) is illustrated in Exhibit 2.4.

Exhibit 2.3

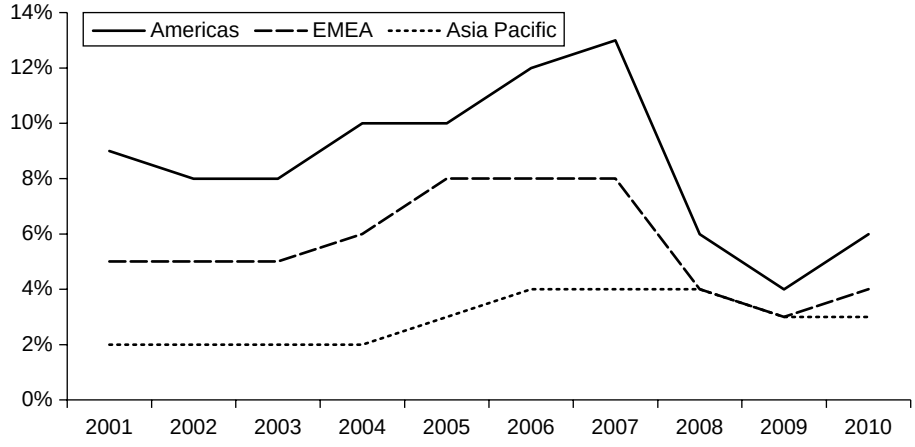
Global syndicated loan issuance



Source: Dealogic

Exhibit 2.4

Syndicated loan issuance as a share of regional GDP



Source: Dealogic, RBS

The Americas, as the most mature capital market, retains the deepest penetration of syndicated loan issuance as a share of nominal regional GDP with a peak of 13% in 2007. Levels in the EMEA region also increased through to 2007, albeit with the levels growing at a slower pace. Asia-Pacific remained relatively stable throughout the period. Due to the economic downturn, the Americas and the EMEA region decreased substantially and were close to the levels in Asia-Pacific in 2009. While the syndicated loan issuance as share of regional GDP is already rising again since 2010 in the Americas and the EMEA region, levels in Asia-Pacific remain steady but low.

Historically, the major regional loan markets developed relatively independently of one another, and structures or pricing in one market would not directly translate into similar deals in other markets. However, over the last five years the loan market, has become increasingly global and less linked to individual markets, cross-border acquisitions have become commonplace, investors have increasingly searched for yield and assets on a global scale and leading arrangers of syndicated loans moved to a global model. This last point is especially important given that the capital demands of transactions often surpass the ability of local investors to finance the deal themselves, thus requiring truly global banks to arrange these transactions in order to tap investor appetite in more distant regions. The leaders in arranging syndicated loans over the period 2000-2010 globally are illustrated in Exhibit 2.5.

EMEA region

As noted above, the syndicated loan market in EMEA experienced substantial growth until 2007 and change, particularly among the Western European countries. Exhibit 2.6 illustrates the development in loan volumes in certain large EMEA countries.

Exhibit 2.5

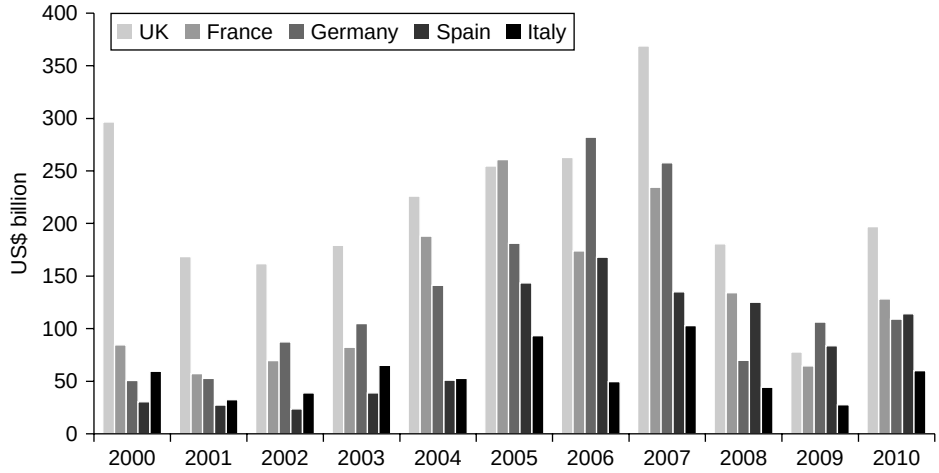
Top bookrunners of global syndicated loans 2000–2010

Bookrunner	*Volume (euro billion)*	*Market share (%)*
JP Morgan	4,265	16.8
Bank of America Merrill Lynch	2,720	10.7
Citi	2,499	9.9
RBS	1,002	4.0
Barclays Capital	986	3.9
Deutsche Bank	880	3.5
Wells Fargo	773	3.1
BNP Paribas	750	3.0
Mizuho	558	2.2
Credit Suisse	491	1.9

Source: Dealogic

Exhibit 2.6

EMEA syndicated loan issuance – five largest markets



Source: Dealogic

Across Western Europe, however, the composition of the larger markets has changed significantly over the past ten years. The United Kingdom (UK), which historically had the most developed loan and capital markets, grew at a slower pace from 2000 to 2007 (3% per annum on average) compared with the four largest continental markets (Germany, France, Italy and Spain) (28% per annum on average altogether). Even within the continental markets there have been differentials in growth, with Spain and Germany growing at a faster pace (24% and 26%, respectively) than France and Italy (16% and 8%, respectively). In 2008 and 2009 the syndicated loan issuance in the mentioned five countries decreased significantly, before recovering in 2010 in line with the overall market development. The UK was once again the biggest syndicated loan market with issuance volumes of France, Germany and Spain on a similar level. With this in mind, it is not surprising that the leaders in arranging EMEA syndicated loans over the period 2000–2010 are largely drawn from the most active markets as shown in Exhibit 2.7.

Syndicated loan segments

As mentioned before, syndicated loans are 'private' debt facilities and are not standardised or regulated like other capital markets instruments; furthermore, syndicated loans are sold on a 'wholesale' basis to sophisticated bank and fund investors and not to individual retail buyers. This combination offers borrowers tremendous flexibility and thus the loan may be adopted for a variety of purposes:

Exhibit 2.7

Top bookrunners of EMEA syndicated loans 2000–2010

Bookrunner	*Volume (euro billion)*	*Market share (%)*
RBS	712	8.0
Citi	544	6.1
Barclays Capital	542	6.1
BNP Paribas	514	5.8
JP Morgan	502	5.6
Deutsche Bank	466	5.2
Commerzbank	334	3.8
Credit Agricole CIB	319	3.6
Societe Generale	293	3.3
HSBC	247	2.8

Source: Dealogic

mergers and acquisitions (M&A) financing and acquisition financing as the loans are confidential and can be executed quickly and in size; liquidity backstops as the loan facilities can remain undrawn; and highly structured transactions such as project or property financings. As noted previously, however, syndicated loans do not work as well for financial institution or sovereign borrowers which require long-term financing or for long-term capital where the tightly governed loan facilities are more restrictive in a permanent capital structure than long-term bonds.

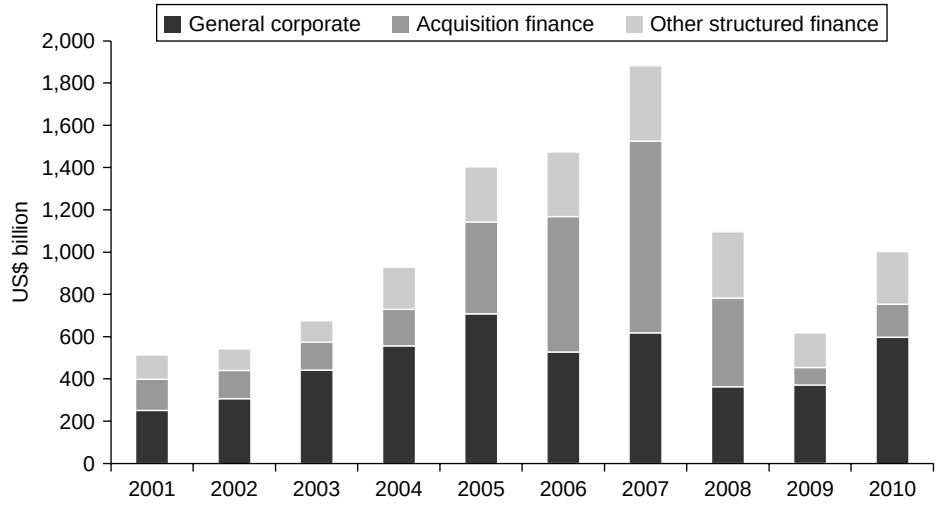
Based on these uses, the syndicated loan market may be divided into three broad segments.

- *General corporate:* these deals are typically investment-grade or near investment-grade and are often positioned as 'relationship' transactions; vanilla backstop facilities, working capital lines and capex facilities would fall into this segment.
- *Acquisition finance:* these deals are event-driven transactions linked to M&A activity; leveraged buyout (LBO) financings, acquisition bridges and high-grade acquisition facilities would be in this segment.
- *Other structured finance:* these transactions often involve structures that are unique to the particular funding requirement and are often linked to a particular underlying asset; project finance, property finance and aircraft finance would typically fit into this segment.

Exhibit 2.8 presents the composition of syndicated loans by use of proceeds in the European syndicated loan market since 2001.

Exhibit 2.8

EMEA syndicated loan market issuance



Source: Dealogic

As one might expect, the greatest year-on-year volatility in issuance has occurred in the acquisition finance segment, given that these deals are usually one-off transactions, are directly linked to M&A activity in the broader markets and are frequently very large such that individual transactions (such as ATT's US$20 billion acquisition bridge for T-Mobile USA from March 2011 and BHP's US$45 billion acquisition facility for Potash Corp from September 2010) can materially impact an individual year's volume. General corporate issuance has increased substantially, largely due to continental European clients converting their bilateral backstop facilities into more flexible syndicated loans, often as the first step toward a more progressive capital structure and more recently volume has reflected the level of refinancings of previous transactions. Other structured finance issuance has increased but at a slower pace than the other segments: these more tailored uses for syndicated loans do not lend themselves so easily to broader capital markets instruments and thus this segment is not positioned for explosive growth like acquisition facilities.

Each of these segments has distinct characteristics to be aware of.

General corporate

For an investment-grade borrower, the greatest flexibility will likely be achieved through a single revolving credit facility which can be used for a wide variety of purposes, although a borrower may prefer to spread its maturity profile in order to reduce any refinancing risk. Where liquidity available

in the market might be limited (for instance, as a result of aggressive pricing, weakening market conditions or where drawings are expected for a portion of the facility over a period), a facility structured to incorporate a term loan (to cover any long-term drawn amounts) and a revolving credit facility for the variable balance will often prove more attractive in the market.

In the current investment-grade market, tenors range between 364 days and seven years, with the bulk of issuance in today's market occurring in the 3- and 5-year tenors. In the past 364-day facilities took advantage of a capital weighting benefit for the lenders resulting from the implementation of the Basel capital adequacy directives which due to the lower capital allocation for such transactions enabled banks to price them more cheaply. This advantage is largely removed with the implementation of Basel II and Basel III.

Historically 5+1+1 (see below) and 7-year facilities have only been offered to the strongest names, though this also varies by geography with 7-year facilities more common in Scandinavia than in any other geography. The longest facilities typically available to most investment-grade borrowers are therefore five years or a '5+1+1 year' facility, consisting of a 5-year facility with an extension option which can be requested by the borrower usually at the end of the first and second years to extend the facility and 'renew' its tenor to five years from the date of the extension, thus creating the possibility of a 7-year end-to-end tenor for the transaction. Although the request to extend comes from the borrower, the implementation is subject to the individual acceptance of each bank who is under no legal obligation to do so. Usually however there is the relationship pressure from the borrower to extend. This increase in tenor is an example of the strength of market liquidity shifting the balance of lending terms in favour of borrowers. As many borrowers refinance their existing facilities there is a trend for borrowers to request virtually the same borrower-friendly documentation which these companies have enjoyed for the last four to six years. In contrast banks have, over time, sought to update and standardise documentation in accordance with forms formulated by the Loan Markets Association (LMA). The LMA is Europe's trade association for the syndicated loan markets with its core activities being the provision of recommended documentation for both primary and secondary syndicated loan markets and establishing market practice. The LMA was established in 1996 and its office is located in London. It has a corporate membership of over 455 members comprising banks, institutional investors, law firms, rating agencies and system providers, all actively engaged in the international syndicated loan markets.

Acquisition finance

This segment can be further divided into two parts: high-grade and cross-over acquisition loans; and leveraged acquisition loans.

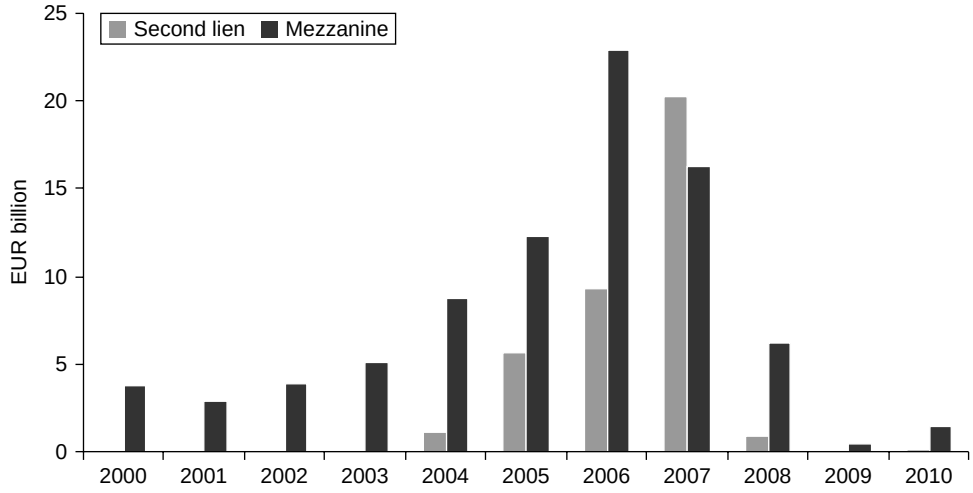
High-grade acquisition loans are for borrowers with an investment-grade credit profile but are usually documented with stronger credit protections and higher pricing than standard investment-grade loans. These are often short-term bridges to capital markets issuance or to asset disposals, although in the past few years some larger facilities have had a substantial element of 3- or 5-year tranches to provide additional flexibility to the borrower. Pricing of acquisition financings include in most cases a premium compared with pure general corporate facilities to reflect the potentially higher risk profile of the company and to reflect the funded nature of these types of transactions. Cross-over acquisition loans are for investment-grade borrowers that become borderline investment-grade/non-investment-grade as a result of new acquisition debt. Bridge tranches can be more difficult

for these types of borrowers because the credit profile is not strong enough to tap the high-grade bond market but is not weak enough to warrant the expense and restrictions of the high-yield bond market. Consequently, cross-over acquisition loans have stronger credit protections (for example, financial covenants), higher pricing and longer tenors than high-grade loans. Recently we have seen the substantial growth in the cross-over rated or unrated bond market which also absorbs some of the demand for liquidity in this space.

Leveraged loans apply to borrowers with non-investment-grade credit profiles and here the margins are typically 250bps +. They are typically LBOs and are considered more risky given the level of debt put onto the borrower versus the available cash flows. In order to attract investors, pricing is higher for non-investment grade issuers, with the loans lent on a secured basis and include more restrictive documentation provisions. A European LBO structure will typically consist of a 6-year amortising Term Loan A and 7-year bullet Term Loan B, along with a 6-year revolving credit facility. Depending on the sector, credit profile and rating, the term loans may also feature a Libor/Euribor Floor of 150bps to attract liquidity. Second lien facilities which were prevalent in 2006 and 2007 are yet to return to current structures to any great extent. Subordinated facilities such as private mezzanine facilities or public high-yield bonds continue to provide financial sponsors with the flexibility to meet the demand for increased debt in LBO structures (see Exhibit 2.9). As at the time of writing, the leverage market is experiencing a lack of primary supply which is driving strong fund demand for paper. As a result, more aggressive structures are being discussed than had been in early 2011 and 2010 transactions, with some of the features seen in 2007 deals such as covenant lite[1] and dividend recapitalisations[2] starting to return.

Exhibit 2.9

Development in European second lien and mezzanine facilities



Source: Dealogic

Other structured finance

Other structured finance covers a wide array of transactions that are tailored to a specific financing need, and often the loan market is the only market with the expertise or financial flexibility to provide the necessary capital. The three main areas of structured deals are project finance, property finance and aircraft finance.

In 2010 the global project finance market (including equity, bonds and loans) reached record levels of US$355 billion which represents a growth of 22% on the US$2990 billion raised during 2009 and up 11% on the previous record year in 2008 (US$321 billion). The energy sector continued to be the leading sector and accounted for 33% of global project finance in 2010. For the second consecutive year, the Asia-Pacific region accounted for the highest proportion of project finance volume and represented 42% of the market. The EMEA region accounted for 40% in 2010 while the Americas proportion of 18% was the lowest on record. The popularity of the loan product within project finance can clearly be seen by the growth of project finance loans which reached a record volume of US$280 billion in 2010 (+27% compared with US$221 billion in 2009).

Property finance, which is often combined with a corporate syndicated loan transaction and can be referred to as 'opco/propco' financing, provides highly structured funding solutions for real estate owners, occupiers and investors with existing property portfolios and to support acquisitions. Such solutions can involve combinations of senior debt (secured or unsecured general corporate revolving credit facilities or senior secured term loans), bridge and M&A-related financing, mezzanine loans for both corporate and asset level financing, construction loans, and equity products in order to maximise and optimise the capital structure and the financial and tax position of the deal. In addition to syndicated real estate loans which at the height of the market ranged in size from US$50 million to over US$2 billion with tenors of up to five years, commercial mortgage backed securities (CMBS) have also been a key financing instrument in property financing (and are placed with securitisation investors), but this market all but died following the crisis in 2008.

Aircraft financing involves providing debt financing and leasing solutions to airlines worldwide. The leasing and financing market for the modern Airbus, Boeing and Regional Jet aircrafts involves over 100 airline customers in more than 30 countries. From a business perspective, the sale of aircraft assets enables flexibility to inject capital back into the business, incorporate lease-terms to fit fleet planning requirements, and avoids the time-consuming task of remarketing the aircraft. Consequently the sale and leaseback of new and existing aircraft is a central component in the suite of aircraft financing structures. Typical aircraft financing structures include: (i) senior secured loans on new and recently acquired aircraft; (ii) structured multi-tranche debt financing; (iii) debt into tax leases; (iv) finance leases; (v) European Export Credit Agency (ECA) and Export-Import Bank of the United States (Exim) financing; and (vi) manufacturer pre-delivery payment financing (PDPs). The current trend in the aircraft financing sector is for club deals whereby the financing is syndicated to only a very limited number of investors.

After the financial crisis new regulations affecting banks have resulted in a reduced number of traditional investors in these sectors.

Exhibit 2.10 illustrates some of the key differences among general corporate, acquisition finance and other structured finance loans.

Exhibit 2.10

Key differences between loan types

	General corporate	*Acquisition finance: high-grade and crossover*	*Acquisition finance: leveraged*	*Other structured finance*
Tenor	364 days to up to 5/5+1+1/7 years	364 days to 5 years; greater emphasis on short-term bridges and amortising structures	6 to 8 years	3 to 30 + years
Size	Typically US$100 million to US$10 billion	Typically US$500 million to US$5 billion; could be up to US$40 billion	Typically US$300 million to US$2 billion; could be more	Typically US$100 million to US$2 billion; could be US$5 billion or more
Credit profile	Investment-grade, or crossover, typically externally rated (but not required)	Investment-grade and near investment-grade; may not be rated	Non-investment-grade; often not publicly rated unless debt size over US$1.4 billion (€1 billion)	Investment-grade and near investment-grade; usually not publicly rated
Lenders	Typical lenders are banks	Typical lenders are banks	Typical lenders could include investment funds and banks	Typical lenders are banks, with some funds
Purpose	General corporate purposes, commercial paper backstop, standby undrawn facilities	Acquisition bridge to capital markets take-out or asset disposals, long-term acquisition financing, working capital	LBOs, Management buy-outs (MBOs), Management buy-ins (MBIs), Acquisition financings	Financing a particular project or asset (for example, infrastructure transactions, construction deals, property financings or aircraft transactions)
Facility types	Unsecured Revolving Credit Facilities often including Swing Line Provisions, Term Loans, Letter of Credit (LC) facilities, Capital Expenditure (Capex) facilities	Unsecured (usually) bridge facilities (short–medium term), revolving credit facilities, term loans, LC facilities, Guarantee facilities	Secured Revolving Credit Facilities, Term Loans, Mezzanine facilities	Secured Revolving Credit Facilities, Term Loans, Standby Facilities, Value Added Tax (VAT) facilities, occasionally second lien or mezzanine tranches

Source: RBS

Syndicated loan process

Regardless of the purpose of the syndicated loan, there are three main phases of the syndicated loan process that occur in nearly every transaction: the mandate phase; the syndication phase; and the post-closing phase. There are a number of variations on these three phases but, in general, understanding the basics here is essential to having the full picture on how the syndicated loan functions.

Mandate phase

The first stage of any syndicated loan transaction is the decision of a borrower to raise debt in the syndicated loan market.

A company or private equity house/financial sponsor (the 'borrower') recognises the need for debt facilities, resulting for example from the need for additional capital for an acquisition or to refinance existing debt. Consequently, the borrower may request one or more banks in one or more products (for example, syndicated loans, private placements, high-grade bonds) to provide indicative terms upon which they might be prepared to arrange a financing. This is known as a 'request-for-proposal' (RFP). In leveraged transactions, the financial sponsors request banks to provide indicative financing support to their bid for a target company with the process usually occurring via a competitive auction process.

Over time, a bank will typically attempt to build up a strong relationship with potential clients and to present the financial products in which it has expertise in order to cement a position in the client's mind as a natural partner in any financing. This will include presenting senior bank personnel as well as product specialists who will aim to impress the borrower with their knowledge and market perspective. If there is no such prior relationship, banks may approach a prospective borrower without solicitation, marketing proposals for financial solutions to certain scenarios, for example the refinancing of existing debt or the raising of new funds such as for an acquisition. The format and detail of such approaches will vary depending on the bank, its capabilities, and the relationship with the company.

Once the decision has been made to raise debt in the syndicated loan market, a bank or group of banks will be engaged by the borrower on an initially non-binding basis, during which period a number of key points in these initial proposals are agreed on in a 'Summary of Terms and Conditions' or 'term sheet'. Typically this will be agreed concurrently with a formal letter of engagement, or 'mandate letter' setting out the scope and responsibilities of both the borrower and arranging bank(s).

Of course, banks have to want to provide a loan in order to get to this stage and this requires them to obtain all necessary internal credit, capital and distribution approvals. In any lending situation, the credit quality of the borrower is a key factor for banks in determining whether to provide a loan: can the borrower repay the facility and what are the risks involved? In a syndicated lending situation, there is the added dimension of distribution risk; the assessment of the attractiveness of the loan to other lenders is key as managing the underwriting risk is essential to the success of the syndicated loan process. When a prospective arranger is satisfied that the credit, capital and distribution risks are manageable, then the bank is ready to accept a mandate for the financing.

Mandates are awarded for a variety of reasons, but most commonly they will be won on the following key criteria:

- strength of bank's relationship with the borrower;
- ability of the bank to provide, execute and distribute the debt facilities; and
- proposed pricing and structure of the facility.

For a borrower with a number of relationships with different banks, the pricing/structure of the facility is often the key differentiator. Any bank wishing to win the business of arranging a syndicated loan will, therefore, seek to offer competitive pricing and a flexible structure to the borrower. A balance must be maintained: economic return and credit protection for the participant banks versus presenting a sufficiently attractive offer to the borrower to be of interest and competitive with rival offers. Setting the price too low or the structure too weak could result in a lack of investors willing to participate and the failure of the deal, while too high a price or too tight a structure could result in the loss of a potential mandate to competing banks. Correctly understanding and judging the size and position of the pricing and structure band within which participant investors are prepared to commit to the transaction is, therefore, critical to winning the business.

Prior to the preparation of the full loan documentation in the syndication phase, the key commercial terms are typically negotiated between the borrower and the lead bank or documentation agent. A term sheet typically includes, as a minimum, the basic structure: amount, type, tenor, any financial covenants (including covenant headroom levels), security, amortisation profile, pricing, permitted acquisition and disposal baskets/carve-outs and basis of document preparation (which will often be either 'Loan Market Association (LMA) standard' or a previous facility). More detailed term sheets can specify general covenants, representations and events of default (usually as headings alone, but legal language can be expanded where necessary), as well as guarantors, conditions of prepayment, other restrictions imposed on the borrower such as dividend payment restriction, and may specify certain terms that will be included within the mandate letter, such as market flex (where the borrower agrees that the arrangers may change either structure or pricing in certain events in order to ensure successful syndication).

Included in the structuring discussions with the borrower will be whether the facility needs to be underwritten or whether it can be executed on a best efforts basis. Underwritten facilities, where arranging banks bear any risk of transaction failure for a fee, may be expected to be less aggressive than a corresponding best efforts facility. Therefore, a borrower looking to refinance a maturing working capital facility may, in a difficult market, welcome an underwritten facility to obtain certainty that the facility will be refinanced but, in more benign conditions, will likely opt for a more aggressive best efforts structure in order to benefit from improved pricing. Underwritten facilities are often required for acquisitions, either leveraged or investment-grade/corporate acquisition financing, both to provide certainty of funding for certain jurisdictions and to maintain the confidentiality of the pre-announcement bid discussions.

Syndication phase

Once the mandate has been awarded, the process of preparing the loan documentation gets underway. If external counsel for the lenders has not been appointed in the previous phase then one will be at this stage to prepare the first draft documentation on the basis of the term sheet agreements.

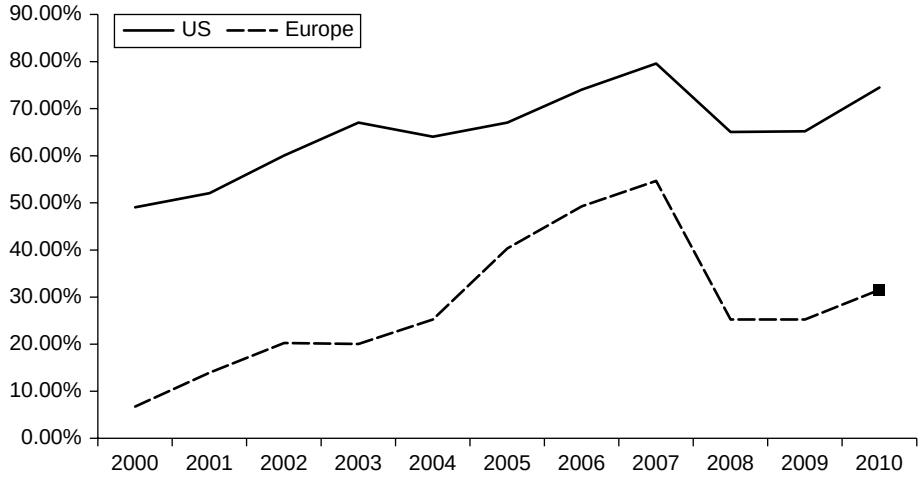
Simultaneously, the arranging bank will seek to prepare to market the transaction through: (i) preparation of supporting marketing information (for example, an information memorandum, a bank

meeting presentation and, for leveraged transactions, the finalisation of financial, legal and tax due diligence reports by external advisers); (ii) preparation of an invitation letter to be sent to prospective lenders who may have been identified to be interested in participating in such a transaction; and (iii) direct announcements concerning the facility, if required, via the trade press or, in certain circumstances, to lenders directly (a process known as 'sounding out'). The scope and detail of the information released to the investor group is individual to each transaction with the level of detail dependent on prospective lenders' familiarity with the credit: detailed information will be required for a new entrant into the syndicated loan market and for particularly complex transactions, whereas less information is needed for a large, publicly listed company which has regularly tapped the syndicated loan market for refinancings and is inviting existing relationship banks. Prior to launch, market capacity and liquidity are key considerations: the greater the liquidity in the market, the more borrower-friendly terms can be achieved; and the more interested investors, the greater the potential liquidity available. This leads to a more complex interplay between a number of variables around the pricing, structure and number of lenders approached, and ultimately leads to a binary decision by any single lender to join the syndicate or not to.

The syndicated loan market consists of a finite number of investors, each with different attitudes towards risk/sector/geography/pricing, with individual relationship histories influencing investment decisions and amounts to be invested. This investor base expanded considerably during the period 2007–2008 with the growth in institutional investors and the creation of the collateralised loan

Exhibit 2.11

Institutional lenders' share of the primary leveraged market



LCD did not track enough European observations in 2009 to compile a meaningful sample.

Source: Standard & Poor's LCD

obligation (CLO) funds. Typically the institutional investors and CLO funds invest in the drawn non-amortising tranches in a leveraged capital structure. The development and liquidity in this lender category can be seen in Exhibit 2.11 which shows the significant growth in institutional lenders as a share of leveraged loan issuance until 2007. Following the Lehman bankruptcy and the banking crisis, volumes especially in Europe dropped significantly, starting to recover slowly, in 2010.

Typically, arrangers will prefer to approach more investors in order to minimise the risk of a failed syndication, while, conversely, borrowers often prefer smaller lender groups because they are easier to manage. This creates a tension that needs to be managed between the borrower and the arranger regarding the distribution of risk in the transaction: for best efforts deals, this distribution risk lies mainly with the borrower, but with underwritten facilities the risk lies with the underwriting arranger to make up any shortfall.

At an agreed time, the facility will be launched into the syndicated loan market by way of an invitation letter. The invitation letter will provide a minimum amount of information about the transaction: typically an introduction describing the borrower, the identity of the arranging bank(s), size of the transaction, requested participation amount and any associated fees and the transaction timetable. A confidentiality agreement is usually attached to the invitation letter, requiring investors to sign and return this in exchange for the full facility details (such as a term sheet) and any additional information released. Post this launch, the transaction will go through a syndication ('sales') process of typically three to four weeks, with a presentation by management to interested investors usually occurring in the week following launch to allow investors to become familiar with the borrower and transaction beforehand. This lender presentation is a useful way of enabling lenders and the borrower to meet with senior management of the borrower who present the future strategy for the borrower.

The sales process of a syndicated loan, also known as 'bookrunning', is the most visible role in a syndicated loan, requiring a detailed understanding of a facility as well as of potential lenders. The syndication process is launched via the distribution of the invitation letters to the agreed investor invitee list and the provision of the information memorandum. Most syndicated loans involve the use of an electronic distribution system (for example, Intralinks and Debtdomain) to allow investors secure access to any relevant information on a centralised basis.

The negotiation of the final loan documentation, based on the agreed term sheet from the mandate phase, can either occur prior to the syndication launch, as is typical in many leveraged transactions, or during the syndication process, as can be the case in investment-grade corporate transactions. Outside the normal legal and jurisdictional limitations there is an almost unlimited scope for variation among these documents and, as a result, a general framework has been developed over the years and standardised by the LMA. The LMA standard framework deals with a number of the necessary mechanical arrangements involved with the proper running of a syndicated loan, such as assignment and transfers, majority lender decisions, representations, information undertakings, interest payment mechanics, conditions precedent and notification and consultation of all parties. The standardisation of these 'boiler plate' terms frees up the parties to discuss more important commercial issues while minimising lengthy negotiation and expensive legal consultation.

At the end of this sales period, lenders will either commit to the facility (usually subject to individual satisfaction with the documentation) or decline. It is important to remember that lenders (either banks or institutional investors) in a syndicated loan do not necessarily contribute equal amounts to the deal as different commitment and title levels exist and each lender committing to the facility is acting on a several basis without responsibility for the other investors in the syndicate.

Any individual disagreements with documentation are resolved between the borrower and prospective lenders and administrative details will be collected so that the facility can be prepared for signing. Lenders will sign into the facility via a number of different processes. The most common method of signing involves each lender signing individually and returning the signature pages to the lead bank, documentation agent or lawyer, often by fax/scanned email. Once collected, the signatures are compiled into one document, and a conformed copy is sent around confirming that the process is completed. On a prefunded transaction when the loan documentation is already signed, the committed lenders are funded into the transaction by way of the execution of transfer certificates.

Post-closing phase

This phase begins at the point of signing and lasts for the life of the facility. When a loan has been syndicated, lender allocations have been made and the lenders have been funded into the transaction (that is, they are now legal counterparties under the facilities), the syndicate is formed. From this point on, the agent has the key role coordinating all parties and monitoring the facilities, particularly in terms of financial reporting and covenant compliance. A key role for the agent is to distribute information to the syndicate so that all the syndicate members receive the same information and are able to monitor the performance of the credit themselves. An annual bank meeting is often arranged where the borrower's management report on financial performance to date and present the next year's budget to the syndicate. This enables the lenders to regularly meet with management and to raise any questions. Should any waiver or amendment of the loan agreement terms be required during the life of the facilities, the agent will coordinate this process. It is important to remember that the agent does not act on its own but, rather, always acts on the instructions of the lenders.

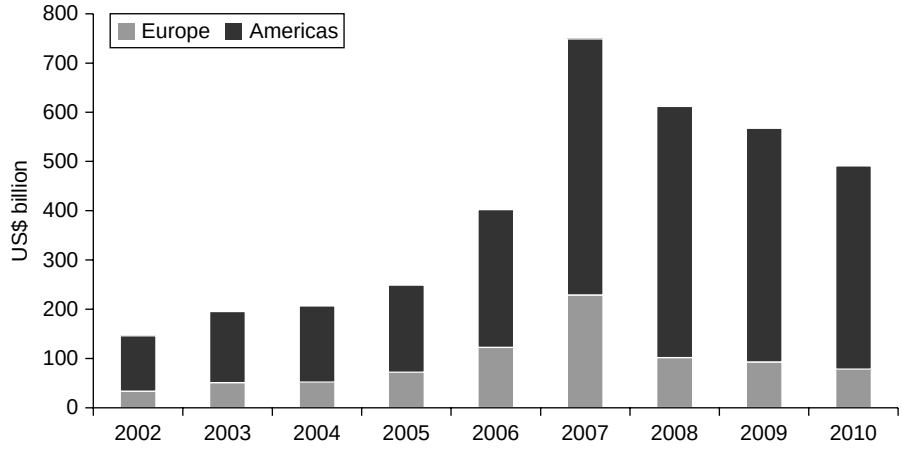
Once allocations have been made and announced, the loan then becomes 'free to trade' which means that lenders can trade the loan in the secondary loan market. As a result of the liquidity in the loan market until 2007, it was common for lenders who received a lower than desired allocation in primary syndication to come to the secondary loan market to increase their position in the deal. On the flip side of this, if lenders want to actively manage that position they can utilise the secondary loan market to sell some of their participation in the deal. The decision to buy and sell will obviously be driven by the price in the secondary loan market, and the agent will play a key role in maintaining the syndicate list and notifying the borrower of any changes in this list if trades have been executed. Trading has been important in the Americas for some time now and has become more important in Europe in the past several years as institutional investors have become more pervasive in the market, as illustrated in Exhibit 2.12. Nevertheless, since the start of the credit crisis in 2008, banks have more frequently stuck to their lower allocations on transactions and with fewer relative value investors this decline has been very noticeable. Volumes in the Americas stayed relatively stable.

Summary

The syndicated loan market is an integral part of the global capital markets and continues to adapt to the market and regulatory conditions at a fast pace. One of the reasons for the rapid pace of change is the inherent flexibility of the loan product and its ability to complement other capital markets products in complex transactions. Further, the globalisation and increasingly interlinked nature of

Exhibit 2.12

Global secondary loan market volumes



Source: Thomson Reuters LPC

world markets has led to new uses for loans – both in terms of large acquisition financings as well as in structured special-purpose transactions – and has also led to the creation of global investors who are ready to deploy capital to geographic regions and industrial sectors with the most attractive opportunities. Consequently, successful arrangers of syndicated loans are using their global networks to reach these investors. Heraclitus' statement about constant change was correct, but whatever changes come in the near future we can be assured that the syndicated loan market will be able to adapt and add value for borrowers and lenders.

[1] Covenant lite transactions describe facility agreements which do not contain the usual protective set of financial and non-financial covenants for the benefit of the lenders. Covenant lite also normally refers to covenants which are in part only tested on an incurrance basis which is ordinarily seen in the bond markets rather than a maintenance covenant basis which is typical in the loan market. This means that the covenants are not tested regularly but only to the extent certain situations occur. Although traditionally banks have insisted on a wide range of covenants which allow them to intervene if the financial position of the borrower deteriorates, around 2007 the increasing strength of private equity firms and the decreasing opportunities for traditional corporate loans led banks to compete with each other to essentially offer less invasive terms to borrowers in relation to LBOs.

[2] A dividend recapitalisation can be described as debt raising in order to pay a special dividend to private equity investors or shareholders. Until 2007 dividend recapitalisations have seen a high growth rate, primarily as a way for private equity firms to recoup some or all of the money they invested to purchase their stake in a company.

Chapter 3

US private placements

Michael Thilmany
HSBC

What is a private placement?

A private placement is the direct sale by an issuer, of its debt or equity securities, to a limited number of 'sophisticated' investors (qualified investment buyers (QIBs) or accredited investors (AIs), as defined respectively). The investor base generally includes insurance companies, as well as pension funds, money managers, finance companies, and bank trust departments. Traditionally, private placements have been sold to investors for long-term investment purposes (that is, not for resale), and the secondary market has traditionally been inactive relative to the public markets. These securities are sold without registration under the United States Securities Act of 1933, as amended (the 'Securities Act') pursuant to the private placement exemption contained in Section 4(2) of the Securities Act. No resale of the Notes may be made unless the Notes are subsequently registered under the Securities Act or an exemption from the registration requirements of the Securities Act is available, such as from the exemption provided by Rule 144A of the Securities Act relating to resales of the Notes to QIBs.

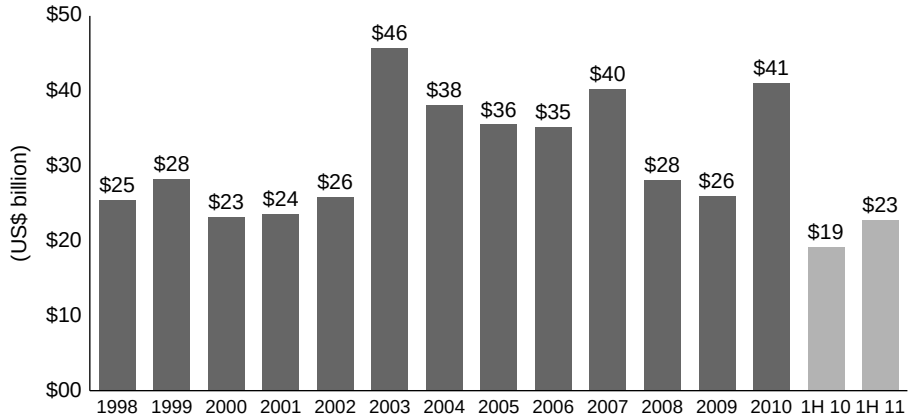
The market for private placements has grown from US$16 billion of total issuance in 1980 to amounts approaching US$1 trillion of outstanding issuance in 2010. Half-year traditional private placement issuance reached US$23 billion in 2011 as a result of historically low interest rates and other market factors we will further explore. This expansion of the private placement market is attributed, in large part, to the growth of transactions by non-US issuers. Cross-border private placements have accounted for 60% of 2011 half-year totals and approximately half of all traditional issuance volume over the past decade.

Investors like the US private placement market because it has proven itself to be one of the safest asset classes for investors, particularly insurance companies, to buy investment-grade fixed income securities. Twice in the period 2002–2009, first following collapses of Enron and other public companies and then again following the financial crisis of 2008, executives at US insurance companies undertook strategic reviews of all their investments and learned that the performance of their private placement investments ranked among the best in their portfolios from a recovery and return perspective. Accordingly, these investors increased their allocations to the asset class following each such review. Investors appreciate the ability to meet the issuer during the roadshow and certainly during investor due diligence, tailored documentation, which in senior note financings rank *pari passu* with bank debt and ongoing reporting and dialogue.

The debt private placement market is available to issuers interested in raising from US$5 million to over US$1 billion principal amount. Issuers are attracted to the market for privately placed debt securities because it offers the following advantages.

Exhibit 3.1

Private placement volume



Source: Thomson Reuters

- *Provides long-term, fixed rate financing.* Although floating rate money is occasionally available, the very great majority of the total volume of privately placed debt is sold on a fixed rate basis. By issuing fixed rate securities, the issuer benefits from the knowledge that its cost of capital will remain constant until the maturity of the issue and, in the private market, these maturities can be significantly longer than maturities available in other markets – as long as 10, 20 or even 30 years.
- *Limited need to obtain rating.* Generally speaking, investors in the private market perform their own credit analysis and do not require issuers to obtain a credit rating. In certain circumstances a rating may be desirable in order to achieve optimal pricing and terms. If a rating is deemed necessary to ensure tighter pricing and terms, agents will assist the issuer in the preparation of materials and strategy with respect to the rating agencies. Such ratings are usually only required for structured notes, since the insurance industry regulator – the National Association of Insurance Commissioners (NAIC) – reserve the right to require one. (For more information on the NAIC, see 'Characteristics of a private placement issue', 'National Association of Insurance Commissioners'.)
- *Can accommodate complex structures or difficult-to-sell credits.* The private market is especially attractive to issuers of 'story' paper where in-depth and sophisticated analysis is required to properly explain a credit. The private market allows the investor to hear a detailed description of a financing in a focused selling effort, rather than through a broadly disseminated document. As a result, the private market offers a source of capital that might not be available in other markets for complicated credits such as holding company structures, project financings, securitisations, asset-backed securities, leveraged buyouts, turnaround situations and leveraged leases.
- *Can be executed quickly*. Issuers have the ability to enter the market quickly since the private placement process does not involve Securities and Exchange Commission (SEC) registration and

generally includes a small number of investors. Interest rates are 'locked-in' as lenders commit to the financing and the documentation process follows. The entire process can be accomplished in eight to 10 weeks for a typical first-time issuer and in as little as four weeks for well-known names or repeat issuers in the market. Since investors hope that issuers will issue more than once, documentation is increasingly drafted as master note agreements permitting future issuances.

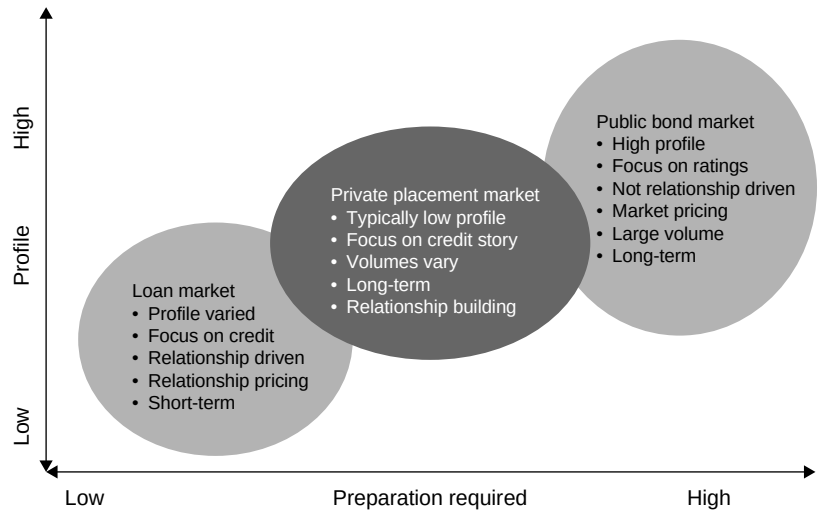
- *Preserves confidentiality.* The private offering process can be tightly controlled. Information regarding the issuer is sent to a select group of sophisticated investors accustomed to treating offering information in confidence. While the majority of issues are executed on the basis of publicly available information, from time to time, offering materials do contain material, non-public information. By acceptance of offering materials, each prospective investor agrees to maintain the confidentiality of such information substantially in accordance with procedures adopted by such investor in good faith.
- *Permits tailoring of terms to meet strategic objectives.* Each private placement of debt securities is an individually negotiated, unique transaction. Maturity, amortisation, currency, issue amounts, economic compensation, covenants and other major terms can be negotiated to preserve management flexibility and to effectively pursue strategic business objectives and financial priorities. Such tailored solutions are unavailable in other bond markets, further enhancing the private placement market's value to issuers globally.
- *Establishes new investor base*. In the course of executing a private placement, an issuer's management can establish strong relationships with institutional lenders. These lenders develop an understanding of the issuer, follow the progress of the issuer and can become an important ongoing source of capital for the issuer in the future.
- *Simple and transparent information requirements.* Investors seem to develop long-term relationship with issuers. Each investor can invest anything from US$5 million to US$200 million. The majority of first time private placement issuers are not well-known to investors, so a good understanding of the issuers businesses and financials is essential. Usually, only three offering documents need to be prepared: Private Placement Memorandum (PPM); Note Purchase Agreement; and Investor Presentation. Depending on complexity and management's time availability, these usually take three or so weeks to prepare.
- *Minimises transaction costs*. The expenses incurred in connection with a private placement of debt securities (legal, printing, miscellaneous, and so on) are typically significantly lower in total than those associated with a public offering. Credit analysts in the market are familiar with local GAAP practices and therefore do not require US GAAP reporting or reconciliation. Unlike the registered or 144A markets, auditor's comfort letters are also excluded. Similarly, opinions such as 10(b)5 letters are also not required. Documentation today is based on the Private Placement Enhancement Project's Model Form No. 1 or 2, documentation resulting from industry-wide input. Such standardised documentation helps keep legal costs down as well.
- *Can accommodate smaller issues.* Due to the relatively low level of expenses associated with private placements the private market can be more economical for smaller issues on an 'all-in' basis than other debt alternatives.
- *Allows timing flexibility*. In addition to being a relatively quick process, private placements offer the issuer significant flexibility with regard to both market entrance as well as the actual take-down of funds. The US private placement market is open year-round. Accordingly, depending on specific disclosure or other considerations, issuers can come to market anytime. Especially

important in this steep US dollar yield curve environment, investors in private placements can be quite accommodating to an issuer's funding needs, and structures incorporating delayed and/or multiple-stage takedowns are not uncommon. Investors are willing to negotiate spreads over Treasury yields or actual coupon rates three, six or even 12 months in advance.

- *Minimises managerial distraction*. Issuer management teams are spared much of the time-consuming effort that is typically associated with a public offering of debt securities, as the lengthy SEC registration process avoided.

Exhibit 3.2

Comparison of fixed income markets



Source: HSBC

Characteristics of a private placement issue

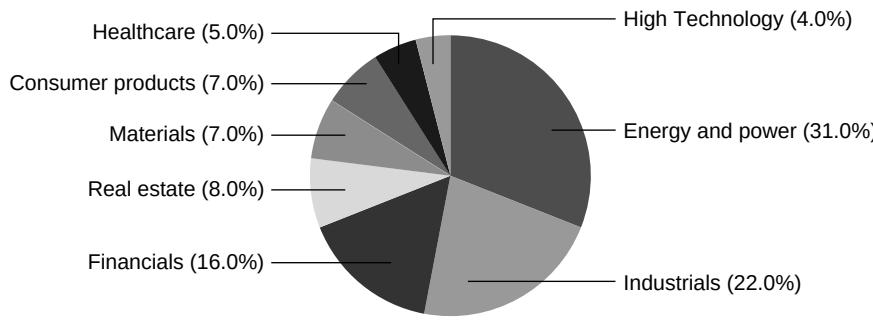
Certain trends emerging in the recent private placement market environment have allowed for some generalisation of a typical issue. The following guidelines represent a summary of these characteristics.

Business

Issuers in the private market range from small private companies to well-known publicly traded corporations across all industries, including companies in transportation, manufacturing, retailing, service, media and entertainment, natural resource, utility, banking and insurance industries, and many

Exhibit 3.3

1H 2011 issuance by industry



Source: Thomson Reuters

others. The unifying theme in the private market is that the issuer generally needs to provide an in-depth description to investors to be fully appreciated or does not want to get public credit ratings.

Geographic diversity

US insurance companies and pension funds have been investing abroad for decades. Historically such investment activity took place in Canada and to a lesser extent Mexico, both of whom for regulatory purposes the NAIC classifies as 'domestic investments'. Investment in UK corporations is the largest and deepest among the geographies. Historically this is the case since UK borrowers have used the US Private Placement Market to fund or hedge US assets. Investors also became quickly comfortable with UK corporate legal jurisdiction, owing to well-established creditor rights. Accounting and business practices there also gained early praise. Over the past five years, Australia, Ireland, Germany and other countries represented in Exhibit 3.4 have gained in investment popularity.

Structure

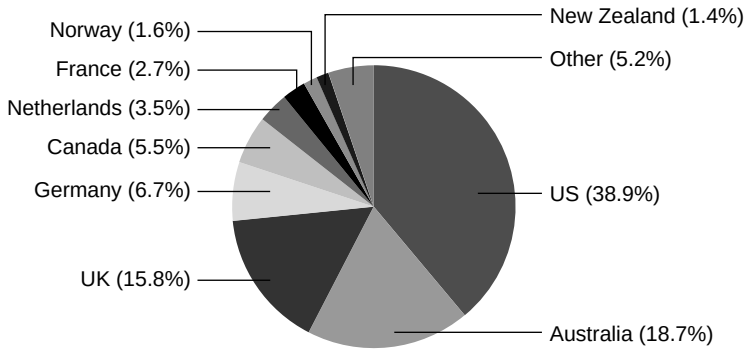
The private market will also accommodate various types of structures. The private market is capable of understanding complicated holding companies, special-purpose vehicles, private companies and foreign-based issuers.

Credit profile

The majority of the transactions consummated in the private debt market are for companies with an A to BBB credit profile. While below-investment-grade transactions had been rare in the early 1990s

Exhibit 3.4

1H 2011 issuance by region



Source: Thomson Reuters

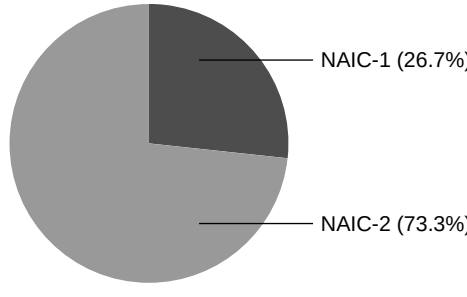
and common before that, a market for below-investment grade issues has re-emerged. Companies with AA– or better credit qualifications and a relatively straightforward 'story' have traditionally favoured the public market over the private market, where such issuers can often achieve lower coupon rates and less restrictive covenant packages.

National Association of Insurance Commissioners

The NAIC is an association of state insurance commissioners, formed to promote uniformity in the valuation of insurer investments. Every fixed income investment held by an insurance company is

Exhibit 3.5

1H 2011 issuance by credit quality



Source: HSBC

assigned a NAIC rating. New issues without a formal credit rating are priced by investors based on their assessment of the NAIC rating. NAIC ratings are typically assigned after a deal is completed.

Exhibit 3.6

Rating equivalent of NAIC designations

Designation	*Rating equivalent*	*Reserve requirement (%)*	
		Life/health	*Property/casualty*
NAIC-1	A– and above	0.4	0.3
NAIC-2	BBB– to BBB+	1.3	1
NAIC-3	BB– to BB+	4.6	2
NAIC-4	B– to B+	10	4.5
NAIC-5	CCC– to CCC+	23	10
NAIC-6	CC, C, D	30	30

Source: NAIC

Types of securities

Investors in the private market prefer to purchase the senior debt securities of the issuer. Subordinated issues have been popular but have a higher coupon. The market does not always require that senior debt be secured, particularly if the issuer's bank debt is unsecured. In some cases, the market is receptive to private placements of convertible debt, as well as preferred and common stock.

Box 3.1

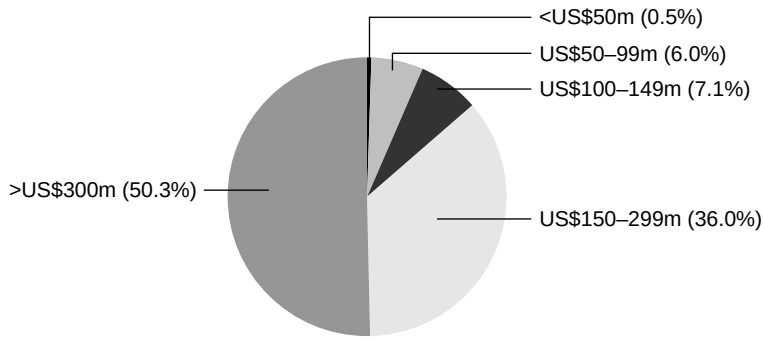
Senior secured debt	Common
Senior unsecured debt	Most common
Subordinated debt	Common

Issue size

Most debt private placements placed by the leading private placement agents were in the range of US$150 million to US$250 million principal amount. However, average deal sizes in 1H 2011 were US$300 million or larger, corroborating the increased importance of the market to both borrowers and investors.

Exhibit 3.7

1H 2011 issuance by size



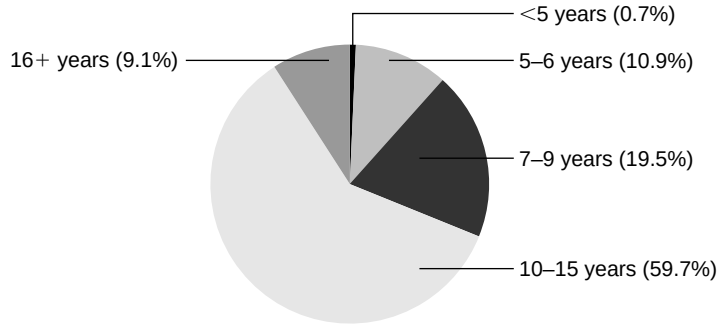
Source: Thomson Reuters

Maturity and amortisation

The majority of privately placed debt matures between five to 12 years. The market is, however, receptive to issues as short as two years and as long as 20 to 30 years in the case of some project financings, public utility issues and higher-rated issues. Amortisation is typically set to match the cash flows of the issuer and varies from transaction to transaction.

Exhibit 3.8

1H 2011 issuance by maturity



Source: Thomson Reuters

Interest rate

As mentioned earlier, over 85% of debt private placements are structured on a fixed rate basis. It is customary in the market to quote and price private debt issues in terms of a basis point spread above the yield on US Treasury securities with a comparable average life. This spread varies with the credit quality of the issuer, the maturity of the issue, and the terms of the note agreement (covenants, all provisions, and so on).

Currency

US private placements are predominantly issued and funded in US dollars. However, non-US dollar financings are increasingly common, with a growing number of investors demonstrating appetite for purchasing sterling, euros, Australian dollars, New Zealand dollars, and Japanese yen.

Callability and refundability

Since investors in the private market typically fund their investments with fixed-rate, fixed-term liabilities, they require protection against – or compensation for – optional prepayment of an issue. Investors are concerned about being prepaid in a lower interest rate environment. The private placement market permits prepayment by requiring the issuer to pay a Market Makewhole premium. The Market Makewhole is a provision designed to allow for prepayment by an issuer at any time, while ensuring that the investor is adequately compensated for the reinvestment risk resulting from such prepayment. This compensation takes the form of a premium over the face amount of notes prepaid and is calculated by discounting the remaining principal and interest payments of the notes by the current reinvestment rate. If the current reinvestment rate is less than the coupon on the notes a premium will result. Furthermore, the shorter the maturity, the lower the premium.

Covenants

Covenant requirements vary from issuer to issuer and are negotiated with investors in each private placement transaction. Generally speaking, covenant restrictions in a private placement fall somewhere between the fairly 'loose' tests found in public offerings of debt securities and the relatively 'tight' tests typically associated with bank financings. Generally, issuers look to replicate the definitions and reporting requirements in their bank agreements.

Most senior bond transactions include both affirmative as well as negative covenants such as:

- compliance with laws, and so on;
- transactions with affiliates, and so on;
- asset sale and merger restrictions;
- maintenance of properties;
- line of business; and
- lien restrictions (negative pledge).

Typically, the private placement investors will seek to have the same or similar financial covenants as those of the issuer's commercial banks. Occasionally, ratios such as interest coverage or debt

to ebitda may be relaxed relative to prevailing levels, a concession to the tenor of the US private placement market.

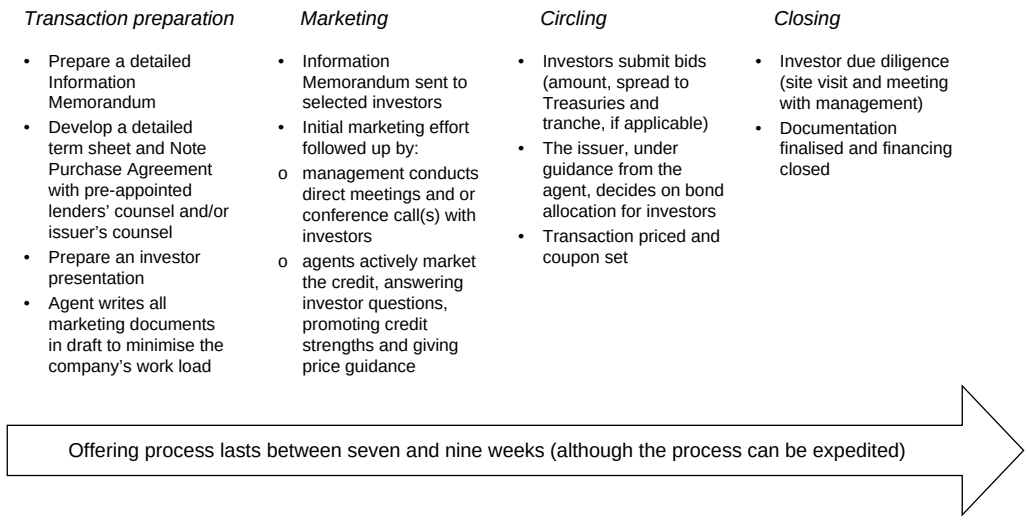
During the period of 2005–2008, for better quality senior debt issuers who provide no financial covenants to current banks, the market will often be satisfied with a most favoured lender provision. This provision has helped investors get comfortable with a lack of covenants while at the same time attracting it to the US Private Placement Market issuers unaccustomed to providing covenants. However, since 2008, investors' appetite for uncovenanted transactions has strongly declined, the market since having witnessed perhaps a handful of issues from high quality public issuers who would never consent to covenants.

Private placement process

Transaction execution involves four phases with the agent guiding the issuer through each stage. The process itself is broadly consistent with other debt markets. However, issuers who have accessed both public and private markets have noted the US private placement market's transparency. Since the transaction is a direct offering to investors – as opposed to a sale to an underwriter who re-offers the securities – issuers get a much clearer perspective on investors.

Exhibit 3.9

Typical transaction execution timetable



Source: HSBC

Exhibit 3.10

US and UK investor base

Source: Author's own

The market for private placements

While lip-service has been paid to development of a European private placement market, cross-border placements of private paper is an extremely important part of the market. In the first half of 2011, traditional cross-border issuance exceeded domestic US issuance by nearly 63%.

Although dollar issues of private debt constitute the largest portion of placements, as issuers become more sophisticated and awareness of the private placement market spreads, companies are expressing an increased interest in sterling, euros, Australian and New Zealand dollars, and Japanese yen denominated placements. Issuers benefit from receiving funding in their currency of preference and not having to incur swap costs. However, dollar denominated funding will remain dominant while there is the existence of dollar arbitrage opportunities and a relatively undeveloped European investor base.

The market is comprised of a network of institutional investors including insurance companies, large pension funds, money managers and finance companies. Each major investor generally has a dedicated group of professionals to evaluate and purchase privately placed securities. This core investor base comprises approximately 50 to 60 insurance companies, several pension funds and money managers, and a handful of finance companies.

Despite consolidation in the US insurance market, volume capacity has grown, thereby at least keeping pace with issuance growth. Over the past few years, investment-grade fixed income issuance – both domestic and internal – has been met with ample supply of funds. Although the market has seen a few billion dollar transactions, most are more modestly sized (see Exhibit 3.7). Issues are usually oversubscribed, with investors quite often severely cut back during bond allocation.

Summary analysis

Exhibit 3.11 compares and contrasts fixed income issuers' various financing options.

Exhibit 3.11

Comparison of fixed income issuers' financing options

	US investment grade	*High yield public*	*'Public style' Rule 144A private*	*Traditional US private placement*	*Bank market*
Typical borrower credit quality	AAA to BBB–	BB+ to CCC	AA to B	A+ to BB+	AA to B
Investor base	Broad	Mutual funds and insurance companies	Both public and private buyers	Predominantly insurance companies	Banks
SEC registration	Yes	Yes	No	No	No
Required disclosure	Extensive	Extensive	Extensive	Limited to investors	Limited to investors
Interest rate	Fixed	Fixed	Fixed	Fixed or Floating	Floating
Typical amortisation	Bullet	Bullet	Bullet	Bullet/ Amortisation	Amortisation
Profile					
Typical maturity	Up to 30 years	Up to 20 years	Up to 30 years	Up to 30 years	Up to 7 years
Convenants	Non-financial[1]	Varies	Non-financial	Typically less restrictive than bank covenants	Generally restrictive
Timing	12 weeks	12 weeks	10 weeks	8 to 10 weeks	6 to 8 weeks
Prepayment	Yes (make-whole or predetermined call premiums)	Yes (following non-call period)	Unusual	Yes (make-whole or predetermined call premiums)	Yes (no premium)

[1] Non-financial covenants include negative pledge, merger restriction and, if applicable, sale-leaseback.

Source: Author's own

Chapter 4

Debt capital markets

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Introduction to bonds

A bond is a marketable debt instrument which contractually obliges the issuer to repay an obligation, usually at par, on a specified maturity date. During the life of a bond, the borrower will typically make periodic interest payments of a set percentage of the par/nominal value, although under the floating rate note (FRN) format, the payment will vary according to a specific interest rate or index. One notable exception, highlighting the academically important concept of the time value of money, is a zero-coupon bond. However, for the purposes of this discourse, we will tend not to focus upon this format and its principal use as an instrument for US Treasury bills.

The contractual nature of bond debt, combined with the risk aversion of investors, leads to variety of form that means the term 'bond' remains a general one. Nevertheless, it holds, in most instances, that a failure by the borrower (otherwise known as an 'issuer') to comply with pre-documented terms can lead to corrective action aimed at securing recovery of owed principal and accrued interest. One final point of context is the less well known fact that the market value of the world's bond markets exceeds that of the equity markets by a factor of 1.5. Yet, relative to equity markets, an inconspicuous profile that is afforded by functional characteristics does not detract from the importance of this source of financing.

Form

Typically, bonds are issued as either bearer or registered instruments. A bearer bond sees ownership transferred upon physical delivery, thereby offering an element of anonymity. Should a bond be issued under registered format, a record of ownership is centrally stored. Having bonds settled via clearing houses means that the commercial and legal difference between the two formats has diminished. As has historically been shown, bearer bonds have been the more prevalent format in European markets (reflecting legal and tax implications arising from English-law registered notes).

Stratification of debt and the ability to order the priority of claims against the cash flows and assets of an organisation are fundamental tools of corporate finance. In the context of bonds, you will find seniority broadly divided into senior secured, senior unsecured (that is, a floating lien against unsecured assets), senior subordinated (a particular reference to bank capital) and subordinated. The IPMA handbook, which is administered by the International Capital Market Association (ICMA) – a self regulatory trade association for participants of capital markets – recommends that the description of seniority is unambiguous to the involved parties prior to launch. Documentation associated with new issuance will detail the specificities relating to the ranking of bond debt, its

likely *pari passu* status versus bank loans and, amongst other features, negative pledge covenants aimed at maintaining the priority of a bond holder's claim. Generally speaking, bonds will not have as strictly defined covenants as comparable loans. This tends to be because the investor base is numerically larger in scale compared with the number of bank participants in a syndicated facility and, therefore, this has the potential to encourage free rider behaviour. Despite the likely presence of a trustee, it is difficult to obtain consent for consensus collective action. One further reason for the lack of highly specialised covenants is the difficulty in pricing the pickup in credit spread, on a stand-alone basis, that results from the inclusion of an incrementally tighter covenant package.

Within the generic categories already mentioned, and looking more specifically at corporate issuers, rating agency classification allows for a further subdivision of bonds as either investment grade (also known as high grade) and sub-investment grade (high yield). The threshold between the two categories is often referred to as housing 'crossover' credits and for Moody's Investors Service (Moody's) and Standard & Poor's (S&P) the lower boundary is Baa3 and BBB– respectively.

Another commonly referred to category of capital is known as hybrid debt. This bridges the divide between the equity and debt capital markets and retains characteristics from both asset classes. It allows for the injection of fresh capital into an entity without the need to approach existing stakeholders. Given the non-dilutive effect (and albeit partial equity treatment may only be achieved), this can be an attractive option for corporates looking to mount a rating defence. For financial institutions, various iterations of hybrid capital, such as contingent convertible bonds, help in building capital buffers.

For entities wishing to raise capital in the debt capital markets, the ability to pledge specific assets or a class of assets in support of a bond can provide a pricing benefit to the issuer. A covered bond is one such example, allowing financial institutions to realise tighter pricing versus a straight unsecured bond. The process of securitising assets takes the concept of asset backed borrowing in the debt capital markets a step further by formally transferring ownership of the assets to a vehicle which then itself issues bonds. This concept has historically been used by: governments; agencies, through mortgage back securities; financials, issuing treasury cash management bills (CMBs); and corporates, who may factor accounts receivables. The concept of 'whole business securitisations' is one employed to good effect in the UK where there has historically been an advantage for pledging security behind the bonds. Participation in such forms of securitisation will usually require utility-like income and a capital intensive business, but this allows the owners to achieve a cheaper cost of funding by borrowing against the regulatory capital value of the securitised business.

Issuers of bond debt

The most frequent borrowers within the debt capital markets are financial institutions and sovereign issuers. This, in itself, is hardly surprising given their respective financing requirement. However, it does highlight the skew in favour of better rated counterparties that exists in debt capital markets. Prior to the emergence of sub-segment catering to high yield issuers in the 1980s, the capital markets were largely the preserve of high grade corporates, financial institutions and sovereign, supranational and government-agencies (SSA) issuers. Furthermore, in Europe, where bank loans have historically been the main source of finance for corporates, banks and financial intermediaries have an established record of raising capital in the bond markets. The disintermediation of corporate borrowing is more prevalent theme in the US, where corporates make up the third largest issuing group.

Issuing entities can normally be subdivided into the three broad categories of SSA, financial and corporate issuers. The following represents a more comprehensive list (with examples of each in brackets):

- supranationals (the International Monetary Fund);
- sovereign governments (Republic of France);
- government agencies (KfW);
- regional authorities (Region of Lazio);
- banks (Société Générale);
- insurance companies (Allianz);
- other financial institutions (Nationwide Building Society);
- corporates (BP);
- captive finance companies (Banque PSA);
- investment holding company (Berkshire Hathaway); and
- special purpose vehicles (for example, securitisations, catastrophe bonds or project bonds).

Use of proceeds

Upon settlement of a new bond issue, and based on vanilla terms, the issuer will receive the proceeds as an up-front cash injection. The 'drawn' nature of a bond instrument generally means that there will be some pre-consideration by the issuer as to the purpose of raising the funds. This scenario differs from that under a revolving facility where, in the current environment, the 'cost of carry' for an undrawn line is relatively low. A similar observation is made for commercial paper (CP) backstop lines which are provided at relatively low cost by banks on the assumption that strong credits are unlikely to be unable to roll over their short term debt (thereby creating a need to draw on backup facilities). In the broader context of debt capital markets, use of proceeds can attempt to be summarised under the following headings.

Financing of budget deficits

Many, if not most, sovereign governments and agencies are unable to balance their public sector finances. In years of surplus, reserves are built and cash can be invested, saved or spent on projects. Deficit years imply a funding requirement. Given that governments are unable to raise equity, the majority of their financing is done through the sale of bonds. In the UK, between 75% and 80% of gross consolidated national debt was financed by medium and long term bonds as of FY2010. The remaining amount was financed via from National Savings, Treasury bills (bonds with less than 1-year maturity) and short-term borrowing from the Bank of England.

Acquisition financing

Acquisitions can be funded through either the exchange of cash or equity as consideration for a business. Takeover and acquisition rules will normally specify the requirement for funding to be in place ahead of a bid and therefore the preparation of bridge facilities are not uncommon ahead of debt capital markets 'take-out'. Clearly it is not in the interests of the syndicate members to build

up significant single name concentration to a single counterparty and therefore disbursing underwritten debt to a diverse investor base mitigates risk exposure. This is one reason why acquisitive companies want to maintain easy access to the bond market.

Project financing

The fixed income nature of bonds does not lend itself well to the financing of the construction or build out phase of a project where uncertainty of cash flow timing is heightened. Nevertheless, once build out is complete, the relatively predictable cash flows that arise (potentially from a pre-arranged offtake contracts) are ideally suited to paying a stable coupon on a bond (even if the principal is amortising). In order to overcome the difficulties of financing the early stage of a project, synthetic solutions include provision of external guarantees in support of the build out phase. Alternatively, arranging a 'turnkey' engineering and construction contract effectively puts the risk of cost overrun and delay back to the contractor. Project bonds have historically been used to finance infrastructure such as pipelines, mobile telephone networks or electricity grids.

Increasing capital

Many bonds are issued to raise finance for what is commonly referred to as 'general corporate purposes'. This would be typically senior unsecured corporate borrowing, as well as senior unsecured and covered bank finance that would be used for the day to day running of the business. The description is deliberately vague but would capture at least the following: working capital needs, pension deficit, acquisition finance, capex, or even to pay dividends. It is worth highlighting that there is a distinction between the funding needs of a financial institution's treasury and its regulatory capital base. The two can be funded via debt capital markets, albeit the latter is subordinated and therefore far more costly.

Rebalancing capital structure

Issuers may wish to strengthen the cash portion of their respective balance sheets. If they are prefunding, as many large corporates chose to do in tumultuous conditions during 2009, the (opportunity) cost of carrying this capital will weigh in their minds. Theoretical studies suggest that organisations have an optimal capital structure that minimises their cost of funding. Raising debt on the bond markets, in conjunction with increasing the payout ratio, will rebalance the debt-to-equity mix of the organisation. We saw evidence of such activity with Microsoft in 2010 when it broke coupon records, also benefitting from record low treasury rates, and issued US$6 billion in total. Here, low yielding proceeds were used to fund its share repurchase programme as well as to offset cash reserves held in foreign subsidiaries. Along similar lines, bond proceeds can be used to hold steady dividend payout in years where earnings require supplement.

Refinancing maturing debt

Should the borrower not have available cash or simply not wish to pay down an upcoming debt maturity (for example, an existing, soon to mature, bond), it may wish to issue another bond with similar terms but for a longer maturity.

Timing and cost of carry

Whilst swap contracts allow treasurers to adjust their fixed-to-floating liability mix, sustained periods of low interest rates create windows where issuers can opportunistically issue cheaper fixed income debt. A low interest rate environment also reduces the cost of carry for issuers looking to undertake pre-financing.

Bond investors

In order to better understand bond markets, it is important to be aware of the elements making up the demand dynamic. Knowing that, for instance, the UK has a greater proportion of private investment directed through pension funds, helps explain the shape of local yield curves and the existence of a strong bid for long-duration bonds. Key segments amongst the investment community are outlined below with examples of each entity being provided in brackets:

- central banks (the European Central Bank);
- asset managers (Fidelity);
- money market funds (Crédit Agricole Asset Management);
- pension funds (Ontario Teachers' Pension Fund);
- insurance companies (AXA);
- hedge funds (Bluebay);
- banks (Société Générale);
- corporates (Treasury departments); and
- wealthy individuals.

Global bond markets

In its most straightforward form, a bond can be launched by an issuer in its native geography, denominated in its currency of operation and arranged by a local bank (for example, Microsoft issuing a US dollar benchmark transaction to US investors with J.P. Morgan as bookrunner). However, the multinational nature of issuers and investors has led to the development of capital markets that better facilitate the flow of capital. It is now not unusual to see, for instance, Mubadala Development Company (a state owned investment vehicle of Abu Dhabi) issuing US dollar denominated debt via Société Générale. Interconnected markets allow price sensitive borrowers to tap pools of liquidity and, if needs be, match foreign assets with foreign liabilities. The basis market allows issuers to tailor their requirements and it can sometimes be cheaper, despite swap and credit charges, to repatriate foreign raised capital.

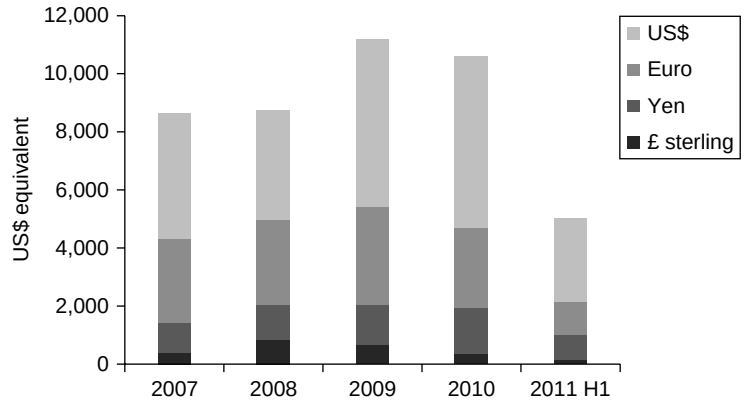
There are now several key categorisations of internationally originated bonds. Contrary to its often loose usage, the term 'Eurobond' refers to any bond denominated in a currency other than that of the country in which it was issued (for example, a USD denominated bond issued to European investors). Commonly used nicknames such as yankee, bulldog and kangaroo bonds refer to a separate class of bond known as 'foreign bonds'. These are bonds denominated in the local currency to the market in which they are issued, however, issued by a foreign entity. The third and final categorisation refers to 'global bonds', which offer the flexibility that they can be offered in both foreign and Eurobond markets.

The global debt capital markets are highly concentrated in several key currencies (see Exhibit 4.1). Whilst there are established and sometimes growing opportunities to raise finance amongst the smaller markets (for example, Swiss franc, Norwegian krone, Swedish krona and renminbi), the importance of scale is driving consolidation. The largest four markets are:

- dollar – offering the largest global investor base and a highly developed public and private market;
- euro – second largest market benefitting from large institutional investor bases and developed secondary credit flow;
- yen – whilst the third largest market, tends to be inward focused with currency risk costly to mitigate; and
- sterling – increasingly marginalised, although offering a strong bid at the long end of the curve due to significant resource vested with pension funds and insurance companies.

Exhibit 4.1

All debt capital markets issuance in core markets (US dollar equivalent)



Source: Dealogic

What drives choice between global capital markets?

- Cost – to swap funds back to operational currency and either fixed or floating (basis).
- Credit spread – relative familiarity of a credit in one market versus another may affect spreads.
- Documentation – an aspect of cost but also dependent on the level of disclosure required.
- Liquidity preference – accessing specific duration cost effectively may be linked to a market.
- Asset-liability matching – foreign subsidiaries, thereby qualifying for hedge accounting.
- Saturation – accessing a more varied investor pool.
- Diversification – reducing reliance on a single market for funding.

Exhibit 4.2

(a) All international euro-denominated corporate bonds

Rank	*Managing bank or group*	*Total €m*	*No. issues*	*Share (%)*
1	BNP Paribas	19,212	126	11.5
2	Deutsche Bank	17,488	105	10.5
3	SG Corporate & Investment Banking	11,970	78	7.2
4	Credit Agricole CIB	9,511	72	5.7
5	RBS	9,112	68	5.5
6	HSBC	8,829	57	5.3
7	JPMorgan	7,513	56	4.5
8	UniCredit	7,504	48	4.5
9	Barclays Capital	6,935	47	4.2
10	Citi	6,449	52	3.9
	Subtotal	104,523	295	62.7
	Total	166,809	372	100.0

Source: Dealogic – 1 January to 31 December 2010

(b) All international US dollar-denominated bonds for financial institutions

Rank	*Managing bank or group*	*Total $m*	*No. issues*	*Share (%)*
1	JPMorgan	61,046	227	14.5
2	Bank of America Merrill Lynch	47,193	508	11.2
3	Morgan Stanley	44,792	306	10.6
4	Citi	39,784	281	9.5
5	Goldman Sachs	30,592	228	7.3
6	Deutsche Bank	30,337	122	7.2
7	Barclays Capital	27,039	700	6.4
8	UBS	22,748	385	5.4
9	Credit Suisse	21,406	98	5.1
10	HSBC	19,115	176	4.5
	Subtotal	344,053	2,436	81.7
	Total	420,984	2,812	100.0

Source: Dealogic – 1 January to 31 December 2010

(c) All international jumbo covered bonds

Rank	*Managing bank or group*	*Total €m*	*No. issues*	*Share (%)*
1	Barclays Capital	15,511	58	8.9
2	BNP Paribas	14,794	61	8.5
3	HSBC	12,850	48	7.4
4	UniCredit	10,802	49	6.2
5	Deutsche Bank	10,624	42	6.1
6	Natixis	9,673	43	5.6
7	RBS	9,087	38	5.2
8	SG Corporate & Investment Banking	8,807	37	5.1
9	UBS	8,008	39	4.6
10	Landesbank Baden-Württemberg	7,337	35	4.2
	Subtotal	107,493	179	61.9
	Total	173,799	189	100.0

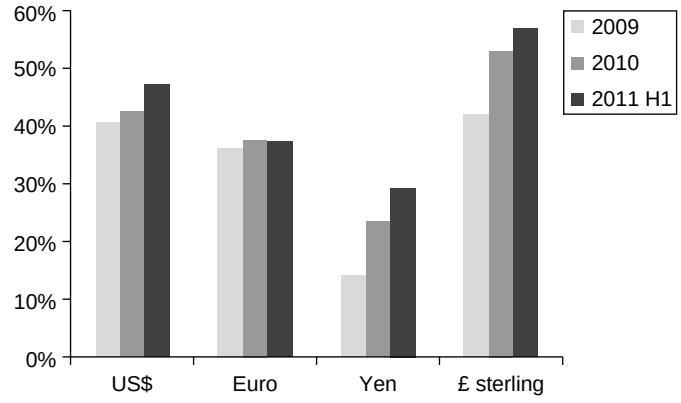
Source: Dealogic – 1 January to 31 December 2010

In order to follow their customers to a multinational model, investment banks and advisers have had to evolve fixed income capabilities outside their home markets. This brings us to the topic of league tables and their significance. Some view league tables as a signal of competence and credibility to issuers, who themselves, wish to ensure a successful outcome for their transaction. This is one interpretation of league tables. Others may suggest they are simply a reflection of monopolised markets. In Exhibit 4.2, we have provided a summary of the main currencies of issuance with the tables offering a snapshot at the turn of the decade. The issuance data used for league tables differs from that graphed in Exhibit 4.1 because of league table 'eligibility' criteria that exclude bonds with maturities of less than 18 months, non-syndicated transactions, government auctions and retained tranches (for example, ABS, covered). The more commonly referenced league tables will tend to offer a greater degree of granularity, highlighting specific segments of the debt capital markets such as 'all international euro-denominated corporate bonds', 'all international US dollar-denominated bonds for financial institutions', or 'all international jumbo covered bonds'.

One interesting trend, that may not be entirely evident based on the point-in-time information included in Exhibit 4.2, is the increasing prominence of overseas bookrunners in core markets. This is demonstrated in Exhibit 4.3 where the trend of an increasingly diversified bookrunner base is evident in all of the core markets.

Exhibit 4.3

Apportioned league table credit to non-local bookrunners (all rank eligible bonds)



Source: Dealogic

Documentation

Bonds are contractual in their nature and are therefore capable of being tailored to best match the needs of investors, issuers, as well as the preferences of regulators. Whilst it is inevitable that documentation will differ between jurisdictions, there are also obvious differences amongst involved

parties, structures and the issuers preferred level of disclosure. Nevertheless, the trend towards homogenisation continues to occur. As with other observed attempts to standardise documentation in a financial context (for example, International Swaps and Derivatives Association (ISDA), Loan Market Association (LMA) documentation), the goals are generally to establish market practice that is conducive to the efficient conduct of business as well as to minimise cost through adoption of a collective approach.

In developed markets, the key determinant for documentation type will be whether the borrower expects to become a frequent issuer in the bond markets or will instead return more intermittently on a 'stand-alone' basis. Considerations for the stand-alone format versus the programme format (in Europe, a European medium-term note (EMTN) programme, in the United States either a US MTN programme, a global MTN programme, or SEC registered shelf) are outlined below.

Flexibility

For what can be window driven markets (that is, best pricing achievable only sporadically), it is critical for some issuers to be able to, at short notice, print a specific form of note with specific tenor, size and denomination to attract favourable terms. An established programme affords issuers such flexibility and will accommodate most types of security. However, for some highly complex structures, using existing documentation framework may be difficult and in such instances, it may be better to pursue the stand-alone route.

Cost

Setting up a programme makes economic sense if the fixed costs associated with setting up the programme (for example, legal, other third party advisers, listing, printing) can be negated by a frequency of issue that, as an estimate, should be more than twice a year. This is because the marginal cost of supplementing a prospectus can be quite small relative to a stand-alone issue where the principal terms must be reproduced in full for each drawdown.

Time

In essence, a programme allows issuers to access the public debt markets market in size at short notice; thereby reducing execution risk. For a stand-alone issue by an infrequent issuer, it can take between four to six weeks from the point of banks being mandated to pricing occurring. This compares with a period of no greater than several days for an issue executed under an EMTN programme and where timing can, for instance, have implications for pre hedging costs. Blackout periods, which preclude the company from executing transactions in their own securities, can restrict issuance for up to four months of the year (around quarterly financial report). Whilst this time can be used for the preparation of documentation, the ability to tap markets, at relatively short notice, outside of a blackout period is clearly desirable.

Utilising a programme for public bond market offerings can therefore be best summarised as being suited for investment grade and frequent borrowers. Furthermore, a significant disclosure burden upon such programmes is lifted by the ability to incorporate by reference periodic updates, such as quarterly results, into the offering documents.

US debt issuance programmes are known as either an SEC registered shelf (US MTN programme) or a Reg S/Rule 144A programme (global MTN programme). In the US, the latter form allows the sale of bonds to investors identified as Qualified Institutional Buyers (QIBs) but does not allow distribution to public or retail classified investors. Though disclosure requirements for a Reg S/Rule 144A programme track closely those of a SEC registered programme, this format avoids SEC fees, oversight and ongoing reporting requirements.

With respect to a SEC registered shelf (US MTN programme), upon a transaction being launched ('takedown' of bonds from shelf), the issuer will file with the SEC a prospectus supplement or pricing supplement containing final terms, underwriting arrangements and any updated financial information or disclosure of the issuer. In order to issue registered securities off a shelf registration statement, an issuer must keep current the information about itself that is included or incorporated by reference in the prospectus. This is usually done by filing annual and quarterly financial statements (on Form 20-F, Form 6-K and press releases on Form 8-K).

A Reg S/Rule 144A (global MTN programme) essentially works in a similar way to an EMTN programme. The key difference is that the issuer disclosure in the offering document will need to be current at time of any issuance and this can be achieved by producing a supplemental prospectus to the programme base prospectus or by simply updating the disclosure in the base programme prospectus.

The governing legislation for issuance under an EMTN programme is covered in the 'Prospectus & Transparency' and subsequent 'Amending' directives. Establishing a programme requires creation of a base set of documents that agree general terms and conditions that will govern future issuance of notes. Features detailed in a programme will include potential currency denomination, potential maturities, interest calculations, early redemption mechanics, stock exchange listing, the overall programme amount and a provision for appointing new dealers to the programme. Detailed terms (particularly pricing) are only agreed at the time of issuance and are therefore provided as a subsequent supplement.

The issuer will usually appoint one bank as arranger for the programme, to coordinate the initial legal documentation process and also ensure the programme is kept up to date. In addition to this role, the issuer will appoint anywhere up to a dozen permanent dealers under the programme and these represent potential lead managers of future drawdowns under the programme. The issuer can appoint new dealers to the programme at any time.

Both EMTN and US equivalent programme prospectus' are designed to facilitate the listing of future bonds on a stock exchange (for example, London or Luxembourg for EMTN). An application to list is made and (potentially) granted by listing authorities at the time the programme is established, albeit there is no requirement for an accompanying issue of notes. Notes are only actually listed once they are issued and the application will outline the maximum amount which may be issued under the programme. As most of the groundwork for listing is completed when the programme is set up, the process of listing new issues is essentially a formality and, therefore, achieved quickly.

An issuer can appoint either a trustee or fiscal agent under a programme. The trustee has a fiduciary duty to the noteholders as a whole and is the only individual able to bring enforcement proceedings against the issuer following a default. The involvement of an intermediary is an advantage to issuers wanting protection from errant noteholders who may look to exploit minor, yet technical, breaches of covenants. Where a trustee is appointed (that is, in the absence of a deed of covenant), legal counsel may be required and thereby adds a further cost dimension. Fiscal agents

primarily handle administrative matters and it is their duty to ensure the timely payment of interest and principal on the notes.

During the life of a programme, it is important for the issuer to ensure that the prospectus remains up to date and accurate at the time of any drawdown, so as to avoid liability for the provision of inaccurate or misleading information to investors. Prospectus supplements may reflect changes to the law, the issuer's financial position, regulatory requirements or any changes to the terms and conditions of the programme. ICMA, for instance, states that the prospectus should contain all relevant information to enable an investor to make an informed assessment of the issuing entity.

Once a programme has been established, the documentation required for an issue off the programme is simplified and, for a syndicated transaction, would typically involve the preparation of final terms, pricing supplement and a subscription agreement (the pro forma of which is agreed on the establishment of the programme).

Standard documentation for a stand-alone issue would include the prospectus, a subscription or purchase agreement, a fiscal agency agreement or trust deed, final terms, legal opinions and comfort letter. A summary of some of the key documents is provided:

- *invitation telex:* (fax, email or Bloomberg message) is prepared by the bookrunners (lead managers). In summarising principal terms, it is the basis for syndicate participation. On occasions, simply a term sheet is sent;
- *prospectus:* marketing document that contains, amongst others, disclosures on the issuer (business and financial information), terms and conditions of the notes, description of selling restrictions and detail on use of proceeds;
- *subscription agreement:* agreement between issuer and the underwriters executed on the signing date detailing the conditions of the subscription of the bonds;
- *fiscal agency agreement:* agreed between the issuer and the fiscal and paying agent outlining responsibilities for payment of principal and interest to noteholders;
- *trust deed:* agreement between bank selected as trustee and the issuer explaining fiduciary relationship between trustee and the noteholders; and
- *closing documents:* legal opinions (from local and international counsel) and comfort letter. The latter is provided by an issuer's auditor to the underwriters, confirming that financial information is correctly extracted from recent audited accounts, and following limited computation highlights any material changes to the issuer's financial position since.

Sample termsheet

For the purpose of outlining the main features of a new bond, Exhibit 4.4 shows examples of a fixed note and floating rate note termsheet.

Accounting

Financial disclosure requirements (as outlined by regulators in the key markets) exist to provide investors with sufficient information to make an informed judgement. Until 2007, financial statements submitted to the SEC had to be presented in US generally accepted accounting principles (GAAP) or domestic GAAP (and then reconciled to US GAAP). Financial statements prepared under English-language international financial reporting standards (IFRS) are now able to be presented to

Exhibit 4.4

(a) Termsheet senior euro fixed-rate bond

Issuer	*Generic corporation*	*Generic corporation*	*Generic corporation*	*Generic corporation*
Tenor	5-year	7-year	10-year	12-year
Issuer rating	Relevant rating	Relevant rating	Relevant rating	Relevant rating
Status	Senior, unsecured	Senior, unsecured	Senior, unsecured	Senior, unsecured
Principal amount	Benchmark	Benchmark	Benchmark	Benchmark
Trade date	8 September 2011	8 September 2011	8 September 2011	8 September 2011
Settlement date	13 September 2011	13 September 2011	13 September 2011	13 September 2011
Maturity date	Wednesday 13 September 2016	Friday 13 September 2018	Monday 13 September 2021	Wednesday 13 September 2023
First coupon date	13 September 2012	13 September 2012	13 September 2012	13 September 2012
Re-offer spread versus mid-swap	85 bps	95 bps	105 bps	115 bps
Mid swap rate	1.857%	2.136%	2.392%	2.524%
Re-offer yield (annual)	2.707	3.086	3.442	3.674
Government reference	OBL 2 ¾ 04/08/16	DBR 4 1/4 07/04/18	DBR 2 1/4 09/04/21	DBR 2 1/4 09/04/21
Reference yield	0.867%	1.230%	1.674%	1.674%
Re-offer spread versus reference	184 bps	186 bps	177 bps	200 bps
Coupon	2.625%	3.000%	3.375%	3.625%
Re-offer price	99.621%	99.465%	99.441%	99.558%
Redemption price	100%	100%	100%	100%
Denominations	Euro 100k + 1k	Euro 100k + 1k	Euro 100k + 1k	Euro 100k + 1k
Day count	Act/Act (ICMA)	Act/Act (ICMA)	Act/Act (ICMA)	Act/Act (ICMA)

Source: Authors' own

(b) Termsheet senior US dollar floating rate note

Issuer	*Generic corporation*	*Generic corporation*
Tenor	18-months	3-years
Issuer rating	Relevant rating	Relevant rating
Note type	Floating rate note	Floating rate note
Principal amount	Benchmark	Benchmark
Trade date	24 August 2011	24 August 2011
Settlement date	29 August 2011	29 August 2011
Maturity date	Thursday 28 February 2013	Friday 29 August 2014
Interest rate basis	3 month US dollar Libor	3 month US dollar Libor
Index maturity	Quarterly	Quarterly
Spread	Libor + 18 bps	Libor + 25 bps
Re-offer price	100.000%	100.000%
Index	3-month Euribor	3-month Euribor
Denominations	US dollar 1k + 1k	US dollar 1k + 1k
Day count	Act/360	Act/360

Source: Authors' own

the SEC, thus overcoming a historic deterrent for most non-US borrowers. The provision of financial information, audited by a third party, to accompany the sale of bonds remains a fundamental feature giving transparency to the market.

In general, bonds are accounted for as debt instruments and therefore benefit from the tax shield that is created by interest being a deductable expense. Hybrid bonds, by design, provide us with an exception, qualifying for partial equity credit on the balance sheets of corporates, or as part of the core (Tier 1) or supplementary (Tier 2) capital reserves of a financial institution. Accounting authorities and rating agencies are not entirely aligned on their treatment of hybrid capital, but the general conditions for equity treatment are:

- an ongoing contractual obligation for the issuer to deliver cash or another financial asset to another entity; and
- a requirement upon the issuer to exchange financial assets or liabilities with another entity in accordance with potentially unfavourable conditions.

Thus, an equity accounted debt instrument should have the following features to qualify for suitable treatment:

- perpetual or (extremely) long dated maturity date;
- no obligation to deliver cash – issuer has full discretion to avoid payment; and
- acceptance of a deeply subordinated position in the issuer's capital structure.

Pricing

In the absence of a discourse on bond mathematics, it suffices to highlight that the current market value of a bond, priced as a percentage of the nominal, should be an amount equivalent to the present value of all expected future cash flows, discounted at a rate that reflects the economic opportunity cost of that capital.

Issuers will inevitably try to minimise the yield that they are required to pay in order to attract debt capital. Looking at this same situation from the perspective of an investor, it is clearly in their interest to obtain the highest yield for taking the smallest capital risk.

Often, the starting point in the price discovery process for a bond involves observing the yield on a benchmark bond of similar tenor. For a monetarily sovereign issuer (such as the US), there is no risk of default for economic reasons because it can always make payments as they fall due by crediting bank accounts (the ability to create money). Some may debate whether this amounts to zero default risk (for example, rating agencies look to the presence of credible, uninhibited governmental institutions), but it seems logical that the cost of funding for a benchmark issuer should be lower than for most other issuers. This, in itself, is not a necessary condition for defining a benchmark yield curve, however, the curve should offer good visibility on a reference price by consisting of bonds that are traded in volume in a liquid market. Whilst the term 'benchmark' in the UK and US, will likely refer to the yield curve constructed from gilts and treasuries, it is not uncommon (as in Europe) for the term to be used in reference to the swap yield curve.

In Europe it is convention to calculate the spread for an issuer relative to the mid swap rate (that is, halfway between bid and offer swap rate) for a given maturity. For the most part, and excluding

the effect of liquidity at the longer end, the swap curve sits above the relevant government yield curve. Apart from measuring the demand and supply conditions of swaps and government bonds, the swap curve also reflects the risk of a counterparty to an interest rate swap (typically with a bank related entity). As such, it can be seen to reflect an interbank yield curve or the risk associated with a panel of AA rated banks. Given that, for instance, the treasury curve exhibits institutional and regulatory distortion (repo special rates, taxes and liquidity), some would argue in favour of using the swap rate as a benchmark.

The risks bondholders are exposed to can be broadly categorised under the following headings:

- interest rate risk – variation arising from the term structure of interest rates and usually quantified through duration and convexity;
- credit risk – risk neutral probability of default or, more generally, the financial and non-financial characteristics of an entity that contribute to it meeting its outstanding obligations in a timely manner;
- liquidity risk – as measured by the bid-offer spread, it is the ability to maintain and then unwind a position without incurring excessive transaction costs; and
- tax risk – particularly in the US where currently the interest earned by an investor on treasuries is exempt from state and local taxes.

If we make the simplifying assumption that the higher borrowing cost faced by a non-benchmark defining issuer is driven by credit and liquidity risk, then accurately ascertaining 'credit spread' becomes paramount in understanding the pricing dynamic. The most common methods used to quantify credit spread are discussed below.

Yield spread

Yield spread (also referred to as 'absolute yield spread') can be defined as the difference between the yield to maturity of an issuer's bond and that of a similar tenor on-the-run benchmark bond. On the run, or most recently issued bonds are considered more liquid than off the run or older issues as market participants tend to focus their attention on newer issues. Furthermore, the age of a bond is a proxy for liquidity as older bonds tend to find themselves absorbed into buy and hold portfolios. Yield spread incorporates several assumptions, namely:

- coupons received by the investor can be reinvested at the current yield to maturity; and
- a flat yield curve which implies a constant reinvestment rate.

In addition to the inherent weaknesses of these assumptions, yield spreads are only a relative measure versus (say) government bonds which may exhibit a differing coupon and be of only similar (but not identical) tenor. This would suggest that yield spread should only be used as an expression of price and not as a measure of credit spread. Ultimately, drawing equivalence between yield spread and credit spread is a flawed logic. Nevertheless, it is sufficient as a proxy, and therefore continues to prevail as a widely used measure of credit spread. Should one wish to isolate the credit spread for a given issuer, there are more precise methods.

I-spread

The maturity mismatch, that is a feature of yield spread, will often be adjusted for in the quoted spread to the benchmark. The effect is pronounced in the secondary market where the bond rolls down the benchmark curve as time passes. The interpolated spread measure avoids the need to make a manual adjustment to the yield spread by using linear interpolation to obtain a 'benchmark' yield where the maturity of a bond straddles two active points on the benchmark curve.

Z-spread

Whilst the i-spread tackles the mismatched maturity aspect, it continues to display the weaknesses of a measure that is based on the yield-to-maturity (YTM). YTM uses a single discount rate to value the cash flows of a bond and, in doing so, ignores the shape of the spot yield curve. To address this weakness, you will often observe references to the 'zero-volatility spread'. This spread represents the shift required of the benchmark (usually Libor) zero rate curve so as to re-price the bond. Its calculation is based on an iterative process whereby an equivalence is drawn between the present value of a bond's cash flows, discounted at the corresponding zero rates (plus some constant z-spread), and its prevailing market price. This means that the z-spread takes into account term structure and assumes that cash flows can be reinvested at (say) Libor + z-spread. Each cash flow over the life of the bond is discounted based on today's forward rates expectation, thereby overcoming a principal YTM weakness. Reinvestment risk remains present as it is not locking in the forward rate expectations today. Because z-spread is adjusting for differing reinvestment rates for future cash flows, the difference between zero-volatility and interpolated spread is more pronounced for longer dated bonds and where the yield curve is steeper (either normal or inverted). By inference, where the term structure is flat, zero-volatility and interpolated spreads will match. Whilst z-spread takes into account term structure, it is, once again, a relative measure of value and should therefore be viewed as a means to express the price of a bond relative to the reference benchmark curve.

Asset swap spread

This is a spread over Libor paid on the floating leg in a par asset swap package, thereby transforming the coupon cash flows of a bond. Each cash flow is discounted by solely the zero coupon reference rate. Given that this spread is based on tradable components, it is often seen as a better reflection of the compensation required by investors to assume the credit risk of the issuer for a given maturity. This said, asset swap spreads tend to under and overestimate credit risk where the bond is trading away from par (due to a disproportionate coupon) as the Libor spread must compensate for front ending payment (at market price) versus entering a swap contract at par.

Credit default swap spread

When markets are functioning efficiently, the credit default swap (CDS) spread is the cleanest measure of credit spread. It represents the contractual premium paid to a seller of CDS for taking the risk of losing par minus the expected recovery rate in a default scenario. It implicitly references the Libor curve. As it is a traded instrument and has observable price across a term structure, it

checks all the boxes of an accurate measure of credit spread. This said, in less liquid markets, and especially where the CDS is synthetic (that is, not based on a deliverable), the accuracy of CDS as a measure of credit spread is questionable.

International convention dictates that bonds accrue interest on a daily basis. However, it is also the norm for prices to be quoted as if calculated on a coupon date. This 'clean' price does not incorporate accrued interest on the bond since the last coupon payment. Upon ownership transfer of the bond, the actual amount paid will be the 'dirty' (or gross) price, which will compensate investors for holding a bond in the cum dividend period. Interest accrues from (and including) the last coupon date up to (but excluding) the settlement date.

Distribution methods

The methods used by issuers to distribute debt securities vary according to the goals of the issuer. Whereas some issuers will approach the market infrequently, others, such as government issuers, will have ongoing financing requirement that require greater consideration towards longer-term factors.

Sovereign issuers

Government bonds (issued in domestic currency) are typically sold through governmental bureaus or agencies that aim to manage the long term cost of financing national debt. The terms 'government' and 'sovereign' are often used interchangeably, although, technically, sovereign debt refers to an obligation that is denominated in a foreign currency. The US Treasury auctions Treasury bills, bonds, notes and inflation protected securities (TIPS), with the UK government issuing gilts through an executive agency of HM Treasury known as the Debt Management Office (DMO). In both cases, debt is issued though a competitive auction process, highlighting a global trend, identified by the Organisation for Economic Co-operation and Development (OECD), towards convergence of debt policies and procedures. Looking more broadly at the OECD, the auction process seems to be favoured with only nuanced differences in approach to trade-offs such as predictability and transparency. Appointed investment banks tend to run a book system when the sovereign is looking to access an untapped area of the market and wishes to mitigate some of the risk of generating insufficient demand through a standard auction. Often this approach will be adopted for the first tranche of a longer-dated bond or for inflation-linked bonds.

The US Treasury market represents the deepest and most liquid global government debt market seeing 301 auctions in 2010 alone and equating to issuance worth US$8.4 trillion. Sale of these securities via the auction process follows a three step approach consisting of announcement, auction and finally issuance. As supposed to other governments who maintain greater flexibility in their approach, the US focuses on the regularity and predictability of its issuance programme, following a relatively strict schedule. With the exception of Treasury CMBs and 4-week bill announcements (which meet short term Treasury liquidity needs and are announced at short notice), markets are formally advised of an upcoming auction several days prior to the event. Confidential bids are submitted electronically through the Treasury automated auction processing system (TAAPS) in either competitive or non-competitive form. Bids in the latter format (specifying only quantity sought) primarily come from small investors and individuals with competitive, price determining,

bids (submitted in terms of yield or discount rate) tending to come from primary dealers. A Dutch auction process delivers a single yield to all participants with this most recently auctioned Treasury, thereafter being referred to as the 'on-the-run' issue for the given maturity. This auction format differs to that seen in the UK (via the DMO) and in France (via Agence France Tresor), where multiple prices are determined. Amongst other measures, including quantity of bids received, the success of an auction will be measured by looking at the 'tail' of an auction; defined as the difference between the final stop-yield and the highest yield bid.

Financial institutions and corporates

Non-sovereign borrowers tend to use one of two methods for selling bonds to investors. These include 'private placements' and 'book-building'.

Private placements' usually occur for smaller bond issues. Under this scenario, the borrower and the investor can, together, tailor the structure of the bond and thus it can be adapted to suit more specific needs. In a private placement the bonds will typically be placed with a small number of investors (anywhere between one and 20, although the lower end of the range is more common). They can be sold to both institutional and retail investors. The main advantages to the borrower include:

- they do not have to embark upon extensive marketing exercises to sell the bonds;
- the bonds can be easily sold without a public rating; and
- the processes are faster since all the counterparties are already known.

Therefore, privately placed bonds are useful in instances where an issuer accesses the market frequently for smaller amounts of money, where prior knowledge of timing of the bond sale is not required and perhaps where they seek to opportunistically diversify their investor base. Additionally, the private placement market is useful to infrequent borrowers looking to issue a sub-benchmark sized bond and where a lighter documentation requirement is sought (largely because the majority of privately placed bonds can be sold off an MTN programme). Often privately placed bonds are sold on a reverse-enquiry basis, that is, an investor can inform a borrower, usually via a bank, that they would be interested in buying a certain structure of paper from a certain issuer.

'Book-building' (the same method that used during an equity initial public offering (IPO) or rights issue) is the common method utilised for the sale of public bonds by financial institutions and corporates. When a corporate decides to raise money in such a manner, it will mandate the deal to a syndicate of banks. These banks will leverage upon their relationships with investors to locate the optimal placement for the bonds. For a benchmark sized issue (in the euro-denominated market that is one with a minimum size of €500 million), between three and four banks are commonly mandated to act as bookrunners on the deal. Often, co-managers, who tend to have no placement or allocation, can be mandated to allow the borrower to reward additional relationship banks. Once the borrower has announced their intentions for the sale of the bond it will set indicative terms for the issue. These are likely to include price guidance and a rough size as well as provide a rough indication of the borrower's intentions with regards to the timing of launch. The books will be opened and investors will place orders through banks into the book. 'Pot' systems are becoming commonplace for transactions that utilise the book-building process.

Under a 'pot' system the orders placed into the book are credited to all the bookrunners working on the transaction and, thus, the bookrunners should work seamlessly together for the success of the transaction rather than compete with each other for individual orders. This book-building process carries the following advantages:

- full transparency;
- enables momentum to gather and therefore substantial and progressive spread tightening;
- allows for the size, duration and funding cost to be optimised; and
- it supports significant diversification of the placement during the allocation process.

As the book develops, the bookrunners will release updated information to the market regarding the size, timing of issue and any refinements to the price guidance. Once the bookrunners believe that the necessary numbers of orders have been garnered for the optimal deal, the book will be closed and the allocation process begins. The banks will try to ensure that the majority of the bonds are sold to high-quality accounts, typically those who buy to hold the paper rather than sell it in the market for a quick profit. Having said this, it is necessary to have a certain amount of liquidity in the secondary market. Thus, it would be inadvisable to allocate no bonds to hedge funds and bank trading accounts. If there was unlikely to be any secondary market liquidity, especially on a benchmark transaction, many buy-to-hold investors may not put in orders in the first place.

Tapping

Borrowers can tap outstanding issues much like a rights issue. Once again, the borrower can choose to do this via a 'private placement' or through 'bookbuilding' process. Tapping is common when there is significant residual demand for previous bonds that have been placed and where the borrower requires additional finance. By tapping an outstanding issue, capital can be raised in a far cheaper and quicker manner than if the borrower was to launch a new bond altogether. It is advised that there is significant residual demand in the market for a bond in order to tap an existing issue. This is to avoid a disproportionate impact on current bondholders, who may be disappointed because the new paper will supply the residual demand in the market rather than increase the relative value of their paper.

Investor roadshows

Whilst it is not uncommon for an issuer to participate in a non-deal roadshow, such meetings with investors will often precursor a bond offering. Roadshows provide an opportunity to market the issuer's credit story and outline transaction details, immaterial of whether the borrower is a sovereign, financial or a corporate. In addition, a roadshow allows the issuer to collect market intelligence on tenor and price preference, even if they have to be wary of creating 'insiders'. Roadshows typically involve one-on-one meetings with selected high-profile investors, group presentations and a conference call. This type of marketing campaign will maximise the breadth of demand and helps to ensure favourable pricing. Such marketing is essential for first-time (inaugural) issuers, recommendable post major credit events (such as an acquisition) and not so necessary for regular issuers as part of their normal course of funding.

Secondary markets

The principal differentiating characteristic of bonds versus other forms of debt is the relative ease of ownership transfer and tradability. Secondary markets exist to facilitate this trading activity and the price discovery process.

From the perspective of an issuer, secondary markets offer visibility on whether new issues were suitably priced and also offer a window to overview the evolving term structure cost of debt finance. Often, large issuers will establish a curve of differing maturities to both set the tone for future issues and to gauge market sentiment versus peers. For investors, besides providing the means to exit a position other than by holding a bond through to maturity, a functioning secondary market allows the capacity to actively manage risk exposures. Markets should, in theory, bring buyers and sellers together without the need for intermediation, thereby reducing transaction related expenditure.

It is commonly accepted that the listing requirements in New York are more onerous than on the major exchanges elsewhere. Within Europe the majority of euro-denominated and sterling bonds are listed on the London, Frankfurt and Luxembourg stock exchanges. The disclosure requirements on these exchanges are quite similar and EMTNs are usually documented according to English law. The bond market, by nature, is less concentrated than equity markets and sees far larger average trade sizes. These two characteristics result in a lower frequency of trading and, in most cases, an absence of two-way flow that is required for a pool of investor liquidity. As such, despite a significant proportion of bonds being listed, most are traded over the counter (OTC) with dealers providing liquidity by putting their own capital at risk.

Strains placed on bank capital since the financial crisis of 2008, have reduced the capacity and willingness for banks to act as principals in the market. Contraction of bid-offer spreads has also led to reduced appetite for broker dealer firms to take a position on portfolios of credit and market make. The resulting drop off in volume has led to increased price volatility, which in itself heightens the risk of market making. We have also observed the rising prominence of electronic trading platforms as a means of overcoming lighter trading flow. Noting this constrained environment, a strong trading platform that market-makes for an issuer's bonds will add liquidity. Invariably, liquidity supports trading activity and allows for more accurate price determination and transparency on securities. Credit investor relations are aided by lead managing banks who are able to produce well-regarded credit research. This unbiased information is distributed to the investor base in the hope of better informing their future investment decisions.

In addition to being able to monitor individual secondary 'cash' levels for existing bonds through trading activity, externally compiled indices, such as the iBoxx, give market participants perspective on the relative performance of single obligors relative to that of a basket of obligors. Such indices are often weighted (in a transparent fashion) to more accurately reflect the performance of sub-segments of the credit market. In addition to the cash indices, synthetic CDS indices such as iTraxx provide an alternative point in time measure of credit risk. Given the generally static maturities of bonds and CDS contracts, both types of indices need to be 'rolled' on a regular basis to maintain an unbiased representation of the market.

Chapter 5

Covered bonds

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Introduction: what is a covered bond?

A covered bond is a senior bank obligation whose interest and capital payments are backed by a preferential claim on a dynamic pool of assets. The dynamic nature of the pool stems from the issuer's ongoing obligation to substitute maturing and defaulting assets within the pool. The assets typically remain on the balance sheet of the issuer or within the consolidated group accounts. In most cases the main features, such as eligibility requirements, preferential claim of the bondholders, matching requirements and post-bankruptcy procedures, are subject to a specific covered bond law. The covered bond law can also contain limitations regarding the business activities of covered bond issuers (special banking principle). Within the last 10 years, the number of European countries that have dedicated covered bond laws has increased significantly. Several countries, where banks had started issuing covered bonds despite the absence of a dedicated legal framework (so called 'structured covered bonds') have introduced such a framework at a later stage. Examples for such countries are the UK or the Netherlands. Despite the trend towards law based covered bonds, there are still some countries, mainly outside of Europe, where issuance is based solely on contractual agreements. With a total outstanding volume of over €2.3 trillion (end of 2009 according to the 2010 ECBC Fact Book) the covered bond market is one of the largest bond markets in the world. The growth and internationalisation of the covered bond market even accelerated with the outbreak of the financial crisis in late 2007. As risk appetite of investors waned and credit differentiation between markets and issuers increased, the secure nature of covered bonds increased their appeal both for issuers and investors.

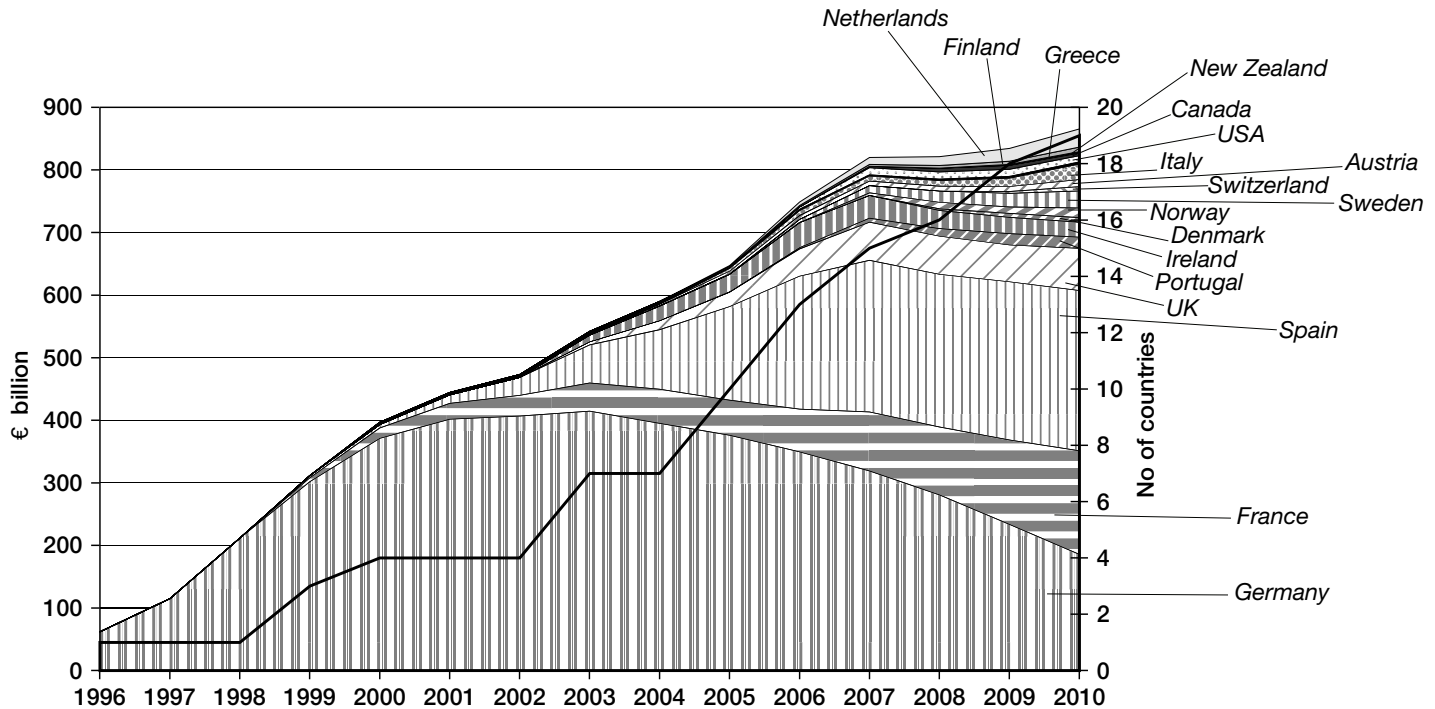
The core feature of covered bonds is the investor protection in case of the issuer's insolvency. In this scenario the pool of assets will be segregated and continues to generate cash flows in order to pay interest and capital on the outstanding covered bonds. Other creditors of the insolvent issuer have no access to these collateral assets as long as any covered bond remains outstanding.

The method of segregating the cover assets from other assets on the issuer's balance sheet can differ significantly, depending on the legal framework or structure. If the cover assets are kept on the balance sheet of the issuer, earmarking can be achieved by entering them into a special cover register. In other cases, the cover assets can be transferred to a special purpose vehicle that guarantees a bond issue of the issuing bank. Asset segregation can further be achieved by transferring the assets to a highly specialised subsidiary, which sole purpose lies in holding cover assets and issuing covered bonds. Whichever method is chosen, it is important that the pool of segregated assets remains dynamic, that is, the issuer or its parent company continues to substitute maturing or defaulting assets.

Before the insolvency of the issuer, interest and capital is paid out of the cash flow generated

Exhibit 5.1

Outstanding jumbo covered bonds by country



Source: BNP Paribas

by the issuer's total balance sheet. Payments to the covered bondholders are not limited to the cash flows generated by the collateral assets. Usually, covered bondholders have a full recourse against the issuer of the covered bonds, that is, there can be no loss under the covered bonds without a prior default of the issuer. During the life of the covered bonds, the issuer has the obligation to provide enough collateral for the outstanding covered bonds. The collateralisation requirement is an essential part of the covered bond framework and can range from a 100% nominal cover to a specified minimum over-collateralisation. This forms the basis for the dynamic nature of the cover pool. As cover assets mature or default while there are still covered bonds outstanding, the issuer has to add new assets to the cover pool on an ongoing basis in order to meet the cover requirement. Since the issuer continues to bear the credit risk associated with cover assets it is also required to provide the underlying capital, that is, there is no capital relief when issuing covered bonds as there is with other securitisation techniques such as mortgage-backed securities (MBS).

Bankruptcy event

In case the issuer becomes insolvent or bankrupt covered bondholders do not participate in the bankruptcy proceedings. Covered bonds and cover assets are segregated from the balance sheet of the issuer and continue to run on their own until the last covered bond has been repaid according to its original schedule. Some frameworks provide for the possibility of early repayment of the covered bonds in a bankruptcy event, but this has to be seen as the exception.

Once the cover pools and the covered bonds have been split from the issuer's balance sheet the pool becomes static. Since substitution of maturing and defaulting assets stops, covered bondholders have to rely fully on the cover pool's ability to generate cash flows for the outstanding covered bonds. If at some point after the issuer's bankruptcy the pool cannot generate enough cash flow to pay interest and capital on the covered bonds the pool would be liquidated and the proceeds distributed among the covered bondholders. If there remain open claims of covered bondholders, they rank *pari passu* with other unsecured creditors of the issuer due to the full recourse of the covered bond holders.

Issuers of covered bonds

Covered bonds have, so far, been issued only by banks or financial institutions. Access to high-quality, long-term assets as well as resources and expertise to conduct an active asset-liability management, make banks suitable for the issuance of covered bonds. Some covered bond frameworks restrict the business activities of the issuing institute mainly to the origination of collateral assets and the issuance of covered bonds. This restriction is referred to as the Special Banking Principle and aims at reducing the issuer's risk profile by concentrating on selective low-risk business areas.

The level of issuer specialisation differs notably from framework to framework. In extreme cases the issuer is merely a vehicle that acquires the cover assets from its parent company and funds this through the issuance of covered bonds. Extreme specialisation, where the asset side of the issuer consists almost exclusively of cover assets, can negatively affect the value of the covered bondholder's full recourse. Non-collateral assets remain on the parent company's balance sheet and are thus out of reach of the covered bondholder. However, the special bank principle can avoid potential problems in connection with structural subordination of deposit holders as the specialised issuer is typically funded through the capital markets.

Structural subordination

Structural subordination can occur in a quantitative way if covered bonds are substantially over-collateralised, thus reducing the amount of available assets for unsecured creditors in a bankruptcy event. There can also be qualitative structural subordination if a deteriorating asset base forces the issuer to increasingly substitute assets in the pool which no longer meet the eligibility criteria with performing assets from the rest of the balance sheet. Besides banking supervisory authorities that have been mainly concerned with subordination of deposit holders, rating agencies have also flagged that there could be pressure on the unsecured rating of the issuer as a result of structural subordination. So far, there has been no rating action in connection with structural subordination through the issuance of covered bonds. Some frameworks limit the amount of covered bonds that can be issued by each bank in order to limit the effect of structural subordination.

Type of collateral assets

The high quality and credit ratings of covered bonds are, to a large extent, based on the quality of the collateral. So far, public sector debt and mortgage loans have been used as collateral for covered bonds. Beside the high credit quality of both asset classes they also tend to have medium- to long-term maturities which is in line with the medium- to long-term focus of covered bond issuance. Both asset classes can be kept either in separate pools or in a mixed pool, depending on the covered bond framework. Separate pools allow a clear distinction between public sector and mortgage covered bonds.

The covered bond frameworks specify which kind of public sector debt or mortgages are eligible as collateral.

Public sector debt

Public sector debt means loans or bonds issued or guaranteed by public sector entities, that is, central and regional governments as well as municipalities. The respective covered bond framework usually limits the geographical range of eligible public sector debt. Within the defined geographical range there is no minimum rating. However, in some cases eligibility of public sector debt is linked to a certain risk weighting of such assets.

Mortgage loans

Mortgage loans used as collateral for covered bonds have to be secured by a first rank mortgage in favour of the issuer of the covered bond. In some cases home loans which are guaranteed or insured by a third party are used as collateral as well. Similar to public sector assets, the geographical range of eligible mortgage loans is limited within the covered bond framework. In addition, there is a maximum loan-to-value (LTV) ratio for eligible mortgage loans which, depending on the covered bond framework, ranges from 60% to 80%. The LTV limit ensures that the value of the underlying property exceeds the amount of the outstanding mortgage loan by a certain percentage (between 25% and 67%). Thus, the LTV limit represents a buffer against fluctuations in the real estate market.

Mortgage collateral can be further broken down into residential and commercial mortgages. While some covered bond frameworks do not distinguish between the two mortgage types, other frameworks limit the share of commercial mortgages in the pool or allow only residential mortgages.

There is also the possibility to have lower LTV limits for commercial mortgages within the same pool than for residential mortgages.

Mortgage valuation

Valuation methods for the underlying property vary significantly across the different covered bond frameworks. The valuation basis can range from long-term sustainable value to market value or indexation. The less conservative the valuation method is the higher is the need for frequent revaluation. Revaluation intervals differ significantly as well, depending on the framework. They range from monthly revaluation to revaluation on a case-by-case basis if there is a persistent drop in the property value.

Substitute collateral

In addition to the above-mentioned ordinary collateral, the cover pool can also contain to a limited extent (usually capped at between 10% and 20%) substitute collateral. Cash, central bank deposits and high-quality government bonds usually qualify as substitute collateral. Especially in the case of mortgage covered bonds, substitute collateral acts as a buffer against larger unexpected repayments of mortgage loans. Such repayments would result in an increased inflow of cash into the pool (unless a similar amount of covered bonds become due for repayment at the same time) which cannot always be turned into new mortgage loans right away. Technically, such an inflow of cash could otherwise lead to a technical breach of the cover requirements or force the issuer to buy back outstanding covered bonds. Substitute collateral thus increases the issuer's flexibility within the collateral management.

Asset-liability matching

With the exception of the traditional Danish covered bond system, most covered bonds show a mismatch in cash flows between cover assets and outstanding covered bonds. Maturities of the cover assets are often longer than those of the covered bonds. Due to the full recourse, the issuer is obliged to pay interest and capital on the covered bonds, even if the cover pool does not produce the necessary cash flows. Thus, the issuer is responsible for the liquidity management. Usually there is no distinction between cash flows generated by cover assets and cash flows coming from other assets of the issuer. Obviously, this changes once the issuer becomes insolvent and covered bondholders have to solely rely on the cash flows generated by the pool. The level of asset-liability mismatches at the time of the issuer's insolvency can, therefore, affect the risk of a default of the covered bonds in a post-bankruptcy scenario.

In order to limit potential market risk in a post-bankruptcy scenario, covered bond frameworks contain a variety of asset-liability matching (ALM) requirements. Typically these requirements include the hedging of currency mismatches, limitation of interest rate and duration mismatches, as well as net present value (NPV) matching. The number and strictness of ALM requirements differ significantly across the various frameworks. In several frameworks, issuers have voluntarily committed themselves to stricter ALM requirements than those contained in the legal framework. The main aim of this is to enhance investor confidence in the product and to achieve higher covered bond ratings.

Derivatives in the cover pool

When it comes to hedging interest rate and currency risks, derivatives such as swaps play an important role. As we have seen above, hedging of mismatches becomes crucial once the issuer has become insolvent and the pools are static. It is, therefore, important to ensure that the derivative contracts survive a potential insolvency of the issuer and are not terminated upon the default of the issuer. Thus, most covered bond frameworks allow for the inclusion of derivative contracts in the cover pool. This means that derivative counterparts have a preferential claim against cash flows arising from the cover pool which ranks *pari passu* with the claims of covered bondholders. In the case of an issuer's bankruptcy, derivative counterparts continue to receive payments from, and to make payments to, the cover pool according to the terms of the derivative agreement.

Cover monitor

In order to ensure that the issuer of covered bonds complies with the coverage and ALM requirements, an independent cover monitor is appointed for each issuer. In most cases, the cover monitor reports directly to the banking supervisory authority. Its main task is to check that assets which are included in the cover pool meet the eligibility criteria and that all outstanding covered bonds are always covered sufficiently. The cover monitor usually does not act as trustee for the covered bondholders, even though it is sometimes referred to as trustee. Although it usually checks if the valuation of assets has been conducted in line with the regulation, it is not involved in the valuation process itself.

In cases where there is no cover monitor, such as in the Spanish Cédulas framework, the banking supervisory authority itself takes over the supervision of the coverage requirements. The necessity to monitor the cover stems from the dynamic nature of covered bonds, where the composition of the cover pool can change every day. A further level of surveillance comes from the rating agencies, which base their covered bond ratings largely on the composition of the cover pools. However, one has to bear in mind that the legal minimum requirements within the covered bond framework could be lower than the requirements for achieving a triple-A rating.

Rating covered bonds

Based on the high quality of the collateral and the protection provided within the covered bond frameworks, covered bonds are generally rated at a higher level than senior unsecured debt of the same issuer. All three main rating agencies link the rating for covered bonds to the rating of the issuer. The amount of achievable rating uplift or de-linkage is usually determined on an individual issuer by issuer basis.

In case of S&P, the covered bond rating is determined by quantifying the asset liability mismatch between the cover pool and the outstanding covered bonds. The asset liability mismatch considers credit, operational and counterparty risk as well as cash flow mismatches between the cover pool and the outstanding bonds. Depending on the asset liability risk category S&P assigns a notching range for each programme. The actual notching or rating uplift that the programme achieves within this assigned range depends on the programme's ability to obtain third-party liquidity or liquidate assets in an insolvency scenario.[1]

Moody's employs a two-step approach for rating covered bond. In a first step, Moody's determines a rating based on its expected loss model. Prior to the issuer's default, this expected loss model focuses on the credit strength of the issuer. After the default of the issuer, Moody's focuses on the credit quality of the cover pool, refinancing risk as well as interest rate and currency mismatches between the cover pool and the outstanding covered bonds. In a second step, the agency determines a timely payment indicator (TPI), which could cap the achievable rating of the covered bonds. Moody's defines the TPI as the likeliness of covered bonds receiving timely payments following the default of the issuer. The TPI can rank from 'Very High' to 'Very Improbably'.[2]

Fitch's rating approach for covered bonds mainly addresses their probability of default. However, there can be also some rating benefit from recovery expectation. Fitch uses a discontinuity factor (D-Factor) to determine the maximum achievable rating uplift on a probability of default basis. The D-Factor measures the likeliness of payment disruptions on the covered bonds in case of the issuer's insolvency. Stress tests on the cover pool determine the actual covered bond rating on a probability of default basis. Within the stress test the agency determines whether the over-collateralisation within the cover pool can compensate for credit risk, maturity mismatches, interest rate risk and currency risk inherent in the pool. In a last step, Fitch determines whether there can be a further rating uplift based on the assumed recovery percentage.[3]

Risk weighting

Generally, covered bonds have the same risk weighting as senior unsecured debt of the same issuer. However, within the EU, covered bonds can qualify for a lower risk weighting if they meet certain criteria. These criteria are set out in the European Capital Requirements Directive (CRD). CRD refers to the requirements of Article 22(4) of the UCITS directive. The requirements of Article 22(4) are:

- issuer is an EU credit institution;
- bonds issued on the basis of a legal provision to protect bondholders;
- special supervision by public authorities;
- sums deriving from the issuance must be invested according to the law in assets which cover the claims of the bondholders;
- bondholders have a preferential claim on assets if issuer fails; and
- the member states must notify the EU Commission.

In addition to the above mentioned requirements, CRD contains the following set of collateral criteria.

- Exposures to or guaranteed by public sector entities (that is, central governments, central banks, public sector entities, regional governments and local authorities) in the EU.
- Exposures to or guaranteed by Non-EU public sector entities if they qualify for the credit quality assessment step 1 (minimum rating of AA–). Non-EU public sector entities that qualify for the credit quality assessment step 2 (rated between A+ and A–) are limited to 20% of the nominal amount of outstanding covered bonds.
- Exposures to institutions that qualify for the credit quality assessment step 1 (minimum rating of AA–) if the total exposure to these kind of institutions does not exceed 15% of the nominal amount of outstanding covered bonds.

- Residential mortgage loans with a maximum LTV of 80%.
- Commercial mortgage loans with a maximum LTV of 60%. Commercial mortgage loans with a maximum LTV of 70% are permitted if the covered bonds provide for a minimum over-collateralisation of 10%.
- Residential mortgage-backed securities (RMBS) which are secured by at least 90% with mortgages with a maximum LTV of 80% as long as the share of these RMBS does not exceed 10% of the outstanding covered bonds and the RMBS tranches are rated Aa3/AA– or higher.
- Commercial mortgage-backed securities (CMBS) which are secured by at least 90% with mortgages with a maximum LTV of 60% as long as the share of these CMBS does not exceed 10% of the outstanding covered bonds and the CMBS tranches are rated Aa3/AA– or higher.

Until the end of 2013, the share of RMBS and CMBS is not limited if the underlying residential or commercial mortgage loans were originated by a member of the same consolidated group of which the issuer is also a member. Covered bonds meeting the above listed requirements qualify for a preferential treatment when determining the risk weighting under the standardised approach as well as the internal ratings based (IRB) approach.

The actual risk weighting for covered bonds that meet the above criteria will depend on the approach that the holding institute has chosen. Under CRD there are two main methods: the standardised approach and the internal ratings-based approach.

Standardised approach

Under the standardised approach, the risk weighting of the covered bonds is directly linked to the risk weighting of the issuer. The risk weighting of the issuer itself can either be linked to the risk weighting of the country it is located in (that is, one notch below the country's risk weighting, Option 1) or to the credit rating of the financial institution itself (Option 2) (see Exhibit 5.2).

Exhibit 5.2

Risk weighting of covered bonds under the standardised approach

Option 1			*Option 2*		
Sovereign rating	*Issuer risk weighting (%)*	*Covered bond risk weighting (%)*	*Issuer rating*	*Issuer risk weighting (%)*	*Covered bond risk weighting (%)*
Aaa–Aa3 AAA–AA–	20	10	Aaa–Aa3 AAA–AA–	20	10
A1–A3 A+–A–	50	20	A1–A3 A+–A–	50	20
Baa1–Baa2 BBB+–BBB–	100	50	Baa1–Baa2 BBB+–BBB–	50	20

Source: Author's own

Internal ratings-based approach

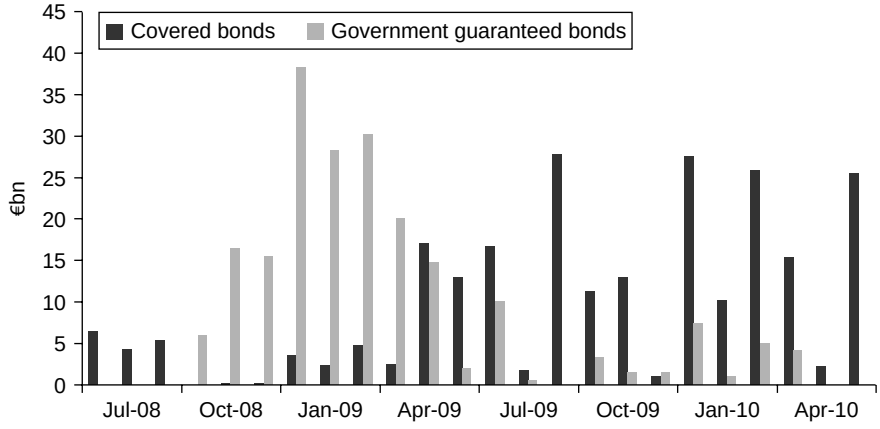
Within the IRB, the risk weighting is based on the following parameters: probability of default (PD); loss given default (LGD); maturity of the bond; and exposure at default. The foundation IRB allows the bank that holds the covered bond to assess PD itself, provided that it will not reach a value of less than 0.03%. LGD and maturity are set by the regulator. With the amendment of CRD in June 2010, an LGD level of 11.25% was introduced for all covered bonds. Previously covered bonds could only reach a LGD level of 11.25% in special circumstances, while the general LGD level for covered bonds was set at 12.5%. The maturity is set at 2.5 years for all bonds. Under the advanced IRB, both PD and LGD have to be estimated by the credit institution. The maturity can be set within a range of one to five years.

Covered bonds during the financial crisis

Compared with other instruments such as senior bank bonds and MBS, covered bonds have fared relatively well during the recent financial crisis. Clearly, credit differentiation increased significantly while secondary market liquidity dropped and has not returned to pre-crisis levels. However, covered bonds continued to provide funding to a large range of banks in times of market stress, when other funding options were not available or only at significantly higher cost. In fact, the number of banks that issue covered bonds continued to rise since the outbreak of the financial crisis. The importance of covered bonds as a funding tool was further highlighted by the €60 billion purchase programme that was launched by the member banks of the Eurosystem in July 2009. The purchase programme which was conducted in the primary and secondary market helped to broaden market access and to reduce banks' dependence on government guaranteed funding.

Exhibit 5.3

Monthly issuance of government guaranteed bonds versus covered bonds



Source: BNP Paribas

Dwindling public sector support for banks in the aftermath of the financial crisis has increased the focus on covered bonds even further. Since holders of unsecured bank debt face higher risks of burden sharing in a stressed scenario, secured instruments such as covered bonds are becoming increasingly attractive. This will broaden the investor base for covered bonds especially towards credit investors that so far have preferred unsecured bonds. On the other hand, higher spread differentiation between covered bonds and unsecured debt will increase the funding advantage that banks can realise by issuing covered bonds.

Difference between covered bonds and MBS

Covered bonds are often compared with MBS, mostly because they are collateralised by a similar type of assets. What differentiates covered bonds from MBS, however, is the full recourse of covered bondholders against the originator of the assets (that is, the issuer) and the dynamic nature of the cover pool. A dynamic cover pool bears the risk of a deteriorating quality in a stressed scenario. An issuer could reduce the level of voluntary over-collateralisation or reduce the quality of the cover assets within the provisions of the covered bond framework. On the other hand, there is an extra level of protection provided by the combination of full recourse and dynamic pool. As long as the issuer is solvent it will cover any credit losses occurring within the pool. Holders of an MBS are fully exposed to the quality of the underlying collateral, although admittedly the level of disclosure on the asset pool is typically higher in case of MBS than in case of covered bonds. It is obvious that the level of the extra protection is linked to the credit quality of the issuer of the covered bonds and its economic and legal ability to substitute cover assets.

The securitisation market could ultimately benefit as well from the increased focus on secured funding. However, better performance during the crisis as well as beneficial regulatory treatment is giving covered bonds a head start. Asset-backed securities (ABS) and MBS could have higher chances of growth in areas where the underlying assets are not eligible for covered bonds.

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[1] See S&P's, 'Revised methodology and assumptions for assessing asset-liability mismatch risk in covered bonds', 16 December 2009.

[2] See Moody's, 'Moody's rating approach to covered bonds', 4 March 2010.

[3] See Fitch's, 'Covered bonds rating criteria', 18 December 2009.

Chapter 6

Convertible bonds

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Introduction

A convertible bond is a hybrid financial instrument sharing at the same time characteristics of debt and equity. Its anatomy can be reduced in simple wording to a corporate bond where the investor has the right to convert the bond into shares. This conversion right is reserved for the investor. It is not an obligation and is therefore labelled as an optional conversion. The number of shares received upon conversion is defined in the prospectus and is called the conversion ratio (C_r). After conversion the investor typically forgoes the remaining coupons (c) and the final cash redemption of the face value (N) of the convertible. This brings us to the definition of the conversion price:

$$C_p = \frac{N}{C_r} \qquad \text{(Equation 1)}$$

To trace the roots of convertible bonds, we have to go back to the 19th century, where these bonds were used to finance railroad projects in the United States. This has evolved over time into an asset class with a size of over US$252 billion[3] spread across 625 different issues and offering an average yield of around 3.6%.

Convertibles traditionally bear a fixed coupon which offers an advantage over the dividend yield of the underlying shares (yield advantage). This coupon however, will be lower than the interest offered on corporate debt issued by the same issuer. The investor is compensated for this by the option to convert the bond into shares. This embedded option makes convertible bonds interesting enough for traditional fixed income investors. The limited downside of a corporate bond combined with the unlimited upside of the embedded option, makes this an instrument that attracts a lot of investors. The final payoff (P_T) of a convertible bond at the expiry date (T) is given by:

$$P_T = \max(N, C_r S_T) \qquad \text{(Equation 2)}$$

Where S_T denotes the stock price at time T.

Hybrid instrument

Parity and bond floor

A convertible bond is a hybrid financial instrument with characteristics of both debt and equity. For increasing share prices, the value of the convertible bond moves closer to parity (P_a). The parity

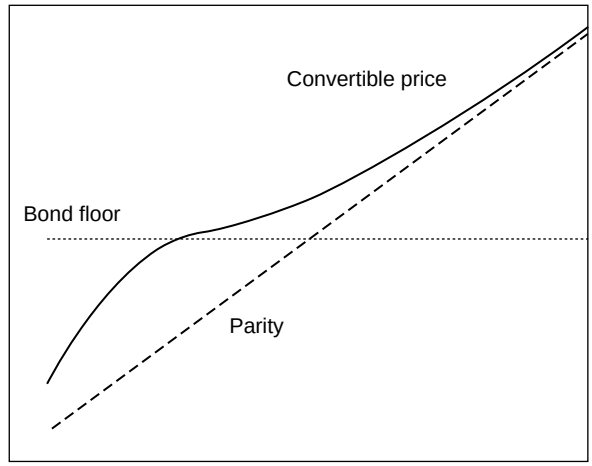
of a convertible bond, also called the conversion value, is the value of the package of underlying shares received on conversion:

$$P_a = C_r \times S$$

This is graphed in Exhibit 6.1, which also illustrates what happens to the convertible bond's value when the share price decreases. In this case, the value of the convertible bond (P) trends lower towards the bond floor (B_F). The value of the embedded option to convert the bond into shares is, in such a case, very low. The only proceeds left for the investor are the coupons and the final redemption. The bond floor is the corporate bond component of the convertible. It is calculated as the present value of all the cash flows embedded in the convertible bond while neglecting any possible conversion into shares. This is often called the investment value of the convertible. The bond floor is the value of the convertible security when the conversion option is removed from the instrument setup. The bond floor is calculated taking the appropriate credit spread into account. When the share price decreases further, the convertible slips into a distressed situation. Extreme low share prices deteriorate the credit outlook of the issuing company and the bond floor ceases, in this case, to provide a real lower bound to the price. The convertible bond price snaps back towards the parity line. The credit spreads of corporate debt issued by the same issuer will indeed increase and pull the value of the bond floor down.

Exhibit 6.1

Convertible bond price



Source: Authors' own

The introduction of parity and bond floor into our convertible bond glossary allows for two typical measures used by practitioners.

Premium to parity:

$$\frac{P - P_a}{P_a}$$

Premium to parity or conversion premium indicates how much a convertible bond investor is willing to pay to own the convertible as opposed to the underlying shares.

Investment premium:

$$\frac{P - B_F}{B_F}$$

The investment premium or premium to the bond floor, is a measure of how much an investor is willing to pay for the option embedded in the convertible. The level of the bond floor depends on the interest rate of the convertible's currency and the credit quality (credit spread) of the issuer.

Delta of a convertible bond

The delta of the convertible quantifies the change of the convertible bond's price (P) given a particular change in the price of the underlying equity (S):

$$\Delta = \frac{\partial P}{\partial S} \qquad \text{(Equation 3)}$$

This is the first derivative of the price of the convertible with respect to the price of the underlying common stock. When the bond is trading close to the bond floor, the equity sensitivity is almost zero. With $\Delta=0$, the convertible structure has been reduced to a corporate bond. In a very distressed situation, the delta of the convertible picks up again. For high share prices or just before the point of a conversion, the convertible bond investment matches a holding in the underlying shares:

$$\Delta_{S \gg C_P} \approx C_r$$

Yield measures

The delta is a typical equity measure applied onto a convertible bond. It carries the necessary information for an equity investor or a derivatives trader to have a grip on the equity sensitivity of the convertible. A fixed income investor will apply different metrics to the convertible bond. We will briefly discuss two of them: current yield and yield to maturity.

Current yield

The current yield is equal to the coupon dividend by the price of the convertible.

Yield to maturity

The yield to maturity is the discount rate needed to make the sum of the present value of all the cash flows coming from the convertible (coupons (c) and final redemption (N)) equal to the price of the bond.

Basic features

The issuer will typically incorporate within the convertible bond structure some basic features that change the overall characteristics of the instrument. This allows the convertible bond to match the needs of the issuing company while still being attractive enough for investors.

Issuer call

The issuer has, during a certain call period, the right to buy back the outstanding convertible security at a price K. This is the call price. In legal documents regarding convertibles, this is often called the early redemption amount (K). The moment the bond gets called, the investor can still convert into C_r shares if this would be economical to do so. This is called a forced conversion. After receiving a call notice from the issuer, the rational investor will convert if the conversion value is larger than the early redemption amount specified in the prospectus:

$$C_r \times S > (K + \text{Accrued Interest})$$

The conversion into common stock and the possibility to get called are the two basic building blocks present in most hybrid securities. When the issuer call does not depend on the price level of the underlying share, the call is defined as a hard call. The other case is a soft call feature; when the stock price is only trading above a trigger level the bond is eligible to be called by the issuer. This trigger level is defined as a certain percentage above the conversion price. This soft call condition is also often accompanied with a grace period. This is the number of days that the trigger condition needs to be fulfilled in order for the convertible to be callable by the issuer.

As an example, see Exhibit 6.2, which shows the Allergan convertible bond issued in 2006 and expiring 20 years later. The soft call trigger is 130% of the prevailing conversion price and this condition needs to be fulfilled 20 business days out of 30 consecutive business days.

Issuer put

Where the call option makes the bond less attractive for the investor, the put option improves the bond characteristics. The investor has on a particular date, the put date, the right to sell back the bond to the issuer. The price against which the investor can sell back the bond is called the put price (P_v). This put price is usually equal to par and shrinks the effective maturity of the convertible. The Allergan convertible came with three different put dates. Here the investor can sell back the bond at par to the issuer every fifth year after the issue date. The yield to put calculates the discount rate using only the cash flows up until the put date.

Exhibit 6.2

The Allergan convertible bond

Allergan 1.5% 1 April 2026			
Issue date	12 April 2006	Conversion ratio	15.7904
Maturity date	01 April 2026		
Face value	1,000		
Bond currency	US dollars		
Put		*Contingent conversion*	
Date	Put value	Start date	30 June 2006
01 April 2011	100%	End date	01 February 2026
01 April 2016	100%	Level	120%
01 April 2021	100%		
Soft Call		*Coupons*	
Date	Call price	Coupon	1.50%
05 April 2009	100%	Frequency	Semi-annual
05 April 2011	100%	Daycount	30/360
Call trigger	130%		

Source: Bloomberg

Mandatory

A mandatory convertible will always be redeemed back into shares at the maturity date. The investor does not have the possibility to skip the conversion into shares and ask the cash redemption of the face value instead. Because of this, a mandatory convertible does not have a real bond floor offering downside protection.

Coupons

A convertible bond traditionally comes with fixed coupons. Other variants are zero-coupon convertibles or convertible bonds that distribute a floating interest rate. An investor needs to check the prospectus on how the coupons are going to be handled when the bond is called back by the issuer or when a conversion takes place. In some convertible bond issues, the investor does not necessarily receive the accrued interest earned when a conversion or an issuer call takes place.

Advanced features

Exchangeable

An exchangeable bond is a convertible security where the company issuing the shares is different from the company in whose shares the bond can be converted. This is for example the case when a company, having a large stake in another company, wants to dispose of this investment. Through an exchangeable, the company is effectively executing a forward sale. It is still holding on to its large stake, up until the conversion of the exchangeable in the underlying shares.

Resets

A convertible bond with a reset or refix feature has an adjustable conversion ratio. In the case of a bad share price performance, the conversion ratio can be increased. In the case that the share price performs well, it is even possible to have a downward adjustment to the conversion ratio. There are two different reset-mechanisms possible: snap-shot resets and window-resets. The first variant resets the conversion ratio based on the observed share price on one single day, while the second variant constructs the refixing of the conversion ratio based on the average share price level during a particular timeframe. After the reset takes place; the convertible bond continues with a new conversion ratio C^*_r and new conversion price C^*_P. The adjustment of the conversion price on the reset date (TR) depends on the level of the share price on this date (S_{TR}). In theory the issuer is facing an unlimited dilution because falling share prices push up the new conversion ratio. This is the reason why a reset typically is issued with a floor on the conversion price. Accordingly there is also a maximum (cap) on the new conversion price. This guarantees that the conversion ratio does not decrease too much after the reset. The next set of equations illustrates the reset process:

$$C_P^* \begin{cases} \alpha C_P & \text{if } S_{TR} > aC_P \\ \gamma S_{TR} & \text{if } bC_P \le S_{TR} \le aC_P \\ \beta C_P & \text{if } S_{TR} < bC_P \end{cases}$$

The new convertible bond price is floored using a scaling factor $\beta<1$ and a cap $\alpha>1$. In practice:

$$\gamma = 1 = \frac{a}{\alpha} = \frac{b}{\beta}$$

From a portfolio management perspective, the reset is a challenge. The investor will become more exposed to the share price when this share price is falling. Indeed, the lower the share price on the reset date, the more the conversion ratio will increase. This is a typical situation of negative convexity.

The San Miguel convertible (see Exhibit 6.3) has been taken as an example to illustrate the reset mechanism. In this bond the reset takes place on a quarterly basis starting on 5 November 2011. It is important to stipulate that the floor is applied on the initial conversion price of 137.5 PHP whereas the cap is applied on the prevailing conversion price.

Exhibit 6.3

The San Miguel convertible

San Miguel 2% 5 May 2014			
Issue date	05 May 2011	Conversion price	137.5
Maturity date	05 May 2014		
Face value	200,000		
Bond currency	US dollars		
Equity currency	Philippine peso		

Soft call		*Reset*	
Date	Call price	Frequency	Quarterly
11 May 2012	100%	Start date	05 November 2011
Call trigger	130%	Cap	100%
		Floor	80%

Source: Bloomberg

Contingent conversion

The contingent conversion feature (CoCo) makes sure that the bond can only be converted when the share price is trading above a predefined level. Below this level, the convertible remains a standard corporate bond. The Allergan convertible, we previously used as an example, had been issued with such a contingent conversion feature attached. Here the conversion in shares can only be done if the share price trades 20 days out of 30 consecutive business days above the CoCo trigger of 120% of the conversion price.

This CoCo feature has nothing to do with the series of contingent convertibles issued in 2009–2011 by Lloyds and Credit Suisse. These CoCo bonds will convert mandatory into shares if a well specified accounting ratio such as the core tier 1 ratio drops below a certain level. These CoCos will therefore convert into shares when the bank issuing these hybrid instruments gets into a less viable state.

Makewhole

The makewhole clause makes the bond more attractive for an investor. The investor gets an extra payout when the bond gets called to make up for the loss of the embedded option and the remaining coupons. This instrument feature makes the terms and the conditions of the convertible security look good in the eyes of the investor. The makewhole payout can happen in two different ways:

- there will be an extra cash payment to the holder of the bond upon call. This cash payment could, for example, be equal to the remaining coupons skipped because of the early call; or
- upon call, the conversion ratio is increased. Hence in the case of a forced conversion, the investor will get an extra amount of shares.

A makewhole feature is active during a period called the makewhole period.

Accretion

Convertible bonds can be issued with an accreting feature. This is typically applied to both the trigger level and the early redemption amount. The trigger level would increase at a pre-specified accreting rate while the call price K will also increase over time. This clause is advantageous to the investor since it will become more difficult for the issuer to call the bond as the convertible gets closer to expiration.

Dividend entitlement

After conversion the bond holder will receive shares. If the shares are existing shares – as is the case with exchangeable bonds – the dividend entitlement is passed on immediately. The day after conversion, the investor owning those shares, has the right to any dividends paid out after the conversion date. But when the conversion is into new shares, that have yet to be created, the convertible bond holder needs to be aware of some possible pitfalls. An example of this is the fiscal year for which dividends are going to be paid. If the fiscal year is the year in which the bond is converted into shares, then the first dividend payout is expected the year following this conversion.

Dividend protection

A long exposure of a convertible bond brings the investor some exposure to the share price performance of the underlying share. The investor does not benefit from any increases to the dividend payout on the other hand. On the contrary, the value of the convertible will drop if the issuer decides to increase the dividends. This dividend increase is only going to be beneficial to the share holder not the convertible bond holder. To protect the convertible bond investor from these unexpected changes in the dividend policy, some convertibles are going to be issued with a dividend protection feature. Two dividend protection mechanisms are available.

Conversion ratio adjustment
The conversion ratio of the convertible will be adjusted upwards to adjust for any increase of the dividend yield above a certain threshold.

Dividend pass-thru
The dividends paid out above the pre-defined threshold are passed on to the convertible bond investor.

Cross-currency convertible

The convertible bond is not always denominated in the currency of the issuing company. Foreign currency or cross currency convertible bonds are issued in a market that is not the domestic market of the underlying share. An example would be a Japanese company issuing a Swiss franc denominated convertible in Switzerland. From a valuation and risk perspective, there is an extra level of complexity that is added as soon as the stock currency and the bond currency differ from each other. The exchange rate between the stock and the bond currency now intervenes. We define this rate as FX_{SB}. This is the number of units of the bond currency one has to pay to own one single unit for a stock currency.

The parity of the convertible now depends on the level of this exchange rate:

$$P_a = \frac{C_r \times S \times FX_{SB}}{N} \qquad \text{(Equation 4)}$$

The consequence of Equation 4 is the fact that the value of the convertible not only depends on the level of the share price (S) but also on the exchange rate between the bond and the stock currency. The San Miguel convertible we used to illustrate the reset convertible is an example of a cross currency convertible. The holder of that bond will be exposed to fluctuations in the US dollar–Philippine peso exchange rate.

Convertible bond market

Investors

Convertible bond investors can be split into two categories: outright or long-only investors and arbitrageurs. The outright category has become more important in the aftermath of the 2008 credit crisis during which the asset class of convertible bonds suffered a lot.

Outright investors buy the convertible security and engage in a limited amount of hedging activities. The currency risk would, for example, be hedged in such a long-only strategy. The overall risk profile of the convertibles in which the portfolio is invested, is not changed a lot. In this investment strategy the convertible bond is purchased because the investor has a positive view on the performance of the underlying share. The attractive valuation of the convertible can also be a driver in the investment process. Investing into the convertible asset class is not limited to convertible bond funds only. Equity funds will also invest in convertible bonds. They would target convertibles that are trading close to parity with a typical equity-like behaviour. These high-delta bonds will be appealing to an equity investor if the coupon of the bond is higher than the dividend yield earned on the underlying shares. This is the yield-advantage of a convertible and is defined as the difference of the current yield on the bond and the dividend yield on the underlying shares. A fixed-income investor could also open up the portfolio for convertible bonds. Investing will be in convertibles trading close to the bond floor. The embedded option is, therefore, worthless. The convertible is out of the money and is only offering a yield. If this yield is attractive compared with corporate debt issued by the same or similar issuers, a high-yield investor might invest in this convertible.

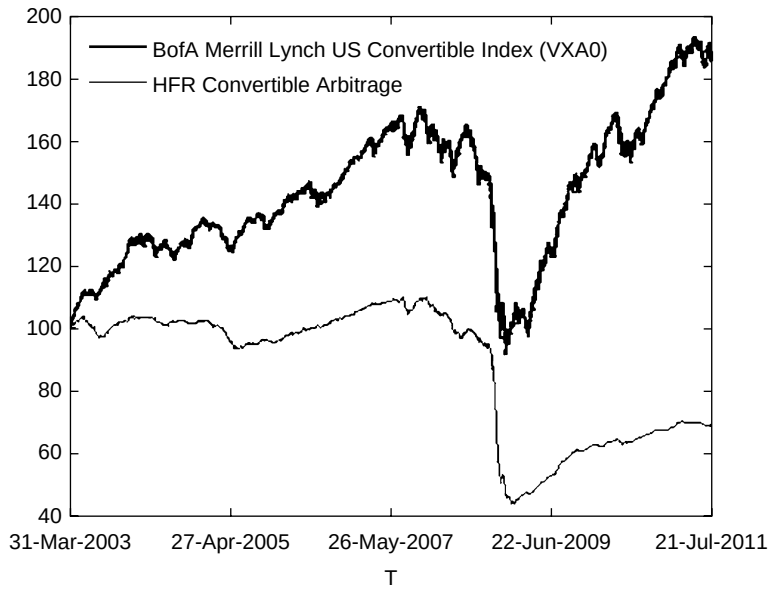
Convertible bond arbitrageurs

In convertible bond arbitrage, the investors take a much more active stance when hedging the risk of the convertible bonds they invest in. Given the hybrid nature of a convertible bond, the investor will encounter in one and the same financial instrument equity, credit, interest rate, dividend and volatility risk. The most obvious hedge is the delta-hedge where the arbitrageur sells enough shares short to immunise the equity risk of the convertible. Any negative impact on the value of the convertible bond, because of a weakness in the price of the underlying shares, will be compensated by the gains on this short position. Similarly the investor could buy credit default swaps to hedge the credit risk embedded in the bond or sell call options on the underlying shares to hedge to some extend the volatility risk. Convertible bond arbitrage is, given its technical nature, a strategy dominated by hedge funds.

Comparing both strategies is shown in Exhibit 6.4 using dedicated indices. For the long only investor in US-convertibles, the index compiled by Bank of America Merrill Lynch was used. The convertible arbitrage index constructed on the weighted performance of hedge funds active in the convertible arbitrage as calculated by HFR, was used to benchmark the performance of the convertible arbitrage category.

Exhibit 6.4

Performance of the Merrill Lynch Convertible Bond index and the HFR Convertible Arbitrage Index



Source: Bloomberg, Bank of America Merrill Lynch and Hedge Fund Research, Inc

Issuers

There are plenty of different arguments as to why a company should issue convertible bonds. For growth companies, the lower coupon argument might be a very good reason to opt for convertible debt as these companies might run tight budgets in the first years after the issue date. An issuer is able to monetise the volatility of his share price by selling options which are part of the convertible set-up. These options reduce the annual interest rate charge for the issuer of the convertible bond. Instrument features such as calls, resets or dividend protection allow the issuer to have a tailor-made convertible that matches the needs of the issuer and remains attractive enough for the investor. In some jurisdictions, convertibles can be issued very quickly. In the United States for example, a Rule 144A offering can happen on an overnight basis. At the time of writing this chapter, the average credit quality of a convertible bond was just below a BBB rating with an average maturity between three and five years.

New issuance

Convertibles are redeemed at the maturity date or can be converted into shares through an optional or a forced conversion before this date. In some cases, issuers purchase back their own convertible bonds. Here, issuers might sell new convertible debt to finance this repurchase. New issuance is very important to the convertible bond market as it is replacing older bonds with newer instruments. In a normal business year, the market would see the issuance of 600 or more new convertible securities. The new issuance is very cyclical and depends, for example, on the level of the interest rates. When interest rates are low, companies might prefer to issue straight corporate debt instead of relying on convertible debt to raise cash. The credit-crisis of 2008 also had a negative impact on the issuance of convertible bonds. From October 2008 to April 2009, there was an almost zero new issuance of convertibles.

Equity exposure of convertible bond

The delta of a convertible bond has previously been defined as $\frac{\partial P}{\partial S}$. Practitioners prefer to use 'delta percent' or 'Δ%' when referring to the equity component of a convertible bond. Suppose we are dealing with a convertible with Δ%=60% and that this convertible has a conversion ratio equal to 140 shares per bond. In the case that we are holding 10 of those bonds, the delta equivalent in shares is equal to 840 shares (=10 × 60% × 140). To translate the Δ% of a convertible bond consisting of n bonds into Δ_{Shares}, the following equation has to be applied:

$$\Delta_{Shares} = n \times \Delta\% \times C_r$$

Example

Exhibit 6.5

Description of the Kloeckner convertible bond

Kloeckner 2.5% 22 December 2017			
Issue date	22 December 2010	Conversion ratio	1,992.03
Maturity date	22 December 2017		
Face value	50,000		
Bond currency	Euro		
Soft Call		*Coupons*	
Date	Call price	Coupon	2.50%
1 December 2016	100%	Frequency	Annual
Call trigger	130%	Daycount	Act/act
Put			
Date	Put value		
22 December 2015	100%		

Source: Bloomberg

To illustrate the delta of a convertible, we can take the example of the convertible bond issued in December 2010, by the German company Kloeckner. On 25 July 2011 the bond had a market quote of 111.80% against an underlying share price of €19.09. The delta of the convertible was 62% and the conversion ratio was 1992. This tells us that a position of 100 bonds, corresponding to a face value of €5 million, matches a holding in 123,504 shares. This is the 'delta shares equivalent' of this convertible bond position:

$$\Delta\text{Shares} = 100 \times 62\% \times 1992 = 123{,}504$$

The market value of the convertible bond position in Kloeckner bonds is €5.59 million (= 5 m × 111.8%). Using the delta we can estimate the impact of a 5% increase in the share price:

$$\text{Change in market value} = 123{,}504 \times €19.09 \times 5\% = €117{,}880$$

Through the delta one can calculate valuation changes in a convertible bond price (∂P) for a given change in the underlying share price (∂S) without having to rely on a numerical valuation model:

$$\delta P = \Delta \times \delta S \qquad \text{(Equation 5)}$$

Convexity of a convertible bond

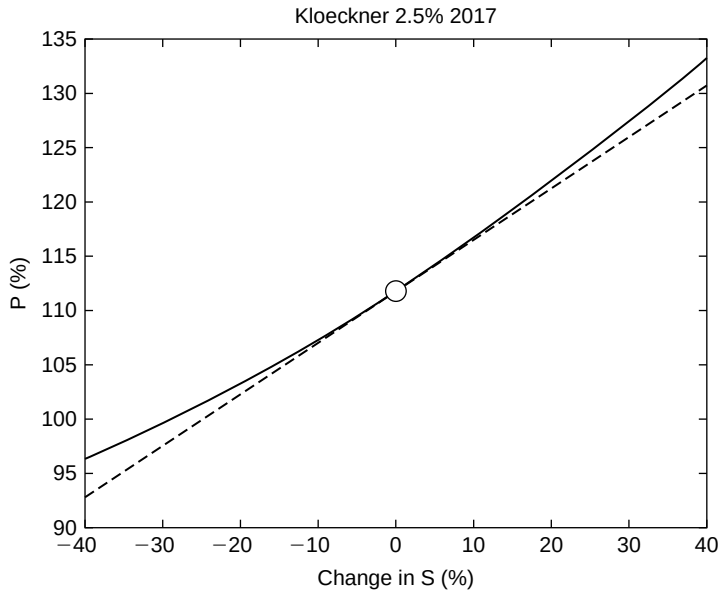
The graph in Exhibit 6.6 illustrates the fact that using a delta to estimate price changes in a convertible is only valid for small changes in the share price. This is caused by the positive convexity ('gamma') present in the convertible bond. The fact that the gamma is positive in our example has as a consequence that the delta increases for increasing share prices. The investor gets more exposed as the value of the underlying share appreciates:

$$\Gamma = \frac{\partial \Delta}{\partial S} = \frac{\partial^2 P}{\partial^2 S} > 0 \qquad \text{(Equation 6)}$$

Because of this property, it is not correct to rely solely on the delta to estimate change in convertible bond valuations. The 5% change in the €5 million holding in the Kloeckner convertible resulted in an estimated price gain of €117,880. Using a valuation model that takes this positive gamma into account, the theoretical value of the convertible increases from 111.80% to 114.20%. This corresponds to a gain of €120,000. This gain is slightly above the delta-based approximation.

Exhibit 6.6

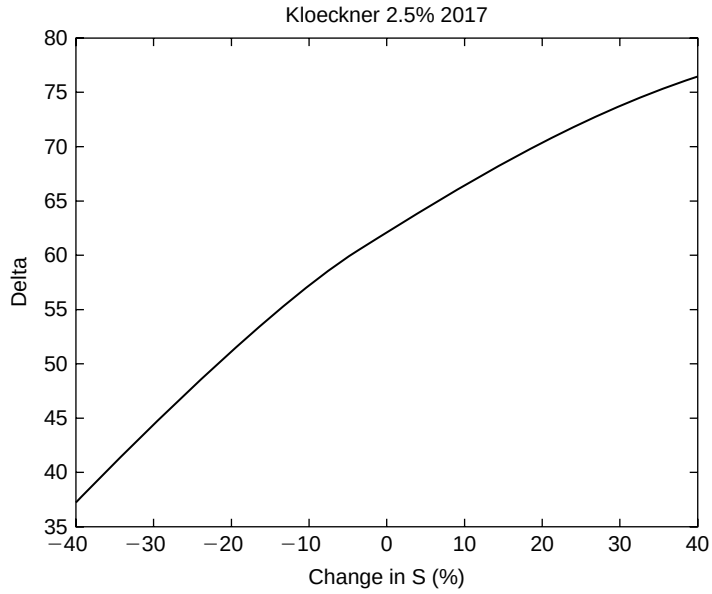
Price of the Kloeckner convertibles for changes in the underlying share price



Source: Authors' own

Exhibit 6.7

Delta Kloeckner bond



Source: Authors' own

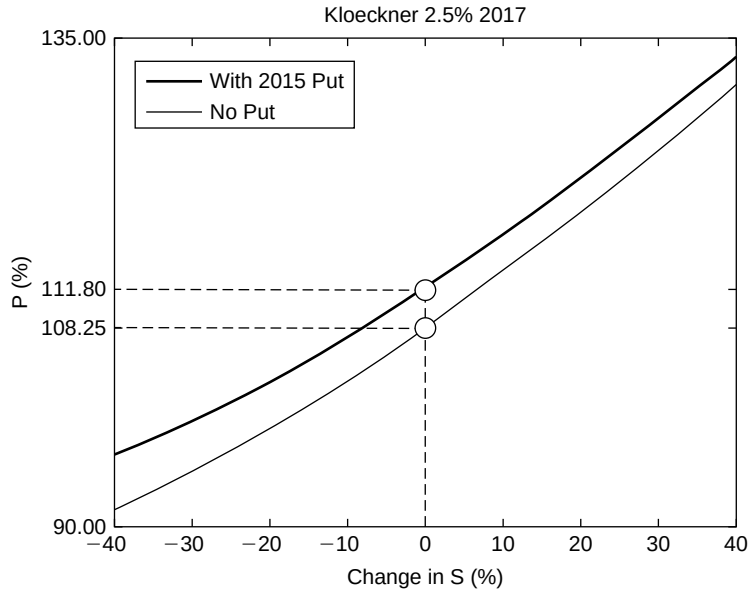
Exhibit 6.7 illustrates the changes of the Δ% for different price changes in the underlying spot price of the convertible bond. Adding convexity to Equation 6 results in a better estimation of the change in a convertible's price:

$$\delta P = \Delta \times \delta S + \frac{1}{2} \Gamma \times \delta S^2 \qquad \text{(Equation 7)}$$

A positive convexity adds value to the convertible bond. The investor sits in a comfortable seat because the equity exposure increases when the share price does well. At the same time a convertible bond holder is more protected in the case of a weak share price performance because of the lower delta for lower share prices. Distressed convertible bonds on the other hand might exhibit a negative convexity as illustrated in Exhibit 6.1. The value of the convexity does not only depend on the level of the share price, but also on some particular instrument features of a convertible bond. An example of a feature that impacts the gamma of a convertible bond is the put. A put will therefore change the convertible's value. Exhibit 6.8 shows the price chart for the sample convertible bond. The Kloeckner convertible has a put on December 2017. On this date the investor can sell back the bond to the investor for 100% of the face value. If one were to omit the presence of this put in the setup of this convertible, the value of this bond would decrease with 3.55% to 108.25%.

Exhibit 6.8

Theoretical price for the Kloeckner convertible removing the put feature



Source: Authors' own

Removing the put clearly impacts the convexity of the bond. This is illustrated in Exhibit 6.9.

Profile of a convertible

The equity sensitivity of a convertible can be used to split the price graph of Exhibit 6.1 into different areas. Each of these areas corresponds to a particular price behaviour of the convertible and attracts a dedicated investor base.

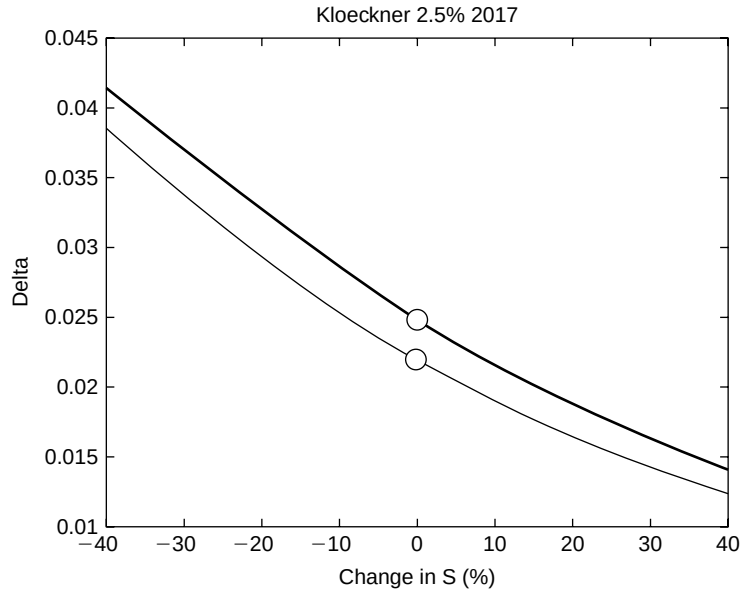
Distressed debt
This is the domain of the 'broken' bonds. The convertible has fallen through the theoretical bond floor and the bond has been given the 'junk' status. The premium collapses and the price of the bond converges to parity. This type of convertible has a high equity sensitivity.

Out-of-the-money
The share price has fallen far below the conversion price. The delta of the convertible is lower than 40% but greater than or equal to 10%.

At-the-money or 'balanced'
The delta of the convertible is between 40% and 80%.

Exhibit 6.9

Gamma of the Kloeckner convertible with and without the 2015 put



Source: Authors' own

In-the-money

The underlying share has risen so much that all the non-linear price behavior of the convertible is gone. The bond has an almost perfect linear relationship between P and S and acts as if it was a share. The price of the convertible converges more and more towards Parity (Pa).

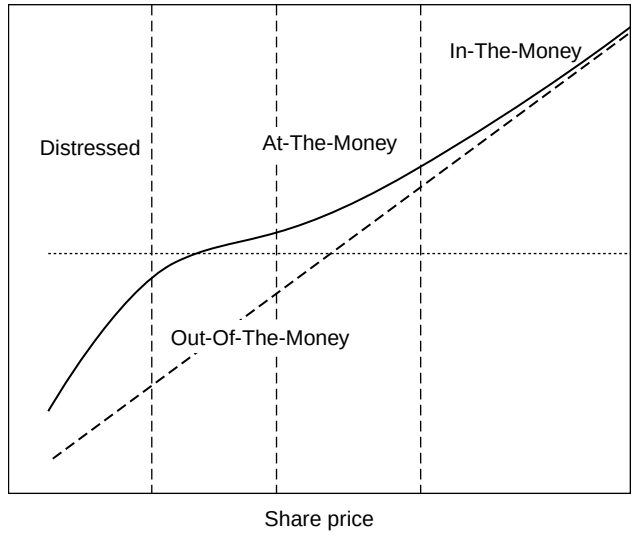
Valuation

Introduction

In order to determine the theoretical price of a convertible bond one needs to rely on a valuation model. Next to the theoretical price, such a model also delivers the different sensitivities. These sensitivities are called the 'Greeks' of the convertible. We have already discussed two of them: delta and gamma. The theoretical price of the convertible bond is considered the main output of the model. The difference between the convertible bond's market price and its theoretical price is the cheapness. The cheapness is an important tool in the investment process, but should never be the only element on which an investment decision is based. Convertibles that are trading below their theoretical price can remain cheap for a long time. Other inputs in the investment process are based

Exhibit 6.10

Different profile of convertible bond



Source: Authors' own

on an extensive analysis of the underlying share and its credit quality. The view on this underlying share and the sensitivity of the convertible to changes in the share price, are important inputs as well.

Therefore, a model needs to be studied with the necessary caveats. In the early days of convertible bond investing, a portfolio manager too often relied on simplistic measures such as yield advantage. Current convertible bond models are more advanced. There is no such thing as the one-and-only convertible bond model. Portfolio managers tend to use different approaches. Before going deeper into detail one should be aware that a model is constructed from two building blocks: stochastic processes and numerical techniques. The stochastic process is the way the financial inputs are modelled. Do we assume the returns of the share price to be normally distributed? Do we allow jumps in the share price? Do we allow default? The numerical technique is the methodology used to solve the pricing of the convertible given a particular stochastic process.

Stochastic process

The stochastic process behind a convertible valuation model, describes those input parameters that have a random nature.

One factor model

A one factor model has only one stochastic component. For a convertible bond model, this is obviously the stock price (S). The Black-Scholes model has its foundations in this family of stochastic processes. All the other parameters such as volatility (σ), interest rate (r) and dividend yield (q) are considered to be deterministic. A stochastic differential equation can be used to describe small changes in the share price S (dS) during a small interval (dt):

$$\frac{ds}{S} = (r-q)dt + \sigma W\sqrt{dt} \qquad \text{(Equation 8)}$$

The stock price movement described in Equation 8 is also called a geometric Brownian motion. There are two components: a drift term and a random element. The drift term is in a risk neutral setting driven by the interest rate (r) and the dividend yield (q). The random component depends on the volatility of the share price. W is a random number drawn from a standard normal distribution with mean 0 and variance 1:

$$W \sim N(0,1) \qquad \text{(Equation 9)}$$

In such a Black-Scholes approach the logarithmic returns of the share price over a time period T are hence distributed according to a normal distribution:

$$\log\left(\frac{S_T}{S}\right) \sim N((r-q-\frac{\sigma^2}{2})T, \sigma^2 T) \qquad \text{(Equation 10)}$$

Two factor model

When allowing a stochastic behaviour for a second parameter, one increases the complexity of the model with an extra notch. Two factor models deal, for example, with a non-deterministic interest rate, a stochastic credit spread or a volatility that is itself a random element. A stochastic volatility model deals with share prices that move according to Equation 8, but each time the value of the volatility will be a different number. An example of such a model is the Heston-model:

$$\begin{aligned} \frac{dS}{S} &= (r-q)dt + W_S\sqrt{v}dt \\ dv &= \alpha(b-v)dt + \eta\sqrt{v}dtW_v \end{aligned} \qquad \text{(Equation 11)}$$

The first line of the equation above describes the random behaviour of the share price S. Each movement dS is driven by a standard normal variable W_S and the variance of the share *v*. The second line describes how this variance *v* moves during the time step dt. Four extra parameters are introduced:

- b: long term variance;
- α: speed of mean reversion;
- η: volatility of the variance (also called the vol of vol); and
- ρ: correlation between W_S and W_v.

The random element driving the stochastic behaviour of the variance v comes from a standard normal variable $Wv \sim N(0,1)$. The correlation (ρ) between the equity prices and variance is negative. This deals with the observation that falling share prices often are accompanied by an increase in the level of the volatility.

Multi-factor models

In theory there is no limit to the combination of different factors into one single model. Multi-factor models might create a false feeling of safety. They are constructed using more parameters and one might be tempted to think that this will lead to a better valuation. More parameters need to be estimated or calibrated to other financial instruments issued by the same underlying share. Especially as the calibration of these parameters is not going to be straightforward. What looks like a perfect approach on first sight, can become financial quicksand.

One-and-a-half factor models

Instead of adding more dimensions to the stochastic processes, practitioners very often take a step back and use so called one-and-a-half factor models. An example of such a model is the blended credit spread model. This model uses a credit spread that is tagged to the level of the share price or the conversion probability of the convertible. When a bond is very deep in-the-money, for example, and conversion very probable, the convertible is considered to be default-free since the bond can be hedged with shares. The credit spread is zero. In the opposite case, the convertible trades very close to the bond floor and behaves as if it was a corporate bond. The credit spread used is now higher. The credit spread used in the discounting of the cash flows, is done using a blended credit spread.

Numerical techniques

The stochastic process models the input factors driving the value of the convertible bond. This is the first step; the second step is the choice of an appropriate numerical technique. We often cannot rely on a closed-form formula such as the one developed by Black-Scholes for European options. Applying a closed form formula is indeed not possible given the complexity of the instrument's structure. There is, first of all, the possibility of an early optional conversion of the bond. This feature can be combined with an issuer call, a put, a reset, and so on. This is the reason why it is not possible to split the value of the convertible in a coupon bearing bond and an option on the underlying share. If such a split was possible, the valuation would have been straightforward.

There are three possible different numerical techniques to handle the convertible bond valuation: lattice models, finite differences and American Monte Carlo. Not all stochastic process can be solved with every one of these three possible choices. There are performance and accuracy constraints at work.

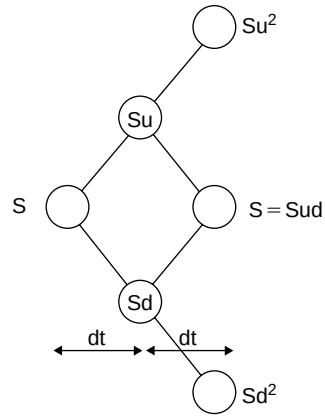
Lattice models

Lattice models are also called tree models because they model the share price as moving up and down from node to node on the branches of a tree. These models are a discrete version of a Black-Scholes world, allowing the share only to move between two small time steps (dt) across a limited set of values for S. The best known examples are the binomial and the trinomial trees. Both approaches are used a lot in practice and receive the better qualification from an educational point of view.

Lattice models are mainly used in one factor models. A binomial tree is constructed in Exhibit 6.11. The share price can, in a small time step (dt), move up from S to S × u. In the opposite case where the share price moves down, the new share price becomes S × d. In the case of u = 1/d, the tree is recombining. This means that the value of an up-move followed by a down-move results in a share price equal to the initial level. The size of the multiplier (u) and the probability of having to deal with such an up-move is chosen so that the simulated process is consistent with Equation 8 where a one factor process has been described. The accuracy of the obtained convertible price in a lattice model depends on the number of time steps used to simulate the stock price process. The more steps, the better.

Exhibit 6.11

Binomial Tree for a one factor model



Source: Authors' own

A trinomial tree has a branching order (b) equal to three. From every point, the share price can now move further to three different nodes instead of two. Lattice models with a higher branching order (b >2) such as a trinomial or a heptanomial (b=7) tree have their merit as they converge faster to the correct solution.

Finite differences

Finite differences are used in most commercial convertible bond pricing and risk management software. It is a very robust methodology that delivers better Greeks than the traditional lattice methods. The approach is different from what is done in a lattice model. The partial differential equation of the convertible bond is solved in a two-dimension grid (S,t).

American Monte Carlo

Lattice and finite difference methods suffer from the curse of dimensionality. In other words, they deliver quick and accurate results when simple convertible bonds are to be priced while dealing with a single factor process where the only random variable is the share price. Adding more factors increases the dimension of the problem and impacts the performance of these techniques. The dimension of the valuation problem is not always limited to the number of factors used in the stochastic process. An instrument feature such as a reset also adds another state variable, for example. All of this suggests that the convertible should be priced with a different numerical technique. Here the American Monte Carlo reaches out a helping hand. The American Monte Carlo algorithm is based on two different steps:

1 Generating paths: in the first step a large set of possible share price paths is generated. The price paths need to be consistent with the stochastic process which was chosen. The dimensionality is now no longer an issue. Next to the share price, one would also be able to simulate a process where volatility, interest rate and default risk are stochastic without a large computational cost.
2 Checking early exercise: the value of the convertible is, of course, based on the payoff of each of the different paths. In each of the paths, the possibility of an early conversion, a put or a call can be checked. This can be done, for example, using the Longstaff-Schwartz approach which was originally designed to price American options through a Monte Carlo simulation.

American Monte Carlo is still more of a research tool than a pricing tool that is easy to put in practice on a trading desk. The flexibility to model convertible bonds through a wide range of possible multi-factor models comes unfortunately at a high computational cost.

The techniques and models mentioned in this paragraph have been grouped together in Exhibit 6.12, which provides a schematic overview of which techniques are suited to a particular stochastic model. It is obvious that finite differences and lattice models are not used when the dimension of the stochastic process is two or more. Here the American Monte Carlo finds its use.

Jump-diffusion example

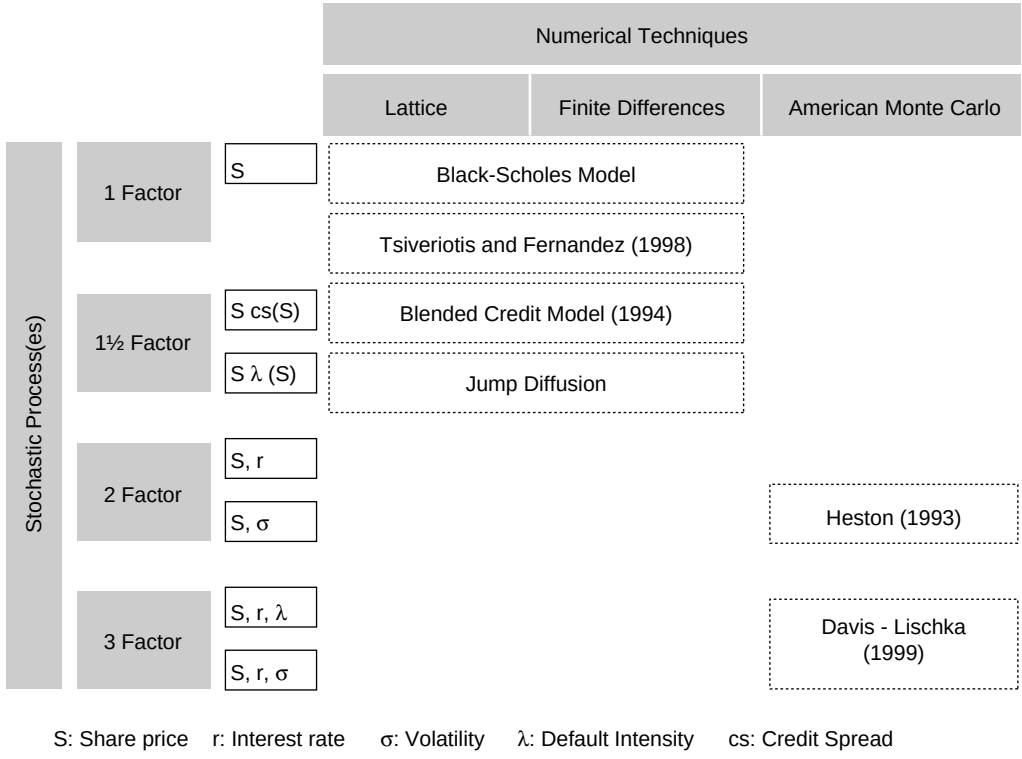
Introduction

To illustrate one possible model choice, we will consider a convertible bond where the underlying share price process is modelled using a one factor model. The convertible bond is priced using a trinomial tree (see Exhibit 6.12). The one factor model chosen is a jump-diffusion model. In this particular approach the share price is following the Brownian motion as laid out in Equation 8 but is also allowed to jump downwards with a certain probability. A sudden collapse of the share price to zero is considered in this exercise to simulate a default of the company issuing the convertible bond. The probability of such a default and the corresponding downward jump in the share price is given by the default intensity $\lambda > 0$:

$$\text{Probability Default } (P_{DEF}) = 1 - \exp(-\lambda dt)$$
$$\text{Probability Survival } (P_{SURV}) = \exp(-\lambda dt) \qquad \text{(Equation 12)}$$

Exhibit 6.12

Map of convertible bond models



Source: Authors' own

Exhibit 6.13 presents a trinomial tree where the stock price is modelled using jump-diffusion. The stock price can now move to four different positions in the next time step dt. The lowest value the share price can take is zero. This value represents the default-layer, the level that is considered to correspond to a default of the underlying company. On default the bond holder is expected to recover a certain fraction of the face value of the bond, this fraction is the recovery rate (R). The other three layers to which the share price can move are an upward move (S × u), a downward move (S × d) and a node where the share price moves from S to S × m. All of this happens with the respective probabilities P_u, P_d and P_m. The following relationship between the different probabilities holds:

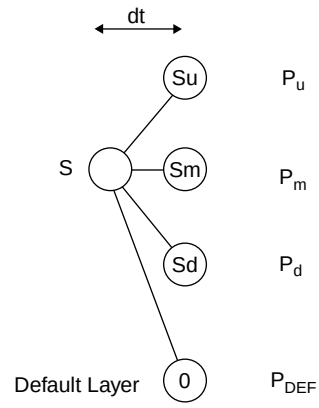
$$P_{DEF} + P_u + P_d + P_m = 1$$

hence (Equation 13)

$$P_{SURV} = P_u + P_d + P_m$$

Exhibit 6.13

Trinomial tree in a jump-diffusion model



Source: Authors' own

Using a default intensity λ(S) which depends on the share price turns the model into a one-and-a-half factor model. One could think of a model where low values of S correspond to high values for λ and vice versa. Incorporating a share price where we allow the stock to drop to zero on default is an example of an implementation of a jump-diffusion model. Jump-diffusion models have become increasingly popular and are used by a lot of convertible bond practitioners. The following equation describes a jump-diffusion stock price process in a risk neutral framework:

$$\frac{dS}{S} = (r + \lambda - q)dt + \sigma W\sqrt{dt} - dI$$

where

$dI = 0$ with probability $\exp(-\lambda dt)$ (Equation 14)

and

$dI = 1$ with probability $1\text{-}\exp(-\lambda dt)$

The size of the different moves u, m and d are given by the following formula:

$$u = \exp((r + \lambda - q - \frac{\sigma^2}{2})dt + \sigma\sqrt{3dt})$$

$$m = \exp((r + \lambda - q - \frac{\sigma^2}{2})dt) \quad \text{(Equation 15)}$$

$$d = \exp((r + \lambda - q - \frac{\sigma^2}{2})dt - \sigma\sqrt{3dt})$$

The corresponding probabilities are:

$$P_u = \frac{\exp(-\lambda dt)}{6}$$
$$P_m = \frac{2\exp(-\lambda dt)}{3} \qquad \text{(Equation 16)}$$
$$P_d = \frac{\exp(-\lambda dt)}{6}$$

Example

To illustrate the jump-diffusion model in a trinomial setting, we consider the following example of a zero coupon convertible bond. The bond has a five year maturity and has a conversion ratio of 0.8. The face value equals 100. The default-intensity is 1% and the interest rate is 3%. The share is expected to distribute a 3% dividend yield and has a 30% volatility.

The convertible in this example is hard-callable from the second year onwards with an early redemption price equal to 130% of face value (K=130). On the fourth anniversary of the bond, the investor can opt to put back the convertible to the issuer. The put price is equal to face value (P_V=N).

The trinomial tree is constructed using a limited number of five steps (dt=1). This limited number of steps is only justified because we will use this five-step tree as an educational example. The survival and default probability over this one year time step are respectively equal to 99.01% and 0.99%. The multiplicative factors to move up and down the tree together with their corresponding transition probabilities are shown in Exhibit 6.14.

Exhibit 6.14

Node probabilities

Move	*Value*	*Probability*
Up (u)	1.62	16.50%
Middle (m)	0.97	66.00%
Down (d)	0.58	16.50%

Source: Authors' own

This results in the two following trinomial trees (see Exhibits 6.15 and 6.16). The first tree plots the share prices for the different time steps, while the second tree plots the different node probabilities. The share price tree has 12 final nodes, including the default layer where S=0.

Exhibit 6.15

Share price tree

T	*1*	*2*	*3*	*4*	*5*
					127.18
				694.38	670.51
			427.76	413.05	398.86
		263.51	254.45	245.71	237.26
	162.33	156.75	151.36	146.16	141.14
100.00	96.56	93.24	90.04	86.94	83.96
	57.44	55.47	53.56	51.72	49.94
		32.99	31.86	30.77	29.71
			18.95	18.30	17.67
				10.89	10.51
					6.25
	0.00	0.00	0.00	0.00	0.00

Source: Authors' own

Exhibit 6.16

Node probabilities

T	*1*	*2*	*3*	*4*	*5*
					0.01%
				0.07%	0.24%
			0.45%	1.19%	2.02%
		2.72%	5.39%	7.41%	8.81%
	16.50%	21.78%	22.91%	22.54%	21.65%
	66.00%	49.01%	39.54%	33.66%	29.65%
	16.50%	21.78%	22.91%	22.54%	21.65%
		2.72%	5.39%	7.41%	8.81%
			0.45%	1.19%	2.02%
				0.07%	0.24%
					0.01%
	0.99%	1.98%	2.95%	3.92%	4.87%

Source: Authors' own

The probability of reaching for example a node where S=90.04 in year 3 is equal to 39.04%. The probability of being default before year 3 is equal to 2.95%.

Valuing a convertible bond is done by rolling backwards in the tree starting at the final nodes and working towards the initial node equal to the current share price. The value of the convertible bond at the maturity date (T=5) is given by Equation 2. The result of applying this equation is given in Exhibit 6.17. The node on the default layer is worth 30 because of the recovery rate. The nodes where the stock ends below the conversion price have a convertible bond value equal to the face value of the convertible. The nodes where the share price is above the conversion price are in this final step equal to parity.

Exhibit 6.17

Final nodes

T	*1*	*2*	*3*	*4*	*5*
					901.75
					536.41
					319.09
					189.81
					112.91
					100.00
					100.00
					100.00
					100.00
					100.00
					100.00
					30.00

Source: Authors' own

From T=5 we can move one step further towards the nodes in T=4. In the layer T=4, we need to work out in every single node if the bond should be converted, put, called or kept alive. In a first step we calculate the continuation value of the convertible P_C in each node of this particular layer. Finally, the value of the convertible P in each node, is given by the following equation:

$$P = \max(P_V, C_r S, \min(K, P_C))$$

Optional conversion

Suppose that the share price went up four consecutive years and reaches a value of 694.38. The continuation value of the bond is equal to the present value of the expected value of the convertible.

The table below represents the value in each of the four nodes for T=5 having their origin in node S=694.38. There are three nodes where the bond is not default (S=1127.18, S=670.51 and S=398.86) each having a corresponding probability.

Exhibit 6.18

Nodes (T = 5) starting in S = 694.38 (T = 4)

S	*P*	*Prob*
1127.18	901.75	16.50%
670.51	536.41	66.00%
398.86	319.09	16.50%
0	30	0.99%

Source: Authors' own

The expected value is given by:

$$16.50\% \times 901.75 + 66.00\% \times 536.41 + 16.50\% \times 319.00 + 0.99\% \times 30 = 555.80$$

Given this expected value of 555.80, the continuation value is equal to 539.61 (=555.8/1.03). The conversion value obtained by converting the bond in this particular node into 0.8 shares each worth 694.38 is equal to 555.5. The bond holder will in this case convert the bond. The bondholder is much better off after conversion. Keeping the bond alive is not a rational decision.

No conversion

In the same layer T=4, we now consider the node where S=146.16. Based on the convertible bond values P in the following nodes, the continuation value in this node is equal to 119.07.

Exhibit 6.19

Nodes (T = 5) starting in S = 146.16 (T = 4)

S	*P*	*Prob*
237.26	189.81	16.50%
141.14	112.91	66.00%
83.96	100.00	16.50%
0	30	0.99%

Source: Authors' own

This continuation value is smaller than the conversion value of 116.93 (= 0.8 × 146.16). The issuer does not convert the bond into shares. The bond is worth more when it is kept alive till the next node.

Put

For those nodes in layer T=4 where the share price is low, the bond holder is going to put the convertible bond back to the issuer. In these nodes both the continuation value and the conversion value are lower than the put price.

Exhibit 6.20

T=4

T	*1*	*2*	*3*	*4*	*5*
					901.75
				555.50	536.41
				330.44	319.09
				196.57	189.81
				119.06	112.91
				100.00	100.00
				100.00	100.00
				100.00	100.00
				100.00	100.00
				100.00	100.00
					100.00
				30.00	30.00

Source: Authors' own

The value of the convertible in each of the nodes of layer T=4 has now been calculated. From this layer we move to T=3, T=2, T=1 and eventually end up in the initial node. The value of the convertible in this initial starting node, delivers finally a theoretical convertible bond price equal to 99.84 (Exhibit 6.21).

Risk management

Equity risk

The main market risk embedded within a convertible bond is the equity risk. Hedging this risk is a dynamic exercise. It needs a regular rebalancing. The hybrid nature of a convertible brings

Exhibit 6.21

Convertible tree

T	*1*	*2*	*3*	*4*	*5*
					901.75
				555.50	536.41
			342.21	330.44	319.09
		210.81	203.56	196.57	189.81
	132.25	128.37	124.11	119.06	112.91
99.84	99.52	99.37	99.47	100.00	100.00
	91.01	93.47	96.42	100.00	100.00
		92.98	96.42	100.00	100.00
			96.42	100.00	100.00
				100.00	100.00
					100.00
	30.00	30.00	30.00	30.00	30.00

Source: Authors' own

us an equity exposure that changes and depends on the level of the share price. An equity hedge constructed on the day the bond was purchased for the portfolio will no longer be efficient after the share price moved.

For our sample convertible (Kloeckner 2.5% 2017) in which we held a €5 million position, we needed to hold a short position of 123,504 shares. This creates a delta neutral position since this short exposure immunises small movements in the underlying share price. Because of the convexity involved, the investor has to sell more shares to keep this delta neutrality in case the share price goes up. In the case of a falling share price, the short exposure will have to be reduced in order to keep the delta neutrality.

Credit risk

A default of the issuer of the convertible can be hedged, at least in theory, using credit default swaps. The long exposure of the convertible bond can be hedged through a purchase of credit protection on the issuer of the bond. This will prove to be a real challenge because this hedge will also need a regular rebalancing. More protection will need to be bought when the share price decreases while some portion of the credit default swap will need to be unwound when the share price goes up. On 26 July 2011, the average credit quality of a convertible bond was just below a BBB rating with an average maturity between three and five years.

Some practitioners use options on convertible bonds (ASCOTS)[4] to reduce the credit risk. These allow them to keep the equity option embedded within the convertible bond while selling off the larger portion of the credit risk.

Volatility risk

The sensitivity of a position in a convertible bond with respect to an overall shift in volatility is called vega. This sensitivity belongs to the category of the 'dirty' Greeks. These Greeks measure a sensitivity versus a change in a parameter that is not supposed to change at all when one is pricing convertibles in a single factor model. The only random element in such a model was the share price. All the other inputs were deterministic. Slicing and dicing the sensitivity to changes in the model volatility is done in a less advanced way in a convertible bond holding than it is usually handled in a derivatives portfolio. The reason for this is that a derivatives portfolio tends to have a lot of options spread out over a large range of strikes and maturities on one underlying asset. Where convertible bond portfolio managers often work with a single volatility number per bond, equity derivative traders use a volatility surface. A convertible bond trader can to some extent rely on a short call option on the same underlying share as the convertible to offset some of the vega exposure. The negative vega and delta of the short call option will hedge some of the delta and vega risk of the convertible.

Liquidity risk

The 2008 credit crunch started in sub-prime credit but hit the convertible bond market in full force. It is an excellent example of how illiquidity undermines a convertible bond portfolio and illustrates the importance of liquidity for a convertible bond investor. The graph in Exhibit 6.22, illustrates how a sell off in the market combined with a lack of liquidity impacted the convertible bond valuations. Both investment grade and non-investment grade names were struck.

Merger and acquisition risk

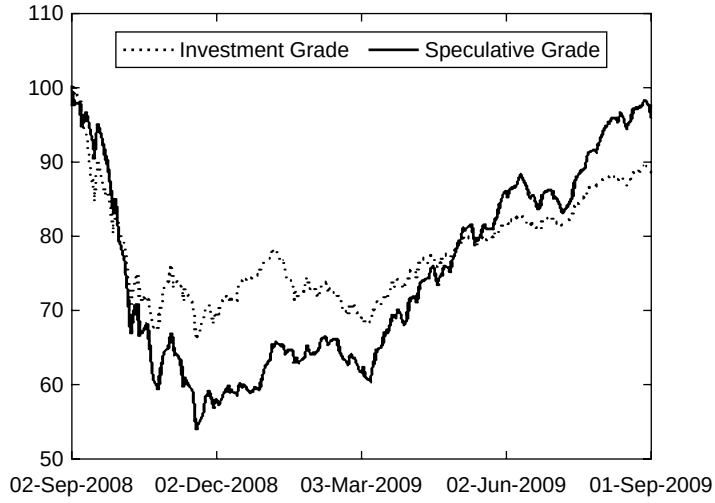
The ownership of a convertible bond portfolio is subject to takeover and merger risk. In both cases this is a concern because this risk cannot be hedged away. The jurisdiction in which the convertible is incorporated also plays a crucial role. The underlying share price might increase when it becomes the takeover target. At first sight, this is obviously good news for the convertible investor. This increase generates a gain. In some cases, however, the increase in the underlying share price might not be enough to compensate for the loss in premium. The takeover bid signals indeed the end of the life of the underlying share and terminates all remaining volatility. Some convertible bond issues, therefore, come with specific measures that ought to protect the investor when the underlying share is taken over by another company. We will briefly cover two of these measures: a change of control put and a change of the conversion ratio.

Change of control put

A change of control put will enable the convertible bond holder to put the bond back to the issuer, against payment of a redemption value once the change of control is a fact.

Exhibit 6.22

Convertible bonds during and after the 2008 credit crunch



Investment Grade Convertible Bonds and Speculative Convertible Bonds reached their lowest point on the same day (20 November 2008). The investment grade is the US VXA1 index maintained and published by Bank of America Merrill Lynch. The speculative grade convertible bond index (VXA2) is also published by Merrill.

Source: Bloomberg

Change of conversion ratio

To compensate the investor for a loss of the premium to parity when the underlying share is taken over, the prospectus sometimes foresees an enhancement of the conversion terms. The bond holder will benefit from an increase in the conversion ratio. A pre-determined schedule (ratchet schedule), deals with this increase in C_r. The increase depends on the remaining time to maturity and the level of the share price.

Conclusion

This chapter was a very brief introduction into the large universe of convertible bond. Each convertible is different and there is no such thing as 'the' convertible bond structure. See 'Further reading' for more literature covering this topic.

Further reading

De Spiegeleer, J. and Schoutens, W., *The Handbook of Convertible Bonds: Pricing, Strategies and Risk Management* (London: Wiley, 2010).

De Spiegeleer, J. and Schoutens, W., *Contingent Convertible (CoCo) Notes: Structure and pricing* (London: Euromoney Books, 2011).

Longstaff, F. and Schwartz, E., 'Valuing American options by simulation: A simple least-squares approach', *The Review of Financial Studies 14(1)*, 2001, pp. 113–47.

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[1] Head of Risk Management, Jabre Capital Partners, Geneva.

[2] Professor of Financial Engineering, Department of Mathematics, Katholieke Universiteit Leuven.

[3] Barclays Capital, 26 July 2011.

[4] Ascots have been around since the late 1990s. The denomination of this option can be attributed to Morgan Stanley. This investment bank came up with the abbreviation ascot, which stands for Asset Swapped Convertible Option Transaction.

Chapter 7

Contingent convertibles: introduction to a new asset class

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Introduction

Contingent convertibles (CoCos) are a brand new asset class which stirred the financial world in 2011. In doing so, they have been continuously hitting the headlines in the financial press. These loss-absorbing instruments' goal is to reinforce the balance sheet of a financial institution and they have been the topic of a lively debate in the financial markets. The enthusiasm of some investors was not shared by others who considered CoCos to be yet another kind of hybrid. The opponents have built their case on the fact that the hybrids that were around in 2008 were unable to save the banks that issued them. CoCos for them are a new and untested asset class that should not be given the benefit of the doubt. Those in favour of contingent capital have enthusiastically forecast a US$1 trillion market. This prosperous forecast was immediately challenged and some questioned if there were going to be any buyers at all for these instruments. In this chapter, we will take a neutral stance and investigate the financial dynamics and risk management aspects of these instruments. The rise of CoCos has to be seen in the larger context of more stringent capital requirements for banks that in September 2010 led eventually to Basel III. The first CoCo issued by a financial institution even saw daylight in November 2009, a year before the new Basel proposal came out. This first CoCo was issued by the Lloyds Banking Group. Their example was followed by Rabobank early 2010 and in February 2011 there was a US$2 billion CoCo issued by Credit Suisse. Yield-hungry investors have shown a large interest in this latter issue which was more than 10 times oversubscribed. In this chapter, we will also elaborate on some structuring and pricing aspects of these new instruments.

Definition

What is a CoCo?

A CoCo is a bond that is converted into equity or (partially) written down as soon as the bank gets into a less viable state. For example, this could be the solvency of the bank dropping below acceptable standards or the capital failing to meet regulatory minima. This is a going-concern situation. One could also have a bond that converts into equity in a gone-concern situation, where default of the bank is lurking around the corner. In such a state of non-viability, equity investors see their holdings written down and the bond holders become the new shareholders. Such a bond is

a bail-in bond, and is often confused with the notion of a CoCo. The possible use of bail-in bonds was given a boost when the Independent Commission on Banking (ICB)[4] released its final report on 12 September 2010. In this proposal, banks are urged to increase their loss-absorbing capital through the use of these bonds.

In this chapter, the main focus will be on CoCos. Bail-in debt will be kept out of the scope. The moment when the bonds get converted or written down, is called a trigger event. One can distinguish four different kinds of triggers: a market-based trigger, an accounting trigger, a regulatory trigger and a multi-variate trigger. When the trigger event takes place, investors typically suffer a loss, since the face value (N) is written down or converted into shares (worth less than the bond notional). We introduce the following notation: in case of conversion, investors receive C_r shares value at S*. The implicit purchase price of these shares is called the conversion price C_p:

$$C_p = \frac{N}{C_r}$$

The choice of the conversion price has a significant impact on the dilution of the current shareholders. A low conversion price leads to more shares being created on conversion and will dilute any existing shareholder. In most situations it will result in S*< Cp. As long as the trigger event has not taken place, the CoCo remains a standard corporate bond distributing coupons. The coupon stream will stop once conversion has taken place. The trigger events in the CoCos issued up to the time of writing were all based on an accounting trigger. The core Tier 1 (CT1) ratio of a bank acts in this event as a metric to judge whether the bond should be converted into shares or not.

In August 2011, the first preferred CoCo was constructed. The ANZ group[5] did not choose a corporate bond structure that converts into shares, but constructed this contingency around a preferred share. The trigger which converts the preferred shares in ordinary shares materialises when the CT1 ratio of this banking group drops below 5.125%.

Risk profile

The risk profile of a CoCo corresponds to an investment product with a low probability for a high loss and a high probability for a moderate gain. From a risk perspective, one could categorise a contingent convertible as an instrument with a limited up side and an unlimited down side. The possible unlimited loss is tied to the key element of a CoCo structure: the trigger. Typically a conversion will result in a situation where investors end up with cheap shares (S*<Cp). Indeed, the fact that the bank is in a non-viable state when regulators, creditors and deposit holders are worried, will go hand in hand with falling share prices. The risk of having to impose a possible loss on the bond holder needs to be compensated. The buyer of a CoCo will therefore be awarded a higher coupon to face this down side risk similar to the higher coupon for lower rated bonds. In the section ‘Pricing techniques’, we will explain how the different building blocks of the CoCos impact the value of this coupon.

CoCo-like products

On the long list of structured products there are some popular variants that resemble CoCos. Reverse convertibles and auto-callables, for example, are investment products both offering a high coupon to

compensate for down side risk. The buyers of these instruments are facing a small probability of a large loss. We should not go as far as considering these structured products to be CoCo lookalikes. The main take-away here, is the fact that because these popular products have a broad investor base, the same could potentially be said for CoCos. In fact, CoCos have more in common with these structured products than with the standard convertible bonds. Both bonds are hybrid instruments, but have very different risk profiles. A convertible bond has an unlimited upside potential and the conversion decision remains mainly in the hands of the investor. The conversion into shares is optional. The CoCo investor, on the other hand, is forced into a conversion when the trigger materialises. The difference between CoCos and convertibles has been blurred by the issuance of a CoCoCo by the Bank of Cyprus combining a convertible bond with a forced conversion into shares when the Core Tier 1 ratio of the bank falls below a 5% level.

CoCos in the market

The capital requirements imposed by regulators on the balance sheet of the financial institutions they monitor have changed regularly. The full scale implementation of the Basel III proposal is expected to be finalised 30 years after the first capital accord saw daylight in July 1988. The focus of Basel III was on more and better capital. Now, the CT1 capital, founded on retaining earnings and common equity, is required to be at least 7% of the risk weighted assets. This requirement is composed of a standard minimum requirement of 4.5% and a supplementary 2.5% capital conservation buffer. This is an important increase from Basel II where only 2% CT1 was required. The total minimal capital requirement combining (Core) Tier1, Tier2 and the conservation buffer needs to be at least 10.5%. Therefore, in the next few years banks must gather additional core capital. It creates a place for CoCos in this asset gathering exercise, since according to Basel III guidelines, CoCos can count as loss absorbing capital because of their write-down or conversion trigger. They could take up some space in the Tier 1 and Tier 2 part of the regulatory capital.

The strongest CoCo issuance is expected in Europe possibly with a lot of buying interest from Asian investors. The US market is for several reasons not CoCo friendly. There is first of all the non-tax deductibility of the contingent capital interest rate charge for the issuing bank. On top of this, there are other resolution mechanisms in the US to deal with banks on the brink of collapse. The rise of the CoCo market has to some extent been dealt a blow by the Basel committee in June 2011. Before this date, market participants were expecting that Basel and the Financial Stability Board (FSB) would allow the capital surcharge for systematically important banks (SIFIs) to be met with contingent capital. The proposal of the Basel Committee turned out to be different and CoCos could not be used to meet this additional surcharge that amounts to between 1% and 2.5% of a bank's risk weighted assets. From a regulatory perspective the future importance of contingent debt is met with confusion. Where Basel only allowed CoCos in the additional Tier 1 and Tier 2 capital, the European authorities developed a more outspoken CoCo stance. The European Commission proposed in its Capital Requirements Directive (CRD4) that CoCos had a role as additional Tier 1 capital and actually detailed that the qualifying trigger level should be 5.125% of CT1 or higher. Two months later the ICB in the UK introduced the mandatory ring fencing of the retail business of a bank and also increased the capital requirements for banks when it published the Vickers report. Contingent debt and bail-in bonds now received a spot in the minimum standard of loss absorbing debt. But the commission clearly favoured the use of bail-in bonds over the introduction of CoCo

bonds. It is important to note that the regulatory work has resulted in proposals which are open to consultation from the industry. It should be no surprise that a lot of lobbying work is currently being undertaken by several professional organisations representing the financial industry. The current role for CoCos as laid out in the current proposal could possibly change.

New products always attract a lot of attention and engender lively debate about their advantages and drawbacks. Although CoCos introduce an explicit guarantee and potentially could reduce systemic risk and constitute an extra capital buffer, some negative effects are also expected. A dilution of existing shareholders could occur if the conversion price is set too low. Moreover, some argue that a trigger on the CoCo of one bank could pull the trigger on the CoCos of other financial institutions. This would particularly be the case if banks start to invest in each other's contingent capital.

Anatomy of a CoCo

Every CoCo is constructed from several building blocks, which have an impact on its value, risk and attractiveness. First, we will discuss the trigger, which specifies the circumstances under which conversion or a write down of the face value takes place.

Trigger event

The conversion of the CoCo takes place when a particular trigger event occurs. Generally speaking, this corresponds to the moment when a bank slips into difficult territory and potentially could reach a non-viable state. What the optimal choice for a trigger event should be is the topic of an on-going debate. For the moment, we will limit ourselves to four possible choices: a market-based trigger, an accounting trigger, a regulatory trigger and a multi-variate trigger.

Market-based trigger

A market-based trigger is the most straightforward one. Conversion into shares or a write down of the face value, takes place when the share price drops below some pre-set barrier level, which is well defined in the prospectus. Other market variables, such as a credit default swap (CDS) spread, could be used as a trigger as well. Without any doubt, the main advantage of such a trigger event is its transparency. The stock price value is continuously observable and a direct hedge instrument is available. The flipside of a market-based trigger, is that there is a risk of manipulation. The 'flash crash' that shook the US equity market in May 2010 is an illustration of how easily share prices can be pulled down by an imbalanced sell order. No single CoCo with a market-based trigger has been issued so far.

Accounting trigger

CoCos constructed using an accounting trigger have their roots in the balance sheet of the company. For the moment, this seems to be the path chosen by the different CoCo issuers. CoCos typically use the CT1 ratio to specify the triggering of contingent debt. Lloyds and Credit Suisse constructed their CoCos using a CT1 trigger of 5% and 7% respectively. The fact that CT1 triggers found their way into contingent debt is linked to the fact that this particular accounting measure is a cornerstone in the minimum capital requirements specified in the Basel III proposal. There are some arguments against the use of an accounting trigger, however. Accounting ratios are not constantly available, which leaves

some room for speculation regarding a possible trigger event. Furthermore, accounting numbers are not as transparent as market-based data, such as share prices or CDS spreads. However, some argue that CT1 ratios can give an incorrect view on the viability of the financial institution, which can be distant from the economic reality. The large US financial institutions that in 2008 either failed or had to be bailed out by the government, were reporting capital ratios above the minimum requirement.

Regulatory trigger

Using a regulatory trigger, a government, represented by a national financial regulator, decides when to convert the CoCos of a bank into shares or impose a haircut. The main drawback behind this idea is the discretionary nature of such a trigger. Its presence in a CoCo could reduce the marketability of such a bond. The Credit Suisse CoCo was the first where this feature was added and combined with an accounting trigger. The Credit Suisse CoCos issued in February 2011 also have an accounting trigger equal to a CT1 ratio of 7%. Therefore, either the CT1 level falling below this level or a regulatory decision could activate the trigger.

Multi-variate trigger

Another trigger choice, mainly proposed in academic circles, is the so-called multi-variate trigger. Here we are dealing with a blending of several triggers into one. A regulator would declare a state of emergency as the first necessary step. Without this initial condition no single CoCo could convert. This is a macro-economic trigger which needs to be combined with a micro trigger that deals with the financial health of a particular financial institution. Only when these two triggers are met, can the bond of a particular bank be converted into shares. This mechanism would ensure a recapitalisation of problematic banks only when the financial industry itself is facing tough times, but not any sooner.

Conversion type

Conversion or a debt write down takes place when the trigger level is achieved and will be specified in the prospectus.

Conversion into shares

Here the CoCo bond is converted into a pre-defined number of shares in the case of the trigger event. The conversion ratio (C_r) determines how many shares the bond holder will receive for every bond once the trigger takes place.

Debt write down

A second possibility is that the face value of the debt is written down. A haircut is imposed upon the CoCo investor and no shares are issued. The CoCos issued by Rabobank use this conversion type. In Rabobank's case, the investor will have to face a 75% loss of the face value of the convertible once the trigger event takes place.

Conversion price

A low conversion price is favourable for CoCo investors, because they receive more shares when a conversion takes place. This is definitely not welcomed by the shareholders. Low conversion prices

lead to a higher dilution of their initial equity investment. Future profits and dividend pay outs will have to be spread over a larger investor base.

In practice, three different conversion prices are possible.

1 $C_p=S^*$ (=Share price on the trigger day)
Since any trigger taking place at time T^*, will point to a weak financial shape of the bank, the share price S^* on this trigger moment will be low. Because of this low conversion price, the conversion ratio is attractive for the CoCo holders. The current shareholders will have to accept a dilution of their shareholdings. This dilution is, in theory, unlimited. However, CRD4 has made it clear that unlimited dilution is not allowed if a bank wants a CoCo bond to qualify for the additional Tier 1 bucket.

2 $C_p=S_0$ (=Share price on the issue date)
In contrast to the previous choice we now have $C_p=S_0$, which therefore implies a lower conversion ratio for CoCo investors. The existing shareholders are better off, since they are not going to have to deal with an unlimited dilution. Lloyds' CoCo is the basic example here with C_p=59 pence, Lloyds' stock price at issue date.

3 C_p= Conversion price with a floor
This choice is a compromise between the two previous solutions. This mechanism sets the conversion price equal to S^*, but imposes a floor level $C_{p,\,Floor}$ below which the conversion price cannot drop. The problem of an unlimited dilution is thereby avoided:

$$Cp = \max\,(S^*,\ C_{p,Floor})$$

This imposes a constraint on the maximum number of shares that might be received once conversion takes place. See Exhibit 7.1.

Exhibit 7.1

Recently issued CoCos (August 2011)

	Coupon Bearing Bonds			*Preferreds*
	Lloyds	Rabo	Credit Suisse	ANZ
Size	£7 billion	Euro 2.2 billion	Swiss franc 12 billion	AU$750 million
Trigger	CT1	Equity capital ratio	CT1	CT1
Trigger level	5%	7% and 8%	7%	5.125%
Regulatory trigger	No	No	Yes	Yes
Number issues	32	2	2	1
Issue date	2009	2010 and 2011	2011	2011
Loss absorption	Conversion	Write down	Conversion	Conversion
Maturity	+/– 8 year	Non-call 5 year	Non-call 5 year	First mandatory conversion after 8 year
Conversion price	Issue price	–	Floored	Floored

Source: Bloomberg

Pricing techniques

A CoCo is a hybrid security incorporating characteristics of both debt and equity. The valuation of CoCos boils down to the quantification of the trigger probability and the expected loss suffered by the investors if such a trigger event eventually takes place. Structural pricing models will solve the CoCo puzzle by modelling the assets on the balance sheet. Derivative approaches, on the other hand, will value CoCos starting from the market prices of other financial instruments: shares, options and corporate bonds. It is important to stress that sticking a theoretical value onto the CoCo is not a goal as such. More important is the fact that we build the model to investigate the dynamics of the CoCo and its sensitivity to changes in the different market parameters. A complete valuation model for CoCos with an accounting trigger should be founded on a joined distribution of accounting data and share prices. Understanding the accounting data, would help us to quantify the probability of a trigger occurring. This is a complex and almost impossible task, given the fact that accounting data are not always readily available. An additional complexity comes from the fact that any historical relationship between the share price and an accounting ratio is flawed. Before the credit crunch, for example, the market cap of a bank was positively correlated to the total size of the assets on the balance sheet. The market loved leverage and 'big was beautiful'. Post-2008, this observation does not hold any more.

The two approaches we present are credit derivatives and equity derivatives where the hitting of an accounting trigger is replaced by an equivalent share price barrier being touched.

Credit derivatives approach

In this approach, the goal is to calculate the extra yield added on top of the risk free rate. This extra yield, called the CoCo spread (cs_{CoCo}), should be a fair compensation of the conversion risk and subsequent loss that investors take. Having the CoCo spread at hand, the value of a zero coupon contingent convertible with a face value N and maturity T can be calculated with the following formula:[6]

$$B = Ne^{-(r+cs_{CoCo})T} \qquad \text{(Equation 1)}$$

To start we will introduce the notion of default intensity λ. Using λ, one can calculate the probability of a bank defaulting during a small time interval (t, t+dt). This default probability, given the fact that the bank has survived up till time t, is equal to λdt. Accordingly, the probability that the bond survives the next T years is given by:

$$e^{-\lambda T}$$

This is the survival probability p_s. Hence, the default probability is:

$$1 - e^{-\lambda T}$$

This formula forms the basis of the intensity based credit modelling also known as the reduced form approach.

After default, the investor expects to recover some fraction of the bond's face value N. This fraction is the recovery rate R. Using this rate one can express the investor's loss as being equal to: (1-R)×N.

We can now extend our credit derivatives framework to CoCos. Our starting point is the well-known relationship between credit spreads (cs) and default intensities (λ). This relationship is called the 'credit triangle':

$$cs = (1\text{-}R)\,\lambda \qquad \text{(Equation 2)}$$

A trigger event can be modelled as some kind of special case of a 'default' event. Default intensity λ is then replaced by a trigger intensity $\lambda_{Trigger}$. This trigger intensity is higher than λ, since triggering is more likely than defaulting. A bank will first meet a constraint on its capital requirement before it incurs a complete insolvency:

$$\lambda_{Trigger} > \lambda$$

Now, we can formulate the analogous of Equation 2 as an extension to the CoCo case:

$$cs_{CoCo} = (1 - R_{CoCo})\lambda_{Trigger} \qquad \text{(Equation 3)}$$

Therefore, we have to calculate two values: R_{CoCo} and $\lambda_{Trigger}$. The loss on conversion depends on the recovery rate:

$$Loss = (1 - R_{CoCo})N \qquad \text{(Equation 4)}$$

The loss for the investor depends on the value of the shares received:

$$Loss = N - C_r S^* = N\left(1 - \frac{S^*}{C_p}\right) \qquad \text{(Equation 5)}$$

Where S^* is a share price on the trigger moment. Simple calculus leads to the following formula:

$$R_{CoCo} = \frac{S^*}{C_p} \qquad \text{(Equation 6)}$$

One can now easily see that the choice of the conversion price C_p has a big impact on the recovery rate and the value of the CoCo. High conversion prices result in larger losses after conversion, whereas a lower value ensures that the total value of the shares will be close enough to the CoCo's face value to prevent a large loss for the investor. Therefore, the choice of C_p and the value of S^*will allow us to calculate the loss that the CoCo holder is going to face. A more difficult task is to estimate the expected value of the share price when an accounting trigger materialises. We therefore associate an accounting or regulatory event with a corresponding market trigger and a stock price barrier S^*. Hitting an accounting trigger is in this credit derivatives approach considered

to be equivalent to the stock price reaching a barrier level S^*. In this approach p^*, which quantifies this probability that the trigger is going to take place, is given by the following equation:

$$p^* = N\left(\frac{\log(\frac{S^*}{S}) - \mu T}{\sigma\sqrt{T}}\right) + \left(\frac{S^*}{S}\right)^{\frac{2\mu}{\sigma^2}} N\left(\frac{\log(\frac{S^*}{S}) + \mu T}{\sigma\sqrt{T}}\right) \qquad \text{(Equation 7)}$$

with

$$\mu = r - q - \frac{\sigma^2}{2}$$

q: continuous dividend yield
r: continuous interest rate
σ: volatility
T: maturity of the contingent convertible
S: current share price
N: normal cumulative distribution function

From p^* we can determine $\lambda_{Trigger}$:

$$\lambda_{Trigger} = -\frac{\log(1 - p^*)}{T} \qquad \text{(Equation 8)}$$

Having obtained a value for $\lambda_{Trigger}$ and R_{CoCo}, the CoCo spread can be calculated using the formula in Equation 3. In the formulas applied so far, a Black-Scholes framework was used. This choice was driven by educational considerations. It allowed us to keep the maths involved very short and clear. Other stock price models can of course be incorporated in order to better reflect the non-normal properties of stock price distributions.

Pricing example

The following example shows how to price a newly issued CoCo with the credit derivative approach.

This sample CoCo has a maturity of 10 years (T). The underlying share is price set at $100, has a volatility (σ) equal to 30% and is expected not to distribute any dividends at all (q = 0). The continuous interest rate (r) is 4%. We now assume that the occurrence of the trigger corresponds to a share price equal to half the current share price (S*= $50). The calculation of the credit spread under this assumption is given by the following three step process.

1 Recovery (Equation 6)

$$R_{CoCo} = \frac{S^*}{C_p} = 50\%$$

2 Probability of hitting the trigger (Equation 7)

p*=48.30%

3 Trigger intensity (Equation 8)

$$\lambda_{Trigger} = -\frac{\log(1-0.4830)}{10} = 0.066 = 6.6\%$$

Therefore: cs_{CoCo} = (1-50%) × 6.6% = 330 bps. Adding this spread to the continuous interest rate, gives the total continuous yield on this CoCo of 7.30%. Now, the CoCo value can be calculated easily with Equation 1.

Case study: Lloyds

In this case study, the credit derivatives technique will be applied on the CoCos issued by the Lloyds Banking Group. The issuance of the Lloyds CoCos, or enhanced capital notes (ECN) as they are sometimes labelled, was not the result of a capital raising exercise. The investors did not really have a choice; it was the result of swapping existing hybrid capital into this new CoCo. The total issue size was around £7.5 billion spread over 32 different series. The characteristics are given in Exhibit 7.2.

Exhibit 7.2

Summary of the Lloyds' CoCo

Issuer	Lloyds Banking Group	*Maturity*	10–20 year
Full name	Enhanced capital notes	*Yield at Issue*	Libor + 7%
Issue size	£7.5 billion	*Conversion price*	59 pence
Currency	Sterling, US dollar and euro	*Trigger*	Core Tier 1 ratio
Issue date	1 December 2009	*Trigger level*	5%
Subordination	Lower Tier 2		

Source: Bloomberg

Starting from the market price of these contingent convertibles, we can now calculate the implied level of S*. These levels drive the expected loss priced into the CoCo spread. It represents the view of the market on the expected loss a CoCo investor will face in case of a trigger event.

In Exhibit 7.3, a total of five different CoCos issued by Lloyds have been selected as an example. For each of the bonds, the implied trigger level S* has been calculated.[7] In theory each of these bonds should disclose the same expected loss. Indeed, all of the bonds trigger on the same moment, share the same conversion price and therefore should have the same recovery rate and loss. The small differences observed between the expected losses of the bonds can be attributed to the pricing mechanism used. The credit derivatives approach does not take the coupons into account. For this reason we prefer to call the credit derivatives approach a 'rule of thumb' method. The

equity derivatives approach goes one step further and uses the coupon structure of the CoCo when calculating its theoretical price.

Exhibit 7.3

Expected loss for five Lloyd's CoCos

ISIN	*Coupon*	*Frequency*	*Maturity*	*Currency*	*P %*	*S**	*% Spot*	*Expected loss %*
XS0459089255	15	SA	21-Dec-19	Sterling	111.75	1.30	4.3	97.80
XS0459086749	7.8674	A	17-Dec-19	Sterling	74.00	0.88	2.9	98.51
XS0459091582	7 5/8	A	9-Dec-19	Sterling	74.55	0.83	2.8	98.59
XS0459091236	7 5/8	A	14-Oct-20	Euro	75.25	0.65	2.2	98.90
XS0459088109	9.334	A	7-Feb-20	Sterling	82.66	0.92	3.1	98.44

Source: Authors' own and Bloomberg

Equity derivatives approach

Another possible way of pricing a CoCo is based on an equity derivatives approach. The triggering of the CoCo through an accounting or regulatory trigger is taken, similar to the credit derivative approach, as an event equivalent to the share price dropping below a barrier level S*. Once this happens, the CoCo holder will be a holder of C_r shares. The valuation of a CoCo in the equity derivatives approach has also its foundations in barrier option pricing. Once again, we set off on a Black and Scholes framework, but this can easily be extended into models beyond Black-and Scholes, incorporating jumps[8] or stochastic volatility, for example. These more advanced models deal adequately with the 'fat-tail' risk embedded within a CoCo.

Step 1: zero coupon CoCo

Let us consider a zero coupon bond with face value N and maturity T. Upon the trigger, the bond holder will be long C_r shares. Denoted as $1_{\{Trigger\}}$ the trigger indication function which equals 1 when the CoCo is triggered and 0 otherwise. As mentioned above, the trigger is based on the share price hitting a low barrier level S*. This is considered to be equivalent to an accounting or regulatory trigger being hit. The indicator is $1_{\{\min(St)_{0\le t\le T}\le S^*\}}$, where S* is the trigger level. The final payoff P_T of the CoCo is thus given by the following equation:

$$P_T = \begin{cases} C_r S_T & \text{if triggered} \\ N & \text{if not triggered} \end{cases} \qquad \text{(Equation 9)}$$

Equation 9 can be expressed using the trigger indicator in the following way:

$$\begin{aligned} P_T &= N + \left(C_r S_T - N\right) 1_{\{Trigger\}} \\ &= N + C_r \left(S_T - \frac{N}{C_r} \right) 1_{\{Trigger\}} \\ &= N + C_r \left(S_T - C_p\right) 1_{\{Trigger\}} \end{aligned} \qquad \text{(Equation 10)}$$

Two components are clearly visible in Equation 10: the face value N of the bond and the purchase of C_r shares, which becomes a fact once a trigger materialises. We can approximate the purchase of the shares by a knock-in forward on these underlying shares combined with a long position in a zero coupon bond.

Zero Coupon CoCo = Zero Coupon Corporate Bond + Knock-in Forward(s)

This decomposition now allows a closed form formula to price CoCos. However, in reality the CoCo holders receive shares (S) not forwards (F) with conversion value $C_r S$ not $C_r F$. Forwards, for example, do not receive dividends, while shares do. This introduces a flaw in the model. Nevertheless, we can assume that the dividend pay-out after conversion is going to be low, if not zero. This makes the barrier option technique an acceptable approach.

Thus, the value of the zero-coupon CoCo on the valuation date is given by the following formula:

$$P = Ne^{-rT} + \text{Knock-In Forward} \qquad \text{(Equation 11)}$$

Step 2: adding coupons

We can now introduce coupons into the CoCo valuation. When a trigger occurs, the investor gets shares and immediately foregoes all future coupons. The investor is short a single binary down-and-in option (BDI) for every coupon to be paid. These options knock-out and therefore neutralise the payout of the coupon once the barrier level S* is reached. A coupon bearing CoCo bond can be split in several different financial instruments.

$$\text{CoCo} = \text{Corporate Bond} + \text{Knock-in Forwards(s)} - \sum_{i=1}^{k} c_i e^{-rt_i} 1_{\{\text{Trigger Time} \le t_i\}} \qquad \text{(Equation 12)}$$

Thus, the price of the CoCo is equal to corporate bond (A) to which a knock-in forward (B) is added. The sum of BDI options which offset the coupons c_i upon the occurrence of a trigger (C) lowers the price of the CoCo:

CoCo=A+B+C (Equation 13)

where:

$$A = Ne^{-rT} + \sum_{i=1}^{k} c_i e^{-rt_i}$$

$$B = C_r \left[Se^{-qT} \left(\frac{S^*}{S} \right)^{2\lambda} N(y_1) - Ke^{-rT} \left(\frac{S^*}{S} \right)^{2\lambda-2} N(y_1 - \sigma\sqrt{T}) - Ke^{-rT} N(-x_1 + \sigma\sqrt{T}) + Se^{-qT} N(-x_1) \right]$$

$$C = -\sum_{i=1}^{k} c_i e^{-rt_i} \left[N(-x_{1,i} + \sigma\sqrt{t_i}) + \left(\frac{S^*}{S} \right)^{2\lambda-2} N(y_{1,i} - \sigma\sqrt{t_i}) \right]$$

with:

$$x_{1,i} = \frac{\log\left(\frac{S}{S^*}\right)}{\sigma\sqrt{t_i}} + \lambda\sigma\sqrt{t_i}$$

$$y_{1,i} = \frac{\log\left(\frac{S^*}{S}\right)}{\sigma\sqrt{t_i}} + \lambda\sigma\sqrt{t_i}$$

$$x_1 = \frac{\log\left(\frac{S}{S^*}\right)}{\sigma\sqrt{T}} + \lambda\sigma\sqrt{T} \qquad K = C_p \qquad C_r = \frac{N}{C_p}$$

$$y_1 = \frac{\log\left(\frac{S^*}{S}\right)}{\sigma\sqrt{T}} + \lambda\sigma\sqrt{T} \qquad \lambda = \frac{r - q + \frac{\sigma^2}{2}}{\sigma^2}$$

All formulas can be found in Rubinstein and Reiner[9]. For calculation examples we refer to De Spiegeleer and Schoutens.[10,11]

CoCo dynamics

A CoCo starts as a standard corporate bond. The only possibility of a loss for an investor is when a trigger occurs. The theoretical model developed above builds on a link between the level of the share price and the probability of a possible conversion. Low share prices where the stock moves closer to S*, should have a negative impact on the value of a CoCo. A more sophisticated investor will therefore proceed to hedge a holding in CoCos. These investors will sell short shares of the bank in which conversion could take place. Doing so, they want to immunise the loss on the CoCo with a gain on the short position.

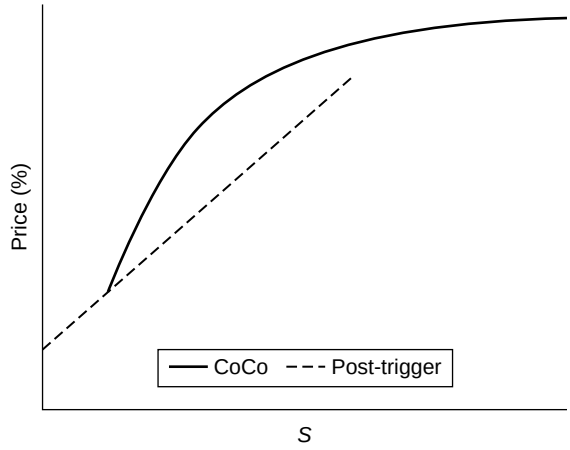
Exhibit 7.4 illustrates the theoretical dependence between the CoCo price (P) and the share price (S). The CoCo bond is clearly non-linear for changes in the underlying share price. The sensitivity of a CoCo price for stock price movements is called delta and is equal to:

$$\Delta = \frac{\partial P}{\partial S} > 0$$

This equity sensitivity increases when the stock price S trades closer to trigger level S*. This forces the hedger to sell more shares of the underlying bank as the CoCo is likely to be triggered. An investor dealing with this is easily pulled into the uncomfortable situation of negative convexity. The more the share price goes down, the more shares need to be sold. Some call this downward spiral, a death spiral. It could occur close to the trigger level and will constrain the amount of contingent debt a bank could issue. The free float of shares outstanding and the average daily traded volume of shares are therefore important bottlenecks on the CoCo issuance. The authors argue that this is going to cap the CoCo issuance in Europe to a level of around €150 billion for the top 30 banks.[12]

Exhibit 7.4

Payoff profile of a CoCo



Source: Authors' own

Conclusion

At the time of writing this chapter, CoCos were still an untested asset class, met with enthusiasm by some and distrusted by others. Without taking sides in this debate, we have discussed the construction of a CoCo and its anatomy. Using a very straightforward approach based on derivative pricing models, we were able to investigate the dynamics of a CoCo.

All of this is work in progress and a lot will depend on how regulators view CoCos in the capital structure of the bank. It is also needless to say that CoCos alone will not be enough to save a bank from collapse. CoCos reinforce the balance sheet, but will have no impact on its liquidity. A bank can have its capital structure based on instruments that are truly loss absorbing, but will still be unable to avoid collapse if there is a large imbalance between the liquidity of the assets (loans, mortgages) it invests in and the funding used for those activities.

[1] Head of Risk Management, Jabre Capital Partners, Geneva.

[2] Department of Mathematics, Katholieke Universiteit Leuven.

[3] Professor, Department of Mathematics, Katholieke Universiteit Leuven.

[4] The ICB was created on 16 June 2010 by the UK government and is chaired by Sir John Vickers. The Commission has been asked to consider structural and related non-structural reforms to the UK banking sector to promote its financial stability.

[5] Australia and New Zealand Banking Group is an international bank with its headquarters in Melbourne, Australia.

[6] We use continuous interest rates and credit spreads throughout this document.

[7] The pricing used a market date of September 9, 2011. The Lloyds' share price was 30.14 pence and a volatility of 86% was used. The dividend yield was set equal to zero.

[8] Corcuera, J.M., De Spiegeleer, J., Ferreiro Castillo, A., Kyprianou, A.E., Madan, D.B. and Schoutens, W., 'Fast pricing of contingent convertibles under smile conform models', Working paper, 2011.

[9] Rubinstein, M. and Reiner, E., 'Unscrambling the binary code', *Risk Magazine 4*, 1991, pp.75–83.

[10] De Spiegeleer, J. and Schoutens, W., *Contingent Convertible (CoCo) Notes: Structure and pricing* (London: Euromoney Books, 2011).

[11] De Spiegeleer, J. and Schoutens, W., Pricing contingent convertibles: a derivatives approach, 2011. Available on www.ssmn.com

[12] De Spiegeleer, J., Schoutens, W. and Van Hulle, C., 'Cracking the coco pricing conundrum', *CreditFlux*, July 2011.

Chapter 8

Development finance for the private sector

Simon Jackson
African Development Bank

Private sector financing in MDBs

Origins

The original function of multilateral development bank (MDBs) was to provide long term concessional finance to governments and the public sector. As the development impact of promoting and financing the private sector was recognised, the World Bank created the International Finance Corporation (IFC) in 1956 to enable it to distinguish its public and private sector operations. In 1991, the European Bank for Reconstruction and Development (EBRD) was created to facilitate the transition of the eastern bloc countries from command to market economies. While responsible for both public and private sector investment, it was designed primarily to meet the needs of the latter.

The African Development Bank (AfDB), the Asian Development Bank (AsDB) and the Inter-American Development Bank (IADB) have developed private sector operations within their existing operations, rather than separately.

IFC's definition of a 'private sector' borrower limits the shares that may be held by governments or state entities to a minority. Other MDBs may regard state-owned companies as eligible, provided they are creditworthy in their own right.

The principal providers of development finance are as follows.

1 Multilateral development banks (MDBs), also sometimes referred to as international financial institutions (IFIs) including:
   - global, regional and continental institutions such as:
     - African Development Bank (AfDB);
     - Asian Development Bank (AsDB);
     - European Bank for Reconstruction and Development (EBRD);
     - Inter-American Development Bank (IADB); and
     - International Finance Corporation (IFC).
   - institutions specialising in sub-regional countries of operations, including:
     - Banque Ouest Africaine de Développement (BOAD);
     - Black Sea Trade and Development Bank;
     - Caribbean Development Bank;
     - Central American Bank for Economic integration (CABEI);

    - Corporación Andina de Fomento (CAF);
    - Development Bank of Southern Africa (DBSA);
    - East African Development Bank;
    - Eurasian Development Bank; and
    - Industrial Development Corporation (IDC).
  - institutions based around groups of donor nations, including:
    - European Investment Bank (EIB);
    - International Fund for Agicultural Development (IFAD);
    - Islamic Development Bank (IsDB);
    - Nordic Investment Bank (EIB); and
    - OPEC Fund for International Development (OFID).
2. Domestic development finance institutions (DFIs), established by their respective governments, including:
  - Australia – Australian Agency for International Development (AusAID);
  - Austria – Oesterreichische Entwicklungsbank AG (OeEB);
  - Belgium – Belgian Investment Company for Developing Countries (BIO);
  - Canada – Canadian International Development Agency (CIDA);
  - Denmark – Industrialisation Fund for Developing Countries (IFU);
  - Finland – Finnish Fund for Industrial Co-operation (Finnfund);
  - France – Promotion et Participation pour la Coopération économique (Proparco);
  - Ireland – Ireland Development Corporation;
  - Japan – Japan Bank for International Co-operation – JBIC and Japan International Co-operation Agency (JICA);
  - Germany – Deutsche Investions und Entwicklungsgesellschaft (DEG);
  - Netherlands – Nederlandse Financieringsmaatschappij voor Ontwikkelingslanden NV (FMO);
  - New Zealand – New Zealand Official Development Assistance (NZODA);
  - Norway – Statens Investeringsfond for Næringsvirksomhet i Utviklingsland (Norfund);
  - Spain – Compañia Española de Financiació n de Desarollo (COFIDES);
  - Sweden – Swedfund international AB (Swedfund);
  - Switzerland – Swiss Investment Fund for Emerging Markets;
  - United Kingdom – Department for international Development (DFID); and
  - United States – US Agency for International Development (USAID).

Investment criteria

As well as the ability of borrowers to repay their facilities, MBDs and DFIs analyse in detail the following aspects of private sector loan requests:

- development impact[1] – MBDs and DFIs model the economic as well as the financial return of their projects, to assess the wider effects on the community and society. This will include issues such as corporate governance, transparency, minority empowerment and gender equality. Development outcomes are re-assessed retrospectively during and after project completion;
- environmental and social – each institution has its own criteria, although these are substantially similar to the Equator Principles and the IFC Performance Standards. When working with more

than one development agency it is important to ensure that the environmental and social (E&S) consultant's terms of reference cover all the individual requirements;
- procurement – borrowers must demonstrate that all equipment and services being financed by the development agencies have been procured through a fair and transparent competitive tendering process. The standards are based on the spirit, rather than the letter, of the more exacting rules for public sector projects; and
- 'additionality' – the mandates of development agencies require that their funds should be additional to, rather than substitute, those of commercial lenders, to avoid 'crowding out' or displacing banks and other investors. 'Additionality' can be demonstrated by taking political or commercial risk, accepting security or lending for tenors that would be unacceptable to commercial investors. Additionality should not be achieved through pricing – see 'B-loan terms and conditions'.

Preferred creditor status

Country risk in loans extended by MDBs is partially mitigated by their de facto, or in certain cases de jure, creditor status (often referred to as preferred creditor status (PCS)) derived from their respective treaties or articles of establishment. While this status varies between the MDBs, each considers itself to have PCS in respect of loans made to and in its member countries, which are signatories to the treaty (or similar multipartite state-level instrument) by which it was established.

PCS is not directly enforceable and is subject to the interpretation of the individual establishment documents, but is generally held to provide that:

- private sector debt obligations to an MDB are not subject to rescheduling where the borrower's inability to service its debt is due to a general foreign exchange shortage in the borrower's country; [2]
- borrowers whose businesses are conducted in local currencies have preferential access to foreign exchange for debt service of loans from MDBs;
- loans from MDBs are not subject to withholding tax; and
- defined treatment under nationalisation.

The DFIs of individual donor countries are established under domestic laws only, to which the countries benefiting from their products and services are not subject. Any preferential status of the debts extended by DFIs is therefore subject to bilateral arrangements between the governments of the lender and the borrower.

A/B-loan co-financing

The mobilisation of external financing resources is a fundamental objective of all MDBs. While their capital resources are extensive, bolstered by their access to the bond markets on the basis of their credit ratings, they can only fund a small proportion of total development finance needs directly.

The principal instrument for mobilising external financing from commercial investors (bank and non-bank) is through the A/B loan mechanism. MDBs operating such participation schemes include African Development Bank, Asian Development Bank, European Bank for Reconstruction and Development, Inter-American Development Bank and International Finance Corporation.

The MDB, as lender of record, extends a loan to a borrower in two parts: the A-loan (provided by the MDB for its own account); and the B-loan funded by participations from commercial lenders without recourse to the MDB.

Because the MDB remains the lender of record, the B-lenders have the benefit of the MDB's preferred creditor status. There is no consistent approach between investors of the credit grading and risk capital allocation of B-loans relative to conventional facilities, although:

- the Bank for International Settlements opined in 2004 that B-loan participations through MDBs may be treated as local currency obligations for the purposes of risk asset allocation and country provisioning. Thus, for example, if a borrower has local currency rating of A2/A but an international rating of Baa1/BBB+ (possibly constrained by the rating of its government), a B-lender may, if it wishes, grade a foreign currency-denominated B-loan as high as A2/A for risk capital and portfolio management purposes;
- some investors treat B-loans favourably for the purposes of country limit allocation, counting only a proportion or using categories applicable to mitigated risk, akin to the booking of export credit facilities; and
- other investors may not differentiate the booking of B-loans, but draw comfort from the perceived benefit of lending in association with an MDB, in the belief that governments will be reluctant to prejudice their access to MDBs' public sector lending programmes by interfering (whether through, inter alia, nationalisation, withdrawing concessions or land rights, or inequitable taxation or regulation) with the businesses of private sector borrowers.

No formal rule exists for the maximum amount of commercial lending through a B-loan that can have the benefit of PCS, but AfDB, EBRD and IFC all generally maintain a minimum ratio of A-loan to B-loan of 1:3.

Although PCS is intended to give a degree of comfort to commercial B-loan providers against country risk, MDBs make no representation as to its future efficacy and expressly do not guarantee B-lenders against country or commercial risk; neither do they guarantee to borrowers the performance and obligations of the B-loan providers. MDBs are not required to count the amount of B-loans against country or sector limits.

Eligible B-loan investors

Each MDB has its own detailed criteria for establishing the eligibility of individual investors to participate in its B-loan programme, but these broadly share the following concepts:

- investors may be bank or non-bank;
- they must be viable and commercially operated;
- the following are generally not eligible:
  - banks incorporated or with head office in the country where the borrower is incorporated or the project is located. PCS provides a degree of political risk mitigation, which would be inappropriate against the country responsible for the lender's own supervision or regulation;
  - export credit agencies;

  - governmental, quasi-governmental, or multilateral agencies. B-loan investors may be government-owned, provided that they are operated independently and commercially, and the investment is not being made in the national interests, such as a condition for the award of an export contract; and
  - project sponsors and off-takers.
- lenders generally require an investment grade rating (to mitigate against the risk of a lender being unable to fulfil its funding obligations) although this may be waived by the MDB.

B-loan terms and conditions

Status: the rights of A- and B-lenders against the borrower rank *pari passu*. In the event of only partial settlement of debt service obligations by the borrower, including recoveries following default, monies are allocated to all lenders pro rata to amounts receivable. Security is registered in the name of the MDB as lender of record.

Tenor: in return for the free risk mitigation of the PCS, B-loan providers are typically asked to lend for slightly longer tenors than they might for conventional facilities. The tenor of the A-loan, lent by the MDB for its own account, is frequently longer than that of the B-loan. There are no rules for the maximum difference between the tenors of related A- and B-loans, although in project financing (especially for infrastructure with predetermined revenue streams) a substantially accelerated repayment schedule for the B-loan will limit the cash flow available to service the A-loan.

Pricing: most MDBs price their own facilities (whether or not they have associated B-loans) by reference to market levels. Where the tenors of A- and B-loans are different, the pricing should be consistent, the margin of the A-loan being determined by the extrapolation of a notional curve of tenor against yield.

Due diligence: the MDB will typically prepare an information memorandum, on the borrower's behalf, for prospective B-loan providers and share reports from its consultants and advisers. Like the mandated lead arrangers of a conventional syndicated loan, the MDB makes no representation as to the completeness or accuracy of the information provided.

Co-arrangers: the MDB may appoint one or more commercial lender to act as co-arranger of the B-loan.

Voting rights: B-loan participants have voting rights in the event of the need for waivers or amendments to the loan documentation. The procedures for this of individual MDBs vary slightly, but unanimity among the B-lenders is generally required to change any of the 'money terms' (tenor, pricing, repayment schedule), while changes to conditions precedent, security, ownership and control, financial covenants or support arrangements require majority consent. A majority of B-loan providers may be required for acceleration of the B-loan following an event of default.

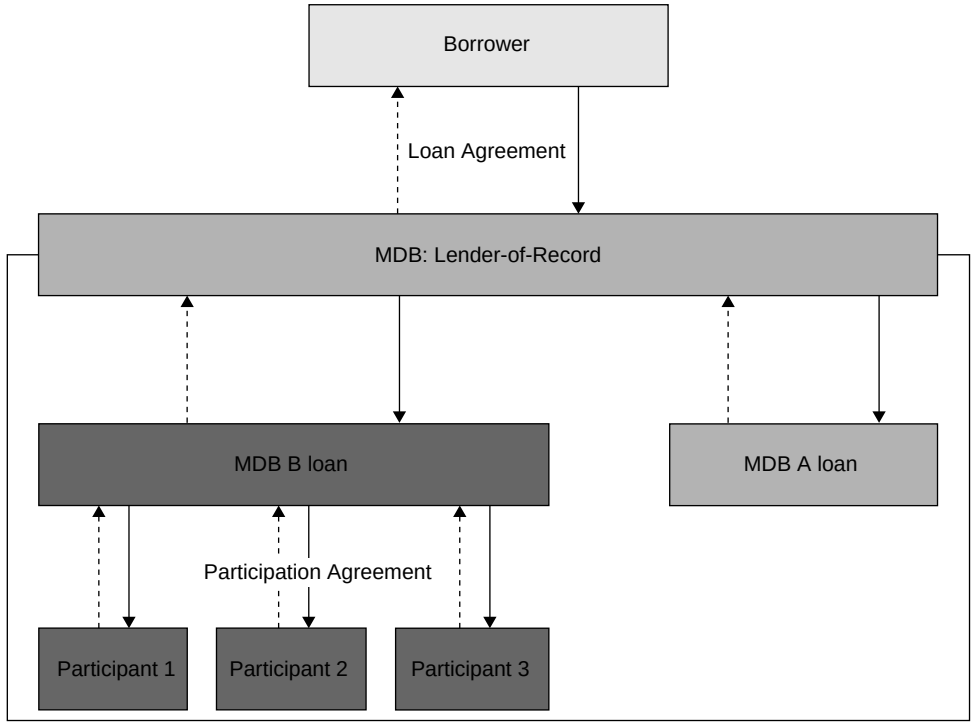
Documentation: the MDB enters into a loan agreement in the amount of both the A- and B-loans. The B-loan providers enter into a participation agreement with the MDB, which the borrower is aware of and acknowledges, but not party to, and acknowledges, the existence of the B-loan.

Political risk insurance (PRI): nothing precludes B-lenders from obtaining private sector PRI to reinforce the political risk mitigation of PCS. This may be arranged up front by the MDB and be made available to all providers, or be procured by individual lenders without reference to the MDB. The terms or most PRI policies require the insurer to have the right to step into the shoes of a lender following a claim, which is only possible if the insurer is itself an eligible B-loan participant.

The arrangement of the A/B-loan structure may thus be represented as shown in Exhibit 8.1.

Exhibit 8.1

The arrangement of the A/B-loan structure



Source: Author's own

MBD/DFI syndication

Development agencies have syndicated facilities between themselves for many years. During the financial crisis starting in 2007, the level of commercial investment in B-loans declined substantially as lenders retreated, often at the behest of their governments and regulators, to their home markets. While overall financing volumes decreased over this period, the proportion of the debt provided by, and syndicated between, development agencies increased significantly.

Without the market conventions developed over a number of decades between commercial lenders, the agencies have had to establish new bases of co-operation, particularly in accepting the findings of due diligence performed by one agency on behalf of others, often called 'mutual reliance'. Commercial lenders take it for granted that the adviser or one or more mandated lead arranger will prepare an information memorandum or package which will be signed off by the borrower as accurate. This fundamental principle of syndicated lending is not ingrained in the development agencies, initially leading to duplication of due diligence, effort and expense.

A number of different approaches have subsequently been adopted to address this:

- EBRD and IFC tend to syndicate facilities to other MBDs and DFIs substantially in the manner of a commercial syndication, with clearly defined arrangers and participants, with the arranger presenting the findings of the due diligence effectively as a fait accompli. IFC has sought to formalise the relationship between arranger and participants (substantially conforming with commercial lending practice) with a series of Master Co-operation Agreements, entered into bilaterally with other agencies;
- informal arrangements such as the African Financing Partnership (including AfDB, DEG, DBSA, EIB, IDC and IFC and Proparco) seek to provide a distribution platform by sharing opportunities and co-ordinating due diligence to minimise duplication of effort; and
- more formal arrangements such as that between DEG, FMO and Proparco entail the sharing of the analysis and conclusions, as well as the findings, of due diligence. This takes mutual reliance further than in the commercial sector.

MDBs and DFIs typically have their own documentation requirements, so it is frequently impracticable for them to lend under a common loan agreement. In these circumstances the majority of the provisions of the financing are contained in a common terms agreement, with each lender signing its own short-form loan agreement with the borrower.

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[1] EBRD prioritises 'transition impact'.

[2] In practice, commercial A/B loan co-financings through MDBs in countries such as Russia and Argentina, have been excluded from sovereign debt rescheduling.

Chapter 9

Islamic finance: where is the market going?

David Roberts
Eiger Trading Advisers

Introduction

Islamic finance comprises various different instruments, the most widely known being *sukuk* and *murabaha*. Syndicated credits have not been widely used by Islamic banks thus far. There are good reasons for this slow development, but more importantly, the potential now exists for Islamic banks to play a much more active role than previously. This chapter seeks to explain the basic tenets of Islamic financing, and looks into why activity has been subdued, and why the market might now develop at a much faster pace.

Principles of Islamic financing and *riba*

Islamic financing is different to the conventional financing markets due to the special principles that govern it, the most widely known being the prohibition of interest, which rules out the use of debt-based financial instruments. Equal emphasis is placed on ethics, moral, social and religious dimensions contrary to the sole focus on economic and financial aspects as in the conventional market. Any predetermined or fixed rate that is applied to the maturity and the principal of an underlying debt instrument is believed to be '*riba*', which means excess and is therefore prohibited. As interest is seen as a cost that is not tied to the achievements in the business it is not seen as social, as social justice would mean that rewards and losses would be divided in an equitable fashion.

The next principle is about risk sharing. This principle is a result of the first principle, the prohibition of interest. As the lenders become investors, because they cannot charge interest, they join the productive business. Therefore they share in the risks of the business for a share in the profits.

The next principle describes money as 'potential capital' as long as it is not invested in productive businesses and therefore it is not entitled to the time value of money. The Islamic financial systems recognise the time value of money only when money acts as capital in productive activities. In addition, Islamic financial systems prohibit '*gharar*', or speculative behaviour, which incorporates transactions that involve extreme uncertainties and risks. Consequently gambling, or '*maysir*', for example, is forbidden. Another well known principle is that the financing of 'sinful activities' such as the production of alcoholic beverages, gambling, weapons, or pornography is forbidden.

Although there are several conceptual differences between an Islamic syndicated financing and a conventional syndicated loan, ultimately both rank *pari passu* with other senior debt obligations

of the borrower and cost in terms of credit spread. To qualify as Islamic, the supporting opinion of a Shariah scholar or Shariah board must be given.

Islamic syndicated financing is the participation by a group of institutions in a joint financing operation through one of the Shariah permitted modes of financing, which are the profit and loss sharing principles known as '*mudarabah*' and '*musharaka*', or the mark-up principles known as '*murabaha*' and '*ijara*'.

Many Islamic syndicated credits have been arranged, and have often been structured around the *murabaha* concept which involves an underlying asset such as a commodity being sold to the obligor on deferred payment terms. The syndicate of participating banks enters into an investment agency agreement with one of the mandated lead arrangers acting as '*wakeel*' much like the conventional facility agent. This means that conventional and Islamic finance houses can work together on the same deal as long as all the tenets of Shariah are complied with. Some scholars however have been reticent about the *murabaha* structure of late, but it is still widely used.

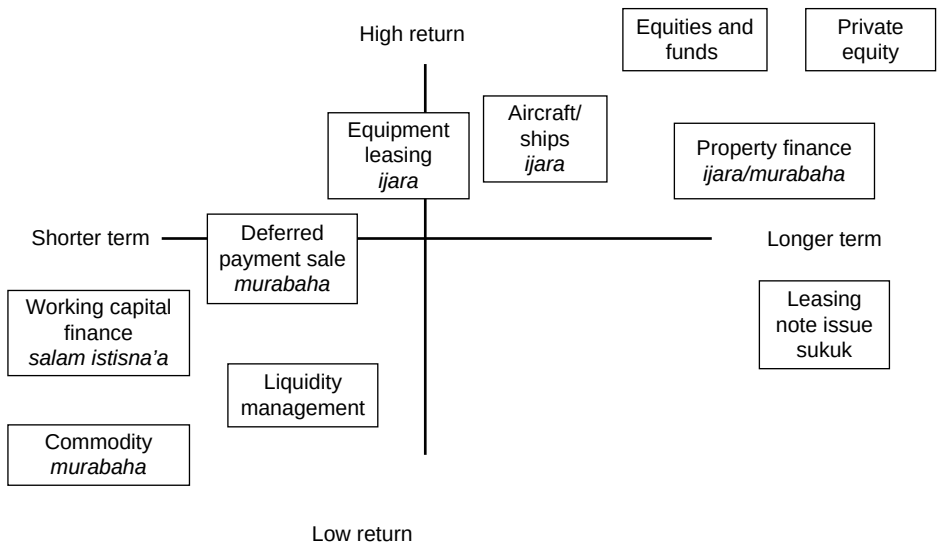
Although simple, there is a perceived opacity about Islamic financing which has limited its appeal as long as conventional alternatives have been there.

Islamic financing structures

There are many different Islamic financing structures ranging from low return commodity *murabaha* to higher return *ijara* structures. The basic types and their salient features are shown in Exhibits 9.1 to 9.6.

Exhibit 9.1

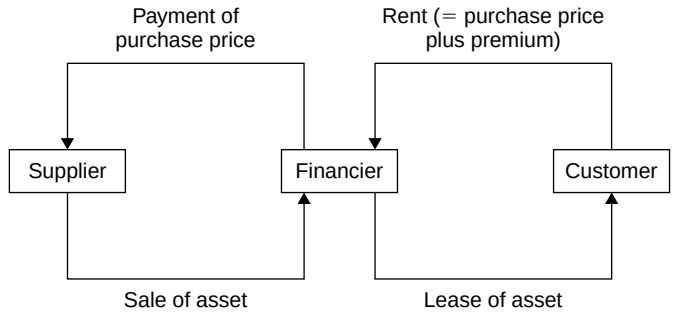
Islamic finance asset types



Source: Eiger Trading Advisers; author's own

Exhibit 9.2

Simple *ijara* structure

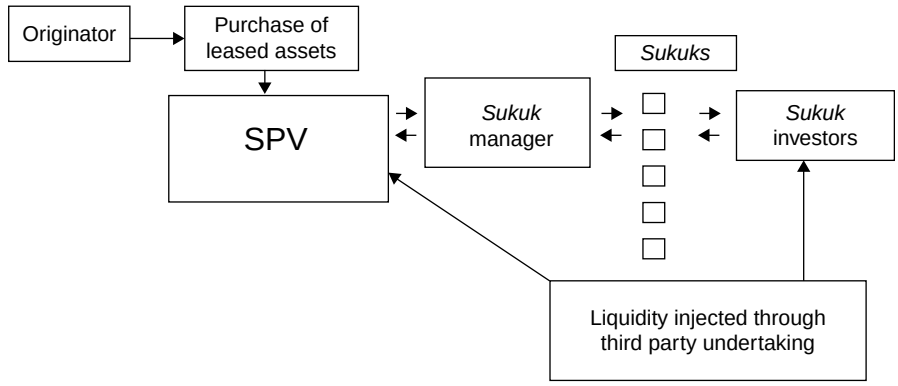


- An *ijara* is a lease and can be used to provide asset finance.
- The supplier in the above diagram, a subsidiary of the customer, will transfer to the financier the *usufruct* rights of the assets. Legal ownership of the underlying asset remains with the supplier.
- The financier pays the supplier and leases the asset to the customer.
- The customer makes regular rental payments to the financier while the asset is in use. The payments can be fixed or floating, typically calculated by reference to a benchmark, such as Libor, plus a margin.
- In the structure above, a syndicate of banks can provide commitments/funding to the financier where required.
- A purchase undertaking is given by the supplier to purchase the assets at maturity or in an event of default, at the par value of the outstanding amount of the *ijara*.

Source: Author's own

Exhibit 9.3

***Ijara* (leasing) *Sukuk* programme investment structure**

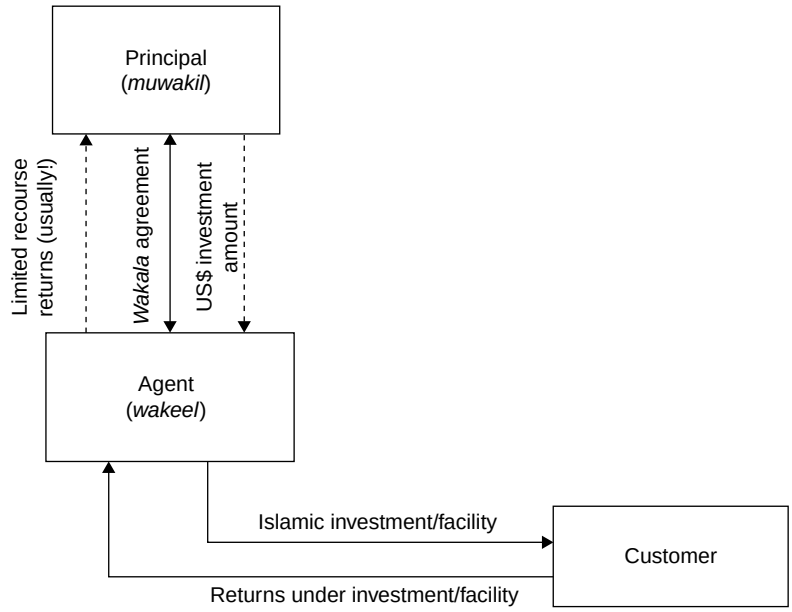


- Special purpose company (SPV) acquires leased assets.
- Investors acquire percentage of ownership through *Sukuk* manager.
- Manager issues securities (*Sukuk*) to investors.
- In asset backed structures a liquidity feature can be included, that is, redemption facility through *Sukuk* 'put' option with a purchase undertaking from a third party.

Source: Eiger Trading Advisers; author's own

Exhibit 9.4

Wakala (investment agency)

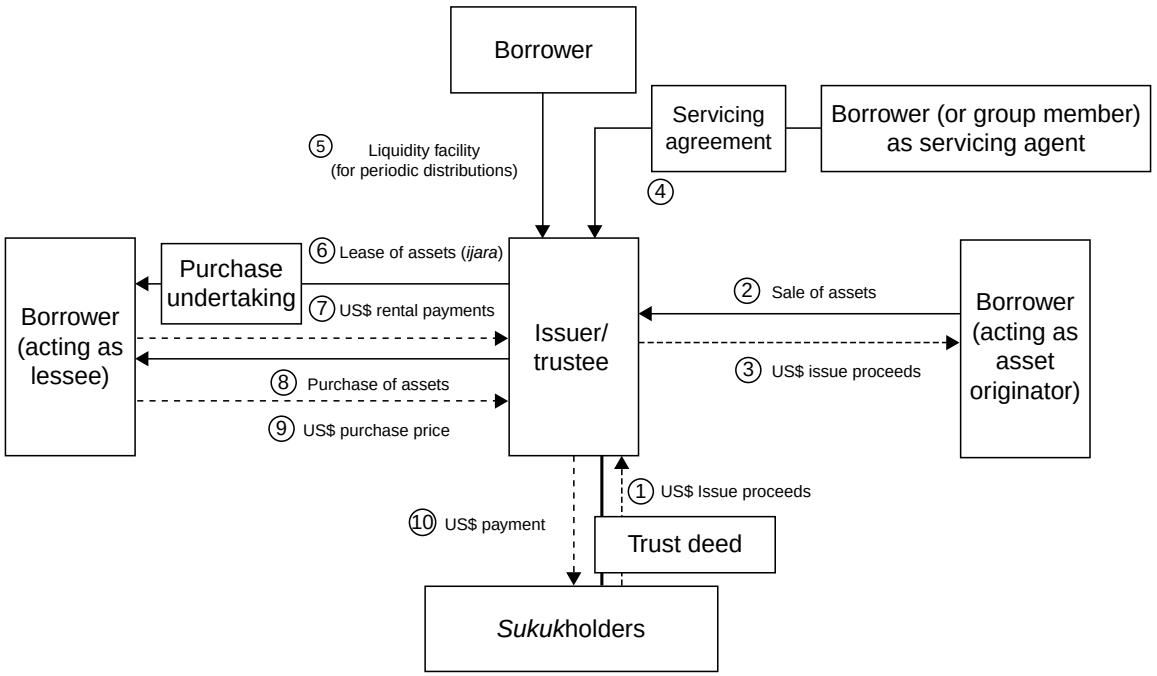


- *Wakala* means agency and is used where the principal (the *muwakil*) appoints an agent (the *wakeel*) to undertake specified activities on behalf of the *muwakil*. In the context of an investment, the principal appoints the agent to manage investments on its behalf.
- The agent is paid an agency fee and need not participate in the profits generated by the investment. However, in some investments the agent is given a share of the profits by way of an incentive.
- The principal must bear all losses borne by the investment in the absence of any fraud, negligence, misconduct or breach of agency by the agent.

Source: Eiger Trading Advisers; author's own

Exhibit 9.5

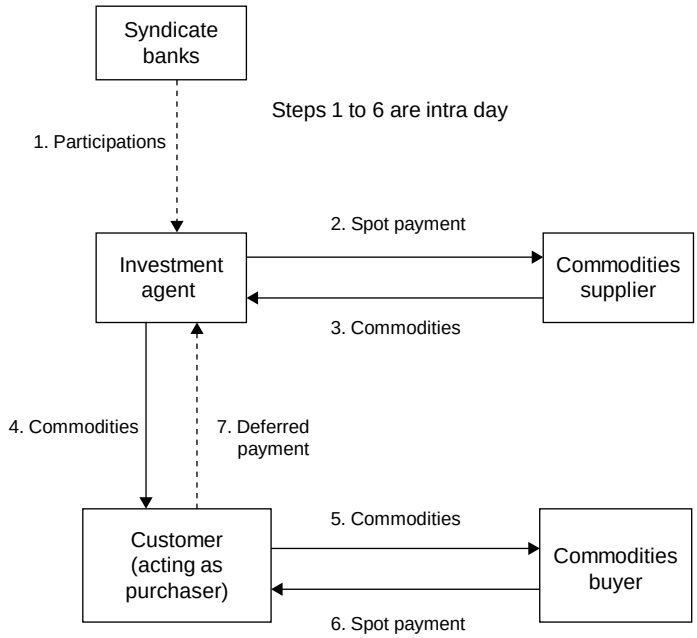
***Wakala* (investment agency) *sukuk* structure**



Source: Eiger Trading Advisers; author's own

Exhibit 9.6

Commodity *murabaha* (or *tawarruq*) structure



- The entity requiring financing purchases a commodity from the financier, often through an agent, on deferred payment terms.
- The customer then immediately sells it at spot to a third party.
- The customer has until the end of the deferred payment period to pay the original purchaser (the financier) the agreed cost-plus price.
- A commodity *murabaha* transaction is a debt based transaction and is therefore not tradeable but can be transferred at par value.

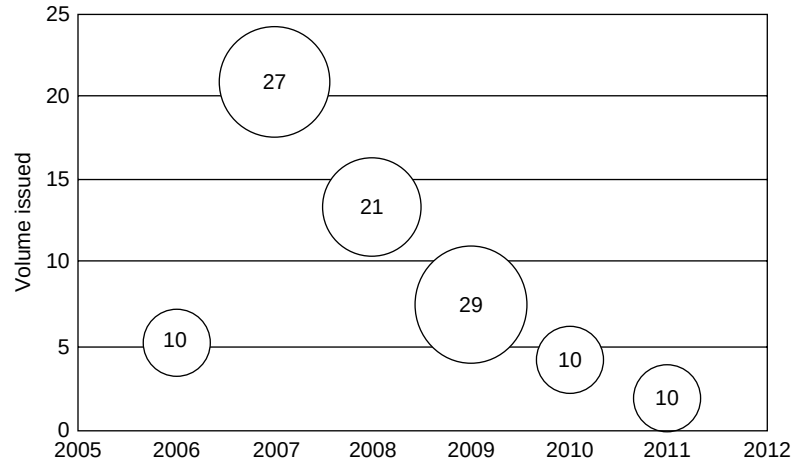
Source: Eiger Trading Advisers; author's own

Islamic financing: market size

On taking a look at the statistics, we can see that the crisis of 2007–2008 severely curtailed activities in the Islamic financing market. Just as annual issuance had steeply increased to US$20 billion plus in 2007 and number of deals rose to 27, volumes and number of deals fell sharply and have barely recovered since (see Exhibit 9.7). At least for 2011, there is hope that the curve can return to positive territory.

Exhibit 9.7

Islamic syndicated credit issuance in US$ billion and by number of deals



Source: Bloomberg; Eiger Trading Advisers

Post the global financial crisis of 2007–2008 it is disappointing to observe that despite all the latent liquidity that currently exists with Islamic financial institutions, deals being printed in the Islamic syndications market are very few and far between.

We can also see that the Islamic market is tiny when compared to the conventional market, and represents less than 1% in terms of volume for Europe, Middle East and Africa (EMEA) (see Exhibit 9.8).

Exhibit 9.8

Islamic versus conventional financing

	Islamic		*Conventional*	
Year	*Issuance US$ billion*	*Number of issues*	*Issuance US$ billion*	*Number of issues*
2006	5.1768	10	1050	1234
2007	20.89599	27	1444	1423
2008	13.34481	21	682	760
2009	7.47458	29	457	614
2010	4.25032	10	760	896
2011	1.78	10	583	637

Source: Bloomberg; Eiger Trading Advisers

Why is this? Quite simply, the potential for Islamic financing has been slow to catch on with conventional and Islamic borrowers. Islamic banks were severely buffeted by the 2007–2008 financial crisis, and have been hampered just as much by cheaper conventional financing options being readily available to their clients. This landscape, for reasons mentioned below, is now beginning to change in their favour.

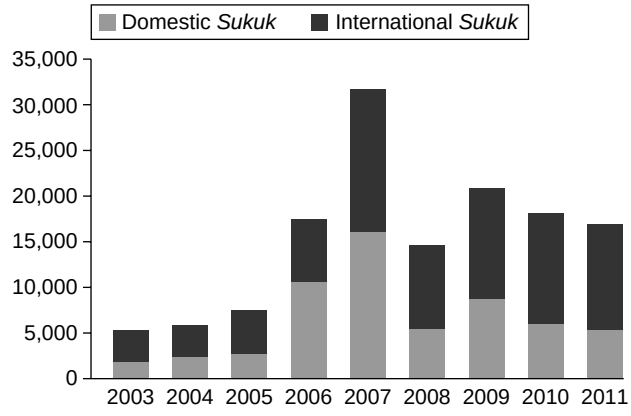
We should also factor in that, in the aftermath of the global financial crisis, international bond and *Sukuk* issuance has replaced a large volume of business that historically was undertaken by the loan market. Eurozone banks are still repairing their balance sheets and very reluctant to lend other than to core clients. Many Islamic banks however are the exception and are still open for new business as long as it carries the Shariah 'hallmark'.

Sukuk issuance

Exhibit 9.9 shows *Sukuk* issuance has been reasonably steady but not yet reached the volume peak in 2007. With an expected US$1 trillion of infrastructure spend alone over the next 10 years in the Middle East, and more than US$250 billion of Economic Transformation Plan spend in Malaysia over a similar period, there should be no shortage of opportunities for Islamic banks or those operating Islamic windows to play a major role in financing or arranging financing for these assets.

Exhibit 9.9

International versus domestic *Sukuk* issuance



Source: Bloomberg; Eiger Trading Advisers

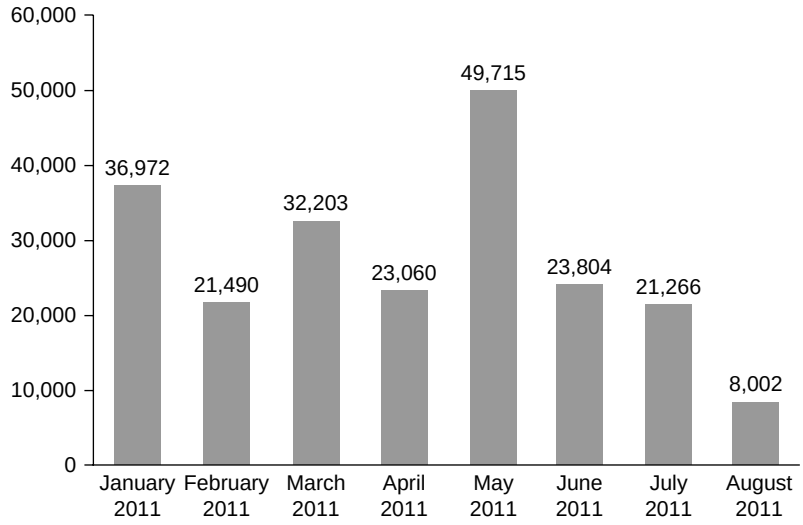
Whilst conventional financing will play its part, we can expect to see high volumes of *Sukuk* issuance and Shariah compliant syndicated loans. With conventional banks becoming further constrained in their appetite to lend by seemingly endless rounds of regulatory capital demands (Basel III, home regulatory as well as EU and SIFI requirements, and comments from the IMF for increased capital

levels), plus supervisory changes such as the UK ring-fencing of retail businesses from investment banking, and Solvency II being introduced for insurance companies, one would expect the Islamic banks to be well positioned.

Borrowers anxious to tap into this alternative source of liquidity should take note, particularly as conventional corporate bond issuance has slowed right down due to market turbulence and uncertainties in the Eurozone. European corporate bond issuance fell from just under US$50 billion in March 2011 to just US$8 billion in August 2011. As at 30 August 2011, there has been no 'blue chip' corporate issuance in the Eurobond market since 22 July 2011.

Exhibit 9.10

2011 Investment grade Eurobond issuance



Source: Dealogic

Uncertainty in the bond markets is good for the loan bankers and will drive borrowers to the loan markets as has often been the case before. Loan bankers can expect an increase in new business if the Eurobond markets remain closed. *Sukuk* issuance is also likely to increase.

Islamic banks have *not* been immune from the financial crisis. On the contrary, many have been affected by the failures of the Saad Group, Algosaibi, and Dubai World. In Dubai real estate prices have plunged more than 60% since 2007. Local and international banks suffered mainly due to their exposure to a relatively small number of names connected to the property sector. With the worst over, diversification of asset classes and sectors is behind the drive for new business by most of the Islamic banks. Real world assets, particularly the finance of trade and inventories for Shariah compliant commodities to and from the region is driving business forward.

Central banks in the MENA region have also reacted, and new regulatory measures have been taken to help safeguard banks against further downturns. This leaves the banks well capitalised, with many banks carrying a Tier 1 ratio of 15% and no longer relying on Tier 2 to absorb losses.

A sign of the returning health to the Middle East markets was the announcement by Investment Corporation of Dubai, the investment arm of the Government of Dubai that it will repay in full a US$4 billion debt facility due through internal sources. This turned out to be bad news for syndicated loan bankers who had arranged and oversubscribed a refinancing which included a US$1.5 billion Islamic tranche. A good show of Islamic liquidity, however.

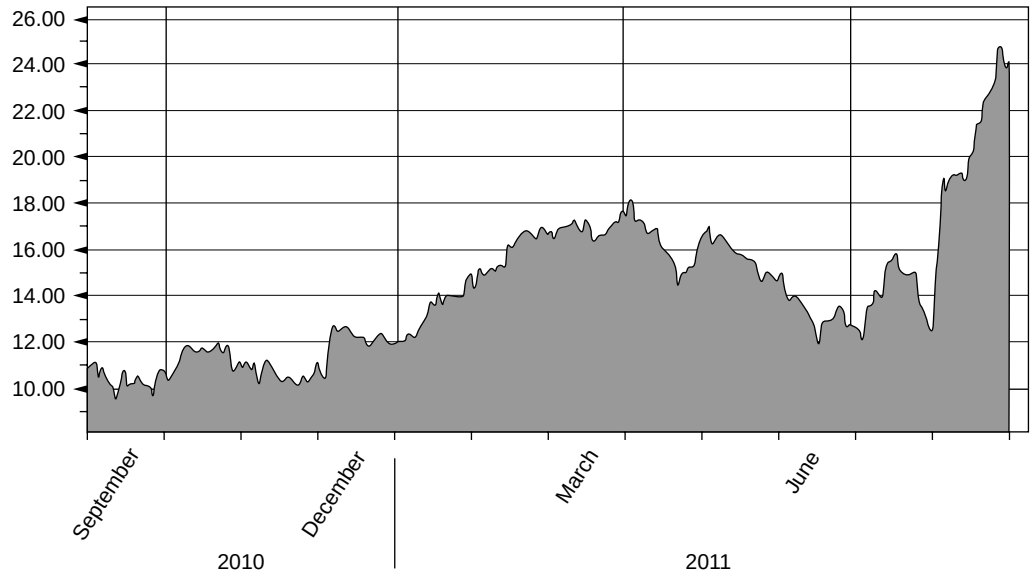
A new economic crisis?

The Islamic banks have one important advantage over their Eurozone counterparts: they are not contaminated by large holdings of Eurozone debt. A recent report into 91 banks from the Eurozone and their exposure to sovereign debt highlighted the problem. Their exposure to Italy, Greece, Portugal and Spain alone amounted to €733 billion. And with a new global economic crisis seemingly to be developing, this is likely to further weaken conventional banks.

Exhibit 9.11 shows the Libor/overnight index spread (OIS) for the US dollar and illustrates the current lack of confidence in the interbank market.

Exhibit 9.11

US$ Libor/OIS spread



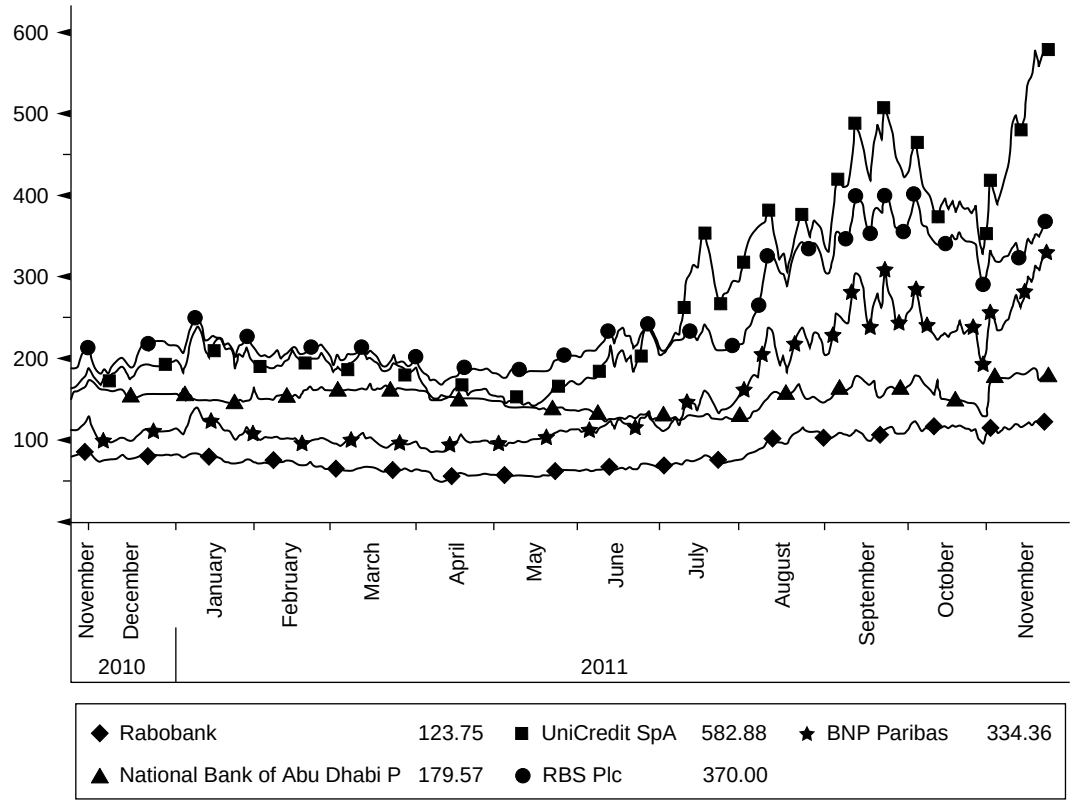
Source: Bloomberg

The latest credit default swap (CDS) charts as well as the rise in the European Central Bank (ECB) funding windows, and the spike in the OIS/Euribor spread are all indicating that banks are losing confidence again and their willingness to lend to each other is actually back to levels last seen at the height of the 2008.

Exhibit 9.12 illustrates the CDS spreads of a cross section of banks, showing the recent spike for eurozone banks, and relatively flat line for some of the Gulf Co-operation Council (GCC) banks.

Exhibit 9.12

CDS spreads of eurozone and GCC banks



Source: Bloomberg

Arrangers and bookrunners

With the ranking of the top 10 bookrunners varying considerably over the last five years, there are no truly established leaders in the Islamic syndicated lending market. We have seen Al Rajhi,

Noor Islamic Bank, and Dubai Islamic Bank high up in the bookrunner tables as well as RBS and BNP Paribas in the last few years. Standard Chartered and HSBC however have been the most consistent over the last five years. Citibank leads the 2011 table of bookrunners so far (see Exhibit 9.13).

Exhibit 9.13

Bookrunner league table 2011 (YTD)

Bank	*Rank*	*Market share (%)*	*Amount US dollar (million)*	*Issues*
Citi	1	27.6	491.54	5
HSBC Bank PLC	2	13.1	232.92	1
RBS	2	13.1	232.92	1
Samba Financial Group	2	13.1	232.92	1
Standard Chartered PLC	5	12.1	216.2	3
Arab Banking Corp	6	7.5	133.7	3
Noor Islamic Bank	7	4.3	76.2	1
National Bank of Abu Dhabi	7	4.3	76.2	1
Abu Dhabi Islamic Bank	9	3.8	68.06	1
BNP Paribas Group	10	1.3	22.5	1
Total YTD			1783.16	

Source: Bloomberg; Eiger Trading Advisers

Industry breakdown

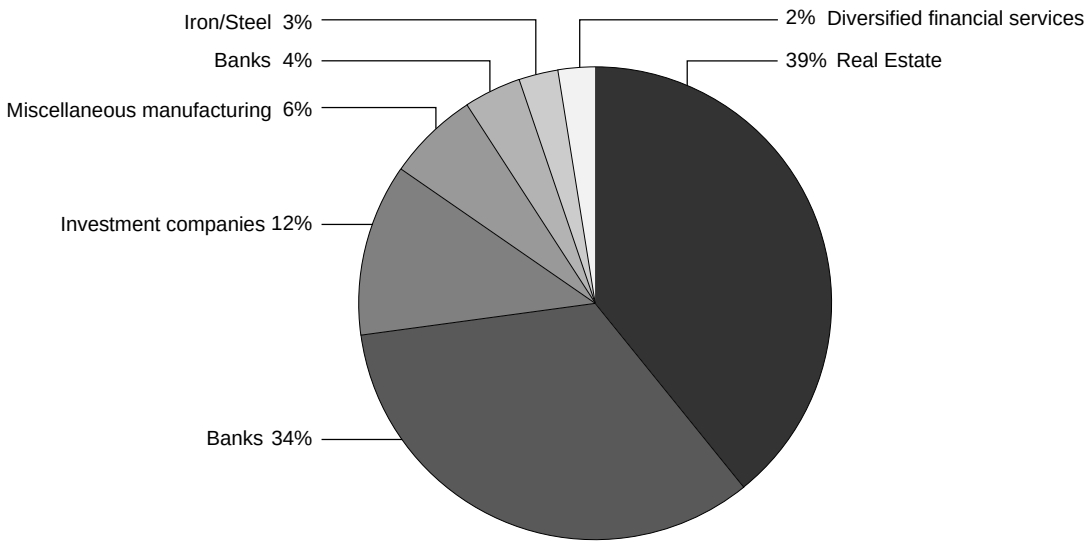
Over the last five years the data shown in Exhibit 9.14 has not changed apart from the growth of Islamic funding to the real estate sector which represented only 22% of the market in 2007.

Islamic banks in London

Several Islamic banks are present in the UK, namely: Qatar Islamic Bank, Gatehouse Bank, European Islamic International Bank, Bank of London and the Middle East, and Islamic Bank of Britain. Their progress to date mirrors the market elsewhere for Islamic finance. Great potential but the market has not yet taken off. These banks are providing wholesale and traditional merchant banking services to an increasing number of clients who typically are seeking new sources of liquidity. Whilst Shariah compliance is paramount, new borrowers are increasingly willing to consider the Islamic documentation as a means to widen their funding base. Activity is expected to increase both in *Sukuk* issuance and structured/syndicated financing for UK issuers for 2011 and beyond.

Exhibit 9.14

Industry issuers 2011 (YTD)



Source: Bloomberg; Eiger Trading Advisers

So where will the market be in five years?

There are many good reasons to believe that Islamic financial institutions will play a more prominent role in global finance due to the reduced lending appetite of conventional banks. The Islamic financing market can expect much higher volumes over the next years both in *Sukuk* issuance and syndicated financing; this will grow the market share of Islamic finance to a more respectable level. The consequent profitability of Islamic financial institutions will drive their expansion into areas as yet untapped, and perhaps the concept of a *global* Islamic bank is not beyond our imagination.

Chapter 10

Credit ratings

Alex Griffiths
Fitch Ratings

Introduction

Credit ratings provide an opinion on the relative ability of an entity to meet financial commitments. They have been used by investors as indications of the likelihood of receiving their money back in accordance with the terms on which they invested since the early years of the 20th century, and the three major international credit rating agencies all bear the names of the original industry pioneers – Messrs Poor (Standard & Poor's), Moody (Moody's Investor Services) and Fitch (Fitch Ratings). The now-familiar AAA-D rating scale was introduced by Fitch in 1924 to meet the growing demand for independent analysis of financial securities.

Credit ratings are provided primarily by independent companies which assign ratings across all credit asset classes globally. Issuers generally choose which agency or agencies to use on the basis of the degree of investor/lender acceptance of those ratings in the markets in which they seek to raise debt finance, and the quality of service they expect to receive from the agency: both in speed of completion of rating process and the ongoing relationship.

The ratings are generally freely available on the agencies' websites or from third-party data providers such as Bloomberg and Reuters. The rating methodologies are also publicly available on the agencies' websites.

Agencies may also assign ratings to satisfy investor demand or when seeking to establish breadth of coverage in a new market. Fitch Ratings currently maintains global coverage of over 6,000 financial institutions, 2,000 corporate issuers, 100 sovereigns, 500 project and infrastructure finance transactions, and 200 sub-sovereigns and maintains surveillance on over 9,000 structured finance transactions.

What are credit ratings?

Fitch Ratings' credit ratings provide an opinion on the relative ability of an entity to meet financial commitments, such as interest, preferred dividends, repayment of principal, insurance claims or counterparty obligations. Credit ratings are used by investors as indications of the likelihood of receiving the money owed to them in accordance with the terms on which they invested. The agency's credit ratings cover the global spectrum of corporate, sovereign (including supranational and sub-national), financial, bank, insurance, municipal and other public finance entities and the securities or other obligations they issue, as well as structured finance securities backed by receivables or other financial assets.

The terms ‘investment grade’ and ‘speculative grade’ have established themselves over time as shorthand to describe the categories ‘AAA’ to ‘BBB’ (investment grade) and ‘BB’ to ‘D’ (speculative grade). The terms ‘investment grade’ and ‘speculative grade’ are market conventions, and do not imply any recommendation or endorsement of a specific security for investment purposes. Investment grade categories indicate relatively low to moderate credit risk, while ratings in the speculative categories either signal a higher level of credit risk or that a default has already occurred.

Credit ratings express risk in relative rank order, which is to say they are ordinal measures of credit risk and are not predictive of a specific frequency of default or loss. Fitch’s opinions are forward-looking and include analysts’ views of future performance.

Fitch Ratings’ credit ratings do not directly address any risk other than credit risk. In particular, ratings do not deal with the risk of a market value loss on a rated security due to changes in interest rates, liquidity and other market considerations. However, in terms of payment obligation on the rated liability, market risk may be considered to the extent that it influences the ability of an issuer to pay upon a commitment. Ratings nonetheless do not reflect market risk to the extent that they influence the size or other conditionality of the obligation to pay upon a commitment (for example, in the case of index-linked bonds).

In the default components of ratings assigned to individual obligations or instruments, the agency typically rates to the likelihood of non-payment or default in accordance with the terms of that instrument’s documentation.

Restricted default (RD) ratings indicate an issuer that in Fitch Ratings’ opinion has experienced an uncured payment default on a bond, loan or other material financial obligation but which has not entered into bankruptcy filings, administration, receivership, liquidation or other formal winding-up procedure, and which has not otherwise ceased operating. This would include:

- the selective payment default on a specific class or currency of debt;
- the uncured expiry of any applicable grace period, cure period or default forbearance period following a payment default on a bank loan, capital markets security or other material financial obligation;
- the extension of multiple waivers or forbearance periods upon a payment default on one or more material financial obligations, either in series or in parallel; or
- execution of a distressed debt exchange on one or more material financial obligations.

Default (D) ratings indicate an issuer that in Fitch Ratings’ opinion has entered into bankruptcy filings, administration, receivership, liquidation or other formal winding-up procedure, or which has otherwise ceased business. Default ratings are not assigned prospectively to entities or their obligations.

The rating process

At the start of the rating process, each rated entity or transaction is assigned to a primary analyst, who works with the support of a secondary analyst. For corporate and public finance ratings, the primary analyst is responsible for leading the analysis and formulating a rating recommendation, and is typically also responsible for the continuous surveillance of the rating during the life of its publication. While the primary analyst for structured finance transactions is also responsible for

leading the analysis and formulating the initial rating recommendations for the transaction, responsibility for ongoing surveillance of the transaction is typically transferred to a dedicated surveillance analyst. However, for some groups, day-to-day surveillance activities can remain with the primary analyst. Ratings are assigned and reviewed using a committee process.

Monitoring ratings

Fitch's ratings are monitored on an ongoing basis, unless they are of a point-in-time nature. Analysts in all groups will initiate a rating review whenever they become aware of any business, financial, operational, or other information that they believe may reasonably be expected to result in a rating action, consistent with the relevant criteria and methodologies.

Fitch's surveillance function incorporates the use of market indicators, such as bond and credit default swap (CDS) pricing information; 'non-traditional' indicators, such as corporate governance scores; and a broader array of cash flow, systemic risk, and operational risk analyses.

Input from rated entities

Fitch's analysis and rating decisions are based on information received from sources known to it and believed by Fitch to be relevant to the analysis and rating decision. This includes publicly available information on the issuer, such as company financial and operational statistics, reports filed with regulatory agencies, and industry and economic reports. In addition, the rating process may incorporate data and insight gathered by analysts in the course of their interaction with other entities across their sector of expertise. Information provided to one analytical group may be shared internally with another group, if it is considered relevant.

The rating process also may incorporate information provided directly by the rated issuer, arranger, sponsor, or other third party.

Corporate finance ratings

Non-financial corporate ratings

Qualitative inputs

Corporate analysis is most heavily influenced by qualitative inputs. An assessment of the industry in which an entity operates and factors specific to its operations allow an overall assessment of business risk. This assessment of business risk is used both to calibrate the financial metrics appropriate to a particular rating and to determine approximate caps for a rating – Fitch will not assign the highest rating levels to corporates with an abnormally high business risk, even if they display very strong financial profiles.

In performing this qualitative analysis, Fitch explicitly considers the following.

- *Industry profile* – including considerations such as: is the industry in a decline or growth phase, is it cyclical, are there high barriers to entry, and social, demographic and regulatory trends in key markets. The legal and political environment and sovereign rating of the country in which the company operates are also considered.

- *Company profile* – including position in key markets, level of product dominance, ability to influence price, product, sales and customer diversification, comparative cost position.
- *Management strategy and corporate governance* – including operating strategy, risk tolerance and financial policies. Track record, as well as credible intent, are key considerations. Corporate governance is an asymmetrical consideration – if it is good or adequate, it has little bearing on the rating, but if it is poor it can have a negative impact on the rating.
- *Ownership, support and group factors* – including relative strength of parents/subsidiaries (including state parents) and strength of links between the entities.

Quantative inputs

Once a risk profile has been determined, it is used to calibrate the financial profile commensurate with different rating levels. In practice this can be done by peer analysis – a comparison to the financial metrics and ratings of businesses with similar risk profiles – or by using more detailed guidance related to specific sectors.

Fitch uses its Sector Credit Factors documents to aid third parties in understanding this process. These highlight, for each of the major corporate sectors, the key elements of business risk and also the key through the cycle financial metrics typically associated with rating categories.

The agency favours an analysis of a company's ability to generate cash to service its debt over solely balance-sheet based ratios.

As the accounting rules applicable to non-financial corporates have become more complex, Fitch has moved from profit to cash flow metrics as their key measures of performance. In certain circumstances, Fitch still references EBITDA, a profit-based measure, as a key financial metric. Its simplicity of calculation, and the fact it strips out what are usually the two key non-cash items in operating profit (depreciation and amortisation) means it still has some use.

However, cash flow measures are preferred where there is sufficient information to calculate them accurately. Fitch uses three key measures.

- Funds from operations (FFO), essentially operating cash flow less net interest paid less tax paid, but before working capital movements.
- Cash flow from operations (CFO): FFO less working capital movements.
- Free cash flow: CFO less exceptional items less capital expenditure less common dividends.

Key financial metrics considered include:

- leverage – which compares debt, sometimes adjusted, to a measure of income, at Fitch typically FFO;
- coverage – which compares a company's cash generation to its interest expense. Fitch often widens this to include a company's ability to meet lease payments and debt repayments; and
- profit margin type measures – a company's ability to generate profit (or more typically cash) compared to revenue. A high margin typically implies more operational flexibility.

The agency performs various adjustments to reflect the debt-like nature of some items which are not, for accounting purposes, classified as debt. The most common of these are as follows.

- Lease adjustments – leases can be characterised as an alternative means of financing fixed asset purchases, and lease adjustments are made to allow meaningful comparisons between companies which own their key operating assets to those that lease. These adjustments involve capitalising leases either on a multiple basis (that is, multiplying annual lease cost by an amount, assuming an asset would have to be used continually to generate EBITDA, regardless of lease term) or on a net present value basis.
- Pension adjustments – pensions have some debt-like components but the agencies differ on how best to reflect these. Treatments range from Fitch's methodology which focuses more on appropriately reflecting the cash outflows associated with pensions in its forecasts, to approaches geared more to treating accounting pension deficits as debt.
- Hybrid debt adjustments – Fitch reverses out accounting adjustments which classify hybrid debt instruments, such as convertible debt, as part debt and part equity. Once reinstated as debt, the agencies have varying criteria for evaluating how equity-like the instruments are – focused on factors including level of subordination, coupon deferral and conversion – and therefore what proportion of the instrument they will classify as equity.

Bank and other financial institutions ratings

Fitch's analysis of a bank or other financial institution includes an assessment of both qualitative and quantitative factors, external and internal, that drive the issuer default ratings (IDRs). Examples of qualitative factors include franchise and management. Examples of quantitative factors include capitalisation, profitability, and asset quality. The relative weightings of these factors may vary according to specific circumstances. External factors include the economic environment in which the bank operates, the legislative, regulatory, and fiscal framework, and the structure of the financial system in the country in question.

Fitch typically assigns long and short-term issuer default ratings to banks, as well as support ratings, support rating floors and ratings which reflect the stand-alone risk of a bank getting into difficulties. The support rating reflects the likelihood of the bank being supported by a third party, either the state or an institutional owner. Banks have historically been more likely than other corporate entities to receive support in case of difficulty, and such support has been an element of Fitch's bank ratings for more than 30 years. However recent legislative moves raise the question of whether support is likely to continue in the same form in future, in the face of policymaker opposition to use of taxpayer funds to bail out bondholders.

The five key elements of Fitch's analysis of any financial institution are as follows.

- Industry profile and operating environment, including sovereign risk, size and composition of the economy within which the bank operates, characteristics of the relevant markets, competition, accounting practices, and regulatory and legal framework.
- Company profile and risk management, including strength and depth of franchise and management, size, market position in key activities, nature/concentration of customer base, business mix and competitive advantages, geographic and industrial sector diversification, systemic importance domestically and internationally, and quality of distribution. Credit risk, market risk, operational risk, reputational and legal risks are also reviewed.

- Financial profile, including profitability, funding and liquidity, capitalisation and leverage, as well as credit risk/asset quality and cash flow.
- Management strategy and corporate governance, including organisational structure and quality/credibility of business strategy and governance aspects such as independence/effectiveness of the board of directors, oversight of related-party transactions.
- Ownership, support, and group factors – to the extent that an institution can rely on support, the IDR may benefit from ratings uplift.

Fitch does not use a pre-set weighting for each of these rating categories or for the various elements within each category, as the appropriate weightings may change given particular circumstances. As a general guideline, where one category is significantly weaker than others, this weakest element tends to attract a greater weight in the analysis.

Ratings are primarily based on a review of public information together with Fitch's judgments and forecasts. In many cases, Fitch will meet with management and receive non-public information. In certain cases, Fitch's forward-looking views related to risk exposures or forecasts may dominate a rating conclusion, and such forward-looking views may be based on factors that are highly judgmental.

One limitation to ratings is event risk. Event risk is defined as an unforeseen event that, until the event is known, is not included in the existing ratings. Event risks include management's decision to unexpectedly acquire another company, undertake a sizable share buyback, or unexpected losses arising from an operational breach. Some ratings may already include a reasonable assumption that management is acquisitive, prone to utilising existing financial flexibility, or has a weak operational infrastructure, but specifics of the event and its effect on funding, capital, and liquidity will not be known until the event is announced or consummated, at which point ratings can be ascertained.

Insurance ratings

The main factors that Fitch examines in the analysis of insurance companies are industry profile and operating environment; company profile and risk management; financial profile; management strategy and corporate governance; and ownership, support and group factors.

The agency does not use a pre-set 'weighting' for each of these rating factors, as the appropriate weightings can change given particular circumstances. As a general guideline, where one factor is significantly weaker than others, this weakest element tends to attract a greater weight in the analysis.

The main risks faced by insurers include product risk (comprising various factors such as the risk that claims are of a higher frequency or severity than anticipated), reserve risk (the risk that reserves set aside to meet future claims are inadequate) and asset risk (the risk that asset valuations fall, leaving the insurer with inadequate resources to pay claims). Other risks which can be important in some cases include liquidity and expense risk.

Unlike many non-financial ratings, insurance is an industry where the financial strength of the insurer offering a policy is intrinsically linked to the value of the policy that is offered. A slight weakening in financial strength can in some cases have a magnified effect, due to a loss of new business or the presence of explicit or implicit rating triggers. As such, the severity of ratings transition may be more pronounced for insurers than for non-financial corporates.

Although financial institutions such as banks share some similar characteristics with insurers, most notably a potential vulnerability to a sudden loss of confidence, the volatility of ratings for

financial institutions is moderated to some extent by an expectation of government support. Given the lower systemic importance of insurance firms, Fitch does not typically assume that government support will be forthcoming. However, in specific instances an expectation of government support or continued government support can provide support to ratings levels.

Unique to insurers is the long-term insurer financial strength (IFS) Rating which is an issue rating assigned to the insurance company's policyholder obligations. This provides an indication of an insurer's capacity to pay its insurance obligations and is derived from the IDR of the insurance operation. Fitch also assigns short-term IFS ratings and IDRs.

After consideration of the inherent risks of an insurance firm operating in particular markets, Fitch considers the specifics of the organisation to be rated and the extent to which it has strengths or weaknesses which are unique or unusual. This evaluation of both company profile and risk management is principally qualitative in nature and based on available information.

Examples of idiosyncratic risks affecting an insurer's company profile can include significant capital markets or other non-insurance operations, rapid growth, known unusual contract features or risk concentrations. If additional idiosyncratic risks are identified this may reduce the rating to the extent that it is considered material.

The financial profile of a company is the most quantitative element of Fitch's rating analysis although the interpretation of results and weighing them into the rating includes significant elements of qualitative judgement. Fitch reviews various financial ratios and other quantitative measurements. These are generally evaluated relative to a combination of industry norms, specific ratings benchmarks, prior time periods and expectations specific to the rated entity.

The strategy of an organisation's management team can have a significant impact on creditworthiness with some teams being more conservative in their strategies than others. Strategies that would be considered higher-risk include a rapid expansion into new areas (especially without suitable experience and expertise), aggressive mergers and acquisitions activity as well as high return expectations leading to high tolerances to risk.

The form and identity of ownership can affect the financial strength of a rating unit through an impact on financial flexibility and management strategy. Fitch does not have a 'preferred' ownership structure but considers the credit implications of each case on its merits. In its assessment of various operating units, Fitch will generally review the extent capital is fungible amongst legal entities and other management linkages between them.

Sovereign and public finance ratings

Quantitative inputs

Sovereign and public finance ratings are a synthesis of quantitative and qualitative judgements that capture the willingness as well as the capacity to pay. A wide range of economic and financial variables are incorporated into sovereign and public finance (sub-sovereign) ratings. Key quantitative inputs for sovereign rating analysis can be divided into four broad categories:

- macroeconomic performance and prospects;
- structural features of the economy that render it more or less vulnerable to 'shocks', including the risks to macroeconomic stability and public finances posed by the financial sector, as well as 'political risk' and governance factors;

- public finances, including the structure and sustainability of public debt as well as budgetary financing; and
- external finances, with a particular focus on the balance of payments (current and capital account flows), as well as the level and structure of external debt (public and private).

Past performance is not always a good guide to the future. Nonetheless, a country's track record of economic performance reflects the cohesiveness and robustness of its macroeconomic policy framework and the structural strengths and weaknesses of its economy. Countries that have benefited from a long period of sound macroeconomic policies are likely, other things being equal, to enjoy stable and higher non-inflationary growth, leading to higher income levels and greater resilience to shocks. Sovereigns underpinned by economies that have benefited from a track record of low inflation and stable economic growth will tend to be rated more highly than those that have experienced chronic inflation and severe economic cycles in the recent past.

Management of public finances is critical to sovereign creditworthiness. Inappropriate fiscal policies can result in macroeconomic instability and even crisis, undermining sovereign creditworthiness. A high and rising public debt burden erodes the solvency of the sovereign, while a weak debt structure can render public finances vulnerable to duration, currency and refinancing risks. Moreover, the more vulnerable public finances to adverse shocks, the less capacity to sustain a given level of debt. Similar considerations apply to balance of payments and external debt analysis. Indicators of public and external debt sustainability include the ratio of debt service payments to government revenues/expenditure and to current foreign exchange receipts; the ratio of public and external debt to domestic and external income streams and the level of national output (for example, GDP); primary fiscal and external balances as a share of GDP required to stabilise and or reduce public and external debt stocks.

Ratings of public finance entities, such as provinces and cities, draw on similar quantitative measures of fiscal flexibility and debt sustainability, such as the ratio of debt and interest payments to revenue, as well as a detailed analysis of key revenue and expenditure items (diversity and mandatory versus discretionary spending respectively), and measures of liquidity (for example, size of cash deposits relative to debt service).

For sovereign analysis, data sources for the quantitative inputs are, in most instances, publicly available from international institutions such as the IMF, European Commission and OECD, and national sources such as central banks and key government departments (ministries of finance and economy, debt management offices (DMO) and treasury departments) and national statistical agencies. Often the DMO and treasury departments will be requested to provide more detailed and up-to-date information on public debt and debt service than is available in the public domain. For public finance analysis, sub-national authorities are the principal source of data on their public finances.

Qualitative inputs

Qualitative inputs primarily seek to capture the 'willingness to pay', which for sovereign and sub-sovereign issuers is an important aspect of the credit and rating assessment. 'Willingness to pay' relates to the political will and capacity of the policy authorities to formulate and effectively implement measures that will be sufficient to mobilise resources necessary to honour debt obligations. In the case of sub-sovereign ratings, the qualitative factors include the characteristics of the

institutional and legal framework, political factors associated with inter-governmental relations and the socioeconomic profile of the city/region.

Qualitative inputs into the sovereign rating assessment will include the transparency and predictability of economic and budgetary policies, rule of law and governance environment more generally, as well as an assessment of broader 'political risk' that includes the likelihood of internal or external conflict, including war, as well as 'regime change' that could disrupt debt service or even result in the repudiation of debt incurred by a previous regime. Indicators of 'willingness to pay' include debt service record, political and social stability (for example, incidence of peaceful transition of power from one regime to the next, democratic or otherwise), indicators of governance (such as those provided by the World Bank and Transparency International) and indicators of demography and income (for example, level of income inequality; population growth and structure).

Peer comparisons

Sovereign creditworthiness is not easily understood in isolation and rigorous peer analysis is fundamental to sovereign rating analysis. Comparisons of sovereign creditworthiness indicators across countries and over time serve to highlight countries' relative strengths and weaknesses and their ability to sustain shocks. Individual countries' data are benchmarked against medians for each broad rating category (for example, 'A', 'BBB', 'BB', 'B'). Sovereign rating models may help to inform these comparisons and assist in ascertaining appropriate rating levels. Sovereign ratings (long-term foreign and local currency) may be supplemented by outlooks – positive, negative and stable – that give an indication of the direction in which a country's sovereign creditworthiness is expected to evolve over time. In situations where developments are moving quickly, a rating watch may be applied, implying that the rating could be upgraded or downgraded over a relatively short time horizon. Similar considerations apply to public finance ratings.

Structured finance ratings

Investors in structured finance (SF) transactions rely primarily on the underlying asset pool securing the transaction for repayment of interest and principal. To evaluate if investors will be fully repaid in accordance with the terms of the transaction, there are five aspects fundamental to SF: legal structure; asset quality; credit enhancement; financial structure; and originator and servicer quality.

The distinguishing feature of a SF transaction is the isolation, or 'de-linking', of an underlying pool of assets from the corporate credit risk of the original owner, or 'originator', of those assets. This is typically achieved in SF by the sale of an identifiable and specific pool of the originator's assets to a special purpose vehicle (SPV) so that neither the assets nor their proceeds will be consolidated as part of the bankruptcy estate of the originator/seller in the event of its insolvency. Fitch analysts will review key transaction documents and legal opinions to determine whether they reflect the transaction and its structure as represented to Fitch.

SF transactions are collateralised by a broad spectrum of financial assets which are classified into four main sectors: residential mortgage-backed securities (RMBS), commercial mortgage-backed securities (CMBS), asset-backed securities (ABS), and collateralised debt obligations (CDOs). Fitch typically analyses the assets' credit characteristics to derive a loss expectation under a scenario that reflects a highly probable outcome commensurate with Fitch's current expectations. This is

commonly referred to as the base case scenario. Fitch may use historic originator data, deterministic or stochastic modelling to derive its base case assumptions. Loss expectations are then increased for higher rating categories. Fitch employs a forward-looking rating philosophy that seeks to take a 'through the cycle' rating approach in the higher rating scenarios and an expectations-based approach at the lower rating scenarios.

Credit enhancement is the mechanism that provides bondholders with protection against losses on the underlying pool. It can be sourced internally by means of subordination, excess interest, or over-collateralisation (O/C) or externally by a third-party provider in the form of a financial guarantee, the provision of a reserve fund account, external equity, or a combination of the above. Fitch's ratings for each bond reflect whether the agency believes the bonds have sufficient credit enhancement available to withstand default given losses on the underlying collateral pool that Fitch expects under the specific rating stress scenario.

Fitch's approach to analysing the various structures is described in asset-specific or cash flow criteria reports. The cash flow modelling will reflect the specific structure of the transaction concerned in assessing the adequacy of credit enhancement at each rating level. Cash flow criteria may include a number of stress assumptions that are applied at different rating levels. Stresses may include, but are not limited to, prepayment stresses, front and back-loaded default and loss timings, interest, basis and foreign exchange stresses to address any unhedged exposures.

The extent and nature of cash flow stresses adopted will depend on the asset class and type involved and the financial structure of the transaction concerned.

The originator, servicer, and CDO asset manager as transaction participants can affect the performance of the underlying assets and, ultimately, the SF transaction. Fitch's operational risk, funds and asset manager teams, or asset-specific rating analysts review the operational processes for each originator, servicer, or asset manager participating in a SF transaction rated by Fitch. Whether indicated by an internal score, opinion, or public rating, the assessment may lead to adjustments to a transaction's base case expected loss and credit enhancement levels, application of a rating cap, or it may cause Fitch to decline to rate a transaction.

Infrastructure and project finance ratings

Fitch has rated or reviewed infrastructure finance transactions in a variety of sectors, including social infrastructure, thermal power, renewable energy, oil and gas, toll roads, rail and airports. Fitch's analysis firstly addresses the potential of the project to generate a stable cash flow based on its legal framework and fundamental economics together with any political or macroeconomic risks. The agency then considers the financial structure to form an opinion on the capacity of those cash flows to service the rated debt instruments in accordance with their terms. A distinguishing feature of most infrastructure financing is the issuance through a single purpose company or a limited purpose public authority with tight restrictions on both its business and its financing structure.

Fitch considers a wide variety of risk attributes but, typically, the key rating factors would include completion risk, price and volume risk (for example, commodity price risk on a power plant, traffic risk on a toll road or wind resource risk for a windfarm), counterparty credit risk and operating and maintenance costs. Whilst the majority of transactions use fully amortising debt structures, some include elements of refinancing risk too. The relative importance of each attribute in the analysis will vary by project. Peer group and cash flow stress analysis are important parts of the rating process.

Fitch is often asked whether it would expect to upgrade a rating once a transaction completes the construction phase. Completion risk is not necessarily a rating constraint, as long as it is adequately mitigated by the use of suitable contractors with a robust contractual structure and appropriate levels of liquidity support. Furthermore, Fitch will tend to rate to the weakest point in the life of the debt, which for some transactions may be in the operating phase (for example, an oil refinery whose completion is guaranteed by strongly rated sponsors but which is exposed to volatile commodity price spreads during operations).

Projects tend to be financed by a combination of equity, internally generated cash flows and debt. The nature of the debt financing varies by region. In Europe and the Middle East, banks have historically been comfortable lending very long dated debt (over 20 years) although the Basel III capital regulations will make this less attractive. This has been complemented by the involvement, until recently, of monoline insurers enhancing the credit quality of 'BBB' category bonds particularly in the social infrastructure sector. Monoline insurers are no longer actively pursuing new guarantee business. In North America, bank lending appetite tends to be shorter term and hence the unwrapped project bond market is more mature. Local bond markets are developing in emerging markets, particularly for power plants and toll roads, although these markets continue to offer only limited tenors and continue to be largely bank funded. Export credit agencies and multilaterals have been active in supporting political and commercial risks in transactions, primarily but not exclusively in emerging markets.

In general, infrastructure transactions rated by Fitch have demonstrated significant rating stability through the 2008–2010 downturn. Those transactions that have suffered due to economic factors have generally seen only modest downgrades (on average less than one notch). In fact, most significant negative rating actions in the infrastructure sector during 2008 to 2010 were due to transaction-specific factors (for example, a major outage at a power plant or significant resource overestimation at a landfill gas project).

While some sectors are more volatile than others, three key factors explain why infrastructure finance rating performance remains fairly stable, even during severe downturns.

- Infrastructure assets are usually of an essential nature, for example, roads or power plants and often benefit from natural or regulated monopolies. They frequently receive income from utility or public sector counterparties and are also not directly exposed to pure market risks and discretionary spending.
- The structural features generally associated with infrastructure financing often take the form of limited recourse vehicles provided with substantial liquidity. They can thus sustain temporary shocks and offer a creditor-friendly covenant package.
- The rating scenarios for such projects generally include conservative assumptions, that is, some underperformance is assumed as a starting point to the rating process. Also, the long history of available performance data for most of these asset classes offers a reliable gauge of the range of future performance.

Despite being less exposed to temporary macro shocks than other sectors, infrastructure finance has its own particular issues to contend with: single asset exposure, counterparty risk, forecast risk, completion risk, commodities prices and leverage, to name a few. This is the reason why ratings are generally limited to the 'A' rating category at the higher end of the scale, with the exception of some large, specific operational assets mostly in the public sector.

Part 2

Applications

Chapter 11

Commercial paper issuance

Andrew Ellis
Goldman Sachs

A changing backdrop

In the space of a few short years, the shape, size, structure and purpose of the global commercial paper markets have changed profoundly. When we completed work on the first edition of this book, in the spring of 2006, it seemed almost inevitable that the upward-sloping trajectory of commercial paper markets globally – and indeed all short-term debt markets around the world – would be not just sustainable, but more or less a certainty: confidence was running high, liquidity was abundant, and more and more issuers from all industry types, domiciles and ratings categories were establishing programmes, while investors had not yet been affected by the sub-prime-related issues to which they were indirectly exposed within the booming asset-backed sectors of the market. With the benefit of hindsight it is hard to avoid the conclusion that what at the time had seemed like an unstoppable force unravelled most dramatically once the effects of the US sub-prime crash hit markets during the spring and summer months of 2007. We are all still preoccupied with the repercussions of these events in all areas of the short-term debt markets: new regulations, new practices and restrictions, and the markedly changed sentiment among market participants and practitioners.

The product revisited

Before we examine in more depth the ways in which the landscape has shifted over the ensuing period, it may be of value to restate the structure, purpose and definition of commercial paper. In its simplest form commercial paper (CP) is a promissory note – a debt security with a fixed maturity of 397 days or less (in the case of US commercial paper (USCP)) and 364 days or less (in the case of Euro commercial paper (ECP)). In practice the average maturities in each market are generally much shorter, with the bulk of maturities falling in a range of one to three months. Commercial paper is usually issued as a non-interest bearing (or zero coupon) security, issued at a discount to its face value. In a general sense the commercial paper markets in the US and internationally in the ECP market are high-quality investment grade markets, offering institutional issuers of short-term paper such as corporations, financial institutions and government agencies access to short-term liquidity for their short-term funding and/or working capital needs. Such issuers, often active in both markets at the same time, are generally able to issue paper (subject to either market and/or credit-specific conditions, or both) at rates of interest which are typically lower than alternative sources of funding, for example, bank loans. Generally both the US and Euro commercial paper markets are open to issuers whose short-term credit ratings are a minimum tier 2 rating from (ratings) agencies such as

Standard & Poor's, Moody's or Fitch. In addition, in comparison with the more stringent documentation and disclosure requirements embedded in other debt issuance platforms, a commercial paper programme is relatively straightforward to establish, with standardised documentation and disclosure templates reducing the amount of time and, importantly, money needed to set up a programme.

Recent developments – STEP

In recent years, due to a very great extent to the impact of the financial crisis, the number of active issuers as well as new programme launches have declined; in addition, due to ratings downgrades, a number of issuers have exited the market altogether. In the ECP market, the short-term European paper (STEP) market was established under the aegis of the European Central Bank (ECB), to promote common standards of disclosure and best practices across programmes. Some financial issuers adopted the STEP label in the period 2008–2010 when the ECB lowered its repo eligibility collateral requirements, whereby bank-issued ECP no longer required a listing on a recognised exchange to be eligible as collateral in ECB repo operations, as long as in addition it met the ECB's broader eligibility criteria. This was reversed at the end of 2010, when the listing requirement was reintroduced as one of the standard measures required for bank-issued paper under the eligibility criteria. However, there is no doubt that the relaxation of the criteria in the period 2008-2010 increased the popularity of the STEP label and made it more relevant for many issuers. In actual fact, we now know that the use of STEP-labelled ECP as collateral in the ECB's repo operations has not in practice been particularly substantial. However, at a time when many banks – particularly across the eurozone's periphery – have struggled with market access and with their basic day to day funding and liquidity conditions in commercial paper and other instruments difficult and unpredictable, the STEP label has provided a degree of comfort: by adopting the STEP label to establish ECB eligibility for their ECP, the banks which chose to do so were simply trying to make their commercial paper as relevant and acceptable to international investors as they possibly could.

Evolution of market outstandings

So much has changed and is continuing to change as we write this chapter. The evolution of overall market outstandings provides good evidence of this. In the spring of 2006, as the first edition of the book went to press, outstandings in all segments of the USCP market were still increasing rapidly, standing at circa US$1.7 trillion. At the same point in time, outstandings in the ECP market were approaching US$575 billion. In combination these two markets were by far the most important markets for short-term debt issued programmatically (that is, issued off internationally recognised and accepted documentation platforms) anywhere in the world and of course still retain that status today.

At the time of writing in the spring of 2006, both markets still had some way to go to reach what would eventually turn out to be their peaks as measured in outstandings, in July 2007, only a few short weeks before everything would begin to change for good. At that time USCP outstandings were regularly exceeding US$2 trillion, fuelled by huge amounts of asset-backed commercial paper issued out of multiple exotic and complex vehicles, created to source attractively-priced short-term funding which in turn was used to finance a range of assets; and structured investment vehicles similarly reliant on seemingly unlimited flows of short-dated funding to finance longer-term assets on the other side of their balance-sheets. In addition to the prolific activity in this 'secured' segment of

the market, which by itself was responsible for more than 50% of total market outstandings at that point in time, unsecured financial issuance – day to day wholesale bank funding – was also booming.

Corporate/non-financial issuance was important, too, on a stand-alone basis but at a relatively more modest scale (as it remains today), while the tier 2 (lower rated) segment stood at circa US$140 billion in aggregate size. Much of the same issuance activity and trends were at large in the ECP market at the same time. The ECP market peaked at the same time in July 2007, at a total size of US$ 877 billion, with similar demographics at the time – in terms of the diversity and breadth of issuance activity across the different sectors – as its US cousin. The events of late-2007 were of course in many ways a taste of what would occur almost exactly a year later following the Lehman bankruptcy. Since that time both markets have ebbed and flowed – more ebbing, less flowing on balance – such that at the time of writing this chapter USCP outstandings stand at circa US$1 trillion (some 50% lower than at the peak of the market in 2007), and ECP outstandings stand at circa $513 billion, a reduction of more than 40% from peak outstandings in the summer months of 2007.

Current and future challenges

So, what has changed? And what does the future look like for short-term debt markets? Are these markets sustainable as viable sources of liquidity for the needs and requirements of future borrowers? For markets to thrive and blossom, issuers must believe in their value and efficiency and, critically, a vibrant, receptive, core investor base must exist to buy the paper in the first place. On both sides of the ledger, forces are at work in the shape of a new global regulatory environment which has affected and will continue to affect the habits and sentiment of relevant participants in a material fashion, such that the medium to long-term shape and trajectory of short-term debt markets are difficult to predict. At the heart of this conundrum is the pattern and direction of regulatory change evolving in the aftermath of the financial crisis which will force banks (in particular via Basel III) to reform their funding practices. The understandable intention of banking regulators is to ensure that in the future banks cannot be so threatened by the shutdown of short-term wholesale debt markets: at the height of the financial crisis it became clear all too quickly that many financial institutions were overly-reliant on the open-ended availability of short-term debt to fund themselves, and found themselves terribly exposed as a result when faced with the catastrophic collapse in investor and interbank support in the short-term wholesale debt markets.

Furthermore, it is useful to note that despite all the upheavals it is banks and other financial institutions which continue to account for the majority of global CP issuance. As the changes envisioned in Basel III begin to take effect in earnest (both the introduction of the Liquidity Coverage Ratio in 2015 and the Net Stable Funding Ratio in 2018 will have a profound effect on the use of short-term debt by banks and, arguably, are already starting to have such an effect), banks will be examining funding options which allow them to lengthen their average maturities in a meaningful way.

The fact that this coincides with the regulatory upheaval facing the global AAA-rated money market fund industry is material. As the single-most influential investing constituency in the short-term debt markets money funds face regulatory pressures every bit as far-reaching as those affecting financial institutions. With the goal of effecting change to existing investment practices, global regulators have either introduced or have proposed a swathe of new rules and guidelines which will require these portfolios to shorten their exposures and to cap their maturities in a manner which is intended to protect their own end-investors and ensure they are able to provide for same-day

liquidity on demand. These are profound and far-reaching changes which could materially impact the way in which short-term debt markets evolve. Faced with this new reality, the challenge for the commercial paper markets, indeed for short-term wholesale debt markets in general, is to navigate a course whereby their functional relevance as a practical and efficient source of abundant and cost-effective liquidity for multiple issuer types is sustainable into the future.

Market access – general preconditions

Looking back at the landscape we painted in the 2006 edition it was evidently a straightforward exercise to delineate the market – in terms of market access – by ranking and by issuer segment/category. Many of the key requirements which have historically governed access to short-term liquidity through commercial paper issuance (for example, appropriately high credit quality) are still firmly in place; however, there are now so many additionally important factors to be considered that it is instructive for us to make reference to them here. We have already mentioned some of the root-and-branch changes which are substantially influencing the buying habits of AAA-rated money market fund investors, and we shall look at these more closely in due course. Elsewhere, however, investors are preoccupied by other considerations beyond mere short-term credit quality which could impact their sector allocations and decisions whether to purchase a particular credit; among these are factors such as geographic origin, proximity to the sovereign (if a bank), and the strength of back-up lines and support mechanisms for those asset-backed conduits which continue to function.

Before we look at the evolution of the money market investor base over the period we should touch on the broad themes affecting recent issuer activity and participation in global commercial paper markets: an understanding of these is important in the context of the recent past. Overall the pattern of issuance and the relative split of active issuers by type do not look materially different from what was described in the 2006 edition, with the key exception being the size and extent of decline in activity in the secured segment of the market, something which we touched on a little earlier in the piece. At the current time the USCP market's main constituents, as reported weekly by the Federal Reserve (once again, readers are encouraged to monitor data updates for themselves via the Federal Reserve website for its latest statistical releases on the evolution of the USCP market) are as shown in Box 11.1.

Box 11.1

US asset-backed commercial paper: US$374.7 billion
US unsecured commercial paper: US$730.9 billion
    Non-financial: US$192.1 billion
    Financial: US$538.8 billion
US tier 2 commercial paper: US$69.5 billion
Total US commercial paper outstanding: US$1,105.6 billion

Source: US Federal Reserve, 13 July 2011

And the current ECP market's demographics are shown in Box 11.2 (as measured monthly by Euroclear).

Box 11.2

Asset-backed euro commercial paper: US$35 billion
Financial euro commercial paper: US$251 billion
Corporate euro commercial paper: US$61 billion
Supra/sovereign/agency euro commercial paper: US$199 billion
Tier 2 euro commercial paper: US$28 billion
Total euro commercial paper outstanding: US$545 billion

Source: Euroclear, 2 July 2011

At the end of June 2011 the leading issuers of ECP (for which information is more publicly accessible than for the USCP market) were as shown in Exhibits 11.1 to 11.4.

Exhibit 11.1

ECP top 10 issuers

Rank	*Issuer*	*Outstandings (US$ equivalent) million*
1	Kreditanstalt fuer Wiederaufbau (KfW)	25,023.68
2	Kingdom of Belgium	22,436.66[1]
3	FMS Wertmanagement	21,978.85
4	Bank Nederlandse Gemeenten NV (BNG)	15,619.48
5	Banque Federative du Credit Mutuel (BFCM)	15,545.93
6	Caisse d'Amortissement de la Dette Sociale (CADES)	15,355.04
7	Banco Bilbao Vizcaya Argentaria (London)	13,830.75
8	Caisse des Depots et Consignations (CDC)	13,214.98
9	Santander Commercial Paper SA Unipersonal	11,408.25
10	ABN AMRO Bank NV	11,121.14

[1] Includes outstanding Belgian treasury notes

Source: Dealogic CPWare, 1 July 2011

Exhibit 11.2

ECP top 10 financial issuers

Rank	*Issuer*	*Outstandings (US$ equivalent) million*
1	Banque Federative du Credit Mutuel (BFCM)	15,545.93
2	Banco Bilbao Vizcaya Argentaria (London)	13,830.75
3	Santander Commercial Paper SA Unipersonal	11,408.25
4	ABN AMRO Bank NV	11,121.14
5	ING Bank NV	10,376.87
6	Lloyds TSB Bank plc	9,528.29
7	Nordea Bank AB	9,085.63
8	NATIXIS SA	8,602.86
9	Pohjola Bank plc	8,345.01
10	Bank of Western Australia Ltd	6,753.16

Source: Dealogic CPWare, 1 July 2011

Exhibit 11.3

ECP top 10 sovereign/supra/agency issuers

Rank	*Issuer*	*Outstandings (US$ equivalent) million*
1	Kreditanstalt fuer Wiederaufbau (KfW)	25,023.68
2	Kingdom of Belgium	22,436.66[1]
3	FMS Wertmanagement	21,978.85
4	Bank Nederlandse Gemeenten NV (BNG)	15,619.48
5	Caisse d'Amortissement de la Dette Sociale (CADES)	15,355.04
6	Caisse des Depots et Consignations (CDC)	13,214.98
7	Landeskreditbank Baden-Wuerttemberg -Foerderbank (L-Bank)	11,069.41
8	Nederlandse Waterschapsbank NV	10,306.88
9	Republic of Austria	9,798.83
10	European Investment Bank (EIB)	9,631.73

[1] Includes outstanding Belgian treasury notes

Source: Dealogic CPWare, 1 July 2011

Exhibit 11.4

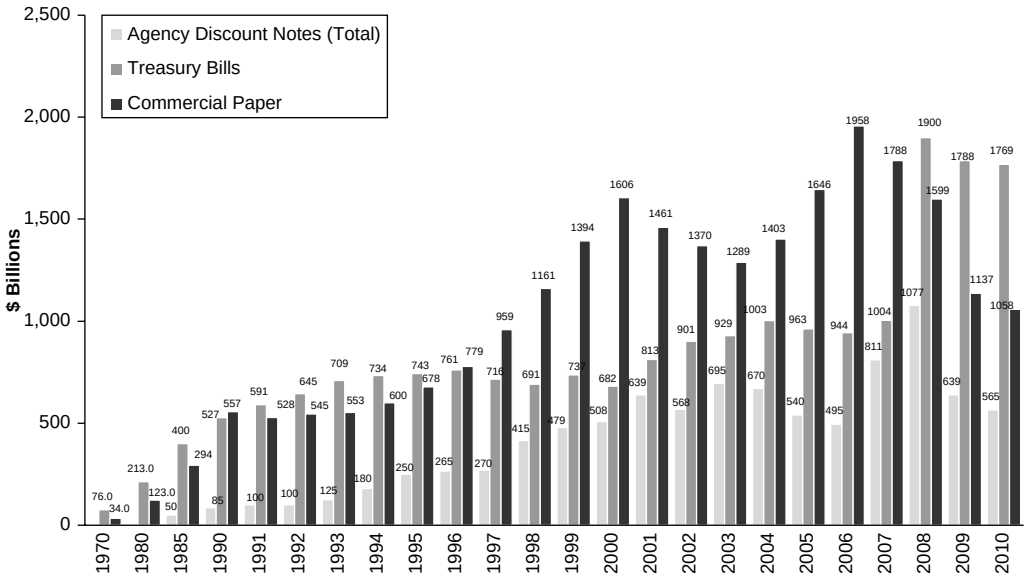
ECP top 10 corporate issuers

Rank	*Issuer*	*Outstandings (US$ equivalent) million*
1	ENEL Finance International NV	*7,735.94*
2	Deutsche Telekom AG	*5,647.04*
3	Societe Nationale des Chemins de Fer Francais (SNCF)	2,886.76
4	Deutsche Bahn AG	2,701.10
5	Volkswagen AG	2,466.98
6	Telefonica Europe BV	2,428.23
7	Toyota Motor Finance (Netherlands) BV	2,326.24
8	International ENDESA BV	2,298.03
9	Vodafone Group plc	2,209.75
10	Schlumberger plc	2,047.64

Source: Dealogic CPWare, 1 July 2011

Exhibit 11.5

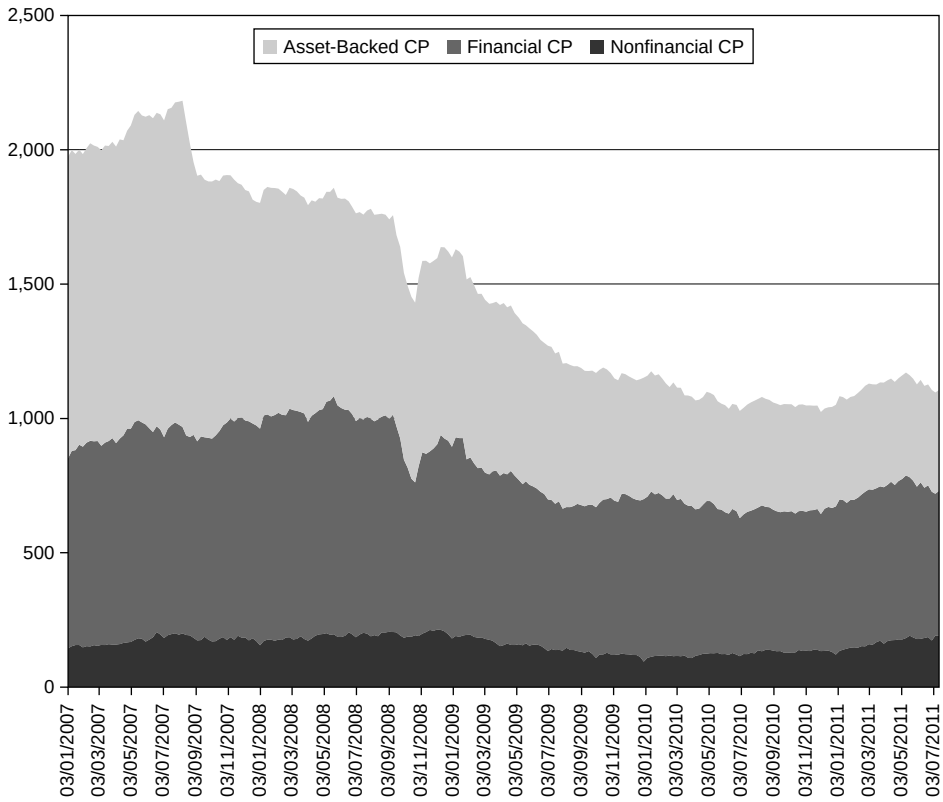
Overview of outstanding US money market instruments 1970–2010



Source: Federal Reserve, US Treasury, Federal National Mortgage Association, Federal Home Loan Mortgage Corporation, Federal Farm Credit, Federal Home Loan Bank

Exhibit 11.6

Evolution of USCP markets during the crisis years



Source: Federal Reserve

Issuance trends

Each of the main segments/groupings present in 2006 is still active now, albeit in different shapes and sizes as we have seen. Central to market activity today, as in 2006, are the significant issuance volumes maintained by financial institutions, which remain the most significant issuers in both markets. Interestingly, in recent years, investors have very often expressed a preference for buying and holding certificates of deposit (CDs) over the commercial paper of the same issuer. One of the reasons cited for this preference is a widespread belief that CDs are generally a more liquid instrument.

Away from the asset-backed segment, the next most important issuer segments are the non-financial/corporate/industrial issuers and – in the context of the ECP market – the supra/sovereign/agency segment; in this space issuers are generally of the highest credit quality and often AAA-rated due to their close – and often outright – alignment with sovereign borrowers. While overall outstandings

in these segments are also lower on an absolute aggregate basis, on a relative basis each segment is represented at more or less the same level as had been the case in 2006.

Perhaps understandably, investor preference at the height of the financial crisis catapulted industrial and sovereign/supra issuers in both markets to a 'flight to quality' status, marked by significant positive pricing differentials relative to other issuer types. Much of this differential persists today, although these days the advantages in pricing and maturity extension are more a function of rarity value and high investor demand for non-financial exposure in the wake of persistent concerns surrounding the strength of and implied support for many financial institutions.

Corporate paper in general remains in very short supply – a combination of reduced working capital needs in the wake of the economic downturn and a focus on balance-sheet repair, and a marked trend among certain corporates to reduce their reliance on commercial paper markets for their short-term liquidity needs. Basel III will begin to exert an impact on this segment due to the higher weighting which banks will need in future to allow for in their liquidity coverage ratio calculations to compensate for the impact of the recalibration of undrawn commitments (liquidity facilities) and loans under credit facilities. This, in turn, will be a further consideration for corporate borrowers in terms of their aggregate cost of funding in commercial paper as they are generically required by the credit rating agencies to maintain CP back-up at a level close to or at 100% of possible CP outstandings. If banks are obliged (in cash flow terms) to set aside more funds as insurance against the perceived risks in undrawn facilities of this type there is a strong chance they will look to pass on to their clients some of the costs associated with holding higher amounts of contingent liquidity, in the form of more expensive CP back-up.

Pricing dynamics

Despite the challenges of the past few years borrowing conditions – pricing, maturities and so on – in commercial paper have progressively improved. If we consider pricing specifically, the impact of central bank liquidity – the result of the coordinated policy measures to pump huge amounts of excess liquidity into markets since the Lehman bankruptcy – and low interest rate policies have both been hugely significant factors influencing pricing conditions. Even among Tier 2 issuers, particularly in the US – where at the height of the crisis issuers were generally hit by lower levels of overall liquidity, shortened maturities as investors retreated from perceived risk positions, and pricing that gapped out markedly reflecting the gloomy sentiment of the time, spreads to Libor are now a good deal tighter and maturities generally much longer once again. Though it would be incorrect to state that the effects of the crisis have dissipated in entirety, particularly as the situation remains exacting and challenging for many, it is appropriate to assert that conditions have been steadily improving for a range of issuers, such as major industrials, 'national champion' banking institutions and borrowers in the AAA-rated segment of the market.

Conclusions

And yet it cannot be denied that the commercial paper markets have changed profoundly. All participants have had to learn to adapt to the new mood and are managing teams, processes and offerings to the demands of new regulation. Elsewhere, it is notable how much of a shift there has been in issuance habits, investor preferences, product nuances and structures, as well as changed dynamics

precipitated by the new order. Many of the old certainties have gone. Among market participants, the investment community has been at the forefront of reaction and readjustment, buffeted initially by the market environment and then most recently by regulatory upheaval.

The impact of regulatory change in the US in 2010, and the impending introduction of similar changes to the portfolio management practices of European money market funds, is still being felt: new rules regarding portfolio liquidity, changes to average maturities and the introduction of new weighted average life measures. US money funds have operated under the new regime for much of the past year already, swinging their portfolios into line progressively in the months prior to the official introduction date of May 2010. Given the size and importance of the global money fund industry, particularly in the US, and its historic role as liquidity provider in chief for short-term borrowers, the new rules are a sea change for commercial paper markets. The impact of regulatory change on investor buying habits and, by definition, on the short-term issuance profiles of many international borrowers should not be underestimated. Due to the rules on weighted average life and maturities, plus the strengthened minimum liquidity requirements, portfolios will be a great deal more conservative in their investment decisions than had perhaps been the case hitherto.

At a time when restrictions on maturities are pushing money market funds to shorten their credit exposures, issuers are generally reaching for longer maturities – either by choice/design (in the case of industrial issuers) or by requirement, in the case of banks and financial institutions. It is not yet clear how this dichotomy of interest can be bridged and merely serves to underline the importance of the development of new pockets of liquidity and/or structural innovation in order to sustain the evolution of short-term debt markets.

In this chapter we have attempted to highlight some of the most important factors influencing the behaviour of issuers and investors in the commercial paper markets in recent years. It is clear that the old certainties and assumptions are no longer as watertight as they had been prior to the events of 2007–2008. Viewed through the prism of the upheaval caused, these events were negative indeed.

On the other hand, markets had arguably been overheating at that time so perhaps the alternative view is in fact more positive, that these events served as a timely reality-check. Without question, commercial paper as an instrument for funding remains hugely important today, with global market outstandings still comparable with where they stood just a few years prior to the rapid expansion witnessed in the period prior to 2007. Commercial paper is still a highly relevant and efficient instrument, and remains at the forefront of issuer strategy for the provision of short-term liquidity, in good size and at attractive levels.

And while the demise of some of the more exotic secured structures created in the boom years prior to the financial crisis is incontrovertible, it is equally undeniable that these are markets which have a long track-record of positive and creative energy and innovation. Such facts give many of us at the coalface of this industry much confidence that a future marked by further expansion is achievable, the catalysts for which will be a steady return of confidence and renewed investor activity on the one hand, as well as the beneficial effects of a sustained economic revival on the other. Indeed, by emphasising the growth agenda, we can possibly look forward to the emergence of new short-term debt market activity in markets such as Brazil, India and China. How satisfying it would be for all of us, the next time we come to update this chapter, to be able to report on new issuers and – since liquidity provision is the single-most important *raison d'être* for commercial paper markets – new investors in such parts of the world, to reinforce the claim that short-term debt markets are indeed still of relevance. But that is for another time.

Chapter 12

Syndicated loans – acquisition finance*

Rebecca Manuel
The Royal Bank of Scotland

Introduction

Acquisition finance is one of the most dynamic and exciting areas of the syndicated loan market. With its combination of demanding timeframes, large risk positions and integration with other capital markets instruments, acquisition financings can pose challenges, but also attractive opportunities, for even the most experienced loan market professionals. This chapter will discuss the main areas of acquisition finance – investment- and non-investment grade – and present case studies that illustrate the basic structures and processes of acquisition deals in today's market.

Background

As discussed in Chapter 2, the syndicated loan market offers borrowers tremendous flexibility across a wide array of uses, largely because the Europe, Middle East and Africa (EMEA) loan market is a private market and the participants are sophisticated banks or institutional investors who are able to assess risk and take decisions quickly. In acquisition finance, however, the syndicated loan market truly demonstrates its ability to add value to financial market transactions because of its unmatched abilities in the three 'S' categories: size, speed and secrecy. Large amounts can be raised in a matter of days from one or a small number of lead banks, thus preserving the confidentiality of the bidder's intentions with regards to the target. These traits have enabled the syndicated loan market to play a critical role in the growth and development of mergers and acquisitions (M&A) activity globally over the past few decades.

The period 1995–2000 represented historic records for M&A activity, fuelled by the dot-com boom. Post-2002, the debt and equity markets underwent a significant retrenchment, as corporates focused on de-levering their balance sheets and rebuilding credit quality. In 2005, the markets experienced a resurgence in global M&A activity, as acquirers with strong balance sheets took advantage of low long-term interest rates in the United States and Europe and seemingly limitless liquidity in the debt capital markets to pursue groundbreaking acquisitions in terms of size and structure. Activity peaked in 2007 with global M&A volumes surpassing US$4 trillion.

Volumes dropped by almost a third the following year, amidst the beginning of the worldwide financial crisis which saw the collapse of Lehman Brothers, equity indices plummet and drying up of liquidity in the credit markets. M&A activity continued to decline up to 2009, recording a total of just under US$2 trillion in 2009. This coincided with significantly declining volumes in the syndicated loan market, as banks looked to reduce their balance sheets in the light of significantly higher funding costs.

The period 2009 to 2011 has seen a recovery in global markets, although sovereign and economic concerns remain, with equity values rising and M&A activity steadily increasing. Market predictions for syndicated loan volumes in 2011 show a rebound to US$3 trillion for the year. Conditions in the syndicated loan market have strengthened over the past two years, with volumes increasing and pricing falling against a backdrop of strong investor demand for loans. Large scale acquisition financing is available to corporates once again, displayed by several underwritten deals in 2010, such as BHP Billiton's US$45 billion facilities to finance a proposed takeover of Potash Corp. However, acquisition financing volumes remain below that of 2007, and refinancings continue to dominate the global loan market.

The syndicated loan markets have been a key contributor to the growth in M&A activity in the past 15 years, as both new and existing lenders/investors have become increasingly active in acquisition finance transactions. This has been noticeable by the correlation between M&A and syndicated loan volumes, both hitting record highs in 2007, before falling in 2008. Many of these transactions were made possible by the depth of the syndicated loan markets, as unprecedented amounts of debt financing allowed companies to finance ever-larger transactions. In addition, the willingness of lenders to consider a wide range of transactions, from investment-grade credits to leveraged deals, broadened the scope of the syndicated loan market.

Exhibit 12.1 shows the development of syndicated M&A volume in EMEA over the past decade, peaking in 2007 with just under US$900 billion of volume from 538 deals. As M&A activity fell over the next few years, acquisition-related syndicated loan volume fell reaching a low of US$70 billion in 2010, although this number is expected to rise steadily in 2011 and 2012. The figures displayed show the clear disparity between pre- and post- financial crisis levels and its impact on the loan market, as well as the wider markets. Although acquisition financing volumes fell in 2008 to 2010, the loan market began its recovery 18 months ago and is gathering momentum. It is clear the bank market has the capacity to fund large M&A volumes going forward as seen by the strong demand for several jumbo transactions in 2010, therefore M&A appetite is unlikely to be restricted by insufficient liquidity. Despite the lack of M&A related financing activity, 2010 saw syndicated loan volumes in EMEA rise on 2009 to almost US$600 billion driven primarily by refinancings, as seen in Exhibit 12.2. In 2011, loan volumes are expected to build on 2010, driven both by continued refinancing activity but also an increasing M&A pipeline.

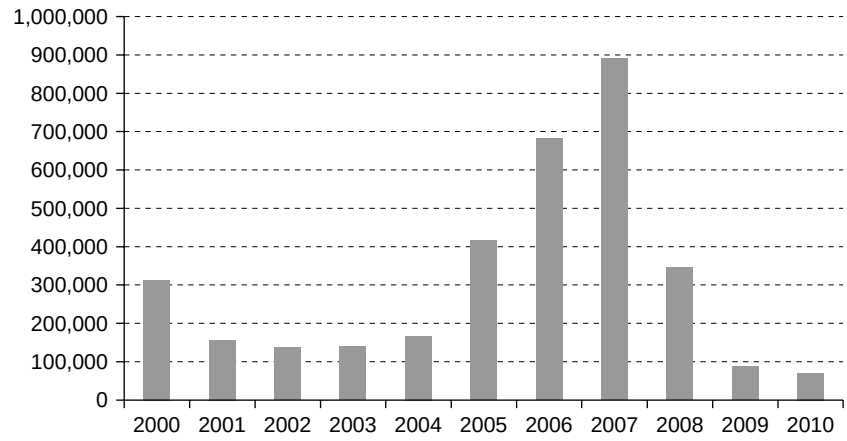
Over the past decade, the syndicated loan markets for acquisition debt financing have become more sophisticated and experienced regular development and evolution. In broad terms, it is possible to separate transactions into two classes: investment-grade, and leveraged (non-investment grade). Both markets have their own unique characteristics and participants/investors as seen below, although at the lead arranging levels, there is some degree of overlap.

Investment grade transactions:

- are generally for publicly rated companies BBB–/Baa3 or better;
- arranger/investor relationship is with corporate borrower;
- can be jumbo underwritten deals, with a range of up to US$50 billion, structured as a combination of bridges to public debt capital markets, for example, short tenors (1, 3, 5 years), pricing with step-ups (for example, margin increases by 10% to 15% over time if not refinanced) or tied to percentage of deal outstanding, plus term loan debt which would be held by the banks to maturity;
- are generally senior unsecured debt;

Exhibit 12.1

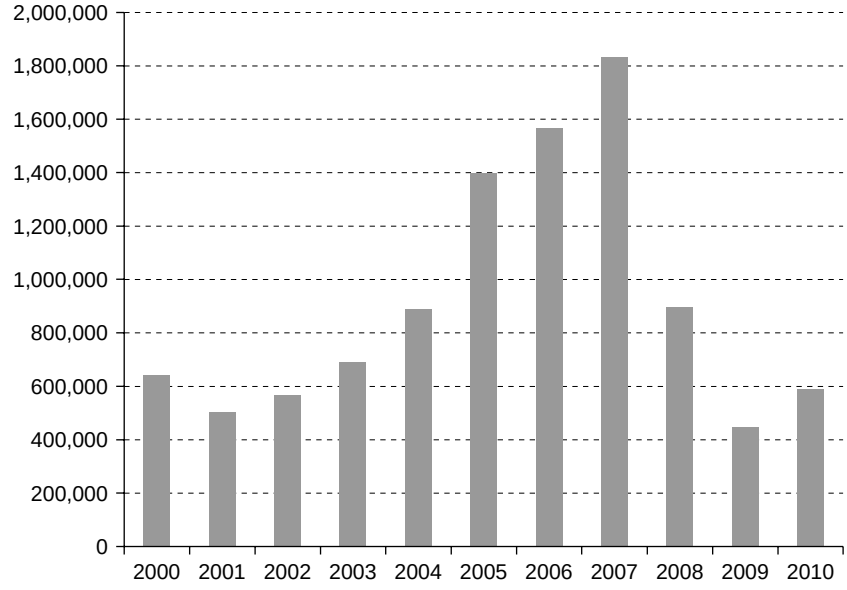
EMEA syndicated loan M&A volume (US$ million)



Source: Thomson Financial

Exhibit 12.2

EMEA syndicated loan volume (US$ million)



Source: Thomson Financial

- margins are typically between 50bps and 200bps;
- pricing will include an 'acquisition premium' to corporate working capital facilities and to compensate for size as well as any short term deterioration in credit quality; and
- are often reliant on a core group of relationship banks to the borrower to drive initial liquidity for the transaction.

Leveraged/non-investment grade transactions:

- are generally for companies rated BB+/Ba1[1] or lower;
- arranger/investor relationship is with the borrower or financial sponsor(s);
- tenors are usually longer than on an investment-grade deal, with a greater reliance on term debt repaid by cash flow or refinancing in the loan markets (structure tends to include a combination of amortising term debt and revolving credit tranches, generally with a six-year tenor, and bullet term debt of seven years);
- in 2010 pricing tended to be between 400bps and 500bps;
- are reliant on institutional investor market as well as banks for participants.

Case studies

Investment grade case study – BHP Billiton

On 18 August 2010, BHP Billiton (A+/A1), the world's largest mining company, made a US$130 per share all-cash offer for Potash Corp, the world's largest integrated fertiliser and related industrial feed products producer. The offer represented a 32% premium to the volume weighted average price of Potash Corp's shares on NYSE (period ending 11 August 2010, the day preceding BHP's offer), and valued the equity component of Potash Corp at circa US$40 billion.

BHP launched its hostile takeover offer following Potash Corp Board's rejection of BHP's offer on 17 August 2010.

To support this offer and provide certain funds, BHP required a US$45 billion acquisition facility and looked to a small group of core relationship banks to underwrite the transaction. The process with the banks was started in early August and managed on a very short timeframe, with prospective underwriters asked to provide credit approved, committed responses within one week. BHP approached five underwriters to underwrite the transaction on a 25% basis, in order to provide certainty in the event that one of the banks was not able to deliver a commitment or meet the aggressive timeline. All five banks invited: RBS, JP Morgan, BNP Paribas, Barclays, and Santander; were ultimately approved to underwrite the transaction. The ability of the banks to react with such speed and in size enabled BHP maintain confidentiality around its intention to launch an offer until it went public later that month.

All five banks were able to meet the challenging timetable, despite the size of the underwritten commitment required, largely due to:

- the clear ask and defined structure of transaction – syndication strategy and documentation well progressed;
- the quality set of information provided to banks to assist their credit process; and
- BHP contact at an executive level within each bank to push process forward.

Significant up-front work done by BHP enabled this landmark transaction to be raised and documented within an exceptionally short timetable. Preparation also enabled the facilities to launch into the bank market a day after the offer was posted.

The structure of the transaction was well balanced providing BHP with sufficient flexibility and lenders sufficient comfort on the refinancing strategy. The latter had been achieved due to refinancing incentives such as margin step-ups and duration fees in addition to comfort gained from BHP's track record in the debt capital markets and its commitment to maintaining an 'A' rating.

A single phase, single ticket relationship syndication was undertaken and launched promptly following announcement of the bid. Syndication was completed and banks signed in after four weeks; faster than originally anticipated.

The syndication process was an overwhelming success: 19 banks committed during the syndication phase, bringing the total bank group to 25. A total of US$66.5 billion was raised representing a 1.5 times oversubscription, allowing underwriters to be scaled back to US$1.8 billion from an original underwritten commitment of US$8.4 billion.

The key terms of the deal were as shown in Exhibit 12.3.

Exhibit 12.3

Overview of facility terms

	Facility A term loan	*Facility B term loan*	*Facility B RCF*	*Facility C RCF*
Facility size	US$25 billion	US$10 billion	US$5 billion	US$5 billion
Term	1+1 years	3 years	3 years	4 years
Margin (bps p.a.)	70	110	110	130
Commitment fee	30 %	30%	35%	35%

Source: RBS deal summary: BHP Acquisition Financing (2010)

Non-investment grade case study – WorldPay

WorldPay is a leading global payments services business providing merchant acquiring and processing services to national, international and SME merchants. It is the number one merchant acquirer in the UK and number four globally by transaction value. WorldPay estimates its merchant acquiring market share to be circa 44% in the UK, where the company processes circa £3.5 billion transactions annually and serves circa 180,000 merchant clients.

On 6 August 2010, Advent International and Bain Capital signed an agreement to acquire WorldPay from The Royal Bank of Scotland plc for a total consideration of circa £1.9 billion. Advent and Bain acquired 80.01% of WorldPay and RBS Group retained a 19.99% equity state in the business going forward.

The acquisition was financed with £970 million of senior secured facilities and a £300 million mezzanine facility. The financing represented the largest UK private equity deal since 2008. The

financing structure was supported by a 42% equity cushion. The deal was underwritten by RBS, Barclays Capital, Goldman Sachs, Morgan Stanley and UBS.

The transaction was highly notable given it was the largest UK private equity deal since 2008 and successfully tested the market's capacity for sterling liquidity. The deal was financed entirely through the loan market. Market participants had been eagerly anticipating the primary supply, especially in Europe where new issues had been slow to materialise.

The financing package included syndication efforts across both Europe and North America in sterling, euro and US dollars in order to maximise liquidity. A successful 'early bird' phase of syndication resulted in several lenders joining the transaction driving strong momentum for the general syndication.

The final cross-border loan package was structured as follows:

- £160 million, six-year amortising TLA, 450bps;
- £325 million, seven-year bullet TLB1, 500bps;
- £235 million, seven-year bullet TLB2, 450bps (sold in dollars);
- £100 million, seven-year bullet TLB3, 475bps (sold in euros);
- £75 million, six-year revolver, 450bps; and
- £75 million, six-year capex/restructuring facility, 450bps.

The entire TLB was issued at 99, with a Libor/Euribor floor of 1.75%. The Libor/Euribor floor is a relatively recent phenomenon in the European loan markets. It has been primarily seen in US deals and was created to present attractive returns to investors to in the light of historically low Libor rates.

The TLB saw broad-based support across the sterling, euro and US dollar tranches. Despite fears that the market would struggle to fill a large sterling requirement, there was strong demand for the sterling denominated tranches, aided in particular by the presence of one large anchor order. The institutional tranche emerged with an original issue discount (OID) of 99, which came tighter than where market sources had initially expected. In addition, given the strong demand, the underwriters were able to reduce the pricing on the tranches ('reverse flex') for the benefit of the borrower. Margins were reduced by 25bps on the sterling and euro term loans, and by 50bps on the US dollar term loan. Even with the reduced pricing, the order books were still significantly oversubscribed with investors receiving only a small proportion of their desired allocation.

European high yield bond market – providing additional liquidity for acquisition financing

Until 2009, the European high yield bond market was relatively small and illiquid. As such, it was not considered to be a source of acquisition finance debt where speed and certainty of execution, along with the ability to deliver liquidity in size, are key. However, since 2009, the European high yield market has shown rapid growth in both attracting new investors and in providing liquidity to the debt markets.

With the capital costs to banks of lending on the rise, investors finding a renewed appetite for yield and significant capital build-up in funds, the high yield bond market in Europe is thriving.

Increasingly in 2010, high yield bonds became an important part of capital structures alongside or, in lieu of, bank lending facilities, in part driven by continuing strong demand by high yield investors for assets, as well as growing interest by issuers in the flexibility afforded by high yield bonds.

The majority of the recent high yield bond surge in Europe has been focused on refinancing but, with the pick-up in new event-driven deals, bridges to high yield bonds are becoming a more popular option (as in the US) to finance new acquisitions by private equity firms and strategics alike. The bridges are required because there may be uncertainty or delays to the closing of the acquisition, hence the desire to avoid issuing bonds until there is absolute certainty around the closing of the deal. The requirement for 'Certain Funds' in the European market means that the documentation process for bridges is more comprehensive and requires a fully documented structure.

Introduction to structural differences

One of the key differences between loans and bonds is the covenant structure. Under a bank facility, the financial covenants and the restrictive covenants have to be complied with throughout the life of the loans, with the financial covenants tested on a regular basis. These types of covenants are called 'maintenance' covenants. In contrast, high yield bonds use 'incurrence' covenants, which are only tested at the point at which an issuer is looking to incur additional debt. As such deterioration in a group's performance in itself would not trigger a default under the covenants. Instead, until the financial ratio is in compliance with the negotiated levels, the group cannot enter into certain transactions, for example, incur further debt.

Other key differences include the tenor, or repayment period, of the indebtedness, including amortisation and mandatory and optional redemptions, as well as reporting requirements and interest rates. The flexibility of a high yield bond, however, comes at a cost. With its longer tenor a bond typically cannot be redeemed for half the life of the instruments; such restrictions generally do not apply in the loan market.

Bondholders have a much more passive relationship with issuers and this more arms-length relationship can potentially make managing a debt syndicate more challenging as there is lack of visibility as to who holds the bonds. High yield bond investors are not used to being involved in the amendment process in the way that banks are under a loan agreement. In addition, bonds are public debt instruments, hence the structuring and offering processes are highly regulated, and investors are restricted from accessing private information (that is, forward-looking information such as financial projections). In contrast, generally European loans are private debt instruments and therefore not subject to a standard set of processes or structures which can allow for greater structuring and repayment flexibility.

What is next?

Given the higher capital costs of lending, renewed appetite for yield and significant capital inflow into high yield investment funds, the market expects to continue to see an increase in the use of high yield bonds for acquisition financings. We will see a market that can be readily accessed and greater opportunities for both high yield and loans going forward. There will be a continued need in the market for both high yield bonds and loans given the ongoing need for additional financing liquidity.

Case study: Liberty Global acquisition of Unitymedia – high yield acquisition finance

In the past, buy-out activity has been funded primarily with a senior revolving credit facility (RCF) and then either using the secured lending market alongside mezzanine financing as subordinated debt, or a mix of the loan and bond market – with the loan market providing the senior secured debt and the bond market funding the unsecured subordinated debt. However, as the European high yield market has matured, we have started to see bonds used more frequently in acquisition financings.

In November 2009, Liberty Global acquired German cable company Unitymedia in a €3.64 billion deal. Funding for jumbo leveraged buyouts and trade purchases had dwindled, as banks, the traditional provider of liquidity for acquisition financings, continued to be under funding and balance sheet pressure. However, Liberty Global was able to access strong demand in the high yield market. Almost €2.7 billion of high yield bonds were issued to help fund the purchase, with the target company itself used as the issuance vehicle for senior secured (€1.99 billion) and senior unsecured (€665 million) notes. The transaction was the largest cable deal in the history of the high yield market, and also the largest secured European high yield bond financing ever.

High yield bonds had not been used extensively by European companies for acquisition financing before. The most notable bond financing linked to an acquisition was the US$16 billion raised for Roche early 2009, but that was for one of the world's best-rated companies. Investment banks in the past have provided bridge loans for leveraged deals prior to these being taken out via syndicate loans, mezzanine and high-yield debt. Unitymedia used only the high yield market.

Instead of Unitymedia obtaining a bridge loan (which is generally an expensive form of financing with exploding pricing tied to the duration of the bridge facility) the bond was issued and the deal proceeds were held in escrow until the takeover in 2010 was completed. The structure further underlined the extent to which bonds were replacing bank debt for non-investment grade companies. Putting the bonds into escrow instead of getting a bridge loan was cheaper than getting banks to lend money to mitigate risk for three months, and from a bondholder perspective this would have been a risk free investment yielding 8.5% and 10%. The financing was announced on a Friday, and was already oversubscribed by Monday evening, and books closed about four times oversubscribed. The deal was increased by €160 million equivalent amid the strong demand.

This deal gave the market confidence that multi-billion euro-denominated acquisition financings could be accomplished in the non-investment grade space. Prior to the deal, Unitymedia's financial sponsors were in the process of taking the company public, so Liberty had to act quickly to secure financing for the buyout taking advantage of a short period of market access to complete the necessary due diligence.

Liberty also recently used this approach for its acquisition of KBW.

Basel III and its effect on the loan market

Basel III

A comprehensive set of reform measures designed to improve the regulation, supervision and risk management within the banking sector. The Basel Committee on Banking Supervision published the first version of Basel III in late 2009, giving banks approximately three years to satisfy all requirements. Largely in response to the credit crisis, banks are required to maintain proper leverage ratios and meet certain capital requirements.

Effects of Basel 3 on the loan market:

- higher funding costs:
  - elevated capital ratios under Basel III (January 2013);
  - higher quality capital obligations under Basel III;
  - increased funding via covered bonds; and
  - elevated cost of senior unsecured issues.
- regulatory burden:
  - elevated capital ratios;
  - elevated liquidity obligations for (January 2015); and
  - solvency 2 (January 2013) may push weak credits to the loan rather than bond markets.
- lower equity returns:
  - banks' ROE forecasts are generally circa 10% versus 20% pre-crisis levels.

The shape of the Basel III proposals has now emerged. Although not as harsh as initially feared, Basel III will have a major impact on the development of the global financial services industry over the next decade. Basel III is a package of amendments to the existing Basel II regime. The fundamental architecture of Basel II – the division of Internal Ratings Based (IRB) banks into standardised, foundation IRB and advanced IRB – continues, and the approach of using the banks' own models to provide the inputs for the regulatory capital determination survives intact. Basel III makes a series of adjustments to various components of the basic calculation, all of which have the effect of increasing in one way or another the amount of capital required, and imposes some new constraints on bank activity.

Exhibit 12.4

Basel III capital requirements

	2013	*2015*	*2018*	*2023*
Equity	3.5%	4.5%	*7%*	*7%*
Other Tier 1	1.0%	1.5%	1.5%	1.5%
Tier 2	3.5%	2.0%	2.0%	2.0%
Total requirement	8.0%	8.0%	10.5%	10.5%
Capital deductions	0%	40%	100%	100%
Legacy sub debt	90%	*70%*	40%	0%
Leverage ratio	Observed	Disclosed	In force	In force
LCR	Observed	In force	In force	In force
NSFR	Observed	Observed	In force	In force

Source: Clifford Chance briefing note

The provisions of the proposed regulations requires that banks should be subject to liquidity coverage ratios, requiring them to maintain a pool of high quality liquid assets equal to the forecast outflows expected over a month long period of high stress. Particularly contentious is the committee's recommendation for banks to maintain high quality liquid assets to cover 100% of their liquidity facilities to corporate companies.

The borrowers most likely to face the brunt of any restrictions to bank lending caused by the Basel III regulations are those small and medium enterprises that have already seen their access to funding tighten throughout the credit crunch. These smaller companies are the lifeblood of any country's economy, and will be the main drivers behind sustained recovery. If the Basel III proposals are brought to bear in the market, their main source of financing could be strangled, and economic recovery may well be hampered.

Final Basel definition

> A liquidity facility is defined as any committed, undrawn back-up facility put in place expressly for the purpose of refinancing the debt of a customer in situations where such customer is unable to obtain their ordinary course of business funding requirements (for example, pursuant to a commercial paper programme) in the financial markets. General working capital facilities for corporate entities (for example, revolving credit facilities in place for general corporate and/or working capital purposes) will not be classified as liquidity facilities, but as credit facilities.
>
> The amount of the liquidity line captured here excludes the portion of the liquidity line that is backing securities issued that do not mature within the 30-day horizon. Available, unused capacity to issue financings that could mature within the 30-day horizon should be subject to the relevant assumed draw on the liquidity facility for the available capacity.

Ultimately this will likely have a profound effect on the 'carry' cost of commercial paper (CP) standby lines, their sizing and the efficiency of CP programmes overall. In addition there will likely be much closer scrutiny over the underlying purpose clause of general corporate facilities.

Elsewhere the liquidity ratio will impact banks' appetite for <30 day cash deposits, the leverage ratio will impact appetite and pricing for off balance sheet items whilst the harsher capital ratios and moves to regulate the shadow banking system are set to trigger profound reviews by banks of what lines of business they want to adopt over the coming years.

The regulatory changes to the banking and shadow banking systems will have a profound effect on the business appetites of banks but time will be needed for these changes to evolve. In the meantime we predict that banks will become steadily more conservative in applying 'New World' modelling to determine their appetite for syndicated facilities.

Regulatory updates – key items

Basel III will now be implemented in Europe via CRD 4, with a short consultation expected in Q1 2011. Lobbying opportunities will arise until the Council and MEPs finalise legislative text (expected Q3/Q4 2011).

Minimum capital standards
Transition period from 1 January 2013 to 1 January 2019.

- Minimum common equity of 7% compared to 2% under existing rules.
- Non-qualifying capital instruments will be phased out from 1 January 2013.
- Deductions from common equity (that is, of goodwill, certain tax credits, and minority investments *et alia*) will be phased in from 1 January 2014.
- Additional capital requirements for systemically important banks are still to be finalised.

Liquidity coverage ratio
Observation period commenced 2011, enforcement from 1 January 2015.

- Identifies the amount of unencumbered, high quality liquid assets an institution holds that can be used to offset an acute short-term stress scenario entailing both institution-specific and systemic shock to be endured over a 30 day period.
- Stress assumptions include draw downs on: committed credit facilities to non-financial corporate customers 10%; committed liquidity facilities to non-financial corporate customers 100%; on committed credit and liquidity facilities to other legal entity customers (such as financial institutions including banks, securities firms, insurance companies, multilateral development banks) 100%.

Net stable funding ratio
Following an observation period, enforcement from 1 January 2018.

- This ratio is defined as the ratio of the available amount of stable funding to a required amount of stable funding and must be greater than 100%.
- 'Stable funding' is defined as those types and amounts of equity and liability financing expected to be reliable sources of funds over a one-year time horizon under conditions of extended stress. The amount of such funding required of a specific institution is a function of the liquidity characteristics of various types of assets held, off balance sheet contingent exposures incurred, and/or the activities pursued by the institution. The aim will be to reduce reliance on wholesale funding.
- Extensive recalibration of some of the metrics will be forthcoming following consultation in 2010.

Leverage ratio
Disclosure 2015, transition in 2017, implementation 2018.

- The leverage ratio will be supplementary to Basel II measures with a test of capital against a total exposure measure to include off balance sheet leverage including credit derivatives; certain off-balance sheet items (*inter alia* credit commitments, unconditionally cancellable commitments, direct credit substitutes, acceptances, standby letters of credit, trade letters of credit); securitisation exposures; repurchase agreements.
- The target value of the leverage ratio suggested by the Committee is 3%, to be confirmed upon completion of the design of the leverage ratio.

Outlook and summary

Europe's biggest companies rely on bonds more heavily than ever for their long-term drawn debt. But the loan market proved during its comeback last year that it remains a key source of funding, not just for backstop lines but for M&A, too. Throughout 2010, the loan market proved flexible and robust despite wider macroeconomic challenges such as the European sovereign crisis, and the overall equity and debt capital markets volatility. Partly because of this resilience, the loan product remains a key weapon in any treasurer's arsenal.

European companies' approach to funding has changed since 2008. Borrowers are more flexible with their financing and less willing than ever to simply rely on a single investor base for their capital needs. Although volumes in the European corporate bond market fell last year by more than 50% from 2009, issuance remains high and some believe that European companies are permanently shifting their funding models.

Syndicated loans remain indispensable for any borrower looking for event-driven funding. The US$45 billion loan obtained in August 2010 by Anglo-Australian miner BHP Billiton showcased the benefits of funding acquisitions through the bank market.

In 2009 EMEA capital raising was dominated by the bond market and many saw this as a permanent shift away from loans. In 2010 we saw a strong reversal of that trend with a huge volume of loans successfully syndicated at very aggressive levels.

While it is difficult to opine where volumes for one particular financing product may be from quarter to quarter, what we do see is the emergence of a more balanced offering available to issuers to support their acquisition financing requirements. The depth of liquidity available in the bond markets is seen as a positive development in terms of offering issuers longer term liquidity and banks more flexibility in recycling their capital into new opportunities. The characteristics of size, speed and secrecy remain key in the domain of acquisition finance, and the loan product, despite the many challenges ahead, remains well-placed to be at the heart of this activity.

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*The material in this chapter is up to date as at the time of writing in 2011.

[1] Note that BB range issuers tend to be defined as 'crossover' issuers and may be offered 'investment grade structures' as well, depending upon the profile of the issuer and the strength of its banking relationships.

Chapter 13

Project finance

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Introduction

The purpose of this chapter is to provide an overview of project finance. This chapter will outline what project finance is, the key features which distinguish it from other methods of financing, the motivations and circumstances for utilising it and the typical structuring considerations therein. Moreover, it will be shown to be a method of infrastructure finance[1] which has become increasingly relevant in the wake of the Global Financial Crisis.[2]

What is project finance?

Project finance can be characterised in a variety of ways and there is no universally adopted definition but as a financing technique, the authors' definition is:

> The raising of finance on a limited recourse basis, for the purposes of developing a large capital-intensive infrastructure project, where the borrower is a special purpose vehicle and repayment of the financing by the borrower will be dependent on the internally generated cash flows of the project.

This definition in itself raises a number of interesting questions, which include the following.

- What do we mean by 'limited recourse' financing – recourse to whom or what?
- Why is project finance typically used to finance large capital intensive infrastructure projects?
- Why is the borrower a special purpose vehicle (SPV) under a project financing?
- What happens if the internally generated cash flows of the project are not sufficient to repay the financiers of the project?

These points will be addressed throughout the course of this chapter.

The terms 'project finance' and 'limited recourse finance' are typically used interchangeably and should be viewed as one in the same. Indeed, it is debatable the extent to which a financing where the lenders have significant collateral with (or other form of contractual remedy against) the project shareholders of the borrower can be truly regarded as a project financing. The 'limited' recourse that financiers have to a project's shareholders in a true project financing is a major motivation for corporates adopting this approach to infrastructure investment.

Project financing is largely an exercise in the equitable allocation of a project's risks between the various stakeholders of the project. Indeed, the genesis of the financing technique can be traced back to this principle. Roman and Greek merchants used project financing principals in order to share the risks inherent to maritime trading. A loan would be advanced to a shipping merchant on the agreement that such loan would be repaid only through the sale of cargo brought back by the voyage (that is, the financing would be repaid by the 'internally generated cash flows of the project', to use modern project financing terminology).

As a more discernable financing technique, it was adopted widely during the 1970s in the development of the North Sea oilfields and also in the US power market following the 1978 Public Utility Regulatory Policy Act (PURPA), which provided the regulatory impetus for independent power producers (IPP) through the requirement of long term offtake contracts for the power they produced.

Arguably the most prolific use of project financing has been the UK 'private finance initiative' (PFI) which began in 1992 and has been actively promoted and managed by the successive British governments since then. PFI is the commoditisation of public-private partnerships (PPP) into a systematic programme. PPP is a specific form of project finance where a public service is funded and operated through a partnership of government and the private sector, typically structured under a long term concession arrangement. In return, the project company receives a defined revenue stream over the life of the concession from which the private sector investors extract returns. In the UK, the PFI framework has been used to procure a variety of essential infrastructure including street lighting, schools, military accommodation/equipment, roads, hospitals and prisons. In 1999, the UK government adopted the 'Standardisation of PFI Contracts' (SoPC) which has continued to evolve as a framework for PPP projects in the UK. SoPC effectively commoditised PPP in the UK, thereby enabling the project finance market (its contractors, advisers and lending community) to support a tremendously high volume of PPP contracts, some with transaction values as low as US$40 million which would otherwise be regarded as economically unviable due to the transaction costs and long lead times associated with most project financings.

The project finance market (2010)

The EMEA region (Europe, Middle East and Africa) and North America has traditionally been the focus of the global project financing market, particularly as a result of western governments' prolific utilisation of PPP as a method of funding essential national infrastructure. However, since the Global Financial Crisis, Asia Pacific transaction volumes made up nearly half of the total global project finance market, representing a significant shift in the balance of trade flows in the infrastructure market (see Exhibit 13.1).

As shown in Exhibit 13.2, India's huge demands for domestic infrastructure development have provided more than a quarter of the total global volume of project financing in 2010.

Exhibit 13.3 confirms that the project finance market continues to be dominated by the power and transportation projects. These sectors are highly capital intensive, form essential pieces of national infrastructure, have long asset lives and typically have predictable revenue streams, making them ideal assets for project financing.

The volume, geographic spread and cross-sector penetration of project financing in 2010 was impressive and confirms that the infrastructure market remains resilient, although there have been notable implications for the product as a result of the Global Financial Crisis which are revisited later in this chapter.

Exhibit 13.1

Project finance transactions by region

	2010		2007	
	US$ million	*%*	*US$ million*	*%*
Asia Pacific	98,708.30	47.42	44,842.30	20.38
EMEA	83,931.20	40.32	130,667.30	59.40
Americas	25,534.50	12.27	44.476.30	20.22
Global total	208,173.90	100.00	219,985.90	100.00

Source: Thomson Reuters Project Finance International

Exhibit 13.2

Project finance transactions by country (2010)

	Country	*US$ million*	*%*
1	India	54,801.70	26.32
2	Spain	17,376.10	8.35
3	Australia	14,592.10	7.01
4	United States of America	13,423.80	6.45
5	United Kingdom	13,020.80	6.25
6	Taiwan	12,064.40	5.80
7	Saudi Arabia	10,000.20	4.80
8	Switzerland	5,371.20	2.58
9	France	5,350.70	2.57
10	Italy	5,014.50	2.41
	Top 10 total	151,015.50	72.54
	Global total	208,173.90	100.00

Source: Thomson Reuters Project Finance International

Similarities to other forms of financing

The extent to which project finance should be regarded as a distinct wholesale banking product, or as a financing technique which incorporates a number of disciplines, is debatable. As a method of debt finance, project financing shares a number of the techniques and approaches found in other areas of wholesale banking (see Exhibit 13.4).

Exhibit 13.3

Project finance transactions by sector (2010)

Sector	*US$ million*	*%*
Power	73,300.40	35.21
Transportation	52,315.40	25.13
Oil and gas	25,950.80	12.47
Leisure and property	13,824.20	6.64
Telecommunications	13,382.70	6.43
Petrochemicals	11,306.40	5.43
Mining	8,857.70	4.25
Industry	6,306.00	3.03
Water and sewerage	1,577.50	0.76
Waste and recycling	1,266.60	0.61
Agriculture and forestry	86.30	0.04
Global total	208,173.90	100.00

Source: Thomson Reuters Project Finance International

Transactional stakeholders

The sophisticated contracting arrangements of a project financing are underpinned by a detailed allocation of risks between a number of 'project stakeholders'.

Exhibit 13.5 provides a generic overview of the principle parties which typically feature in most project financings. An example of the contractual relationships between these parties is shown in Exhibit 13.6.

In addition to the core project stakeholders shown in Exhibit 13.5, there are typically a host of other advisers, experts and professionals whom are either directly or indirectly involved in a project financing, including:

- due diligence advisers to the lenders which at a minimum will include technical and legal advisers but potentially also financial, insurance, auditing, tax, accounting, market and environmental advisers (depending on the specifics of the project);
- advisers to the sponsors – typically financial, legal and technical advisers at a minimum; and
- under a PPP framework, advisers to the procuring authority/government – again, typically financial, legal and technical advisers.

Exhibit 13.4

Comparison of project finance versus other wholesale financing techniques

Form of financing	*Parallels/commonalities*	*Key differences*
Corporate lending	• Dependent on available cash flows to service debt • Term loan structures used	• Under an (unsecured) corporate loan, the lenders have recourse to all the assets of the company itself (regardless of whether the proceeds of the loan are used to finance a specific asset or not) or in the case of a secured loan, a specific asset of the company • In project finance, the borrower (the project company) is an SPV and the principle lender security is the future cash flows of the project itself – it is 'cash flow lending'
Securitisation (asset-backed securities)	• The borrower is an SPV • A form of 'off balance sheet' financing for the originator • The SPV issues bonds to fund the purchase of assets by the SPV. (Per a project financing), the bondholders repayment of interest and principle is contingent on the performance of the underlying assets of the SPV	• A securitisation can only occur for cash generative assets (for example, a loan portfolio which is generating interest payments). Project financing is most typically used to finance greenfield[1] projects • In a securitisation, there are typically a large volume of assets being financed via a single SPV (for example, a portfolio of mortgages). The pool of assets may therefore be of a variable credit quality and hence the financing instruments (bonds) are usually tranched accordingly. In a project financing, a single (or very small number) of assets are funded via a single borrower, presenting a uniform credit profile for all lenders
Leveraged buy-out (LBO)	• Highly leveraged transactions	• In a project financing, the shareholders to the transaction are not contractually at risk if the project vehicle (borrower) defaults on its loans
Venture capital	• Discrete number of equity investors • High focus on equity return of an investment	• Venture capital investments are speculative assessments of a company's potential to generate returns. A project financing is predicated on robust, long term and highly predictable financial modelling of forecast cash flows

[1] A new project, where one did not exist before and therefore no significant capital works are required on the project site or any existing assets located on the site. A brownfield project will typically include the demolition or rehabilitation of existing assets on the project site.

Source: Authors' own

Exhibit 13.5

Typical stakeholders of a project finance transaction

Stakeholder	*Summary of role in a project financing*
Sponsors	• The equity investor(s) and owner(s) of the project company – can be a single party, or more frequently, a consortium of sponsors • Subsidiaries of the sponsors may also act as sub-contractors, feedstock providers, or offtaker to the project company • In PPP projects, the government/procurer may also retain an ownership stake in the project and therefore also be a sponsor
Procurer	• Only relevant for PPP – the procurer will be the municipality, council or department of state responsible for tendering the project to the private sector, running the tender competition, evaluating the proposals and selecting the preferred sponsor consortium to implement the project
Government	• The government may contractually provide a number of undertakings to the project company, sponsors, or lenders which may include credit support in respect of the procurer's payment obligations (real or contingent) under a concession agreement
Contractors	• The substantive performance obligations of the project company to construct and operate the project will usually be done through engineering procurement and construction (EPC) and operations and maintenance (O&M) contracts respectively
Feedstock provider(s) and/or offtaker	• More typically found in utility, industrial, oil & gas and petrochemical projects • One or more parties will be contractually obligated to provide feedstock (raw materials or fuel) to the project in return for payment • One or more parties will be contractually obligated to 'offtake' (purchase) some or all of the product or service produced by the project • Feedstock/offtake contracts are typically a key area of lender due diligence given their criticality to the overall economics of the project (that is, the input and output prices of the goods or services being provided)
Lenders	• Usually a combination of one or more commercial banks and/or multilateral agencies and/or export credit agencies and/or bond holders

Source: Authors' own

Schematic contractual structure for a project financing

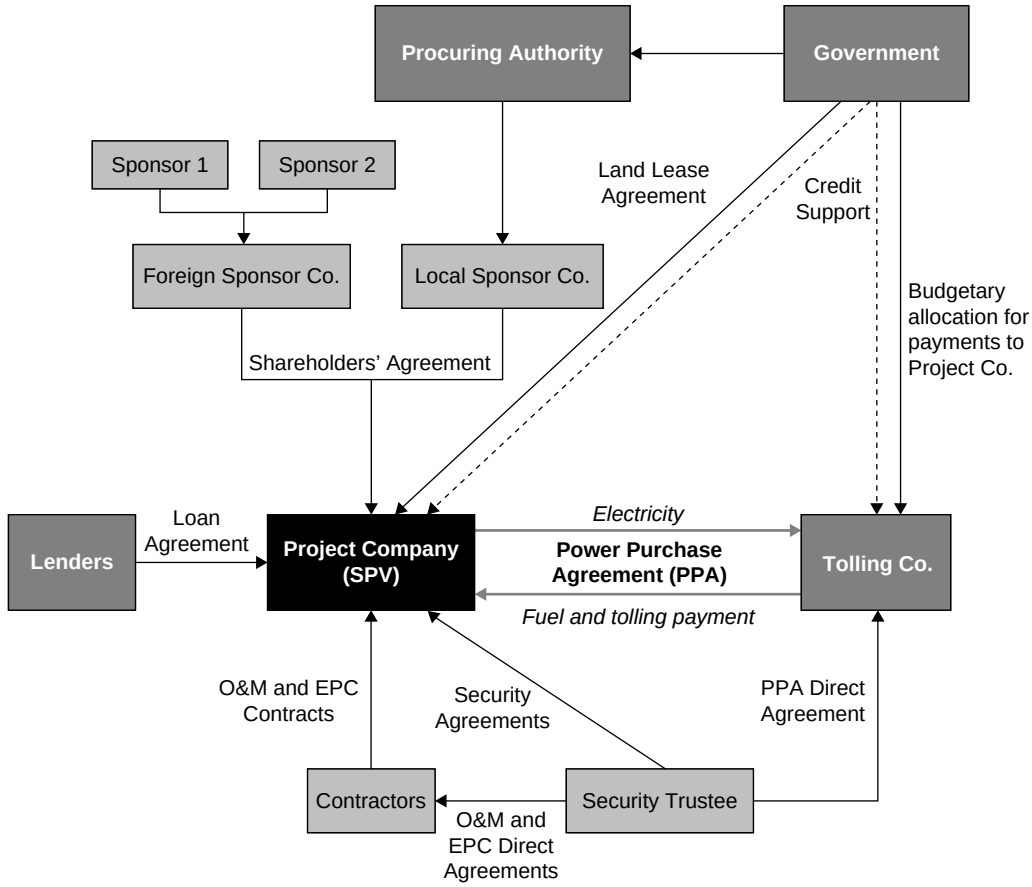
Exhibit 13.6 illustrates a generic contractual structure for a power project PPP in an emerging market, where the head contract is structured as a 'tolling' agreement – the project company (the power company) is provided the primary energy (for example, gas, oil, coal) for free and paid to convert it to electricity. The government is both a shareholder and provider of credit support to the 'Tolling Co'.

Ownership arrangements

The terms and conditions of the sponsors' ownership of the project company will be covered under a shareholders' agreement which will codify matters relating to the control, corporate governance, funding, ownership, share transfer and termination of the SPV.

Exhibit 13.6

Example PPP contractual structure



Source: Authors' own

Input and sales arrangements

Critical to the assessment of the creditworthiness of a project will be the input (for example, feedstock or raw materials or fuel) and sales (purchase of goods or services either into a market or under a contract) arrangements of the project company. Lenders will ideally wish to have the security of long term, contracted input and sales agreements containing clear pricing mechanics.[3] Key considerations will include:

- the tenor of the contracts – noting that if the input/sales contracts have a shorter tenor than the proposed financing, there is a renewal risk for lenders; and

- the extent to which sales arrangements are subject to demand risk or if the offtaker of the goods/services will be insulating the project company from this risk under a form of 'take or pay' or 'availability' contract – where the project company earns revenues merely for making the goods or services available, irrespective of demand.[4]

In the contractual structure example shown at Exhibit 13.6, a classic tolling arrangement with a government supported feedstock provider/offtaker insulates the project company and its lenders from many of the risks associated with input and sales.

Stakeholder motivations for project financing

Project financing is predicated on the equitable allocation of risks between a project's stakeholders through various contractual relationships between the parties. A well structured project provides a number of compelling reasons for stakeholders to undertake project financing as a method of infrastructure investment.

Sponsors

In a project financing, because the project company is an SPV, the liabilities and obligations associated with the project are one step removed from the sponsors. This provides a number of structural advantages to the sponsors, which include the following.

- *Limited recourse:* a default under a corporate loan may enable the company's financiers 'recourse' to (that is, seek remedy against) the assets of the company. In a project financing, the lenders' only recourse are to the assets of the project company. This is an important consideration given the magnitude of the financing for many infrastructure investments may be far greater than the corporate balance sheets of the sponsors. Notwithstanding the above, it would be inaccurate to surmise that project financing is always non-recourse to the shareholders, as commonly other forms of support in the form of contingent equity and partial or full completion guarantees may be provided directly by the sponsors to the project company.
- *High leverage:* a project financing is typically a highly leveraged transaction – it is rare to see a project company financed with less than a 60/40 debt/equity ratio and in certain sectors such as social infrastructure, it is not uncommon for projects to be 90% debt financed. The key advantages to sponsors of this high leverage, include:
  - lower initial equity injection requirements, thereby making the project investment a less risky proposition;
  - enhanced shareholder equity returns; and
  - debt finance interest may be deductible from profit before tax (PBT), thereby further reducing the (post tax) weighted average cost of capital of the project company.

  The advantages noted above will all help to lower the cost of a project and therefore are desirable from both sponsor and procurer perspectives. However lender covenants will invariably limit the extent to which sponsors can 'lever' the project company. Moreover, it is not uncommon in PPP programs for the host government to restrict the maximum permissible gearing for a project company in order to promote meaningful levels of foreign direct investment through equity shareholdings.

- *Balance sheet treatment:* in a traditional corporate lending structure, the capacity of a corporation to raise debt financing is constrained by the strength of its balance sheet, commonly assessed by prospective lenders through various financial performance ratios such as net debt/EBITDA. Project financing allows the shareholders to book debt off balance sheet, although the extent to which this is achievable will generally be determined on the basis of the extent to which the sponsor is determined to control the asset, with reference to the specific shareholding structure of a project and the contractual terms of any concession agreement.

Project financing also provides a vehicle for companies to hedge risks associated with their core businesses. Take the example of a power utility domiciled in a developed western nation with a domestic merchant[5] power market supporting most of its generating assets, the attractions of investing in an emerging market project financed IPP would include:

1 expanding the geographic footprint of its asset base, thereby diversifying the macro-economic/political portfolio risk; and
2 diversification of the risk profile of its revenue stream through, for example, securing a source of long term contracted revenues under a PPP framework to balance the market risk inherent to its domestic merchant portfolio.

Procuring authority/government

Considerable advantages are presented to governments through adopting PPP frameworks as a method of infrastructure procurement.

- *Fiscal optimisation:* traditional methods of infrastructure procurement require the government finance construction. PPP transfers the financing responsibility to the private sector, thereby allowing the government to amortise the cost of the asset over the term of the concession. The amortisation period will depend on the tenor of the financing achievable for the asset but 20 year commercial facilities are not uncommon in certain sectors.
- *Process efficiency:* PPP has been shown as a way of eliminating inefficiencies from governmental infrastructure procurement, through tighter contracting and increased rigour of execution.
- *Performance risk:* under a PPP relationship, the risks of constructing and operating the asset are passed to the private sector through the head and sub contracts. Hence, private sector Sponsors are financially heavily incentivised to ensure full asset performance.

Lenders

As with any form of financing, lenders to a project financing extract a return commensurate with the level of risk. In itself this is a motivation for any form of lending. Lenders to a project financing also typically seek additional returns through the provision of the associated products and services required by the project company (for example, project accounts, trustee roles, hedging and advisory services).

Moreover, 'behaviouralisation' studies of project finance loans confirm that as a class of asset, they are generally robust. A Moody's survey of 2,639 projects from 1983–2008 showed that 213 of the projects had a senior loan default, of which the average ultimate recovery rate was 76.4%.[6]

Project process sequence

As noted above, the bulk of project financing transaction volume is related to the procurement of essential public infrastructure and therefore typically procured through a PPP programme.

In a PPP programme, the respective arm of government which is procuring the project on behalf of the government (which could be a state owned entity, such as a public utility) will typically be

Exhibit 13.7

Example outline of a PPP tender process

Step/documentation	*Description*
Issuance of request for expressions of interest (RFEOI)	• An open sampling of the universe of potential companies who are in principle interested to tender for the project
Issuance of request for qualification (RFQ)	• A first stage tender document released to all companies which have expressed interest to tender for the project. Respondents are typically assessed on their basic financial and technical abilities to implement the project
Issuance of request for proposals (RFP)	• A second stage tender document released to all companies or consortia of companies that were deemed 'qualified' under the terms of the RFQ • RFPs are characteristically highly detailed and prescriptive documents which outline the full financial, legal and technical bid documents required to be provided by the bidders and the terms/conditions of the tender competition
Bid submission	• Each bidder submits its tender documents to the procuring authority on a specified date • Typically tender prices (the cost of implementing the project – for example, the NPV of total required revenues over the life of the concession) from each bidder are 'fixed' at this stage, subject to any agreed price re-opening mechanisms under the terms of the RFP
Bid evaluation	• The procurer and its advisers will undertake a detailed financial, technical and legal evaluation of each bidder's compliance with the tender evaluation criteria specified in the RFP
Winning bidder selection, final commercial negotiations and 'commercial close' of project agreements	• Assuming compliance with the terms of the RFP, procurers will usually specify price as being the final determinant of the tender competition – lowest (compliant) bidder wins • Commercial close represents the finalisation and signature of the 'head contract' (the concession contract) and the supporting project documentation such as shareholder's agreements and sub-contracts
Negotiation of financing documents, signature of financing agreements and financial close	• Negotiation of financing agreements (loan agreements and direct agreements) can happen in parallel to the negotiation of the financing agreements, thereby allowing simultaneous commercial/financial close • Financial close has been achieved when all 'conditions precedent' to the financing documentation have been satisfied and the project company is therefore able to draw down debt to fund construction of the asset

Source: Authors' own

legally required to initiate a formal tender process for private sector involvement in the proposed project. A company or consortium of companies will be invited to bid for the right to implement the project as the private sector sponsor (shareholder) in the project company. Exhibit 13.7 outlines an example of the steps which could be expected in a PPP bidding process.

Formal tender processes such as this are viewed positively within the project financing market, as a way of:

- procuring essential public infrastructure in a robust and transparent manner, thereby maximising the potential pool of investors and lenders;
- utilising the expertise of the private sector in structuring, financing and documenting complex infrastructure projects, thereby ensuring the project is delivered within the specified cost and time envelopes; and
- standardising the procurement of 'cold infrastructure' (that is, asset classes such as utilities, transportation and social infrastructure) which inevitably need to be procured on a repeated basis in order to meet growing demand linked to population growth.

PPP programmes similarly enable governments to demonstrate that the public funds which are used to amortise the cost of these assets over their concession life are being used efficiently and transparently.

Pre-requisites to project finance

There are clear advantages to using project finance as a tool for financing large infrastructure projects. Nevertheless, there are a number of practical pre-conditions to financing a project on a limited recourse basis.

1 *Sustainable economics:* whilst comfort can be gained from: (i) undertaking detailed financial due diligence and modelling to stress-test the projected cash flows of the asset; and (ii) contractually mitigating revenue risk, experienced investors and bankers will ultimately look for a clearly identifiable demand for the project's goods or services in order to 'rationalise the credit'.
2 *Identifiable risks:* an unidentified and unmitigated risk could potentially jeopardise the stability of a project. Exhibits 13.8 and 13.9 provide examples of common risks and mitigation strategies for project financing.
3 *Accessible financing:* from both sponsor and (if applicable) procurer perspectives, high leverage and long-tenor financing is a de facto requirement to achieving attractive economics for large infrastructure financings.
4 *Political stability:* even if political 'force majeure' risk is contractually born by the government (as is common practise in many PPP programmes), the efficacy of that remedy to lenders/investors would be negated by a strategic sovereign default – expropriation/nationalisation of assets being one potential example. Whilst such risks cannot be mitigated against in the insurance markets, varying degrees of political risk insurance can be obtained through the use of financing products available from multilateral and export credit agencies.

If the pre-conditions above are satisfied, there is good chance that a project financing for an infrastructure asset is achievable.

Nevertheless, the complex legal, technical and financial structures inherent to a limited recourse financing generally necessitate higher upfront transactional costs than traditional corporate lending (through advisers fees and higher debt pricing) as well as a longer execution timetable. However:

- additional transactional costs are usually capitalised into the overall project budget to be financed and will therefore represent a minor percentage of total project costs for a large infrastructure endeavour. Moreover, project finance debt facilities are typically structured with long repayment tenors (to better match the economic life of the underlying asset) and hence all capitalised costs are amortised over a long period of time; and
- although the execution timeline for a greenfield project financing can be anything from 12 to 18 months (from inception to financial close), this is principally a function of the sophisticated risk allocation and lender due diligence processes of limited recourse finance – processes which, it can be argued, provide a critical governance mechanism to the sponsors/procurer.

Exhibit 13.8

Construction phase risks and mitigants

Risk	*Typical mitigants*
Completion delay	• Experienced, credit worthy construction contractor • Financial penalties (liquidated damages) payable from the contractor to the project company to cover loss of revenues due to completion delay
Failure of completion for ancillary infrastructure	• The risk that ancillary infrastructure which is required to operate the project is not completed on time, is usually born by the government under a PPP framework (for example, utilities, feedstock supply)
Cost overrun	• A lenders' technical consultant will confirm the adequacy of the project budget • Standby debt and equity available from lenders/sponsors
Force majeure	• Usually extensions of time and relief from liability • Project company will also seek financial protection from insurers
Sponsor credit risk	• Lenders will assess the sponsors credit worthiness and potentially require letters of credit sufficient to cover sponsor equity commitments

Source: Authors' own

Project risks and mitigants

Project risks are usually bifurcated between the construction and operational periods of the project. Lenders are most 'at risk' during the construction period (and this is typically the period when most defaults occur). Hence, particular due diligence will be undertaken on the strength and contingent support associated with the construction contract.

Exhibit 13.9

Operations phase risks and mitigants

Risk	*Typical mitigants*
Feedstock supply	• (If applicable), usually mitigated through a robust, long term feedstock agreement with a credit worthy counterparty
Sales	• Contracted sales through an offtake agreement which clearly specifies agreed volumes/capacity/pricing • Non-contracted sales where market risk is a factor are supported by an independent market study and appropriate financial structuring to ensure sufficient downside protection
Operations and maintenance	• Experienced operator with a strong track record of operating assets of a similar nature and size. Contract to include liquidated damages in case of poor performance • Long term maintenance agreements, typically with the original equipment manufacturers
Political (for example, war, regulatory, permitting)	• Procurer risk in most PPP frameworks, with financial relief availed to the project company • Contractual relief agreed between joint venture (JV) shareholders in non-PPP transaction
Cash flow	• Robust project model with significant granularity at both the operational and financing levels • Cash flows stress tested under a number of downside scenarios (for example, reduced demand, increased input/ouput pricing, macro-economic shock) • Model audited on behalf of lenders by an independent auditor • Additional project cash flow protection through lender cash reserve accounts
Currency and inflation	• Currency risk either born by the government (if a PPP framework) or through matching the currency of revenues and debt financing • Inflation risk can either be contractually passed on through sales or mitigated through creating sufficient headroom in the project economics
Interest rates	• Interest rate risk typically largely hedged as a lender requirement

Source: Authors' own

Financing considerations

Sources of debt finance

There are a variety of debt finance products which can be applied in a project financing but the specific mix of products available to a project will depend on the sector, jurisdiction, project size, sponsor profile, transaction risk profile and source of capital equipment. Because of the inherent benefits of leverage and tenor to a project's economics, sponsors will invariably be drawn to the most liquid and long-term instruments available for a given project.

The principle sources of debt finance for a limited recourse, greenfield project are as follows.

- *Commercial bank loans:* although traditionally structured as syndicated loans with large initial underwrites, sponsors now look to build clubs of banks for projects following the collapse of the syndicated loans market during the Global Financial Crisis. Commercial funding for projects can be sourced both from international and local banks.
- *Export credit agencies (ECAs):* ECA finance was historically more relevant for financing projects in emerging markets due to the political risk cover obtained by commercial lenders utilising ECA cover. This picture has changed somewhat in the wake of the Global Financial Crisis (see below) and ECA finance is now a major source of global project lending. The majority of ECA financing is covered lending, where commercial banks provide the underlying funds and are insulated by the ECA for a large proportion of the commercial and political risk associated with the project. The product can either be restricted to financing of specific capital goods sourced from the ECAs home country ('tied') or on an un-tied basis. A number of ECAs will offer direct financing products, where the underlying funding is also provided by the ECA.
- *Multilateral agencies:* multilateral agencies are established by intergovernmental agreements and unlike ECAs are independent of the interests of any single country member or recipient government – they are designed to promote international and regional economic co-operation. They can provide direct lending, political insurance to other lenders and even equity participation. Because they are developmental in nature, they are predominantly emerging markets focused and will seek a strong socio-economic developmental rationale for a project to consider support.

Additionally, bond financing has been used widely in project financing, particularly in the US for the financing of power projects. However, the majority of project bonds for Greenfield financings have required significant Sponsor support undertakings (for example, full completion guarantees) and hence it is debatable the extent to which these represent true limited recourse financings. Nonetheless, the bond market is an attractive option for project financing due to the availability of long tenor, fixed rate funding and there have been notable issuances recently in the market. Moreover, bonds present an attractive alternative source of liquidity for refinancing existing project finance loans.

Equity

Equity can be contributed by sponsors using a variety of structures:

- ordinary share capital; and/or
- shareholder loans, which can provide two advantages, being: (i) a tax shield through tax deductible shareholder loan interest; and (ii) an optimised returns distribution profile, where shareholder loan repayments of interest and principle are not restricted by balance sheet retained earnings; and/or
- a bank-funded equity bridge loan (which will be guaranteed by the sponsors and typically repaid at project completion), the use of which optimises shareholders' return profiles through delaying the timing of equity contributions to the project.

Documentation and security

Projects are commonly funded using multi-sourced debt financing structures. A number of individual facility agreements will therefore sit under a common terms agreement, acting as an umbrella inter-creditor agreement for all lenders and outlining the common terms therein. A core element of this will be the exhaustive list of events of default and would typically include triggers such as failure to pay and breaches of representations and warranties made by the project company.

The security provided for under the financing documentation is a key issue as lenders' only collateral is the project's assets (both tangible and intangible). Taking security allows the lenders to take control of the project if necessary. A typical security package will therefore have a suite of direct agreements which allow lenders to 'step-in' to the project agreements (see Exhibit 13.6). Without these, other forms of security over the project's assets themselves is of little value. Additional forms of security may include a pledge of the project company shares, a mortgage over the project site and its assets and a charge over the project company's bank accounts and project insurances.

Project finance post the financial crisis

A number of interesting trends and developments have occurred in the project financing market in the wake of the Global Financial Crisis. Notably, continuing pressure on bank liquidity has resulted in a smaller universe of international banks with the appetite and balance sheet capacity to fund large infrastructure projects. The knock-on effect has been the de-facto suspension of the project finance primary syndication market, with banks less willing to take large underwriting positions.

Furthermore, for those banks that remain in the market, tightened regulatory requirements for the management of bank capital have been specified under the Basel III accords. Banks now have to assign a higher percentage of their liquidity to back long tenor commercial debt financing and this has placed upward pressure on the pricing of project finance 'uncovered' bank debt financing. However, a far lower risk weighting (and hence, capital requirement) is apportioned to ECA covered finance.

These trends have created a heightened demand for both ECA covered and ECA direct financing in the infrastructure market. ECAs have been under increased pressure to support their exporters and developers in their overseas businesses. Large international companies have been aggressively hunting for returns overseas, particularly to hedge against sluggish domestic markets with suppressed growth.

Infrastructure investment has proven an attractive safe haven. The emerging market economies have shown the strongest growth in the wake of the crisis and continue to require significant infrastructure development, particularly for basic 'cold infrastructure' such as utilities and transportation. Due to the funding pressures facing the commercial banks, ECA direct financing has therefore become an important feature of emerging markets greenfield infrastructure finance, particularly for large PPP projects, where contractors are recognising the competitive advantage of strong ECA support.

Finally, the considerable increase in debt pricing witnessed during the Global Financial Crisis will create a number of refinancing opportunities for assets funded during this period as normality and stability returns to the markets. Nevertheless, sponsors and procurers alike are motivated not to deflect constrained commercial bank liquidity away from greenfield project financings (where commercial banks are most suited) and instead to tap additional pools of liquidity for refinancing, such as project bonds. This may prove to be an attractive new class of asset for investors craving both yield and portfolio diversification.

Summary

The confluence of the factors above has created greater impetus for private and public sector parties to leverage the benefits afforded by project finance. Governments globally have recognised the importance of infrastructure development as both a pre-requisite for the provision of basic services and a catalyst for growth. Lenders looking for diversified earnings, particularly in the emerging markets, recognise this as a significant opportunity. Moreover, infrastructure projects provide an attractive investment opportunity for corporates looking for overseas returns, particularly when financed on a limited recourse basis.

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[1] For simplicity, the term 'infrastructure' has been generically used to refer to any capital intensive asset or group of assets which provide essential goods or services (for example, utilities, petrochemicals, transportation services, housing) and can be contractually structured to provide internally generated cash flows.

[2] The capitalised term 'Global Financial Crisis' has been used to refer to the global period of economic stagnation and instability in the banking markets, which started in 2008 and has continued into 2011.

[3] The extent to which long term sales agreements can be structured is industry dependent and projects can be structured with the project company retaining demand risk.

[4] Demand risk is a function of both price and quantity, each of which can be independently addressed. For example, a third party (offtaker) may accept quantity risk but only provide limited mitigation to price risk through cap/collar mechanisms.

[5] A power utility market where the system generators sell electricity into a wholesale electricity market at prices determined by the market. The generator's revenue streams are therefore exposed to market pricing risk.

[6] Thomson Reuters Project Finance International.

Chapter 14

SES Global's billion dollar private placement

Michael Thilmany
HSBC

Precursor to a private placement

SES is a seminal financial example in the US private placement market and its successful transaction in 2003 remains one of the most significant transactions for non-US institutions in this market. Headquartered in Luxembourg, rated Baa2/BBB, with significant but not persistent US dollar as well as euro funding needs, SES remains a favoured commitment among the investors. The complexity of the media value chain and SES's place within it continues to illustrate the market's investment sophistication. Furthermore, the fact that SES was able to raise over US$1 billion, having failed to raise finance in the euro markets due to difficult then-prevailing conditions, demonstrates the ongoing resilience of the US private placement market in relation to the euro markets.

In July 2003, SES Global issued, what was at the time, the largest private placement in the US. The Group's decision to tap the private placement market to raise funding was the result of a number of considerations and perceived advantages that this route has over more 'traditional' methods. The amount raised – US$1.045 billion funded by a total of 39 institutional investors – reflects the greater flexibility and considerable potential that this market offers corporations looking to raise debt.

SES Global is the world's leading satellite group operating over 40 satellites throughout the world. SES operates mainly through SES ASTRA in Europe, SES AMERICOM in North America and New Skies Satellites in Africa, South America, the Middle East and parts of Asia. The Group also holds strategic participations in satellite operators AsiaSat, SES SIRIUS, QuetzSat, Ciel and Star One as well as in a number of satellite service provision companies.

SES provides customers with unrivalled market expertise, the highest audience figures year upon year, and an unmatched level of service excellence. The Group offers truly global coverage with the world's largest satellite fleet reaching 95% of the world's population.

At the time of the American acquisition at the end of 2001, a large syndicated bank loan was put in place, primarily as an 'acquisition facility', based on floating rates and with specific requirements and covenants attached to the deal. However, with the then relatively low global interest rates and with the possibility of an uptick in the foreseeable future, SES Global started thinking about refinancing this arrangement.

The company is a highly capital-intensive business. Running costs are relatively low but building and launching a satellite is an expensive business, costing, on average, €250 million. Satellites have an average working lifetime of 15 years. To this point, the company's growth has been both

organic and through acquisitions. The Group was then entering a phase of business development at the time, consolidating operations and focusing predominantly on organic growth, for which the Group had specific capital requirements.

SES looked at fulfilling these requirements in January 2003, with an attempt to raise finance in the Eurobond markets, but without success. Nothing was wrong with the 'credit' per se, but the pricing of the potential bond issue did not meet the company's expectations and there was no pressing need for them to raise finance at that time. Readers should bear in mind that no satellite operator had ever approached the Euromarkets before, so credit analysts there were unfamiliar with the media value chain in general or fixed satellite service providers in particular. World financial markets, particularly the public debt and equity markets, waited anxiously on the sidelines watching the run-up to the war in Iraq.

Thus, SES decided to pull out of the Eurobond market. Within an hour of making that choice, the company got a call outlining the possibilities of using the private placement market. Even in times of distress in the capital markets, there are always players in the private placement market looking to invest. Indeed, during difficult times, it is business as usual for the US private placement market. During previous crises such as the crash of 1987, the Asian crisis of 1997, the Russian crisis of 1998 or the attacks of 9/11, the US private placement market has steadily provided a reliable alternative for issuers of debt and equity. Although SES did not have a specific need for financing at the start of the year, it was clear that there would be the potential for fund raising, whenever they chose to go back to the market. So persuaded, the company went on a roadshow in July 2003 to explain their business model to potential investors.

The company's business model has some specific advantages when appealing to investors through the private placement market. Operating margins are among the highest credit analysts would ever see. Furthermore, SES has long-term contracts with broadcasters. Ten years is typical, where broadcasters are contracting to use transponder capacity for 10 years, or even longer in some cases. These long-term contracts ensure secure earnings flow – what is referred to as the 'contract backlog' – and SES has the biggest contract backlog in the sector, currently worth over €7 billion.

Decision to approach the private market

Why did SES go to the private placement market? First, as mentioned previously, reliability. Secondly, in contrast to the Eurobond market, there is a high level of confidentiality. An issuer can talk to potential investors, but the deal is not made public until it is closed. Thirdly, SES's financing needs are predominantly in US dollars so the company looking to raise US dollar finance and having a pool of US-based potential investors was another major attraction. The company imagines that it could one day issue in the US public markets: many of those investors would already be well-educated SES investors. Fourthly, the timing was perfect from an interest rate point of view. Ten-year interest rates had hit 3.10% in June 2003 so SES was motivated to lock in historically low US dollar rates.

Transaction execution

The company appreciated the simple, transparent and straightforward process, which took about nine weeks in total.

SES hired two banks, HSBC and Barclays as agents. One, in conjunction with SES, wrote the private placement memorandum and investor presentation using the company's publicly available information and the banks' sector expertise. The other agent worked with pre-appointed lenders' counsel to craft the note purchase agreement out of the termsheet the second agent wrote in conjunction with both SES and its US legal counsel. The investor presentation was derived from the company's equity presentation which eliminated shareholder-focused information and added useful credit information typical to the market and often found in bank presentations. The termsheet, and by extension, the note purchase agreement (which used the Private Placement Enhancement Project's Model Form No. 2 as a framework) drew heavily from SES's syndicated bank loan referenced in relation to the AMERICOM purchase. Since this was an acquisition facility, the agents were able to reduce covenants and ratios on behalf of SES while at the same time complying with market standards (after the private placement closed, the company refinanced the syndicated bank loan and commanded much easier terms from the banks due to the successful dilution of covenants in the private placement documentation).

The three offering documents – the private placement memorandum, investor presentation and note purchase agreement – were prepared in about three weeks.

In the final week of offering document preparation, the banks held a 'lottery' to choose the investors that each agent would exclusively market to. Investor totals were in excess of 50. Once done, each agent contacted all of their names to schedule roadshow meetings. Upon completing the private placement memorandum and note purchase agreement, each agent sent the documents, along with a joint letter from each agent, to the investors, effectively launching the transaction. Investors had a few days to a week to begin researching the credit and familiarising themselves with the transaction before the roadshow.

The SES roadshow

The roadshow was very extensive, consisting of visiting investors, both in groups as well as one-on-ones, across 12 US cities in the course of one week, from east coast to west coast plus London. Meetings lasted from one and a half to two hours each. SES's Finance Director (since retired) and Group Treasurer, Walter Dilewyns, presented the company. For those investors who were either unable to personally meet with SES management or were located in inconvenient cities, the company held a (recorded) conference call where the company spoke uninterrupted for about 50 minutes followed by a similar amount of time of individual investor questions.

Even before the roadshow began, a lot of the questions that came out of this were dealt with immediately by the company or their advising banks. While the company enjoyed the group meetings and the conference call, SES found that communicating with small groups was a much better way of getting their message across. Their experience was that investors were much more demanding in the questions they asked when presenting for a private placement, compared to, say, a public offering. The private placement investors do their own credit analysis and make their own estimates of the creditworthiness of a particular company. Nevertheless, they will still look at credit ratings when they are available and compare them with the National Association of Insurance Commissioners' (NAIC) ratings. The NAIC assigns a rating to every fixed-income investment held by a US insurance company. As it was, SES was already rated BBB by Standard & Poor's and Baa2 by Moody's, and between pricing of the deal and the due diligence visit, S&P upgraded their rating to BBB+, which was good news for investors.

The agents provided investors price guidance at the conclusion of the roadshow. Since there were no direct investment-grade public comparatives to guide the market, the agents had to refer to various BBB public media comps to justify the maturities and pricing SES expected to command.

Circling and pricing

Although SES put US$300 million on the cover, offering 7-, 10- and 12-year maturities, the transaction was getting very intense attention from the entire market and it was obvious by the end of the roadshow that SES would enjoy a blowout reception. Bids were due about three days after the last roadshow meeting. Knowing that demand would reach record levels, SES quickly checked with key board members about increasing the transaction. Given the company's refinancing requirements and objectives, SES was able to immediately utilise the additional funding, and decided to conclude the fundraising at US$1.045 billion. The company felt that the pricing was very attractive and there was a willingness on the part of all the parties involved to go to this higher figure.

On the morning following bids, bonds were allocated to the 39 investors across the 7-, 10- and 12-year maturities. The agents fixed the coupons and executed the relevant swaps within a few minutes, thereby eliminating any further interest rate or market risk for SES.

Investor due diligence

Arrangements were then made for all interested investors to visit SES's head office at Château de Betzdorf in Luxembourg. Investors were treated to a tour of the facilities and received further presentations on pre-defined areas of further interest to investors. A convivial dinner hosted by senior management served as the starting point for the direct relationship SES has developed with the investors over the years. Investors greatly value this direct access to management that public investors lack. Investor due diligence is, therefore, of benefit to both the company as well as investors.

Finalisation of documentation

Documentation was finalised a few weeks after due diligence and funding occurred on the date agreed at the time of coupon setting, about a month previous. While T 5 settlement in the public markets is the norm, the private placement market can provide up to one year delayed drawdown, a valuable option for issuers in steep yield curve environments. SES took advantage of the then-prevailing steep US dollar yield curve and saved itself basis points by executing forward starting swaps at the time of pricing. Customarily, investors are often willing to provide up to three months' delayed funding free of charge.

Successful execution

The result was the biggest private placement deal at that time and SES felt this was a very positive outcome for their group in particular and the sector in general. Insurance companies had been particularly interested in what they were offering, because they tend to have longer-term liabilities and are, therefore, looking for longer-term investments. The fact that SES contracts are typically of 10- or 15-year duration means the company is ideal for that type of investment. Another advantage

of opting for a private placement is that an issuer can have a large degree of flexibility over structuring the repayment terms. An issue can have bullet payments or amortise, with SES having chosen to use both for different tranches of their placement.

The private placement process is also relatively straightforward from a reporting aspect. It is not necessary for an issuer to report under US GAAP (generally accepted accounting principles) and not being required to publicise the deal was important to SES after pulling out of the proposed issue in the Eurobond market. Nor is there any need for SEC registration. Similarly, there is no formal requirement for a company to have a long-term debt rating in order to raise money via a private placement, though having one is undoubtedly an asset.

In a private placement, there is no agent between the company and the investors. In the future, an issuer's relationship can be direct with their investors. Of course, this also means an issuer has to be highly effective in communicating with investors, but this relationship should help with any future fundraising activity.

Choosing professional advisers is still a key part of the process and the chemistry between the company and its advisers and among the advisers is very important. In SES's case, they chose two banks where the individuals crucially had a sound knowledge of the industry. It is particularly important that the chemistry is right when dealing with more than one party. The vital question to ask is: 'Can they sell to the right people?'

SES enjoyed a positive experience in the US private placement market.

Chapter 15

Liability management for corporate bond issuers

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Introduction to liability management

Liability management (LM) is a term that is used to refer to transactions that involve the active management by an issuer of its outstanding bonds. Broadly this covers repurchase for cash, exchange for new securities, and/or modification of the terms and conditions of securities by seeking note-holders' consent.

As outlined further in this chapter, bond issuers have a variety of objectives for executing such transactions, and within the three broad categories of transactions outlined above, there are various combinations that can be used to meet specific objectives. LM has been employed by bond issuers of all kinds – corporate, financial institution, and those from the public sector. Corporate issuers have historically tended to be the most active, and have exhibited a great variety and innovation in such transactions. Following the credit crisis, in particular, financial institutions have employed LM tools in numerous instances. Issuers from the public sector are somewhat more selective in using LM.

Market trends in Europe

The growth of LM, both by number and sophistication of transactions, has been a rather direct reflection of the growth and maturity of the European bond markets in general, and the Eurobond market in particular. Whilst transactions involving issuers' existing bonds have taken place for as long as bonds have been in existence, LM formally established itself within the European debt capital markets (DCM) arena in the late 1990s and early 2000s. Corporate bond issuers were the key users of LM to begin with, and such transactions were seen as helpful but not an essential part of an issuer's toolkit.

LM gathered significant momentum with the bond markets back in action in early 2009 following a halt during the peak of the credit crisis. This was initially driven by financial institutions seeking to repurchase or refinance their subordinated debt instruments that were trading at distressed levels. Corporate bond issuers were then quick to see the opportunity presented by the unusually low interest rate environment to achieve various objectives via LM transactions, most importantly in repurchasing or refinancing bonds issued at a very high cost during or just following the credit crisis. LM has thus become an essential part of DCM for all issuers in the post-credit crisis phase.

Types of transactions

There are broadly four types of LM transactions.

- *Open market repurchase* (OMR) – non-public repurchases of bonds, that is, there is no documentation involved, and these transactions are more akin to secondary market trades. As a result, OMRs tend to involve a repurchase of only a small amount of a bond as a proportion of the total outstanding. Typically such repurchases are disclosed to the market only once they are completed, and this is done at the issuer's discretion.
- *Tender offer* – public repurchases of bonds, that is, these transactions are fully documented with the express purpose of providing all noteholders with the necessary information and providing them with an opportunity to participate in the repurchase exercise. Tender offers are typically employed when issuers seek to repurchase, for cash, large proportions of the outstanding amount of their bonds.
- *Exchange offer* – refinancing of bonds by exchanging them for new bonds. Not only is the repurchase leg of such transactions fully documented, but also the new issue leg, as is commonly done in stand-alone bond issues. As with tender offers, exchange offers are employed when issuers seek to refinance large proportions of the outstanding amount of their bonds, via the issuing of new bonds (rather than just repurchasing using existing cash on balance sheet).
- *Consent solicitation* – amendment of certain terms and conditions of an existing bond. Such amendments could relate to features of the bond including the obligor, coupon, maturity, or certain specific covenants. Investors are typically compensated or incentivised to participate via the payment of a consent fee paid by the issuer.

As explained further, combinations of the above four broad types of LM transactions could be employed to achieve various issuers' objectives.

Key drivers for corporate bond issuers

LM transactions could be structured to achieve one or more of the following objectives, and these are being increasingly commonly pursued by corporate bond issuers.

- Manage gross or net debt – issuers may have various constraints on leverage including covenants in debt documentation and/or guidelines imposed by ratings agencies to maintain or improve credit ratings. LM is a useful tool in clearly demonstrating that the issuer is either reducing its gross debt, such as in the case of a tender offer, or is actively managing its position to keep gross and/or net debt stable, such as in the case of an exchange offer.
- Cost of carry – issuers with excess cash positions, such as following a disposal or a cut in capex or dividends, may wish to optimise the return on cash by repurchasing their own debt. From issuers' standpoint, a repurchase of own debt could be viewed as a 'risk-free' investment, and, in general, short-dated bonds are repurchased to meet this objective given the short duration that is generally comparable to alternative cash investments.
- On-going interest expense – issuers either repurchase expensive debt for cash, or refinance these with less expensive and generally longer-dated debt. This is a typical strategy employed to refinance bonds issued in difficult market conditions ahead of the scheduled maturity.

- Up-front profit and loss (P&L) impact – repurchases of bonds are more often than not done at a cash price that is different from the par or book value of the debt. Doing so results in a P&L impact – gain in the case of a repurchase below par, or loss in the case of a repurchase above par – and this is generally recorded in the P&L at the time of settlement of the transaction. Issuers may wish to actively manage their P&L by choosing to take such gains/losses up-front, which could be a driver to execute repurchases.
- Refinancing risk – issuers may wish to reduce large redemptions with a view to minimising or mitigating refinancing risk at maturity. Both tender offers and exchange offers provide effective means of achieving this objective.
- Maturity extension – refinancing existing short-dated debt with new longer-dated debt is a common theme in LM. Exchange offers are the preferred means of achieving this objective.
- Drive investor interest in new issue – by definition, exchange offers involve existing bondholders participating in the new issue as well. Such an exercise could therefore be used to drive investor interest in the new issue, and may also provide a 'lead order' as a result.
- Provide exit option to noteholders – a tender offer may be used as a means of providing investors with an exit option from the relevant bonds. Such an exercise could help an issuer maintain or manage investor relations, particularly in special situations such as merger and acquisition (M&A) involving the issuer, or in difficult market conditions.
- Restructuring or actively managing capital – a commonly employed theme with financial institutions involving subordinated debt, wherein the issuer could potentially improve their capital position by recording an up-front P&L gain by repurchasing below par, or by replacing existing capital instruments with new 'efficient' capital instruments that comply with prevailing regulatory requirements.

Structuring LM transactions to meet the objectives

With issuers' needs constantly evolving, LM transaction structures have not only had to adapt to such needs, but have also provided a very effective platform for issuers to meet their objectives. Amongst the multiple possible combinations, Exhibit 15.1 shows the ones that have proved to be the most popular and visible over time in meeting the specific objectives.

Determining features of LM transactions

Following the choice of the transaction structure to meet issuers' broad objectives, specific features of the transaction could be tailored to optimise execution. Amongst a host of possibilities, the following are the key features that are typically addressed ahead of preparation of documentation.

- Number of bonds to be targeted in repurchase.
- Repurchase amount – particularly if the offer is for 'any and all' of the outstanding bonds or for a specific amount.
- Pricing methodology – generally done either on a fixed price basis or on a fixed spread basis.
- Acceptance priority – need to determine the order of preference when targeting multiple bonds.
- Timetable – should provide investors with sufficient time to respond to the offer.

Exhibit 15.1

LM alternatives and decision factors

	Gross debt	*Cost of carry*	*Interest expense*	*P&L impact*	*Refinancing risk*	*Maturity extension*	*Drive investor interest*	*Exit option*
Tender offer	✓	✓	✓		✓			
Refinance and tender offer	✓	✓	✓		✓	✓		
Tender offer and refinance	✓	✓	✓		✓	✓	✓	
Exchange offer	✓	✓	✓	✓	✓	✓	✓	
Combined tender and exchange offer	✓	✓	✓	✓	✓	✓	✓	✓
Tender/exchange offer and consent solicitation	✓	✓	✓	✓	✓	✓	✓	✓
Consent solicitation								✓

Source: Authors' own; SGCIB

Documentation

Documentation for European LM transactions has become increasingly standardised. However, unlike new issues for which a prepared European medium-term note (EMTN) programme could potentially be employed, documentation for LM transactions have to be prepared afresh for each transaction. Public LM documentation would generally include the following:

- tender/exchange offer memorandum – the main document that outlines the details of the transaction; and
- announcements – regular information provided to investors during the course of the offer.

Exhibit 15.2 shows the key features of selected recent LM transactions for corporate issuers.

Recent European LM transactions – key features

Exhibit 15.2

Recent European LM transactions – key features

Issuer	*Moody's*	*S&P*	*Announcement date*	*Transaction type*	*Repurchased security*	*Years to maturity*	*Listing*	*Amount offered (€m)*	*% of nominal*	*Repurchase spread/price*
PPR	NR	BBB–	12/04/11	Tender	€800m 8.625% 2014	3.0	Luxembourg	499.8	62.5	ms+45bp
Adecco	Baa3	BBB–	31/03/11	Tender and exchange	€500m 4.500% 2013	2.1	London	167.0	33.4	ms+50bp
Adecco	Baa3	BBB–	31/03/11	Tender and exchange	€500m 7.625% 2014	3.1	London	144.0	28.8	ms+80bp
OHL	Ba2	BB–	10/03/11	Tender and refinance	€700m 6.250% 2012	1.2	London	234.1	55.5	103.25%
E.ON	A2	A	24/01/11	Tender	€1,750m 5.125% 2012	1.7	Luxembourg	545.0	31.1	ms-28bp
E.ON	A2	A	24/01/11	Tender	€750m 4.125% 2013	2.2	Luxembourg	178.1	23.7	ms-10bp
E.ON	A2	A	24/01/11	Tender	€1,500m 5.125% 2013	2.3	Luxembourg	410.7	27.4	ms-6bp
E.ON	A2	A	24/01/11	Tender via MDA	€1,750m 4.875% 2014	3.0	Luxembourg	324.1	18.5	ms+19bp
E.ON	A2	A	24/01/11	Tender via MDA	€1,000m 5.250% 2014	3.4	Luxembourg	213.6	21.4	ms+23bp
DONG Energy A/S	Baa3	BBB	13/01/11	Refinance and tender	€1,100m 5.5% NC 15	4.5	Luxembourg	535.1	48.6	ms+235bp
National Grid plc	Baa1	BBB+	10/01/11	Tender via MDA	€1,000m 4.125% 2013	2.2	London	429.4	42.9	ms+15bp
National Grid Gas	A3	A–	10/01/11	Tender via MDA	€800m 5.125% 2013	2.3	London	298.8	37.4	ms+17bp
National Grid El. Trans.	A3	A–	10/01/11	Tender via MDA	€600m 6.625% 2014	3.1	London	230.7	38.4	ms+28bp
National Grid plc	Baa1	BBB+	10/01/11	Tender via MDA	€600m 5.000% 2018	7.5	London	187.7	31.3	ms+58bp
Vivendi	Baa2	BBB	02/12/10	Tender via MDA	€1,120m 7.750% 2014	3.1	Luxembourg	290.0	25.9	ms+70bp
Coca-Cola HBC	A3	A–	29/11/10	Tender	€500m 4.375% 2011	0.6	Luxembourg	198.9	39.8	102.10%
Centrica Plc	A3	A–	29/11/10	Tender via MDA	€500m 4.375% 2011	3.0	London	353.4	47.1	ms+15bp
CEZ	A2	A–	23/11/10	Tender and exchange	€400m 4.625% 2011	0.5	Luxembourg	246.3	61.6	101.90%
CEZ	A2	A–	23/11/10	Tender and exchange	€500m 5.125% 2012	1.9	Luxembourg	185.2	37.0	ms+15bp

Issuer	*Moody's*	*S&P*	*Announcement date*	*Transaction type*	*Repurchased security*	*Years to maturity*	*Listing*	*Amount offered (€m)*	*% of nominal*	*Repurchase spread/price*
CEZ	A2	A–	23/11/10	Tender and exchange	€500m 4.125% 2013	2.9	Luxembourg	213.2	42.6	ms+18bp
Accor	NR	BBB–	19/11/10	Tender	€600m 6.500% 2013	2.5	Luxembourg	150.2	25.0	ms+110bp
Accor	NR	BBB–	19/11/10	Tender	€600m 7.500% 2014	3.2	Luxembourg	132.3	22.1	ms+125bp
France Télécom	A3	A–	10/11/10	Tender and refinance	€750m 4.625% 2012	1.2	Luxembourg	159.5	21.3	ms-30bp
France Télécom	A3	A–	10/11/10	Tender and refinance	€1,225m 4.375% 2012	1.3	Luxembourg	416.3	34.0	ms-30bp
France Télécom	A3	A–	10/11/10	Tender and refinance	€3,500m 7.250% 2013	2.2	Luxembourg	1387.1	39.6	ms+0bp
Swedish Match AB	Baa2	BBB	08/11/11	Tender and refinance	€300m 4.625% 2013	1.6	London	170.6	56.9	ms+30bp
Danone	A3	A–	08/11/10	Tender and exchange	€701.9m 6.375% 2014	3.2	Luxembourg	83.9	12.0	ms-5bp
Danone	A3	A–	08/11/10	Tender and exchange	€675m 5.50% 2015	4.5	Luxembourg	71.6	10.6	ms-5bp
Auchan	NR	A	02/11/10	Tender and refinance	€300m 4.125% 2011	0.5	Luxembourg	65.8	21.9	Euribor-30bp
Auchan	NR	A	02/11/10	Tender and refinance	€800m 5.000% 2013	2.5	Luxembourg	125.4	15.7	ms+0bp
Auchan	NR	A	02/11/10	Tender and refinance	€900m 5.125% 2014	3.7	Luxembourg	137.7	15.3	ms+5bp
EDF	Aa3	A+	28/10/10	Tender and refinance	€2,000m 5.625% 2013	2.2	Paris	604.6	30.2	ms+0bp
EDF	Aa3	A+	28/10/10	Tender and refinance	€600m 5.000% 2014	3.6	Paris	228.9	38.2	ms-5bp
EDF	Aa3	A+	28/10/10	Tender and refinance	€2,000m 5.125% 2015	4.2	Paris	617.2	30.9	ms+12.5bp
La Poste	NR	A	26/10/10	Tender and exchange	€625m 5.750% 2011	0.5	Luxembourg	113.7	18.2	102.50%
La Poste	NR	A	26/10/10	Tender and exchange	€800m 4.000% 2013	3.0	Paris/Luxembourg	74.0	9.2	ms+0bp
Bouygues	NR	A–	18/10/10	Tender and exchange	€1,150 4.500% 2013	2.6	Luxembourg	440.7	38.3	ms+5bp
Bouygues	NR	A–	18/10/10	Tender and exchange	€1,000m 4.375% 2014	4.0	Luxembourg	241.9	24.2	ms+12.5bp
GDF Suez	Aa3	A	11/10/10	Refinance and ender	€1,750m 4.375% 2012	1.3	Luxembourg	609.6	34.9	ms-20bp
GDF Suez	Aa3	A	11/10/10	Refinance and tender	€1,250m 4.750% 2013	2.4	Paris/Luxembourg	182.5	14.6	ms-5bp
GDF Suez	Aa3	A	11/10/10	Refinance and tender	€1,400m 6.250% 2014	3.3	Luxembourg	379.3	27.1	ms+10bp

Source: Authors' own

Case study: DONG Energy corporate hybrid refinance and tender offer – January 2011

SG CIB as joint bookrunner, joint LM adviser and joint dealer manager.

Transaction characteristics

Issuer:	DONG Energy A/S
Issuer ratings:	Baa1/A–/BBB+ (all stable)
Issue ratings:	Baa3/BBB/BBB– (all stable)
Launch date:	13 January 2011
Expiration date:	20 January 2011
Overall response:	€535 million (49% of out. nom.) (€500 million accepted)
Targeted notes:	€1.1 billion 5.5% subordinated due in 3005 callable in 2015
Joint LM advisers:	BarCap, SG CIB
Joint dealers managers:	BarCap, DB, JPM, SG CIB

Background

After an inaugural hybrid transaction in 2005, and in the context of significant capex plans, DONG Energy (fully owned by Danish State and municipalities) wished to access the hybrid market again in order to strengthen its capital base and further support its strong ratings. In parallel, the liability management exercise was a way to refinance a portion of the outstanding bonds with new notes (hybrid call extension from 2015 to 2021), while increasing the overall quality of instruments for DONG Energy.

In November 2010, DONG Energy launched a tender offer on its €1.1 billion hybrid bond due 3005 and callable in 2015, and announced its intention to issue a new hybrid bond.

Although the tender showed a strong response from investors with €625 million offered, the overall transaction was postponed due to unusually volatile markets in late 2010 owing to sovereign related concerns, which made credit spreads on the new issue leg unattractive for the issuer.

With market conditions much improved in January 2011, DONG Energy re-launched the process, this time with the new issue bookbuilt and priced at the beginning, followed by the tender offer. Following the successful new hybrid issue of €700 million on 13 January, the company offered to re-open the tender with a target repurchase amount of €500 million.

Outcome

With the tender offer gathering a response of €535 million nominal (49% of outstanding amount), DONG Energy accepted for repurchase the target amount of €500 million of the existing hybrid, thereby substantially reducing the company's (hybrid) refinancing needs in 2015 to €600 million. The company also slightly increased the overall amount (and quality) of outstanding hybrid capital following the new €700 million issue: this hybrid provides a mechanism whereby a rating downgrade of the company by S&P conditionally increases the equity credit applied on the instrument (hence providing an equity buffer).

This transaction is the first combined LM and new issue for a corporate hybrid in the Eurobond market.

Chapter 16

Aircraft portfolio securitisations: a decade in motion

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Introduction

The past decade has borne witness to a tumultuous cycle for aircraft finance in general and pooled aircraft securitisations in particular. The terrorist attacks of 11 September 2001 combined with the general cyclical downturn in the aviation industry resulted in a relatively dormant securitisation market in the early 2000s. Fear of additional outbreaks of SARS (severe acute respiratory syndrome) and other epidemic disease during 2002 and 2003 in addition to the launch of wars in Afghanistan and Iraq further contributed to the unwillingness of the capital markets to participate in such transactions. Fuelled by increased merger and acquisition (M&A) activities in the aircraft leasing sector, the year 2005 marked a watershed for aircraft finance as activity levels in the pooled aircraft securitisation market returned to those consistent with the end of the 1990s, 2000 and the first half of 2001. A large number of transactions closed in 2005 and 2006, such as the US$1 billion Aircraft Lease Securitisation Limited, or ALS, transaction that closed in September 2005 and the US$1.86 billion ACG Trust III securitisation that was completed just before the end of 2005. During 2006, the industry witnessed the consummation of the US$560 million Aircastle 2006–1 transaction (also known as ACS) and the US$810 million Genesis Funding Limited transaction, seemingly indicating an upward trend for aircraft securitisations. The first half of 2007 continued the fervour of 2006's activity, as many new transactions, such as the second securitisation from ALS, the US$1.66 billion Aircraft Lease Securitisation Limited 2007-1 transaction, the US$1.091 billion Airspeed transaction and the second securitisation from Aircastle, the US$1.17 billion ACS 2007-1 transaction, were launched. The year 2007 was marked, mostly significantly of course, by the credit crisis. The US$853 million Babcock & Brown Air Funding I Limited transaction came to market and closed in the early stages of the 2007 credit crisis. Through the credit crisis and ensuing economic downturn, and as sponsors and underwriters plan ahead in hopes of an eventual economic recovery, innovations and evolutions of the aircraft securitisation transaction model continue to arise. In addition to the aircraft backed transactions, similar methodology has been used to create aircraft engine lease pooled securitisations, introducing another asset class to the securitisation market. In August 2005, Willis Lease Finance issued US$228 million of engine pooled securitisation in its WEST 2005-1 transaction and GECAS followed with the US$330 million Blade Engine Securitisation Ltd transaction in August 2006. This chapter examines a brief history of pooled aircraft securitisations and the challenges that sponsors

and underwriters face in bringing such transactions to the market. This chapter also focuses on the use of pooled aircraft securitisations as a means of obtaining permanent financing for large-scale acquisitions and discusses some of the challenges facing new entrants to the market.

In the beginning

Various forms of aircraft financing in the capital markets have existed for almost three decades, beginning with equipment trust certificates (ETCs), pass-through trust certificates (PTCs), and enhanced equipment trust certificates (EETCs). ETCs were used to fund a single aircraft in use by a single airline with the PTCs and EETCs being used later to finance multiple aircraft in use by a single airline. Each of these forms of financings essentially represented a corporate obligation of the issuing airline secured by the related aircraft and enhanced, in certain structures, by the use of features such as a liquidity facility dedicated to making timely payments of interest on the related certificates. In contrast to PTCs and EETCs, pooled aircraft securitisations developed as a technique to finance multiple aircraft in use by numerous airlines around the world. Aircraft operating lessors have historically been the primary sponsors of pooled aircraft securitisations. The technique has been utilised by the sponsors to either obtain long-term financing or create balance sheet capacity. As the owner of the aircraft, the operating lessors are responsible for managing the residual risk of the aircraft, which includes remarketing the aircraft to a new lessee after the expiry of the existing lease term. As the leases entered into by the operating lessors with lessees (typically airlines) are often on a short-term basis, the remarketing function is critical in maximising value from the portfolio. Pooled aircraft securitisations, therefore, heavily rely on the ability of the servicer to maximise cash flows for the bondholders by remarketing the aircraft as each lease expires. In addition, the servicer in such transactions is responsible for identifying opportunities to sell the aircraft subject to certain parameters set forth in the transaction documents. In the past, the sponsor has typically acted as the servicer, earning servicing fees in return which are often a percentage of the lease rental receipts.

The utilisation of securitisations as a means to finance aircraft portfolios is not a novel financing mechanism. In 1992, former Irish lessor Guinness Peat Aviation (GPA), brought the first pooled aircraft securitisation to the market with the Aircraft Lease Portfolio Securitisation (ALPS), offering over US$350 million of bonds secured by the resale value of the aircraft in the portfolio. Following ALPS, the pooled aircraft securitisation model continued to evolve over the course of the 1990s, eventually securing offered bonds by the expected cash flow generated by lease payment streams in addition to the resale value of the subject aircraft. The modern form of pooled aircraft securitisations really took flight with the US$4.1 billion Airplanes Pass Through Trust issued in 1996, the US$1.2 billion Aircraft Finance Trust offering in 1999 and the US$1 billion Morgan Stanley Aircraft Finance offering in 2000. Each of the subsequent transactions in this sector has followed essentially the same underlying principle: to securitise the expected cash flow of aircraft leases from existing contractual cash flows as well as future re-leasing cash flows for the full term of the useful life of the assets. The typical useful life of an aircraft is assumed to be 25 years.

Offerings

As Exhibit 16.1 demonstrates, between 1996 and 2001, there were over US$20 billion in issuances in the ‘modern’ pooled aircraft securitisation market. Enthusiasm for such financings understandably drastically declined after 9/11 and the pooled aircraft securitisation sector, like other areas of

the industry, became distressed, effectively closing the door to new issuances. Aircraft portfolios otherwise ready to be securitised, such as the AWAS (Ansett Worldwide Aviation Services) portfolio owned by Morgan Stanley, failed to be brought to market notwithstanding that transactions in respect of such asset portfolios had previously been planned and, in some cases, were in advanced stages of the documentation process. As the aviation sector commenced its recovery from 9/11, the pooled aircraft securitisation market became more feasible. Prospective bondholders and rating agencies, though, required some drastic changes to the traditional methodology of aircraft portfolio valuation and demanded less aggressive levels of leverage than previously offered. By every measure, current aircraft finance deals are structured more conservatively than the deals of the 1990s and are designed to better withstand the cyclicality inherent in the industry. Most of the US$12.7 billion issued in the pooled aircraft securitisation market since 9/11 occurred in 2005 (see Exhibit 16.1) seemingly signalling a revival of this sector. Further, while the pooled aircraft securitisation market has traditionally been dominated by passenger commercial aircraft, other aviation assets, such as spare engines and spare parts, were introduced to this market in the past decade and one can expect to see more activity in the capital markets for these asset types as well. As illustrated by Exhibit 16.1, activity in the aircraft securitisation market peaked during 2005 through the first half

Exhibit 16.1

Issuance volume by year in US$ million (aircraft and engine securitisations, excluding EETCs)

1996	4,652.0
1997	0.0
1998	4,479.0
1999	2,006.0
2000	5,701.7
2001	3,306.0
2002	0.0
2003	2,678.8
2004	0.0
2005	3,527.9
2006	1,700.0
2007	4,774.0
2008	0.0
2009	0.0
2010	0.0
2011 (YTD)	290.0
Total	33,115.3

Source: Bloomberg and Amur Capital Management LP

of 2007. Following the 2007 credit crisis through 2010, new issuances in the aircraft securitisation market dried up, with sponsors instead seeking other financing sources such as corporate bank and bond markets. Mirroring the overall condition of the global economy, new transactions have been gradually, yet cautiously, testing the market.

Acquisition financing

One method of financing acquisitions in the aircraft industry that gained momentum in 2005 included a two-phase structure consisting of a first phase bridge loan to facilitate the acquisition of certain aircraft assets followed by a pooled aircraft securitisation to provide permanent financing for the portfolio of assets. In the third quarter of 2005, Cerberus Capital Management brought ALS to market to retire the interim or bridge financing used to finance the acquisition of debis AirFinance (since renamed as AerCap). Cerberus used the proceeds of the bridge financing to acquire debis AirFinance and its aircraft portfolio. The proceeds of the subsequent ALS offering were applied to repay in part the bridge financing and, hence, provide a permanent financing for the acquisition. Later in the second quarter of 2007, ALS issued a new series of notes to refinance its outstanding notes and fund the acquisition of addition aircraft.

Aviation Capital Group announced its plans to purchase Boullioun Aviation Services, also known as Boullioun, from WestLB AG in the first half of 2005. The purchase of Boullioun allowed Aviation Capital Group to acquire over 110 aircraft making them one of the largest aircraft operating lessors in the world. Aviation Capital Group, like Cerberus, facilitated the purchase of Boullioun through the use of interim bank financing. Aviation Capital Group effected the ACG Trust III securitisation, their third securitisation in five years, to replace the bridge financing used to acquire Boullioun under great time pressure, bringing the offering to market in only a few months and closing the transaction prior to the end of 2005. The proceeds of interim loans in both transactions essentially functioned to provide parties with the immediate liquidity necessary to consummate the initial acquisition. Most interim financings are subject to time pressure to repay the associated bridge loan without incurring increased interest rates and/or other penalties. In addition to financings that include a two-phase structure, additional features were introduced in the securitisation market during the period of 2005–2006. The first Aircastle or ACS transaction in 2006, for example, was structured to allow, for the first time, regular equity payments. This payment was subject to the satisfaction of debt service coverage ratio. Taking the concept one step further, the Blade Engine transaction in 2006 and the Airspeed transaction in 2007 not only featured regular equity dividend payments but also sold their entire equity tranche to third party institutional investors through private placements, effectively enabling the sponsors of these transactions to get sale treatments while avoiding the expense and time-consuming nature of publicly listing the deals.

The securitisation market can be an attractive source of financing for aircraft assets as compared to the traditional bank loan market. The pooled aircraft securitisation market offers greater liquidity and significantly diminishes refinancing risk by allowing for longer-term financing. The chief limitation of this market, however, is that the securitisation structure in connection with aircraft financing tends to be somewhat inflexible in accommodating the inevitable changes in the characteristics of an aircraft portfolio as it ages, goes through industry cycles and weathers the new developments of the aircraft industry, such as the introduction of new aircraft models and new technology.

Characteristics of securitisation transactions

In aircraft financing transactions in the 1990s, a portfolio of aircraft could include a broad range of aircraft types and ages. In aircraft acquisition financings that have occurred in the last decade, the types of aircraft in the portfolio intended to be financed have become increasingly important and more recent pooled aircraft securitisations have focused on a younger average portfolio age and more current aircraft models. This concern for the quality of the aircraft in a portfolio is reflected in the many conditions that must be satisfied before the initial lending in respect of a bridge financing can take place, including the prerequisite that a certain number of the aircraft in the subject portfolio be novated prior to, or concurrently with, the initial lending. Similarly, in the context of pooled aircraft securitisations, rating agencies have required a certain number of aircraft, or even particular aircraft in the portfolio, actually be delivered into the transaction no later than the bond issuance date. In addition, the balance of the undelivered assets must be novated or delivered within a certain period of time following the closing. In most transactions, funds for the undelivered assets are held in separate accounts to be applied in connection with the delivery of such assets. In the event that a particular aircraft is not novated or delivered within the established timeframe, funds in the related segregated account will be utilised to repay an allocable portion of the debt. These novation and delivery requirements, present in both the ALS and ACG Trust III transactions, stem from the importance of a young, diversified pool of aircraft and are critical in order to assure that the funds advanced and bonds issued have the benefit of an acceptable mix of aircraft assets.

The Aircraft Lease Securitisation II Limited transaction (also known as ALS II) consummated in June 2007 is the natural evolution of the securitisation structures that focused on quality and age of the aircraft portfolio. On the closing date of the transaction, the ALS II securitisation vehicle issued notes to commitment holders with an outstanding principal balance of zero. Under the terms of a note funding agreement, each commitment holder agreed to, subject to certain conditions, make advances up to an amount not to exceed its total commitment under the note funding agreement, in connection with the delivery of each aircraft into the ALS II portfolio. As each aircraft was delivered, and the corresponding advance made, the principal amount of the notes was increased by the advance amount. The ALS II aircraft portfolio was comprised of 30 brand new Airbus model A319 and A320 aircraft that were part of a total purchase order of 70 Airbus aircraft by AerVenture Limited. By utilising this unique structure, the ALS II transaction was able to take advantage of an existing purchase order by the sponsor to assemble a highly desirable portfolio of entirely new aircraft. In addition, by delivering the aircraft directly into the securitisation vehicle as each aircraft was delivered from the manufacturer, the ALS II transaction was able to avoid the timely and often costly process of aircraft novations.

The emphasis on increasing the quality and decreasing the age of the aircraft in an asset pool, while still maintaining a degree of diversity among the aircraft, is also an attempt to minimise the risks of volatility in lease rates and defaulting lessees. Many transactions, including ALS, ACG Trust III, ACS, Airspeed, ALS II, Genesis and BBAir have incorporated a liquidity facility available to counteract such risks if realised. Credit facilities provide increased liquidity and can be drawn on to cover certain expenses, senior swap payments and interest on the senior class or subclass of bonds.

Pooled aircraft securitisations also include specific regional concentration limits as to the location of the lessees as well as requirements in respect of the target sale price of each aircraft in the portfolio before such aircraft can be sold. These criteria are established at the outset of the transaction and can be very cumbersome to later modify as such changes typically require a bondholder vote.

Concentration limits attempt to provide comfort to the bondholder by limiting the political risk at the expense of the bondholder. The concentration limits restrict the ability of the securitisation vehicle to act as compared to other operating lessors who, free of such restrictions, are able to make more productive use of their aircraft by deploying such aircraft in regions or countries with the greatest demand for them. In addition, operating lessors that have financing arms can use such leverage to ensure that their aircraft remain in revenue service. By establishing fixed criteria at the outset of the transaction, the deal structure can greatly constrain the ability of the servicer to effectively place aircraft in revenue service and, as a result, can act as a detriment to bondholders. In order to make these structures more viable, these concentration limits need to incorporate an element of dynamism to provide the securitisation vehicle with increased flexibility to manage specific regional downturns.

Bondholders recognised that pooled aircraft securitisations in the 1990s were based on financial models that assumed insufficient expenditures in respect of the aircraft. In transactions that have occurred post-9/11, the methodologies for stress case scenarios with respect to pooled aircraft securitisations have been more conservative and assume a greater level of expenses, including maintenance and capital expenditures. One of the lessons learned from pooled aircraft securitisations completed in the 1990s is the need for better monitoring of periodic expenses which may be accomplished through more extensive reporting requirements and detailed information in respect of the aircraft and the related lessees. The more transparent information requirements in recent transactions have helped to provide the junior bondholders with the ability to monitor and better determine the reasons behind cash flow volatility.

Initial public offerings

In the traditional aircraft securitisation structure, the equity in the securitisation vehicle was retained by the sponsor (or one of its affiliates). One of the innovations to emerge post-9/11 in the last five years was the aircraft securitisation coupled with a simultaneous initial public offering. In these transactions, the equity interest in the securitisation vehicle is held in a newly formed company. Concurrently with the closing of the aircraft securitisation, the common shares of the newly formed company are sold in an initial public offering. ACS, Genesis and the BBAir transaction are all examples of securitisation transactions that closed at the same time as the initial public offerings of their respective issuer parent companies.

Role of monolines and liquidity facilities in the revival of the post-9/11 market

It is important to note that the revival of the pooled aircraft securitisation market post-9/11 was largely aided by the participation of monoline insurers. Aviation Capital Group's second securitisation, ACG II, is credited with returning pooled aircraft securitisations to the market. The ACG II transaction was made possible through support from MBIA Insurance Corporation, a monoline insurer. In ACG II, MBIA wrapped two senior tranches of bonds, while a single junior tranche was offered without monoline support.

In transactions such as ACG II, ALS and ACS, a single monoline insurer issued a financial guaranty insurance policy in favour of senior classes or subclasses of bonds to secure specific payment terms, including, among other things, the payment of timely interest on such insured class of bonds and the repayment of outstanding principal on the final maturity date of the bonds. As one

may anticipate, monoline insurers have required a fair amount of control over the transactions in which they have been involved. Monoline insurers have rights to consent to, among other things, the sale of any aircraft in the portfolio, as well as the acquisition of future aircraft, the issuance of any bonds offered in a refinancing and the securitisation vehicle's hedging policies. In addition, monoline insurers have obtained independent rights to terminate the servicer. This could be perceived as a disadvantage to junior bondholders who purchased bonds in reliance on the strength of the servicer, as such servicer may now be terminated for reasons unrelated to the performance of the aircraft portfolio. A potential check on the monoline's ability to unilaterally terminate a servicer is that each securitisation vehicle is required to have an approved servicer in all instances; therefore, even if the initial servicer is terminated, a replacement servicer must be in place. This may be cold comfort to those who entered the transaction on the basis of a recognised servicer. Further, monoline insurers have obtained extensive transaction approval requirements. This raises the concern in a multiple monoline deal, such as ACG Trust III, that there may be circumstances in which the servicer determines that a certain course of action will maximise value for the bondholders but a single monoline has the right to veto such action. Expanded junior bondholder buyout rights in pooled aircraft securitisations such as ACG Trust III that are more consistent with those in EETCs, such as the jetBlue EETC transaction, provide some protection. In such transactions, following an event of default under the debt documents the junior bondholders have the right to buy out the senior class of bonds and, if such bonds are subject to a monoline policy, concurrently cancel such policy and act as controlling party. These rights obviously only make sense if the junior bondholders view the collateral as having sufficient value to justify the additional outlay of funds.

In 2005, the ACG Trust III securitisation departed from the norm of having a single monoline insurer in order to securitise the largest portfolio of aircraft since the 1996 Airplanes transaction. In ACG Trust III, the securitisation vehicle issued three classes of bonds. Three separate policies offered by three different monoline insurers wrapped the most senior class of bonds on a rateable and several basis. This was the first time in pooled aircraft securitisations that three monoline insurers, each offering an individual policy, wrapped the same subclass of bonds. The presence of multiple monoline insurers in ACG Trust III acted as an additional challenge in the transaction. The rating agencies expressed concern about the decreased flexibility of the securitisation vehicle resulting from accommodating the varying concerns of three monoline insurers with separate institutional policies. The concept of several and rateable draws on the three monoline policies presents the theoretical notion that one monoline insurer may default on its payment while the other monoline insurers advance their respective rateable portion of the required amount in full. The result would be that the bondholders could receive less than the total insured payment. Multiple monolines also constrained the perceived benefit of a single entity acting as the controlling party in the transaction. In typical single monoline transactions, absent a default by such monoline insurer, the monoline insurer has the sole right to act as the controlling party, providing such monoline insurer with the right to direct the exercise of the available remedies following an event of default with respect to the securitisation vehicle. With multiple monoline insurers in ACG Trust III, the right to act as controlling party becomes more complicated as it requires the monoline insurers to, in effect, act as a cohesive unit. Consent requirements are further complicated by the possibility of a single monoline insurer dissenting from the actions of the other monoline insurers. The majority vote in ACG Trust III was designed to ameliorate some of these perceived concerns with respect to the requirement of unanimous consent.

In pooled aircraft securitisations structured post-9/11, incorporating monoline support had become crucial to the feasibility of a transaction, as well as the pricing, and to ultimately attract investors. However, it was anticipated as the underlying fundamentals of the aviation industry and the capital markets' receptivity of aircraft transactions improved, one could expect stand-alone, non-wrapped transactions to become more viable from an execution as well as an economic standpoint. Ironically, it was the 2007 credit crisis that spearheaded the introduction of the non-wrapped aircraft securitisation transaction. The BBAir transaction which closed in October 2007, just as the full extent of the 2007 credit crisis was starting to be realised, was the last aircraft securitisation transaction that closed with monoline support. Given the profound impact that the 2007 credit crisis had on the monoline insurers, it remains to be seen the degree of continued utilisation, if any, of the financial guaranty policy in the aircraft securitisation structure.

The BBAir transaction used a senior liquidity facility to counteract risks from potential fluctuations in cash flows. In addition to supplying higher net cash proceeds for the sponsor, the liquidity facilities are typically used to cover specified expenses, certain hedging expenses and interest on the senior class(es) of notes. The ACG II transaction also made use of a supplemental rental facility designed to amortise the bonds on an assumed base case scenario. The supplemental rental facility provided extra liquidity in the event that cash flow from rental payments fell below an assumed threshold triggering the securitisation vehicle's ability to draw on such facility. The use of liquidity facilities helped to revitalise the aircraft securitisation transaction in the post-9/11 market, and has continued to provide utility and support in the wake of the credit crisis. The ALS II transaction, the first stand-alone unwrapped securitisation deal that closed following the credit crisis employed the support of a liquidity facility. As the market recovers from the 2007 credit crisis, sponsors will likely continue to rely on available sources of liquidity support in order to enhance the transaction structures, while at the same time seeking to find additional means of support and enhancement, such as guarantees from various government export agencies.

Aircraft finance players

Most of the major aircraft operating lessors have accessed the pooled aircraft securitisation market at one time or another, including, among others, International Lease Finance Company, GE Capital Aviation Services, AerCap (along with its predecessor, AerFi) and Pegasus Aviation Finance Company. Not all lessors, however, have the same motivation or the same amount of resources to access the pooled aircraft securitisation market. Some lessors are searching for more effective permanent debt financing by matching the assumed useful lives of the assets to the long tenor of debt. Others aim to utilise the securitisation market as a portfolio management tool in order to generate aircraft sales without having to lose customer interface.

It should be noted that pooled aircraft securitisations attract many new and varied sources of capital. The current aircraft market is considered by many institutions one of high risk and a corresponding high return. Due to this perception, many of the veteran players in the aircraft finance market are systematically reducing their exposure in the aviation industry, or exiting the sector altogether. Meanwhile, private equity funds and hedge funds have been participating in greater numbers in all aspects of the aviation industry. These new industry participants are offering a range of aircraft financing options, including by making debt investments and providing equity capital to new aircraft operating lessors, either by acquiring an existing operating lessor or by creating an operating lessor

company through an initial acquisition of aircraft. Examples of this trend include the de novo start up of Aircastle by Fortress Investment Group in 2005, the acquisition of AerCap by Cerberus in 2005, the purchase of the GATX Aviation portfolio by Macquarie Bank and Och-Ziff, a hedge fund, the acquisition of Pegasus Aviation by OakTree Capital Management and the acquisition of Morgan Stanley's AWAS by Terra Firma, among others. Terra Firma subsequently furthered its aviation investment by acquiring Pegasus Aviation and integrating into its AWAS platform. It is significant to note that post credit crisis, private equity funds and hedge funds continue to exhibit confidence in the long term growth and potential for returns in the aviation sector. Examples include Carlyle's US$600 million commitment to RPK Capital, the Oak Hill-led investment into a new operating lessor called Avolon and Oak Tree's second time aviation investment in Jackson Square (formed by former executives from Pegasus Aviation). In various asset classes, many private equity and hedge funds are attracted to the whole business securitisation model as their first entry into the securitisation market pursuant to which an entire operating business is securitised with established cash flows generating liquidity for growth, among other things.

This whole business type of securitisations has attracted greater scrutiny from the rating agencies because of the potential and unpredictable impact of the Days Inn bankruptcy. Briefly, in the Days Inn bankruptcy in the early 1990s the bankruptcy court ordered the substantive consolidation of the parent company, as debtor, and the special purpose vehicle (SPV) formed in the Days Inn deal that held the securitised assets because, among other things, the assets were deemed to be 'core operating assets' of the debtor or assets that are sufficiently distinct and vital to the debtor's business. In essence, the bankruptcy court found that the core operating assets were too intertwined with the debtor's operations to truly be isolated in a bankruptcy-remote entity and the securitised vehicle was hence disregarded as a separate entity. In attempting to utilise the whole business securitisation model, one will have to carefully distinguish the facts of the proposed securitisations from the facts in the Days Inn transaction and demonstrate that the assets to be securitised do not constitute 'core assets' of the sponsor.

It will be interesting to see, as the market slowly emerges from the downturn of credit crisis, if the new entrants will have a major impact in the area of pooled aircraft securitisations as generally rating agencies and investors have preferred servicers with an established operating history. Nevertheless, these new sources of financing have established themselves as key players in the aircraft finance market and one can expect that they will play a critical role in the continued revival of the pooled securitisation market. Whether these new entrants anticipate aircraft leasing to be a long-term investment remains to be seen. As the global economy recovers, however, market participants can expect to see a greater variety in the capital structures used as well as the sources of funds in the pooled aircraft securitisation market. Much as the support of monoline insurers and the addition of liquidity facilities greatly aided in the return of the aircraft securitisation following 9/11, it remains to be seen what new innovations and evolutions will develop vis-à-vis the aircraft securitisation model as the post-credit crisis economy improves.

During the last two years, accessing the secured and unsecured high-yield market has been increasingly popular for operating lessors. In the wake of the credit crisis, the utilisation of these full recourse transactions to access the capital markets demonstrates a move away from the traditional securitisation model. These transactions often prove to be attractive to operating lessors seeking greater operating flexibility as the transaction structures lack many of the operating restrictions imposed by securitisations. Examples of unsecured transactions include Aircastle's offering of US$300 million in aggregate principal amount of 9.75% senior unsecured notes and Aviation Capital

Group Corp's offering of US$600 million in aggregate principal amount of 7.125% senior unsecured notes, which closed in the third and fourth quarters of 2010, respectively. AWAS Aviation Capital Limited also entered the high-yield market, with a secured transaction, in the fourth quarter of 2010 with the offering of US$600 million in aggregate principal amount of 7% senior secured notes. The high-yield transaction has provided an attractive alternative to the securitisation model for those operating lessors willing to trade the cost of higher interest rates for greater operational flexibility.

Return to the future

Currently, the aircraft operating leasing industry supplies over one-third of the worldwide commercial aircraft fleet. This industry is expected to take on even greater market share as the aviation industry and the global economy as a whole continues to recover, as airlines grow and adjust to meet expected increased traffic and increased customer demand from developing markets and as airlines continue to be conservative on larger capital expenditures. As the aircraft operating lessors take on a bigger role, they will have great interest in ensuring that access to the capital markets is preserved. Many of the deals in the past five years were effected to provide permanent financing for aircraft asset pools. Some of the more established aircraft operating lessors may not be attracted to such structures because, among other reasons, they place greater emphasis on the ability to sell and acquire aircraft on a less constrained basis than current securitisation models currently offer. ALS, ACG III, and later ALS II and BBAir represented marked improvements in the older securitisation structures and, prior to the credit crisis, revitalised the market for pooled aircraft securitisations. Still, further opportunities to improve the model remain, especially as sponsors will eventually seek to re-enter the market. For example, in July 2011, under new agreements with Boeing and Airbus, American Airlines agreed to acquire 460 narrow-body, single-aisle aircraft from the Boeing 737 and Airbus A320 families, with purchase rights and options for an additional 465 aircraft. The deliveries of these new aircraft commencing in 2013 will provide aircraft operating lessors and other financiers with unique opportunities to revisit the securitisation structure as a means of providing long term financing for American Airline's aircraft. In addition, the success of non-aircraft asset backed securitisation deals (such as ticket sales, cargo receivables and cargo containers) in 2010 indicate increasing investor appetite and demand. Aircraft securitisations have also been used historically to fund merger and acquisitions, so an increase in merger and acquisition activity in the aircraft operating lessor market would likely see a corresponding increase in aircraft securitisations. Lastly, to the extent that established operating lessors remain reluctant to re-enter the securitisation market, new operating lessors and startups, eager to establish themselves in the market, may step in to take advantage of growing investor demand.

As the uninitiated always discover, the aircraft finance market, in contrast to other structured finance markets, appears to operate under its own unique set of assumptions and considerations. The challenge that lies ahead is the development of more innovative financing techniques in order to meet the varied and complex goals of the sponsors, whether by adapting solutions used in other asset classes or otherwise, and to face the ever changing difficulties of the economic climate.

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The authors would like to thank Cecilia Chan, Associate, US Asset Finance Practice, Clifford Chance US LLP for her help with this chapter.

Chapter 17

Key considerations of covered bond issuers and covered bond investors

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Introduction

While the history of covered bonds can be traced back several hundred years, it was only in the recent past that they have gained recognition on a broader basis. Especially the recent financial crisis has boosted interest in covered bonds from both issuers and investors. In the following chapter we take a look at the key considerations of issuers and investors in the covered bond market. The points listed below can be seen as the main drivers but also limitations of the expansion of the covered bond market.

The issuer's perspective

Funding advantage

One of the key drivers for banks to issue covered bonds is to achieve lower funding cost. Through providing collateral (and other structural enhancements) covered bonds usually achieve a higher rating than unsecured debt of the same issuer. Lower rated banks (that is, A rated) that manage to achieve a rating uplift of 4 to 6 notches are typically able to realise a greater absolute funding advantage compared to their senior funding level than higher rated banks (that is, AA rated) where the rating uplift ranges from 1 to 3 notches. Track record and depth of the covered bond market can also influence the funding advantage that banks can achieve with covered bonds over unsecured debt. Long established covered bond markets with a large investor base typically can lead to lower covered bond funding levels than markets which have only recently been established.

The financial crisis of 2007–2009 had a profound impact on the differentiation between covered bonds of different issuers but as well as on the spread difference between covered bonds and senior unsecured bonds. As uncertainty about the creditworthiness of banks increased, the spread between covered bonds and unsecured debt widened significantly, thus increasing the potential cost savings achievable through covered bonds.

Available collateral

In order to use covered bonds as a funding tool, a bank needs enough cover assets of sufficient quality. The types of assets that can be used are typically defined in the covered bond framework.

If the available assets do not meet the criteria set out in the covered bond framework, the bank can issue covered bonds based on contractual agreements where the asset eligibility criteria would be tailored towards the issuer's needs. The disadvantage of using a tailor made solution lies in the potentially lower investor acceptance as well as in potentially less favourable regulatory treatment (see below). In both cases, less favourable funding levels for the issuance of covered bonds would be the case.

The amount of collateral needed to issue covered bonds depends first and foremost on the amount of covered bonds to be issued. So far, all covered bond frameworks and programmes require that the nominal amount of eligible collateral is at least as high as the nominal amount of outstanding covered bonds. In addition to that, many frameworks require a certain level of over-collateralisation which ranges from 2% to 25%, depending on the framework. Rating agencies typically require a certain level of over-collateralisation as well to award a certain rating uplift for the covered bonds from the issuer's rating. The level of required over-collateral mainly depends on the level of perceived risk (mainly credit risk and liquidity risk) within the cover pool. As over-collateral has to be funded with unsecured debt, it can be a significant cost factor especially for lower rated issuers, where unsecured finding is more expensive and potentially more over-collateral is required to achieve the desired rating level for covered bonds.

Alternative use of collateral

Since the collateral used for covered bonds is often similar to that used in residential mortgage-backed securities (RMBS), issuers should consider which product represents the better use of collateral. It is worth noting that in several cases, securitisation will not be a viable option simply because the securitisation market has not recovered since the outbreak of the financial crisis in the same way as the covered bond market. In cases where the securitisation market is accessible, issuers have to consider difference in achievable funding levels, different levels of required over-collateralisation and the fact that securitisation might lead to a reduction in capital requirements for the issuer, which covered bonds do not offer. On the other hand, existing and upcoming regulatory treatment on the investor side often disadvantages securitisation over covered bonds.

Expansion of investor base

Before the financial crisis, covered bonds were widely considered a 'rates product', that is, seen as a relatively homogeneous, highly rated and highly liquid asset class. This made covered bonds an attractive alternative for buyers of government and agency bonds. As a result, the covered bond investor base was very distinct from the typical credit investor base that was focussing on senior and subordinated bonds. With the greater credit differentiation within the covered bond market after the collapse of Lehman and the impact of the 'bail-in' discussion (see below), the investor base for covered bond has become far more mixed, especially driven by growing participation from credit investors. Still, issuing covered bonds instead of unsecured debt allows a bank to broaden its investor base by reaching investors or portfolios that would not have bought unsecured debt. The importance of having as many funding options available as possible clearly became apparent during the financial crisis. It can thus make sense for banks to issue covered bonds even though the funding advantage compared to unsecured debt may not look significant. In addition, covered bonds

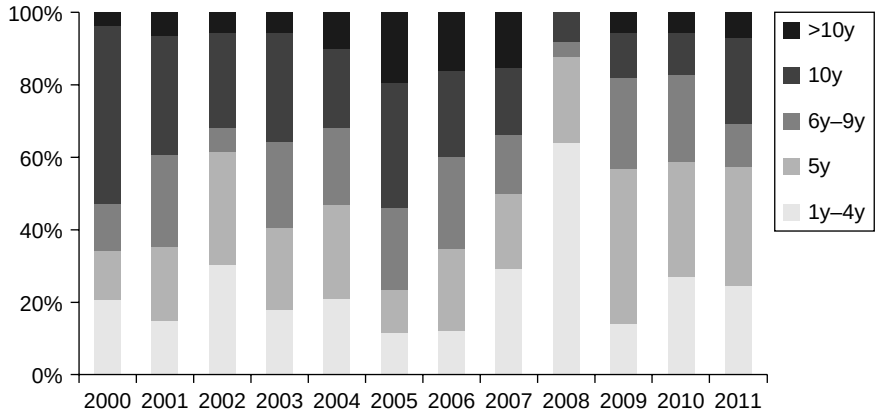
can be an additional source of liquidity in times of stress. As we have seen in several cases during the height of the financial crisis, banks were able to use their own covered bonds (for which at the time there was little or no demand in the market) as collateral for repo transactions with central banks or use them in special facilities to exchange them for government bonds with the central bank.

Lengthening of maturity profile

Similar to reaching investors that would not buy unsecured debt of the bank in question, covered bonds can also be used to raise long-term funding which would not be available of prohibitively expensive in the unsecured debt market. Especially lower rated institutions might rely more on covered bonds to raise long term funding. In addition, assets used as collateral for covered bonds often have medium to long-term maturities and thus it makes sense to fund them with longer dated liabilities.

Exhibit 17.1

Euro benchmark covered bond issuance by tenor



Source: BNP Paribas

Excessive use of covered bonds

Issuance of covered bonds usually leads to structural subordination of unsecured creditors. Ultimately, excessive use of covered bonds, especially in connection with high over-collateralisation, can lead to pressure on the unsecured rating of the issuer. So far, we have not seen downgrades of banks due to excessive issuance of covered bonds. However, there may have been cases where banks chose not to issue more covered bonds in order to avoid negative impact on the unsecured rating. Apart from rating agencies, banking regulators may also limit issuance of covered bonds. Currently, only a few countries have issuance limits for covered bonds in place, however one cannot exclude that more countries will implement such limits if covered bond issuance reaches a critical limit.

The investor's perspective

Relative cost

Buying covered bonds instead of senior unsecured bonds of the same issuer typically requires investors to accept a lower yield level or spread. In exchange the investor expects a higher level of security provided by the preferential claim on the cover pool. Apart from the quality of the cover pool (or the risk associated with it), issuer risk, regulatory framework, sovereign risk and regulatory treatment can have an impact on the spread between senior unsecured and covered bonds as well as on the spread between covered bonds from different issuers.

Issuer risk

Despite the added security provided by the cover pool, the quality of the issuer plays an important part for the investment decision. Fundamentally, there is a strong significant link between the quality of the covered bond and the quality of the issuer, since it is up to the issuer to substitute assets within the pool when necessary and keep the quality of the pool at the required level. In addition to that, investors may also give some credit to the senior unsecured claim against the issuer that they share with other unsecured creditors. The rating of the covered bond can also be affected by the issuer rating which reflects the creditworthiness of the issuer. Lastly, many institutional investors need specific credit lines for the issuer in order to buy or hold its covered bonds. Deterioration of issuer quality can lead to a reduction of credit lines or risk limits for that issuer, which ultimately can have an impact on the investor's ability to hold or buy covered bonds of that issuer. It is due to the above mentioned points that the creditworthiness of the issuer became the main driver of covered bond spreads during the financial crisis despite the collateralisation requirements and bankruptcy segregation of cover asset provided by the applicable covered bond framework.

Cover pool risk

The quality and size of the cover pool is vital for the extra protection it offers bondholders in case of the issuer's insolvency. The minimum quality of the cover assets is determined by the eligibility criteria contained in the covered bond framework or the issuer's programme documentation. The same applies to any minimum over-collateralisation of the pool. The actual composition and size of the pool typically varies from the minimum requirements, reflecting the issuer's lending specific lending business as well as requirements that may have been set by rating agencies. The ongoing substitution of cover assets can lead to significant changes in the composition of the cover pool and available over-collateral during the life of the covered bond. For investors this means that they need to take not only the current state of the cover pool into consideration but also legal limitations which may allow a dilution of the current pool or a reduction of voluntary over-collateral. Especially in times of stress, issuers may chose to reduce over-collateral that has initially been provided to secure a certain rating level of the covered bond and to use these assets to raise liquidity at the cost of potential rating pressure on the covered bonds.

Cover pool transparency

Given the importance of the composition of the cover pool and its dynamic nature, the investor's ability to analyse the cover pool on an ongoing basis can have an impact on the investment decision.

The level of cover pool transparency varies greatly between market segments and issuers. With very few exceptions, existing covered bond frameworks do not contain specific disclosure requirements for the cover pool, leaving depth and frequency of disclosure mostly up to the issuer's discretion. The majority of issuers publish cover pool reports either on a monthly or a quarterly basis on their websites. Level of over-collateralisation, geographical breakdown of cover assets and (in case of mortgage cover pools) average loan to value levels of the portfolio are the most commonly disclosed parameters. In some cases, break down of loan to value ratios into buckets, information on the type of mortgages (for example, commercial or residential) and share of loans in arrears is disclosed as well. However, the lack of statutory disclosure requirements in most cases, mean that the data mentioned above is often not comparable. One example for this are loan to value ratios where varying valuation methods make a comparison of cover pools difficult.

A further source of cover pool data are reports published by the rating agencies. Given that rating agencies typically have access to more detailed cover pool data, the information contained in their reports often exceeds that available in the cover pool reports published by the issuer. However, reports from rating agencies might not in all cases be available in the same frequency as the cover pool reports of the issuer, especially if the issuer is not coming to the market with new covered bonds very often.

Covered bond framework

Most covered bonds are issued on the basis of a specific legal framework that regulates the use of collateral and segregation of cover assets in a bankruptcy scenario. In the absence of a specific legal framework, covered bonds can also be issued on the basis of contractual agreements (structured covered bonds). While covered bond frameworks and structures can differ greatly in various details, three main features can be identified that have a significant impact on the covered bonds under such framework.

Asset eligibility criteria

As mentioned above asset eligibility criteria can have a significant impact on the composition of the cover pool. Typical eligibility criteria include type of assets (for example, public sector loans, mortgages loans), geographical restrictions on the cover assets as well as other risk metrics such as maximum loan to value ratios for mortgage loans used as collateral. Stricter asset eligibility criteria are likely to lead to a more homogeneous covered bond market as the cover pools of issuers using such framework will be more similar. Less stringent asset eligibility criteria can not only lead to greater heterogeneity in the market but may also require more intensive ongoing surveillance of the cover pool by the investor.

Matching requirements

The vast majority of covered bonds are exposed to a certain level of mismatch of cash flows between outstanding covered bonds and the cover pool. In a post bankruptcy scenario, such mismatches can lead to problems since the options to manage the cash flows are greatly reduced. Most frameworks contain provisions that limit the potential mismatch between covered bonds and cover pool (see Chapter 5). More stringent matching requirements can reduce the risk of payment disruptions on the covered bonds in a post bankruptcy scenario. However, in most cases a certain mismatch risk

(mostly stemming from different maturities on the asset and liability side) will remain despite matching requirements laid out by the covered bond framework.

Post-bankruptcy procedures

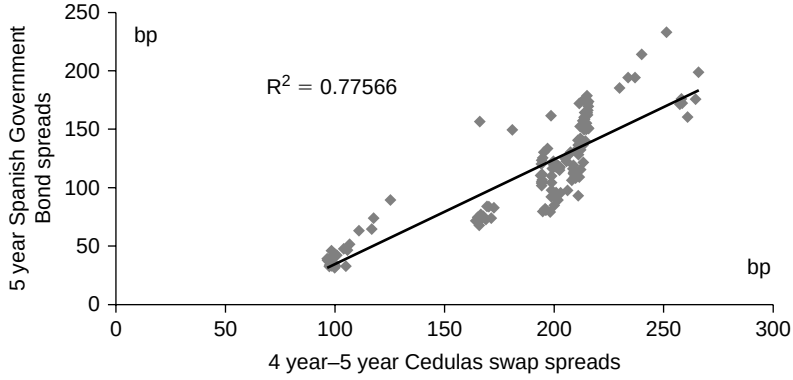
The procedures set out by the covered bond framework or structure vary significantly from country to country. The main reason for this lies in differing bankruptcy regulation in place with the respective countries. In addition to the segregation of cover assets, such procedures can include provisions for alternative management and servicing of the pool, options to raise liquidity as well potential bondholder voting on early repayment of covered bonds in a bankruptcy event.

Sovereign risk

During the recent financial crisis, sovereign risk has become a significant driver of covered bond spreads and thus market risk. Although sovereign risk can also be part of the cover pool risk, especially where covered bonds are secured by public sector debt of a struggling country, the main impact on covered bonds comes through the sovereign risk associated with the country where the issuer is located. Especially in peripheral countries, there has been a high correlation between spread movements within the sovereign bond market and the respective covered bond market. For investors, especially those that have to mark their investments to market, sovereign risk and resulting potential spread volatility can be decisive factor in the investment decision.

Exhibit 17.2

High correlation between asset swap spreads of 5 year Spanish government bonds and 4–5 year Spanish covered bonds (during 2010)



Source: BNP Paribas

Deteriorating credit quality of the sovereign can also have a rating impact on covered bonds. While covered bonds can have a higher rating than the country where the issuer is located significant deterioration of the sovereign rating usually leads to downgrades of the banks located in that country. If the rating of the issuing bank falls below a certain level, it will also cause downgrades of the covered bond rating.

Regulatory treatment

Covered bonds benefit from preferential regulatory treatment in several areas. So far, such preferential treatment has been limited to the EU area. However, upcoming regulation (that is, Basel III and Solvency 2) could lead to preferential treatment on a more global basis.

Risk weighting

Banks that buy covered bonds typically have to hold less capital for such investments compared to unsecured debt of the same issuer (see Chapter 5). While a lower risk weighting may not necessarily be most decisive factor for buying covered bonds, it can be said that its relevance is increasing in times where capital is scarce or more expensive to raise for banks.

Investment limits

Covered bonds that meet the criteria of Article 22(4) of the Directive on Undertakings of Collective Investment in Transferable Securities (UCITS Directive) benefit from higher investment limits within the EU. Investment funds are allowed to invest up to 25% of their assets in covered bonds from the same issuer, whereas such limit is 5% for unsecured debt. Most investment funds will have internal guidelines that require stricter investment limits than the 25% allowed by the UCITS Directive. However, the preferential regulatory treatment can be used to argue a better treatment of covered bonds within internal stricter investment limits.

Basel III – liquidity coverage ratio

Covered bonds will, under certain conditions, qualify as liquid assets for the liquid coverage ratio (LCR) that will be introduced in 2015 under the Basel III regulation. The fact that covered bonds will be eligible, while other bank debt is excluded will have an impact on the investment decision of banks, which are one of the largest group of investors in covered bonds.

Solvency 2

Upcoming Solvency 2 regulation will allow insurance companies to hold less capital for the spread risk of certain covered bonds. This can make covered bonds more attractive for insurance companies compared to other bonds with a similar rating.

Rating dependency

In case of Basel III and Solvency 2, preferential treatment of covered bonds will be dependent on a certain minimum rating level of the covered bonds (AAA or AA–). This means that covered bond ratings are likely to become more important for the investment decisions of certain investor groups. As a consequence rating changes (especially downgrades) can have a bigger market impact.

Bail-in

During the recent financial crisis, banks have received significant amount of public sector support. Such support included guarantees, special liquidity facilities as well as recapitalisation or nationalisation of struggling banks through the public sector. In the aftermath of the financial crisis it became clear that the willingness and in some cases also the ability of the public sector to bail out

banks on a large scale in the future has significantly decreased. This is underlined by a various regulatory and legislative initiatives such as the consultation paper on bail-in that was released by the EU Commission. While the details of any bank resolution or bail-in regimes are not known yet, it is clear that the risk position of bank creditors is likely to change due to the reduced level of potential public sector support. At the same time, it is widely assumed that the preferential claim of covered bondholders would not be affected by the bail-in regimes.

Since investors have to have to assume a potentially higher risk of facing a loss on their investment in unsecured bank debt, the relative security that covered bonds provide through the segregated cover pool is gaining significance. This can lead to a scenario where investors that have so far mainly invested in unsecured bank debt will invest more in covered bonds. The increasing probability for a covered bond investor having to rely on the collateral (due to reduced public sector support) also means that the focus placed on the quality of the collateral and bankruptcy mechanisms within the covered bond framework should increase when making investment decisions.

Conclusion

The multitude and diversity of key considerations described above, reflect the complexity of the covered bond market. With the ongoing growth, also outside of Europe, and changing rating requirements complexity of the covered bond market has increased in recent years. This trend is likely to continue driven by regulatory changes and potentially also by using other asset classes as collateral for covered bonds. Consequently, the way investors and issuers are looking at covered bonds and their benefits and risks is likely to continue to evolve.

Chapter 18

Pulkovo Airport Project, St Petersburg, Russia

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Background

This project, signed in July 2010, was Russia's first public-private partnership (PPP) project in the airport sector designed in accordance with international standards and financed by international commercial banks.

This project was to build, expand, finance and operate the Pulkovo Airport facilities (with the exception of the cargo terminal and business facilities) under the terms of a PPP agreement with the City of St Petersburg and the Pulkovo Airport Company, with a concession period of 30 years.

The borrower in the project was Northern Capital Gateway, a special purpose company owned by VTB Capital, Fraport AG Frankfurt Airport Services Worldwide and the Copelouzos Group.

The total project cost was €1.2 billion, including construction and transaction costs. Of this amount, €720 million was debt financing, provided by a group of multilateral development banks (MDBs) – EBRD, IFC, Nordic Investment Bank, Eurasian Development Bank and Black Sea Trade and Development Bank – and Vnesheconombank of Russia (VEB).

The EBRD and IFC provided and syndicated A/B loans of €200 million and €170 million respectively, and syndicated a combined total of €170 million in B loans. With the EBRD and IFC taking a tenor on their A loans of 15 years, the commercial banks in the B loans took a tenor of 12 years.

The commercial bank syndicate, participating pro rata in the EBRD and IFC B loans, comprised Espirito Santo Investment plc, Nordea Bank, Standard Bank, Unicredit, DZ Bank, KfW IPEX-Bank, Mediobanca and Raiffeisen Zentralbank Oesterreich.

The fact that this benchmark deal was heavily oversubscribed demonstrates the market appetite for such landmark infrastructure deals in Russia.

Key facts and considerations

The City of St Petersburg is Russia's second-largest city, and Pulkovo Airport is the fourth largest in Russia (after the three Moscow airports), with the airport experiencing a CAGR of 11.5% over 2000–2009, reaching its full capacity.

A competitive tender for the operation, refurbishment and extension of the airport was launched in 2008 with the support of the World Bank, Citigroup and Dewey and Leboeuf. The Fraport/VTB/Copelouzos consortium selected on 25 June 2009 took over operations of the airport on 29 April 2010.

The project was one of the first PPPs in Russia and the first PPP project under the PPP Law of St Petersburg (Law No. 627-100), and there would be no state grant. A 30-year PPP agreement with the City of Saint Petersburg for the operation, refurbishment and extension of the Pulkovo Airport provided for the following:

- obligation to run the airport at IATA Level C;
- obligation to construct a new 14 million passengers per annum (PAX) capacity terminal by end of 2013; and
- obligation to keep expanding the airport to maintain the IATA level C along with traffic growth.

The risks to address included:

- construction risk as it involves the construction of a new terminal;
- traffic risk: no throughput guarantee but a revenue sharing mechanism (11.5% concession fee) on revenues;
- tariff risk: the Federal Tariff Authority (federal level) is not a contracting party; and
- limited security (no security over the assets)/untested legislation.

Key structuring elements included:

- compensation for termination covering at least 80% of outstanding senior debt;
- direct agreement with the City and step-in-rights in key contracts; and
- strong sponsor support: experienced sponsors and 40% equity contribution.

Project impact

Being the first competitively and transparently procured airport concession in the Russian Federation, structured under the PPP Law of St Petersburg, the Pulkovo project carries huge 'demonstration effect' for other cities in Russia, with high replication potential.

The Pulkovo project is a flagship project for St Peterbsurg that addresses key transport needs. It sets high standards in terms of building energy efficiency and energy management that go substantially beyond what is required under current legislation.

The success of the commercial tranche syndication demonstrates the value of the contribution of the MDBs in terms of level of investment, dialogue with the authorities, and expertise and credibility in pioneering a complex project in new sectors and geographies.

Lessons for success

Several things were vital for the success of the project, amongst which were the following:

- committed regional administration;
- experienced advisers;
- open transparent bidding process that led to a selection of a strong consortium;
- advanced regulatory framework with special regional PPP law adopted;

- fair and sustainable risk allocation; and
- strong co-operation of MDBs and VEB.

Conclusions

When MDBs partner with commercial banks (and, in this case, with other governmental agencies) the results can be a strong blend of commercial strength and viability, appropriate risk mitigation, and long tenors matching the economic life of the assets to be financed, leading to a valuable infrastructure asset for a major city, and leading in turn to economic growth.