BONDS AS AN ALTERNATIVE TO BANK LENDING IN PROJECT FINANCE

Stefan Karaleev – Global Business Law and Regulation LLM

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For bibliographic and reference purposes this thesis should be referred to as:

Karaleev, S. 2025. Bonds as an Alternative to Bank Lending in Project Finance. LLM Thesis, Department of Legal Studies, Central European University, Vienna.

ABSTRACT

This thesis examines the alternatives to bank lending for project finance with an emphasis on project bonds. In recent years, the banking sector has been subject to increasing regulation adhering to international standards by the Basel Committee on Banking Supervision, the latest being the Basel III regulations and their updates. This has significantly reduced the ability of banks to provide the long-term loans required to finance infrastructure projects, such as highways, bridges, and power plants. This shift has created the need for project sponsors to turn to new sources of financing, including tapping the bond markets.

In this context, this thesis aims to examine the current regulatory environment of project finance, the challenges and opportunities in seeking alternative funding sources. It first analyzes project finance with an emphasis on the role of bank lending in the process. Subsequently, it discusses the relevant aspects of the Basel III Regulations that have led to the disruption of the traditional syndicated bank loan model. The focus then shifts to alternatives, such as refinancing, infrastructure debt funds, and most importantly, project bonds.

The thesis employs doctrinal legal research and industry practice with regard to project finance, international regulations on banks, and U.S. capital markets law as one of the key global regulatory benchmarks for the issuance of project bonds. The lessons from the thesis are widely applicable to jurisdictions with developing capital markets with a rising demand for investment in infrastructure projects.

AUTHOR'S DECLARATION

I, the undersigned, **Stefan Karaleev** candidate for the LLM degree in **Global Business Law and Regulation**, declare herewith that the present thesis titled **'Bonds as an Alternative to Bank Lending in Project Finance'** is exclusively my own work, based on my research and only such external information as properly credited in notes and bibliography. I declare that no unidentified and illegitimate use was made of the work of others, and no part of the thesis infringes on any person's or institution's copyright.

I also declare that no part of the thesis has been submitted in this form to any other institution of higher education for an academic degree.

Vienna, 12 June 2025

Stefan Karaleev

ACKNOWLEDGEMENTS

I would like to express my deepest gratitude to my thesis supervisor, Professor Tibor Tajti, for the inspiration, knowledge, and guidance he has given me throughout the academic year, and especially during the thesis writing process.

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LIST OF ABBREVIATIONS

BCBS	Basel Committee on Banking Supervision
CEE	Central and Eastern Europe
CRD	Capital Requirements Directive
CRR	Capital Requirements Regulation
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EIB	European Investment Bank
EU	European Union
IFC	International Financial Corporation
MIGA	Multilateral Investment Guarantee Agency
PBCE	Project Bond Credit Enhancement
PPA	Power Purchase Agreement
PPP	Public-private partnership
QIB	Qualified Institutional Buyer
RWA	Risk Weighted Asset
SEC	Securities and Exchange Commission
SPV	Special Purpose Vehicle

CHAPTER 1: INTRODUCTION

1.1 Why this Topic?

The use of syndicated bank loans for building large-scale infrastructure projects has proven to be a tried and tested method that produces results worldwide,[1] both in developed and emerging jurisdictions. These loans are usually provided by a group of banks and multilateral financial institutions, called a bank syndicate, to the sponsors of large-scale projects. However, this financing method is highly leveraged, meaning that the ratio between debt and equity finance can reach amounts of up to 80 per cent.[2] This means that the cost and tenor of the debt are critical to the successful financing of a project. The increased regulatory constraints on the banking sector since the 2008 global financial crisis, namely the Basel III regulations,[3] which include additional monitoring, disclosure, liquidity and capital reserve requirements, have limited the ability of traditional bank debt to fully fund these large-scale projects. As a result, banks have become less willing to extend the long-term loans needed to bring a project from the construction phase to its operational phase, so that the revenues of the operation can repay the debt incurred.

These complications have left a major financing gap in the traditional project finance structure. The capital markets have increasingly stepped in to fill this gap, with project bonds gaining significant traction, including in the context of the growing green finance investments.[4] While project bonds present new opportunities for financing, they are not widely utilized, especially in Central and Eastern Europe (CEE) and other regions of the world with less developed capital

[1]Charles-Henri Larreur, *Structured Finance* (Wiley 2021) 97.
[2] Edward. R. Yescombe*, Principles of Project Finance* (2nd Edition, 2014) 11.
[3] Christian Ostendorf, 'Effects of Basel III on the Business Segment of International Project Finance' 2.
[4] Miguel Torres Caro, Peter Young and Vishal Mawkin, 'Project Bonds and Energy Transition: A Proven Financing Solution' [2022] (Butterworths Journal of International Banking & Financial Law) 1.

markets and securities regulatory frameworks. It is a consequence of this relative underdevelopment that the project bonds' regulatory requirements and specifics with regard to the linked due diligence, disclosure and liability are not widely known. This is therefore the research and knowledge gap that this thesis tries to bridge, as it gives a legal perspective on the issuance of bonds for large-scale projects. An argument can be made that combining both types of finance, project bonds and bank lending, has synergetic effects for project finance despite the additional legal and regulatory work required.

From a practical perspective, this thesis argues that issuing project bonds could also prove useful in the process of 'waking up'[5] the dormant capital markets in the CEE region. Furthermore, due to the underdevelopment of capital markets in these emerging jurisdictions, project bonds are often issued abroad, mostly in the United States. These tendencies are true in particular for countries like Bulgaria, where the capital market has seen only modest increases in activity after the crash during the global financial crisis of 2008. The lessons are applicable for the European countries as a whole, who are largely absent from the project bond market, or have a single-digit number of issuances.

1.2 Research and Methodology Issues

Project finance is a complex contractual structure originating in the common law tradition.[6] As Philip R. Wood writes, in project finance, 'contract is the king'.[7] It is important to note that project finance has been regulated by some national legal systems in the context of public-

[5] Todor Todorov, 'Waking up the Bulgarian Stock Exchange Bull' *Capital* (31 January 2025) https://www.capital.bg/moiat_capital/investments/2025/01/31/4736404_da_subudim_bulgarskiia_borsov_bik/ accessed 10 June 2025.
[6] Stefano Gatti, *Project Finance in Theory and Practice: Designing, Structuring, and Financing Private and Public Projects* (Academic Press 2008) 233.
[7] Philip Wood, *Project Finance, Subordinated Debt and State Loans* (Reprinted, Sweet & Maxwell 1997) 13.

private partnerships (PPPs).[8] However, this thesis does not aim to analyze the PPP aspects of project finance but will concentrate on the sources of financing.

In view of the above, this thesis will rely on doctrinal legal research, including academic publications on the subject, relevant regulations, industry reports by law firms, businesses and consultancy firms, as well as documents produced by international institutions (e.g., Basel Committee on Banking Supervision, European Investment Bank) for the description of the project finance structure. For the chapters concerning banking regulations the thesis will analyze the text of the Basel III standards and relevant industry reports. Finally, for the chapter on alternatives to bank lending, especially on project bonds, the thesis will take a detailed look into US capital markets law, as well as academic periodicals and reports by law firms, banks and consultancy firms. This is due to the fact that the largest amount of project bonds is issued in the United States[9] which is 'by far the largest and most active market for securities'.[10] As far as the legal treatment of project finance bonds is concerned, the US is also the most tested jurisdiction, serving as a benchmark for other capital markets.

Some of the research problems encountered during the writing of this thesis include a lack of relevant court cases and studies focusing specifically on the legal aspects of project bond issuance. Furthermore, literature on the topics of project finance, bank lending and bond issuances is more abundant from the perspective of economics and finance as compared to law. However, the topics covered in the thesis are also relevant for lawyers and the thesis will focus on the legal aspects of the problems presented.

[8] Gatti (n 6) 27.
[9] Crédit Agricole 'Project Bond Fundamentals - January 2022' <https://www.ca-cib.com/sites/default/files/2022-03/Project-Bond-Focus-Fundamentals-2022.pdf> accessed 09 June 2025.
[10] Stefano Gatti, *Project Finance in Theory and Practice: Designing, Structuring, and Financing Private and Public Projects* (Fourth edition, Academic Press, an imprint of Elsevier 2024) 356.

1.3 Roadmap to the Thesis

This thesis will have an asymmetrical structure, as Chapters 2 and 4 will be more voluminous than Chapter 3. The chapters on project finance and project bonds present the fundamentals, problems and solutions that concern these topics and thus require a more in-depth approach than Chapter 3, which analyzes the essential features of the capital requirements regulations and their impact on project finance.

Chapter two of this thesis will contain a general description of project finance as a kind of structured finance tool,[11] including the definition, key concepts, components and actors. The analysis will then focus on the process of the financing in the context of project finance itself, i.e., the sources of capital needed for the construction of the project. Traditionally, this will be a combination of equity finance and credits offered by a syndicate of banks.[12] This classical approach to structuring a project finance transaction will then be compared to the new developments in the area.

Chapter three will analyze the key policies and rules enshrined into the Basel III regulations, their effects and implications on the banking sector in general, and specifically on the difficulties that they have created for commercial banks active in the project finance market.[13]

The final, central chapter will focus on a detailed exploration of the financing and refinancing of projects through debt instruments (bonds) issued on the capital markets. The rules regarding the offering of bonds are especially important, as the issuing of project bonds often relies on exemptions from registration requirements, in order to speed up the capital-raising process and lower the overall expenses. Another aspect of importance is the peculiarities of project bonds,

[11] Larreur (n 1) 5.
[12] Wood (n 7) 19.
[13] Larreur (n 1) 128.

including their issuer, financial terms, approach to covenants and monitoring.[14] Some attention will also be devoted to the developments in the European Union, namely the 2020 Project Bond Initiative[15] and its aftermath.

The conclusion will include suggestions for legislators and policymakers in those emerging economies which desire to attract more foreign investment and increase the financing of projects through the capital markets.

[14] David F Asmus (ed), *The Project Finance Law Review* (Law Business Research Ltd 2019) 16.
[15] The Europe 2020 Project Bond Initiative - Innovative infrastructure financing, <https://trad.eib.org/products/blending/project-bonds/index.htm> accessed 09 June 2025.

CHAPTER 2: PROJECT FINANCE – MEANING AND FEATURES

This chapter analyzes the main features of project finance, the types of assets, key participants and the steps in the financing and building of a project, following the traditional works on the legal and business aspects of project finance by the authors Stefano Gatti, Phillip R. Wood, Scott L. Hoffman and Edward R. Yescombe, as well as newer developments in the area by Charles-Henri Larreur.

2.1 What is meant by Project Finance?

The topic of project finance is of interest for several reasons. First of all, it blends together different areas of law, including contracts, company and banking law. Secondly, it extends not only to narrower areas of law and regulation as the ones governing public-private partnerships, but also to sector-specific regulations such as those applicable to the generation of renewable energy from photovoltaic and wind power stations. On the business side of the equation, project finance combines aspects of finance, risk management, insurance policies and project management. In terms of value, the magnitude of project finance loans is astronomic. For example, the value of extended project finance loans reached US$355 billion from 989 transactions.[16] This shows that research into the developments in project finance is not only valuable from a theoretical perspective but also has substantial practical significance.

As mentioned, project finance as a concept grew out of industry practice and has therefore not been extensively regulated by national legislation. Thus, the definitions of project finance are

[16] 'Global Project Finance Review 2023' (London Stock Exchange Group) <https://thesource.lseg.com/thesource/getfile/index/9766e371-1173-488f-99af-69bd731a4ea3-share-1> accessed 09 June 2025.

usually given by international institutions and organizations. An official definition of project finance was provided by the Basel Committee on Banking Supervision in the context of the 'Basel II' framework.[17] It reads as follows:

> 'Project finance is a method of funding in which the lender looks primarily to the revenues generated by a single project, both as the source of repayment and as security for the exposure. This type of financing is usually for large . . . installations that might include, for example, power plants, chemical processing plants, mines, transportation infrastructure, environment, and telecommunications infrastructure. Project finance may take the form of financing of the construction of a new capital installation, or refinancing of an existing installation . . . In such transactions, the lender is usually paid solely or almost exclusively out of the money generated by the contracts for the facility's output, such as the electricity sold by a power plant. The borrower is usually an SPE (Special Purpose Entity) that is not permitted to perform any function other than developing, owning, and operating the installation. The consequence is that repayment depends primarily on the project's cash flow and on the collateral value of the project's assets'.[18]

As per the definition, project finance is characterized by the type of asset that is being financed, the non-recourse or limited recourse nature of the debt and the establishment of the Special Purpose Entity (SPE) for carrying out the project. The terms Special Purpose Vehicle (SPV)[19] and Project Company (ProjectCo) are also used interchangeably by some authors[20] to denote the same concept in project finance.

2.2 Types of Project Assets

Historically, arrangements similar to modern day project finance have been used to develop large-scale infrastructure. Famous examples of project finance from the 19th century include the construction of the Suez Canal and the Eiffel Tower,[21] and the Channel Tunnel between France and the UK in the 20th century. Nowadays, project finance is used to fund projects in

[17] Yescombe (n 2) 6.
[18] Basel Committee on Banking Supervision, International Convergence of Capital Measurement and Capital Standards—A Revised Framework (Bank for International Settlements, Basel, 2005) 49.

[19] Larreur (n 1) 97.
[20] Ostendorf (n 3) 10.
[21] Larreur (n 1) 97.

the industries of power generation, telecommunications, petrochemicals, oil, gas, and transportation.[22] Renewable energy projects, including wind and solar energy, are becoming increasingly relevant and well financed, as the global economy strives to decrease the carbon emissions. The common features of these different assets include high building costs, long construction period, and an operational lifespan reaching over several decades.[23]

2.3 Project Participants

Every project finance initiative has several groups of participants, which have their concrete roles and play their part in the construction, financing, risk and profit sharing of a project. The goal of this subchapter is to briefly outline these participants and their involvement in financing infrastructure projects.

2.3.1 Project Sponsors

The main participants are the *project sponsors*. They are an 'entity, or group of entities, interested in the development of the project and which will benefit, economically or otherwise, from the overall development, construction and operation of the project'.[24] The project sponsors are the 'shareholders of the SPV'.[25] They invest equity in the project, as opposed to the lenders and bondholders, who finance the project with debt. The equity investors 'assume the highest financial risk, but at the same time they receive the largest share in the project's profit'[26] in the event of completion and successful operation.

[22]London Stock Exchange Group (n 16).
[23] Larreur (n 1) 97.
[24] Scott L Hoffman, The Law and Business of International Project Finance: A Resource for Governments, Sponsors, Lenders, Lawyers, and Project Participants. 2nd Edition (Brill | Nijhoff 2001) 103.
[25] Larreur (n 1) 117.
[26] Yescombe (n 2) 30.

Sponsors can be divided into two categories, industrial and financial. Industrial project sponsors are the ones that have a 'real business activity beyond investing',[27] as they are behind all linked industrial activities such as performing feasibility studies, designing, construction overseeing, operation and maintenance of the projects.[28] Financial sponsors, also known as passive investors,[29] are investment companies that solely invest equity capital in infrastructure projects, but 'do not perform any industrial tasks related to the projects they invest in'.[30]

2.3.2 Project Lenders

Banks, insurance companies, credit corporations and other lenders provide debt financing for projects.[31] As we will discuss in the subchapter on financing sources, banks still provide the majority of the project finance lending.[32] As the amount of debt in infrastructure projects can become quite large, it is common practice for banks to band together in what is known as a *bank syndicate*. Banks form these syndicates 'because any one lender individually does not have the capacity to provide the entire project loan, or because it wants to limit its risk exposure in the financing'.[33] Bank syndicates often include both domestic (from the point of view of the asset location) and foreign banks in order 'to discourage the host country government from expropriatory acts or other discriminatory action'.[34] The banks inside the syndicate can have designated roles, such as senior and junior lenders or arranging, managing, and agent banks.[35]

[27] Larreur (n 1) 117.
[28] Larreur (n 1) 117.
[29] Yescombe (n 2) 32.
[30] Larreur (n 1) 119.
[31] Hoffman (n 24) 104.
[32] Larreur (n 1) 127.
[33] Hoffman (n 24) 105.
[34] Hoffman (n 24) 105.
[35] Hoffman (n 24) 105

2.3.3 Bondholders

Bondholders are another distinct group of debt investors in project finance operations. In the context of project finance, large institutional investors, rather than retail investors, are the most common type of bondholders. These investors are also 'represented by a bond trustee, a financial institution that acts as the representative for the bondholders in managing the debt transaction'.[36] This thesis will devote more attention to project bond investors in Chapter 4.

2.3.4 Multilateral Banks and Financial Institutions

The multilateral financial institutions are a 'special category of banks that often participates actively in international syndicated loans ... and project finance deals in developing countries'.[37] These institutions deliver 'significant credit support for projects',[38] especially in developing jurisdictions. It is therefore useful to briefly describe the main players and their *modus operandi.*

International financial institutions have played a major role in the proliferation of project finance in developing countries since the 1990s,[39] providing loans, credit enhancements and promoting private investment in infrastructure building. These institutions can be divided into bilateral and multilateral. The bilateral institutions are further divided into developmental agencies and export credit agencies[40] that play a significant role in the trade and investment between two countries.

By far the most important *multilateral financial organization* in terms of weight and financing volume is the World Bank Group,[41] operating globally with its five major agencies.[42] Out of

[36] Hoffman (n 24) 106.
[37] Gatti (n 10) 208.
[38] Hoffman (n 24) 105.
[39] Gatti (n 10) 209.
[40] Gatti (n 10) 224.
[41] World Bank Group <https://www.worldbank.org/ext/en/home> accessed 09 June 2025.
[42] Gatti (n 10) 224.

them, the International Financial Corporation [43] (IFC) and the Multilateral Investment Guarantee Agency[44] (MIGA) are the ones with the biggest impact on international project finance, as they provide loans and investment guarantees, making investment in developing countries' infrastructure more attractive.[45]

There are also multiple *regional multilateral banks* active in the area of project finance, such as the European Bank for Reconstruction and Development[46] (EBRD) in London, the European Investment Bank [47] (EIB) in Luxembourg, the Asian Development Bank, [48] African Development Bank,[49] and others. Chapter 4 of this thesis will discuss the EIB's Project Bond Initiative, which is one of the most important recent developments in the area of project finance in the European Union.

2.4 Special Purpose Vehicle (Project Company)

The SPV is the centerpiece of 'the contractual and financial relationships in project finance'.[50] It is a legal entity that is the formal owner and developer of a specific project finance transaction.[51] It can be described as a 'box', which contains the project finance relationships, meaning that it cannot carry out any other business outside the project. In practice, the SPV must be a newly organized entity.[52] It is born together with the project and commits to developing, building, and operating the project, nothing more.[53] The SPV is normally set up 'in the country in which the project is taking place'.[54] However, more elaborate corporate

[43] International Financial Corporation <https://www.ifc.org/en/home> accessed 09 June 2025.
[44] Multilateral Investment Guarantee Agency <https://www.miga.org/> accessed 09 June 2025.
[45] Gatti (n 10) 218.
[46] EBRD <https://www.ebrd.com/home.html> accessed 09 June 2025.
[47] EIB <https://www.eib.org/en/index> accessed 09 June 2025.
[48] Asian Development Bank, < https://www.adb.org/> accessed 09 June 2025.
[49] African Development Bank < https://www.afdb.org/en> accessed 09 June 2025.
[50] Yescombe (n 2) 40.
[51] Gatti (n 10) 295.
[52] Gatti (n 10) 295.
[53] Gatti (n 10) 295.
[54] Yescombe (n 2) 40.

structures are also employed, such as the establishment of an 'intermediary holding company in a favorable third country tax jurisdiction'.[55] From a legal point of view, the purpose of the SPV is to 'isolate the project from the other assets of the sponsor'.[56] In cases when financing is non-recourse (as opposed to limited recourse), this limits the liability of the project sponsor only to the invested equity. Due to tax considerations,[57] some projects use other business forms that the limited company, for example limited partnerships or unincorporated joint ventures.[58]

2.5 Sources of Financing

2.5.1 Non-recourse or Limited-recourse Debt

Despite the regulatory challenges, non-recourse commercial bank loans still constitute the majority of project finance capital, especially in the construction phase. They are one of the defining characteristics of project finance, separating it from regular corporate finance. In project finance, lenders have limited or 'no recourse to the sponsors other than for the equity that they have contributed or committed to contribute to the project company'.[59] The debt is repaid by the project company once the project starts operating and generating income. The collateral for the debt of project finance lenders is a 'security interest in all of the assets and cash flow of the project company'.[60] The project lenders may require completion guarantees from the project sponsors to reduce risk, in which case 'the financing becomes limited-recourse rather than non-recourse'.[61] The non-recourse nature of project finance means that lenders need to have a sufficient level of guarantees, known as the *security package*. It includes a pledge on the shares of the SPV, the bank accounts, an assignment of receivables and a mortgage on the

[55] Yescombe (n 2) 40
[56] Larreur (n 1) 156.
[57] Hoffman (n 24) 103.
[58] Yescombe (n 2) 40.
[59] Gatti (n 10) 336.
[60] Hoffman (n 24) 114.
[61] Yescombe (n 2) 219.

project property.[62] Contained in the lender's security are the typical project finance *step-in rights,* whereby lenders can 'replace sponsors and/or the project company in running the project'[63] in the event of a default.

2.5.2 Other Sources of Financing

The second most important source of liquidity for project finance after bank lending is the bond market. As project bonds will be discussed in detail in Chapter 4, it is worth devoting some attention to other new developments in project finance, namely infrastructure debt funds.

Infrastructure debt funds are relatively new players in the field of project finance. They have emerged as an appealing option for insurance and pension funds, as they provide stable long-term investment opportunities.[64] These new funds invest in infrastructure debt, rather than equity, which differentiates them from the project sponsors. As Charles-Henri Larreur argues, the 'more stringent capital-consumption rules applicable to long-term debt was making it more difficult for banks to provide project finance loans'.[65] This shift created the right conditions for the rise of the infrastructure debt funds. The same regulatory environment has also helped the expansion of and interest in project bonds.

2.6 Phases of Project Finance

A typical project finance deal goes through several phases established in the practice of planning and constructing an infrastructure asset. The phases of project finance are of importance for this thesis due to their impact on deciding how to finance and refinance a project. That is to say that whether a project is a greenfield or brownfield investment, or

[62] Larreur (n 1) 162.
[63] Gatti (n 10) 321.
[64] Larreur (n 1) 131.
[65] Larreur (n 1) 131.

whether it benefits from a long-term power-purchase agreement, can greatly impact the ratio of equity investment, bank loans and bond financing.

2.6.1 Development Phase

Some authors, such as Edward R. Yescombe and Charles-Henry Larreur, include the development phase as a separate step in project finance. It is described as the period during which the project 'is conceived ... contracts are negotiated, signed, and come into effect, and the equity and project-finance debt are put in place and available for drawing'.[66] Other authors do not consider it as a separate stage in structuring a project finance deal and rather focus on the construction (pre-operational) and the operational phases, which will be discussed in the following subchapters. It is nonetheless a crucial step, as the development works before construction, together with permits can take 'between 3 and 7 years depending on the size of the projects and on the country',[67] and a further 1 or 2 years to reach the financial closing.[68]

2.6.2 Construction Phase

It is during the construction phase (pre-operational according to the Basel Regulations terminology) that the loans are drawn 'to pay for the construction of the infrastructure'.[69] The construction phase is also the period with the highest risk for lenders, as the loans for building the project are being drawn. The risk during this phase is 'directly proportional to drawdowns',[70] as the period of biggest uncertainty for the lenders is 'just before testing the project facility performance and reliance, when the financing has been fully disbursed'.[71] This is also why the Basel III Regulations have given exposures in project finance a credit risk-

[66] Yescombe (n 2) 29.
[67] Farid Mohamadi, *Introduction to Project Finance in Renewable Energy Infrastructure: Including Public-Private Investments and Non-Mature Markets* (Springer International Publishing AG 2021) 10.
[68] Mohamadi (n 51) 10.
[69] Gatti (n 10) 339.
[70] Gatti (n 10) 356
[71] Gatti (n 10) 356.

weight of 130% during the pre-operational phase, the impact of which will be discussed in Chapter 3.

2.6.2 Operational Phase

When the construction is completed, the operational phase of the project begins. During the operational phase, the SPV generates cash flow by selling 'the output of the goods or services produced by the project',[72] for example the highway usage, electricity, minerals, etc., in order to repay its lenders. According to the Basel rules, the operational phase begins when the SPV has '(i) a positive net cash flow that is sufficient to cover any remaining contractual obligation, and (ii) declining long term debt'.[73] It is during this phase that refinancing usually happens, and it is the most suitable period for issuing project bonds.

[72] Larreur (n 1) 99.
[73] Basel Committee on Banking Supervision, 'Basel III: Finalising Post-Crisis Reforms' 14 <https://www.bis.org/bcbs/publ/d424.pdf> accessed 09 June 2025.

CHAPTER 3: BASEL REGULATIONS

The third chapter of this thesis centers on the Basel III Regulations and their impact on project finance bank lending. The aim of the chapter is to put the current challenges facing project finance into the broader context of regulatory change in the banking sector. This step is necessary in order to reach the crux of the thesis, namely the chapter on project bonds.

3.1 The Path to Basel III

The Basel III regulations are established by the Basel Committee on Banking Supervision[74] (BCBS), which is the main global standard setter for banking regulation and supervision worldwide. The Basel regulations are the international standards for regulating the activities of commercial banks and reducing their risk of default. They were originally created in 1988, named the Basel Accords, and have been updated several times, usually after a period of crisis in the global banking and financial system. As mentioned, in their current form, the Basel III standards were first adopted in the aftermath of the 2008 global financial crisis and finally updated in 2017. It is because of this latest update that the standards are sometimes labelled 'Basel III Endgame',[75] giving them an implication of finality.

It is important to note that the BCBS does not have formal authority and that the Standards themselves are non-binding. However, the decisions of the Committee and the Basel rules are closely followed by most major jurisdictions. In the United States, the Standards are proposed and implemented 'jointly by the Federal Reserve, the Office of the Comptroller of the Currency

[74] Base Committee on Banking Supervision, <https://www.bis.org/bcbs/index.htm>, accessed 10 June 2025.
[75] After the final 2017 reforms, the standards are now known as Basel III Endgame in the US, Basel 3.1 in the UK, and are implemented through Capital Requirement Regulation 3 (CRR3) in the European Union.
Source: https://en.wikipedia.org/wiki/Basel_III:_Finalising_post-crisis_reforms, accessed on 09 June 2025.

(OCC) and the Federal Deposit Insurance Corporation (FDIC)'.[76] The latest amendments in the US implementation of the Basel III standards have been criticized by the securities industry for going above the international standards and 'gold-plating'[77] them.

In the European Union, the Basel III regulations have been implemented through the Capital Requirements Regulation[78] (CRR) and the Capital Requirements Directive (CRD).[79] For purposes of conciseness and uniformity, this thesis will directly cite the relevant rules from the Basel Framework.[80]

One of the key goals of the Basel Regulations is to 'limit the risks taken by banks'[81] by restricting their capacity to lend money above a certain extent. Simply put, the rules aim to restrict the amount of loans that a bank can give and link that amount to a portion of 'the bank's equity'.[82] In order to achieve this, the Basel Accords have introduced Risk Weighted Assets (RWA). This requires banks to convert their assets, such as loans, guarantees, exposures, into RWAs, whose 'nominal value is weighted according to its risk'.[83] In other words, depending on the level of risk, as determined by the Basel Framework, each asset is given a corresponding risk weight, which can range from 20% on highly rated corporate loans, to up to 130% on the deemed to be riskier pre-operational long-term project finance loans.

[76] Adam Girling, 'Basel III Endgame: What You Need to Know' 1 <https://www.ey.com/en_us/insights/banking-capital-markets/basel-iii-endgame-what-you-need-to-know> accessed 21 April 2025.
[77] Dr. Guowei Zhang, Dr. Peter Ryan and Carter McDowell, 'The Federal Reserve Should Remove "Gold-Plating" in the Basel III Endgame'<https://www.sifma.org/resources/news/blog/the-federal-reserve-should-remove-gold-plating-in-the-basel-3-endgame/> accessed 03 June 2025.
[78] Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012 [2013] OJ 2 176/01.
[79] Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC [2013] OJ 2 176/338.
[80] Basel Committee on Banking Supervision (n 73).
[81] Larreur (n 1) 8.
[82] Larreur (n 1) 8.
[83] Larreur (n 1) 9.

This is, albeit simplified, a brief explanation of the highly technical nature of the Basel Regulations. Together with the next subchapter, it is sufficient for the goals of this thesis in explaining why these regulations have negatively impacted project finance bank lending, hence the need to explore alternatives, such as project bonds.

3.2 Impact on Project Finance Loans

As already mentioned, the assignment of a high risk weight (RWA) of 130% to project finance loans [84] in the construction phase (pre-operational phase) is the reason that banks have experienced difficulty in financing projects with loans. Furthermore, the standards have made it complicated for most banks to offer 'competitive pricing on long-term financing ... over more than 20 or 25 years'.[85] The answer of banks active in the project finance market has been the introduction of 'soft' mini-perms and 'hard' mini-perms, which aim to reduce the loan tenor and encourage refinancing.

The *mini-perm* structure is an 'abbreviation for a short-term, permanent financing'.[86] These are 'debt financing solutions incentiviz(ing) refinancing following project completion, either by exposing the project company to a risk of default should a refinancing not be possible prior to maturity (a "hard" mini-perm) or through "soft" means, such as periodically increasing the margin on the loan (a "soft" mini-perm)'.[87] Project sponsors use these 'shorter term loans with tenors of five to seven years to finance the construction and early operation phase of their projects'.[88] This new regulatory environment has led the sponsors to structure new project finance deals with 'multi-sourced financing packages'.[89] This includes lending from banks in

[84] Basel Committee on Banking Supervision (n 73).
[85] Larreur (n 1) 128.
[86] Hoffman (n 24) 434.
[87] Caro, Young and Mawkin (n 4).
[88] John Dewar '*Why the World Needs Project Bonds (and Project Finance Lawyers)*' (Global Legal Group Ltd 2024) 1.
[89] Dewar (n 88) 1.

Asia, the Middle East, and Latin America, increased involvement by export credit agencies and multilateral banking institutions, subordinated debt from large direct lending funds,[90] and crucially for this thesis – the bond markets.

[90] Dewar (n 88) 1.

CHAPTER 4: PROJECT BONDS

We arrive at the fourth, crucial chapter of this thesis. The main goal of this chapter is to present the legal aspects of project bonds and their issuance, with an emphasis on the United States securities regulation. This chapter argues that in light of the current struggles that banks face in providing the long-term lending for project financing in the construction and operation phases, project bonds will expand their role as an alternative to bank financing, both as a tool for primary financing and for refinancing. The chapter will also address the questions connected to issuing project finance bonds in comparison to bank financing, including the risk of negative carry, the onerous documentation, credit ratings and issues with creditor approval when changes to the project occur.

The analysis will mainly be based on United States securities law, as it is quintessential for the global project bond market. Furthermore, the SEC 'safe harbor' rules enable the sponsors of international projects to tap into the capital market of the US and to successfully finance their ventures. The chapter will also trace the developments in the European Union, which itself is on a quest to create a more integrated Capital Markets Union.[91]

4.1 What are Bonds?

Before we get into the specifics, it is worth giving a conceptual definition of bonds and their role in corporate and structured finance.

[91] European Commission, 'Capital markets union and financial markets' <https://finance.ec.europa.eu/capital-markets-union-and-financial-markets_en> accessed 08 June 2025.

Bonds are fixed income securities. They represent a promise or obligation for a certain amount of debt to be repaid after a certain amount of time, called *maturity*, together with a certain amount of *interest*. The interest is usually paid in fixed intervals throughout the duration of the bond, named *coupons*,[92] while the *principal amount* is usually paid at the end of the bond maturity. Bonds can also be seen as a loan between the *issuer* and the *initial subscriber*. During the bond issue and original subscription, the *issuer* receives the amount of the loan as the subscription price for the bond from the *initial subscriber*.[93] On the final maturity day of the bond (equivalent to the final repayment day of the loan),[94] the *issuer* repays the *principal* to the owner of the bond *at that point in time*, which may be someone other than the *initial subscriber*,[95] i.e., the bond can be further traded between investors.

In the realm of corporate finance, bonds are one of, if not, the main method of financing a corporation, the other, of course, being stocks. Corporations issue bonds to 'grow their business, buy property and equipment, undertake profitable projects, for research and development, or to hire employees'.[96] It should be noted that issuing fixed income securities, such as bonds, presents the majority of corporate financing in the United States. On the other hand, European corporate financing is still largely bank-based, and corporate bond financing is not as widespread as in the US.

4.2 Why Project Bonds?

Project bonds are not a new phenomenon and have existed for quite some time. For example, railway bonds were employed by the United States to build its extensive railway infrastructure

[92] LexisNexis Legal Glossary <https://www.lexisnexis.co.uk/legal/glossary/coupon> accessed 10 June 2025.
[93] Gatti (n 10) 349.
[94] Gatti (n 10) 349.
[95] Gatti (n 10) 349.
[96] Jason Fernando, 'Bonds: How They Work and How To Invest' <https://www.investopedia.com/terms/b/bond.asp> accessed 05 June 2025.

between the end of the 19th and the beginning of the 20th century.[97] However, they have gained renewed traction in the last two decades due to their attractiveness for large institutional investors, such as pension and insurance funds. Bonds are currently the 'second largest financing source'[98] in the project finance space after bank loans. Their issuance has increased significantly in recent years, reaching an annual global market volume of $79.8BN in 2021.[99]

Contrary to their name, project bonds are 'not a distinct type of bond',[100] but rather a term defining a group of fixed income securities that are categorized by their source of repayment, i.e., the cash proceeds from the operation of a project. They are usually issued by the SPV (Project Company) and are further rated by the agencies and supported by credit enhancements. Project bonds might also be issued by the sponsor, but in this case, they could be considered too similar to regular corporate bonds and defy the off-balance sheet nature of project finance.

4.2.1 Utilizing Project Bonds in Refinancing and Beyond

The majority of project bonds are issued by the SPV for the purpose of refinancing an existing project after the completion of its construction phase, when the project has entered the operational phase and can generate cash flow. It is also considered that bonds in project finance are mainly suitable for more 'standard' projects in developed jurisdictions.[101]

Project bonds have rarely been used in the past for greenfield (construction phase) investments, but rather for brownfield investments,[102] i.e., projects in the operational phase. However, in recent years there are successful examples of greenfield projects being financed by project

[97] Tehreem Husain, '*How has infrastructure been financed in the past?*' <https://www.economicsobservatory.com/how-has-infrastructure-been-financed-in-the-past> accessed 09 June 2025.
[98] Ostendorf (n 3) 24.
[99] Project Bond Focus (n 8) 2.
[100] Caro, Young and Mawkin (n 4).
[101] Yescombe (n 2) 95.
[102] Larreur (n 1) 121.

bonds,[103] especially when the bond issuer can include credit enhancement features, such as the ones provided by the EIB Project Bond Initiative, which increase the bond's credit rating and therefore lower the interest rate and default risk.

4.2.2 Advantages of Project Bonds

This subchapter will look into the main benefits of issuing project bonds as compared to project finance bank loans. They include fixed pricing, long tenors and lighter covenant packages.

One of the major advantages of issuing project bonds is locking in the cost of financing at the time of issuing. Unlike bank loans, where the cost of financing is subject to changes in the interest rates, bonds are fixed-income securities, where the coupon rates are determined during issuance. In a volatile interest rate environment, 'ability to lock in a long-term fixed rate coupon on a project bond, even if prevailing rates in the capital markets may have been higher than the bank market until recently, has attracted project sponsors to the bond markets in an environment where banks' cost of borrowing has increased'.[104] This gives more cost predictability to the bond issuers as compared to bank financing.

Covenant packages for project bonds are normally lighter than those for bank loans, resulting in less regular oversight.[105] This is mainly due to the fact that bondholders take a less 'active role in the monitoring or management of their investments'.[106] Furthermore, investors have the option of selling the bonds if they are not confident in the investment, which is also 'why they are prepared to accept simpler terms and conditions and a lighter covenant package'.[107] The lighter covenant package has potential downsides as well. If there is a need for any waiver or

[103] Project Bond Focus '15 Project Bonds to Change Your Preconceptions' <https://www.ca-cib.com/sites/default/files/2021-04/Project-Bond-Focus-15-Milestone-Transactions-2021.pdf> accessed 10 June 2025.
[104] Asmus (n 14) 18.
[105] Project Bond Focus (n 8) 2.
[106] Gatti (n 10) 350.
[107] Gatti (n 10) 350.

approval, 'there will likely be high transaction costs involved in obtaining'[108] it from bond investors, as compared to a bank syndicate with more or less constant participants.

As already mentioned in Chapter 3, the Basel III Rules on capital requirements have negatively impacted the long-term credit exposures of project finance loans. This is why 'pricing conditions and tenors'[109] in project bonds have become preferable to bank lending, with bond 'maturities beyond twenty years'[110] being accepted in the market. This is a good match between investors seeking stable investments and projects enjoying long-term contracts, such as a multi-year power purchase agreement (PPA).

4.2.3 Disadvantages of Project Bonds

Along with their undisputed advantages, issuing project bonds also has disadvantages which need to be taken into consideration.

The first weakness of project bonds is the problem of *negative carry.* In bank lending, the drawing of funds is 'conditional, upon reaching the agreed construction milestones'.[111] Thus, interest is paid only on the funds that have been gradually drawn throughout the construction phase. Bonds, on the other hand, are usually 'issued in one go',[112] meaning that all of the proceeds are received upfront. This has the downside that the bond issuer pays 'interests on the entire amount of the project bond',[113] even though the funds are spent gradually.

Bond issuers have come up with alternatives that reduce negative carry, namely the *delayed draw* mechanism, 'where funds are made available overtime with multiple draws'.[114] This is

[108] Asmus (n 14) 20.
[109] Gatti (n 10) 350.
[110] Project Bond Focus (n 8) 2.
[111] Gatti (n 10) 351.
[112] Gatti (n 10) 351.
[113] Project Bond Focus (n 8) 2.
[114] Project Bond Focus (n 8) 2.

often achieved by making the funds available in an 'escrow account in instalments'[115] and releasing them during the construction phase.

Another complication when issuing project bonds is the need to receive a *rating* by specialized rating agencies, such as Standard & Poor's, Moody's, and Fitch.[116] Project bonds usually require an investment-grade rating, as the institutional 'investors are extremely conservative'[117] and have this obligation imposed 'by regulations or by their statutes'.[118] The number of ratings can be in the range of 'one, two, or three'[119] depending on size of the bond issuance, which can add to the overall cost of issuing the securities.

The difficulty in obtaining *waivers and modifications* from the bond investors was already mentioned when discussing the covenant package. Consent by the investors is necessary when making amendments to the terms and conditions of the bonds. Achieving this is difficult because of the 'numerous and dispersed debtholders, coupled with a reluctance of trustees'.[120] The process of obtaining a waiver, even with the help of a bond trustee, is often 'complicated, burdensome, and time consuming'.[121]

These difficulties in issuing project bonds are worth considering by the sponsors when choosing capital market financing over bank lending. However, they have become 'less of a deterrent in a Basel III universe',[122] and are easier to overcome with the growing pool of institutional investors.

[115] Dewar (n 88) 3.
[116] Dewar (n 88) 1.
[117] Larreur (n 1) 132.
[118] Gatti (n 10) 350.
[119] Project Bond Focus (n 8) 2.
[120] Hoffman (n 24) 434.
[121] Gatti (n 10) 350.
[122] Asmus (n 14) 18.

4.3 Investors in Project Bonds

As already mentioned, the bulk of investors in the project bond market are not individuals, but rather large institutional buyers of securities, such as pension and insurance funds. In US securities law they are known as Qualified Institutional Buyers (QIB). The formal definition of QIB lies in the SEC's Rule 144A and reads that a QIB is an entity 'acting for its own account or the accounts of other qualified institutional buyers, that in the aggregate owns and invests on a discretionary basis at least $100 million in securities of issuers that are not affiliated with the entity'.[123] The QIBs, especially insurance companies, 'constitute the bulk of the investor base'[124] for the project bond market. Their long maturities, especially when supported by long-term offtake contracts, such as Power Purchase Agreements (PPA), are useful for the insurance companies and pension funds that are 'looking for long-term investments to match their long-term liabilities'.[125]

4.4 Securities Regulations and Private Placement Exemptions

Project bonds can in principle be issued and traded publicly like any other bond. In that case they would be subject to the US securities laws, namely the Securities Act of 1933,[126] the Securities Exchange Act of 1934[127] and the Trust Indenture Act of 1939.[128]

Registering a bond issue with the Securities and Exchange Commission[129] (SEC) is a 'lengthy and burdensome process'.[130] In practice, the issuers of project bonds (the project sponsor or the

[123] SEC Rule 144A, 17 CFR § 230.144A - Private resales of securities to institutions.
[124] Larreur (n 1) 133.
[125] Project Bond Focus (n 8) 2.
[126] U.S. Securities Act of 1933 <https://www.govinfo.gov/content/pkg/COMPS-1884/pdf/COMPS-1884.pdf> accessed 10 June 2025.
[127] U.S. Securities Exchange Act of 1934 <https://www.govinfo.gov/content/pkg/COMPS-1885/pdf/COMPS-1885.pdf> accessed 10 June 2025.
[128] U.S. Trust Indenture Act of 1939 <https://www.govinfo.gov/content/pkg/COMPS-1888/pdf/COMPS-1888.pdf> accessed 10 June 2025.
[129] Securities and Exchange Commission < https://www.sec.gov/> accessed 10 June 2025.
[130] Gatti (n 10) 354.

SPV) usually rely on 'exemptions from registration available under the Securities Act'[131] in order to skip the laborious process of ensuring proper disclosure for a public offering.

Due to the limits of the thesis format, we will not devote substantial attention to the securities issuing process on public markets. Rather, the analysis will single in on the specialized private placement rules for project bonds, commonly referred to as safe harbors. In particular, we will analyze *SEC's Rule 144A* and the private offering exemption of *Section 4(a)(2) of the Securities Act of 1933*. These are 'the two principal safe harbors for issuing project bonds that are exempt from registration under the US securities laws'.[132] The private offering avenues in US law can be employed by both US and international investors to finance projects all around the globe as there are no restrictions on the type of asset financed or its location.[133] They are the 'predominant forms of project bond issuances in terms of worldwide dollar value and provide ... the most useful illustration of the issues associated with project bonds generally'.[134] US Securities regulation is also chosen due to the facts that it is substantially 'the model for a number of analogous regulations in other countries'.[135]

4.4.1 Section 4(a)(2) of the 1933 Securities Act

Section 4(a)(2) of the Securities Act of 1933 is the *private placement* rule that exempts certain securities issues from the registration requirements 'if the sale does not involve a public offering'.[136] In accordance with this private placement exemption, securities are 'sold directly to the purchasers, rather than purchased by an initial purchaser who then makes a secondary sale'[137] as in a Rule 144A offer (discussed in the following subchapter). In other words, here

[131] Gatti (n 10) 354
[132] Asmus (n 14) 16.
[133] Project Bond Focus (n 8) 6.
[134] Asmus (n 14) 16.
[135] Gatti (n 10) 356.
[136] Project Bond Focus (n 8) 6.
[137] Asmus (n 14) 22.

the *bond issuer* sells the securities *directly*, without the help of an intermediary, to *sophisticated investors.* It is important to note that the Section 4(a)(2) exemption 'is only available to the *issuer*, and not to persons who have acquired securities from the issuer and who want to resell the securities'.[138] Bonds purchased under this exemption are 'restricted securities'[139] under US securities laws, which means that they cannot be resold unless registered or if 'the resale qualifies for an exemption'.[140] One such exemption is Rule 144A, which permits 'permits free resales of restricted securities'[141] to QIBs.

Issuers of Section 4(a)(2) securities usually require a *placement agent* in order to assist them in the due diligence, marketing of the bonds to investors and preparing the private placement documentation.[142] These placement agents, however, are not underwriters, as they do not purchase securities for their own account.[143] As such, they will not be liable under Rule 10b-5 of the 1924 Act for making untrue statement of a material fact or omitting to state a material fact. In practice, the advantages for project sponsors in offering securities under this section include the *smaller number of investors* and their relative stability as compared to Rule 144A offerings, as well as the absence of 10b-5 liability for the placement agents.

Investors will usually buy Section 4(a)(2) bonds for 'long-term investment and will typically make a representation ... that they are not purchasing the bonds with a view towards distribution'.[144] Furthermore, the 'traditionally smaller pool of investors'[145] in Section 4(a)(2)

[138] Robert B Robbins, 'Offers, Sales and Resales of Securities Under Section 4[a](1-1/2) and Rule 144A' (American Legal Institute) 1 https://www.pillsburylaw.com/en/news-and-insights/offers-sales-and-resales-of-securities-under-section-4-a-1-1-2.html accessed 1 May 2025.
[139] Asmus (n 14) 22.
[140] Asmus (n 14) 22.
[141] Robbins (n 122) 3.
[142] Asmus (n 14) 21.
[143] Asmus (n 14) 21.
[144] Project Bond Focus (n 8) 6.
[145] Asmus (n 14) 22.

bonds results in more involvement in the 'due diligence of projects'[146] compared to Rule 144A investors. The smaller number of investors also helps with the management and flexibility of the project, since the investors 'typically also have a deeper knowledge both of the financed project and the assets in general and so will be more flexible in granting waivers and negotiating defaults'.[147] This also makes the process similar to working with a bank syndicate[148], which is one of the advantages of bank financing.

4.4.2 SEC Rule 144A

The most important exemption[149] from the registration requirements in US Securities law is the SEC's Rule 144A. It was adopted in April 1990 and provides a non-exclusive safe harbor from the 'Securities Act registration requirements for resale'[150] of securities from *financial intermediaries* to *qualified institutional buyers*. Rule 144A 'represented an important innovation for the project bond market, facilitating security issues by both domestic and nonresident SPVs on the American market'.[151] It has created 'liquidity in the private placement secondary market, making the U.S. market more attractive to international issuers'.[152]

It is necessary to point out several important characteristics of Rule 144A offerings in order to get a clear idea how they differ from the registered public offerings of Section 5, and the private offerings of Section 4(a)(2) of the 1933 Act.

First of all, the typical structure[153] of a Rule 144A offering is that *initial purchasers,* such as investment banks, buy securities from the *issuers* (SPV) through a *private placement exemption*

[146] Asmus (n 14) 22.
[147] Asmus (n 14) 25.
[148] Asmus (n 14) 25.
[149] Gatti (n 10) 355.
[150] Hoffman (n 24) 435.
[151] Gatti (n 10) 266.
[152] Hoffman (n 24) 435.
[153] Hoffman (n 24) 436.

(like Section 4(a)(2)), and then sell these securities to *QIBs* (insurance and pension funds) without being subject to 'underwriter liability'[154] and without having to register the securities with the SEC. This reduces the substantial cost of the 'registration procedure for issues with the SEC and requirements for periodic disclosure'.[155] The rationale behind the reduced disclosure and liability requirements of Rule 144a is that 'institutional investors are professionals, and they need less protection than small, unqualified buyers of securities'.[156]

However, the *issuers* and *resellers* are not exempt from *all* liabilities, as they have to comply with 'federal and state anti-fraud or anti-manipulation laws',[157] including Rule 10b-5.[158] Moreover, the resellers have to notify the buyers that they are 'relying on Rule 144A to sell unregistered securities'.[159] This information is contained in the *offering circular,* which is part of the offering documentation. This liability for material misstatements or omissions, together with the notification requirements leads to a more extensive due diligence process than in Section 4(a)(2) offerings.

In general, the documentation in Rule 144A transactions is analogous to the one used in registered public offerings and includes the *offering circular*[160] (also known as offering memorandum), which is similar to the *prospectus* in the SEC-registered offerings. The *offering circular* contains 'detailed descriptions of the project and the key project and finance documents, financial information about the key entities involved in the project',[161] as well as 'risk factors, a discussion of the issuer's management, tax considerations, and other matters'.[162]

[154] Robbins (n 122) 3.
[155] Gatti (n 10) 266.
[156] Gatti (n 10) 355.
[157] Robbins (n 122) 8.
[158] Cornell Law School, Legal Information Institute <https://www.law.cornell.edu/wex/rule_10b-5> accessed 09 June 2025.
[159] Robbins (n 122) 6
[160] Dewar (n 88) 4.
[161] Dewar (n 88) 5.
[162] Anna Pinedo 'What's the Deal? – Rule 144A' 56 <https://www.freewritings.law/wp-content/uploads/sites/24/2021/08/Rule144A-WhatsTheDeal_2021.pdf> accessed 7 June 2025.

The result is a 'more comprehensive offering memorandum',[163] with much more details than a Section 4(a)(2) private placement memorandum. This is necessary in order to 'avoid potential liability to the initial purchasers'.[164] Other documents include a *purchase agreement* between the issuer and the initial purchasers, which is equivalent to the *underwriting agreement* in public offerings[165]. Additional documents, issued in favor of the *initial purchaser,* are 'the comfort letter from the issuer's auditors and the '10b-5 letter' from the counsel'.[166] The 10b-5 letter gives a negative assurance that, based on counsel's work, there is no reason 'to believe the disclosures contain an untrue statement or omission of material fact'.[167]

The project bonds sold through this exemption are also restricted securities but can be freely traded among QIBs in another Rule 144A resale.[168] This established pool of QIBs 'distinguishes Rule 144A placements from their Section 4(a)(2) counterparts'[169] making the bonds easier to trade.

Like in Section 4(a)(2), Rule 144A investors also aim 'towards long-term investment, and the trading in Rule 144A project bonds is relatively limited (particularly if the project performs in a stable manner over the life of the bonds)'.[170]

4.5 Project Bonds in the European Union

The European system of structured financing is still largely dominated by banks, especially when compared to the United States capital market-based system. This also applies to project

[163] Asmus (n 14) 24.
[164] Pinedo (n 162) 56
[165] Pinedo (n 162) 56.
[166] Asmus (n 14) 24.
[167] Asmus (n 14) 24.
[168] Asmus (n 14) 23.
[169] Asmus (n 14) 23.
[170] Asmus (n 14) 23.

finance. As part of the EUs efforts to support its capital markets, one notable development is particularly relevant to the topic of project bonds, specifically the EIB Project Bond Initiative.

In the 2010s an effort was undertaken by the European Commission (EC) and the European Investment Bank (EIB) to stimulate the issuance of project bonds on the European market. The '2020 Project Bond Initiative' was a pilot scheme whereby the EIB helped finance several large-scale infrastructure projects in EU countries by providing credit enhancements to large-scale projects such as ports, highways, gas and electricity. The credit enhancements helped these projects to 'attract additional private finance from institutional investors such as insurance companies and pension funds'.[171]

The credit enhancement by the EIB functioned by dividing the project debt into two tranches: 'a senior debt to be placed with institutional investors, and a subordinated debt obligation which would be underwritten by the EIB'.[172] The subordinated debt, or Project Bond Credit Enhancement (PBCE)[173] took the form of a loan from the EIB supported by the EC from the construction phase throughout the project lifespan. The PBCE 'underlies the senior debt and therefore improves its credit quality',[174] offering confidence to institutional investors 'with long-term liability structures and regulated rating requirements for their investments'.[175]

The EIB Project Bond Initiative has yielded overwhelmingly positive results. This pilot phase has provided credit enhancement to ten infrastructure projects in the European Union between 2013 and 2016.[176] Data show that project bond issues in European countries have grown substantially during the period of the Project Bond Initiative.[177] A notable success is the A7

[171] The Europe 2020 Project Bond Initiative (n 15).
[172] José Manuel Vassallo and others, 'The Europe 2020 Project Bond Initiative: An Alternative to Finance Infrastructure in Europe' (2015) (Technological and Economic Development of Economy) 236.
[173] The Europe 2020 Project Bond Initiative (n 15).
[174] The Europe 2020 Project Bond Initiative (n 15).
[175] The Europe 2020 Project Bond Initiative (n 15).
[176] Gatti (n 10) 232.
[177] Gatti (n 10) 232.

motorway project connecting Germany and Denmark, issuing the first greenfield PBCE-backed bonds in the EU capital markets with an amount of €429 million.[178] The bond issuance was not listed, but 'privately-placed with investors that committed prior to the bidding process'.[179]

This is a showcase that, when the right legal and financial conditions are met, capital markets can be not only a complimentary, but also a primary source for financing infrastructure projects.

[178] 15 Project Bonds to Change Your Preconceptions (n 91) 3.
[179] 15 Project Bonds to Change Your Preconceptions (n 91) 3.

CONCLUSION

The goal of this thesis was to map out the present challenges facing project finance and to explore the alternatives that are being utilized by the project sponsors, bank lenders and bond investors. The thesis first introduced the main concepts and peculiarities in project finance, analyzing the different participants and their roles, the sources of financing, the special purpose vehicle and the phases of a project finance deal.

After setting the tone by examining the current state of project finance, the thesis went on to give an overview of the development of international banking regulations. The focus was on the Basel III standards on capital requirements for commercial banks, their implementation in the US and EU, the subsequent impact on the loan market, and the regulatory decisions that have led to a disruption in the bank-based financing model of project finance.

Upon examining the difficulties that commercial banks face today with long-term project finance lending, this thesis offered an alternative in the face of bond issuances. The United States securities markets and their underlying regulation were given as an example of a system where institutional investors successfully participate in financing both domestic and international infrastructure projects by investing in bonds. The analysis of the private placement exemptions of disclosure and registration requirements in US law was a crucial point of the thesis, as they can serve as a blueprint for other jurisdiction in their quest for minimizing red tape, fostering growth in the bond markets while maintaining a high level of investor protection through the sector-specific antifraud provisions.

The thesis concluded by looking at the EIB 2020 Project Bond Initiative. Some of the projects in the Initiative illustrated perfectly the possibility of financing large-scale infrastructure developments in both the construction and operation phases of a project through the capital

markets. The pilot phase of the Initiative opened the door for further developments in the utilization of bonds not only as a refinancing method, but also as a primary source of financing for projects.

As a final takeaway, this thesis argues that reforms fostering the development of capital markets would help drive more liquidity into infrastructure projects. This shift would be beneficial for the countries of the European Union, especially those in Central and Eastern Europe, where there is still a substantial gap in infrastructure development. Furthermore, accelerating the advancement of the EU Capital Markets Union would amplify these benefits for the entire bloc, as it would unlock greater access to capital markets financing, particularly for project finance transactions.

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