

CONTRACTUAL RELATIONS AND ISSUING PROCEDURES IN THE  
EUROBOND PRIMARY MARKET

by

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THESIS SUBMITTED IN PARTIAL FULFILLMENT OF  
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of  
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## ABSTRACT

This dissertation presents an analysis of contractual relations and issuing procedures in the Eurobond primary market. The Eurobond market is the major international forum for the raising of medium - long term debt capital. However, the terms and conditions under which bond issuers access the market has received little academic attention. This thesis fills this gap in the literature.

Recent developments in the theory of transaction costs are utilized to explain institutional arrangements in the Eurobond primary market. For instance, this thesis develops a theory of syndicates which links firm commitment contractual guarantees to the formation of syndicates. Furthermore, by examining the actual procedures employed to distribute new bond issues, this thesis focuses attention on the within syndicate conflicts which often arise during the primary market distribution period. It is the hypothesis of this thesis that within syndicate contractual problems led to the introduction of the Fixed-Price Reoffering (FPRO) method of syndication and distribution.

The theory of the thesis is in two parts. First, I look at why investment banking syndicates are employed to

distribute new bond issues to investors. Second, I examine issuing procedures in the Eurobond primary market. Here both traditional and FPRO procedures are examined. The last major chapter tests three specific hypotheses implied by the theory of syndicates.

DEDICATION

To my Dad

## ACKNOWLEDGEMENTS

I would like to express my gratitude to everyone who assisted in the preparation of this dissertation. To begin with, I would like to thank Doug Allen for his supervision of this dissertation. Doug read the entire thesis several times and was always very prompt in returning my manuscript with comments. Doug's enthusiasm for my topic and economics in general was an inspiration for me. I also thank Mike Bove for his early supervision of my research. Mike inspired my interest in the Eurobond market and transactions cost economics. I thank Robbie Jones for his supervision and suggestions which improved the modeling of the Eurobond primary market. I thank Brett Isaacs, Liina Karimo-Marshall and participants of the Economics 900 workshop for their generous comments. Finally, I would like to thank my family. My Mom for her unconditional love and support and Liina for her love, friendship, and dedication.



## TABLE OF CONTENTS

	Page
Approval Page . . . . .	ii
Abstract . . . . .	iii
Dedication . . . . .	v
Acknowledgements . . . . .	vi
List of Figures . . . . .	x
List of Tables . . . . .	xi
Chapter 1: Introduction . . . . .	1
Chapter 2: Overview of the Eurobond Market . . . . .	5
2.1 Introduction . . . . .	5
2.2 Definition and Brief History of the Eurobond Market . . . . .	5
2.3 Types of Eurobond Issues . . . . .	8
2.4 Participants in the Eurobond Primary Market . . . . .	13
Chapter 3: Issuer / Investment Banker Contractual Relations:	
A Review of the Literature . . . . .	25
3.1 Introduction . . . . .	25
3.2 Principal-Agent Models . . . . .	30
3.2.1 Critical Assessment of the Literature . . . . .	36
3.3 Asymmetric Information and Transactions Cost Arguments . . . . .	41
3.3.1 Critical Assessment of the Literature . . . . .	48

3.4 Concluding Comments . . . . .	52
Chapter 4: A Transactions Cost Theory of Syndicates . . . . .	53
4.1 Introduction . . . . .	53
4.2 Investment Banking Syndicates in the Eurobond Market . . . . .	54
4.3 A Transactions Cost Theory of Syndicates . . . . .	59
4.4 Concluding Comments . . . . .	67
Chapter 5: Grey Market Problems in Traditional Eurobond Syndication and Distribution Procedures . . . . .	69
5.1 Introduction . . . . .	69
5.2 A Model of Eurobond Syndication and Distribution . . . . .	71
5.3 Discussion of Traditional Syndication Procedures . . . . .	79
5.4 Concluding Comments . . . . .	84
Chapter 6: The Fixed Price Reoffering Syndication Method . . . . .	85
6.1 Introduction . . . . .	85
6.2 The Emergence of the FPRO Syndication Method . . . . .	86
6.3 Modeling the FPRO Syndication Process . . . . .	89
6.4 Critical Discussion of the FPRO Syndication Method . . . . .	97
6.5 Concluding Comments . . . . .	101
Chapter 7: Empirical Analysis and Tests of the Theory . . . . .	102
7.1 Introduction . . . . .	102
7.2 Data Analysis . . . . .	103

7.3 Hypothesis Tests . . . . .	105
7.3.1 The Syndicate Size Test . . . . .	105
7.3.2 The Syndicate Reputation Test . . . . .	107
7.3.3 The Bond Pricing Test . . . . .	114
7.4 Concluding Comments . . . . .	121
Chapter 8: Conclusion . . . . .	123
Appendix #1 . . . . .	125
Appendix #2 . . . . .	130
Bibliography . . . . .	131

LIST OF FIGURES

	Page
5.1 Procedure for Distributing a Traditional Eurobond . . .	72
6.1 Procedure for Distributing a FPRO Eurobond . . . . .	89

## LIST OF TABLES

	Page
2.1 International Bond Issues 1970 - 1993 . . . . .	8
2.2 New International Bond Issues by Major Instruments. .	10
2.3 International Bond Offerings by Category of Issuer. .	14
2.4 Top 25 Lead Managers - All Public Issues . . . . .	18
2.5 Lead Manager Shares of New Eurobond Issues . . . . .	20
7.1 Descriptive Statistics of Traditional and FPRO Syndication Procedures . . . . .	105
7.2 Syndicate Size and Underwriting per member for Traditional and FPRO Bond Issues . . . . .	106
7.3 Syndicate Size Test Results . . . . .	107
7.4 Ranking System for Firms in the Syndicate . . . . .	110
7.5 Ranking System for firms Based Upon League Tables. . .	112
7.6 Syndicate Reputation for Traditional and FPRO Syndicates . . . . .	112
7.7 Syndicate Reputation Test Results . . . . .	113
7.8 Mean Statistics for FPRO and Traditional Issues . . . .	117
7.9 Regression Estimates for Test of Effect of Issue Type on Bond Pricing . . . . .	119

## CHAPTER 1:

### INTRODUCTION

During the past several years, international financial markets have undergone major structural changes. This thesis analyzes one aspect of these changes: the choice of contractual arrangements governing primary market syndication procedures in the Eurobond (international bond) market.

The Eurobond market is the major international forum for raising medium-to-long term debt capital. Surprisingly, the terms and conditions under which new bond issuers access the market, although attracting widespread professional interest, have received very little attention from academic researchers. In view of the market's importance, this is a significant gap in our understanding of how international capital markets function.

Although an academic literature exists which examines issuer/investment banker contractual relations, there are several limitations of this literature in terms of its ability to explain contractual relations in the Eurobond primary market. For instance, the literature ignores the fact that new bond issues are typically brought to market by a syndicate of investment bankers. Furthermore, the literature ignores the process by which new securities are brought to market. This thesis addresses these issues by developing a theory of syndication which links the existence of firm commitment contractual guarantees to the

formation of investment banking syndicates. Secondly, the analysis outlines the actual process by which new bond issues are brought to market. Here, the procedures employed and the time sequence associated with Eurobond primary market issuing procedures are outlined. This approach allows me to focus on the incentive strategies available to syndicate members during the primary market distribution period. In the course of doing so, within syndicate contractual issues are also identified and discussed.

This thesis argues that within syndicate contractual issues have contributed to the design of the Eurobond primary market. In particular, I argue that the Fixed-Price Re-offering (FPRO) method of syndication and distribution was introduced as a response to within syndicate contractual problems. The FPRO changed issuing procedures and the nature of the firm commitment contractual guarantee extended to bond issuers by investment banking syndicates. The introduction of these new issuing procedures represented an endogenous change in contract governance structure which permits the testing of a number of hypotheses regarding bond pricing and the theory of syndication presented in this thesis.

This thesis is divided into six major chapters. The second chapter provides a brief overview of the Eurobond market. It identifies the various types of Eurobonds and looks at the participants in the Eurobond primary market. The third chapter

presents a short review of the literature examining issuer/investment banker contractual relations. The papers are divided into two broad categories: those that adopt a principal agent approach to modeling contractual relations, and those that look at the implications of transactions costs and reputation. Analyzing these papers establishes the context for the analysis of the next three chapters.

Chapter four presents a theory of investment banking syndicates. To my knowledge, this theory is the first to link the existence of firm commitment contractual guarantees to the formation of syndicates. The theory developed in this chapter is the unifying theme for the next chapters. Chapter five and six explore issuing procedures in the Eurobond primary market. Chapter five examines traditional syndication and distribution procedures and analyzes the moral hazard problem which emerges during the primary market distribution period. Within syndicate contractual issues are the focus of this chapter. Chapter six provides an analysis of the FPRO method of syndication and distribution. Here, I argue that these procedures were introduced as a response to the within syndicate contractual problems identified in Chapter 5. Chapter seven provides various tests of the hypotheses developed in Chapter's four, five, and six.

The overall hypothesis of this thesis is that institutional arrangements arise in response to transaction costs. In the



Eurobond primary market, within syndicate contract enforcement problems have led to the introduction of new issuing procedures. In particular, the Fixed-Price Re-Offering method of syndication and distribution is an institutional arrangement which was introduced as a method to reduce transaction costs.

## CHAPTER 2: OVERVIEW OF THE EUROBOND MARKET

### 2.1 Introduction

In its relatively short history, the Eurobond market has grown to become the major international forum for raising medium-long term debt capital. The goal of this chapter is to provide a brief overview of the Eurobond market with particular emphasis devoted to the participants in the primary market. Following the introduction, section 2.2 presents a definition and brief history of the Eurobond market. This is followed by section 2.3 which looks at the various types of Eurobonds. Section 2.4 concludes the chapter by looking at the participants in the Eurobond primary market.

### 2.2 Definition and Brief History of the Eurobond Market

The literature on external debt markets normally distinguishes between two types of debt issue - Eurobonds (International bonds) and foreign bonds. A Eurobond is a debt obligation denominated in any one of a number of different currencies and distributed through an international syndicate of underwriting and selling firms. Upon issue, the bonds are simultaneously offered to investors in a number of countries. A Eurobond has three characteristics which make it unique. First, it is denominated in a currency that is different than the home currency of a substantial portion of the investors to whom it is

sold. Secondly, a typical Eurobond is distributed by a multinational syndicate of investment bankers. Finally, Eurobonds are bearer bonds.

A foreign bond, alternatively, is a debt obligation in which the issuer of one country issues a bond in the market of another country with the aid of a syndicate of the host country. The bonds are then sold primarily to the residents of the host country. The two markets together comprise the external bond market.

The consensus opinion is that the first Eurobond was issued on 17 June 1963 by the Italian state highway authority, Autostrade.<sup>1</sup> Autostrade issued 60,000 bonds, each with a face value of US\$250 and a coupon rate of 5.5%. The subscription agreement was signed on July 1 by Autostrade and the syndicate comprised of S.G. Warburg, Banque de Bruxelles, Deutsche Bank and Rotterdamsche Bank. Following its issue, the bond was listed on the London Stock Exchange.

The growth of the Eurobond market was enhanced by two measures introduced by the US government to reduce the US balance of payments deficit. The first, Interest Equalization Tax, taxed US residents' purchases of most foreign bonds issued in the US. The Interest Equalization Tax became effective on 18 July 1963 and had the effect of diverting many foreign borrowers from the US market to the new Eurobond market. The second measure,

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<sup>1</sup> There is some dispute among market commentators regarding the initial issue of a Eurobond.

introduced in 1968, placed restrictions on capital outflows from the US. This measure forced US companies to raise capital for their overseas operations from overseas capital markets. Until capital controls were eliminated in 1974, US corporations were the largest borrowers on the Eurobond market, accounting for one third of the US\$27 billion borrowed (Bowe, 1988:14).

By the time capital controls were eliminated in the US, the Eurobond market was an established institution in international financial markets. Despite the increased exposure to competition occasioned by the US regulatory changes, the Eurobond market has grown steadily. The Eurobond market has thrived because of its ability to evolve and fulfill the needs of borrowers and investors alike. As can be seen from Table 2.1, the growth of the Eurobond market has been exceptional. New issues coming to market have increased from US\$2.966 billion in 1970 to US\$394.6 billion in 1993.

The figures in Table 2.1 also reveal the extent to which borrowers have increasingly gone to the Eurobond market when seeking to raise funds in external bond markets. There has been a 54 fold increase in bond issues in the foreign bond market and a remarkable 133 fold increase in bond issues in the Eurobond market over the 1970-1993 period.

Table 2.1 : International Bond Issues, 1970-1993

Dates	Eurobonds (in Millions)	Foreign Bonds
1970	US\$2,966	US\$1,594
1971	3,642	2,642
1972	6,335	3,413
1973	4,193	3,645
1974	2,134	4,723
1975	8,567	11,344
1976	14,328	18,188
1977	17,735	14,471
1978	14,125	20,154
1979	18,726	22,264
1980	23,970	17,950
1981	31,616	21,369
1982	50,330	25,200
1983	50,100	27,050
1984	81,720	27,800
1985	135,430	31,020
1986	187,700	40,400
1987	140,500	40,300
1988	178,800	48,300
1989	212,800	42,900
1990	180,100	49,800
1991	258,200	50,500
1992	276,100	57,600
1993	394,600	86,400

Source: Morgan Guaranty Trust, World Financial Markets, various issues.  
O.E.C.D., Financial Market Trends, various issues.

### 2.3 Types of Eurobond Issues

The Eurobond market consists largely of public issues listed on the London or Luxembourg Stock Exchanges, complemented by private or semiprivate placements. Most issues are denominated in US dollars, but several other currencies (pound sterling, Deutschemark, Swiss franc, Canadian dollar, yen, French franc,

etc.) have also been used. Issue size varies and the trend has been upward to the point where it is now common to see issues well above US\$1 billion. Maturities are generally between 5 and 15 years.

Issuers seeking to raise funds on the Eurobond market can tailor their bond offering in any number of ways to suit the needs of the investing public. Eurobonds are typically classified into one of the following categories:

#### FIXED-RATE EUROBONDS

The most common type of Eurobond is the fixed-rate "straight" bond. These bonds are usually issued in denominations of US\$5,000 and \$10,000 with coupons for interest payments. The coupon rate is fixed and is simply the stated rate of interest on the bond. Generally, interest and principal payments are free of withholding and other taxes. The fact that Eurobonds are bearer bonds enhances their appeal to investors who wish to avoid the payment of taxes. As can be seen from Table 2.2, the fixed-rate bond dominates all other bond instruments over the 1989-1993 period.<sup>2</sup> It's share of the market ranged from 60.5% to 79.5%.

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<sup>2</sup> The data contained in Table 2 reflects all international bond issues, including Eurobonds and foreign bonds, and therefore may not be totally representative of the Eurobond market.

Table 2.2: New International Bond Issues by Major Instruments (US\$billions)

	1989	1990	1991	1992	1993
Straights	154.6	158.9	242.7	265.4	369.1
Floating Rate Notes	17.8	37.1	18.3	43.6	69.8
Convertibles	14.1	10.6	10.1	5.2	18.1
Equity Warrants	66.2	21.2	31.6	15.7	20.6
Zero-Coupon	2.3	1.5	3.8	3.2	1.8
Other	0.7	0.6	2.2	0.6	1.6
<b>Total</b>	<b>255.7</b>	<b>229.9</b>	<b>308.7</b>	<b>333.7</b>	<b>481.0</b>

Source: O.E.C.D., Financial Market Trends, Vol. 57, February 1994.

### FLOATING RATE NOTE ISSUES

One of the first variations on the straight Eurobond was the floating-rate note (FRN). The FRN is essentially a short-term note with automatic rollover. FRNs are a type of Eurobond similar to syndicated loans because their interest rate is stated in terms of a spread relative to the London (or Singapore) inter bank offered rate. The size of the quoted spread depends on the identity and perceived credit rating of the issuer. The interest rate is adjusted every six months implying semi-annual coupon payments. There is usually a minimum rate below which the value of the coupon will not fall. The FRN was first introduced into the Eurobond market in 1970 and as Table 2.2 illustrates, they are a popular instrument for bond issuers. Their share of the market ranged from 5.9% to 16.1% over the 1989 - 1993 period.

## CONVERTIBLES

A convertible can be considered a straight bond plus an option where the bond may be exchanged for another type of asset at the discretion of the investor. Since the coupon rate is designed to pay a percentage of the combined value of the straight bond and the option, the stated yield will be less than the yield on a comparable straight bond. The first convertible Eurobond was issued in 1965 and since then numerous conversion features have been incorporated into Eurobonds.

The most common conversion feature is an equity convertible which allows the Eurobond, on redemption or at any time during a stipulated time period, to be exchanged at a specified price for the common shares of the issuing corporation. This price is usually set at a premium above the market price of the shares at the time of the bond offering. Eurobonds have also been issued which allows for conversion into other real assets such as gold or oil, or into other bonds with different payment characteristics.

Currency convertibles are another form of convertible bond and are basically bonds issued in one currency which allow the investor the option of obtaining the principal and interest in an alternative currency. The level of these payments relate to a predetermined procedure for calculating the relevant exchange rate. This arrangement determines the allocation of exchange risk between the issuer and investor.



If a fixed exchange rate is chosen, where the exchange rate between the currencies is fixed for the full maturity of the offering, the exchange rate risk is allocated to the issuer. If a floating exchange rate is chosen, where the exchange rate between the currencies is set immediately prior to the payment of interest and principal, the exchange risk is placed on both the issuer and investor. Again, Table 2.2 indicates the extent to which market participants have utilized this instrument. Convertibles share of the market has ranged from 1.6% to 5.5% percent over the 1989 - 1993 period.

#### EUROWARRANTS

Another form of option used in the Eurobond market is the warrant. Eurobond warrants are essentially dated call options convertible into equity or other bonds. A typical Eurobond with warrants is a bond paying a fixed coupon at predetermined intervals which carries a warrant giving the investor the right to purchase the common stock (or other bonds) of the issuer at a pre-specified price over a given period. The exercise price of the warrant is fixed at a small premium of the market price of the underlying share. This premium reflects the cost associated with purchasing the warrant and immediately exercising it into equity, not the direct cost associated with the share purchase itself. The advantages of a warrant arise from the fact that the warrant can be detached from the bond itself and traded in the

secondary market. Furthermore, the advantage of a warrant over a convertible privilege is that it can be exercised without the bond being redeemed. The popularity of this market instrument is reflected in Table 2.2 which shows a market share ranging from 4.3% to 25.9% over the 1989 - 1993 period.

#### ZERO-COUPON BOND ISSUES

Another frequently utilized instrument in the Eurobond market is the zero-coupon bond which pays no interest. These bonds are purchased at a discount from par and the investor earns a return in the form of a capital gain at maturity. The attraction to investors of this type of instrument is that for many investors the appreciation in value as maturity approaches is not taxable, or only taxable when the bond is liquidated, and then at capital gains rates rather than ordinary income tax rates. Table 2.2 documents the use of this instrument type over the 1989-1993 period and indicates a market share ranging from .3% to 1.2%.

#### **2.4 Participants in the Eurobond Primary Market**

Market participants in the Eurobond primary market include issuers, investors, and intermediaries who underwrite and distribute the offerings of issuers to the investing public.

## ISSUER (BORROWER)

The issuer of a Eurobond can be a government, a private corporation, a public enterprise, a commercial bank, or an international organization (such as the World Bank). Data on international bond offerings by category of issuer is presented in Table 2.3 for the 1989-1993 period.

	US\$billions				
	1989	1990	1991	1992	1993
Governments	20.2	24.5	44.4	63.6	104.3
Public Enterprises	32.1	41.0	48.3	52.8	65.1
Banks	62.1	56.0	55.9	67.3	110.1
Private Corporations	119.8	79.0	123.7	108.7	153.6
International Organizations	21.6	29.4	36.4	41.3	47.9
<b>TOTAL</b>	<b>227.1</b>	<b>255.8</b>	<b>229.9</b>	<b>308.7</b>	<b>481.0</b>
	% of total				
	1989	1990	1991	1992	1993
Governments	7.9	10.7	14.4	19.1	21.7
Public Enterprises	12.5	17.8	15.6	15.8	13.5
Banks	24.3	24.4	18.1	20.2	22.9
Private Corporations	46.8	34.3	40.1	32.5	31.9
International Organizations	8.5	12.8	11.8	12.4	10.0
<b>TOTAL</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: O.E.C.D., Financial Market Trends, Vol. 57, February 1994.  
Author's Calculations.

The figures reveal some interesting developments. For instance, there has been a tremendous increase in the number of sovereign issues floated over this period. Government offerings have increased fivefold with an increase in market share from 7.9

to 21.7%. Private corporation offerings have been erratic in terms of the dollar volume but there is an observed decrease in their market share from 46.8 to 31.9%.

#### INVESTORS

The largest group of investors in Eurobonds has historically been individual private ones, most commonly dealing through professional investment advisors and fund managers. However, institutional investors - insurance companies, pension funds, mutual funds, and charitable organizations - are increasingly important. No published data exists to document the market share of each investor category, although it is estimated that private investors hold 50 - 60% of Eurobonds.

#### FINANCIAL INTERMEDIARIES

In the Eurobond market, the syndicate method of underwriting and distribution dominates. The syndicate method is where a group of investment bankers join together in a temporary partnership for the purpose of underwriting and distributing a particular issue of securities. A typical syndicate will be comprised of a lead manager (possibly with joint-lead managers), a lead management group, a co-management group, and possibly a group of selling agents.

## The Lead Manager

The lead manager plays the key role in an underwriting, working usually with a small lead management group, a larger group of co-managers, and possibly a selling group of many members. The primary role of the lead manager is to advise the issuer on the main features of the issue and timing. Other important functions include: an analysis of the credit risk of the issuer and an assessment of the market's ability to absorb and place the issue; assistance in the formation of the syndicate; allocating subscriptions to the syndicate members; assisting the issuer to prepare the prospectus which includes all required disclosures of information; handling the requisite legal work; preparing all the documents associated with payment for, and delivery of, securities; and establishing a pool of funds for the stabilization of the issue in the grey or secondary market (Bowe, 1988:43).

The way in which the lead manager is chosen by the issuer differs from case to case. It may be the case that an issuer chooses a lead manager on the basis of a long standing working relationship. In other cases, the issuer negotiates with several investment banks before selecting the one that appears to offer the best package. Sometimes the lead manager is chosen by competitive bidding.

When selecting a lead manager, a potential issuer of a security will consider more than the terms and conditions of the

different proposals submitted. They will also take into consideration the reputation of the investment banker in international markets, the banker's experience in marketing issues similar to the issuer's, and its placement (selling) power.

The participants in the Eurobond underwriting industry operate in an environment where a large number of investment banks assume the role of lead manager in Eurobond issues. In 1990, for instance, 98 different managers led deals.<sup>3</sup> Publications such as *Euromoney* and *Institutional Investor* regularly compile league tables indicating the relative standing of the major banks in lead managing, co-managing, and underwriting new Eurobond issues. A high profile in these standings is sought after very aggressively and enhances the reputation of market participants. Table 2.4 profiles the top 25 lead managers over the 1989-1992 period.

Examining the stability of market share among the top 25 lead managers reveals that the identity of the top 25 has remained fairly stable over this period. For instance, 17 of the top 25 lead managers in the 1992 rankings were in the top 25 all four years. In addition, 19 of the top 25 in 1992 were in the top 25 three out of the four years. Looking at the ratings for the top 10 in 1992, we see that 7 lead managers were in the top 10

---

<sup>3</sup>"Happy Days Are Here Again," *Euromoney*, Supplement (March 1991) : 1.

Table 2.4: Top 25 Lead Managers - All Public Issues

	1992		1991	
	\$Million	%Share	\$Million	%Share
1. Deutsche Bank	21,579.62	7.83	21,039.90	7.80
2. Nomura Securities	19,600.59	7.11	17,098.18	6.90
3. CSFB	16,239.57	5.89	16,599.34	6.70
4. Goldman Sachs	14,100.52	5.11	14,933.81	6.03
5. J.P. Morgan	12,685.03	4.60	10,877.13	4.39
6. Merrill Lynch	12,070.15	4.38	10,869.77	4.38
7. Banque Paribas	12,053.24	4.37	10,707.25	4.32
8. Union Bank of Switzerland	11,185.98	4.06	10,010.55	4.04
9. Daiwa Securities	10,068.20	3.65	9,276.14	3.74
10. Yamaichi Securities	8,305.75	3.01	8,585.69	3.47
11. Nikko Securities	7,918.74	2.87	8,282.92	3.34
12. Industrial Bank of Japan	7,150.96	2.59	7,929.46	3.20
13. Lehman Brothers	7,093.67	2.57	7,239.84	2.92
14. Salomon Brothers	6,735.17	2.44	6,867.52	2.77
15. Dresdner Bank	6,407.66	2.32	6,165.85	2.49
16. Morgan Stanley	6,193.94	2.25	5,985.59	2.42
17. Credit Commercial de France	5,888.12	2.14	5,361.88	2.16
18. Swiss Bank Corporation	5,594.46	2.03	5,144.61	2.08
19. SG Warburg Securities	5,529.96	2.01	4,900.04	1.98
20. Citicorp Group	4,452.30	1.61	4,429.03	1.79
21. Societe Generale	4,320.34	1.57	2,927.02	1.18
22. Abn Amro	4,242.63	1.54	2,907.04	1.17
23. Kidder Peabody	4,193.32	1.52	2,841.01	1.15
24. Credit Lyonnais	4,157.33	1.51	2,683.12	1.08
25. Barclays de Zoete Wedd	4,069.32	1.48	2,652.68	1.07
1. Nomura Securities				
2. CSFB				
3. Daiwa Securities				
4. Deutsche Bank				
5. Banque Paribas				
6. Goldman Sachs				
7. Yamaichi Securities				
8. Nikko Securities				
9. Morgan Stanley				
10. Merrill Lynch				
11. Union Bank of Switzerland				
12. Swiss Bank Corp.				
13. J.P. Morgan				
14. S.G. Warburg				
15. Credit Lyonnais				
16. Salomon Brothers				
17. Credit Commercial de France				
18. Industrial Bank of Japan				
19. Dresdner Bank				
20. Hambros Bank				
21. Baring Brothers				
22. Barclays De Zoete Wedd				
23. Wood Gundy				
24. Abn Amro				
25. Societe Generale				

Table 2.4 continued

	1990		1989	
	\$Million	%Share	\$Million	%Share
1. Nomura Securities	16,160.20	9.20	31,892.00	15.00
2. CSFB	11,626.90	6.60	16,862.00	7.90
3. Deutsche Bank	11,177.10	6.40	16,329.10	7.70
4. Daiwa Securities	8,231.90	4.70	15,286.40	7.20
5. Salomon Brothers	7,837.30	4.50	10,677.00	5.00
6. J.P. Morgan	6,979.00	4.00	9,057.00	4.30
7. Nikko Securities	6,560.10	3.70	7,915.30	3.70
8. Merrill Lynch	6,356.10	3.60	7,437.70	3.50
9. Goldman Sachs	5,679.10	3.20	6,614.30	3.10
10. Banque Paribas	5,562.70	3.20	6,076.50	2.90
11. Yamaichi Securities	5,409.10	3.10	5,917.60	2.80
12. Union Bank of Switzerland	5,233.30	3.00	5,497.40	2.60
13. Credit Commercial de France	4,538.60	2.60	4,845.00	2.30
14. Industrial Bank of Japan	4,448.10	2.50	3,814.90	1.80
15. S.G. Warburg	4,115.40	2.30	3,416.90	1.60
16. Morgan Stanley	4,086.00	2.30	3,214.60	1.50
17. Banco Di Roma	3,791.10	2.20	2,870.80	1.40
18. Bankers Trust	3,628.60	2.10	2,765.40	1.30
19. Credit Lyonnais	3,289.60	1.90	2,729.40	1.30
20. Mitsubishi Bank	3,239.60	1.80	2,727.70	1.30
21. Swiss Bank Corp.	2,830.90	1.60	2,614.90	1.20
22. Hambros Bank	2,688.80	1.50	2,612.70	1.20
23. Baring Brothers	2,592.20	1.50	2,213.60	1.00
24. Istituto San Paolo Di Torino	2,336.90	1.30	1,951.90	0.90
25. Commerzbank	2,306.20	1.30	1,828.40	0.90

Source: Euromoney, various issues.



all four years and 9 were in the top 10 three out of the four years. Finally, the ratings for the top 3 lead managers in 1992, shows that only 1 firm was in the top 3 all four years, while 2 firms were in the top 3 three out of the four years.

Despite the large number of active Eurobond lead managers, market share has remained concentrated in the top 25. This is illustrated in Table 2.5. This table presents the aggregate market share for the top 3, 5, 10, 15, and 25 lead managers from 1989 to 1992. The figures clearly illustrate that the Eurobond underwriting industry is concentrated, although this concentration has decreased somewhat over this period. The top 3 lead managers market share is very large, although this share has decreased from 30.6% in 1989 to 20.8% in 1992. Similarly, the top 5 have witnessed a decrease in market share from 42.8% to 30.5% over this period. Aggregate market share for the top 25 remained stable in the 80% range over this period.

Table 2.5: Lead Manager Shares of New Eurobond Issues

	1992	1991	1990	1989
Top 3 Lead Managers	20.8	21.4	22.2	30.6
Top 5 Lead Managers	30.5	31.8	31.4	42.8
Top 10 Lead Managers	50.0	51.8	49.1	60.3
Top 15 Lead Managers	62.8	66.5	62.6	71.4
Top 25 Lead Managers	80.5	82.6	80.1	83.4

Source: Author's calculations from Table 4 data.

## The Lead Management Group

The lead manager usually joins with several other major investment bankers to form the lead management group. These managers play a role similar to that of the lead manager but with fewer administrative responsibilities and in a role secondary to the lead manager. An investment bank is usually invited to join the lead management group because of its placement power. These banks are chosen for their ability to generate investor support within their own domestic market. Because Eurobonds are sold simultaneously to investors in several different countries, managing groups for Eurobond issues tend to be larger than those in domestic markets.

## The Co-Managers (Underwriters)

Having formed the lead management group for the launch of a Eurobond issue, the lead manager must then put together the co-management group. The function of the co-management group is to underwrite the risk of the issue during the primary market distribution period<sup>4</sup>. The typical view of the underwriting process is that the members of the underwriting syndicate purchase the issue from the borrower. The key function of the underwriters, therefore, is to accept the market liquidity risk. They provide a guarantee that the issuer will actually receive the price of the issue that has

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<sup>4</sup> It should be noted that lead and co-lead managers also underwrite the risk of the issue.

been agreed, regardless of their ability to place the issue with investors.

The decisions on how many co-managers are invited and what percentage of the underwriting each should be allocated are subject to considerable negotiation. Lead managers generally have the freedom to select syndicate members, although issuers may request the inclusion of particular banks on the basis of an on-going relationship with that institution. For public Eurobond issues, the lead managers generally commit themselves to underwrite about 40% or more of the entire issue with the co-management group absorbing the rest. In most Eurobond issues there are usually just two bracketed groups - majors, underwriting about 1% of the issue each, and minors, underwriting 0.5 per cent each. There is considerable professional jealousy about these participations, since a banker's relative position in the issue is perceived to reflect their prestige in the industry. Some firms will refuse to participate in an issue unless they are included in the block with the largest participations.

### The Selling Group

The sale of Eurobonds is undertaken not only by lead and co-managers, but also by a larger group of selling agents. The members of the selling group do not take any underwriting risk but simply receive a commission for the bonds they sell. Each member of the selling group receives

only a very small allotment of bonds, often less than 0.5% of the total issue. Sometimes there is no separate selling group at all with the entire issue placed by syndicate managers.

#### THE FEE STRUCTURE

The fee structure of a typical Eurobond issue reflects the differences in the responsibility for administration and risk undertaken by the various members of the syndicate. Fees are not paid directly, but are obtained by discounts on the price at which Eurobonds are provided to members of the syndicate. Total commissions vary between 2% and 2.5% depending on the maturity of the issue, as follows<sup>5</sup>:

	Maturity		
	5 Years	7 Years	10+ Years
Management fee	0.375%	0.375%	0.5%
Underwriting fee	0.375%	0.375%	0.5%
Selling commission	1.250%	1.500%	1.5%
Total commissions	2.000%	2.25%	2.5%

Regarding this fee structure, it should be noted that the management fee is generally not shared equally between members of the management group. The lead manager generally takes a share, the praecipium, before allocating the remainder to all members. Furthermore, the underwriting fee

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<sup>5</sup>The following Table is from C.L. Courtadon, The Competitive Structure of the Eurobond Underwriting Industry, Monograph Series in Finance and Economics (New York : Salomon Brothers Center for the Study of Financial Institutions, 1985), p. 4.

is earned by all members of the syndicate who perform an underwriting function, including lead and co-managers. It is also the case that the selling commission is paid to all members of the syndicate who actually place the issue.<sup>6</sup>

It should be noted that these fees are rarely if ever earned by the syndicate since the bond offerings are rarely sold at the offering price. As soon as all final terms have been contracted and the bonds are in the possession of selling group members, there is no enforceable constraint which compels the sale of the securities at the offering price. Any bonds sold at less than the offering price, therefore, will reduce the gross spread earned by the seller and possibly the syndicate if this information becomes public.<sup>7</sup>

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<sup>6</sup>This description of the fee structure describes the fee structure for traditional Eurobond offerings. Chapter 6 of the thesis outlines the fixed-price re-offering method of syndication and discusses the implications of this syndication method for the fee structure.

<sup>7</sup>This issue is discussed fully in Chapter 5 and 6 of this thesis.

**CHAPTER 3:**  
**ISSUER / INVESTMENT BANKER CONTRACTUAL RELATIONS: A**  
**REVIEW OF THE LITERATURE**

**3.1 Introduction**

A critical review of the academic literature examining contractual relations between issuers and investment bankers will be presented in this chapter. The purpose is to discuss the insight and the limitations of this literature in terms of its ability to explain contractual relations and issuing procedures in the Eurobond primary market. I argue the existing literature has two major limitations: i) it ignores the fact that most issues are brought to market by an investing banking syndicate; and ii) it ignores the actual process by which new securities are brought to market. The following three chapters address these two issues and provide a more complete understanding of contractual relations in the Eurobond primary market. The goal now, however, is to survey this literature.

Organizations which issue securities on the capital market have a number of methods available for marketing the securities. The issuer may decide to place the securities privately with the general investing public or offer the securities on a pro rata basis to its existing security holders through a rights offering. In a rights offering, existing security holders receive a right from the issuer

giving them the option to purchase new securities for each security already owned.

Another option for the issuer is to employ an investment banker to distribute the securities to investors. If an investment banker is employed, they can negotiate the offering terms with the banker or they can put the issue out for competitive bid. In the case of a negotiated offering, the determination of offering terms, such as price, is largely a matter of negotiation. The representative of the prospective investment banking group may propose a public offering price and a spread, which may then be met by a counterproposal by the issuer. This process will continue until a mutually satisfactory agreement is reached or until one party breaks off the negotiations.

If the issue is to be offered competitively, the issuer will publish an Invitation for Bids. The invitation specifies the general characteristics of the issue, including the total par value and the maturity, and frequently a minimum and maximum range of prices which will be accepted. Investment banking firms which specialize in managing issues may respond to the invitation by organizing a syndicate to bid on the issue. This bid will be submitted to the issuer in accordance with the terms of the invitation. Generally, the issuer will award the issue to the bidder specifying the lowest cost of capital to the issuer.

Investment banking firms act as intermediaries between organizations seeking external sources of funding and the investing public. An investment banker serves four basic functions that may be of value to the issuer: advising, underwriting, distribution, and issue price certification. The investment banker provides advice regarding the type of securities to be issued, coupon rates, maturity, timing, offer price, etc. Second, the investment banker may underwrite all the risk regarding the proceeds from the issue. Third, the investment banker serves a distribution function by selling the securities to the public. Fourth, the investment banker may use its reputation to certify that the issue price is consistent with inside information.

There are three forms of contracts between issuers and investment bankers commonly observed in practice: a 'firm commitment' contract, a 'best efforts' contract, and a 'stand-by' contract. A firm commitment contract, similar to a rent contract, is one where the investment banker purchases the entire issue outright and guarantees that the issuer will receive a fixed amount of funds. If the security does not sell well, the underwriter, not the issuer, takes the loss. Firm commitment contracts often include 'Green Shoe' provisions which gives the underwriter the option to acquire additional securities once the issue has been distributed. In the case of Eurobonds, a separate tranche may be issued if the initial offering is successful.



If the issuing firm does not require the issue to be underwritten, a best efforts contract is entered into. In a best efforts contract, which resembles a wage contract, the investment banker is employed only for distribution purposes. There is no commitment made to raise a fixed amount of funds and the whole risk is born by the issuer. The best efforts contract, therefore, implies greater uncertainty for the issuer because they do not know how much capital will be raised with the issue. This uncertainty can be limited by stipulating a minimum-sales-constraint clause which specifies a minimum sales threshold which must be met in the offering period. If sales fall short of the threshold, the offer will be withdrawn from the market.

In the stand-by contractual arrangement, which resembles a share contract with a side payment, the investment banker commits to purchase all the securities the issuer is unable to sell at a pre-specified price. The underwriter receives a flat fee plus a percentage of the value of the securities underwritten for this service. In the extreme case of a complete failure by the issuer to sell its securities, the issuer is assured of receiving a pre-specified amount. It also obtains a proportion of the receipts it has generated on its own by saving part of the underwriter's share. In this form of agreement, the risk is shared by the issuer and the investment banker [Mandelker and Raviv, 1977:684].

Several studies have examined contractual relations in the investment banking industry. The studies examine the advising, underwriting, distribution, and certification functions of the investment banker and offer explanations for observed contractual relations between issuers and investment bankers. Furthermore, the studies derive optimal contract design results under a variety of risk and information assumptions.

The literature examining contractual relations between issuers and investment bankers has evolved into two distinct strands. The first group of papers employ principal-agent models to examine the implications for contractual choice of risk and asymmetric information. Different assumptions are employed regarding the risk tolerance and the information endowment of the contracting parties. Based upon these assumptions, optimal contract and commission schemes are discussed. The second group of papers examine the implications of transactions costs based on asymmetric information. In this latter group of papers there is no reference to the risk tolerance of the actors in explaining contractual choice.

It should be noted that none of the papers surveyed discuss the Eurobond market in particular. The papers, though general, discuss the institutional setting existing in U.S. bond and equity markets. This is a limitation of the literature since there are important institutional

differences between the two markets. These limitations will be noted in the discussion to follow.

When discussing the two strands of the literature, the individual papers will be surveyed and then discussed critically as a group.

### 3.2 Principal-Agent Models

The literature examining the implications of risk in the investment banking industry have one thing in common: they explain firm commitment contracts by asserting that issuers are risk averse and investment bankers are risk neutral. The fundamental difference between the articles relates to the information endowment of the relevant actors. By employing different assumptions regarding the initial endowment of information, the authors examine the underwriting, advising, and distribution functions of investment bankers. Optimal contract design results are also derived.

#### **Mandelker and Raviv (1977)**

Mandelker and Raviv focus on the underwriting function by presenting an economic analysis of optimal risk bearing in underwriting. In a world of symmetric information regarding the state of the capital market, a framework is developed in which various contracts are optimal. The analysis examines the demand for insurance by the issuing firm and the underwriters' willingness to supply it under a

variety of assumptions regarding the parties' degree of risk aversion.

If the issuer is risk averse, this implies *ceteris paribus* they prefer a contract with minimum proceeds variability (i.e., a contract with no variability at all). Therefore, under the assumption that the investment banker is risk neutral, the best underwriting agreement is the firm commitment contract. However, the demand for underwriter's services is smaller when the market liquidity risk of an issue is also smaller. For instance, since potential price fluctuations of issues with low quality ratings are greater than for high quality ratings, it is expected that issuers of high quality securities will be inclined to accept a best efforts contract and the risk of an issue [Mandelker and Raviv, 1977:690]. In other words, there is less need to purchase insurance from underwriters. In the event that the issuer and investment banker are both risk averse, the optimal contract will bear a close resemblance to the stand-by contract. For adverse market conditions, the issuer receives more than the amount obtained from the sale of the securities. However, in favorable market conditions, all the proceeds from the public in excess of some predetermined amount are shared by the issuer and underwriter with the share going to each party a function of the ratio of absolute risk aversion [Mandelker and Raviv, 1977:693].

## Baron (1979)

Baron examines the distribution and pricing of securities under the assumption that the parties have symmetric information regarding the state of the capital market. He addresses the moral hazard problem that may be present when the interests of the issuer and the investment banker do not coincide and the banker is able to act in his own rather than the issuer's best interests. The problem lies in the fact that the investment banker has an incentive to set a low offer price to minimize the distribution effort required to place the issue with investors. Baron, therefore, examines the contractual arrangements that the issuer can use to induce an investment banker to act in the issuer's interests. The ability of the issuer to design such a contract or commission schedule depends on its ability to observe the actions of the banker.

If the issuer is able to observe the distribution effort and offering price, the first-best commission formula employs a 'forcing contract' that specifies the actions that are to be taken by the investment banker. If the investment banker takes the actions preferred by the issuer, the commission schedule will be increasing in the net proceeds of the issue. If the banker does not take the actions preferred by the issuer, a penalty will be levied against the investment banker [Baron, 1979: 163].

When examining the risk tolerance of the contracting parties, Baron goes on to note the following. For a risk

neutral banker and risk averse issuer, a firm commitment contract is optimal. If the issuer is risk neutral, the investment banker will receive a fixed payment and the issuer absorbs all the risk associated with the issue. This corresponds to a best efforts arrangement. If both the issuer and banker are risk averse, the commission paid to the banker and the amount received by the issuer both depend upon the net proceeds of the issue. In other words, both parties bear some risk as in a stand-by agreement [Baron, 1979:165].

In the more realistic case where the issuer is unable to observe the distribution effort of the banker, an incentive problem is present. For example, in order to reduce the distribution effort, the investment banker may have an incentive to establish an offer price lower than the issuer would prefer. Similarly, for a given issue price the issuer would prefer a greater distribution effort than the banker would prefer [Baron, 1979:167].

An incentive problem is thus potentially present relative to both the distribution effort and the pricing decisions, but since the offer price can be observed by the issuer, the issuer can dictate the offer price that it prefers.<sup>8</sup> The issuer, however, is not in a position to

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<sup>8</sup>It should be emphasized that Baron is referring to institutional arrangements which exist in the U.S. In the Eurobond market, issuers cannot observe the offer price since the bonds are bearer bonds. Syndicate members are able to shirk on their contractual agreement to sell the securities at the proposed offering price, because they are not traceable back to the syndicate member. This issue is explored in detail in Chapter 5.

observe the distribution effort of the banker and is thus unable to dictate the distribution effort preferred. The optimal contract under these circumstances depends upon the actors willingness to bear risk..

If the investment banker is risk neutral, a firm commitment contract is optimal indicating that the distribution effort problem does not exist under these circumstances. However, if the banker is risk averse, both the issuer and banker will share the risk as in a stand-by arrangement. The optimal commission function under these circumstances is an increasing function of the net proceeds and involves a bonus if the issue is sold out at the issue price [Baron, 1979:173].

#### **Baron and Holmstrom (1980)**

Baron and Holmstrom examine the issue price decision and the design of the investment banker compensation schedule under the assumption that the investment banker has superior information regarding the state of the capital market. This informational asymmetry arises because the investment banker is able to obtain private information about the demand for the issue by conducting pre-selling activities during the registration period. If this is the case, the potential incentive problem is aggravated because the investment banker through its role as an advisor has an opportunity to recommend an offer price that is contrary to the issuer's interests. The risk averse issuer, who has no

access to the information obtained through the preselling activities of the investment banker, is unable to determine if the recommended price is appropriate. The goal of the paper, therefore, is to design a compensation schedule for the investment banker which will induce the investment banker to set an offer price consistent with the interests of the issuer.

Recognizing that the investment banker has superior information regarding the likely demand for the issue, the issuer will delegate the offer price decision to the investment banker. To insure that favorable information obtained in the pre-selling activities is reflected in a higher offer price, a payment schedule based on the offer price set by the banker is employed. If the banker is risk neutral, a firm commitment contract is optimal and the issuer not only prefers to delegate the offer price decision to the banker but finds it optimal to let the banker bear the full consequences of its decisions. When the banker is not risk neutral, a risk sharing stand-by contract with a commission payment based on the offer price and the net proceeds of the issue can be effective in inducing the banker to set an offer price more in the issuer's interests than would otherwise be the case [Baron and Holmstrom, 1980:1122].



### 3.2.1 Critical Assessment of the Literature

The first issue to address is the suggestion, contained in all the surveyed articles, that firm commitment contracts arise only in the face of risk aversion. For example, Mandelker and Raviv state: 'the fact that firms seek insurance contracts from underwriters and are willing to pay a premium in order to avoid being exposed to flotation risk is inconsistent with risk neutrality and implies a risk averse behavior' [Mandelker and Raviv, 1977:686]. The problem with this statement is the implication that firm commitment contracts are inconsistent with risk neutral behaviour. This is simply not true. This issue is addressed in Chapter 4 of this thesis where a transactions cost explanation for firm commitment contracts is presented which is consistent with risk neutral behaviour.

Furthermore, it is questionable whether the investment banker need bear any risk in a firm commitment underwriting. The 'risk' of a change in market conditions during the offering period can be hedged in the futures and options markets. For example, Gilson and Kraakman (1984) note that if the investment banker fears that the market will change during the primary market offering period it can utilize the futures and options markets to eliminate all risk. For example, if the banker fears that interest rates may rise while it is trying to sell a fixed rate bond, it can eliminate all risk by selling treasury bills for future delivery [Gilson and Kraakman, 1984:618]. Similarly, members

of investment banking syndicates in the Eurobond market can hedge the risk of not being able to sell the entire issue to investors by selling all or part of their bond allotment forward in the grey market during the subscription period.<sup>9</sup>

One final comment regarding risk aversion is the suggestion made by Mandelker and Raviv that issuers of high quality securities will be inclined to accept a best efforts contract. The reason offered for this is that potential price fluctuations of issues with low quality rating are greater than that of high quality ratings. Therefore, the market risk is lower for high quality ratings and the demand for underwriting services should reflect this. The problem with this implication of risk aversion is that it is inconsistent with what we observe in the Eurobond market.

In the Eurobond market, the vast majority of issues are distributed under firm commitment contracts between issuers and investment bankers [Bowe, 1988:53]. The Eurobond market is also regarded as a premier market where only the lowest credit risks are able to issue securities on this market [Mendelson, 1983:5.1.11]. The dominance of firm commitment contracts and the presence of high quality issuers seems to be inconsistent with this implication of the principal agent models based on risk averse behaviour.

Throughout the analysis of Baron (1979) and Baron & Holmstrom (1980), it is assumed that the offer price of the

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<sup>9</sup>The behaviour of syndicate members in the grey market will be addressed in Chapter 5.

security is observable by the issuer. The observability of the issue price has important implications regarding the optimal contract to be negotiated between the issuer and investment banker. However, in the Eurobond market it is not true that issuers can observe the offer price of their securities. Members of investment banking syndicates in the Eurobond market often sell the issue forward in the grey market at a discount from the offer price.<sup>10</sup> Furthermore, it is often the case that large institutional investors are able to negotiate discounts from the offer price when they purchase securities from syndicate members. The discounting of securities in the Eurobond primary market is such a pervasive problem that it has led to within syndicate conflicts which threaten the efficiency of the Eurobond primary market. In fact, it is the contention of this thesis that the problems associated with offer price discounting and syndicate conflicts has resulted in the adoption of new issuing procedures in the Eurobond primary market.<sup>11</sup>

A final issue to be addressed concerns the argument put forth in Baron (1979) and Baron & Holmstrom (1980) that investment bankers have an incentive to set a low offer price to minimize the distribution effort required to sell the securities. This moral hazard problem arises because of the issuer's inability to monitor the distribution effort of

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<sup>10</sup>The grey market is a forward market for newly issued Eurobonds that takes the form of forward contracting between market participants during the period between the announcement day of the new issue and the closing day. (Bowe, 1988:229)

<sup>11</sup>The analysis contained in Chapters 5 and 6 of this thesis explore these issues in detail.

the investment banker. To correct for this moral hazard problem in the absence of information regarding the distribution effort, the authors propose different compensation schemes to induce the investment bankers to set the 'correct' offer price. For instance, Baron proposes a non-linear compensation scheme that rewards the investment banker for successful placement of the issue. Baron and Holmstrom, on the other hand, propose a linear compensation scheme which increases with the net proceeds of the issue and the offer price. One potential problem with this argument, which both acknowledge, then ignore, concerns the competitiveness of the investment banking industry.

If there is competition between investment banking houses to secure the mandates to distribute the offerings of issuers, this incentive to set too low an offer price would surely be tempered by the resulting loss of market share. This would especially be the case if mandates are granted on the basis of competitive bidding. In the absence of collusion between competitors, it is difficult to believe that any underpricing could occur even in a negotiated offering. Baron, however, curiously assumes that if the industry is competitive, that competition will affect the overall level of compensation of the investment banker but not its decision making [Baron, 1979:159]. He simply assumes away the possibility that competition could have an influence on the offer price decision.

The fundamental problem we are left with is determining the extent to which there is competition in the investment banking industry. As Baron notes, the extent to which the investment banking industry is competitive is not clear and is difficult to assess because many firms are not publicly owned and others consolidate their underwriting profits with commercial banking or brokerage profits [Baron, 1979:159]. Looking at the number and market share of lead managers in the Eurobond market does not really help to clarify the matter either. For instance, as noted in Chapter 2, in the Eurobond market there were 98 different managers who led deals in 1990. However, despite this large number of active Eurobond lead managers, Table 2.6 clearly shows that market share is concentrated in the top 25. Furthermore, there is a large degree of stability in these rankings. It is very difficult, therefore, to reach any conclusion regarding the competitiveness of the Eurobond investment banking industry.

What we do know, however, is that non-linear compensation schemes increasing in the offer price are not observed in the Eurobond market. Commissions are expressed as the difference between the proposed offering price and the price guaranteed to issuers. This suggests that the authors either overstate the problem, or that competitive forces in the Eurobond investment banking industry have eliminated the underpricing problem.

A final comment about the principal agent models is that the results generated appear to be more 'prescriptive'

than 'descriptive'. By employing ad hoc assumptions regarding the parties' degree of risk aversion, the models derive optimal contract design results which suggest what should be done. These results are often not indicative of what we observe in practice. An alternative to prescriptive suggestions that investment bankers change their contracts is that the assumption is refuted.<sup>12</sup>

### 3.3 Asymmetric Information and Transaction Cost Arguments

Another literature exists, which examines the importance of asymmetric information, reputation, and transactions costs in the investment banking industry. This literature examines the advising, distribution, underwriting, and issue price certification functions of the investment banker. These explanations of contractual choice do not, however, rely upon the risk preferences of the transacting parties to explain issuer/investment banker contractual relations.

#### Baron (1982)

Baron examines the demand for advising and distribution services based upon an informational asymmetry between the issuer and the investment banker.<sup>13</sup> The investment banker is assumed to be better informed about the state of the capital

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<sup>12</sup>Doug Allen pointed this out to me.

<sup>13</sup> The demand for underwriting is eliminated by assuming that both parties are risk neutral. Baron, therefore, also implies that firm commitment contracts arise because of an aversion to risk.

market than the issuer. The advising function, therefore, is of value to the issuer given the banker's superior information regarding the state of the capital market and the market's likely response to the issue. Distribution by the banker will also be of value to the extent that the banker can generate demand for the issue. An investment banker may be able to do so either because of their ability to persuade customers to purchase the issue or because they are able "certify" the issue by putting their reputation behind the issue [Baron, 1982:956]. If the issuer contracts for the services of the investment banker to provide advice and distribution power, a delegation contract is entered into.

Baron shows that although the issuer has a demand for the distribution services of the investment banker, the inability of the issuer to observe the distribution effort of the investment banker implies that the banker will supply less than the first-best effort level under a pure distribution contract. The issuer may be able to improve on a pure distribution contract by employing the advising services of the investment banker. Under such a contract, the offer price decision is delegated to the investment banker who uses their superior information about the capital market when setting the offer price. The issuer must compensate the investment banker for the use of this information, so the banker shares in the gains from their superior information.

In the context of an example, Baron shows that the optimal offer price is below the first-best offer price indicating that new issues would be under priced when the investment banker is better informed about the state of the capital market [Baron, 1982:975].

#### **Ramakrishnan and Thakor (1984)**

Ramakrishnan and Thakor develop an asymmetric information explanation for the emergence of financial intermediaries as diversified information brokers. The key to their theory of financial intermediaries as information brokers is an explanation of why intermediation reduces the cost of exchanging capital. A major component of this cost is the cost of information production.

Ramakrishnan and Thakor develop a model which provides an economic rationale for the emergence of intermediaries based on their ability to lower information production costs. In the absence of a financial intermediary, there will be a tremendous duplication of effort whenever a borrower seeks to raise capital from investors since each investor will seek to screen the borrower. This can be avoided by appointing an information producer (broker) to certify the borrower's likelihood of default.

In a typical firm commitment offering, the investment banker guarantees the borrower fixed proceeds from the issue and assumes the risk of that the actual proceeds from the issue will be less than the guarantee. The investment



banker's fee is the spread between the actual proceeds from the issue and the amount guaranteed. A successful issue is one that is fully subscribed at the price at which the investment bank decides to float the issue. To ensure the success of the issue, the investment banker should know what price to float the issue at. This will require information production. If the investment banker does produce the required information, this will increase the probability of a successful issue. If the required information is not produced, this will increase the probability of an unsuccessful issue. This suggests that the investment banker's payoff depends on the result of a noisy, market - based indicator, which in this case is the market's assessment of whether the information contained in the offer price (set by the banker) is reliable [Ramakrishnan and Thakor, 1984:425].

#### **Booth and Smith (1986)**

Booth and Smith develop a theory of the role of the investment banker in certifying that risky issue prices reflect potentially adverse inside information. The theory is based on the assumption that there is an asymmetry of information between insiders, who are shareholders, and outsiders, who are potential subscribers of new issues. In the model, investment bankers are employed to "certify" that the issue price is consistent with inside information regarding future earnings prospects of the firm. Issuing

firms effectively lease the brand name (i.e. reputation) of an investment banker to certify that the issue price reflects available inside information [Booth and Smith, 1986:263].

The asymmetric information problem arises from the fact that insiders with superior knowledge of the firms prospects may use this to their advantage when issuing new securities. Insiders have an information advantage that enables them to exploit outsiders since the incentive to issue arises partly from the opportunity to effect a wealth transfer from outsiders. The result of this is that you would expect to see the proportion of over-valued firms seeking new outside financing to be larger than the proportion in the population. As a result, the announcement by insiders that they intend to issue new securities provides information about the probability that the firm is over-valued. The response to the announcement, therefore, is an instantaneous decline in firm value according to the degree of over-valuation perceived by outsiders to be reflected by the announcement [Booth & Smith, 1986:264]. This announcement effect motivates the use of investment bankers to certify the issue price.

For the investment banker to be able to certify the price of a new issue, it must spend resources to become an insider. Therefore, the cost to the issuing firm of employing the investment banker consists of the rental price of the banker's reputation and the certification cost

incurred by the banker. The banker will incur direct costs of certification only to the point where the marginal cost of certification equals the marginal benefit so that net issue proceeds are maximized subject to the constraint that the issue is not over-priced [Booth & Smith, 1986:267]. This will protect the bonding investment of the banker without the banker having to incur the full cost of certification.

Incomplete certification gives rise to an announcement effect price decline since the banker must substitute for the lack of complete certification. Since full certification is unlikely to be optimal for all issues, a price decline should be expected on average. Furthermore, the average magnitude of the decline should be related to the magnitude of potentially adverse information.

Booth and Smith note that equity issues will experience the greatest decline and low risk debt the smallest since low risk debt issues only require certification that inside information would not result in bankruptcy, i.e. only the more extreme states of nature need to be precluded. Equity issues, on the other hand, require that all adverse inside information be discovered. The cost of certifying equity, therefore, will exceed the cost of certifying debt for two reasons. First, the expected wealth transfer on debt issues is less since in many states of nature the debt service cash flows are not affected by opportunism. Second, the cost of certification is reduced since there are states of nature where no cheating can occur [Booth & Smith, 1986:272].

### Chemmanur and Fulghieri (1994)

Chemmanur and Fulghieri examine the role of financial intermediaries as information producers and argue that reputation acquisition by intermediaries certifies the credibility of the information they produce. They also derive implications for the valuation of financial securities sold by the intermediary.

Chemmanur and Fulghieri develop their model in the context of an investment bank underwriting a stock issue.<sup>14</sup> Entrepreneurs approach the market to raise capital for their projects and market their securities through an investment bank. Investment banks are information producers that interact repeatedly with the market. They provide noisy evaluations of the firm's projects, which they report to investors when marketing the securities to investors in return for a fee from the issuer. Investors determine the market value of the securities.

Because investors do not observe the effort put forth by investment banks when evaluating entrepreneur's projects, they do not know the strictness of investment banks' standards when they recommend investment in the securities of the issuer. Investors, therefore, use the investment banks' past performance, as measured by the quality of firms in which they have previously sold securities, to assess

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<sup>14</sup>The authors do note, however, that their model can easily be amended to examine non-equity offerings and other types of financial intermediary.

credibility. They value the securities they market accordingly.

Investment banks face a trade-off; setting strict standards in evaluating the worthiness of projects is costly in the short run but beneficial in the long run since it reduces the probability of marketing lemons and damaging their reputation. A lower reputation leads to reduced fees and to lower market values for securities sold in the future. The evaluation standard set by investment banks, their reputations, valuation of securities by investors, investment banking fees, and issuers' choice between underwritten and direct sale of securities emerge endogenously in the equilibrium of a dynamic game [Chemmanur & Fulghieri, 1994:58].

### 3.3.1 Critical Assessment of the Literature

The first two articles surveyed discuss the implications of asymmetric information but focus on two different problems. Baron, on the one hand, focuses attention on an information asymmetry which exists between issuers and investment bankers where bankers are assumed to have more information regarding the state of the capital market. Ramakrishnan and Thakor, on the other hand, focus on an information asymmetry which exists between issuers and investors. Investors are assumed to lack knowledge about the true characteristics and investing opportunities of borrowers.

The major problem with Baron is that his underpricing equilibrium result does not appear to apply to the Eurobond market. Baron's underpricing result stems from the fact that the investment banker, who is better informed about the state of the capital market, will set an offer price for the security which reduces the effort required to distribute the issue to investors. While the result appears intuitively appealing, it ignores the impact that competition in the investment banking industry may have upon the behaviour of the investment banker. If significant competition exists in the industry, it seems unlikely that investment bankers will be able to negotiate underpriced offer prices. In the Eurobond industry, the evidence seems to suggest that underpricing of securities is not a problem. Indeed, the analysis of Chapter 5 illustrates that the opposite is often true. During the course of a typical offering in the Eurobond market, it is very common for members of the syndicate to discount the issue to institutional investors, or to sell the issue forward in the grey market at a discount from the proposed offering price. Price discounting by syndicate members suggests that the initial offering price was set too high.

Ramakrishnan and Thakor, on the other hand, offer a plausible explanation for the demand for investment bankers as information producers. In their discussion of firm commitment contracts they also correctly identify that the investment banker's payoff depends upon the market's

assessment of whether the information conveyed in the issue price is reliable. However, they do not take this line of reasoning far enough. I believe they have the ingredients for an explanation of why firm commitment contracts are desirable in the first place. By accepting a firm commitment contract, investment bankers are sending out a signal that they are prepared to stand by the information they have produced and utilized in setting the offer price. By accepting the risk that the issue will be unsuccessful, investment bankers 'certify' their information production to the market. A best efforts contract, on the other hand, sends out no such signal to the market because the investment banker is guaranteed a commission for each security sold. This issue will be explored further in the following chapter.

The articles by Booth & Smith and Chemmanur & Fulghieri examine the importance of investment banker reputation in certifying the information contained in the offer price of new issues. However, the authors address two different issues. Booth and Smith suggest that the issuance of new securities signifies that 'insiders' perceive the firm to be over-valued. This perception will result in an immediate decline in the value of existing securities when the new issue is announced to the market. Investment bankers with a reputation in the market will be demanded by issuers to certify that insiders are not issuing securities to effect a wealth transfer from investors.

Chemmanur and Fulghieri, on the other hand, look at reputation as a means to certify the credibility of the information they produce and utilize in establishing new issue offer prices. In many respects, this article is an extension of Ramakrishnan and Thakor in that the importance of reputation is added to the discussion of the investment banker as information producer.

Both articles present an interesting discussion with testable implications. By developing a proxy for the reputation of investment bankers, one can test the extent to which investment banker reputation reduces the price decline associated with the announcement of new issues, as suggested by Booth and Smith. One can also test the extent to which investment banker reputation influences the pricing of new securities. In the bond market, where new issues are priced relative to benchmark issues, one would expect to see the offerings of reputable investment bankers with a tighter spread relative to benchmarks than the offerings of non-reputable bankers. This implication of Chemmanur and Fulghieri will be tested in the empirical part of this thesis using the data collected on Eurobonds. Unfortunately, I have been unable to collect the necessary data to test the hypothesis put forth by Booth and Smith.

One of the limitations of both studies is that they make no attempt to explain issuer/investment banker contractual relations. This is unfortunate given the fact that investment banker reputation could influence the choice



of firm commitment, best efforts, or stand-by contracts. It seems plausible that underwriter reputation could be a substitute for the 'signaling' effect of firm commitment contracts discussed above.

### 3.4 Concluding Comments

As noted in the introduction to this chapter, a major limitation of all the articles surveyed is their treatment of within syndicate contractual issues. The academic literature has a tendency to treat the syndicate like a "black box". There is no recognition of the fact that new issues are typically brought to market by a syndicate of investment bankers. As a result, the academic literature ignores within syndicate contractual issues which arise in the marketing of new issues. This issue is especially important in the Eurobond market where within syndicate contractual concerns are responsible for the structural changes we have recently observed in the Eurobond primary market.

The goal of the next chapter, therefore, is to open up this "black box" and present a theory of syndicates. Chapter 4 will also develop a transactions cost explanation for the existence of firm commitment contracts. Chapter 5 will then examine actual issuing procedures employed in the Eurobond primary market. Here, the focus is on the within syndicate conflicts which typically arise in the course of marketing a new Eurobond issue.

## CHAPTER 4:

### A Transactions Cost Theory of Syndicates

#### 4.1 Introduction

A major limitation of the literature examining issuer/investment banker contractual relations is its failure to recognize that new issues are typically brought to market by a syndicate of investment bankers. This chapter attempts to fill this gap in the literature by presenting a theory of investment banking syndicates. The purpose of the chapter is to provide a transactions cost explanation for the use of investment banking syndicates which doesn't rely on attitudes toward risk to explain contractual choice.

The major contribution of this chapter is to link the existence of firm commitment contracts to the formation of investment banking syndicates. This will provide a unifying theme for the analysis of the next two chapters which examine issuing procedures in the Eurobond primary market. Furthermore, a number of testable implications of the theory developed in this chapter will be discussed in Chapter 7.

This chapter is organized as follows. The next section defines syndicates and discusses syndication procedures in the Eurobond market. This is followed by a presentation of a transactions cost explanation for the existence of syndicates. Some concluding comments end the chapter.

#### 4.2 Investment Banking Syndicates in the Eurobond Market

Syndicates are a common mechanism for selling a large number of securities in a short period of time.<sup>15</sup> An investment banking syndicate can be thought of as a temporary partnership of bankers entering a contract with borrowers (issuers) to sell a particular issue of securities to the investing public. Members of the syndicate are assigned specific roles, typically being a manager (lead, co-lead, or management group member), or selling agent. This allows for specialization among its members, either in terms of their ability to complete certain marketing or management tasks or to guarantee outcomes.

Lead managers play the key role in the syndicate working usually with a small lead management group, a larger group of co-managers, and often a selling group of many members. Lead managers secure the mandate from issuers to place the bond issue and are responsible for advising the issuer on the main features of the issue and timing. Lead managers also have the management responsibility of assembling the syndicate to distribute and underwrite the issue. Since Eurobonds are sold simultaneously to investors in several countries, there is a need for a multinational syndicate of investment bankers. Lead managers carefully select syndicate members for their ability to distribute the issue to investors in their home markets. Syndicate managers

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<sup>15</sup>In this discussion I will assume that bonds are the type of security distributed by syndicates. Of course, syndicates are also employed to distribute other types of securities.

are also chosen because of their willingness to commit the necessary capital to provide firm commitment contractual guarantees to issuers. Specialization within the group, therefore, generates the efficiency gains from syndication which allow it to dominate other methods of issuing securities.

A syndicate's activities are governed by a number of contracts. In the Eurobond market, the relationship between the syndicate and the issuer is established by the subscription (or underwriting) agreement.<sup>16</sup> The majority of subscription or underwriting agreements are firm commitments; i.e. the managers agree to purchase the entire bond issue outright for resale to final investors.<sup>17</sup> The agreement sets out the terms upon which the managers agree to purchase the bonds and is signed only after a purchase price has been negotiated between the parties. The contract also specifies the amount that each firm subscribes, and the amount, therefore, it must take into inventory if the entire issue cannot be placed with investors.

Within-syndicate relations are governed by three contractual agreements: the agreement among underwriters; the selling agreement; and the manager's agreement. These

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<sup>16</sup>In the Eurobond market, whether a subscription or underwriting agreement is signed depends upon whether European or American syndication procedures are employed. This issue will be discussed later in the chapter.

<sup>17</sup>The data set utilized for this thesis does not report contract type. However, in discussing this issue with market professionals the sentiment was that there were only firm commitment contracts observed in the industry. Furthermore, as noted in Chapter 3, Bowe, 1988:53, notes that the majority of underwriting agreements are firm commitments.

contracts specify the agency relationship between the lead manager and other syndicate members.<sup>18</sup> The relationship between the lead management group and the co-managers is set out by the agreement among underwriters. The agreement among underwriters is regarded as the "constitution" of the purchase syndicate. It begins with an identification of the issue to be purchased by the group, since each syndicate is formed for a specific issue. Second, the agreement outlines the terms of the sale. This includes the price at which the securities are to be sold to investors, called the public offering price, which all members of the syndicate agree to adhere throughout the life of the syndicate agreement.<sup>19</sup> In some instances, the agreement among underwriters will allow the lead management group to negotiate the final terms and conditions without previous approval from the co-management syndicate. The agreement among underwriters is signed by all parties just before the actual bond offering.

The relationship between the management group and the selling agents is established by the selling agreement. Selling agreements between managers and selling group members set out the terms upon which members of the selling group agree to deal in the bonds. The two important provisions of the agreement are that those who sign the

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<sup>18</sup>The issuer is not a party to any of these agreements.

<sup>19</sup>This is an important aspect of the underwriting agreement and it represents a source of conflict between syndicate members in the Eurobond market. In the Eurobond market it is common for syndicate members to violate this agreement by offering the securities for sale at a discount from the offering price. This topic will be discussed in detail in Chapter 5.

agreement promise to pay for the securities they take, and that they honor the prohibition against selling the securities in certain nations.

Finally, a managers' agreement between the co-lead managers specifies the role of each, usually delegating the organization of the issue to the lead manager. This agreement may also specify the amount each manager must take into inventory in the event the issue does not sell out in the primary market. The contract also provides for the division of the management commission (Wood, 1980:182).

In the Eurobond primary market, there exists two different syndication procedures: the European and American procedure. The most common of these is the European syndication procedure. Here the lead manager/managing group signs a subscription agreement with the issuer. Drafts of this agreement are submitted only to members of the lead management group, who purchase the entire issue from the borrower, acting as principals rather than as representatives of the co-managers. Once the subscription agreement has been signed, the management group is committed jointly and severally to purchase the entire bond issue. This implies that every member of the management group is liable for the entire issue. It is often the case, however, that the agreement among managers will limit the extent of the risk exposure to that portion of the issue the manager actually subscribes. When dealing with the selling group, the managers do not act as agents for the co-managers. The

securities sold to the selling group do not belong to the co-managers, they belong to the lead managers.

The co-managers in this syndicate are best described as sub underwriters in that they have no contractual obligation to the issuer. In the agreement among underwriters they simply agree to take an agreed number of securities from the lead management group at a predetermined price. For this they receive a commission. Their contractual commitment, therefore, is to the lead management group, not the issuer.

If American syndication procedures are employed, the lead manager/managing group is appointed and vested with specific agency powers under the agreement among underwriters. When contract terms have been finalized with the issuer, the lead manager and issuer sign an underwriting agreement. The function of the underwriting agreement is similar to the subscription agreement, confirming the basic terms and conditions of the issue. Under the terms of the underwriting agreement, the entire issue is purchased by the lead manager acting as an agent for the entire syndicate. The purchase is made severally, rather than jointly and severally. This implies that the liability of the managers is limited to the amount of the issue the firm actually underwrites. All managers participate in the underwriting agreement and thus have a direct legal obligation to the issuer.

### 4.3 A Transactions Cost Theory of Syndicates

Given that the syndicate method of distribution is the predominate procedure for selling new issues of securities, a very simple question needs to be addressed: Why do lead managers enter into temporary partnerships with other investment bankers to distribute new issues of securities? In other words, why would an investment bank tie up it's capital in several issues in partnership with other bankers as opposed to going it alone and tying up it's capital in one or two issues? The obvious answer to these questions is that syndicates are formed to assist lead managers in performing the functions they are hired by issuers to perform (i.e. the advising, underwriting, and distribution functions). However, this answer begs another question: Why do lead managers need assistance in performing these functions?

In explaining why syndicates are utilized, one theory posited is that syndicates allow risk averse lead managers to diversify the risk associated with offering firm commitment contracts to issuers.<sup>20</sup> The irony of this explanation is that it contradicts the literature which argues that firm commitment contracts arise in a setting where risk neutral investment bankers offer insurance to risk averse issuers. The fundamental problem with using attitudes toward risk to explain contractual choice in

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<sup>20</sup>I am aware of at least two efforts to explain syndicate behaviour in this way, namely that of Biglaiser (1992) and Wilson (1968).



investment banking is the existence of this basic inconsistency in explaining firm commitment contracts and investment banking syndicates.

In this chapter, I develop a transactions cost explanation which links the existence of firm commitment contracts to the formation of investment banking syndicates.<sup>21</sup> This theory expands on the insight of Barzel (1989a, 1989b) and Barzel and Suen (1987, 1994) who developed a transactions cost explanation for fixed wage contracts between employers and employees. The theory developed here argues that firm commitment contracts are offered as a guarantee for the advice lead managers provide to bond issuers. Syndicates are utilized because there are economies of scale in providing guarantee capital, and so, by pooling their capital, investment bankers save on the amount of guarantee capital. By committing capital to the syndicate, syndicate members guarantee the advice of lead managers. Syndicates are also utilized because there are gains from specialization associated with having a multinational syndicate of investment bankers distribute the bonds to investors.

The starting point for the analysis is the recognition that the process of bringing a new issue of securities to market is problematic. Ascertaining the true value of the securities ex ante is impossible since knowledge of

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<sup>21</sup>This analysis builds on the work of Barzel and Suen (1989, 1992, 1994) and Grossman and Hart (1986).

investors perception of the issue is prohibitively costly to obtain. Furthermore, it is impossible to know with certainty how market conditions will change during the primary market distribution period. Therefore, the actual value of the securities is unknown and variable prior to distribution. If an investment banker is hired to distribute the securities to investors, there is a problem in allocating the variability between the issuer and the investment banker. Barzel suggests that in the presence of variability, the party which has a greater ability to affect the outcome will bear a greater part of the variability in an effort to avoid moral hazard problems. Bearing variability is synonymous with possessing residual claims and is also the same as guaranteeing own action (Barzel, 1989:3).

In their role as advisor, investment bankers typically have a greater ability to affect the success of new issues because they are asymmetrically informed about capital market conditions. They utilize this information when offering advice on the price, timing, and specification of new issues. Investment bankers' advice on price, timing and issue specification largely determines how well the issue will be received by the market. Faulty advice can, therefore, lead to large losses. For this reason, firm commitment contracts are desirable. In a firm commitment contract between the issuer and investment banker, the investment banker is the residual claimant to the difference between the price they have agreed to pay the issuer, and

the price at which they are able to sell and distribute the issue to final investors. In essence, investment bankers guarantee advice by assuming the variability in the value of issues during the offering period and by agreeing to absorb into inventory any securities not sold.<sup>22</sup>

By offering firm commitment contracts, investment bankers also send out a signal to investors. Namely, that they are prepared to stand by the information they have produced and utilized in setting the offer price. The offer price, therefore, serves to convey private knowledge of the product (i.e. the banker's knowledge of the issuer's credit risk). Without investment bankers producing and certifying this information, individual investors would be forced to replicate it on their own, lowering the net gains from trade. Investment bankers, therefore, lower information production costs and reduce the cost of exchanging capital.

The ability to assume the effects of variability depends on the amount of one's transferable wealth. This command over capital has a positive marginal product because of its ability to provide guarantees. Barzel and Suen argue that a basic feature of guarantees is the randomness of the timing and the size of the guarantee payments. Guarantee capital serves as a 'stand-by' and is called into use only when certain random outcomes are realized. Furthermore, when the size and probability of guarantee payments are small, a

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<sup>22</sup>This is an argument for insurance as well, that doesn't depend on risk.

given amount of guarantee capital can guarantee several prospects at once.<sup>23</sup> This suggests there are economies of scale in its use. As the number of guarantee prospects increases, the amount of guarantee capital required to attain a given guarantee level increases as well, but at a lower rate (Barzel & Suen, 1994:13).

To fully take advantage of the economies of scale in guarantee capital, Barzel suggests that capitalists have to combine their capital. They can co-operate by backing each other's guarantees while remaining independent or they can form an integrated pool of capital [Barzel, 1989:16]. Investment banking syndicates allow syndicate members to pool their capital and back each other's guarantees. The extent of the capital commitment required of each syndicate member depends on the syndication procedures employed.

When European syndication procedures are employed, members of the management group sign the subscription agreement with the issuer and provide the firm commitment guarantee. Members of the co-management group, however, also commit capital by signing the agreement among underwriters with the lead management group whereby they agree to assume part of the issue variability for a fee. Their contractual obligation, however, is to the lead management group, not the issuer.

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<sup>23</sup>It was pointed out to me by Brett Isaacs that this is much like fractional-reserve banking which allows a multiple of loans to be made for every dollar deposited into the banking system.

When American syndication procedures are employed, all members of the lead and co-management group are party to the underwriting agreement. This implies that they all have a legal obligation to the issuer. The underwriting agreement allocates the firm commitment guarantee to the syndicate members on the basis of their participation in the issue.

The fundamental difference between the two procedures lies in the fact that when European procedures are employed the lead management group is committed jointly and severally to purchase the entire bond issue. This implies that every member of the lead management group is potentially liable for the entire issue. The amount of guarantee capital that each firm may be required to commit to the syndicate is far greater in this case, even though the agreement among manager's or underwriters may limit the exposure of each syndicate member to the amount they actually underwrite. The issuer, however, can legally require any lead management group member to provide the guarantee capital required to fulfill the terms of the firm commitment agreement. Lead management group members then have to go back to the syndicate to have the management group or underwriting agreement enforced.

American syndication procedures only imply that the syndicate is committed severally to purchase the entire bond issue. In other words, the liability of the managers to the issuer is limited to the amount of the issue the firm actually underwrites. Members of the syndicate are not

expected to honour the commitment of defaulting syndicate members as they are with European procedures. The firm commitment contractual guarantee to issuers is, therefore, weaker when American syndication procedures are employed.

The explanation for the use of syndicates to this point has focused on the advising and underwriting functions performed by the syndicate. Syndicate members also play an important role in the distribution function. Syndicates reduce the cost of distribution by expanding the investor base for placing the securities. Since Eurobonds are sold simultaneously to investors in several countries, there is a need for a multinational syndicate of investment bankers. Lead managers choose syndicate members with a reputation for maintaining long term relationships with investors in the country to whom they are attempting to market the securities. If the multinational syndicate of investment bankers allows for quicker placement of the securities with investors, this reduces the inventory cost of holding the securities. This represents the gains from specialization in distribution associated with having a multinational syndicate of investment bankers.

For example, suppose an investment banker has negotiated to place a \$500 million issue for a commission of 1.5%. This would imply a total commission of \$7.5 million if the issue can be placed with investors at full fees.<sup>24</sup>

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<sup>24</sup>The ability to earn full fees is very questionable, as the analysis of Chapter 5 & 6 will illustrate.

Now suppose the banker has difficulty placing the securities with investors. This implies the bonds must be held in inventory until they can be sold, tying up guarantee capital. If the relevant discount rate is 7.5%, daily inventory costs will be approximately \$103,000. The use of the banker's guarantee capital, therefore, is costly and reduces the profitability of investment banking. Assistance in performing the distribution function will reduce this cost if a syndicate can place an issue with investors quicker than a banker acting alone. Naturally, the banker will have to syndicate their commissions when inviting other bankers to join them in distributing the issue.

In addition to selecting syndicate members on the basis of their relationship with investors in their home country, lead managers also select syndicate members on the basis of the predominant group to whom they market securities. Investment banking firms are distinguishable by the institutional or retail client base they maintain. If an issue is targeted to institutional or retail clients, this will influence the selection of syndicate members. It will also tell us something about the reputation of the syndicate.

One measure of investment banker reputation suggests that distribution power is an important determinant of reputation. Distribution power results from maintaining a relationship with an investor client base. In general, the primary investor clients for the most prestigious investment

bankers are institutional investors. The least prestigious underwriters tend to be retail oriented (Hayes, Spence, and Marks, 1983:53 and 65). This would suggest, therefore, that syndicates formed to distribute issues to institutional investors will be more reputable than those targeted to retail investors.<sup>25</sup>

#### 4.4 Concluding Comments

Barzel and Suen note that when several capitalists decide to back each other's guarantees, they no longer bear the full cost of their own actions. To induce one another to avoid free riding they may choose to restrict their own actions. In the context of investment banking syndicates, these restrictions are specified in the agreement among underwriters, the selling agreement, and the manager's agreement.

However, in the Eurobond primary market, the enforceability of these restrictions is a major issue. Lead managers have the responsibility to monitor the underwriting and distribution effort of syndicate members. However, because Eurobonds are bearer bonds, a moral hazard problem exists because syndicate members can violate the selling agreement by either selling their expected bond allotment forward in the grey market or by discounting the issue to institutional investors. These practices have generated

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<sup>25</sup>This hypothesis is tested in Chapter 7.



conflict within syndicates and have led to the implementation of new issuing procedures in the Eurobond market.

The next two chapters of this thesis examine issuing procedures in the Eurobond primary market and discuss how this moral hazard problem has contributed to the design of the Eurobond primary market.

## CHAPTER 5:

### Grey Market Problems in Traditional Eurobond Syndication and Distribution Procedures

#### 5.1 Introduction

An analysis of traditional Eurobond syndication and distribution procedures is presented in this chapter.<sup>26</sup> The intent of the chapter is to examine the actual process by which new bond issues are brought to market. In so doing, the analysis of the last chapter is extended to focus attention on within syndicate contractual issues.

When traditional procedures are employed in the Eurobond primary market, a moral hazard problem occurs during the subscription period. Syndicate members often sell their expected bond allotment forward in the grey market to inter-dealer brokers at a discount from the offering price.

The selling agreement prohibits the practice of discounting the offering price, but the prohibition is unenforceable since the bonds are bearer bonds.<sup>27</sup> Trading in the grey market is considered a problem for the syndicate because grey market prices are public information. This imposes a cost on non-shirking syndicate members who are attempting to sell the issue at the offer price. Informed

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<sup>26</sup>Traditional procedures are defined here to include the bought deal, although the issuing procedures are different for bought deals. They are grouped together because the within syndicate contractual problems are identical.

<sup>27</sup>Bearer bonds are bonds in which the coupon payments are made to the party who has principle possession of the bond certificate. These bonds are not traceable to the investor because they are not individually designated by serial number as belonging to a particular owner.

investors will observe the grey market prices and insist upon similar discounts from the offer price. Primary market price discounting of this nature reduces syndicate commissions and creates tension within the syndicate.

Lead managers, who are responsible for monitoring syndicate behaviour, have very few options available to deal with this problem. In an ideal world, lead manager monitoring would detect violations of the contractual agreement. Lead managers could then penalize syndicate members guilty of grey market trading by refusing to invite them to join future syndicates they manage. The problem facing lead managers, however, is to find a way to effectively monitor syndicate behaviour.

Within syndicate strategic posturing characterizes the Eurobond primary market when traditional syndication and distribution procedures are employed. It is the hypothesis of this thesis that within syndicate contractual issues have contributed to the design of the Eurobond primary market. In particular the FPRO, an institutional change in syndication and distribution procedures, was introduced in response to the problems associated with traditional procedures.

This chapter presents a model which focuses on these within syndicate contractual issues. The model examines the incentive strategies available to syndicate members during the primary market distribution period. Following the model, a critical discussion of traditional Eurobond syndication and distribution procedures will be presented. This

discussion will serve as the motivation for the analysis of the fixed-price re-offering (FPRO) method of syndication and distribution; the subject matter of Chapter six.

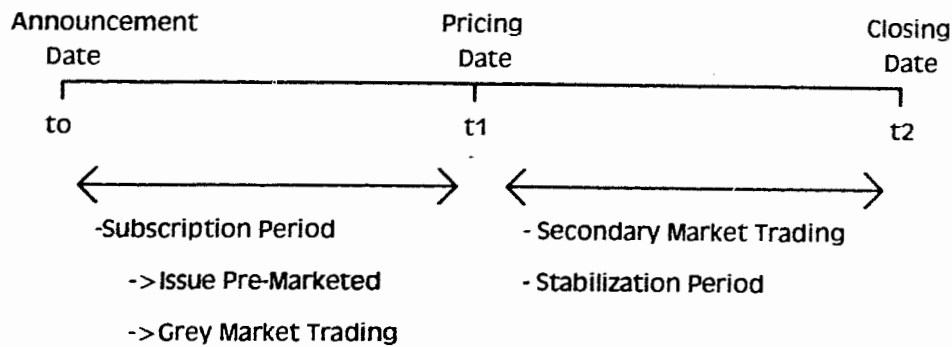
## 5.2 A Model of Eurobond Syndication and Distribution

The basic model consists of an organization (private, public, or supranational) attempting to raise a fixed amount of capital through a bond offering placed with a population of investors. In a traditional Eurobond offering, the prospective lead manager of the issue enters into negotiations with the borrowing organization to secure the mandate to underwrite and distribute the issue.<sup>28</sup> Once the mandate has been secured, the procedure for placing a Eurobond with investors involves three major steps: (1) announcement of the issue and the subscription period where the issue trades in the grey market; (2) formal pricing of the issue which terminates the grey market; and (3) free trading of the issue in the secondary market. See Figure 5.1 for an outline of the procedure for distributing a traditional Eurobond issue.

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<sup>28</sup>It should be noted that the competition to secure the mandate of borrowers is great with a large number of houses capable of managing the deal.

Figure 5.1 : Procedure for Distributing a Traditional Eurobond



Prior to time  $t_0$ , the issuer and lead manager of the issue enter into negotiations to secure the mandate to underwrite and distribute the issue. With the mandate secured, the lead manager forms the lead management group. Under European syndication procedures,<sup>29</sup> all members of the lead management group are party to the subscription agreement signed with the issuer. The lead management group is committed jointly and severally to purchase the entire issue from the issuer. At this time, the lead management group also compiles a list of investment bankers that have the potential to co-manage the issue, or join the selling group.

At time  $t_0$ , therefore, a firm commitment contract has been negotiated between the lead management group and the issuer which guarantees the issuer receives a price,  $P_1$ , for each bond offered. At this time, the coupon rate and a tentative offering price for the bond,  $\hat{P}_0$ , is also

<sup>29</sup>Throughout this discussion it is assumed that European syndication procedures are employed.

determined. The difference between  $\hat{P}_0$  and  $P_f$  is referred to as the gross spread, where  $\hat{P}_0 > P_f$ . The gross spread represents the potential commissions that can be earned by syndicate members and typically range between 1.38 and 2.0%.

The issue is then formally announced on the announcement date with the lead manager inviting other investment bankers to join the underwriting syndicate and selling group. Potential syndicate members usually have 7-10 days (the subscription period) to register their intention to participate with the lead management group in this issue. The lead manager begins to make preliminary allotments of bonds to confirmed syndicate members. These allotments, however, are not finalized until the offering day.

During the subscription period, time  $t_0$  to  $t_1$ , syndicate members start to pre-market the issue to prospective investors (usually institutional) by soliciting indications of interest for the issue at a small range of prices. For example, the lower limit on prices may be par with the upper limit usually around 101 per cent. Circling commitments of this type are not enforceable contracts but investors usually honour these commitments to preserve their relationship with investment bankers. It is also during the subscription period that syndicate members learn whether they are high cost or low cost distributors of the issue.

The syndicate member is a low cost distributor of the issue if they can pre-sell their entire expected allotment of bonds during the subscription period. They are a high

cost distributor if they cannot pre-sell their allotment at  $\hat{P}_0$ . For instance, suppose that upon agreeing to participate in the syndicate, member  $i$  receives a preliminary allotment of bonds,  $q_i$ , which they can purchase at a discount from the proposed offering price. Let this price be  $P_1$ . Of  $q_i$  underwritten by member  $i$ , a fraction of this,  $\delta q_i$ , is placed with investors at  $\hat{P}_0$ . This implies that  $(1-\delta)q_i$  must be held in inventory until the bonds can successfully be placed with investors. The cost to the underwriter of holding this in inventory is  $(1+r)^t P_1 (1-\delta)q_i$ , where  $r$  is the appropriate discount rate and  $t$  represents the length of time the securities are held in inventory.<sup>30</sup>

In the Eurobond market, an institution has emerged which allows high cost distributors to unload their expected allotments during the subscription period. This institution is referred to as the grey market. In the grey market, syndicate members can sell their expected bond allotment forward, through inter-dealer brokers, to other investment bankers not included in the syndicate. Grey market bid-ask quotes for bond issues are publicly available over the Reuters screen with heavy trading usually observed. One estimate suggests that about 50 to 60% of new issues are sold through brokers (Stoehr, 1989:149).

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<sup>30</sup> We can think of  $r$  as representing Eurodollar borrowing costs or as a firm specific opportunity cost. If the capital of the firm is fully committed,  $r$  could represent the cost associated with missing another deal because of the capital committed to the present deal.

For the syndicate member, trading in the grey market is logical if they are a high cost distributor. Syndicate members can lock in a return from their participation in the syndicate if the grey market bid price,  $P_2$ , is greater than the price paid for the securities, i.e. if  $P_2 > P_1$ . Trading in the grey market also allows the syndicate member to avoid the uncertainty regarding future financial and money market conditions. The impact of such changes could affect significantly the final terms at which the issue is priced on pricing day. Since a guarantee has already been extended to the issuer, potential adverse changes in the money market could result in final pricing which wipes out commissions altogether.

Syndicate members are able to breach the selling agreement in this way because the contract is not enforceable in the Eurobond market. Unauthorized trading in the grey market can be accomplished without the lead manager knowing the sellers identity because Eurobonds are bearer bonds. When the bonds are distributed, the security numbers are not recorded in any systemic way. Bonds of the same issue are pooled together by a clearing house and drawn out at random for delivery. Hence, there is no trail for identifying syndicate members engaging in this practice.

The cost of grey market trading for the syndicate member is the reduction in commission earnings of  $(\hat{P}_0 - P_2)(1-\delta)q_i$ . Therefore, we would expect to see forward sales in the grey market whenever,



$$(1) (1+r)' P_1 (1-\delta)q > (\hat{P}_0 - P_2) (1-\delta)q$$

In other words, if the inventory costs of holding the bonds exceed the expected costs of breach, the syndicate member will shirk on their contractual commitment.

The end of the subscription period, time  $t_1$ , is signaled by the pricing day, the time when the final terms and conditions of the issue are agreed between the managing group and the borrower. It is rare for the specifications of the issue, other than offering price, to be altered unless there has been a substantial change in market conditions. The final offering price,  $P_o$ , will reflect information obtained by pre-marketing the issue to investors, information obtained from the grey market, prevailing conditions in the bond market, and the original mandate to distribute the issue. Once the final specifications are established, members of the underwriting and selling group have approximately 24 hours to accept or reject the negotiated terms.

The day after the pricing day, the bonds are formally offered. On the offering day the issuer and managing group sign the subscription agreement containing the final specifications of the issue.<sup>31</sup> The lead manager now communicates his final bond allotment decision to syndicate members. This allotment decision is of strategic importance

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<sup>31</sup>Although the subscription agreement is not signed until the offering day, the management group has a verbal agreement with issuer at the announcement date.

to lead managers in maintaining syndicate discipline during the subscription period.

Lead managers who suspect that members of the syndicate are breaching the contract by actively trading in the grey market have been known to punish violators by using a "bear squeeze". A lead manager employing this tactic allocates no bonds to the syndicate and distributes the entire issue itself. When the short seller in the grey market is required to close their position, it must go back to the lead manager to purchase the bonds. One major disadvantage of this tactic, however, is that it punishes all members of the syndicate, not just the short seller.

A second obvious disadvantage of this tactic is that it leaves the lead manager to distribute the entire issue alone. Since a major function of the syndicate is to assist in the distribution effort, this tactic is potentially very costly for the lead manager. Delays in placing the issue with investors imply an opportunity cost for the lead manager since their guarantee capital is tied up with the issue.<sup>32</sup>

Once syndicate members receive their bond allotments, they can distribute the bonds to the investors who purchased during the subscription period. The issue is now also free to start trading in the secondary market. Immediately upon commencement of secondary market trading, the stabilization

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<sup>32</sup>This was discussed in Chapter 4.

period begins and continues for up to 14 days after the bonds have been offered, denoted period  $t_1$  to  $t_2$ .

Stabilization refers to the practice of buying a security for the limited purpose of preventing or retarding a decline in its open market price in order to facilitate its distribution to the public (Securities Exchange Act Release 2446, (1940)). During the stabilization period the management group utilizes a pool of funds (the stabilization account) to stabilize the price of the bonds, within a narrow range, to ensure smooth placement of the bonds in the secondary market. Price stabilization also occurs if the lead manager of the issue withholds bond allotments to syndicate members. Syndicate members who sold their expected bond allotment forward in the grey market are forced to purchase securities from the lead manager or in the secondary market, thus bidding up the price.

The end of the stabilization period, time  $t_2$ , represents the closing day when the syndicate disbands and all syndicate members pay for the bonds they are committed to purchase. If syndicate members have not sold their entire bond allotment, they will be drawing on their guarantee capital to pay for the bonds. Of course, syndicate members continue their efforts to sell their bonds in the open market.

### 5.3. Discussion of Traditional Syndication Procedures

Traditional syndication and distribution procedures employed in the Eurobond market have generated significant controversy within the industry. The controversy largely centers on the widespread use of the grey market by syndicate members to sell their bond allotments. One market participant has suggested that "...the grey market is a reflection of the fundamental dishonesty of underwriters" (Euromoney, May 1982:94).

As well as reflecting the fundamental dishonesty of underwriters, grey market trading also imposes a cost on low cost syndicate members. Low cost syndicate members, who are able to pre-sell the issue to investors during the subscription period, find their efforts compromised by the grey market. The problem lies in the fact that grey market prices are publicly available. For instance, a particular Eurobond issue may be trading in the grey market at a two-way price quoted as "less 1.75-1.25", these being the bid and offer prices respectively. If the proposed offering price was 99, the grey market prices would therefore be 97.25 and 97.75. Informed investors observe these grey market prices and insist upon similar discounts from the syndicate. Low cost syndicate members, therefore, have market prices imposed on them by high cost syndicate members. In other words, prices are established by the weakest link in the co-manager chain (Euromoney, September

1989:43). This reduces syndicate commissions and harms efforts to pre-sell the issue.

Grey market trading ultimately reflects poorly on lead managers. Lead managers are responsible for organizing and monitoring the syndicate. Syndicates are formed to assist in the distribution effort and because lead managers cannot exploit economies of scale in guarantee capital without size. However, lead managers cannot achieve size without introducing heterogeneity into the group.<sup>33</sup> By enlarging the syndicate and choosing a group which includes both low cost and high cost distributors, lead managers hurt their own reputation.

The reputation of lead managers as a manager and advisor is clearly compromised by the grey market. Grey market prices, which are quoted at a discount from the proposed offering price, leave the impression that the offering price was wrong. Given that syndicate members each commit capital to the syndicate to guarantee the advice of lead managers, lead managers find themselves at conflict with non shirking syndicate members. These syndicate members are committing capital to a syndicate in a deal where they are unable to earn their full fees.

The grey market, strangely enough, essentially acts as a policing mechanism for low cost syndicate members. It provides information about the homogeneity of the syndicate

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<sup>33</sup>See Farrell & Scotchmer [1988], Lueck [1994] for a discussion of groups and the implications of increasing group size.

in that high cost syndicate members are revealed by grey market trading. It also provides information regarding the lead managers ability as an advisor since grey market prices reveal information regarding the market value of the securities. Because of the impact of grey market trading on syndicate commissions, low cost syndicate members exert pressure on lead managers to stabilize prices in the grey market.

When the lead manager of the issue places a syndicate bid to stabilize grey market prices, it essentially buys back bonds from syndicate members. One estimate suggests that some firms have ended up distributing an average of 80% of their deals (Euromoney, September 1989:42). Lead managers, therefore, end up syndicating commissions but not securities to grey market traders. Grey market sellers, on the other hand, are earning a commission for a service they are not providing. Lead managers syndicate the issue to obtain guarantee capital and distribution power, but end up losing both when it is necessary to stabilize prices in the grey market.

Many argue that a second problem with traditional procedures lies in the fact that they haven't evolved to reflect changes in the market environment. Traditional Eurobond syndication and distribution procedures were developed in a different market environment than that which exists today. Since the 1960s and 1970s, when the traditional methods were developed, there have been a number

of important market developments. Market advances stimulated by financial market liberalization and deregulation have occurred in domestic markets like the U.S. and Japan. There have also been significant advances in modern communication. Furthermore, the Eurobond market is now dominated by institutional investors. There has not, however, been corresponding changes in Eurobond syndication procedures to reflect these changes in the market environment.

One of the most important changes in the Eurobond market has been the evolution of the market toward the institutional investor. This has led one market commentator to note that "...institutional investors are now the predominant buyers of Eurobonds, not tax-shy individuals" (Euromoney, September 1989:39). In fact, one estimate suggests that institutional investors likely account for 70% of Eurodollar issues by sovereign and supranational names (Euromoney, September 1989:39). The growing importance of the institutional investor has led one market commentator to suggest that "...now that a majority of dollar Eurobonds are bought by institutions, the classical method is an anachronism" (Euromoney, October 1989:54). With the growing importance of the institutional investor came the realization that the underwriter fee structure was inappropriate.

The level of Eurobond underwriting fees average between 1.38 and 2.0%; a level much higher than comparable fees in the U.S. bond market (Euromoney, October 1989:54). This

Eurobond fee structure reflected the high cost of maintaining a distribution network which focused on the small retail investor. As institutional participation in the Eurobond market increased, however, the size of the selling commission ceased to represent a realistic price for the services provided by the investment banker. In many instances the bulk of the selling commission was passed on to the institutional investor in the form of a discounted price. Despite this, large selling commissions have continued to be a feature of the Eurobond primary market. This begs a question: why haven't Eurobond commission levels fallen to reflect the importance of the institutional investor?

Courtadon (1985) argues that lead managers have an incentive to allow the adjustment of commissions to occur via discounting rather than formally because of the fee structure for the syndicate. With the lead manager's praecipum, plus its share of the management and underwriting commissions, substantial discounting and market intervention can occur before the lead manager's fees are eliminated. If fees are formally reduced, this would remove a cushion that managers and underwriters have against poor pricing (Courtadon, 1985:6).

A more convincing argument than Courtadon's suggests that adopting a uniform, but lower, fee structure reduces syndicate revenues since it forces the syndicate to offer these lower fees to all investors. In other words, syndicate



members will not have the same ability to price discriminate. With the traditional fee structure, syndicate members were still able to earn full fees to the extent that retail investors participated in the primary market. Adopting a lower fee structure would eliminate this source of revenue for syndicates.

#### 5.4 Concluding Comments

From this discussion of Eurobond syndication and distribution procedures, it is clear that traditional procedures have generated controversy in the industry. The failure of market participants to implement new issuing procedures to reflect fundamental changes in the market environment (i.e. the growing importance of institutional investors and the need to bring new issues to market quickly) has resulted in practices whereby syndicate members discount the issue to institutional investors and sell the issue forward in the grey market. Both of these practices violate the selling agreement and have created tension within syndicates. It is in this environment that market participants introduced the Fixed Price Reoffering (FPRO) method of syndication in 1989.

## CHAPTER 6:

### The Fixed Price Reoffering Syndication Method

#### 6.1 Introduction

In response to the problems associated with traditional syndication and distribution procedures, market participants introduced new syndication and distribution procedures. This chapter examines the fixed price reoffering (FPRO) method of syndication and distribution, an attempt to employ US style syndication and distribution procedures in the Eurobond market. This contractual alternative first appeared in August 1989 with the US\$500 million issue of the Government of New Zealand. The success of the FPRO was such that in 1990, the first full year of its use, 22% of all deals employed this syndication method (The Economist, October 1990:87).

The FPRO represents an endogenous change in contract governance structure. It was introduced by market participants in response to the weakness of traditional Eurobond syndication and distribution procedures. As Chapter 5 outlines, the Eurobond primary market was plagued by within syndicate conflicts and a failure to distinguish between institutional and retail investors. The goal of the FPRO method of syndication, therefore, was to reduce within syndicate conflict and introduce a new syndication procedure designed for the institutional investor. By aiming to distribute more to institutional investors, lead managers

claim they are catering to the dominant market force (Euromoney, September 1991:140).

The FPRO will never completely replace the traditional procedure for placing bond issues because retail placement of bonds is difficult with the FPRO. Retail placement of bonds takes several days or longer, and creates a problem of how to commit the syndicate to one price for so long. Furthermore, due to higher distribution costs, there is also the need for banks to pass on a higher commission to their branch networks to get them to sell the bonds, which would make the lower FPRO fees impossible (Euromoney, October 1989:60). Many market participants believe that the FPRO and the traditional syndicate processes will continue side by side. FPROs will be utilized for issues targeted to the institutional investor, with traditional procedures employed for issues targeted to the retail investor.

This chapter is organized as follows. To begin, I describe the major features of the FPRO syndication method. The FPRO is then modeled and examined in the vertical restraints tradition. Here the discussion will focus on the FPRO as a contract enforcement mechanism. This will be followed by a critical discussion of the FPRO method of syndication.

## **6.2 The Emergence of the FPRO Syndication Method**

In response to the problems associated with traditional Eurobond syndication and distribution procedures, the FPRO

method of syndication has recently emerged as a contractual alternative. There are a number of features of the FPRO method which distinguish it from traditional syndication procedures. First, the essential ingredient of the FPRO method is that all members of the syndicate agree not to sell the issue below a certain price--the reoffer price. This offer price is negotiated by members of the management group after the syndicate has pre-marketed the issue to prospective investors.<sup>34</sup> By pre-marketing the issue to investors prior to establishing the offer price, additional information is obtained regarding the market's likely reception to the issue. This reduces the risk of mispriced deals.

Second, since FPRO offerings are targeted to the institutional investor, the FPRO method calls for the replacement of the traditionally large but unstable and uneven fees for syndicate members of between 1.3% and 2% with a smaller but fixed commission rate of 1/4% to 3/8%. Traditional fees are unstable because of the practice of discounting them when offering the bonds to investors and uneven because lead managers earn the extra fee of the praecipium, from which other syndicate members are excluded (Euromoney, October 1989:54). With the FPRO, all syndicate members own the bonds at the same price.

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<sup>34</sup>Fixed price deals can be done with out these negotiations and pre-marketing but many advocates of the approach argue that it is critical to the success of this approach.

One implication of this pricing scheme is that market liquidity risk is now borne by the issuer during the subscription period. This arises from the fact that no price guarantee is extended to the issuer until the offer price is determined.<sup>35</sup> Once the offer price has been determined, syndicate members are committed to this price until the syndicate breaks. Lead managers break the syndicate when they are convinced of smooth placement of the issue with investors. This usually occurs within 24 hours of the pricing day since the issue has already been pre-marketed to investors. Syndicate members, therefore, are only expected to commit to the offer price for 24 hours or less. This represents a fundamental difference from traditional procedures where syndicate members were expected to commit to the offer price for the entire subscription period which could last 7 to 10 days. When the syndicate breaks, the bonds begin to trade freely in the market.

The FPRO method attempts to enforce syndicate discipline by a threat of exclusion from future offerings if the member shirks on the contractual agreement to sell the bonds at the reoffer price. Exclusion from future offerings is costly to syndicate members since it implies the loss of a potential quasi-rent stream of future earnings. Syndicate discipline is also enforced by giving a much smaller than

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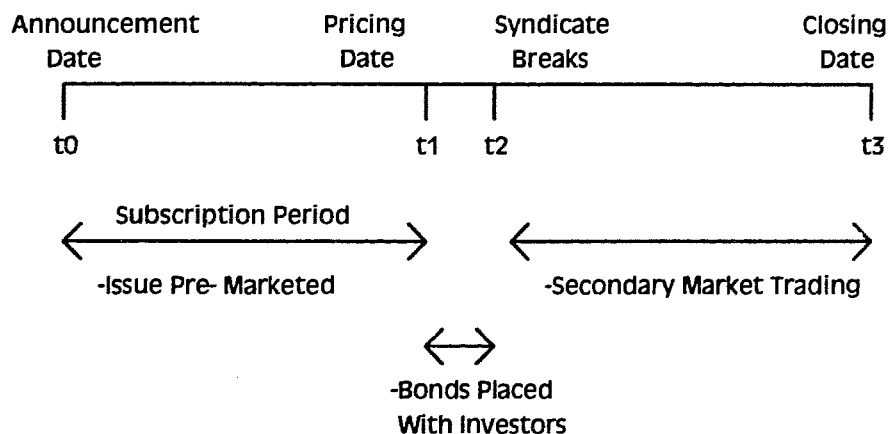
<sup>35</sup>With firm commitment contracts, however, issuers still receive a guarantee that they will be able to raise a certain amount of funds from the bond issue. In other words, the syndicate still incurs the risk that the issue will not sell in the market.

usual lead management group larger allocations of bonds as well as involvement in their pricing. Increasing bond allotments show which syndicate members have true placement ability. If syndicate members do not have placement ability this will be reflected in their attempts to short the issue.

### 6.3 Modeling the FPRO Syndication Process

In this model, we are again considering an organization attempting to raise a fixed amount of capital through a bond offering to a population of investors. When the lead manager secures the mandate to underwrite and distribute the issue, invitations are extended to investment bankers to participate in the syndicate. Potential syndicate members usually have two hours to agree to participate in the bond offering. Upon agreeing to join the syndicate, syndicate members are informed of their bond allocations. See Figure 6.1 for an outline of the procedure for distributing a Eurobond with the FPRO.

Figure 6.1 : Procedure for Distributing a FPRO Eurobond



At this time,  $t_0$ , the issue is formally announced. From  $t_0$  to  $t_1$ , the members of the syndicate pre-market the issue to potential investors. Information regarding investor demand for the offering is obtained by soliciting non-binding indications of interest in the issue at different potential offering prices. During this subscription period, there is no guarantee extended to the issuer regarding the price,  $P_I$ , they will receive for the issue. This is a key difference between the FPRO and traditional procedures because the issuer now assumes the risk that market conditions could change during the subscription period. Although the syndicate still extends a guarantee to the issuer that they will raise a given sum of capital in the capital market, the probability that syndicate members will have to utilize their guarantee capital to ensure this capital is raised is reduced. The theory of syndication developed in Chapter 4 implies that this change will have testable implications regarding the composition of syndicates.

In Chapter 4, I argued that investment bankers provide guarantee capital to insure against variability. Investment banking syndicates are formed because there are economies of scale in providing guarantee capital and because of the gains from specialization associated with having a multinational syndicate of bankers distribute the issue. With the FPRO, however, bond issuers incur market risk during the subscription period which was previously incurred by the syndicate. Syndicate members are now only

guaranteeing the advice they provide when proposing issue pricing. This advice is guaranteed by the fact that issuers still receive a firm commitment contract from the syndicate. There is now, however, a smaller probability that syndicate members guarantee capital will be required. Given this, the theory of syndicates implies that syndicate size will be smaller with each syndicate member accepting a larger allocation of bonds.

A second key difference between the FPRO and traditional procedures is the intended absence of a grey market during the subscription period. Since the syndicate member incurs no market risk during the subscription period, the incentive to short the issue to third party dealers is reduced. However, syndicate members with no placement ability at any price, still have an incentive to sell the issue forward and create a grey market in the issue. Careful selection of syndicate members, therefore, is obviously an important consideration for lead managers attempting to circumvent the grey market. The key is to form a homogeneous syndicate comprised of low cost distributors. This can be achieved by reducing the size of the syndicate and including more reputable syndicate members.

The pricing day, time  $t_1$ , signals the end of the subscription period. At this time, the final terms and conditions are set in an agreement between the borrower and lead management group. The final offer price,  $P_0$ , will be determined by the lead management group as a whole with the



information obtained from the pre-market playing a pivotal role in the pricing decision; although the lead manager still assumes the final responsibility for determining this price.<sup>36</sup> The members of the syndicate are now contractually obliged to distribute the issue at the fixed price of  $P_0$ . By agreeing to this fixed price, the syndicate agrees to hold any bonds they are unable to place at  $P_0$  until the syndicate breaks. In addition, once members of the management group agree on  $P_0$ , the syndicate will extend a price guarantee,  $P_1$ , to the issuer.  $P_1$  will generally be  $1/4 - 3/8\%$  below  $P_0$ . The difference between  $P_1$  and  $P_0$  represents syndicate commissions.

The syndicate will break when the lead manager is assured of smooth placement of the bonds with investors. This is usually within 24 hours of the pricing date with well priced issues and is denoted time period  $t_1$  to  $t_2$ . The issue now starts trading freely in the market. In other words, syndicate members are no longer obliged to sell the issue at the re-offer price. Lead managers may stabilize the issue in the secondary market, but this isn't necessary if the issue is correctly priced. At time  $t_3$ , the issue closes with money exchanged in return for the bonds. The total time

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<sup>36</sup>This will also reduce the probability that syndicate members guarantee capital will be required. Now it is not only the expertise of the lead manager which is utilized when pricing the issue. Furthermore, since no guarantee has been extended to the issuer during the subscription period, there is no constraint placed on the lead manager when utilizing the information obtained in the pre-market to establish the issue price.

to successfully launch an issue could be anywhere between 2 weeks and 2 months, with the average being 5 weeks.<sup>37</sup>

#### **FPROs As A Contract Enforcement Mechanism**

The FPRO contractual arrangement entered into by syndicate members can be thought of as a vertical restraint contract enforcement mechanism. The lead manager attempts to induce underwriter performance through a private enforcement mechanism whereby the threat of exclusion from future offerings is employed to ensure underwriter performance. Exclusion from future offerings will be costly because the lead manager uses the vertical restraints to increase the long run gain to performing underwriters by creating a quasi-rent stream of future earnings (Klein & Murphy, 1988:268).

In the tradition of Klein and Murphy [1988], the starting point for this analysis is the assumption that it is not economically feasible for the lead manager to write an explicit, enforceable contract with syndicate members for the supply of underwriting services. Underwriter performance is assumed to be prohibitively costly to measure and specify in a way that contractual breach and the extent of damages can be proven to the satisfaction of some third party arbitrator (Klein & Murphy, 1988:268). Instead, a private enforcement mechanism is relied upon to ensure performance.

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<sup>37</sup>This discussion of the timing of the issue is based upon the comments of market professionals interviewed by the author in London.

For the private enforcement mechanism to work, the lead manager must be able to commit by excluding underwriters who shirk on the supply of underwriting services. Lead managers must also commit to underwriters who do not shirk with the required quasi-rent stream of future earnings.

The task now is to determine when an underwriter, who is having difficulty placing the issue at  $P_0$ , will decide to breach the contract by selling the issue at a discount from the offering price. Suppose that of  $q_i$  underwritten by member  $i$ , a fraction of this,  $\delta q_i$ , is placed with investors at  $P_0$ . This implies that  $(1-\delta)q_i$  must be held in inventory until the syndicate breaks. The cost to the underwriter of holding this in inventory is  $(1+r)^t P_1 (1-\delta)q_i$ , where  $r$  is the appropriate discount rate and  $t$  represents the length of time the securities are held in inventory. The usual interpretation of  $r$  would be that it represents Eurodollar borrowing costs. In this context, however, "interest" on guarantee capital is unrelated to the conventional interest rate. The interest rate on guarantee capital is interpreted here as a firm specific opportunity cost. If the capital of the firm is fully committed,  $r$  could represent the cost associated with missing another deal because of the capital committed to the present deal.

Now suppose that a reduction in price from  $P_0$  to  $P_2$  will clear the inventory from the books. If the price is reduced in this manner, inventory costs fall to zero and the firm's capital is free to guarantee other outcomes. The costs of

reduction in commission earnings of  $(P_0 - P_2)(1 - \delta)q_i$ . Furthermore, if the lead manager can monitor the underwriter and detect breach of contract with probability  $\Pi$ , the underwriter will be excluded from future offerings at a cost of  $\Pi E(P_0 - P_1)Q/r$  where  $Q$  is the anticipated dollars per year of underwriting if they continue to do business with the lead manager. Therefore,  $E(P_0 - P_1)Q/r$  represents the expected present value of participation in future offerings of the lead manager.

We would expect to see breach of contract whenever,<sup>38</sup>

$$(1) (1+r)^t P_1 (1-\delta)q > (P_0 - P_2)(1-\delta)q + \Pi E(P_0 - P_1)Q/r$$

In other words, if the inventory costs of holding the bonds exceed the expected costs of breach, the underwriter will shirk on their contractual commitment.

It is clear from (1) that the lead manager influences the breach decision through their ability to influence the expected value of participation in future offerings and through  $\Pi$ . Lead managers can influence the expected value of participation in future offerings by controlling the allotment of bonds to syndicate members. However, the ability to influence commission levels is constrained by the fact that these must be negotiated with the issuer. Furthermore, commissions will only be earned if syndicates

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<sup>38</sup>This specification is based on the presumption that there has been no mispricing of the deal

correctly price the bond offering.<sup>39</sup> If the bond offer price is too high, syndicate members will only be able to get the issue off their books by discounting the issue to investors. This will reduce the commissions earned.

Given that  $\Pi$  represents the probability of detecting breach, this implies that lead managers have to monitor the behavior of underwriters to detect breach. Monitoring the behavior of syndicate members will be costly for lead managers given that Eurobonds are bearer bonds. Lead managers of FPROs have, however, attempted to employ effective monitoring schemes.

One such attempt was implemented by an investment banking firm which utilized control numbers on 25% of the bonds it syndicated. The idea was that this would allow the lead manager to trace back to the syndicate member any bonds unloaded through third party dealers. The use of control numbers to monitor underwriter behavior, however, has met with some resistance in the industry. The fear is that widespread use of control numbers will eliminate one of the prime selling features of Eurobonds; namely, the fact that they are bearer bonds which are not traceable to investors. If control numbers are not utilized, then breach of contract may not be detectable and the FPRO may not be an enforceable contract.

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<sup>39</sup>This issue will be discussed further in the next section of this chapter. Whether the issue price is established through competitive bid or through negotiation plays an important role in determining whether the issue is correctly priced.

There is another reason to believe that FPROs are contracts which are difficult to enforce. This arises from the fact that RPM schemes are not possible if retailers can give hidden discounts to their customers (Tirole, 1988:172). In the case of Eurobonds, the underwriter can get around the FPRO by performing two simultaneous transactions with an investor. In one, the new issue bonds are sold at the fixed price. In the other, the underwriter agrees to buy back some old bonds held by the investor at a price above their price in the secondary market. This will provide an implicit discount on the new issue.

If it is the case that FPROs are unenforceable contracts, this suggests that underwriters will shirk on their contractual commitments whenever,

$$(2) (1+r)^t P_0 (1-\delta)q > (P_0 - P_2) (1-\delta)q$$

The underwriter will not consider the present value of the quasi-rent stream associated with membership in future offerings of lead managers in their calculus when the probability of detecting breach is zero.<sup>40</sup>

#### 6.4 Critical Discussion of the FPRO Syndication Method

The FPRO was introduced by market participants to solve the problems associated with traditional syndication and

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<sup>40</sup>Of course, one could presume that  $\Pi > 0$  to a certain extent because of informal channels of communication including the "rumour mill".

distribution procedures. These problems include: i) within syndicate conflicts resulting from grey market trading; and ii) a failure to adapt syndication and distribution procedures to reflect changes in the market environment.

To deal with the within syndicate conflict issue, the FPRO implements a new pricing procedure which reduces the incentive to trade in the grey market. This procedure calls for the management group to determine bond pricing after syndicate members have pre-marketed the issue to investors during the subscription period. This will have two effects. To begin with, the information obtained by pre-marketing the issue is utilized by members of the management group to establish the bond price. Furthermore, the expertise of the entire management group is utilized when establishing the issue price. By incorporating more information and investment banker expertise into the bond price, the probability of a mis-priced issue is reduced.<sup>41</sup> This reduces the incentive to sell forward in the grey market. Secondly, since bond issuers incur the market risk during the subscription period, syndicate members' incentive to unload the bonds through inter-dealer brokers will be reduced. Both of these effects reduce the probability that syndicate members guarantee capital will be required.

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<sup>41</sup>Although pre-marketing also occurs when traditional procedures are employed, the information obtained is not always reflected in the offer price. The reason for this is simple: the lead manager of the issue has already guaranteed the issuer a price net of fees. The only price flexibility remaining for the lead manager is to price the offer within fees.

The key to establishing the FPRO was to convince borrowers of its merits. This hasn't always been easy. Borrowers, who are now asked to incur the market risk of changing interest rates during the subscription period, have not always agreed to the use of this new pricing procedure. Indeed, there is some evidence to suggest that there have been periods when negotiated pricing in FPROs has been replaced with competitive bid pricing. Commenting on this phenomenon in 1992, one market analyst has noted that "...the last three years' talk of harmony and co-operation and the benefits of the negotiated mandate disappeared in a frenzy of competitive bidding--competition which time and again produced prices no one believed would sell" (Euromoney, March 1992:36).

Deals awarded on the basis of a competitive bid imply that consultations with co-managers over pricing don't occur. Furthermore, with the lead manager extending a price guarantee to the issuer immediately upon receiving the mandate to distribute the issue, there is little likelihood that the information obtained during the pre-market will be reflected in the bond price, unless the offer price is still established within fees. Therefore, there is a greater probability that issues will be mispriced. To the extent that there is more mispricing of issues, there is a greater likelihood that syndicate members will short the issue to third-party dealers.



Indeed, there is evidence to suggest that this problem did occur in 1992: "Now that off-market pricing appears to be acceptable...[syndicate] discipline is threatened since syndicate members do not believe in the reoffer price: either they disagree with the view the lead manager is taking on the market, or they know the price reflects a crazy bidding contest. This leaves them with few choices. If they want to make money on a deal, their best hope is to short it" (Euromoney, March 1992:38).

One final way in which the FPRO deals with the within syndicate discipline problem is by changing the bond allotment procedure. In the traditional syndicate, the bond allotment decision occurs after the subscription period and has been used strategically by the lead manager to punish syndicate members who trade in the grey market. However, because it was virtually impossible to trace bonds back to syndicate members selling in the grey market, the lead manager was forced to reduce the bond allotment of all syndicate members to punish the violators. This was a source of conflict within the syndicate.

The FPRO eliminates this problem because syndicate members are informed of their bond allotment upon agreeing to join the syndicate. Syndicate members know with certainty their bond allotments when they are trying to sell the bonds to investors during the subscription period. Therefore, one element of uncertainty facing the syndicate member is

eliminated which may reduce the incentive to sell forward in the grey market.

## 6.5 Concluding Comments

This discussion of the FPRO illustrates how Eurobond industry participants responded to the within syndicate contractual issues identified in Chapter 5. The FPRO represented an endogenous change in contract governance structure which allows me to test a number of implications of my theory of syndicates. Chapter 7 outlines the testable implications of the theory and presents the results of these tests.

## CHAPTER 7:

### EMPIRICAL ANALYSIS AND TESTS OF THE THEORY

#### 7.1 Introduction

The introduction of the FPRO method of syndication and distribution presents an opportunity to test the theory of syndicates developed in Chapter 4. For instance, the theory of syndicates argues that syndicates are temporary organizations formed by investment bankers to pool guarantee capital and distribute bonds to investors. With the introduction of the FPRO, the firm commitment contractual guarantee extended to bond issuers changed with issuers expected to absorb additional market risk during the subscription period. This implies a smaller probability that syndicate members' guarantee capital will be required. Given this, the theory implies that the underwriting syndicate should be smaller with each underwriter committing more guarantee capital to the syndicate.

The introduction of the FPRO also allows us to test the hypothesis that the average reputation of syndicates will be greater with FPRO issues. This result is implied by the theory of syndicates which suggests that the reputation of investment bankers is influenced by the predominant types of investors to whom they market securities. If the most prestigious firms market securities primarily to institutional investors, it is expected that the average

reputation of syndicates will be greater with FPRO issues since the FPRO is targeted to the institutional investor.

Finally, the data regarding bond issues allows the testing of the impact of the FPRO on bond pricing. The theory of syndicates implies that if markets are competitive, the FPRO should imply a lower cost of borrowing to the bond issuer. This follows from the fact that with FPRO issues, borrowers now absorb market risk during the subscription period. Therefore, at launch, the spread relative to benchmark issues should be smaller to reflect the additional risk incurred by issuers.

This chapter reports on these tests of the theory of syndicates and is organized as follows. The next section describes and analyzes the data on Eurobond issues. The data analysis and description is followed by the hypothesis tests where the statistical and economic significance of the results are reported. This section is followed by some concluding comments.

## **7.2 Data Analysis**

The data set of Eurobond issues was collected from the International Financing Review (IFR) covering a period from January 1989 to December 1990. This period provides a two year window that contains the introduction of the FPRO method of syndication and distribution. The data set is restricted to include observations from the U.S. dollar

straight segment of the market where the FPRO method of syndication and distribution was initially introduced.

Data on 441 separate bond issues was reported in the IFR over the 1989-1990 period. Of this, 239 issues were rejected because of incomplete information.<sup>42</sup> This leaves a sample of 202 bond issues, representing 45.8% of the entire population of U.S. dollar straight issues. Of the 202 bond issues for which complete data exists, 158 issues were syndicated using traditional procedures while 44 issues were syndicated using the FPRO procedure.

A number of variables are included in the data set including: \$ amount of the issue; maturity; coupon rate; issue price; yield; commissions; outstanding rating (Moody's and S&P); syndicate type, members and size; spread at launch; and whether the issue includes a call option or was swapped. Table 7.1 sorts the data by type of syndication procedure and reveals the two most important features which distinguish traditional from FPRO syndication procedures.

From this table, we observe the significant differences between traditional and FPRO procedures in terms of the average size of the bond issue and syndicate member commission levels. FPRO issues are significantly larger on average than traditional issues, \$524.2M vs \$195.8M, while

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<sup>42</sup> With so many issues deleted because of incomplete information, this raises the possibility of sample selection bias. For instance, in looking at the data I observed that approximately 20% of all FPRO issues were rejected while approximately 58% of all traditional issues were rejected.

average commissions earned by syndicate members are significantly smaller on average, .307% vs 1.75%.

Table 7.1 : Descriptive Statistics of Traditional and FPRO Syndication Procedures

<u>Characteristic</u>	<u>Total Sample</u>	<u>FPRO</u>	<u>Traditional</u>
Number of Issues	202	44	158
Issue Size (\$million)	267.34	524.2	195.81
Years to Maturity	6.5	7.36	6.29
Spread (basis points)	63	61.7	63.4
Reoffer Yield (%)	9.04	8.83	9.1
Commissions (%)	1.43	0.307	1.75
Callable Before Maturity (%)	8.9	2.3	10.8
Bond Ratings (%)			
Aaa	66.8	84.1	62.0
Aa1	6.9	6.8	6.3
Aa2	13.8	0	17.7
Aa3	6.9	9.1	6.3

### 7.3 Hypothesis Tests

The three hypotheses outlined above will now be tested using the data on Eurobond issues.

#### 7.3.1 The Syndicate Size Test

The introduction of the FPRO method of syndication and distribution presents an opportunity to test the hypothesis that the average size of the syndicate will decline with FPRO issues. It is argued in the theory of syndicates that syndicate members commit capital to guarantee advice and provide firm commitment contractual guarantees to issuers. With the introduction of the FPRO, the firm commitment

guarantee extended to issuers changed with issuers expected to absorb additional market risk during the subscription period. This implies that there is now a smaller probability that syndicate members' guarantee capital will be required. The syndicate, therefore, will be smaller with each syndicate member contributing more capital, on average, to the syndicate.

As Table 7.2 reveals, the FPRO underwriting syndicate is smaller than the traditional syndicate with each syndicate member committing more capital, on average, to the syndicate.

**Table 7.2 : Syndicate Size and Underwriting per Member for Traditional and FPRO Bond Issues**

	<b>Traditional</b>	<b>FPRO</b>
Avg. Issue Size (\$)	195,810,127	524,200,000
Avg. Syndicate Size	18.6	12.9
Avg. Capital Commitment (\$)	1,052,743	4,063,566

To test whether the difference in the average size of the underwriting syndicate is statistically significant, an OLS regression was run with syndicate size the dependent variable. Syndicate size was run on a constant, an issue size variable, and a dummy variable that equaled one for FPRO bond issues. The results of the regression are given in Table 7.3.

Table 7.3 : Syndicate Size Test Results

Variable	Coefficient	t-statistic
Constant	17.168	24.039
Size	0.73509E-08	3.40
Type	-8.2261	-5.78
Sample	202	

The type dummy is negative and significant with a t-statistic of 5.78. This result indicates that the smaller syndicate size associated with FPRO issues is statistically significant. The results, therefore, are consistent with the prediction that the introduction of the FPRO will result in a smaller syndicate.

To determine the economic significance of these results an examination of the estimated coefficients is required. The estimated coefficient of -8.2261 on the type variable implies that for any given issue size, the FPRO syndicate will be 8.2 members smaller than the traditional syndicate. At first glance, the coefficient on the issue size variable appears to be economically insignificant despite the fact that it is statistically significant. This, however, is not true. The coefficient of 0.21636E-08 tells us, for instance, that the syndicate will increase in size by 2.1 members for each \$100,000,000 increase in issue size.

### 7.3.2 The Syndicate Reputation Test

The introduction of the FPRO method of syndication and distribution presents an opportunity to test the hypothesis



that the average reputation of the syndicate will be greater with FPRO issues. It is argued in the theory of syndicates that the reputation of investment bankers is reflected by the predominant type of investor to whom they market securities. The most prestigious firms market securities primarily to institutional investors with less prestigious firms servicing the retail segment of the market. Given that FPRO bond issues are targeted to institutional investors, the average reputation of the FPRO syndicate, therefore, should be greater than the traditional syndicate.

The key to testing this hypothesis is to develop a proxy for the reputation of investment banking firms and the syndicates they participate in. This task is simplified by the fact that a number of different methodologies for creating a reputation variable have been developed and employed in the literature. This thesis will employ two different methodologies for developing a reputation variable.

The first method employed is based on a body of literature which employs variations of a method derived from comments by Hayes regarding the premise that investment bankers are subject to a rigid hierarchy.<sup>43</sup> Hayes argues that each investment banker's prestige is indicated by its position in the hierarchy of the syndicate. Here a reputation measure is adopted which reflects the position of

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<sup>43</sup> See for instance Johnson and Miller (1988), Carter and Manaster (1990), and Carter and Dark (1992, 1993).

the investment banker in the hierarchy of the various syndicates that the firm participates in. The second method employed is based on the premise that the investment bankers reputation is based on their position in the hierarchy of the industry.<sup>44</sup> Here a ranking scheme is developed where the reputation of the investment banker is based upon league tables which indicate the relative position of the major banks in lead managing new issues.

The reputation measure based upon the firm's position in the hierarchy of the syndicate is based upon a prestige classification system initially suggested by Hayes who argues that..."a firm's standing in the syndicate hierarchy in negotiated deals is considered...to be an approximate measure of its stature in the financial and business communities" (Hayes, 1971:138). Hayes contends that a rigid prestige hierarchy exists whereby those in the upper bracket of this hierarchy enjoy a more prestigious position than lower bracket counterparts. This hierarchy is reflected in tombstone announcements.

A tombstone announcement is a listing of a pending public security offering. As part of the announcement, the investment bankers in the syndicate are listed. With Eurobond issues, the lead and joint-lead managers are listed first. Below the lead managers, the remaining firms in the syndicate are found. Those at the very top, but below the

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<sup>44</sup> See McDonald and Fisher (1972).

lead managers, are the most prestigious co-lead management group where the members are listed in alphabetical order. The next most prestigious group of underwriters are the co-managers who are listed alphabetically below the co-lead management group. Within the two broad grouping of firms, it is sometimes the case that a further refinement of the rankings is announced with senior and junior co-lead or co-managers identified.

To construct the reputation variable, a ranking scale is established by examining the tombstone announcements, one at a time, and assigning an integer rank, zero to six, for each underwriter in the announcement according to its position. For example, ignoring the lead and joint-lead section, those underwriters listed as senior co-lead managers are assigned the rank of six (for the most prestigious). Firms listed as co-lead managers are assigned the rank of five, while junior co-lead managers are assigned the rank of four. See Table 7.4 for a further breakdown of the ranking system.

**Table 7.4 : Ranking System for Firms in the Syndicate**

Senior Co-Lead Manager	6
Co-Lead Manager	5
Junior Co-Lead Manager	4
Senior Co-Manager	3
Co-Manager	2
Junior Co-Manager	1
Selling Group	0

As each new announcement is examined, firms included in the syndicate are ranked again according to their position in the hierarchy. This is done for all 202 bond issues included in the database.

To determine the overall integer ranking for each of the investment banking firms, a simple average was taken whereby the sum of the firms rankings across all bond issues was divided by the number of deals in which they participated. See Appendix 1 for a listing of firms and their reputation.

Once the reputation of the individual firms was established, it was simple to establish the reputation for the syndicate. For each bond issue, the reputation for each syndicate member was summed with the total divided by the number of firms in the syndicate to give an average reputation for the syndicate.

The reputation measure based upon the firm's position in the hierarchy of industry develops a reputation measure whereby the reputation of the investment banker is based upon its position in league underwriting tables. This methodology explicitly takes into consideration the volume of business generated by the firm. The ranking system employed is derived from Table 2.4 which presents data on the top 25 lead managers for all public Eurobond issues. For the years 1989 and 1990, firms are given a top ranking of four (for most prestigious) if they were among the top 3 lead managers in either of these two years. Firms included

in the top 5 lead managers were given a ranking of three, while firms included in the top 10 were assigned a rank of two. See Table 7.5 for a further breakdown of the ranking system.

**Table 7.5 : Ranking System for Firms Based Upon League Tables**

Top 3 Lead Managers	4
Top 5 Lead Managers	3
Top 10 Lead Managers	2
Top 25 Lead Managers	1
Not in Top 25	0

Appendix 2 provides a listing of firms included in the top 25 in 1989 and 1990 and their reputation.

Once the reputation of the individual firms was established, the same method as above was utilized to establish the reputation of the syndicate.

With the reputation variables determined, it is now possible to test the hypothesis that the average reputation of FPRO syndicates is greater than the average reputation of traditional syndicates. As Table 7.6 indicates, both reputation measures are consistent in revealing that the average reputation of FPRO syndicates is greater than the average reputation of traditional syndicates.

**Table 7.6: Syndicate Reputation for Traditional and FPRO Syndicates**

	Traditional	FPRO
Avg. Reputation Method #1	1.824	2.031
Avg. Reputation Method #2	1.394	1.896

To determine whether this difference in means is statistically significant, a simple regression was run with average reputation run on a constant and a dummy variable equal to one for FPRO issues and zero for traditional issues.<sup>45</sup> The results of this difference in means test are reported in Table 7.7.

Table 7.7: Syndicate Reputation Test Results

Method #1

Variable	Coefficient	T-statistic
Constant	-0.14706	-13.723
Type	0.11587	5.046

Method #2

Variable	Coefficient	T-statistic
Constant	-0.66585	-14.167
Type	0.45230	4.491

Sample: 202.

As can be seen from Table 7.7, with both syndicate reputation measures, the coefficient on the type dummy is positive and significant. This result indicates that the difference in means is statistically significant implying that FPRO bond issues have more reputable syndicates.

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<sup>45</sup>Because the average reputation variable is a limited dependent variable in its present form, it has been transformed to allow an OLS regression to be run. The syndicate reputation variable has been initially divided by six (four in the case of method #2). This new value, call it A, is then divided by 1-A. The log of this new value was then taken to give us a new dependent variable.

### 7.3.3 The Bond Pricing Test

The final test to be reported examines whether the FPRO method of syndication had an impact on the pricing of new Eurobond issues. Although it is clear that the FPRO formally reduced syndicate commissions, it is not clear what impact the FPRO had on the pricing of bonds. The theory of syndicates implies that the FPRO should result in a lower cost of borrowing for the bond issuer. With FPRO issues, borrowers now absorb market risk during the subscription period. Therefore, at launch, the spread relative to benchmark issues should be smaller to reflect the additional risk incurred by issuers.

An alternative bond pricing hypothesis is implied by the analysis of Chapter 5. In Chapter 5, it was argued that the primary market was characterized by grey market trading and price discounting to institutional investors which resulted in a tendency for new bond issues to fall in price immediately upon trading. This suggests that with traditional distribution procedures, the spread relative to benchmark issues widens when the issue trades. This implies that at launch, the spread relative to benchmark issues is too narrow (i.e., the bonds are overpriced). Given that the FPRO reduces underwriting commissions significantly, one would expect that the spread relative to benchmark issues will be larger at launch with FPROs than with traditional issues. This hypothesis is also consistent with Baron and

Holmstrom (1980) who argue that commission levels and bond pricing should be positively related.

To test these two competing bond pricing hypothesis', a multiple regression is run with the spread at launch relative to benchmark issues the dependent variable. The spread is defined as the premium issuers have to pay off an equivalent U.S. Treasury issue. Previous studies suggest that borrowing costs are affected by many factors, including the size of the issue, the default risk of the issue, and the presence of a call provision.<sup>46</sup> The model tested here also includes issue type, and lead manager reputation as explanatory variables.<sup>47</sup>

The model tested is:

$$\text{Spread} = f(\text{Size of Issue, Duration, Rating, Call Feature, Issue Type, Reputation}) .$$

where the variables and their expected sign are described as follows:

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<sup>46</sup>See for example David S. Kidwell, M. Wayne Marr, & G. Rodney Thompson, Shelf Registration: Competition and Market Flexibility, *Journal of Law & Economics* vol. XXX (1987).

<sup>47</sup>Other studies also usually include an interest rate volatility variable in their models to measure interest rate uncertainty. This variable is usually calculated as the mean absolute deviation in the long-term daily treasury rate over 20 days prior to the sale of the issue. This variable couldn't be included because the actual date of the bond issue is not included in the IFR database. By not including a relevant explanatory variable, the explained variation in the dependent variable is reduced which therefore increases the standard error of the regression. We also introduce the possibility of bias into our coefficient estimates. However, the possibility of bias is very small in this case because there is no theoretical reason to believe that this excluded independent variable is correlated with the other explanatory variables.



Size of Issue = natural logarithm of issue size \$US  
Duration = natural logarithm of bond maturity  
Rating = zero-one variables for the highest credit rating by Moody's Investor Service, where Aaa, Aa1, Aa2, and Aa3 all equal one, with A1 and lower rated issues the reference group.  
Call Feature = zero-one variable that equals one for issues which have a call feature and zero otherwise.  
Issue Type = zero-one variable that equals one for FPRO issues and zero for traditional issues.  
Reputation = proxy for lead manager reputation.

To capture possible economies of scale in underwriting, the model specifies the size of the issue in natural logarithms. The expected sign is negative to reflect the spreading out of fixed underwriting costs over larger issues. The expected sign of the duration variable is positive because there is greater price risk in underwriting long-term securities than short-term securities. The highest of Moody's credit ratings is used as a measure of default risk. The expected sign is negative to reflect that a lower probability of default should result in a lower cost of borrowing. The expected sign on the call variable is positive to reflect the option given to issuers to redeem their issue early. The reputation variable is included in the regression to allow us to test the implication of

Chemmanur & Fulghieri (1994) noted in Chapter 3. Chemmanur & Fulghieri's analysis suggests that the expected sign on the reputation variable is positive to reflect that issues distributed by reputable investment bankers should have a smaller spread relative to benchmark issues.

Table 7.8 presents the descriptive statistics for the sample.

**Table 7.8: Mean Statistics for FPRO and Traditional Issues**

<u>Characteristic</u>	<u>Total Sample</u>	<u>FPRO</u>	<u>Traditional</u>
Number of Issues	202	44	158
Issue Size (\$million)	267.34	524.2	195.81
Years to Maturity	6.5	7.36	6.29
Spread (basis points)	63	61.7	63.4
Callable Before Maturity (%)	8.9	2.3	10.8
Bond Ratings (%)			
Aaa	66.8	84.1	62.0
Aa1	6.9	6.8	6.3
Aa2	13.8	0	17.7
Aa3	6.9	9.1	6.3
Lead Manager Reputation	3.03	3.24	2.97

The data in Table 7.8 reveals some more interesting differences between FPRO and traditional issues. Of particular interest is that the issuer's spread on FPRO issues is 1.7 basis points lower, on average, than traditional issues. It is also interesting to note the significant difference between the credit ratings of issuers utilizing the FPRO issuing procedure versus traditional procedures. The data on bond ratings indicates that FPRO

issues have a much lower credit risk than traditional issues. Finally, we also observe that the reputation of lead managers is greater for FPRO issues.

Table 7.9 gives the results of the OLS and Het(Arch=1) regressions used to test the above propositions.<sup>48</sup> The results<sup>49</sup> in Table 7.9 indicate that the estimates explain approximately 42 percent of the inter-issue variation for the dependent variable. The independent variables all have the predicted estimated signs. However, it is difficult to determine the statistical significance of some of the variables. This results from the fact that the variation in the dependent variable attributable to the missing independent variable gets attributed to the error term in the regression. Therefore, the standard error of the regression gets inflated, resulting in t-statistics which are too small. Despite this, the OLS estimates indicate that the type, call, and bond rating variables are all statistically significant at the 5 percent level. Furthermore, the t-value for the size and duration variable is probably close enough to the critical value of 2 to suggest that these variables are also statistically significant. The only variable which appears to be statistically insignificant is the lead manager reputation variable.

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<sup>48</sup>Het (Arch=1) was run in order to correct for heteroskedasticity and a weak positive auto correlation problem.

<sup>49</sup> The discussion will focus on the OLS regression results since the results of the Het (Arch=1) regression is consistent with the OLS regression.

**Table 7.9: Regression Estimates For Test of Effect of Issue Type on Bond Pricing; Spread the Dependent Variable**

<u>Independent Variable</u>	<u>OLS Estimates</u>	<u>Het (Arch=1) Estimates</u>
Constant	1.4912 (3.35)	1.4021 (3.28)
Log of Size	-0.341 E-01 (-1.41)	-0.277 E-01 (-1.20)
Log of Duration	0.334 E-01 (1.41)	0.275 E-01 (1.21)
Ratings:		
Aaa	-0.339 (-5.71)	-0.334 (-5.96)
Aa1	-0.267 (-3.62)	-0.262 (-3.76)
Aa2	-0.209 (-3.13)	-0.207 (-3.28)
Aa3	-0.151 (-2.05)	-0.136 (-1.91)
Call	0.372 (7.28)	0.372 (7.65)
Type	0.765 E-01 (2.13)	0.694 E-01 (2.02)
Lmrep	-0.987 E-02 (-0.33)	0.181 E-01 (-0.63)
Adjusted $R^2$	.423	.449
F-value	17.402	

Note: t-values are in parentheses

To determine the economic significance of the results, we turn to the coefficient estimates. In general, the dependent variable increases under the following conditions: (a) as the issuer's credit rating decreases, (b) when the issue has a call option, (c) when the size of the issue

declines, (d) when the duration of the bond increases, and (e) when the FPRO issuing procedure is employed. This latter result will now be discussed further.

Recall that Table 7.8 indicates that the spread on FPRO issues is 1.7 basis points lower, on average, than traditional issues. When one examines Table 7.9, we see that the coefficient on the type variable is 0.765. This suggests that FPRO bond issues, *ceteris paribus*, sell for 7.65 basis points more than traditional bond issues. Therefore, when we control for size, duration, bond rating, call, and lead manager reputation it is clear that FPRO issues actually imply a higher cost of borrowing for the issuer. This tells a rather interesting story about the FPRO.

The positive sign attached to the type variable is inconsistent with the theory of syndicates developed in Chapter 4. However, it is consistent with the analysis of traditional procedures contained in Chapter 5 and Baron & Holmstrom's hypothesis regarding bond pricing. The fact that bond issuers are asked to incur more market risk during the subscription period as well as pay a higher spread relative to benchmark issues possibly explains why the FPRO began to unravel in 1992. As noted in Chapter 6, negotiated pricing of bond issues, after the bonds were pre-marketed through the syndicate, was eventually replaced by competitive bidding for bond issues. Given the results contained in Table 7.9, there is a logical explanation for the 1992

break-down in the FPRO. Issuers were asked to incur more market risk as well as pay a higher premium for FPRO issues.

Furthermore, the FPRO was an attempt to employ issuing procedures in the Eurobond market which were designed for the institutional environment which existed in the United States. The American bond market, however, differs from the Eurobond market in one crucial aspect: all bonds in the United States are registered bonds. With Eurobonds being bearer bonds, the FPRO needed a contract enforcement mechanism to accompany the new procedures. The failure of industry participants to agree to the use of security numbers on the individual bonds implied that the FPRO would be a procedure which was difficult to enforce.

One final comment regarding these results. It seems that the reputation of lead managers plays no role in the pricing of new bond issues. Therefore, Chemmanuer & Fulghieri's hypothesis regarding lead manager reputation and bond pricing is not supported by the results of this study.

#### **7.4 Concluding Comments**

The results of this chapter confirm, in two instances, the theory of syndicates outlined in Chapter 4. With market risk transferred to the bond issuer during the subscription period, we do observe a statistically significant decline in the size of the underwriting syndicate. Furthermore, with FPRO issues targeted to the institutional investor, we observe a change in the composition of the syndicate with

the average reputation of syndicates increasing for FPRO issues. Finally, we note that FPRO bond issues have a larger spread relative to benchmark issues. This result is inconsistent with the theory of syndicates but offers a plausible explanation for why bond issuers began to insist on competitive bidding for new bond issues.

## CHAPTER 8:

### CONCLUSION

This thesis has argued that an understanding of contractual relations and issuing procedures in the Eurobond primary market requires a recognition of the importance of the syndicate and an examination of the actual process employed to bring new bond issues to market. The theoretical literature examining contractual relations between bond issuers and investment bankers fails to address these two issues and therefore offers little insight into observed behaviour in the market.

This thesis has also argued that institutional arrangements arise in response to transaction costs. In particular, I argue that within syndicate contract enforcement problems led to the introduction of new issuing procedures. The introduction of the fixed price re-offering method of syndication and distribution was, I contend, an attempt to reduce the transactions costs associated with traditional procedures.

In writing this thesis, I have employed a method of analysis which has focused attention on the actual behaviour of market participants. It is my belief that more insight is to be gained from this approach than an approach which employs ad hoc assumptions regarding risk preferences and information endowments to derive optimal contract design results. The pre-occupation in economics with driving the



logic of rational behaviour to its limit has, I believe, driven economists away from many important and interesting issues in economics. These issues concern questions regarding why institutional arrangements exist and what forces lead to endogenous institutional change.

In this thesis, I have taken a look at a very interesting market with unique characteristics and have attempted to explore some basic issues. For instance, recognizing that bond issues are typically brought to market by syndicates of investment bankers has directed my attention to the question of "Why the Syndicate?". In the course of answering this question, I have taken the first stab at developing a theory with testable implications. Furthermore, by looking at actual procedures employed in the Eurobond primary market, I have focused attention on important transaction costs and have explored the role played by syndicates in the design of institutional arrangements. The introduction of new issuing procedures in the Eurobond primary market represented an endogenous change in contract governance structure which allowed me to put my theory of syndicates to the test.

**Appendix #1: Lead Manager Reputation: Investment Banker  
Position in the Hierarchy of the Syndicate  
Methodology**

**Investment banker**

	# of Deals	Reputation
Banca Nazionale del Lavoro	1	4.00
Caisse des Depots	1	4.00
Chuo Trust International	1	4.00
First Chicago Capital Markets	1	4.00
IMI Capital Markets	2	4.00
Okobank	1	4.00
SE Banken	2	4.00
Swedbank	3	4.00
Yasuda International	1	4.00
Maruman	2	3.50
Mitsui Finance	3	3.33
Daishin Securities	3	3.00
Hyundai	1	3.00
BNL	7	2.71
JP Morgan	111	2.68
Morgan Grenfell	3	2.67
CSFB	114	2.63
Merrill Lynch	140	2.61
Daito Securities	2	2.50
Dean Witter Capital Management	2	2.50
Istituto Bancaria San Paolo di Torino	2	2.50
J Henry Schroder Wagg	2	2.50
Lucky Securities	4	2.50
Nomura Securities	2	2.50
Saitama Finance	4	2.50
Tokai International	2	2.50
Tradition International	2	2.50
SBCI	28	2.46
Citicorp Investment Bank	10	2.40
Nomura International	111	2.35
Lehman Brothers	9	2.33
UBS - Phillips & Drew	103	2.27
Morgan Stanley International	103	2.25
Samuel Montagu	23	2.22
Mitsui Tayo Kobe International	5	2.20
Svenska International	5	2.20
Salomon Brothers	118	2.19
Deutsche Bank Capital Markets	117	2.18

**Investment banker**

	# of Deals	Reputation
Prudential-Bache	35	2.17
Bankers Trust International	50	2.08
IBank of Montreal Capital Markets	3	2.00
Bank of Tokyo International	6	2.00
Bayerische Landesbank	3	2.00
Edmond de Rothschild	1	2.00
Scotial McLeod	3	2.00
Takugin Finance International	1	2.00
United World Chinese Commercial Bank	1	2.00
Goldman Sachs	107	1.99
Norinchukin International	37	1.97
Shearson Lehman Hutton	89	1.97
Banque Paribas Capital Markets	100	1.95
IBJ International	80	1.88
San Paolo Bank	11	1.82
Swiss Bank Corporation	101	1.76
Mitsubishi Trust	25	1.76
BCI	4	1.75
KOP	4	1.75
Daiwa (Europe) Limited	84	1.68
AmroBank	34	1.68
BZW	40	1.68
Mitsubishi Finance	61	1.67
KEB International	3	1.67
Ssangyong Securities	3	1.67
Yamaichi International	59	1.63
Kidder Peabody	32	1.63
SG Warburg	114	1.61
Banco di Napoli	5	1.60
Banco di Roma	5	1.60
Daiwa Bank Capital Management	5	1.60
Mitsui Trust	15	1.60
Yasuda Trust	30	1.60
Taiyo Kobe International	7	1.57
Fuji International	37	1.54
Daewoo Securities	6	1.50
BNP Capital Markets	78	1.49
LTCB International	48	1.48
DKB International	16	1.44
Societe Generale	28	1.39
Sumitomo Trust	22	1.36
Dresdner Bank	39	1.36
Generale Bank	14	1.36

**Investment banker**

	# of Deals	Reputation
BBL	106	1.35
Sumitomo Finance	26	1.35
UBSS	29	1.34
Commerzbank	35	1.34
BGL	6	1.33
Manufacturers Hanover	9	1.33
Nikko Securities	62	1.31
Kleinworst Benson	33	1.27
Girozentrale Vienna	8	1.25
Wood Gundy	4	1.25
KIIC	29	1.21
ABN	30	1.20
Credit Lyonnais	46	1.20
Chase Investment Bank	16	1.19
Bank of Tokyo Capital Markets	42	1.17
Sanwa International	18	1.17
CCF	19	1.16
WestLB	21	1.14
Nat West Capital Markets	36	1.11
BIL	15	1.07
Banca Commerciale Italiana	1	1.00
Banca Nazionale della Comunicazioni	1	1.00
Banco del Gottardo	1	1.00
Banque Indosuez	2	1.00
Banque Internationale a Luxembourg	2	1.00
Baring Brothers	12	1.00
Bayerische Vereinsbank	3	1.00
BNC	2	1.00
Bordier & Company	1	1.00
BSI	1	1.00
Cariplo	1	1.00
CBI	1	1.00
Citibank	4	1.00
Corner Bank	1	1.00
Cosmo Securities	2	1.00
Credit Agricole	1	1.00
Credit Commercial de France	1	1.00
Credito Italiano	1	1.00
Dai - Ichi Europe	1	1.00
Daiwa Securities America Inc.	2	1.00
Dong Suh Securities	2	1.00
Euromobiliare	2	1.00
Gilbert Elliot	1	1.00

**Investment banker**

	# of Deals	Reputation
Hessische Landesbank	1	1.00
HypoSwiss	1	1.00
Istituto San Paolo di Torino	1	1.00
Julius Baer International	1	1.00
Kankaku	1	1.00
KFTCIC	7	1.00
Kokusai Securities	5	1.00
Korea Development Bank	1	1.00
Korea Exchange Bank	8	1.00
Kredietbank	3	1.00
Kyowa Finance	3	1.00
Leu Securities	1	1.00
Mitsui Bank Luxembourg	1	1.00
Monte dei Paschi	2	1.00
Nagrafin	1	1.00
National Securities	1	1.00
New Japan Securities	5	1.00
Nippon Credit Bank	10	1.00
Nippon Kangyo Kakumaru	1	1.00
NKK	9	1.00
Osterreichische Landerbank	1	1.00
Pasfin	3	1.00
Pictet	1	1.00
Postipankki	2	1.00
Raiffeisen Central Bank	1	1.00
RBC Dominion Securities	1	1.00
Sanyo International	3	1.00
Sanyo Securities	1	1.00
Saudi International	1	1.00
Shizuoka Finance Hong Kong	1	1.00
Soogen	1	1.00
Sparekassen	1	1.00
Svenska Handelsbanken	2	1.00
Taiheiyo	1	1.00
Toyo Trust	6	1.00
Union Bank of Finland	1	1.00
Universal	1	1.00
Wako Securities	3	1.00
Yamatane Securities	2	1.00
Creditanstalt - Bankverein	7	0.86
OLB	6	0.83
GZB	4	0.75
Swiss Cantobank	4	0.75

### Investment banker

	# of Deals	Reputation
Swiss Volksbank	7	0.71
Den Danske Bank	3	0.67
RZB	3	0.67
CNCA	2	0.50
Copenhagen Handelsbank	2	0.50
DG Bank	2	0.50
Privatbanken	2	0.50
Bank Cantrade	1	0.00
Handelsbank Natwest	1	0.00
Rabobank	1	0.00

**Appendix #2: Lead Manager Reputation: Investment Banker  
Position in the Hierarchy of the Industry  
Methodology**

Investment banker	Industry Position	Reputation
Nomura Securities	Top 3	4.0
CSFB	Top 3	4.0
Deutsche Bank	Top 3	4.0
Daiwa Securities	Top 3	4.0
Yamaichi Securities	Top 3	4.0
Salomon Brothers	Top 5	3.0
Nikko Securities	Top 5	3.0
J.P. Morgan	Top 10	2.0
Merrill Lynch	Top 10	2.0
Goldman Sachs	Top 10	2.0
Banque Paribas	Top 10	2.0
Morgan Stanley	Top 10	2.0
UBS	Top 25	1.0
Credit Commercial de France	Top 25	1.0
Industrial Bank of Japan	Top 25	1.0
S.G. Warburg	Top 25	1.0
Banco Di Roma	Top 25	1.0
Bankers Trust	Top 25	1.0
Credit Lyonnais	Top 25	1.0
Mitsubishi	Top 25	1.0
Swiss Bank Corp.	Top 25	1.0
Hanbros Bank	Top 25	1.0
Baring Brothers	Top 25	1.0
Instituto San Paolo Di Torino	Top 25	1.0
Commerzbank	Top 25	1.0
LTCB	Top 25	1.0
Samuel Montague	Top 25	1.0
Abn Amro	Top 25	1.0
Dresdner Bank	Top 25	1.0
Westlb	Top 25	1.0
Barclays Bank	Top 25	1.0

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