Stadium Financing
A Case Study of the Stade de France

by

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Abstract

Both finance and construction of major projects have dramatically evolved in the past ten years. Technological breakthrough such as computer orientated design, new cements, new machines have led to a more efficient production process. In the mean time, project financing has been greatly advanced and new techniques have appeared. Large and complex projects have started to be partially funded by the private sector as a result of the will to cut public spending. Indeed, States and governments realized that the returns should be taken more seriously in publicly supported infrastructure projects. To make many projects bankable, new mixes of public-private partnership with new financing schemes have been developed. Financial engineers have developed new securities, backed by the future stream of cash flows generated by the project income. Those securities, enhanced by risk-specialized agencies, will maybe constitute a major innovation and will allow financial engineers to access a new set of investors: small bondholders. This thesis is focused on one such scheme: the financing of the Stade de France.

Thesis Supervisor: Fred Moavenzadeh
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Table of content

1 INTRODUCTION .............................................................................................................. 9

2 THE SPORT INDUSTRY ................................................................................................. 12

2.1 PROBLEMATIC OF STADIUMS CONSTRUCTION ...................................................... 12

2.1.1 Landscape and sport ......................................................................................... 12

2.1.2 Sports and politics ........................................................................................ 14

2.1.3 Sports and economic development .................................................................. 15

2.2 PRESENTATION OF THE STADE DE FRANCE ....................................................... 17

2.2.1 Introduction ..................................................................................................... 17

2.2.2 location ........................................................................................................... 17

2.2.3 Design ............................................................................................................. 18

2.2.4 conclusion ...................................................................................................... 20

3 PROJECT FINANCING .................................................................................................. 21

3.1 INTRODUCTION ..................................................................................................... 21

3.2 ADVANTAGES & DISADVANTAGES OF PROJECT FINANCING ......................... 21

3.3 PUBLIC - PRIVATE PROJECT FINANCING ................................................................ 22

3.3.1 Different models for public-private partnerships ............................................. 23

3.3.1.1 Perpetual Franchise Model (PFM) .............................................................. 23

3.3.1.2 Build-Transfer-Operate (BTO) model ..................................................... 24

3.3.1.3 Build Operate Transfer (BOT) Model ....................................................... 24

3.4 EVOLUTION OF PROJECT FINANCING ................................................................ 25

3.5 RISK ASSESSMENT .................................................................................................. 26

3.5.1 Financial risks .................................................................................................. 27

3.5.2 Liquidity Risks ................................................................................................ 28

3.5.3 Political Risks .................................................................................................. 29

3.5.4 Operational Risk ............................................................................................. 31

3.6 PRIVATE DEBT FINANCING ..................................................................................... 32
3.6.1.1 Commercial papers ......................................................... 32
3.6.1.2 The Term Loan ............................................................ 33
3.6.1.3 The Bridge Loan .......................................................... 33

3.7 PUBLIC DEBT FINANCING .................................................. 34

3.7.1 Bond markets in Europe .................................................. 34
3.7.2 The Euromarket ............................................................. 35
3.7.3 Trust in Jersey ............................................................... 36
  3.7.3.1 Definition of a trust ...................................................... 37
  3.7.3.2 Discretionary powers .................................................. 37
  3.7.3.3 Income accumulation ................................................ 38
  3.7.3.4 Double taxation agreement ......................................... 38
  3.7.3.5 Confidentiality ......................................................... 39

3.8 FUNCTIONING OF THE RATING AGENCIES ......................... 39

3.8.1 What is a credit rating? .................................................. 39
3.8.2 Ratings ................................................................. 39
3.8.3 Credit Loss Experience by Rating ................................... 41
3.8.4 What Ratings Measure .................................................. 42
3.8.5 What Ratings Do Not Measure ....................................... 42
3.8.6 Differences from the US and France ................................ 42

3.9 CREDIT ENHANCEMENT .................................................... 43

3.9.1 Traditional collateralized bonds ...................................... 44
3.9.2 Credit downgrade triggers .............................................. 44
3.9.3 Netting agreements ...................................................... 44
3.9.4 Third party guarantees or financial guarantee insurance .. 44

3.10 SWAPS ........................................................................ 45

3.10.1 definitions .................................................................. 45
3.10.2 Interest rate swap ....................................................... 46
3.10.3 currency swap ........................................................... 46
Table of contents

3.10.4 structural swap ................................................................. 46
3.10.5 Pricing Interest Rate Swaps .................................................. 47
3.10.6 Fixed Rate Debt and Embedded Options ............................... 49
3.10.7 Reversing or Terminating Interest Rate Swaps ....................... 49
3.10.8 Credit Risk Implicit in Interest Rate Swaps ............................ 50
3.10.9 Users and Uses of Interest Rate Swaps ................................. 51
3.10.10 Example of the use of swaps for Liability Management .......... 51
3.11 CONSEQUENCE ON THE HURDLE RATE OF THE PROJECT ........ 52

4 EXPLANATION OF THE MONTAGE .............................................. 54

4.1 PROBLEMATIC OF THE FINANCING .......................................... 54
4.1.1 Problematic for the construction companies .......................... 54
4.1.2 Problematic for the Consortium .......................................... 58
4.1.3 Consequences ................................................................. 60

4.2 FINANCIAL ENGINEERING ...................................................... 61
4.2.1 Introduction ........................................................................ 61
4.2.2 Rules 144A ....................................................................... 61
4.2.3 "Cession de la loi Dailly" ..................................................... 62
4.2.4 Conclusion ......................................................................... 63

4.3 SECURITIZATION OF THE DEBT ............................................ 63
4.3.1 Description of the security.................................................... 63
4.3.2 Main characteristics of securitization ................................... 64
4.3.2.1 Advantage of liquidity .................................................. 64
4.3.2.2 Balance sheets management ........................................ 65
4.3.2.3 Credit enhancement ..................................................... 66

4.4 CONCLUSION ......................................................................... 67

5 THE PARTICIPANTS IN THE REFINANCING .................................. 69

5.1 INTRODUCTION ....................................................................... 69
Table of content

THE CONSORTIUM .................................................................................................................. 70

5.2.1 Bouygues .................................................................................................................. 70

5.2.2 Vivendi (ex- Companie Generale des Eaux) ............................................................... 71

5.2.3 Suez Lyonnaise des Eaux .......................................................................................... 71

5.2.4 The Consortium Stade de France ............................................................................... 72

5.3 THE BANKER .............................................................................................................. 73

5.4 THE BOND ISSUE ....................................................................................................... 74

5.4.1 Stade Finance .......................................................................................................... 74

5.5 THE INSURERS ............................................................................................................ 76

5.5.1 Financial Guaranty Insurance Company (FGIC) .................................................... 76

5.5.1.1 Description of the company ............................................................................... 76

5.5.1.2 Description of its business ................................................................................. 76

5.5.2 LURECO – ERC ...................................................................................................... 77

5.5.2.1 Description of the company ............................................................................... 77

5.5.2.2 Description of its business ................................................................................. 77

5.6 CONCLUSION .............................................................................................................. 78

6 THE ROLE OF THE PARTICIPANTS IN THE REFINANCING .................................... 79

6.1 THE FRENCH STATE .................................................................................................. 79

6.1.1 Concession fees ...................................................................................................... 80

6.1.2 Financial and term provisions ................................................................................ 81

6.2 CSFB .......................................................................................................................... 83

6.2.1 Role of CSFB in the montage ................................................................................ 83

6.2.2 Limitation of decision power ................................................................................ 84

6.2.3 The swap agreement of Stade de France ............................................................... 85

6.2.4 The Guaranteed revolving liquidity agreement ................................................... 85

6.2.4.1 Definitions ......................................................................................................... 85

6.2.4.2 Application on the project ................................................................................ 86

6.3 STADE FINANCE ...................................................................................................... 86
1 INTRODUCTION

Financial engineering is the practical application of mathematical or scientific principles to solve problems or design useful financial products and services. As the civil engineer use his understanding of material sciences, structure or geotechnique to design stadiums, financial engineer's knowledge is financial economics, or the application of economic principles to the dynamics of securities market, especially for the purpose of structuring, pricing and managing the risks of financial contracts.

When designing a stadium, the civil engineer works with in physical and budgetary constraints: Will the stadium support 80,000 spectators at once? Will it withstand extreme lateral forces of wind? Will it survive a once—a-century earthquake?

In designing a security or a risk-management strategy, the financial engineer also works within physical and budgetary constraints: Will the financial structure deliver the desired result if the market moves suddenly? How will it withstand a financial disaster, such as a counterpart's default? How will it perform under current and future tax and accounting rules? How much will it cost?

These varied constraints lead to different solutions. Just as civil engineers can design various kind of stadiums, so financial engineers can design different kinds of financial instruments or strategies to produce a payoff. Therefore both civil engineers and financial engineers play key roles in building, managing and financing projects.

The 5 May 1992, the collapse of a stadium stand in Furiani, Corsica, has led to a highly publicized and volatile trial in Bastia, France. Prosecutor Roland Mahy has asked for
two-year prison terms for the two key defendants, the stand's builder and safety inspector. This is the maximum sentence for manslaughter under France's criminal code. Thirteen other construction, administrative and soccer officials have also been on trial for their responsibility for what is considered to be Corsica's worst disaster. Seventeen people were killed, and 2,300 spectators were injured while attending a French Cup semifinal. That is equivalent to more than one percent of the Mediterranean Island's populations that were killed, crippled or hurt in the disaster.

From day one in May 1995 when building work started on the Stade de France, the site, due for completion in November 1997 has had to deal with this disastrous background. Therefore, not only were the contractors facing a challenging and complex construction, but they had also to manage and to put in place very strict security and quality control procedures. As a result, the Stade de France is for the moment, the more technical and the biggest stadium ever built in Europe.

However, after having host the Soccer World Cup and prove that France was able to build a stadium that could host such an event, there was one last challenge to success: the financing.

Indeed, even though the project was a public-private partnership and therefore contracts have been designed to involve both a public subsidy and private debt, the characteristics of the risks inherent to the project changed during the construction phase. This change transferred a great part of the risks on the bondholders, without improving their rate of return. Therefore, they asked for the financial agreement to be reviewed.
My thesis is about this review and the main problems inherent to stadium financing. To do so, I have tried to understand the project from a financial viewpoint and I have described and analyzed its main characteristics.

My thesis does not cover the challenges of the construction process and the very high quality of the work done but I want to underline in introduction that the result is very impressive.

To understand the project, I have described in Chapter 2 the problematic of the sport industry. Indeed, Stadiums involve in most of the case public-private partnerships. The involvement of the State is a very sensitive aspect of the creation of new stadium. Indeed, because of their up-front costs, subsidies play often a key role. And where public money is involved, political reasons are involved and unfortunately, economical reasoning is not always a key issue.

Chapter 3 & 4 are related to financial engineering and propose a first scheme of the project refinancing. Those parts are more theoretical in the sense that they are the theoretical explanation of the refinancing. ‘Why’ and ‘how’ are the two main questions that I have tried to answer.

Chapter 5 & 6 are more practical and describe the entities and their roles in the refinancing.

Finally, Chapter 7 is the conclusion and I have tried to open the subject on what I will call “fuzzy financing”.
2 THE SPORT INDUSTRY

2.1 problematic of stadiums construction

It is very interesting to try to understand the fundamental reasons why government and politics want to develop sports complexes. In the case of the Stade de France, the underlying reasons are quite obvious in the sense that France was hosting the World Cup and therefore needed a Stadium, which could hold more than 75,000 people. This requirement was indeed a part of the contract each country signed with the World Cup organization before participating in the selection process. But in the majority of the cases, the reasons are less clear and political decisions seem to take preferences over economics reasons.

The Stade de France, by its size, is only comparable to giant American stadiums. Therefore I will emphasize, through the history of those American Stadiums, how sports and politics are related and I will try to show that stadiums are finally just the “physical” result of this relationship. Finally, I will describe the characteristics of the Stade de France

2.1.1 Landscape and sport

Considerable controversy surrounded events near the Quebec community of Kanehaasatak in the summer of 1990 when local members of the Mohawk nation discovered that, as part of a golf course development, plans were afoot to destroy a
century old pine wood, planted by their mothers and fathers, containing a cemetery and regarded by them as ceremonial land. So concerned were the indigenous Americans that they took arms to prevent the appropriation of their space. On July 11, Quebec police opened fire on the protesters and the Canadian army was dispatched in all the Mohawk communities until September 26. Land colonization by sports led local people to confront those developers over potential landscape changes, which would have affected their quality of life.

On the same level, emotions ran high four years ago when, in the London borough of Greenwich, local football fans learned that their club was to leave its historic home ground. At about the same time, residents of the Bristol suburb of Kingswood became alarmed, not about losing a football stadium but by the prospect of having one constructed in their neighborhood. They formed an action group and contacted the local Members of Parliament, feeling as they did that the stadium would negatively affect the quality of their lives but also lower the prices of their property. Such responses to the promise, or threat, of sports landscape, as neighbors, are common throughout the modern world.

These examples show that in various ways, sports landscapes do matter. Sport is a persuasive cultural form, which is not only obvious in the vernacular landscape but also of importance economically and in terms of planning and land use changes. Sports landscapes of various kinds are also regularly communicated to us on television. They range from a few square meters (squash course) to many square kilometers (a golf course) in area; they may be urban or rural and they can be almost natural or totally artificial. Such landscapes have a profound effect on people’s emotions and as a result
they will contribute to the quality of our life, good landscapes improving it, bad landscapes reducing it.

2.1.2 Sports and politics

The importance of sports for the public sector and as something governments should support is repeatedly underscored by the use of sports in politics. We have all seen the TV images of Adolf Hitler's use of the 1936 Olympics to illustrate the virtues, values, and triumph of Nazi society. When groups in the 1960's wanted to highlight the contribution of the African Americans, they recalled the triumph of Jesse Owens over the athletes of the Third Reich and Hitler's inability to graciously acknowledge Owen's accomplishments. Of course one does not have to return to the 1930s to see examples of the use of sports for political messages and efforts.

In 1980, President Jimmy Carter used the Olympics to protest the Soviet Union's invasion of Afghanistan when he refused to send the US team to the Moscow games. The Soviet Union, of course, responded by not participating in the 1984 Olympic Games in Atlanta.

Beyond the international politics associated with sports, domestic, intra-regional and local officials also use sports as the vehicle to deliver their message. The media's attention to sports has encouraged many cities to reshape or establish their images and reputations through sports. Indianapolis is very often quoted as the city that used its reputation as the "amateur sports capital" to undo a negative stereotypes as a sleepy city that came to life one day a year. Buffalo, New York and right now Boston's resurgence involved the building of new facilities for its football and major or minor
leagues baseball. Cleveland attempted to overhaul its image and develop its downtown with more than $400,000,000 in sports related construction. Saint Louis and Saint Petersburg both built domed stadium in the effort to attract sports teams to their cities. In the same time, many college presidents and officials believe that the only way to become a "real university" is to have a sports program to attract the attention of students and maintain alumni. (Is MIT "a real university"? ...) The mythology of the importance of sports is pervasive in the halls of the academia.

2.1.3 Sports and economic development

Despite a persistent push to cut federal costs by eliminating social and economic programs, there is at least one industry where federal subsidies are alive and well -- professional sports. A new report published by the Library of Congress says that American federal, state and local subsidies to help build sports stadium and arenas are growing -- and growing fast.

The annual public subsidy for 21 sports stadiums around the US was $150 million in 1989. This sum was for stadiums and arenas that cost about $50 million to build, and federal subsidies amounted to 17 percent. Since then, although total figures are not available, federal subsidies have quadrupled to more than 65 percent of total subsidies for stadiums that had a construction tab of $200 million or more. "It's hard to justify federal subsidies and stadium financing any way you look at it," says Jeff Humphreys, director of economic forecasting at the University of Georgia. Cities and counties backing stadium financing have long argued that the economic benefits justify the subsidies. However, another study conducted by Robert Baade, a professor at Lake Forest College in Illinois, shows otherwise.
Baade's study found 27 of the 30 metropolitan areas that had built new stadiums or arenas, had little or no discernible change in per capita growth. The three remaining areas (St. Louis, San Francisco/Oakland and Washington, D.C.) actually had a negative impact in per capita growth.

As for job growth projections, most of those numbers are inflated, according to the study. For example, it concluded that the economic benefits to have a football stadium in Baltimore was overstated by 236 percent because the reduced spending on other activities, to enable people to go watch ballgames, was not netted against stadium spending. "The business of sports financing has changed," Baade says. "Today, in order to make a deal look feasible, communities are asking for more up-front money from team owners but they are willing to cut generous lease arrangements."

Ironically, it was the 1986 federal tax law change that pushed governments into a larger financial role in professional sports stadium financing by restricting private financial participation in these projects. The 1986 Tax Reform Act eliminated stadiums from the list of private activities eligible for tax-exempt financing, but financing for governmental stadiums was specifically not eliminated, incorrectly as some have claimed.

That's typically where the problem lies. A professional sports team is being subsidized by taxpayers when the team's lease or rental payments for use of the facility do not cover the operating and construction costs. A federal subsidy occurs when a portion of the stadium financing is backed by state-local bonds whose interest income is exempt from federal taxes. Typically, these exemptions cause the interest rate to be lower than the rate on taxable bonds of equivalent risk. In the past decade, the majority of construction of stadiums and arenas were financed through tax-exempt bonds.
2.2 Presentation of the Stade de France

2.2.1 Introduction

The Stade de France is France’s most prestigious sports facility. It was originally built for the 1998 Soccer World Cup, and met any of the high expectations it had fostered. It is, of this day, the biggest multi-function Olympic-sized stadium in the world. Its construction started in May 1995 and was completed in November 1997, and from then on, it has been dazzling all visitors. The Stade de France, conceived by the Bouygues, GTM Entrepose and SGE Groups, and designed by the architects Macary, Zublena, Regembal and Costantini has many assets to boast of.

2.2.2 Location

The stadium is located ten kilometers north of Paris, and offers convenient access to all of the total 105,000 spectators it can seat. It was inaugurated on January 28th, 1998; a soccer game between the national teams of Spain and France was held on that day. Yet, due to its variable capacity, its unparalleled comfort, and the exceptional quality of its installations, the Stade de France can host a variety of events ranging from soccer and rugby matches to shows on a grand scale, as well as athletics competitions. The ability to vary its capacity is one of the Stade de France’s chief assets. The circle of mobile stands closest to the sports area, and which contain 25,000 seats, is an amazing technical achievement, for never before has flexibility on this scale been attempted. The stands, when set in a configuration 15 meters back from the running tracks and the jumping pits, provides 21,000 seats, giving spectators maximum visibility. The middle stand has a capacity of 30,000, and the upper stand 25,000. In addition, the stadium
ground itself can accommodate 25,000, bringing the maximum capacity for large-scale shows to 105,000.

2.2.3 Design

Everything has been designed with the comfort of each spectator in mind: the public has easy access to covered seats thanks to a special compartmentalized system in the stands, which leads directly to the esplanade. The elliptical form of the stands was chosen to enable the best possible view of the games area, while their actual design, "hugging" the curve of the race track, has long been recognized as the most effective for an Olympic stadium. The comfort of the sportsmen and women was also a prime concern for the architects, as well as those for the media, who will find in the Stade de France the best possible working conditions. The Excellency of the working-conditions provided, has been put to test during the world cup and several gigantic shows that have already been held in this facility. And the Stade de France has met with absolutely every possible requirement.

Even though the specific needs of the media were provided for the architects' main concern was the public's demand for comfort and visibility. The 80,000-seat arena was designed to provide perfect visibility. Its elliptical form that creates converging sightlines provides the best possible atmosphere of conviviality for each event. Because it follows the curves of the athletics track, the ellipse is universally recognized to be the most appropriate shape for an Olympic stadium, which the Stade de France will surely be someday.
The architects wanted to create a spectacular project, with an impression of clarity and strength without aggression. Above all, space integrated into its urban setting transparent, fluid, whose architecture is marked by the verticality of a facade and the perfect horizontally of a glowing disk suspended above the arena. A structure in which the theme of movement is suggested by the sinuous lines of the crown of bleachers, and the ethereal impression of the roof's ring floating above the city symbolizes the limitless universality of sport.

As for the stadium's roofing, with a total surface of more than 6 hectares and weighing as much as the Eiffel Tower, it is an extraordinary engineering feat. Suspended 30 meters above the ground by 18 steel needles, the shimmering disk houses all the lighting and acoustical functions. Its interior edge of glass works as a gigantic filter for natural light. Its white underside can be used as the backdrop for all kinds of special lighting effects. The architects' first concern was how to illuminate the under side of the roof, Luminosity as a building material: Creating lighting is both scientific and empirical, an architectural act, concerning something immaterial. With the image they wanted to impose that of a giant, luminous disk floating above its urban setting, foremost in our minds, our first concern was how to illuminate the under-side of the roof, and by reverberation the ground, without the light sources being visible. One risk they ran was that by creating an overly white light they would «crush» the space. They needed a pleasant lighting that would enhance the lighted faces, with just the right amount of warmth. And there should be a crescendo of intensity culminating in the center the arena. In the interior of the stadium the technical lighting must be perfect for both the players and the spectators, while also meeting the stringent requirements of television retransmission. The Stade de France is a multifunction
stadium; it must have lighting that covers the playing field during football and rugby matches and the track during athletic events, and has the capacity to meet the needs of rock concerts and any other entertainment that calls for stadium capacity.

2.2.4 conclusion

The Stade de France is the biggest mobile, transformable stadium in the world. The lowest grandstand, with a capacity of 25,000 seats can be pulled back 15 meters (rolling on a cushion of air, and steel and Teflon rollers). Thanks to this system, the audience is always the closest possible to a particular event with the best conditions of visibility. The French have just begun to explore the many uses to which the Stadium can be put. But there is no doubt that, what with its remarkable conception and many innovations, the Stade de France will serve as a model for architects, for many years to come.
3 PROJECT FINANCING

3.1 Introduction

Due to recent change in the world economic environment, project financing has become one of the crucial issues for people engaged in the construction industry. Specifically, as the number of international projects has increased, construction project have become more complex in their technology, greater in their size and more expensive in their associated costs. It has become difficult to generate funds for the construction of those projects; this includes both the ability in generating their own equity and the capability of arranging external financing sources.

3.2 Advantages & Disadvantages of project financing

The term "project finance" is generally used to refer to a non-recourse or limited recourse financing structure in which debt, equity, and credit enhancement are combined for the construction and operation, or the refinancing, of a particular facility in a capital-intensive industry. Lenders base credit appraisals on the projected revenues from the operation of the facility, rather than the general assets or the credit of the sponsor of the facility, and rely on the assets of the facility, including any revenue-producing contracts and other cash flow generated by the facility, as collateral for the debt.

When dealing with project financing, several points really matters. Firstly, project financing increase value by reducing agency costs (Corporations do not finance projects only with their own debt but they attract capital investors) and by increasing the value of
the tax shields. Because more projects are financed, more debt are issued, and therefore more interest tax shields are created. Both factors enhance shareholders value.

Secondly, project financing can be beneficial because direct ownership of assets places investors in control when the time comes to make reinvestment decisions. Giving investors control resolves potential conflicts of interest that can arise when management has discretion over reinvestment. With project financing, funding for the new project is negotiated with outside investors. As the project evolves, the capital is returned to the investors, who decide themselves where to reinvest it.

Thirdly, Chen, Kensiger and Martin (1989) point out that the corporate managers choose project financing for projects that entail low informational asymmetry costs (so-called transparent projects, or projects for which their financial studies do not reveal the financial situation of the company). By doing so, they preserve their flexibility to use internally generated funds to finance projects that are available to the firm but cannot be fully disclosed to the public without disclosing valuable proprietary information to competitors.

3.3 Public - Private project financing

In recent years, infrastructure needs in Europe and in the US have grown more rapidly than the available State funding. Many countries have passed legislation designed to encourage private-sector participation in the development, financing, operation, and ownership of projects. Because private-sector entities require a financial rate of return
that is commensurate with what they could earn on alternative projects of comparable risks, public-private partnership structures must be designed so as to provide competitive rates of return.

Public-private partnerships are joint ventures in which business and government cooperate, each applying its particular strengths, to develop a project more quickly and more efficiently than the government on its own. (…cf étude de world bank) Public-private partnership arrangements vary from full private ownership to government approval and oversight to public projects in which the private partner serves as a financial contributor to the government-sponsored project.

It is important to appreciate that these public-private partnerships are not unregulated monopolies. They are governed by negotiated agreements that specify public and private responsibilities, impose public regulation of safety, require quality of service, and often restrict user fees. These projects also pay substantial new taxes to local or state treasuries, which would not be the case if they were entirely publicly funded. In addition to these taxes, state and local governments often receive profit-sharing payments through ground leases or through a contractual requirement that excess project profits be paid to the state.

3.3.1 Different models for public-private partnerships

There are extensive forms of public-private partnerships

3.3.1.1 Perpetual Franchise Model (PFM)

This model gives a private entity the ability to finance and operate the project under a perpetual franchise. This entity retain title of the assets and with this model, all the
financial support for project-related borrowing is provided by private entities. The government regulates safety, quality of service, and, possibly users charges or profits. This model is the most flexible and it can accommodate financing in the public securities markets.

3.3.1.2 Build-Transfer-Operate (BTO) model

This model gives a private entity the right to design, finance and build the project. They transfer legal title to the State immediately after completion tests have been succeeded. The private entities then lease the project facility back from the public authority for a fixed term. A long-term lease agreement gives the private entities the right to operate the project facility and to collect revenue for its own account during the term of the lease. At the end of the lease term, the public authority operates the project for itself or hires someone to operate it.

3.3.1.3 Build Operate Transfer (BOT) Model

This model gives a private entity the right to receive a franchise to finance, build and operate the project for a fixed period of time, after which the ownership would revert to the host government. Ownership reversion would be planned to occur only after the private the private-sector entities had received the return of, and a satisfactory return on, the capital they have invested in the project. In return for the ownership reversion, the government might be asked to furnish some credit support.
3.4 Evolution of project financing

One of the logical evolution of the widespread of project financing techniques in the construction world was the attempt from an Owner to shift to a Contractor the financial risks. Thus, lots of projects depending in one way or another to Governments have seen the transfer of their financial burden to private contractors. Therefore not only must the contractor realize the construction phase, but he must also secure and propose a financing way that will allow him to reduce both its overall costs and its overall risks.

Indeed, in providing the planning of the work and the contracts with suppliers, the contractor has a master-piece in the project financing, which is a very good understanding of the timing of the payments and their signification. Therefore, in those latest years, French contractors have developed new financial competencies. Not only do they provide engineering and architectural services but they have also developed new financial services like strategic planning, cash flow forecast, securization of debt, project equity issuance,...

Those very lucrative activities, once the only fields of investment banks, are slowly shifting to either European contractors or American engineering companies.

Nevertheless, this new attitude needs to rethink some steps of the management in construction companies. Indeed, the financial department, once only in charge of corporation finance problems, will suddenly be also responsive for huge amount of secured loans. This will led to an increase in the financial risks that the company will have to bear.
3.5 Risk Assessment

Only 20 percent of the projects that are seriously considered are successfully completed. Some of the causes for this high failure rate are delays in adoption and completion, technical failure, poor management and legislative or regulatory changes. The key to accurate forecasting and successfully project finance then is to identify and manage these risks.

Although little can be done to alter the underlying risk of a project, allocation of the various types of risks to those participants best able to handle them does reduce a project’s overall riskiness. It is expected, therefore, that the operator would comprise a group of reputable companies, which will apportion the investment into separate and distinct “shares” according to each partner’s ability to deal with any particular risk. Finally, by assessing these risks correctly, it will then be possible to account them for in the NPV and IRR analysis through adequate risk-adjusted discount factors.

Risks in stadium financing are real. They are critical in this type of project because of their huge costs, the long time period between the start of capital formation and the start of financial returns, and because of the high uncertainty in the users level of utilization of the project. Of course, talking of risks is only relevant in the case of a Stadium project of which the financing scheme relies partially or fully on expected revenues such as tickets and commercials...In such cases, the risks can be borne by either the public sector, private investors which would have co-financed the project, and the public if bonds have been issued. Having risks shared in the public is somewhat specific to United States, through the use of general obligation and revenue bonds. However, instances of default
have occurred on these bonds, mainly on the revenue bonds (Cf State of New York, Orange County,...) and therefore in order to mitigate the risks taken by the bondholders use of a insurance company has skyrocketed (cf chapter 3). This practice is now well established in the United States, and has just been introduced in France.

As of the case of France, the resort to debt financing has generally led to government guaranteed bonds. This was particularly true for the development of the French motorway construction program. But since 1986, after a couple of problems with those guaranteed bonds, the greater part of public-private partnerships financing has been carried out through specialized institutions and very little through equity financing.

3.5.1 Financial risks

Financial risk analysis has long been seen as a quantitative process in which risks are measured by the use of probabilities. However, since every new project is essentially unique with no previous data on it, decisions taken as to the nature of the risks are highly subjective and the actions that may be carried out to mitigate the effects of these risks are not clear-cut.

Only the board of directors should assess and allocate the financial risk-bearing capacity of a firm, which in turn depends on the risk culture of the firm. The board of directors must clearly state the firm’s risk philosophy, regarding financial risks. Once this is stated in black and white, the firm’s senior management will be able to work out the organization’s risk-bearing capacity and formulate the significant policies relating to the management and control of financial risks. Even a financial-risk-averse firm will often find it-self facing financial risks, which have resulted from core business deals. It may for
example have to take out a floating-interest rate loan to finance a project. Such a loan exposes it to the vagaries of interest rates, which may go up and down during the life of the loan. The firm thus faces interest rate risk, which it decides to hedge. A risk-averse organization will permit no mismatch between the hedge and the transaction to be hedged in terms of interest rate reset dates or termination dates; a finer point of detail that can only come from a clear annunciation of the firm's risk culture. But even if there was no mismatch in interest reset and termination dates, there will still be some inherent risk in the hedge because the loan will probably be hedged by a swap. Because the two instruments are similar but not identical there will be basis risk which arises whenever there are imperfectly-matched offsetting risk positions. Therefore even a risk-averse firm must establish a good risk control system, because financial risks are part and parcel of today's corporate life.

3.5.2 Liquidity Risks

Liquidity risks relate to the repayment of the debt in the scenario of a very high leveraged firm. This is called the under-investment problem. A firm with risky debt outstanding may have an incentive to forego a capital investment project that will increase its total market value. Indeed, reaching a certain level of debt will increase dramatically the cost of debt because of the rising bankruptcy risk. This strategy however do not tend to diminish the shareholders value in refusing positive-net-present-value projects. Indeed, prospective lenders would have demanded a higher rate of return on their risky loans on the behalf of a declining shareholders rate of return (claims of debt-holders are prior to those of shareholders).
Therefore, when establishing limits for various major risk types and products, senior managers must factor in the size, depth and liquidity of a particular contract, because its liquidity affects the ability of the firm to alter its risk profile quickly and at a reasonable cost. Some firms, for example, even have contract limits for every future contracts based on the volume of turnover and outstanding. Senior managers must also develop procedures to identify and monitor the firm's liquidity sources to ensure it can meet the funding demands of its activities. This is achieved by monitoring the differences in maturities between assets and liabilities and by analyzing future funding requirements based on various assumptions.

3.5.3 Political Risks

Defining political risk is hard to do, and analyzing and quantifying is ever harder. Political risks are the probability or the possibility that an event that is unfavorable to the project's interest will be decided at the political level. There is no general agreement or concession on what constitute political risks. However, three distinctions can be made. They are hard political risks, administrative risks and soft political risks.

Hard political risks include event or decisions that result in partial or total loss of the investment. This group of risks includes expropriation, nationalization, confiscation, forcing local shareholders, war,....

Administrative risks on the other hand result in a decrease in profitability, this category encompasses change in regulations, improper legal framework, control of prices, remittances....

Soft political risks effect also profitability and include events as strike, lack of experience, labor riots and sabotage....Included here are legislative or regulatory changes that can
occur during project construction – particularly tax laws and environmental regulations, as well as the possibility that governments will disallow repatriation of funds.

Political risks are an important aspect in the decisions of financial institutions in infrastructure financing or in any international business decision. Thus come the need for analysis and if possible a try to quantify this risk. However, since there is no consensus, the exact definition of political risk added to that the inability to measure or quantify the components of this risks, we can not expect political risk analysis to give us accurate forecast. What political analysis could achieve is reducing the uncertainty surrounding the political and social developments that can affect business transactions.

Some people think that political risk exists only in the emerging markets. This is not so. Political risks exits in the U.S. and Europe. The federal government and the state government in the U.S. have a troubling trend to make changes in law retroactively. Environmental laws are an example. Consider, for example, the Tenaska Power Project in Tacoma, Washington. The Bonneville Power Administration (BPA), an agency of the US government, entered into an agreement to purchase electric output from a new plant. Chase Manhattan Bank lent more than 100 Million to finance the construction. BPA broke the contract because it had lost customers to other independent producers. As of October 1995, the plant was still about half a year from completion. But construction had been halted, and both the sponsors and the Chase Manhattan Bank sued the BPA. This example what may be the beginning of a new trend. Because of falling oil prices during the 1990's, falling production costs have come down. The pending broad deregulation of the utility industry will cause competition to increase. As a result of both
factors, utilities have stepped up pressure on independent power suppliers to cut their electricity charges or cancel new projects.

Deregulation in particular, reflects political risk in a given country because it requires government's approval.

3.5.4 Operational Risk

"Back office" is the needed structure to capture the cash generated by a project and to redistribute it to investors. Operational "back office" risks are risks that deficiencies in information systems or internal controls will result in unexpected losses. It is associated with human error, system failure and inadequate procedures and control. Operational losses can include losses due to personnel unavailability or injury, natural disasters, the failure of external systems such as an exchange, or a failure of internal controls. By their nature, most of these risks are difficult to quantify and therefore handled judge mentally. But senior managers can mitigate operational risks by ensuring that the firm has comprehensive systems for capturing and monitoring risk. There must be effective internal control over the entry of data into the database, transaction numbering, data and time notation and the confirmation and settlement processes. The system must be able to capture all relevant details of a transaction, identify errors and process payments, and move assets quickly and accurately. Further, the possibility of system failure must be tackled with a fully documented and tested contingency plan. Finally, there must be a comprehensive risk-reporting process in place, producing accurate, informative and timely reports.
3.6 Private debt financing

The traditional way of financing a project in France is to take a bank as a partner, which would hold the bond until its total contractual repayment.

3.6.1.1 Commercial papers

During the construction phase, very little commercial papers are used to finance the project, expenditures and generate interests during that period. Commercial paper is a short-term unsecured promissory note that is generally sold by large corporations on a discount basis to institutional investors and to other corporations. It is mainly an American technique and in France, the secondary market for those securities is not enough liquid to generalize their issuance.

There are three major non-interest costs associated with using commercial papers as a source of short term funding:

- Back-up lines of credit
- Fees for commercial banks
- Rating service fees

In most cases, issuers back their paper 100% with lines of credit from commercial banks. Because its average maturity is very short, commercial paper poses the risk that an issuer might not be able to pay off or roll over maturing commercial paper. Consequently, issuers use back-up lines as insurance against periods of financial distress or tight money, when lenders ration money directly rather than raise interest rates. Another cost associated with issuing commercial papers is fees paid to the large
commercial banks that act as issuing and paying agents for the paper issuers and handle all the associated paperwork. At the end of the construction phase those commercial papers will be either paid by the consortium or assemble in a lonely bond, which is here a Term Loan.

3.6.1.2 The Term Loan

The term loan allows the sponsors to draw down on a term loan during the construction period. The amount borrowed typically peaks at completion of the basic facilities. Term loans have an amortized schedule that is related to the anticipated cash flows from the project. The term typically does not exceed 10 years following completion of basic facilities, but longer repayment periods are achievable when project economics are sufficient compelling or the project is very long-lived. If the cash flow from the project is insufficient to fully amortize the term loan during the period, the sponsors must bear all the risks of the refinancing. The specific terms available in the future will depend on the economic and monetary climate then prevailing.

3.6.1.3 The Bridge Loan

A bridge loan covers any gap between the timing of expenditures and the scheduled drawdowns of long-term funds. Bridge loans are supported by firm take-out commitments from long-term lenders or equity investors. The cost of the funds provided by a bridge loan reflect the risk that bridge-loan providers must bear, which in turn reflect the credit standing of the long-term lenders or equity investors who provide the takeout commitments.
3.7 Public debt financing

As it started to be most of the case in the United States, banks have succeeded in transferring the burden that were certain debts into securities sold in a secondary markets. This technique has given the opportunity for banks to have new free cash flows and therefore the ability to invest in new projects. The very first widely transferred debt is of course the mortgages, for which United States has been a pioneer in the 1970's. Now, a wide range of instruments are tradable.

3.7.1 Bond markets in Europe

The bond market in Europe is very different from the American. Firstly, there is not so much liquidity and secondary markets are not as active as the US's. A second clear difference between the US and France is the concentration of the ownership and control of sources of capital. French debt is largely dominated by institutional, not market sources. Indeed, in 1997, 85% of the external capital needed to finance expansion was debt issuance, privately placed with banks. There is therefore, a very little use of commercial paper, a common publicly short-term debt financing in the United States. On top of it, publicly traded corporate bonds makes up only 0.35 percent of outstanding French loans.

A very interesting element comes also from differences in taxation between United States and France. The key interest in the United States to issue a bond, in which the municipality is involved in a way or another, is the tax exemption. Those American tax exemptions bonds are also a major difference in the financing of infrastructure. It gives the American municipalities the opportunity to bypass their shortage of funds by using
private funds available in the markets at low cost. French municipalities do not have this possibility, and can borrow funds on the markets with no particular advantage over other institutions. The exact rates at which the CLF lends money to local governments are confidential. However, we can take this rates to be 0.3 to 0.4 percent higher than the current French Treasury Bonds. This made these rates approximately equal to 6.8 percent in the beginning of 1999, for 20-Year maturity loans. Also in 1999, in the United States, the municipal bond yield average was around 5.45 percent. Beginning 1999, therefore, the spread between the French and American municipal bonds was ranging from 100 to 200 basis points. This difference, along with the fact that tax-deductible bonds are the cheapest way for American local governments to raise money in the markets, explain the higher use of debt financing in the United States in compare to France.

Therefore, issuing a bond security must be wisely done and therefore on the most liquid European market: the Euromarket.

3.7.2 The Euromarket

The origins of the Euromarket can be traced back to 1957. Having acquired US dollars through their exports of raw materials the Russians were reluctant to hold these funds with US banks. Mainly Moscow Narodny Bank did not want to deposit these US $ in the USA. The funds were held with a French bank instead, which had the cable address EUROBANK.

There are a couple of reasons for the rapid development of the Euromarket:
In 1958 the European Payments Union (EPU) was abolished. The following free convertibility of the European currencies enabled European banks to hold US dollars without being forced to transfer them in their national currency.

In 1963 the US government introduced Regulation Q imposing ceilings on the rate of interest the US banks could pay on domestic dollar deposits. As this regulation did not apply to offshore banks many US banks set up subsidiaries abroad. In 1963 the US authorities also introduced the Interest Equalization Tax (IET), raising the costs of borrowing US dollars in the USA for foreigners.

In 1973 - 1974 the Euromarket played an important role in recycling funds from the surpluses of the OPEC countries to the deficitary oil importing countries. The OPEC countries deposited their additional funds on the Euromarket, thus making borrowing for the importing countries possible.

These regulations made European banks more competitive. These banks are generally able to charge lower interest rates for loans and to pay higher rates on deposits. The difference between these two rates is the interest rate spread. This difference usually varies between 1/2 % and 1%.

3.7.3 Trust in Jersey

When you want to issue a bond on the Euromarket, you need to settle a trust that will be in charge of the issuing of the bond and that will take care of all the administrative problems. It is very often located in Jersey for taxation reasons.
3.7.3.1 Definition of a trust

The Concept of a Trust has been established in English Law since Medieval Times. Jersey Trust Law has been enacted since 1984, although Trusts have been created prior to this date, adopting English Law for the Purpose. New areas of the World are opening up all the time to the advantages of using Trusts in an increasing variety of ways. Tax savings are still an important advantage of the Trust Structure but only one of the many. A Trust or Settlement, as it is sometimes called, is constituted by the execution of a Deed by which the Settlor transfers the legal ownership of assets to a Trustee. The Trustee holds these assets for the benefit of the Beneficiaries, who may include the Settlor. In its original form the Trust was used to avoid the earliest forms of taxation. Later a Settlement, or Will Trust, was designed to protect the family fortune from dissipation by the less responsible members of a family. The chief purpose of the modern Trust is more often to protect assets from taxation, currency controls and other forms of sequestration. In order to gain these benefits it is essential to consider any anti-avoidance rules in the Tax Legislation of the Country of residence or domicile of the Settlor and or Beneficiaries. A Trust is of particular value where persons are domiciled elsewhere than the UK as a means of avoiding death duties and gift taxes, both in the UK and abroad. Trusts have withstood the test of time as the most flexible and secure means of International Estate and Asset Protection Planning. It is believed that the Channel Islands are well placed for Trust Business because of their financial sophistication.

3.7.3.2 Discretionary powers

It is customary for the Trust to give the Trustees wide discretionary powers over the administration, investments and distribution of the assets. As an indication, the
Beneficiaries need not be individually named but may be defined in the Trust Deed as a class of person or a family. As the power of the Trustees is discretionary it is essential that they should not only be of the highest integrity but also that they should keep a personal touch.

3.7.3.3 Income accumulation

It is quite usual for the Trust's assets to accumulate income and as Jersey does not seek to tax income on Trusts for non-residents it is possible to accomplish this without the deduction of any taxation. This can be achieved by investing in certain bonds or bank deposits which pay interest without deducting tax at source; income from other types of investments, such as equities and property may be subject to with-holding tax in the Country where the investment is made.

It may be possible to convert income into capital and distribute non-taxable capital payments. However, it must be emphasized that although there may be no liability to Tax in Jersey each Beneficiary is subject to the Tax Laws of his Country of Domicile.

3.7.3.4 Double taxation agreement

Jersey and Guernsey both have Double Taxation Agreements with each other and with the UK; these Agreements are generally of advantage only when tax in the Channel Islands is payable. However, Beneficiaries who are residents of Countries outside the Channel Islands can take advantage of any Agreements made by their own residencies. Thus a Beneficiary of a Jersey Trust receiving income which has been taxed at source abroad can usually gain credit in respect of that tax in his own Country.
3.7.3.5 Confidentiality

A Jersey Trust does not have to be registered with any public authority. Any information given to the Trustee by the Settlor or the Beneficiaries is kept strictly private and confidential.

3.8 Functioning of the rating agencies

As I said, the capital markets will provide an estimation of the riskiness of the project, by comparing its characteristics with similar projects. Since project financing involves in most of the cases, heavily endebtment, the capital market evaluates the risk of a particular project by analyzing its debt through specialized financial institutions: rating agencies.

3.8.1 What is a credit rating?

A rating simply helps investors determine the relative likelihood that they might lose money on a given fixed-income investment. More technically, it is an opinion of the future ability, legal obligation, and willingness of a bond issuer or other obligor to make full and timely payments on principal and interest due to investors.

3.8.2 Ratings

- Aaa  Bonds, which are rated Aaa, are judged to be of the best quality. They carry the smallest degree of investment risk and are generally referred to as "gilt edged." Interest payments are protected by a large or by an exceptionally stable margin and principal is secure. While the various protective elements are likely to
change, such changes as can be visualized are most unlikely to impair the fundamentally strong position of such issues.

- **Aa** Bonds, which are rated Aa, are judged to be of high quality by all standards. Together with the Aaa group they comprise what are generally known as high-grade bonds. They are rated lower than the best bonds because margins of protection may not be as large as in Aaa securities or fluctuation of protective elements may be of greater amplitude or there may be other elements present, which make the long-term risk appear somewhat larger than the Aaa securities.

- **A** Bonds, which are rated A possess many favorable investment attributes and are to be considered as upper-medium-grade obligations. Factors giving security to principal and interest are considered adequate, but elements may be present which suggest a susceptibility to impairment some time in the future.

- **Baa** Bonds, which are rated Baa, are considered as medium-grade obligations (i.e., they are neither highly protected nor poorly secured). Interest payments and principal security appear adequate for the present but certain protective elements may be lacking or may be characteristically unreliable over any great length of time. Such bonds lack outstanding investment characteristics and in fact have speculative characteristics as well.

- **Ba** Bonds, which are rated Ba are judged to have speculative elements; their future cannot be considered as well-assured. Often the protection of interest and principal payments may be very moderate, and thereby not well safeguarded during both good and bad times over the future. Uncertainty of position characterizes bonds in this class.
• B  Bonds, which are rated B, generally lack characteristics of the desirable investment. Assurance of interest and principal payments or of maintenance of other terms of the contract over any long period of time may be small.

• Caa  Bonds, which are rated Caa, are of poor standing. Such issues may be in default or there may be present elements of danger with respect to principal or interest.

• Ca  Bonds, which are rated Ca, represent obligations, which are speculative in a high degree. Such issues are often in default or have other marked shortcomings.

• C  Bonds, which are rated C, are the lowest rated class of bonds, and issues so rated can be regarded as having extremely poor prospects of ever attaining any real investment standing.

3.8.3 Credit Loss Experience by Rating

The meaning of each rating category can also be defined statistically. Rating agencies annual bond default studies track the actual default and credit loss experience by rating category of corporate bond issuers over the last 78 years. The most recent study shows that the average one-year default rate for Aaa-rated bonds during that period is zero. By contrast, 6.8% of bonds rated B defaulted within one year. The studies also report default experience over longer periods from two to up to 20-years. For instance, over ten-year periods, the study shows that only 0.82% of bonds rated Aaa missed payments; the ten-year default rates for bonds rated B is dramatically higher: 43.9%.
3.8.4 What Ratings Measure

It is important to note that rating agencies long-term ratings measure total expected credit loss over the life of the security. In other words, they are an assessment of both (a) the likelihood that the issuer will default (i.e., miss payments) on a security, and (b) the amount of loss after a default occurs. For example, although the expected probability of default is the same for a given issuer (as indicated by the entity’s senior-unsecured rating), the expected post-default recovery for specific bonds may be higher or lower depending on such factors as collateral and the security’s position in the capital structure. Accordingly, ratings on the issuers’ bonds will also be higher or lower depending on the investor protections in each rated security.

3.8.5 What Ratings Do Not Measure

It is important to recognize that rating agencies ratings are intended only to measure risk of credit loss. They are not intended to measure other risks in fixed-income investment, such as market risk (the risk of loss in the market value of a security.) As opinions of long-term credit strength, they are not intended to rise with the business cycle or a company’s latest earnings report. Also, unlike stock ratings, credit ratings are not intended to measure a security’s potential for price appreciation.

3.8.6 Differences from the US and France

As I said, at the crossroads between risk allocation and the cost of a financing scheme are the rating agencies. The practice is on this point very different between France and the United States. Rating agencies analyze the risk of a given bond issue, and grant it with a grade that reflects the risk inherent within the bond. Almost all the local governments’ bond issues are rated in the United States, whereas a handful of them has
been rated in France (in 1994, only ten were rated). Risk analysis in France is actually carried out by the CLF (Credit Local de France), for its own use, and does not refer to specific bond issues but to local governments in general. A grade from 0 to 100 is given to local governments, based on the government's tax and other types of revenue, the flexibility of the governments' budget and other variables such as the population. Unfortunately, this rating is not public. In the United States and in France, it seems anyhow that local government's rating is not a very reliable indicator. The recent history of both countries has shown that a local government could suddenly default without anyone expecting it (Orange County in the United States and the City of Angoulême in France) and reciprocally, that a local government could well survive in spite of the worst ratings and prediction for the future (City of Brides in France, heavily indebted after the Olympic games of 1992).

To overcome the penalty of having a bad rating or no rating at all in the case of French local governments, a technique has been used in the United States, and is arriving in France: credit enhancement.

### 3.9 Credit enhancement

The credit enhancement is a provision that is added to a deal in order to protect parties to the deal from a possible default by another of the parties. Credit enhancements are often incorporated into OTC derivatives, bonds, asset-backed securities and other instruments. Many exchange-traded instruments such as futures and standardized options incorporate margining requirements or position limits, which enhance credit protection.
Chapter 3

There are a lot of forms of collateralized bonds:

3.9.1 Traditional collateralized bonds

One or more parties may agree to post collateral. Collateral levels may be fixed or vary over time, depending on the market value of the deal.

3.9.2 Credit downgrade triggers

In the event that one of the parties’ credit rating is downgraded below a certain level by a specified credit rating service, the deal is restructured or terminated. Such restructuring or termination may be automatic or at the option of the other parties to the deal. Other events, such as mergers or acquisitions, can also serve as triggers.

3.9.3 Netting agreements

The deal may be executed under a master agreement which provides that obligations under the deal may be netted against offsetting obligations from other deals which are executed by the same parties and fall under the same master agreement.

A drawback of credit enhancements is that they can add to the cost of a deal. For example, when an institution posts collateral, it incurs the cost of financing that collateral. A problem with credit downgrade triggers is that they can compound problems for a counterpart, which may experience credit problems. If the triggers do ever kick in, they force a counterpart to restructure a deal—a process, which may drain their cash flow—at precisely the same time that they are experiencing the credit difficulties.

3.9.4 Third party guarantees or financial guarantee insurance

A third party may guarantee the performance of one or more parties to the deal.

44
In the early 1970s, financial guarantee insurance was created as a way for states, local
governments and agencies to enter the municipal bond marketplace with the advantages
of a Triple-A rating and provide municipal bond investors with secure investments.
For issuers, financial guarantee means their debt obligations are awarded the highest
rating, Triple-A, by independent credit rating agencies, enabling them to borrow at a
lower interest rate. For investors, the financial guarantee provides the assurance that if
the issuer of the obligation defaults for any reason, principal and interest payments will
be made without interruption. Risk-sensitive investors looking for a solid foundation for
their investment portfolio make insured securities an integral part of their financial
strategy. Because of the significant benefits financial guarantee insurance provides, the
market for this product has grown steadily the past decade. In 1997, 54 percent of all
new issue municipal bonds were guaranteed. A decade ago, that number was 19
percent. The market for financial guarantees has also broadened from municipal bonds
to encompass a broad range of financing sectors.

3.10 Swaps

One of the major problems in issuing bonds is to collect revenues in order to repay the
coupons. Before issuing it, bankers and issuers need to understand how they will try

3.10.1 definitions

Swaps are transactions based on the fact that two parties, under the right economic
circumstances, could both benefit by exchanging financial arrangements they prefer not
to retain. Swaps are used by corporations, governments and financial institutions to
manage their exposure to fluctuations in interest rates and foreign currency values. This
privately negotiated activity is conducted by institutional entities rather than retail participants.

3.10.2 Interest rate swap
In a typical interest rate swap, one party agrees to exchange its fixed rate of interest with another party who has a variable interest rate. Because one rate is fixed while the other is variable, the direction of payment between the parties may change as the variable rate changes.

3.10.3 Currency swap
The goals in a currency swap are similar to an interest rate swap, except the transaction involves two different currencies. In a currency swap, one party agrees to make periodic payments in one currency, based on either fixed or floating rates, to another party who also makes periodic payments based on either fixed or floating rates in a different currency. The swap enables both parties to either limit the effect of currency changes as they do business in foreign markets, or to obtain lower cost financing in a desired foreign currency.

3.10.4 Structural swap
A structural swap is very similar to a interest rate swap. Indeed, one party agrees to exchange a stream of cash flows against a different stream of cash flows. Normally structural swap are made between a bank and a corporation which forecast generating a stream of cash flows that do not match some repayments of liabilities
3.10.5 Pricing Interest Rate Swaps

An interest rate swap is a contractual agreement entered into between two counterparties under which each agrees to make periodic payment to the other for an agreed period of time based upon a notional amount of principal. The principal amount is notional because there is no need to exchange actual amounts of principal in a single currency transaction: there is no foreign exchange component to be taken account of. Equally, however, a notional amount of principal is required in order to compute the actual cash amounts that will be periodically exchanged.

Under the commonest form of interest rate swap, a series of payments calculated by applying a fixed rate of interest to a notional principal amount is exchanged for a stream of payments similarly calculated but using a floating rate of interest. This is a fixed-for-floating interest rate swap. Alternatively, both series of cashflows to be exchanged could be calculated using floating rates of interest but floating rates that are based upon different underlying indices. Examples might be Libor and commercial paper or Treasury bills and Libor and this form of interest rate swap is known as a basis or money market swap.

If we consider the generic fixed-to-floating interest rate swap, the most obvious difficulty to be overcome in pricing such a swap would seem to be the fact that the future stream of floating rate payments to be made by one counterparty is unknown at the time the swap is being priced. This must be literally true: no one can know with absolute certainty what the 6 month US dollar Libor rate will be in 12 months time or 18 months time. However, if the capital markets do not possess an infallible crystal ball in which the precise trend of future interest rates can be observed, the markets do possess a
considerable body of information about the relationship between interest rates and future periods of time.

In many countries, for example, there is a deep and liquid market in interest bearing securities issued by the government. These securities pay interest on a periodic basis, they are issued with a wide range of maturities, principal is repaid only at maturity and at any given point in time the market values these securities to yield whatever rate of interest is necessary to make the securities trade at their par value.

It is possible, therefore, to plot a graph of the yields of such securities having regard to their varying maturities. This graph is known generally as a yield curve -- i.e.: the relationship between future interest rates and time -- and a graph showing the yield of securities displaying the same characteristics as government securities is known as the par coupon yield curve. The classic example of a par coupon yield curve is the US Treasury yields curve. A different kind of security to a government security or similar interest-bearing note is the zero-coupon bond. The zero-coupon bond does not pay interest at periodic intervals. Instead it is issued at a discount from its par or face value but is redeemed at par, the accumulated discount which is then repaid representing compounded or "rolled-up" interest. A graph of the internal rate of return (IRR) of zero-coupon bonds over a range of maturities is known as the zero-coupon yield curve.

Finally, at any time the market is prepared to quote an investor forward interest rates. If, for example, an investor wishes to place a sum of money on deposit for six months and then reinvest that deposit once it has matured for a further six months, then the market will quote today a rate at which the investor can re-invest his deposit in six months time.
3.10.6 Fixed Rate Debt and Embedded Options

Fixed rate debt typically includes either a prepayment option or, in the case of publicly traded debt, a call provision. In substance this right is no more and no less than a put option on interest rates and a right which becomes more valuable the further interest rates fall. By way of contrast, swap agreements do not contain a prepayment option. The early termination of a swap contract will involve the payment, in some form or other, of the value of the remaining contract period to maturity.

3.10.7 Reversing or Terminating Interest Rate Swaps

At inception the net present value of the aggregate cashflows that comprise an interest rate swap will be zero. As time passes, however, this will cease to be the case, the reason for this being that the shape of the yield curves used to price the swap initially will change over time. Assume, for example, that shortly after an interest rate swap has been completed there is an increase in forward interest rates: the forward yield curve steepens. Since the fixed rate payments due under the swap are, by definition, fixed, this change in the prevailing interest rate environment will affect future floating rate payments only: current market expectations are that the future floating rate payments due under the swap will be higher than those originally expected when the swap was priced. This benefit will accrue to the fixed rate payer under the swap and will represent a cost to the floating rate payer. If the new net cashflows due under the swap are computed and if these are discounted at the appropriate new zero coupon rate for each future period (i.e. reflecting the current zero coupon yield curve and not the original zero coupon yield curve), the positive net present value result reflects how the value of the swap to the fixed rate payer has risen from zero at inception. Correspondingly, it demonstrates how
the value of the swap to the floating rate payer has declined from zero to a negative amount.

3.10.8 Credit Risk Implicit in Interest Rate Swaps

To the extent that any interest rate swap involves mutual obligations to exchange cashflows, a degree of credit risk must be implicit in the swap. Note however, that because a swap is a notional principal contract, no credit risk arises in respect of an amount of principal advanced by a lender to a borrower which would be the case with a loan. Further, because the cashflows to be exchanged under an interest rate swap on each settlement date are typically “netted” (or offset) what is paid or received represents simply the difference between fixed and floating rates of interest. Contrast this again with a loan where what is due is an absolute amount of interest representing either a fixed or a floating rate of interest applied to the outstanding principal balance. The periodic cashflows under a swap will, by definition, be smaller therefore than the periodic cashflows due under a comparable loan.

An interest rate swap is in essence a series of forward contracts on interest rates. In distinction to a forward contract, the periodic exchange of payment flows provided for under an interest rate swap does provide for a partial periodic settlement of the contract but it is important to appreciate that the net present value of the swap does not reduce to zero once a periodic exchange has taken place. This will not be the case because -- as discussed in the context of reversing or terminating interest rate swaps -- the shape of the yield curve used to price the swap initially will change over time giving the swap a positive net present value for either the fixed rate payer or the floating rate payer notwithstanding that a periodic exchange of payments is being made.
3.10.9 Users and Uses of Interest Rate Swaps

Interest rate swaps are used by a wide range of commercial banks, investment banks, non-financial operating companies, insurance companies, mortgage companies, investment vehicles and trusts, government agencies and sovereign states for one or more of the following reasons:

- To obtain lower cost funding
- To hedge interest rate exposure
- To obtain higher yielding investment assets
- To create types of investment asset not otherwise obtainable
- To implement overall asset or liability management strategies
- To take speculative positions in relation to future movements in interest rates.

The advantages of interest rate swaps include the following:

- A floating-to-fixed swap increases the certainty of an issuer's future obligations.
- Swapping from fixed-to-floating rate may save the issuer money if interest rates decline.
- Swapping allows issuers to revise their debt profile to take advantage of current or expected future market conditions.
- Interest rate swaps are a financial tool that potentially can help issuers lower the amount of debt service.

3.10.10 Example of the use of swaps for Liability Management

A company actually issues seven year fixed rate debt which is callable after three years and which carries a coupon of 7%. It enters into a fixed-to-floating interest rate swap for three years only under the terms of which it pays a floating rate of Libor + 185 basis
points and receives a fixed rate of 7%. At the end of three years the company has the flexibility of calling its fixed rate loan -- in which case it will have actually borrowed on a synthetic floating rate basis for three years -- or it can keep its loan obligation outstanding and pay a 7% fixed rate for a further four years.

3.11 Consequence on the hurdle rate of the project

At this point, it is important to make a distinction between (risk-adjusted) discount rate factor and the internal rate of return.

On one hand, discount factor – r – is the expected rate of return offered by investments equivalent in risks to the evaluated project The capital markets establish it. On the other hand, internal rate of return – IRR – in contrast, is the particular corporate discount factor that makes NPV of the project equal to 0. Therefore, it is a profitability measure, which depends solely on the amount of the project cash flows.

If r is less than IRR, then the project is viable since its NPV is positive. This means that investors would realize a higher rate of return out of the project than what other asset or securities of equivalent risk would have otherwise reported. If IRR equal to r, the investor is indifferent as to invest in either the evaluated project or other market securities or assets of equivalent risks. If r is higher than the IRR, the project definitely offers a lower rate of return than what the investor would realize by investing in securities of equivalent risk.
It is then clear that an important component of the financial evaluation of the project is the attribution of discount rate that will reflect the overall riskiness of it. In other words, \( r \) will depend on the particular willingness of each bidder to undertake the risks poised by the venture in exchange of the return they could realize out of it.
4 EXPLANATION OF THE MONTAGE

4.1 Problematic of the financing

The following table explains the financing situation of the Stade de France in July 1998.

<table>
<thead>
<tr>
<th>Type of security</th>
<th>Volume in millions of Francs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity</td>
<td>150</td>
</tr>
<tr>
<td>Bond issuance</td>
<td>800</td>
</tr>
<tr>
<td>Subsidize</td>
<td>1254</td>
</tr>
<tr>
<td>Total</td>
<td>2,204</td>
</tr>
</tbody>
</table>

4.1.1 Problematic for the construction companies

Project financing involves the creation of a new legal entity that will manage, finance and execute a project. The required funds to finance this new entity, generally, come through equity or bonds and, in all cases, the capital is privately held by investors. Indeed, even if those investors wanted to borrow money on the financial markets, they would use their own borrowing capacities and ratings to do so, and afterwards they would transfer those funds in the project. Therefore, there are two kinds of investors: The ones that are cash-rich and who can provide some equity on their own and the ones that are cash-poor and that need to borrow funds form a lending institution (from venture capital, banks, ...). The latest must therefore provide some guarantees from their own assets and use their own borrowing capacity (which are not unlimited) and criteria (corporation ratings, company financial situation, indebtedness...).
Thus, those cash-poor investors would increase their long-term liabilities and thus would be reflected in both their balance sheets and their income statements. In the meantime, this increase in long-term liabilities would diminish their financial performance and as far as shareholders are concerned, would lead to a decrease in the stock of the company.

If we analyze the financial situation of the three French contractors in 1994, we can see that the three companies were under-performing the market. Indeed, a very tough conjuncture, associated with decreasing orders from the French State Department of Construction in 1994, did push financial analysts to publish recommendations to sell the
three stocks. The following table gives a rough example of how the stocks were under-evaluated.

<table>
<thead>
<tr>
<th>Stock Name</th>
<th>Price 01/01/1994</th>
<th>Price 01/01/1999</th>
<th>Stock increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bouygues</td>
<td>112 euros</td>
<td>222 euros</td>
<td>98.2%</td>
</tr>
<tr>
<td>Vivendi</td>
<td>116 euros</td>
<td>224 euros</td>
<td>93.1%</td>
</tr>
<tr>
<td>CGE</td>
<td>101 euros</td>
<td>165 euros</td>
<td>63.3%</td>
</tr>
<tr>
<td>CAC 40</td>
<td>2400 euros</td>
<td>3500 euros</td>
<td>45.2%</td>
</tr>
</tbody>
</table>

Another interesting problem in the construction industry is that the more a stock is under-evaluated, the more it is difficult to accept projects. Indeed, the capital asset pricing model gives us the following result.

\[
Ca = Re \times Qe + Rd \times Qd
\]

With

<table>
<thead>
<tr>
<th>Ca = Cost of capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rd = Return on debt</td>
</tr>
<tr>
<td>Re = return on equity</td>
</tr>
<tr>
<td>Qd = Quantity of debt in the capital structure</td>
</tr>
<tr>
<td>Qe = Quantity of equity in the capital structure</td>
</tr>
</tbody>
</table>

56
Moreover, a basic accounting formula is:

\[
\text{Equity} = \text{Assets} - \text{Liabilities}
\]

Therefore, if the stock of a corporation is under-evaluated, the capital structure model tells us that there will be a slight increase in the percentage of debt in the corporation capital. But if debt is less expensive than equity (I mean return on equity is generally larger than return on debt), it remains true until a certain time. Indeed, when corporations starts to be too leveraged, a risk of bankruptcy appears and the yield on debt starts to increase exponentially.
The three contractors were in this situation in 1994. They were highly leveraged and they were trying as much as possible to avoid carrying new liabilities if possible. Indeed, new liability would cost them a lot of money and it would in the meantime increase their cost of capital.

Moreover, one of the main characteristics of the French construction industry is that the market is very mature and therefore margins are as low as 1 to 2%.

Therefore even a slight increase in the cost of capital of a construction company has dramatic consequences on bidding for new projects. An increase in their long term liabilities increases their cost of capital (return on debt increasing exponentially with the increase of the corporation indebtedness), and therefore contractors have, as a major consequence, to forgo projects whose IRR is inferior to this new hurdle rate. The three construction companies, very aware of this phenomenon, always tried to find new ways to finance their new projects.

4.1.2 Problematic for the Consortium

One of the key aspects of the first financing of the Stade de France (made in 1994) is the understanding that the project needed to be done, whatever it would cost for the French State, in order to host the World Cup. Therefore, the French State, when it decided to grant the project to the Consortium, knew that the project would be subsidized. It also knew that the financial montage was not totally finished in the sense that the Consortium didn’t have the time in their bidding process to negotiate contracts with either the French Football & Rugby Federations or with the advertising agencies.
Nevertheless, the construction process started the 2nd May 1995 with a typical financial package, which was made with part of equity and traditional long-term debt and until the 29th July 1998 the financing was as follow.

<table>
<thead>
<tr>
<th>Type of security</th>
<th>Volume in millions of Francs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consortium Equity</td>
<td>100</td>
</tr>
<tr>
<td>Long Term Debt</td>
<td>850 @ 14%</td>
</tr>
<tr>
<td>Subsidize</td>
<td>1254</td>
</tr>
<tr>
<td>Total</td>
<td>2,204</td>
</tr>
</tbody>
</table>

The construction companies borrowed the money from a French bank and provided guarantees on their own assets. Indeed, Stade de France Company did not have any assets on which the bank could rely on in the case of any default during the construction phase. Even with these guarantees, they gave a quite high yield on the debt (around 14%)

The two major reasons were the highly leveraged situation of the French construction companies and the overall riskiness of the project.

For instance, in June 1995, after having lost the Stade de France design competition, the French architect Mr. Jean Nouvel launched a huge trial in Brussels against the Consortium, arguing that the contract passed between the participants was anticonstitutional under the European Laws. In the meantime, some French newspapers attacked the project, arguing that the choice of the place (St Denis) has been decided with lots of corruption. Indeed, a stadium is a very active economic pole for a region and
its emplacement will economically boost that area. The mayor of St Denis, the Consortium, the Paris mayor and a lot of politicians were under severe criticism at that time. Finally, six months prior to the opening, a newspaper revealed that the Stadium had been constructed on a polluted ground (an ex-gas station). This pollution was a real problem in the sense that the grass turned yellow. The soil had to be treated, but even though the soil was part of the concession and under the State responsibility, it was one more arrow against the Consortium.

4.1.3 Consequences

The Stade de France project financing solution was a major answer to two problems that are explained in the following table.
The first major set of problems were:

- The risks inherent to changes in political decisions either at the French level or at the European level, and
- The operation risks inherent to the management of the Stadium by the Consortium.

The second major set of problems in the financing was the high cost of capital of the French construction companies.

4.2 Financial engineering

4.2.1 Introduction

American financial institutions are seen as the most active institutions for financial innovations. They have, for example, developed a very significant and very liquid mortgage-based securities market. In terms of credit enhancement, they were the first to enhance municipal bonds. Following this tradition of being very active and very creative, CSFB & FGIC, through the financial montage of the Stade de France have pushed a step further the limit of target investors for project financing. Indeed, in the USA, bond issuance is very strictly regulated under the SEC rules and not every investor can be targeted, as it is the case in France, where the rules are less strict.

4.2.2 Rules 144A

In April 1992, the SEC adopted Rule 144A under the Securities Act of 1933. Rule 144A liberalized the restrictions that had existed on trading unregistered debt and equity
securities. Prior to the adoption of Rule 144A, the US securities laws imposed significant restrictions on the resale of unregistered securities. These registrations rendered such securities illiquid, causing private placement buyers to demand an illiquidity premium, that could go up to 500 basis points. As a result of the SEC's adopting Rule 144A, large, sophisticated, qualified financial institutions ("Qualified Institutional Buyers" QIBs) were allowed to trade unregistered debt and equity securities with each other without regard to the private placement restrictions that otherwise applied to unregistered securities. Consequently, debt securities issued under Rule 144A are considered "quasi public" securities because of the absence of these restrictions.

A Rule 144A private placement could be underwritten. The issuer could sell its securities to one or more investment banks but those investment banks could only resell them to QIBs. The principal buyers of rule 144A debt offerings are large life insurance companies. They are receptive to Rule 144A debt offerings that are investment-grade (Moody's Baa3 or better, Standard & Poor's BBB or better) and they made it clear that they would be interested in investing only if the construction phase were finished.

4.2.3 "Cession de la loi Dailly"

In France, organizations like the MONEP rule the securities industry and therefore, SEC rules have no applications there. In 1994, the law Dailly (named in homage of Mr. Dailly) came into force. This law allowed corporations to trade and exchange unregistered debt securities without regard to the investors. Moreover, those liabilities can be converted into registered securities and can be underwritten.
<table>
<thead>
<tr>
<th>Total share capital</th>
<th>£2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liabilities</td>
<td>799,300,000 F</td>
</tr>
</tbody>
</table>

The main implication is that, unlike the rule 144A, corporations or individuals do not need to be QIBs to trade those securities. Therefore, even if Stade Finance has a debt to equity ratio that is non-conventional, if a corporation agrees to buy its liabilities, it is allowed to proceed. Finally, if it is an investment bank (CSFB here) who buys the liabilities, it is allowed to underwrite it and sell them to everybody.

### 4.2.4 Conclusion

In other words, the financial montage could not have been done in the USA for two reasons. Firstly, Stade Finance corporation would not have been allowed to issue a publicly traded security under the Security Act of 1933, because of its capital structure. Secondly, the Rule 144A forbid non registered securities to be traded by non QIDs.

### 4.3 Securitization of the debt

#### 4.3.1 Description of the security

The security is a “5.25% Guaranteed Notes” due 2013, issued the 27th July 1998 on the Paris Stock exchange and the Luxembourg Stock exchange and enhanced by FGIC & ERC-Lureco, two subsidiaries of General Electric.

This security is the first publicly traded long-term liability that has been issued in France for project financing, and it is also the first French corporate security that has been
enhanced. The designed main aim was both to evade liabilities from the construction companies balance sheets and to sell political & financial risks to risks-specialized corporations, in order to obtain an Aaa grade by rating agencies before issuing it.

4.3.2 Main characteristics of securitization

Finally, after having met several French banks (Societe Generale & Credit Lyonnais), the consortium decided to work with CSFB and FGIC in order to transfer the debt to the public market. Indeed, the bank considered that exactly like mortgage-backed securities, this new financial instrument would benefit from its issuance on a secondary market.

4.3.2.1 Advantage of liquidity

Asset-based financing was once considered something of a last resort for cash strapped companies, which pledged hard assets as collateral or sold receivables to factoring companies. But the new ways of transforming financial assets into securities have turned this image on its head. Investment banks have noticed that by packaging and selling loans, receivables and other current assets via pass-through or participation or by using them as collateral to back more conventional securities, they gain access to a more optimal market at the best rates going on.

If we take the example of the mortgage-backed securities, they were at the beginning very exotic but right now because of their negative correlation with stocks, they are in most of the respected portfolios. This securitization process of those mortgages has led to major benefits. Indeed, by increasing in size, the exchange of those mortgage-backed securities has also exponentially increased and has generated a very liquid market. Investors have therefore started to consider those investments as a full-fledged component of the capital market. Finally, to give a rough idea of the benefits of this new
liquidity, the spread between new mortgages and the Ten-Years Treasuries has declined over the last dozen years, from 350 basis points to 175 basis points.

Liquidity is one of the main reasons for transferring the loan from the banks to the market. Since the Stade de France security is the first security that has been issued for project financing, CSFB had to find a security that was very liquid as a support.

The most liquid securities were in 1998 the country bonds, issued on the Euromarket, that were guaranteed by the national bank of the respective country. Therefore, CSFB decided to issue a Guaranteed Note, but even though the French State was a partner in the project, the French National Bank would have never enhanced the security in the sense that they had no reasons to do so. Indeed, the State was subsidizing the project but didn’t want to be involved in the financing, more than needed. During the construction phase, a quite significant negative press campaign had occurred and the government was not really in the mood to add fuel to the flames.

4.3.2.2 Balance sheets management

Securitization gives also another degree of strategic freedom in the management of the assets-liabilities mix because financial officers have now the opportunity to pass through or to keep their loans in their portfolio depending on the specific financing situation and interest rate structure at any particular time.

Therefore the fact that securitization can shrink balance sheets gives CFOs more real control over their assets and even their returns. A few years ago, corporations around
the world wanted to have the biggest balance sheets and corporations were running for size over quality. But times have changed, and the focus has shifted from corporate size to profitability. Companies started to realize that they were measured by return on assets and that additional assets required costly expansion of their capital base if they wanted to keep their debt ratios under control.

Securitization therefore allows corporations to raise funds without incurring the costs of adding to capital

4.3.2.3 Credit enhancement

Nevertheless, since the project was very risky (cf Cha 3.1.2), the security needed to be enhanced. CSFB, using the model of those enhanced country bonds, decided to realize the first corporate enhanced financial security for project financing. CSFB understood the risks and sold them to risks-specialized entities. The relationship between the risk-bearing corporations and the Stade de France are explained in the following chart.
4.4 Conclusion

Working together, CSFB and FGIC achieved a very interesting montage in the sense that they found a new way of financing projects.

In a close future, if project debt can be underwritten and sold on a secondary market, project financing may no longer need the only recourse to venture capital or investment & commercial banks. Indeed, those type of investors, very conservative, make project developers pay an unjustified huge premium for illiquidity in keeping liabilities in house.

This technique would allow project developers to develop two new competencies:
1. Firstly, they will have the opportunity to access a new set of investors: Small bond holders.

2. Secondly, they will access publicly markets as a source of funds for project financing and thus it will allow spread with LIBOR to dramatically diminish.
5 THE PARTICIPANTS IN THE REFINANCING

5.1 Introduction

In 1992, FIFA chose France to be the location for the 1998 World Cup Football Cup on condition, among other things, that the French Government agreed to build a new stadium with a capacity of 80,000 seated and covered places. Whereas the other stadiums are under the responsibility of the departments, the construction of the Stade de France, under the French 'national interest equipment' law, has been placed under the responsibility of the State. Therefore, in 1998, even though the stadium was built, the State of France worked very closely with CSFB, FGIC and the Consortium Stade de France in order to make the financing happened.

This chapter is therefore an attempt to describe the relationship between all the participants and their respective role in the refinancing.
5.2 The Consortium

The consortium is made of the three biggest French construction companies.

5.2.1 Bouygues

Founded by Francis Bouygues in 1952, Bouygues is a diversified industrial group focused on two main business sectors and six major activities:

- Building
- Civil Works
- Roads
- Property Development
- Public Utilities Management
- Media & Telecommunications

Present in 80 countries, the Bouygues group has a total workforce of over 100,000. 1997 turnover amounted to FRF 92 billion (EURO 14.02 billion), of which FRF 32.5 billion
(EURO 4.95 billion) generated abroad. Forecasted turnover for 1998 amounts to FRF 98.4 billion (EURO 15 billion), of which FRF 35 billion (EURO 5.33 billion) abroad.

5.2.2 Vivendi (ex-Compagnie Generale des Eaux)

Compagnie Générale des Eaux was founded in Paris in 1853, and was soon supplying water to Paris, Lyon, Venice and Constantinople. Over the years, Générale des Eaux extended its expertise to other services:

- Waste management
- Transport
- Energy
- Construction & Real Estate
- Communications

Now operating in 90 countries, employing 235,000 people and having a turnover amounted to FRF 200 Billion, the company is taking on a new impetus with a new name full of life and vigor VIVENDI. In utilities, communications and construction and property, VIVENDI offers an entire range of services that contribute to improving daily life.

5.2.3 Suez Lyonnaise des Eaux

The revenues of FRF 120 billion from the group's core businesses (Energy, Water, Waste Services, and Communications) accounted for 59 percent of total revenues, with each on a rising growth path.

- Energy
- Water
- Waste Services
- Communications
Leaders in their various fields, the other business activities Retail Financial Services, Construction, etc.) rose by 9 percent and account for 41 percent of group revenues in 1998.

The Group has a confirmed ambition as an industrial operator, which is to become world leader in private infrastructure services. To achieve this goal, they will rely upon a number of competitive advantages, like the expertise and motivation of the 185,000 people on their team; the values and cultures which come from companies which are over a century old and the mastery of the most-up-to-date techniques.

5.2.4 The Consortium Stade de France

The dictionary of finance Barron’s gives the following definition for a consortium: “A consortium is a group of companies formed to promote a common objective or engage in a project of benefit to all members. The relationship normally entails cooperation and a sharing of resources, even sometimes common ownership.”

The consortium was incorporated on the 28th December 1994 for a period of 40 years and the ownership was shared in 3 equal parts given to Bouygues, Vivendi and Lyonnaise corporations. On April 1995, the consortium entered into the concession treaty with the French State for a duration of thirty years. The aim of the consortium was to build and operate the Stade de France (in fact, GIE Grand Stade & GIE Stade Projet build the Stadium, but for simplicity, I will assume that the consortium was created for both aims: construction & operations because those structures were just screen subsidiaries)
As of 31st December 1997, the share capital of the consortium amounted to FRF150,000,000 divided into 1,500,000 shares issued and fully paid shares of FRF100. Bouygues, GTM and SGE, three leading French construction companies, each own one third of the share capital of the consortium. (GTM is 65.7% controlled by Suez Lyonnaise des Eaux and SGE is 50.7% controlled by Vivendi)

5.3 The banker

Credit Suisse First Boston (CSFB) is a Swiss Bank and is one of the largest banking institutions in the world, with total consolidated assets of approximately SFr 453 Billion at the end of 1998.

As a leading global investment bank, the bank provides a wide range of financial services from locations around the globe to corporate, institutional and public sector clients around the world.

CSFB business unit has five core business:

- The corporate and investment banking division (CIBD)
- The fixed income division
- The equity division
- The Credit Suisse Financial Products (CSFP)
- The private equity division

CIBD serves a broad range of users and suppliers of capital around the world and provides financial advisory services. The fixed income division and the equity division are active in fixed income trading and equity.
CSFP is a global market leader in derivative and risk management products and foreign exchange and derivatives trading.

5.4 The bond issuer

![Diagram: Relationship between the Trustees & Consortium Stade de France]

5.4.1 Stade Finance

Stade Finance is a corporation that has been created to minimize taxes paid to the French government in issuing the bond. It was incorporated in Jersey, Channel Islands on the 8th April 1998. Stade Finance was incorporated under the Companies (Jersey) Law 1991 as a public company of unlimited duration and with limited liability.

The assets of the company are placed under the Trustee. The trustee is Bedell & Christin Trustees (B.C.T.L.), a trust company incorporated in Jersey. Although closely linked with the UK the Channel Islands are not part of the UK nor are they full members.
of the European Community. Instead they are responsible for their own internal affairs and are associate members of the EEC through their relationships with the UK, which in turn manages all of their foreign affairs. Despite their French heritage and their independence from the UK the Islands laws concerning Companies and Trusts are closely related to English Law. Their strong ties of law and custom with the UK are enhanced by a political and economic stability of high order; this has enabled the Islands, with their low taxation, to become International Finance Centers.

Stade Finance main activity was principally to issue the Notes and to verify the execution and the performance of the contractual agreement defined under the Stade de France Contracts.

The financial situation of Stade Finance is typical of a corporation used as a vehicle for project financing and to minimize taxes on the bond issuance:

<table>
<thead>
<tr>
<th>Total share capital</th>
<th>£2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liabilities</td>
<td>799,300,000 F</td>
</tr>
</tbody>
</table>
5.5 The insurers

5.5.1 Financial Guaranty Insurance Company (FGIC)

5.5.1.1 Description of the company

FGIC is the initials of Financial Guaranty Insurance Company. FGIC is a leading mono-line financial guaranty insurance company. FGIC began its financial insurance operations in 1984 and is a wholly owned subsidiary of FGIC corporation, a Delaware corporation, which is an indirect subsidiary of General Electric Capital Corporation. (GE Capital)

5.5.1.2 Description of its business

FGIC is engaged in the business of writing financial guaranty insurance, principally in respect of securities sold to the public or in to private placements. Since 1984, FGIC has been a leading provider of financial guaranty insurance in the U.S. municipal bonds. It also provides financial guaranty insurance for a variety of other obligations, principally asset-backed and mortgage-backed securities.

FGIC considers its role in providing financial guaranty insurance to be credit enhancement, rather than credit support or substitution. FGIC insures obligation that it considers to be of investment grade quality based upon its own underwriting criteria and guidelines.

By enhancing the credit of the underlying insured obligation and, in many cases, improving its marketability, financial guaranty insurance provided by FGIC generally
enables an issuer to reduce its cost of borrowing (after taking in account the premium paid to FGIC) from what it would have been if the obligation had been sold out without such insurance.

As of 1st January 1999, FGIC had written directly or assumed under reinsurance, guaranties of approximately $300 billion. FGIC claims-paying ability is rated Aaa, AAA and AAA by Moody's, S&P and Fitch IBCA, respectively.

5.5.2 LURECO – ERC

5.5.2.1 Description of the company

LURECO is a subsidiary, based in Luxembourg, of ERC Frankona, which is an indirect subsidiary of General Electric Capital Corporation (GE Capital).

ERC is one of the largest global reinsurance companies with net written premiums of $7.9 billion in 1997. With $27.5 billion in assets, ERC holds top financial evaluations from independent rating services: Standard & Poor's AAA, Moody Aaa and A.M. Best A++. ERC is a large part of GE Capital Services, a part of General Electric.

5.5.2.2 Description of its business

As a reinsurance company, ERC helps other insurance companies, large corporations, associations and other groups transfer risk which exceeds their own capacity or appetite.

ERC includes its core business of property/casualty and life reinsurance as well as financial market products, primary insurance through Westport Insurance Corporation, broker market reinsurance through First Excess & Reinsurance Corporation, high
protected industrial risks through HSB Industrial Risk Insurers, and medical malpractice coverage through The Medical Protective Company.

ERC's main aim was to insure the stadium against any financial default of the Consortium during the operation phase.

5.6 Conclusion
Finally, there are three types of participants in the project.

There is the first group, formed with the three construction companies and the Stade de France. Its main aim is to build and operate the Stadium.

The second group is made of Stade finance and CSFB. Its role has been correlated to financial engineering.
6 THE ROLE OF THE PARTICIPANTS IN THE REFINANCING

6.1 The French State

In April 1995, the French State and the Consortium entered into a thirty-year concession agreement (the Concession Agreement) relating to the financing, the design, the construction, the maintenance and the operation of the Stade de France. The Concession undertook the financing, the design, the construction, the maintenance and the operation of Stade de France at its own risk.

The French State in the Concession Treaty undertook to make to the Consortium an investment grant of FRF 1,194,200,000 (value 1994).
6.1.1.1 Concession fees

Pursuant to the Concession Treaty, the Consortium is required to pay the French State annual concession fees equal to both of the following conditions:

1. 70% of the net revenues (after deduction of the overhead) generated by particular sporting events held at the Stade de France after January 2003, and
2. Up to 25% of the net profits (assuming a 10% payment on Consortium shareholders’ equity investment) generated by the Consortium each year.

Secondly, the Consortium is entitled to a financial indemnity in the event that the “reserved” sporting events indicated in the Concession Treaty (at least five major football matches and four major rugby matches) are not held at the Stade de France, unless for a reason attributable to the Consortium. The right to a financial indemnity arises when cancellation of an event is confirmed or when the relevant sporting federation notifies a schedule of reservations that does not include the relevant number of sporting events.

The indemnity is only payable if:

1. The aggregate number of matches of the same category actually played in the Stade de France over the four preceding seasons does not exceed the total number of matches, and
2. The revenue derived from additional matches of other categories is not adequate to compensate for the resulting loss.
Thirdly, the Consortium is also entitled to certain financial indemnities in the event that the financial terms of the agreements entered into with the French Rugby and Football federations, when renewal are less favorable than those anticipated by the Concession, or if such agreement is not renewed.

Fourthly, the Consortium is entitled to certain financial indemnities until a major first division French Football Club is permanently based at Stade de France and such club generates sufficient income for such support not to be necessary, or if a resident football club departs and is not replaced. However, no compensation will be due if the event giving rise to the indemnity resulted from the Consortium’s breach of its obligations.

6.1.1.2 Financial and term provisions

Firstly, the Consortium is entitled to financial indemnities if unforeseeable circumstances outside the Consortium’s control threaten the financial viability of the concession, or if a shortfall in the Consortium’s revenue not due to its wrongful act, results in a net loss. The indemnity will be payable at the expiry of a 12 months observation period, unless the financial hardship has been remedied by then. Payments must in any event be made in time to enable the Consortium to carry on its operations and to make on due date required payments to the lenders of its long-term debt.

Secondly, the French State shall not directly or indirectly, in whole or in part, provide financing for the construction and operation in the Ile de France region of a stadium of thirty five thousand or more seats having the same purpose as Stade de France.
Thirdly, the French State may terminate the concession by prior notice to the
Consortium, if the Consortium commits a serious breach of its obligations. If upon an
early termination, the Consortium has outstanding long-term debt, the lenders thereof
may propose that a third party assume by way of substitution all the rights and
obligations of the Consortium under the Concession Treaty.

Fourthly, if the French State commits a material breach of its obligations under the
Concession Treaty, the Consortium may commence proceedings against the French
State in the administrator court of Paris. In such a case, the administrative court may
declare the Concession Treaty terminated and assess the amount of terminal payment
to be made by the French State to compensate the Consortium for its direct and indirect
loss. In such a case, the Concession Treaty provides that the French State must assume
all its obligations.

Finally, the French State may terminate the Concession Treaty upon three month’s prior
notice to the Consortium if payments made in respect of the financial indemnities
described above reach certain limits. If the French State elects to terminate the
concession, it is obliged to assume all obligations contracted by the Consortium in
connection with the commission, including its long term debt.
6.2 CSFB

6.2.1 Role of CSFB in the montage

CSFB is the bank that presented FGIC to the consortium and it is also the bank that did underwrite the bond. They have used their international network to find and to design a security that was really serving the Stade de France. Nevertheless, even though the bank was at the origin of the meeting between FGIC and Stade de France, FGIC obtained very strong contracting agreements and did clearly delimitate the role of CSFB.
6.2.2 Limitation of decision power

The Rights of CSFB under the Consortium Credit Facility Agreement are limited by the terms of an agreement between the Consortium, the Bank, FGIC and Stade.

Under those agreements, the Bank, firstly, undertook with FGIC not, without its prior agreement, to take certain actions under the Consortium Credit Facility Agreement. CSFB can not grant any waivers or the giving of consents in response to any request from the Consortium, acceleration of the Consortium Term Advance and enforcement of the security.

Secondly, if the Bank no longer has rated debts, or if the Bank fails to perform its obligation under the Quadripartite Agreement or the Declaration of Trust, FGIC may by notice to the Consortium, may require that the project be transferred to another bank chosen by FGIC.

Thirdly, in the same circumstances, FGIC may require the Bank to transfer all its rights and obligations under the Consortium Credit Facility Agreement, and may require that such of the Project accounts are opened with the Bank be transferred to another bank chosen by FGIC.

Fourthly, FGIC may require CSFB to transfer all its rights and obligations under the consortium credit facility agreement and the limited recourse loan agreement to another bank authorized to do banking business in France and satisfying certain other conditions, in particular that it be rated at the level required of the bank and not be placed on credit watch or any equivalent list with negative implications.
6.2.3 The swap agreement of Stade de France

Throughout its subsidiary, Credit Suisse Financial Products (CSFP), CSFB design a swap agreement to capture the stream of cash flows needed for the repayment of the bond. Indeed, Stade Finance had to enter into this swap agreement in order to match the pattern of its anticipated receipts under the limited recourse loan agreement to the profile of its payment obligations under the notes. The obligations of Stade Finance under the swap agreement are limited recourse only. Accordingly, Stade Finance is only entitled to make payments to the swap counterparty to the extent of sums available to it for that purpose under the declaration of trust.

Under this swap agreement, Stade de France is obliged to make 15 annual payments corresponding to the bank annuity payments and the swap counterparty is obliged on the same dates to make payments of the amounts corresponding to interest on the Notes and, on the last payment date, to the principal of the notes.

6.2.4 The Guaranteed revolving liquidity agreement

6.2.4.1 Definitions

The Barron’s dictionary of finance gives the following definition for a revolving credit:

A revolving credit is a contractual agreement between a bank and its customer, usually a company, whereby the bank agrees to make loans up to a specified maximum for a specified period, usually a year or more. As the borrower repays a portion of the loan, an amount equal to the repayment can be borrowed under the term of the agreement. In
addition to interest borne by the Notes, the bank charges a fee for the commitment to hold the funds available.

6.2.4.2 Application on the project

In the case of the financing of the stadium, since Stade Finance must guarantee the payments of the coupons of the bond, it didn’t want to have any liquidity problems for any reasons (law, economics, construction,...). Therefore, they decided to take an option with CSFB London, to have a revolving liquidity facility agreement.

CSFB London granted Stade Finance a revolving liquidity agreement that entitled Stade Finance to draw up to FRF 78,475,000 if Stade Finance does not have the available funds sufficient to meet the payment of interest on the Notes or a payment under the Swap Agreement. The advances under the agreement will bear LIBOR plus 0.55% per annum for successive three month interest periods and are repayable one year after drawing unless previously repaid.

6.3 Stade Finance

6.3.1 The transaction structure of the bond

6.3.1.1 Recapitulative of the description of the bond

The consortium financed the cost of construction of the Stade de France out of its capital of FrF150,000,000, out of the proceeds of investment grants provided by the French Government (approximately FrF1,254,000,000) and out of the proceeds of the loans
made by the Consortium Shareholders pending the availability of long term financing to be raised by the Consortium, as envisaged in the Concession Treaty. The purpose of the issuance of the Notes is, by the arrangements described below, to provide that long term financing to the Consortium.

6.3.1.2 Process of the issuance of the bond

Stade de France made a Limited Recourse Loan to the Bank, immediately on receipt of:

- The proceeds of issue of the Notes
- An up-front payment by the Swap Counterparty of FrF4,316,220

In the mean time, the consortium undertook to use the amount of that loan to repay the principal of, and accrued interest on, the Consortium Shareholders' loans and to pay or make provision for the payment of certain costs and expenses. Any remaining balances of the Consortium Term Advance have to be used to meet ongoing operating expenses of Stade de France.

The consortium will pay interest on and repay the principal of the Consortium Advance by 15 constant annuity payments of FrF78,475,000 (the Consortium Annuity Payments), the first falling due at the end of the month in which the anniversary date of drawing of the Consortium Term Advance falls and the others falling due yearly intervals thereafter.

Interest on each amount deferred under these arrangements is payable by the Consortium at a rate calculated by reference to the PIBOR plus a margin of 0.55% if the deferral is for a period up to 1 year or 2% for a period exceeding 1 year. Under this Limited Recourse Agreement, the Bank is only obliged to make payments of interest or
principal to Stade Finance to the extent that it receives corresponding payments from the Consortium.

The consortium Credit Facility agreement is ruled by the French Law and the limited recourse loan agreement by the English law.

6.4 The insurers

\[\text{Relationship between the Insurers & Consortium Stade de France}\]
6.4.1 FGIC

6.4.1.1 Role in the financing of the French Stadium

As explained earlier, FGIC primary business is insuring municipal bonds, which are issued by governmental units to finance essential public services and sold in the markets to institutional and individual investors. They do not guarantee structured-asset and mortgage-backed transactions, corporate bonds, including investor-owned utility debt, and other financial obligations.

But since they are a part of GE capital group and since GE, via ERC can undertake corporate & financial risks, they decided to accept the proposal of the Stade de France and enhanced the bond in order to get an Aaa grade. While doing it they pass a contract with LURECO, specialized in financial risks to manage them.

As far as the political risk is considered, they insured the Stade de France against:

- European default – if a new trial arrives and the Stade de France could not be subsidized any more.
- French State default – If the French State do not pay something that is in the contract but not at all linked with a bad operations management made by the consortium.
6.4.2 LURECO

6.4.2.1 Role in the financing of the French Stadium
LURECO accepted to undertake the risks linked to the operation management of the stadium. If the State of France do not pay a subsidy because the government thinks that the operations didn't follow the agreement, LURECO will pay the subsidy and will be paid back by the Consortium.

The Consortium has opened an off-shore account in Luxembourg, which is right now flat. If a default occurs, LURECO will charge the Consortium on this account the needed sum to repay the debt service and the Consortium will have one year to repay this sum with very high interest ( >30% / year). (It could be considered like the Bridge loan I talked before.)

6.5 Conclusion

Each participant had a very major role in the refinancing scheme but nevertheless, since FGIC and ERC Lureco were undertaking the risks, they were given much more decision power than CSFB.

Nevertheless, CSFB learned from the project some financial mechanisms that they will apply in every future project whose forecasted stream of cash flows can be transformed into a security. Moreover, the underwriting fees were generous. (Around 2% of the transaction).
7 CONCLUSION

The financial montage of Stade de France sheds light on new project financing structure. Indeed, by proceeding as they did, the consortium did realize a triple objective:

1. It has diminished its project overall risks, therefore diminished its coupons repayment.
2. By issuing the debt on financial markets, it has avoided to have both liabilities and footnotes. Indeed, when proceeding with project financing, corporations, under the GAAP (Generally Accepted Accounting Principles), have to write, as a comment, all the projects liabilities in which they are engaged one way or another.
3. By selling and therefore reducing the risks, they have achieved to increase their forecasted benefits (debt service is less than initially forecasted).

It seems to me that these asset-backed securities or “fuzzy financing”, will catch the eye of the sports industry in the coming years. Indeed, with very strong governmental policies to decrease taxes as much as possible, public spending will be harder to find. Therefore, infrastructure or stadium financing will maybe greatly use the publicly traded bond markets.

For instance, the Foxboro Stadium could create an entity that will borrow from the bond market the needed money to rebuild the stadium. This bond would be backed by future ticket sales, skybox revenues, advertising, even concession and program sales. Institutional investors could buy the bonds, providing cash towards stadium construction.
Investors would then be paid back, usually at a better yield offered by corporate bonds, by the stream of revenue of the team.
8 BIBLIOGRAPHY


9 Appendix

9.1 Appendix A: French Stadiums

- Bordeaux is known for its wine and is one of the most fertile agricultural areas in France. It sits alongside the Garonne River near the Atlantic Ocean and is home to 214,000 people. Parc Lescure was built in 1938 and inaugurated with a World Cup quarterfinal game. It was been renovated and now seats 35,200.

- The city of Lens is at the heart of the Artois District in northern France. With 35,280 residents, it is the smallest city to host the World Cup in 1998. Felix Bollaert Stadium, built in 1932 and renovated in 1997 for the World Cup, seats 41,275 fans. Originally, it held 49,000, but 32,000 of those seats were standing room only.

- Lyon is one of the most important and well-preserved renaissance cities of Europe. It is the capital of the Rhone-Alps region and home to 422,400 residents. Gerland Stadium was built in 1926 and is one of two historic monuments hosting the World Cup this year. With a recently completed renovation, it seats 44,000.

- Marseille is the oldest city in France, founded nearly 2,600 years ago. It is the cultural capital of south France, with 807,000 residents. The Velodrome Stadium was first built in 1937 and seated 42,000. It has been given a complete facelift in preparation for the World Cup and now seats 60,000.

- Located on the shores of the Mediterranean, Montpellier is a university town. Of its 210,000 residents, 65,000 of them are students at one of three schools. For the World Cup, the city upgraded La Mosson Stadium to seat 35,500, with new lighting and a new sound system. The 10-year-old stadium has consistently been updated since it opened.
• Nantes is the capital of the Loire region and is a crossroads between the land and sea. It is the home of nearly 245,000 residents and the Nantes-Atlantique club, which has won the French Championship seven times. The La Beaujoire stadium was built in 1984 to host the European Championship. It seats 39,500 after a renovation in 1997.

• The city of Paris, with its 2.2 million residents (9 million in the urban area) is the cultural center of France. More than 20 million people visit the city each year. The Parc Des Princes Stadium was built in 1972 and renovated in 1988. It seats 49,000 and, aside from soccer, regularly hosts rugby, concerts, supercross and showjumping.

• Saint-Denis, located just north of Paris, is the traditional burial place for French kings. Now a city of 95,000, it has built the world’s largest multi-functional Olympic-sized stadium in the world for the World Cup. The stadium opened in November, 1997. With a variable-capacity format, the stadium can seat as many as 105,000 -- but will seat 80,000 for the World Cup.

• Often considered the birthplace of the industrial era, Saint-Etienne was built on coal mining. Today, it is home to 200,000 residents. The Geoffroy-Guichard Stadium seats 36,000 after a renovation completed in 1997. It was originally built in 1931, but has been updated with new lighting, a top-of-the-line sound system and a new scoreboard.

• Located in the southwestern part of the country, Toulouse has a unique cultural heritage. It was founded nearly 2,000 years ago on the arms of the Garonne River and is home to 365,000 people. Municipal Stadium was built in 1949 and, recently renovated, now seats 37,000 with a new sound system and lighting.