



# UNDERSTANDING PROJECT FINANCE

## Project Finance

Project finance is the financing of long-term infrastructure, industrial projects and public services based upon a non-recourse or limited recourse financial structure, in which project debt and equity used to finance the project are paid back from the cash flow generated by the project. Project financing is a loan structure that relies primarily on the project's cash flow for repayment, with the project's assets, rights and interests held as secondary security or collateral. Project finance is especially attractive to the private sector because companies can fund major projects off balance sheet.

Project Finance can be characterized in a variety of ways and there is no universally adopted definition but as a financing technique, a broad definition is:

*“the raising of finance on a Limited Recourse basis, for the purposes of developing a large capital- intensive infrastructure project, where the borrower is a special purpose vehicle and repayment of the financing by the borrower will be dependent on the internally generated cashflows of the project”*

This definition in itself raises a number of interesting questions, including:

- What is meant by ‘Limited Recourse’ financing – recourse to whom or what?
- Why is Project Finance typically used to finance large capital intensive infrastructure projects?
- Why is the borrower a special purpose vehicle (SPV) under a project financing?
- What happens if the internally generated cashflows of the project are not sufficient to repay the financiers of the project?

The terms ‘Project Finance’ and ‘Limited Recourse Finance’ are typically used interchangeably and should be viewed as one in the same. Indeed, it is debatable the extent to which a financing where the Lenders have significant collateral with (or other form of contractual remedy against) the project shareholders of the borrower can be truly regarded as a project financing. The ‘limited’ recourse that financiers have to a project’s shareholders in a true project financing is a major motivation for corporates adopting this approach to infrastructure investment.

Project financing is largely an exercise in the equitable allocation of a project’s risks between the various stakeholders of the project. Indeed, the genesis of the financing technique can be traced back to this principle. Roman and Greek merchants used project financing techniques in order to share the risks inherent to maritime trading. A loan would be advanced to a shipping merchant on the agreement that such loan would be repaid only through the sale of cargo

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brought back by the voyage (i.e. the financing would be repaid by the ‘internally generated cashflows of the project’, to use modern project financing terminology).

Arguably the most prolific use of project financing has been the U.K. ‘Private Finance Initiative’ (PFI) which began in 1992 and has been actively promoted and managed by the successive British governments since then. PFI is the commoditization of public-private partnerships (PPP) into a systematic program. PPP is a specific form of Project Finance where a public service is funded and operated through a partnership of government and the private sector, typically structured under a long term concession arrangement. In return, the Project Company receives a defined revenue stream over the life of the concession from which the private sector investors extract returns. In the UK, the PFI framework has been used to procure a variety of essential infrastructure including street lighting, schools, military accommodation/equipment, roads, hospitals and prisons.

A simplified project financing structure for a build, operate and transfer (BOT) project includes multiple key elements:

A special purpose vehicle (SPV) project company with no previous business or record is necessary for project financing. The company’s sole activity is carrying out the project by subcontracting most aspects through construction contract and operations contract. Because there is no revenue stream during the construction phase of new-build projects, debt service is possible during the operations phase only. For this reason, parties take significant risks during the construction phase. Sole revenue stream is most likely under an off-take or power purchase agreement. Because there is limited or no recourse to the project’s sponsors, company shareholders are typically liable up to the extent of their shareholdings. The project remains off-balance-sheet for the sponsors and for the government.

## Special Purpose Vehicle/Entity - SPV/SPE

A special purpose vehicle/entity (SPV/SPE) is a subsidiary company with an asset/liability structure and legal status that makes its obligations secure even if the parent company goes bankrupt. An SPV/SPE is also a subsidiary corporation designed to serve as a counterparty for swaps and other credit sensitive derivative instruments. Although the SPVs/SPEs are used to isolate financial risk, due to accounting loopholes, these vehicles may become a financially devastating way for CFOs to hide debt, as with the Enron bankruptcy.

SPVs/SPEs may be formed through limited partnerships, trusts, corporations, limited liability corporations or other entities. An SPV/SPE may be designed for independent ownership, management and funding of a company; as protection of a project from operational or insolvency issues; or for creating a synthetic lease that is expensed on the company’s income

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statement rather than recorded as a liability on the balance sheet. They help companies securitize assets, create joint ventures, isolate corporate assets or perform other financial transactions.

An off-balance-sheet SPV/SPE documents its assets, liabilities and equity on its own balance sheet rather than on the parent company's balance sheet as equity or debt. The parent company typically prefers this arrangement due to improved management of assets and liabilities, lower risks, higher credit ratings, lower funding costs, greater financial flexibility and lower capital requirements.

SPV's/SPE's mask crucial information from investors who are not aware of a company's complete financial situation. Investors need to look at the parent company's balance sheet as well as the SPV's/SPE's balance sheet before deciding whether to invest in a business. Enron's massive financial collapse is a prime example of why this is important. Enron transferred much of its quickly rising stock to an SPV/SPE and received cash or a note in return. The SPV/SPE used the stock for hedging assets shown on the company's balance sheet. Enron guaranteed the SPV's/SPE's value as a means of reducing risk. When stock prices began dropping, along with the values of the SPV's/SPEs, the guarantees were forced into play. Enron was unable to pay the large amounts of money it owed creditors and investors, leading to a massive financial collapse.

Although the company disclosed its financial information and conflicts of interest on balance sheets for the company and for the SPV's/SPEs, few investors understood the gravity of the situation and what ended up being a disastrous ending for Enron.

## Example of an SPV/SPE

In March 2016, Luxor Capital, a \$3.8 billion hedge fund, announced it was placing four illiquid securities totaling 12% of its investments in an SPV/SPE. The securities included exposure in food delivery service Delivery Hero, private equity investments in online food ordering company Foodpanda and drilling company Ascent Resources, as well as preferred stock in Altisource Asset Management. After losing money for months, the fund began returning 88% of exiting investors' money. The rest will be returned when the illiquid investments are sold.

## Off-Balance-Sheet

Project debt is typically held in a sufficiently minority subsidiary not consolidated on the balance sheet of the respective shareholders. This reduces the project's impact on the cost of



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the shareholders' existing debt and debt capacity. The shareholders are free to use their debt capacity for other investments.

To some extent, the government may use project financing to keep project debt and liabilities off-balance-sheet so they take up less fiscal space. Fiscal space is the amount of money the government may spend beyond what it is already investing in public services such as health, welfare and education. The theory is that strong economic growth will bring the government more money through extra tax revenue from more people working and paying more taxes, allowing the government to increase spending on public services.

## Non-Recourse Financing

When defaulting on a loan, recourse financing gives lenders full claim to shareholders' assets or cash flow. In contrast, project financing provides the project company as a limited liability SPV. Therefore, the lenders' recourse is limited primarily or entirely to the project's assets, including completion and performance guarantees and bonds, in case the project company defaults.

A key issue in non-recourse financing is whether circumstances may arise in which the lenders have recourse to some or all of the shareholders' assets. A deliberate breach on the part of the shareholders may give the lender recourse to assets. Applicable law may restrict the extent to which shareholder liability may be limited. For example, liability for personal injury or death is typically not subject to elimination.

## Recourse

A recourse is a legal agreement by which the lender has the rights to pledged collateral in the event that the borrower is unable to satisfy the debt obligation. Recourse refers to the legal right to collect.

A full recourse debt is a guarantee that no matter what happens, the borrower will repay the debt. Typically with a full recourse loan no occurrence, such as loss of job or sickness, can get the borrower out of the debt obligation. In this situation, if there is no collateral for the loan, the lender can go after the borrowers personal assets to collect if the loan is defaulted.

In contrast, a limited recourse loan would only allow the lender to take assets that are listed as collateral in the signed loan agreement. Also, a non-recourse loan would have no collateral and the lender would only be able to take the asset that is being financed, such as a home in a non-recourse mortgage.



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Recourse lending provides protection to lenders, as they are assured to have some sort of repayment, either cash or liquid assets. Companies that issue recourse debt have a lower cost of capital, as there is less underlying risk in lending to that firm.

## Liquid Asset

A liquid asset is an asset that can be converted into cash quickly, with minimal impact to the price received in the open market. Liquid assets include money market instruments and government bonds. The foreign exchange market is deemed to be the most liquid market in the world because trillions of dollars exchange hands each day, making it impossible for any one individual to influence the exchange rate.

Although there is no universal formula to calculate liquid assets, standard financial liquidity ratios determine and utilize liquid assets. These ratios – including the current ratio and quick ratio – manipulate the level of liquidity analyzed based on the underlying asset.

A liquid asset must have an established market in which enough buyers and sellers exist so the market price of the asset cannot be manipulated or easily changed. A company must have the ability to transfer ownership of the asset quickly and easily for full market price. If a discount is applied to the selling price, the asset is considered to be illiquid.

Assets are listed on the balance sheet in accordance to liquidity with the most liquid assets being listed first. For this reason, cash is always listed as the first current asset because it is the most liquid asset. Cash equivalents may be combined with cash on the top line because they represent demandable and convertible instruments available for immediate conversion. Cash is typically followed by marketable securities, accounts receivable, inventory, fixed assets and goodwill.

Liquid assets is an important classification to creditors and lenders. A company with higher amounts of liquid assets has a greater capability of paying debt obligations as they become due. Therefore, while reporting liquid or illiquid assets is not required for external purposes, management and some external entities such as banks or financial institutions find liquid asset totals useful in loan preparations. In addition, emergency funds are typically held in liquid assets for ease of access.

The stock market is an example of a liquid market because there is a large number of buyers and sellers, and certain stocks are examples of liquid assets. Because of its high trading volume, certain equitable securities may quickly be converted into cash. This is especially the case for stocks with high market capitalization and large share volume. Because stocks can be



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easily sold using electronic markets for full market prices on demand, equitable securities – under the right conditions – are liquid assets.

## The Impact of Recourse on Borrowers

Recourse provides the legal means for a lender to seize a borrower's assets if he defaults on a debt. If the debt is full recourse, the borrower is liable for the full amount of the debt even to the extent it exceeds the value of the collateralized asset. In most cases, the lender may obtain a deficiency judgment to seize unpledged assets, levy bank accounts or garnish wages.

Recourse loans are distinct from non-recourse loans, which limit the lender to claiming only the specific asset pledged as collateral. Recourse debt is the more common form of debt because it is less risky for lenders, while non-recourse debt is usually limited to longer term loans placed on stabilized and performing assets such as commercial real estate.

Recourse debt has certain tax implications for borrowers. Any part of the debt that is forgiven by the lender must be reported as ordinary income. For example, if a lender forecloses on a house to recover a \$150,000 debt and sells it for \$125,000, the borrower still owes \$25,000. If the lender forgives the \$25,000, the borrower must report it as ordinary income.

Regardless of whether a debt is forgiven, the borrower must report a loss or gain based on the difference between the original loan amount and the amount realized in the sale of the asset. In the above example, the \$25,000 must be reported as a loss. Losses incurred through the sale of deficient assets are not tax-deductible.

Most loans are issued with recourse language included in the loan document. The language specifies the recourse actions that may be taken along with any limitations.

Generally, whether a loan is recourse or non-recourse depends on the state where the loan originated. Most states provide for recourse for mortgage lenders, but it may be restricted in some way. For example, in some states, the deficiency judgment cannot exceed the fair market value of the property.

Consider a home that has a mortgage balance of \$250,000 and a fair market value (FMV) of \$200,000. If the lender sells the home at auction for \$150,000, it can only recover \$50,000, which is the difference between the FMV and the amount owed on the loan. In some states, such as Arizona, California and Oregon, lenders are prohibited from obtaining deficiency judgments.



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## Recourse Loans and State Law

Whether individual or organization can enter into a recourse loan for a particular asset is often determined by state law. Some states, such as California, have strict regulations limiting the ability of financial institutions to issue recourse loans, especially for residential real estate purchases.

## Non-Recourse Finance

Non-recourse finance is a loan where the lender is only entitled to repayment from the profits of the project the loan is funding, not from other assets of the borrower.

These types of projects are characterized by high capital expenditures, long loan periods and uncertain revenue streams. Analyzing non-recourse financing requires a sound knowledge of the underlying technical domain as well as financial modeling skills.

Considered a fairly high-risk undertaking on the part of lenders, non-recourse financing does not include access to any of the borrowers' assets beyond the agreed upon collateral, even if they default on the loans. Payments on such loans can only be made as the funded projects generate revenue. Due to the uncertainty, loan periods are generally long to give ample time for projects to produce returns. Additionally, interest rates are generally higher on non-recourse loans, corresponding to the elevated risk involved. If projects produce no revenue during the loan periods, lenders receive no payments on the debt and cannot go after the borrowers for remaining balances after collateral is seized.

If two people are looking to purchase large assets, such as a homes, and one receives a recourse loan and the other a non-recourse loan, the actions the financial institution can take against each borrower are different. In both cases, the homes may be used as collateral, meaning they can be seized should either borrower default. To recoup costs when the borrowers default, the financial institutions can attempt to sell the homes and use the sale price to pay down the associated debt. If the properties sell for less than the amount owed, the financial institution can pursue only the debtor with the recourse loan. The debtor with the non-recourse loan cannot be pursued for any additional payment beyond the seizure of the asset.

## Non-Recourse Loans and Tax Liability

With a recourse debt, if the financial institution forgives any part of the debt after the associated asset is seized and sold, the forgiven amount may be treated as ordinary income

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that the debtor must report to the Internal Revenue Service. In contrast, non-recourse loans are considered paid-in-full once the underlying asset is seized regardless of the price at which the asset is sold.

## Project Management

Project management involves planning and organization of a company's resources to move a specific task, event or duty toward completion. It typically involves a one-time project rather than an ongoing activity, and resources managed include personnel, finances, technology and intellectual property. A project manager helps to define the goals and objectives of the project and determines when the various project components are to be completed and by whom; he also creates quality control checks to ensure completed components meet a certain standard.

Generally speaking, the project management process includes the following stages: planning, initiation, execution, monitoring and closing. Different industries have also developed specialized project management templates that are specific to the unique needs of their respective fields. The templates make project planning efficient and easily repeatable from one set of deliverables to the next. For example, IT project management specializes in facilitating the process of delivering technical products that pass through several life-cycle stages including development, testing and deployment.

For many people, the title of project manager doesn't really mean much. It may seem like a fluffy title for sitting and supervising. While supervision is one important part of the job, a lot more goes into project management than just watching everyone work.

Project management is often associated with fields such as engineering and construction and, more lately, health care and information technology (IT), which typically have a complex set of components that have to be completed and assembled in a set fashion to create a functioning product. But no matter what the industry is, the project manager tends to have roughly the same job.

**A Project Manager Plans:** From start to finish, every project needs a plan that outlines how things will get off the ground, how they will be built and how they will finish. For example, in architecture, the plan starts with an idea, progresses to drawings and moves on to blueprint drafting, with thousands of little pieces coming together between each step. The architect is just one person providing one piece of the puzzle. The project manager puts it all together.

**A Project Manager Facilitates:** When there is a large team working on a single project, communication can quickly break down. This especially holds true when some parts of the job are outsourced. For instance, if you want to start a company that sells widgets online, you

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need to build a website, get your marketing together, talk to suppliers, find a sales crew and have someone in charge of shipping. As a small business, you wouldn't have all of that done in-house, so you act as the project manager to bring all the pieces of the crew together and facilitate cooperation and collaboration.

**A Project Manager Does PR:** Public relations is a huge part of any business. It's not enough to only make sure that the company has a favorable view in the eyes of the public; internal public relations aims to ensure that the head of the company knows what is going on and holds a favorable view of the department. The project manager is in charge of making sure that the higher-ups are kept in the loop and know what is taking place.

**A Project Manager Closes:** Every project has a budget and a time frame. Blow either of those, and the whole project may be lost. The project manager makes sure to keep everything moving smoothly, on time and on budget. That means when the time frame is coming to an end, the manager can keep all the team members working on the project to finish on schedule.

Let's say a project manager is tasked with leading a team to develop software products. He or she begins by identifying the scope of the project. Then he or she assigns tasks to the project team; this team can include developers, engineers, technical writers and quality assurance specialists. The project manager creates a schedule and sets deadlines. Often he or she uses visual representations of workflow, such as Gantt charts and PERT charts, to determine which tasks are to be completed by which departments. He sets a budget that includes sufficient funds to keep the project within budget even in the face of unexpected contingencies. The project manager also makes sure the team has the resources it needs to build, test and deploy a software product.

When a large IT company such as Cisco Systems Inc. acquires smaller companies, a key part of the project manager's job is to integrate project team members from various backgrounds and instill a sense of group purpose about meeting the end goal. Project managers may have some technical know-how but also have the important task of taking high-level corporate visions and delivering tangible results on time and within budget.

Obviously, a project manager must have pristine organizational and time-management skills. But while attention to detail is key, he or she must also be able to visualize a project in its entirety to ensure that it comes together properly. A good project manager is a powerful leader in any circumstance, adept at interpersonal skills and thinking quickly, and able to devise creative solutions to problems.



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## Agile Project Management

The computer software industry was one of the first to use a particular methodology called agile project management. With the basis originating in the twelve core principles of the Agile Manifesto, agile project management is an iterative process focused on the continuous monitoring and improvement of deliverables. At its core, high quality deliverables are a result of providing customer value, team interactions and adapting to current business circumstances. Unlike Waterfall project management, a more traditional method, agile project management doesn't follow a sequential stage-by-stage approach. Instead, phases of the project are completed in parallel to each other by various team members in an organization. This approach can find and rectify any errors in the project without having to restart the entire procedure.

Agile project management provides more flexibility in error detection throughout project stages, resulting in consistently fewer errors than Waterfall, which can only test bugs during developmental stages. In software development, agile approaches are typically used to help businesses respond to unpredictability. Within the Software Development Life Cycle (SDLC), team members are involved in the requirement, design, development and testing phases. Most importantly, agile techniques involve the regular overview of task efficiency in order for team members to adjust behaviors and procedures accordingly.

## Agile Project Management Tools

Agile project management uses a set of narrow-focused tools.

- **Scrum methods** focus on the empirical feedback loops to adapt to the complexity and unpredictability typically found in software development. Decision making is based on observed results following short intervals known as sprints. During each sprint, a tested product is kept in a ready-to-ship state at all times. As a whole, a scrum is a set of roles, responsibilities and feedback that remains consistent throughout the project. Removing predictable errors in the process allows businesses to easily learn and adapt to future errors. Product owners, team and scrum masters are integral to the scrum's success. The product owner is responsible for overseeing, communicating and building the vision for the project. The team is responsible for meeting the goals of each sprint in an autonomous fashion. Working with the product owner and team, the scrum master facilitates the completion of goals by removing any impediments.
- **Lean methodology** focuses primarily on the continuous improvement of processes through waste elimination. Waste is the root of unprofitable activity and consists of defects, overproduction, transportation, waiting, inventory, motion and processing. By



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getting rid of waste, organizations can improve their value stream and effectively deliver increasing value to their customers; ultimately, customer value is created through processes with zero waste. With continuous improvements throughout the process, errors in project deliverables are effectively minimized. Individuals who meet certain criteria can become Lean Six Sigma certified, thus validating their knowledge and application of lean methodology in business practices.

## Zara Agile Supply Chain

Applications of agile project management aren't limited to the IT industry. Apparel retailer Zara has used an agile model to transform itself into one of the world's most valuable chains. Instead of relying on outside production, processes such as design, manufacturing and warehousing remain internal. Designers and product managers are responsible for the initial orders and in-season responses. Rather than focusing on large production runs prior to a new season, Zara manufactures clothing in small batches. Consequently, the company avoids high inventory and profit-eroding markdowns.

Thanks to internal agility, the company can deliver new product to stores in as little as 15 days. Following basic agile principles enables Zara to focus on creating customer value, self-organizing teams and short-cycle but high-quality deliverables.

## Agile Pros and Cons

Agile Project Management can reduce error-related costs through continuous improvement and changes within the planning cycle. Through constant team interaction at short intervals, mistakes can be quickly detected, eliminating the need to restart projects. As a result, any repeated work that is necessary doesn't hurt the organization as much as it would have otherwise. Likewise, agile methodology helps ensure end products most effectively meet customer needs.

While agile processes have tremendous upside, this process isn't fit for all organizations. Agility is contingent on highly skilled team members who can collaborate but also work autonomously. Any holes amongst the team can prove costly and time-consuming for organizations. For example, agile methods wouldn't be suitable for the construction industry, due to its lack of iterative deliverables.



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## Project Completion Restriction

A type of clause, seen most often in municipal bond indentures, which requires the issuing party to sell debt securities (often in the form of revenue bonds) to finance the full completion of a particular project.

Project cash flow projections are rarely certain, and if construction costs exceed estimates, the debt issuer may reconsider the completion or the final structure of the project. A project completion restriction protects the interests of bondholders, as it forces the issuer to secure the debt financing needed to complete the project, which should produce the revenues needed to meet bond payment obligations.

## Completion Bond

A financial contract that insures a given project will be completed even if the producer runs out of money, or any measure of financial or other impediment occurs during the production of the project. Completion bonds are used in many industries, including major films and construction projects.

They may be part of a mortgage financing deal, and serve to protect both the mortgagor and mortgagee. A third party financier, a completion guarantor company, is typically brought in to provide the financial backstop in the event that original financing is insufficient to complete the project. Also known as a completion guarantee.

Completion bonds are often standard pre-project material for any large construction project or complex project involving large sums of money and/or multiple investors. They are a longstanding tradition in the entertainment business, where many variables can come into play which may affect the completion of a large movie project.

A third party guarantor will assess the risk to the projects completion and collect a premium for insuring the particular risks to a given project being completed on time, and on budget. Investors become much more likely to get involved, knowing that the project will be completed enough to be sold so they can recoup their investment.

## Scope

Scope is a project management term for the combined objectives and requirements necessary to complete a project. Properly defining the scope of a project allows a manager to estimate costs and the time required to finish the project. A project's scope includes all of the

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information and deliverables that are expected as the project progresses toward completion. It also outlines the project boundaries by specifying what is not included within the scope of the project and can include information pertaining to the project budget or available resources.

Information regarding the project schedule as well as the assignment of tasks can be included within the scope. Often, the various work groups that will be participating will also be named in order to clarify which personnel, internal or external, may be involved with the project.

## Deliverables

A deliverable can include any objectives or milestones within a project. This can include the creation of products, services, or processes. Additionally, it can include incremental changes, staged across the project plan, used to help govern or assess the pace of the project's progress.

## Product Scopes

When a project is responsible for the creation of a product, the defining the characteristics of the particular product are required. This includes physical specifications, such as size and materials, as well as functional requirements, such as what the product will do and how quickly the product will complete an action.

## Example of Defining the Scope

If the project was to design an airplane, the scope would include the requirements of the plane, such as how many passengers it can carry or how fast it should be able to travel, as well as information pertaining to the ideal size, materials and any associated costs of development. Additional information pertaining to the goals and the associated timeline can be included, such as developing a concept sketch in week one, to serve as a road map to product development.

## Project Management and Project Scope

It is the responsibility of the project manager to ensure that the scope's deadlines are met, allowing for smooth completion of the project. The timeline may be sidetracked by additional tasks, referred to as scope creep, which occurs when the project gains additional features or requirements without extending the deadline.



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## Scope Creep

Scope creep is most commonly associated with a project scope that was initially considered complete when it was begun. As the project progresses, small changes to the original plan occur expanding the scope from the original limit. Those small changes lead to other changes, resulting in a cascading effect of additional considerations and requirements.