A STUDY ON THE DEVELOPMENT OF PROJECT FINANCE IN KOREA SEARCHING FOR SOLUTIONS TO THE MARKET ADVANCEMENT

By

Ju-Hwa Jung

THESIS

Submitted to
KDI School of Public Policy and Management
in partial fulfillment of the requirements
for the degree of

MASTER OF BUSINESS ADMINISTRATION

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ABSTRACT

A STUDY ON THE DEVELOPMENT OF PROJECT FINANCE IN KOREA SEARCHING FOR SOLUTIONS TO THE MARKET ADVANCEMENT

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Before 1997 IMF ruling period, Korean real estate market had two distinguishable characteristics. The first one was that Korean real estate market was suppler oriented and the other one was that in terms of financing, commercial banks' collateralized loans dominated most of the real estate finance market. Therefore it was common for constructors to have provided additional security or third party guarantee for the loans.

However after Asian financial crisis, big changes happened. Korean government introduced some advanced financial techniques from the advanced countries in order to boost up devastated economy from financial crisis and Project Finance was one of them.

Project finance was traditionally used for large scaled long term project such as natural gas development project or infrastructure development project. Project

Finance made it possible to make up the financial shortage of government's resources and utilize private sectors' efficiency in public project. In Korea, Project Finance began to be vitalized starting with Inchon airport expressway project, and project finance started to be used for various real estate development projects about a decade ago. Normally real estate development Project includes housing complex construction, commercial facilities, resorts, golf courses, and so forth.

These days, Project Finance has become so popular financing method in Korea. From the perspective of quantity, Project Finance has become a momentous component in real estate financing market. In Korea, Project Finance started to be highly utilized from 2000 and as of 2006, PF loan balance was measured KRW 20.3 trillion. PF ABS issuance was also popularized from 2004 and at the end of 2006, PF ABS issuance volume was KRW 58.9 billion constituting about 25% of overall ABS market in Korea.

No one can deny that anchoring of Project Finance in Korean real estate market was successful. However, in term of quality, Project Finance still has some points at issue. These days, even shrill warning signals show in the market from time to time. Therefore, it can be said that it is right time to look back and around the current status of Project Finance market for more sound and sustainable development.

I first study the history of Korean PF market and do some real case analysis to

substantiate the current and potential problems in Korean PF market. Three real Project Finance cases are introduced in this thesis: 1) Cheonan-Nonsan expressway project, 2) Doosan We've apartment complex project in Bundang, 3) Jukjeon development project in Youngin city.

This paper also analyzes what the problems exist both ostensibly and potentially in Korean Project Finance market, and tries to derive some valuable policy recommendations. In contrast with previous work on Project Finance in Korea, I deal policy matters and financing matters in a balanced way. As a result of study on Project Finance market system and the case analysis, this paper derives some valuable findings below.

First, even though Project Finance is invigorated in real estate finance market, the accessibility is also limited to only large companies. It was because financial institutions do not have proper feasibility study model and just rely on the project sponsors or project developers.

Second, legal regulations such as limitations on maximum loans to a borrower can function as blocks.

Third, actual full recourse to a project sponsors or developers also spoil the effectiveness of original Project Finance. In this case developers can not enjoy the effects of off-balance sheet finance.

Fourth, savings banks' two aggressive investment to Project Finance can invoke social problems potentially. Some vigilant monitoring activities from government authorities are needed.

Fifth, as we can see in subprime turmoil in US, wrong and too mush generous credit rating on securities can provoke disasters. Proper credit rating is critical to investors' choice. Therefore proper valuation on PF ABS is highly required to reflect only project's profitability and future cash flows. Nonetheless it is the same with Korean Project Finance market. Credit rating companies have tendency to generously endow credit scores on PF ABS. Most of the PF ABS is given credit ratings of BB or above, which is investment level.

Finally, PFV law frustrated to be enacted in Nov 2001 and abrogated in 2003 should be pondered for legislation again.

In sum, even shortage, say the old Korean Proverb, is always better than excessiveness. At present, no one can deny that currently Project Finance is one of the most popular and effective financing methods in Korea. The Project Finance market in Korea shows huge development in terms of quantity, but its physical constitutions are immature and lack quality yet. There also shows some warning signals of overheating to the market. Therefore the thesis strongly insists that sound and sustainable development of Project Finance can be achieved when Korean financial

market become more market oriented and deregulated. At the same time, along with the sound systematic establishment, government's financial support and sometimes sound interventions to the market are also needed.

Dedicated to my lovely family

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Ⅰ. Introduction

1. Background and Purposes

Traditionally Korean society has experienced chronic shortage for housing places since the Korean War in 1950, and it was also thought that there always existed enough demands for housing units in the real estate market. Furthermore, with government's arduous policy to boost up economy and rebuild the country from the ruins after the war, Korean economy started to be revitalized step by step as well as real estate market. Upon these circumstances, many construction companies and developers started to participate in the real estate development market, and Korean real estate market also boomed dramatically for decades. During that period, even large scale projects did not have big trouble in financing due to government's legal and financial sponsor programs like government guarantee.

However there happened big changes in the late 1990s. It was the Asian financial crisis broke out in Dec 1997. Korean real estate market fell in deep recession with Korean economic depression and showed huge plummets in property prices. So Financial institutions like commercial banks started to hesitate to lend their money to constructors or even requested hard equivalent collaterals for the risks. For this reason, many small and medium sized-constructors had big troubles in finding ways to

finance their new projects. It also led vicious cycles. Recession in real estate market led to financial shortage and bankruptcy of constructors, and it also caused deeper deterioration in real estate market.

To solve these financial shortage problems and to develop real estate finance market, Korean government decided to deregulate the market, and at the same time introduced new political supports and new financial systems such as REIT (Real Estate Investment Trust), MBS (Mortgage Backed Securities), Real Estate Fund, PF (Project Finance) and so forth.

In May, 2001, Korean Real Estate Investment Trust Law was passed by Korea national Assembly. Through this law, ordinary REIT and CR REIT (Corporate Restructuring REIT) was introduced. And KoMoCo (Korea Mortgage Corporation) started to issue MBS from 1999 with mortgage loans from National Housing Fund. Later in March, 2004, KHFC (Korea Housing Finance Corporation) was established and got down to business: issuing MBS in long term bond market. Due to these government's successful supports, Korean real estate market could be pulled round again.

Cyclically, since 2000, Korean real estate market price has increased sharply, and the market showed reverse signals on overshooting in real estate market. Therefore Korean government recently announced new amendments to housing laws. It was a

kind of government's reactions to cool the overheated real estate market. The supply ratio of housing units in Korea has already been over 100% nation wide[1], and real estate price also increased sharply for years. So Korean government needed to intervene and regulate the market. New regulations include "post construction sales system" and "open construction cost system" as well as limiting LTV[2] ratio on personal housing finance market.

Korean real estate market was conventionally supplier oriented, and showed much dependence on the deposit money from lottery winners who have rights to own the property after construction is completed. For the reason, even small amounts of money made the construction projects possible. But if the post construction sales system were activated, small sized constructors would have to finance their own way, depending on installment money from the potential buyers no longer. All these things mean the constructors will have big troubles in financing for construction, and will experience financial shortages. It can be a big risk to small construction companies that have relatively low credit scores.

Under this situation, constructors or developers will need a breakthrough, and from the perspective of supplier finance, Project Finance can be the most efficient

[1] Housing supply ratio in Korea was 100.6% in 2002, and increased up to 102.2% in 2004, according to Ministry of Construction and Transportation

[2] LTV(loan to value) ratio indicates the ratio that the maximum loan amount banks can lend for property value

alternative for real estate development market. As a financing method, Project Finance is the most appropriate financial vehicle for the project that has long term and high money requirement, because Project Finance is structurally based only on the cash flows and profitability of the project. It also means Project Finance is insulated from the developers.

Traditionally Project Finance was used for natural resource development and infrastructure development, but for a recent decade Project Finance is being actively used for real estate development projects such as housing development and urbanization. Project Finance has been boomed in Korean real estate market for recent years, but there still exist lots of limitations. One of the current problems is the Project Finances in Korea are inclined to be more heavily dependent on savings banks' short term bridge loans, rather than commercial banks or securities firms. Another one is that strictly speaking, current Project Finances are different from original Project Finance concepts. At this point, it will be valuable to scrutinize current Project Finance and PF ABS markets in Korea. Here, some applicable ideas would be searched to ameliorate Korean Project Finance market and the system structure.

In this thesis, therefore, Concept of Project Finance and Project Finance market status in Korea would be overviewed, and then some clues ideas to help forward the Korean Project Finance market would be searched by analyzing some real Project

Finance cases in Korea.

Finally I hope that this effort could be some help for foreign investors who are interested in Korean Project Finance market as well as Korean market participants.

2. Methodology and strategy

This paper will first overview history of Korean real estate finance market, and introduce some important concepts and terminology related with Project Finance. Based on this basic understanding about Project Finance, the Korean PF loans and PF ABS market status will be scrutinized being followed by some cases analyses. And finally, through these case analyses, I would try to derive some valuable ideas.

More specifically, qualitative methods will be applied in making the analysis. This paper will use market statistics and survey data from relevant institutions like Financial Supervisory Service and Bank of Korea and so forth. Relevant documents such as annual reports, statistics, official correspondence, books, newspapers, journals and other types of publications will also be used.

Ⅱ. Overview of Project Finance in Korea

1. Project Finance loan market in Korea

1) Concept of Project Finance

According to Peter K. Nevitt and Frank Fabozzi, Project Finance can be defined as "a finance of a particular economic unit which a lender has satisfied to consider the cash flows and earnings of that economic unit as the source of funds from which a loan will be repaid and to the assets of the economic units as collateral for the loan" [3] It means two characteristics. First, repayment of debt only depends on the cash flows from the project itself. Second, an independent legal entity called SPC (special purpose company) controls all the projects without a project sponsor's help.

In general, it is often said that the prototype of Project finance is production payment finance[4] for an oil field development project. From the 1970s to 1980s, Project Finance was in its heyday in terms of quantity and quality. But when it came to the 1990s, it was not limited only to oil industry and started to be used in various fields including infrastructure projects such as electricity, tunnel, expressway, power plant and communication facilities. And now Project Finance is even thought as of being a good method to be applied for housing development projects.

The first Project Finance case worldwide was the North Sea oil fields project during the 1970s and with the successful development of the project, Project Finance became popular worldwide. The Teaside Power plant project in the UK and the Hopewell Partners Guanzhou Highway project in China were good examples of

[3]3 Peter K. Nevitt and Frank Fabozzi, " Project Financing", 6th,1995, Euromoney

[4] Originally, PF was utilized for natural resource development project, so most benefits were distributed with productions from the project

successful Project Finance cases. Project Finance lending balances worldwide have exceeded $36 billion with steady annual increases from 1989, and reached a peak of $85 billion in 1997, before dropping back to $54 billion during the following year's global economic turmoil.

2) Characteristics of Project Finance

A. Non recourse or limited resource finance

In Project Finance, all responsibilities for the project are restricted only to the project itself and the project company involved. In addition, structurally relevant risks from the project lenders can be shared. So even though the project company (SPC) fails to repay the debt and defaults, lenders or creditors do not have claims on the property or assets of project sponsors[5]. The creditors only can have claims within the scope of the cash inflows of the project and project company's net assets. For this reason, we call Project Finance a non- recourse finance. It is one of the most distinguishable traits of Project Finance.

However, in reality it is not that difficult to see that many cases in which project sponsors provide some collaterals or guarantee to the lenders instead of relying on the project company' cash inflows. In this case, if the project defaults, lenders would have

[5] Project sponsor is the project initiator practically conducts planning and controlling the project without any financial and legal responsibilities. project sponsors are mostly consisted as consortium.

some claims on the project sponsors. Project sponsors can have some limited responsibility for the project according to the contracts. This case is called limited recourse. The recourse range and conditions are practically predetermined before the contracts between lenders and project sponsors are concluded.

B. Limited collaterals

In Project Finance, sources of debt repayment should be constrained to inner cash flows of the project. So the collateral or security is also limited to the overall assets of the project company itself. It has the same logical background with non recourse finance trait in some ways. But in reality, for the stability and profitability of the project lenders many cases showed that lenders sometimes required project sponsor's guarantee and third party's guarantee for the project's sure success.

C. Escrow accounts

Project Finance is generally called cash flow lending, because Project Finance is based on the cash inflows and outflows from a project. In Project Finance, cash flow forecasts and stubborn accounts management are really important. So, stringent cash management is needed to match timely the cash payments according to payment schedules, and all cash management should be controlled independently. Therefore, for transparent cash controls, "Escrow accounts" is ordinarily used in all relevant

fiscal transactions in Project Finance. Lenders and the project company preset the cash management items and their priority for payment, and under this priority a payment is made in sequence.

D. Off balance sheet finance (bankruptcy remote)

From the perspective of accounting, Project Finance is done and controlled through a project company which is a legal entity. All responsibilities both financially and legally go to a paper company, called the project company. So Project Finance does not have any influences on the project sponsor's financial status. As off-balance sheet financing, project sponsors can lessen the debt to equity ratio, and improve the financial soundness regardless of the project's success. Due to this mechanism, even in case of project default, project sponsors can be free from the sequential bankruptcy. It is the main reason that many developers use Project Finance in large scale and for huge money- absorbing project.

E. Risk sharing

Project Financing has many correlated risks such as construction risk, market risk, operation risk, economical risk, default risk and legal risk. Construction risk means possibility that construction would be delayed or unfinished on time. For example, a failure to permit from government authorities or unsold properties could make the

project impossible, and reduce a mismatch between cash inflows and cash outflows can invoking a higher operating risk.

Through equity participation from lenders or other interest groups in the project, the project company can share these business risks or the uncertainty. It is another attractive advantage of Project Finance that project risks can be assigned to lenders or syndicate of lenders. Of course, this mechanism should offer a higher risk premium to investors rather than corporate finance. That is why Project Finance is called a high risk, high return financing.

F. Structured finance

Project Finance is often said as a representative structured finance in that Project Finance is done through a separate paper company called SPC (Special Purpose Company) which was made by a project initiator or joint investors for the specific project. The SPC is called the Project Company. The project company does its legal and economic role as the main body for the project. Through this independent structure, a lot of project participants can control their assets and liability in one route, and they can also share their risks pertaining to the project. This financing technology can be conducive to cost reduction in financing and uplift the market stability and liquidity.

G. Single business oriented

Project Finance is a financing method depending on cash flows and internal project collaterals. So lenders need to accurately estimate the feasibility and profitability of the project both financially and legally. And lenders and investors always worry about uncertainty of the project. So it is the project sponsors' duty to persuade investors and ascertain the project's success. To persuade the investors or lenders effectively, the project company is recommended to be a single-purposed company. If the project company is involved in various businesses at one time, the profitability and feasibility of the project could become more uncertain, and adequate project risk management could be hardly possible.

3) Project Financing Procedures

Project financing procedures are different according to the project's traits such as project's longevity, magnitude, product, and so forth. But generally we can divide it into 4 steps like preliminary feasibility study, planning, financing and documentation.

A. Preliminary feasibility study

The first step for Project Finance is to do the study on the economical and mechanical feasibility. A feasibility study is one of the most critical steps in Project

Finance. According to the study result, it is determined whether to continue the project or not. So in this step, many relevant market experts such as accountants, engineers, lawyers participate in the feasibility study. After this feasibility study, the most conservative assumption is selected, and whether the project is accepted or rejected is decided. The most common way to estimate the feasibility is the cash flow method called NPV.[6]

First estimate the future cash flows from the project, and calculate the IRR (internal rate of return), which is the discount rate that makes the net present value of cash flows zero. And then calculate the WACC[7], and compare it with the IRR[8]. Finally if the IRR is greater than the WACC, the project is accepted.

B. Project Planning

Only when the feasibility study shows a positive outlook and a profitable future, it is decided to continue the project. After the feasibility test passed, in-depth planning is made based on the information from the feasibility study. In this step, the overall project structuring is made by consultation from various experts such as lawyers and accountants. The project company has to decide the overall plans about how to

[6] A standard method for the financial appraisal of long-term project. Used for capital budgeting, and widely throughout economics, it measures the excess or shortfall of cash flows, in present value (PV) terms, once financing charges are met

[7] Weighted Average Cost of Capital is the return a firm must earn on existing assets to keep its stock price constant and satisfy its creditors and owners. This has been used by many firms as a discount rate for financed projects

[8] Internal rate of return is the discount rate that results in a net present value of zero of a series of cash flows.

finance, how many project participants involved in, risk management tools, and so forth.

C. Project Financing

From the former steps, the structure and risk management strategies are prepared. Then the financing methods and financial structure such as how to finance, when to finance, the portion between equity and debt financing need to be determined. In this step, the financial advisors and lenders generally provide much information on financing. One of the main purposes in this step is to minimize the financing costs.

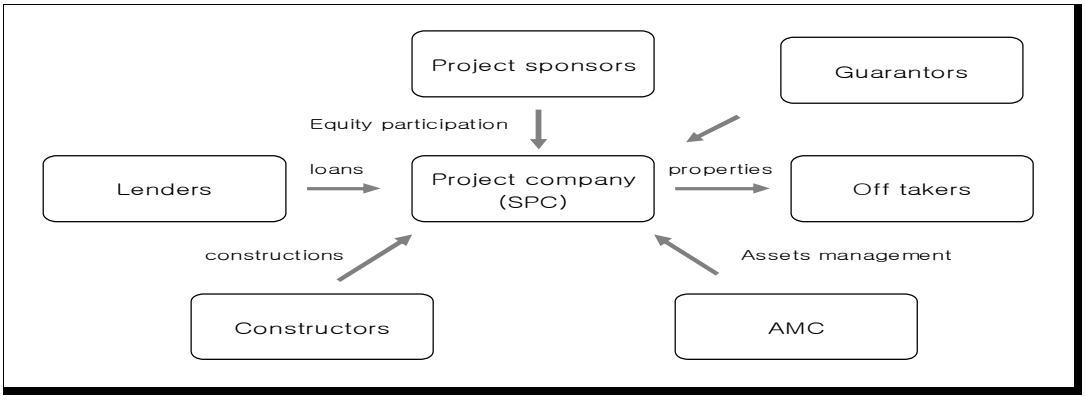
D. Documentation

Project Finance involves various many interest groups. Hence, sometimes conflicts can arise among project participants without a firmly defined and written documentation. One important principle to maintain the project successfully is to sustain the firmly defined contracts among the project participants, and manage the relationship properly during the life of the project. So all results from former steps are summarized and documented in this step. Generally, a Project Information Memorandum and a Project Financing Memorandum are the basic documents. These documents consist of underlying documents, financial documents, security documents, experts' reports and legal opinions.

4) Project Finance Structure

The structure of Project Finance is defined by the characteristics of the project. Project sponsors first establish the paper company called SPC to operate the project, and as the legal entity, the SPC manages the project by borrowing money from the lenders, operating the project, distributing the results to the investors, and repaying the debt to lenders. Of course for the transparent transactions, the SPC has to use escrow accounts for the project. As previously described, the original Project Finance is originally used for huge SOC (social overhead capital) project, so the original structure is somewhat more complicated. But the general form of a Project Finance for real estate development project is supposed to be like as below.

Figures 1) General PF structure in real estate development project



5) Financing methods

In the general type of Project Finance for a real estate development case, the financing activities in a Project Finance can be divided into two parts: 1) Construction

period and 2) Operation period. The former is the period to construct the facilities. During construction period, the project company practically speaking needs lots of money. The latter one is the period to operate the facilities after completing construction. For operating the project, the project company forecasts next year's production and sales, and upon this projection, the project company estimates operating costs to maintain the business. This is the common practice for a Project Finance case such as in natural resource development or utilities facilities development projects.

However, a housing development project shows a different story in Korea. The participants in the Korean housing development market do not have much interest in operating a business after its completion of construction. Developers and constructors mostly want to sell the completed properties right away after its completion, and be paid back their initial investment and additional return as early as possible. Therefore as for housing development project in Korea, project activities can be divided into two different parts: 1) Sanction period and 2) Construction period. The first part is that the project company gets permission from the government authorities and starts selling the properties to individual or institutional buyers before setting out for construction. In this period, constructors usually use their own equity for investment. Constructors however, not having enough funds usually utilize loans from savings banks or private

liabilities as bridge loans. So the interest rate payment burdens for the project company are the highest in this period.

In the second period, the project company actually starts to construct the project after installment sales. Most loans are made in accordance with construction progress after starting constructions. We call it the progress payment. Borrower' risk generally is lower in sanction period and constructors generally use Project Finance loans from commercial banks in this period.

General financing methods for Project Finance consist of equity financing, debt financing, compensation trade and BOT. [9] But compensation trade and BOT can be normally limited to a Social Overhead Capital project and natural resources development projects. The financial structure of a Project Finance usually consists of a combination of equity and debt.

A. Equity participation

It is a way that lenders, construction contractors and other interest groups can participate in the project as investors not just as creditors. They can share the profits and risks from the operation of the project. It is a good way in that the participants share the risk. On the other hand, it is a bad way in that the decision making process

[9]Build – Operate – Transfer indicates the form of project financing, wherein a private entity receives a franchise from the public sector to finance, design, construct, and operate a facility for a specified period, after which ownership is transferred back to the public sector.

and operations becomes more complicated. It generally can be formed as a joint venture, syndication, partnership (limited and general) and so forth. Generally speaking, equity participation can be done in two routes: 1) sheer equity participation through partnership and 2) long term loans to the project company. Long term loans by contract can be recognized as equity capital, and a loan interest rate can be determined and distinguished between general loans and private liabilities.

B. Debt financing (commercial loans)

Most Project Finance cases in Korea depend on debt financing such as Project Finance loans from banks. As previously discussed, Project Finance loans are in principal made by the project's visions, not by collateral or by the project sponsor' level of credit worthiness. And the loan interest rate and lending limits will be determined by the results of the profitability and feasibility study of the project, because lenders are paid back their investment with the cash flows from the project later. Loans can generally be sorted into four types: 1) trust loans, 2) syndication, 3) third party loans, 4) project sponsors' loans.

A SPC that has insufficient funds cannot afford to buy construction land for a project. So they usually use Mezzanine[10] which is a kind of subordinate loan. In Mezzanine, legal claims on the borrower lie behind the senior loans. Therefore a

[10] Savings banks' PF loans in Korea are known mostly as a sort of Mezzanine.

higher interest rate for the Mezzanine would be set up as compensation for taking on a higher level of risk. Mezzanine loans are usually used as intermediate loans for a project, and converted to permanent loans later. Project Finance loans from savings banks are mostly characterized as Mezzanine in Korea.

C. Guarantees

In most practical cases, the lenders require the SPC or project sponsors to provide a guarantee for their risk. But small developers can not provide enough collateral or a sufficient amount of a guarantee. In Korea, the KHFC (Korea Housing Finance Corporation) and the KHGC (Korea Housing Guarantee Corporation) provide a guarantee program on the real estate development project for small construction companies. As a kind of third party guarantee program, the government supports Project Finance through above the two state-run corporations. Even though the current performances of the two companies are not prevailing in the financial market, this program could be a good plus to relatively small sized project.

D. Financial Engineering: securitization

Securitization means that a SPC pools its valuable assets such as receivables or loans, and issue bonds or securities through giving its pooled assets as security. Securitization is one of the advanced financing techniques in the financial market. The

prominent form of securitization is MBS (Mortgage backed securities). These days, securitization has become so popular as one way of the financing method of Project Finance.

A SPC issues securities or bonds depending on the cash flows stream from the project. Through this, a SPC can finance its fund from the financial market without additional debt burden. Not only the project company but also the banks usually can sell their Project Finance loans or underlying assets to a SPC, and issue securities. Generally constructors provide joint liabilities on a guarantee or a debt acceptance for a Project Finance ABS for credit enhancement. Therefore even a low credit rated constructors can finance its funds through securitization. Especially it will be helpful to those constructors or financial institutions who wish to recoup their investment as soon as possible.

An ABS is a representative form of securitization in the long term capital market. Besides ABS, recently another form of securitization is winning popularity in the Project Finance market. This is called Asset Backed Commercial Paper (ABCP). ABCP is a kind of Commercial Paper with a short term maturity of mostly less than 3 months. So ABCP should be refinanced at maturity with another ABCP in a sequential manner to match the long term maturity of a Project Finance. ABCP can be issued mostly through an ABCP conduit. An ABCP conduit is a bankruptcy-remote special

purpose entity that issues commercial paper and uses the proceeds to purchase Project Finance loans. The payments that are collected from the purchased assets are also used to redeem the commercial paper at maturity. Originally, a CP is used for short term assets, but in recent years, the use of ABCP has been expanded so that many conduits now purchase longer-term assets such as mortgage-backed securities, commercial loans, collateralized bond obligations, and collateralized loan obligations. Lately there are also an increasing number of conduits engaging in cross-border transactions.

6) **Comparisons with corporate finance**

Project Finance has some positive aspects as one of the structured finance techniques. First, Project Finance is an exemplary case of a cash flow based, non-recourse financing method. The structuring of Project Finance is ruled mainly by the cash flows from a project. So the project company does not need to provide additional collaterals or credit enhancement in principal. One of the most distinguishable points of Project Finance is that financing is done according to the feasibility or profitability of a project itself, regardless of a project sponsor or corporation's credit worthiness and financial statements. The repayment of debt is also based on the cash inflows and outflows form a project, and all cash transactions are managed under escrow accounts. Second, the project company conducting the project is formed as a SPC, a paper

company. So project sponsors do not have any financial effects from the project.

On the other hand, it is a prominent bad point that the financing cost of Project Finance is relatively higher than corporate financing. A relatively high financial and construction completion risk can make the financing cost higher. Another problem in a Project Finance is that accurately estimating the future profitability of a project is difficult.

Table 1) Benefits and Costs of PF

PERSPECTIVES	BENEFITS	COSTS
Project Sponsors	■ Risk transfer (non- recourse) ■ Off balance financing ■ Risk sharing ■ Tax break	■ Higher financing costs ■ Complex contracts ■ Difficulty in negotiation
Lenders	■ Higher profitability ■ Project risk reduction ■ Reducing information asymmetry problems	■ Difficulty in assessing project feasibility

Project Finance has generally a higher risk than other financing methods, especially corporate financing. So for a risk premium, a higher interest rate is embodied in Project Finance loans.

Table 2) Interest Rate Comparison

(Unit: %, %p)

Loans/Year	2000	2001	2002	Jun. 2003
PF loan (a)	9.97	9.10	8.13	7.53
General corporate loan(b)	8.18	7.49	6.50	6.27
a - b	1.79	1.61	1.63	1.26

Source: Bank of Korea, 2003

Note: Average contract interest rate on PF

Generally it can be said that the major benefits from Project Finance are higher profitability and risk diversification. On the other hand, a difficulty to assess the feasibility and a compromise among stakeholders is the main cost for Project Finance.

Table 3) Comparisons with Corporate finance

	Project finance	**Corporate finance**
Borrower	Project company(SPC)	Corporate
Collaterals	◅ Project company's Assets ◅ Profits from project	◅ All assets ◅ Credit score of corporate
Repayment sources	Net Cash flows from project	Corporate' s cash Short term assets
Recourse	◅ Non recourse ◅ Limited recourse	Full recourse to corporate
Financing base	Profitability of project	Financial status of corporate
Capital management	Escrow accounts	Internal management
Financing costs	Higher	Varied according to the credit of borrower
Risk	Risk sharing	All risks belong to corporate
Applicable areas	SOC, Real estate development	All areas

When compared with traditional corporate finance, Project Finance has many benefits. Construction companies traditionally used corporate financing from commercial banks for which they usually had to provide collateral or a guarantee on the loans. Of course, this kind of providing can worsen their financial status and credit scores. In addition, if the project turned to be a failure, project sponsors would have responsibility for the failure. But in Project Finance, project sponsors can be better insulated from project risk.

7) Project Finance loan market in Korea

Project Finance for real estate development has sharply increased since FY 2000. The main participants were state-run special banks like KDB (Korea Development Bank) and commercial banks. And later, insurance companies, savings banks and securities firms have started to join the market since FY 2002. No one can deny that the Project Finance market in Korea has shown a steady increase in terms of quantity.

The loan amounts increased from KRW 1.3 trillion in FY 2000 to KRW 5.9 trillion in FY 2002 in which it has doubled every year. Moreover, major lenders are also changing from special banks or government-run corporations to commercial banks. In 2001, 41% of Project Finance loans were made from special banks like the KDB, but in 2002 the number decreased to only 19%. On the other hand, commercial

banks' portion increased by about 22%.

Table 4) PF loans of domestic banks in Korea

(Unit: KRW 100 million, %)

	FY 2000		FY 2001		FY2002		1st half. FY2003.	
	Amounts	Portion	Amounts	Portion	Amounts	Portion	Amounts	portion
Sum	12,927	100.0	23,478	100.0	59,595	100.0	33,886	100.0
Commercial banks	9,599	74.3	13,018	55.4	45,942	77.1	24,510	72.3
Provincial banks	1,100	8.5	680	2.9	2,330	3.9	2,430	7.2
Special banks	2,228	17.2	9,780	41.7	11,324	19.0	6,946	20.5

Source: Bank of Korea, 2003

Note: New lending balance / overseas investment excluded

Most Project Finance loans have been executed on SOC until 2001, and about 45% among the total Project Finance loans were related to SOC. However things have been changing. Due to favorable movements in the real estate market and a low interest rate in the financial market, Project Finance in real estate development has started to be vitalized since FY 2002. In FY 2002, huge increases showed from 7.7% to 47% in terms of new lending. As of 2006, Project Finance loans balances were estimated KRW 20.3 trillion, which increased by 77% compared with that of the year before. Especially two Korean major Korean banks, the Woori bank and the Kookmin bank's lending balances were reported as KRW 6.79 trillion and 5.06 trillion which increased by 136% and 126% respectively.

One more interesting thing was that savings banks started to aggressively participate in the Project Finance market since FY 2000. Now they constitute a tremendous market shares. As of FY 2006, savings banks' Project Finance lending balances were KRW 11.2 trillion which is about a 100% increased when compared with figures of FY 2002, KRW 4.3 trillion.

Table 5) PF loans performances by Savings banks

(Unit: KRW 100 million, %)

Year	FY '04	FY '05	FY '06
PF loans volume	34,816	56,279	112,660

Source: Korea Depository Insurance Corporation, 2007

Table 6) PF loan performances by the investment fields

(Unit: KRW 100million, %)

	FY 2000		FY 2001		FY 2002		1ST Half FY2003	
	Amounts	portion	Amounts	portion	Amounts	portion	Amounts	portion
SOC	5,658	43.8	14,860	63.3	10,451	17.5	2,765	8.2
Real estate	-	-	1,806	7.7	28,004	47.0	18,007	53.1
LBO[11]	6,979	54.0	2,388	10.2	11,114	18.6	5,624	16.6
Project loans	290	2.2	4,424	18.8	10,026	16.8	7,490	22.1
(Syndicate)	290	2.2	2,524	10.8	4,666	7.8	3,690	10.9
(ABL)	-	-	450	1.9	2,880	4.8	2,000	5.9
(ABS)	-	-	1,450	6.2	2,480	4.2	1,800	5.3
Total	12,927	100.0	23,478	100.0	59,595	100.0	33,886	100.0

Source: Bank of Korea, 2003

[11] Leveraged Buy Out is kind of techniques that gain control of a majority of a target company's equity through the use of borrowed money or debt.

Among overall real estate loans, Project Finance was made up about 22% as of the first half of FY 2003, according to the Bank of Korea, and it showed a steady increase from FY 2000.

Savings banks' lending balances in 2006 were KRW 2.1 trillion which constituted about 1/10 of the overall Project Finance market, and the lending volume has been increasing tremendously from year to year. It was reported that as of FY 2006, savings banks' average Project Finance loan amount per project was about KRW 4.4 billion, and most of Project Finance cases were done through a consortium with other financial institutions.

Table 7) PF loans by compositions

(Unit: KRW 100million, %)

	Total PF(A)		Consortium(B)		Portion(B/A)	
	Counts	Loan amount	Counts	Loan amount	Counts	Loan amount
PF loans	2,586	112,660	1,667	75,756	64.5%	68.1%

Source: Korea Depository Insurance Corporation, 2007

In terms of the subjects of projects, apartments showed 61.4% of all projects, and residential-commercial building projects constituted 16.8%. According to project stage, most PF loans were made for financing the mid term money and the remainder.

Table 8) PF performances by Projects

(Unit: KRW 100million)

Contents	APT	Resi-Com	Shops	Officetel	Villas	Others	Total
Counts	1,600	403	238	22	20	303	2,586
Loan amounts	69,188	18,954	8,515	637	550	14,816	112,660

Source: Korea Depository Insurance Corporation, 2007

Table 9) PF performances by uses

(Unit: KRW 100million, %)

Contents	Middle & Remaining money	Contract money	Others	Total
Counts (portion)	1,739(67.2)	538(20.8)	309(11.9)	2,586
Loan Amounts(portion)	82,600(73.3)	21,263(18.9)	8,797(7.8)	112,660

Source: Korea Depository Insurance Corporation, 2007

Recently savings banks are enlarging their lending for overseas real estate development projects. As of Dec, FY 2006, the loan amount was KRW 100 billion, and the main target countries were Asian emerging countries such as Cambodia and Kazakhstan.

Another major participant in the Project Finance market is the insurance company. Insurance companies are willing to invest in stable assets that offspring long term profits to match pension payment to their contractors. Furthermore a recent low market interest rate has led them to invest in Project Finance more proactively.

Table 10) PF performances by insurance companies

(Unit: KRW 100million)

	FY 2001		FY 2002	
	Counts	Amounts	Counts	Amounts
Kyobo life insurance	25	4,000	23	4,900
Daehan life insurance	13	2,415	27	4,700
Samsung life insurance	16	2,504	21	3,316
SK insurance	6	537	9	1,225
Dongyang insurance	-	-	2	200
Total	60	9,456	82	14,341

Source: E.S. Lee & J.H. Jung, study on supply oriented finance and development, construction and economy research institute of Korea, 2004

According to The Construction & Economy Research Institute of Korea, domestic insurance companies dealt total 52 projects amounting to KRW 1,434 billion in 2002.

It has also increased by 65% from KRW 945.6 billion in FY 2001. The major insurance companies investing in Project Finance were Daehan insurance company, Kyobo insurance company and Samsung insurance company.

2. Project Finance ABS market in Korea

1) Concept of Project Finance ABS

As of Jun, FY 2006, the total balance of the real estate related loans through financial institutions were estimated to be at minimum KRW 45 trillion. ABS balances outstanding were 8.5 trillion, and fund balances for real estate development

were 3.2 trillion. ABCP balances outstanding were estimated to be KRW 4.5 trillion. The Korean ABS market has increased so tremendously, and MBS and PF ABS are made up of large portions of the current ABS market in Korea.

On Jan 18, 2005, The SEC made a final ruling on the definition of Asset Backed Securities. The term “asset-backed security” is currently defined to mean a security that is primarily serviced by the cash flows of a discrete pool of receivables or other financial assets, either fixed or revolving, that by their terms convert into cash within a finite time period plus any rights or other assets designed to assure the servicing or timely distribution of proceeds to the security holders.

Securitization means a financing method that financial institutions or corporations put together, pool their valuable assets, and with providing them as collateral, issue bonds or securities. With the cash flows from the underlying assets, issuers can meet the due payments to investors. We call the securities as ABS(Asset backed securities), and according to the asset types such as mortgage, student loan, bank loan and corporate bonds, the names of securities are determined like MBS, SLBS, CLO, CBO. Especially, securities issued with Project Finance loans as the underlying assets are called PF ABS.

Qualified underlying assets for securitization should have three main traits. First, the cash flows from the assets should be periodically stable and predictable. If the

cash flows are unstable and unpredictable, cash flow matching between cash outflows from coupon payment to securities investors and cash inflows from underlying assets would be impossible. In that case, cash flow conduit structure cannot be established.

Second, the underlying assets consisting of a Pool need to be homogenous. This is because the securitization structure and an ex post facto management of debt collecting or collateral care can vary according to what the underlying assets are.

Third, a proper valuation and credit scoring should be possible. If the assets cannot be valued financially, cash flow predictions also can be impossible, and if the credit rating on underlying assets is impossible, rating on ABS also can not be permitted. Rating on ABS is crucial for risk management and a coupon rate decision for securities investors.

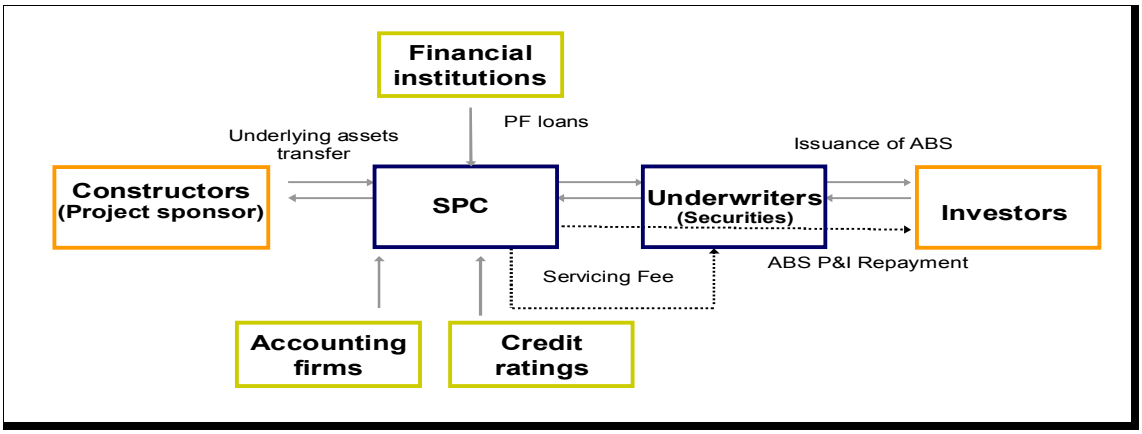
ABS, as an investment vehicle, normally provides a relatively higher coupon rate to investors, and profitability is usually better than other financial products from the perspective of financial institutions. These are the reasons senior PF ABS have become popular in the financial market for the past recent decades.

ABS did a good role to diversify the financing methods and boost up the investment atmosphere in the financial market. With the underlying assets being separated from the balance sheet, financial ratios such as ROA[12] are expected to

[12] Return On Equity indicates the ratio of return from equity investment

improve for financial institutions. Through this we can escape some risks like credit risk and interest rate risk. In addition, with higher credit rating for ABS, we can do finance with a lower cost of capital.

Figure 2) General structure of PF ABS



Originally financial institutions and general corporations issue bonds based on their own credit scores, but ABS is different in that its issuance is determined by the underlying assets' cash flows. ABS issuers need to match the payment schedule between cash inflows from the underlying assets which have been "true sold" and cash outflows to the bond holders. Generally, an ABS issuance depends on the payment abilities of cash flow stream. So, the credit ratings or scores are generally higher than the underlying assets holders' credit worthiness.

2) PF ABS market in Korea

In Korea, the government introduced ABS as a tool to recover a recession in the real estate market that resulted from the 1997 Asian financial crisis. By enacting a new law about securitization in 1998, KAMCO (Korea Asset Management Corporation) started to take a leading role in securitization of NPL (Non Performing Loan) and bad loans from the corporations under a state of corporate restructuring. KAMCO bought loans defaulted from commercial banks at cheap prices, and liquidated or securitized them by issuing ABS.

Especially in 1999, about 50% of the total issuance volume of ABS was related to real estate loans or mortgages. So the role of ABS in real estate finance has increased steadily, and eventually PF backed ABS had became the most popular investment vehicle in the secondary market. However since 2001, the ABS issuance volume has significantly decreased, and in FY 2006 the total issuance balance shrank by 18.8% to KRW 23.2 trillion from KRW 28.6 trillion in FY 2005.

Table 11) ABS Issuance performances

(Unit: trillion KRW, %)

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Total volume	50.9	39.8	39.9	27.0	28.6	23.2
(net change)	(3.1)	(△21.8)	(0.1)	(△32.3)	(5.9)	(△18.9)
Counts	194	181	191	170	236	183

Source: Financial Supervisory Commission, 2007

This decrease was caused partially because commercial banks' soundness of capital assets need to improve, and at the same time the need for securitization decreased. It is said that because of these main factors, the total volume is decreasing. On the other hand, since the KHFC (Korea Housing Finance Corporation) was established in 2004, MBS and SLBS issuance volume has increased prominently. The decrease in MBS issuance in 2006 was led by meaningful interest rate gap between commercial banks' real estate collateralized loans and the KHFC's fixed rate mortgage loans. However since the floating market interest rate is on the rise, it is likely that the KHFC's issuance would be more increasing.

Table 12) ABS issuance by the issuers

(Unit: KRW 100million)

		FY 2004	FY 2005	FY 2006
Commercial Banks		64,040	47,723	43,521
Credit cards & Capitals		84,737	81,241	53,825
KHFC		30,161	43,781	33,960
	MBS	30,161	38,611	17,531
	SLBS	-	5,170	16,429

Source: Financial Supervisory Commission, 2007

One more conspicuous thing is that the portion of real estate PF ABS is increasing year by year. In FY 2003, the real estate PF ABS market was KRW 776 billion, and it was only 1.9% of the total ABS market. But in FY 2006, it had tremendously increased to KRW 5,897 billion which constituted 25.4% of the total ABS market.

Table 13) ABS issuance in terms of underlying assets

(Unit: KRW 100million, %)

Contents	FY 2003		FY 2004		FY 2005		FY 2006	
Loans	72,770	(18.2)	110,184	(40.8)	156,085	(54.6)	139,325	(60.0)
Real estate PF	7,769	(1.9)	16,246	(6.0)	48,760	(17.1)	58,978	(25.4)
Mortgage, NPL	65,001	(16.3)	93,938	(34.8)	107,325	(37.5)	80,347	(34.6)
General loans	178,565	(44.8)	88,845	(32.9)	80,982	(28.3)	52,065	(22.4)
Receivables	66,850	(16.8)	33,194	(12.3)	22,863	(7.9)	25,493	(11.0)
Etc(P-CBO)	80,639	(20.2)	37,541	(14.0)	26,142	(9.2)	15,340	(6.6)
Total	398,824	(100.0)	269,764	(100.0)	286,072	(100.0)	232,223	(100.0)

Source: Financial Supervisory Commission, 2007

Over the years, the issuance of PF ABS has sharply increased. It was because the real estate development market such as apartment constructions expanded, and the real estate developers' financing demand through ABS issuance and market demand on ABS were met. The total volumes of PF ABS issuance has increased by 21% to KRW 5.8 trillion in 2006 from KRW 4.8 trillion.

In the past, most PF ABS cases were based on commercial banks or savings banks' loans for construction companies. And most of cases were to meet credit enhancement requirement through such structures as joint liabilities on a guarantee and a debt acceptance of project sponsors. Another distinguishable note is that most PF ABS cases were issued in the initial steps of the overall project like buying land for construction.

Table 14) Some PF ABS issuance cases in 2006

(Unit: KRW 100 million)

Issuance date	SPC names	Volumes
May 2006	Dongil Universe I	500
May 2006	World Merdian	800
May 2006	Yougin We've	800
May 2006	Imkwang Namyangju	140
May 2006	Shindorim Technomart	3,500
May 2006	Kimpo Iwon	310
Jun 2006	Poonghwa 1	290

Source: NICE fixed income review, NICE bond ratings, 2006

Recently another form of financing method is being highlighted in Project Finance. It is PF ABCP (asset backed commercial paper). ABCP is one of the popular financing method in the money market. It is a form of Commercial Paper with a shorter maturity of less than 3months. ABCP is normally used by companies with low credit scores or project companies unqualified to issue PF ABS. Under current relevant law, the issuers have no duties to report to supervisory institutions. So the exact numbers of ABCP issuances are unknown.

Table 15) PF ABCP issuance volume

(Unit: KRW billion)

	1Q 2006	2Q 2006	3Q 2006	4Q 2006	1Q 2007
Issuance volume	1,268	2,399	2,184	3,465	1,914

Source: Financial Supervisory Service, 2007

As of August 2007, ABCP issuance balance is estimated as 15 KRW trillion according to the Financial Supervisory Service. And with the real estate market booming, ABCP issuances also showed sharp increases in issuance volume. In the fourth quarter of FY 2006, issuance volume increased more than 50% compared with the third quarter of FY 2006. In the aftermath of the government's recent regulation on PF and the real estate market, demand for ABS issuances transferred to ABCP issuances. The ABCP issuance requirement is not tight and can be issued with a lower interest rate if the secondary market is vital. However, the first quarter of FY 2007 shows that a sharp plummet in issuances. This is the result of a credit crunch in the money market infected by the US subpirme mortgage fear.

Ⅲ. Project Finance Case Analysis

1. Project Finance case analysis

It is usually said that the first Project Finance case in Korea was "the Lee Hwa Ryong tunnel" construction project. "Lee Hwa Ryong tunnel" located in Munkyung city of Kyungbuk Province was started to be built from Dec 1994, and completed in Oct 1998. It is meaningful in that the Lee Hwa Ryong tunnel project was the first construction case funded and built by private sectors.

But strictly speaking, that case can not be said a real Project Finance case. With the enactment of the Private Capital Inducement Act on SOC (Social Overhead Capital) in Aug 3, 1994, the Korean government permitted private sectors' involvement in construction and operation in government projects in earnest.

The real first Project Finance case in Korea is said to be the new Inchon international airport expressway project in 1995. The construction took 5 years from Dec, 1995 to Dec, 2000, and total cost was KRW 1,400 billion. Domestic construction companies set up a new project company called "New Airport Hiway co. Ltd" as a form of consortium. Then the new airport hiway co. Ltd drove forward their business as the project company. The project was done as BTO (Build – Transfer – Operate) case, so the project company was supposed to transfer the ownership of the property to government after construction completed, but it had 30 years operating right.

The first Project Finance case to have securitized Project Finance loans as underlying assets in the world was issuance case of CLO (Collateralized Loan Obligation) of the CSFB (Credit Suisse First Boston) in 1998. The SCFB issued $ 617 million bonds in the US. Underlying assets were loans from separate 41 power plant construction projects in the US. The CSFB issued bonds with average maturity of 12.5 years. In case of Korea, the first Project Finance case issuing ABS was the Chonan - Nonsan expressway project.

As previously mentioned, Project Finance is being used for many fields such as infrastructure development, housing constructions and pubic facilities. As the project becomes various, the underlying assets of PF ABS are also becoming variable. In the real estate ABS market, real estate properties and real estate related financial assets including sales price in parcel and deposit money for lease can be underlying assets.

Table 16) Major PF ABS issuance cases

(Unit: KRW 100 million)

Developers	Underlying assets	volume	Issuances
Hyundai development	Sales charge	2,278	Dec 12, 1999
Korea land trust	Right on Expense redemption[13]	2,717	Dec 12, 1999
Korea land trust	Sales charge	179	May 29, 2000
Ssang yong cement	Real estate properties	1,002	July 31, 2000
Doosan C & E co. Ltd	Deposit money for lease	407	Dec 14, 2000
Tongyang major	Real estate property	2,904	Dec 18, 2000
Doosan C & E. co. Ltd	Real estate property	1,221	Dec 20, 2000
LG electronics	Deposit money for lease	1,237	Dec 26, 2000

Source: S.W. Kim, Current status and issues in real estate PF, Korea Land Trust

Here general two exotic cases will be looked around first, and then case analyses will be delved into. The first one is that the Korea Land Corporation issued senior ABB worthy of KRW 405 billion and subordinate ABB worthy of KRW 150 billion based on land with total appraisal value of KRW 555 billion. In this case, the

[13] Korea land trust issued ABS worthy of KRW 271 billion with claims on expense redemption for 18 trust accounts in Dec 1999.

underlying assets were real properties. So the land properties could not generate cash inflows other than land sales price. In addition, selling time and price estimation were not determined yet. But these were critical risks for the Korea Land Corporation. Credit enhancement for the ABB was covered with subordinate bond and credit provision from the Korea Development Bank and the Kookmin bank.

The second one is the National Housing Corporation's securitization case using housing units for leases. The Korea National Housing Corporation pooled the assets or claims on the public leasing apartments such as lease claims, deposit money for leasing, and claims on properties sales. Lease claims were contracted for 5 years and scheduled to be expired in Oct, 1999. In this case, potential risks were delinquency of lease payment, cancellation of contracts, sales price fluctuation and so forth. So for credit enhancement, the Korea Land Corporation provided a guarantee for compensation for damages in case of delinquency and cancellation of contracts as well as credit provisions worthy of KRW 250 billion for temporary liquidity shortage.

Above two cases were simple ABS issuance cases which just issued ABB or ABS with credit enhancement, without establishing a paper company. But in earnest they were not the Project Finance case, but just securitization case to use real estate properties as underlying assets. From here, three real Project Finance cases will be analyzed.

Case 1) The Cheonan - Nonsan expressway project

The first case that used PF loan ABS structure in Korea was the Cheonan-Nonsan expressway construction project. It cost totally about KRW 730 billion and it was featured that the Korean government financed those funds from private market through a Project Finance, especially through issuing ABS. In Dec 12, 1995, the Korean government announced the fundamental plan on business facilities of private investment. Then in July 22, 1997, the Cheonan-Nonsan expressway co. Ltd was established as paper company. In Dec 26, 1997, construction was launched and opened to the public in Dec 23, 2002. The project form was BTO (Build-transfer-operate) and operation duration is scheduled for 30 years from Jan 1, 2003.

The Cheonan-Nonsan expressway project was the construction of an expressway between Cheonan and Nonsan areas. The construction areas was 4 lane round trips and total distance was 80.96Km. The government estimated to shorten the distance and reduce logistics cost by linking the Chonan J.C.T in Kyungbu expressway and Honam J.C.T, and this project was also designed to stipulate the revitalization of Chungcheong province.

The Cheonan-Nonsan expressway co. Ltd was the project company, which was made up of consortium of LG, Hyundai, Kumho construction companies and others. The major lender was the KDB (Korea Development Bank), which lent the project

company, the Cheonan-Nonsan expressway co. Ltd KRW 730 billion worth loans. And the KDB issued PF loan ABS with that loans. The maturities of ABS varied from 5 years to 15 years, and the major investors were the LG investment & securities co. Ltd and the KDB itself.

Total estimated development cost was KRW 1,628.9 billion including 1,440 KRW billion of construction cost, KRW 1,042 billion of interest during construction and 84.7 KRW billion of price cost. Financing consists of KRW 450 billion of equity financing, 730 billion of debt financing, 448.9 billion of financial support.

Table 17) Fund financing plan

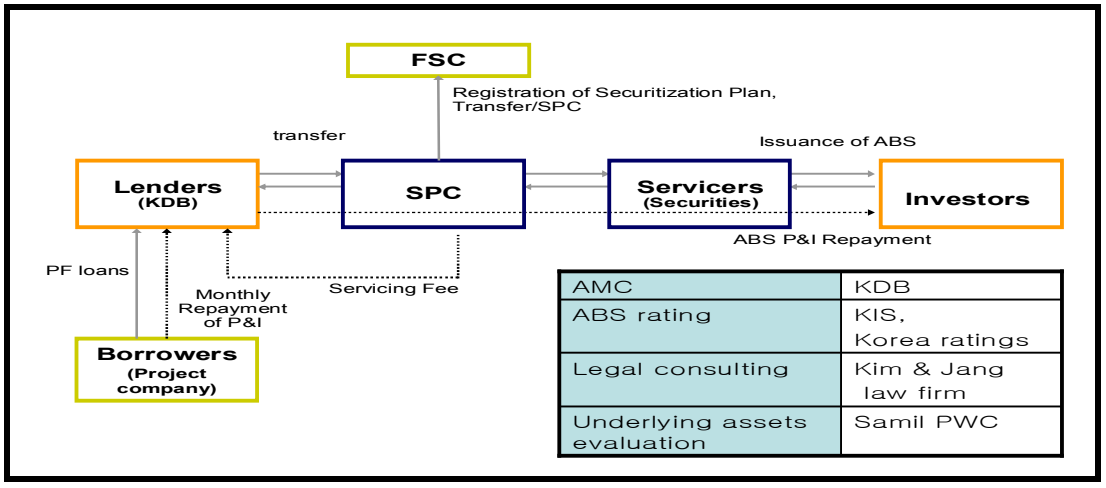
(Unit: KRW billion)

Fund needed		Financing plan	
Total construction	1,440	equity	450.0
Interest during construction	104.2	Debt financing	730.0
Price	84.7	Financial support	448.9
Total investments	1,628.9	total	1,628.9

Source: Wang, S. J, The study on financial support business of Korea Construction Financial Cooperative, Construction and Economy Research Institute of Korea, 2004

The mechanism was the same with general ABS issuing techniques. First, the KDB transferred the loans and collaterals from the project to SPC for securitization. Then SPC makes proper structuring models with the cash inflows and outflows from the PF loans, issues ABS, and pays back the transfer money to the KDB.

Figure 3) PF ABS Issuance Structure of Chonan-Nonsan project



After securitization, SPC repays interest and principals to securities investors with the cash flows from underlying assets. For managing underlying assets, the KDB played an important role as asset manager such as collecting debt and managing collaterals. The Samil Price Waterhouse Coopers which was one of the major accounting firms in Korea did its job as underlying assets evaluations before transferring the assets into SPC. And Kim & Jang law firm, the biggest law firm in Korea also participated in the securitization process while providing a legal counseling and opinion to make effective “true sale” agreement.

In term of ABS structure, PF ABS was made up of 6 senior tranches, and each tranche has 3 month coupon payment condition. Its maturities were ranged from 5 years to 15 years, and about 75 % of the total ABS issuance had 10 years of maturities or more. It was well structured but had relatively short term maturities, which was not scheduled enough to match the long term project when considering 30 years of project

operational duration.

Table 18) ABS tranche Structure of the Chonan-Nonsan project

(Unit: KRW 100 million)

Type		Maturity	Portion	Amounts	Debt service	Credit	Rate
Senior	Tranche 1	5 yrs	4.5%	330	Lump sum payment at maturity	AAA	6.92%
	Tranche 2	6 yrs	3.1%	230	Lump sum payment at maturity	AAA	7.22%
	Tranche 3	7 yrs	6.8%	500	Lump sum payment at maturity	AAA	7.42%
	Tranche 4	8 yrs	8.6%	640	Lump sum payment at maturity	AAA	7.62%
	Tranche 5	10 yrs	23%	1,700	8 yrs grace 2 yrs monthly pay	AAA	7.82%
	Tranche 6	15 yrs	54%	4,000	10 yrs grace 5 yrs monthly pay	AA+	8.62%
Total			100%	7,400			

Source: Cheonan-Nonsan expressway co. Ltd

Case 2) The Doosan We've apartment complex project in Bundang

As of Jan, 2002, the Doosan construction companies dealt with 3 cases of ABS issuance. Two of them were for financial improvement, and the other one was for project based financing. These were Duckso, Wolgok and Bundang apartment construction cases. The issuance volume was KRW 8.40 billion, 1550 billion, 800 billion respectively. The first two cases were reconstruction cases, and the last one was a new construction case. The Bundang We've apartment construction project was

residential–commercial building case located in Keumgok-dong, Bundang city in Kyungki province. The project was consisted of 9 apartment buildings and 656 households with additional facilities.

Table 19) Construction summary of the Doosan We've case

Size	Number of houseolds	Total sales price
32 pyung	76 households	KRW 18.4 billion
45 pyung	126 households	KRW 44.3 billion
56 pyung	454 households	KRW 197.3 billion
Total	656 households	KRW 260.0 billion

Source: Doosan construction co. Ltd

The Doosan construction co. Ltd transferred underlying assets: future cash flows from sales to SPC (Doosan the third securitization co, Ltd), and issued PF ABS in Nov 6, 2001. ABS credit rating was BBB- and the issuance volumes were KRW 80 billion. The measures to protect investors was made with real estate trust structure and flaw security charge.

Table 20) ABS Tranche of the Doosan We've case

(Unit: KRW 100 million)

Type		Maturity	Amounts	Credit score	Coupon rate
Senior	Tranche 1	6 month	190	BBB-	7.56%
	Tranche 2	11 month	255	BBB-	8.16%
	Tranche 3	16 month	140	BBB-	8.47%
	Tranche 4	26 month	215	BBB-	9.03%
Total			800		8.65%

Source: Doosan construction co. Ltd

In the Doosan We've case, only tranche 4 has call option from 24th month to maturity. ABS issuance cost was estimated KRW 8,300 million of interest payment and KRW 800 million of minor cost such as legal counseling and asset management fees.

Case 3) The Jukjeon development project in Youngin city

A) Project summary

The Jukjeon special planned district[14] is located near Jukjeon train station in Youngin city. So it conventionally was thought to have much uses in terms of location and function, but it had big obstacles impeding to be used effectively. There existed highway and railways passing over. What is worse is that the land could not be sold separately, because if separately sold, the values or uses of land could be structurally limited. For these reasons, the KLC (Korea Land Corporation) planned the development project to co-develop this area with private sectors for the purpose of effective land uses through Project Finance. At the same time, private sector constructors could solve funding problems by conducting project with public corporation.

[14] Special planned district indicates the area in which government conducts comprehensive development plan first and then reflect private sector's more creative ideas to develop.

The Korea Land Corporation offered for public subscription in Oct 17, 2001, and selected partners in Dec 30, 2001. The partner was Shinsegye consortium consisted of the Shinsegye Engineering & Construction and the Shinsegye co. Ltd. They entered into contracts in Dec 19, 2001 and established the project company named “the Green city” in Jan 31, 2002. The KLC offered commercial land as investment in kind, and private partners provided money for construction as equity contribution.

Table 21) The Jukjeon development Project summary

(Unit: KRW 100billion)

Construction site	Special planned district in Jukjeon, Yongin city
District	Central commercial district
Land site size	14,956 pyung
Construction size	81,849 pyung
Total costs	3,116 (land cost : 836, construction cost : 2,280)
Project period	Jan 30, 2002 ~ Dec 31, 2007(scheduled)
Facilities	Discount store, department store, etc

Source: Korea Land Corporation

Face-lifted Jukjeon station that will be developed as complex station is supposed to be transferred to the national railroad administration after completion, and commercial facilities will be sold or leased for the general public. In addition, around the station, retail-entertainment complex will be built for shopping and entertainment.

B) Financing structure

This project is to develop railway station and its outskirts for retail and entertainment complex with private partners as Project Finance method. Construction area is 14,956 pyung. For assuring the successful completion of project, partners deposited security money which amounts to 10% of total investment to the KLC. Furthermore foundation capital for the project company establishment was contributed by KRW 900 million from private sector, and the KLC converted 200 million from land providing.

Total project cost was estimated KRW 311.6 billion, which consisted of land acquisition cost, construction cost, interior costs, and so forth. Total investment from private sector was KRW 214.6 billion, and equity investment was KRW 26.7 billion including KLC's KRW 5.3 billion worth investment in kind.

The Shinsegye consortium contributed about 80% of total equity investment, and 8.6% of total project cost (KRW 26.7 billion) was funded by the Shinsegye consortium's borrowing from commercial banks as debt financing. Additionally, the lotting–out price of KRW 197.6 billion is scheduled to be funded through the Green city's wholesales of one room flats and discount stores to the Shinsegye consortium. Finally, another KRW 60.5 billion would be funded by leasing outlet shopping malls.

Table 22) The Jukjeon Project investment by participants

(Unit: KRW 100 million)

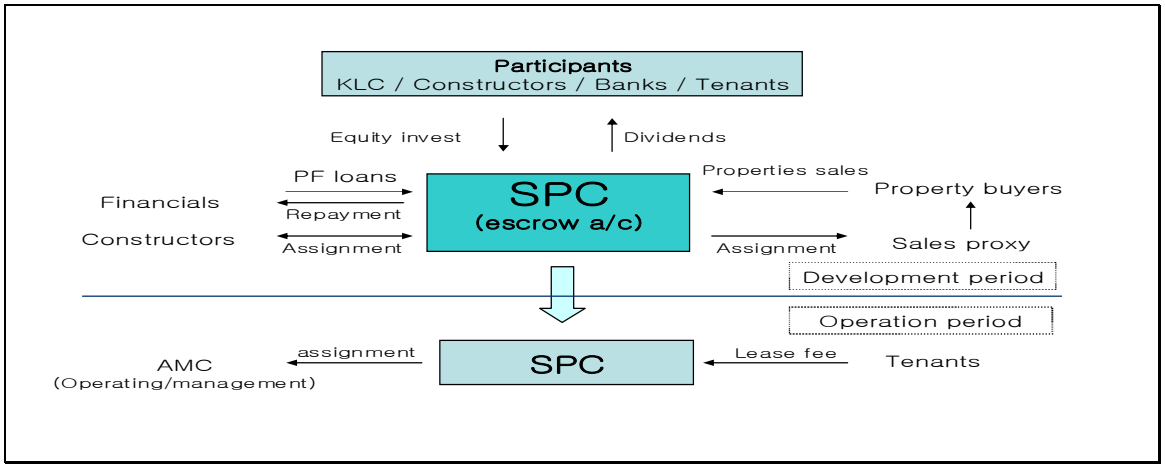
investors	KLC	Shinsegye E&C	Shinsegye.co	Total
Investment(Portion)	53.1(19.9%)	160.5(60.1%)	53.4(20%)	267(100%)

Source: Korea Land Corporation, 2001

There also were some regulations about investment contract. When increasing capital, the KLC' investment is restricted at maximum 20% of total equity for risk control, and the remaining 80% of equity investment is contributed by the Shinsegye consortium. Additionally under all conditions, private partners should retain a biggest stakeholder's position and put 10% of their investment as cash before ground breaking.

Furthermore, for assuring the KLC's profit, private partner has to take all the KLC's equity after project completion, and pays the KLC 3.9% profit per year on equity for the period from establishment of the project company to closing the project company. The KLC directly participates in the project, but provides land and can be paid back cash flows from sales of land and certain portion of profits.

Figure 4) PF structure of the Jukjeon development case



Source: Korea Land Corporation

C) Feasibility study

Total investment was estimated KRW 311 billion. It was made up of land price (31.1%), construction cost (57.8%), planning & audit (2.6%) and others (8.3%). Money needed was supposed to be financed from facilities sales (63.4%), deposit money for lease (19.4%), equity (8.6%) and debt (8.6%).

And total capital was funded from Properties sales (KRW 197,653 million), Deposit for lease (KRW 60,544 million), Equity (KRW 26,682 million) and Debt (KRW 26,704 million).

More specific feasibility study result done by the Korea Land Corporation showed like below.

Table 23) The Jukjeon project feasibility study results

(Unit: KRW million)

	Total	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
Land purchase	97,016	-	-	-	50,762	46,254
Construction	180,145	-	15,125	72,481	66,130	26,407
Plan & audit	8,169	-	675	3,226	2,928	1,340
Interior	7,573	-	51	1,879	3,895	1,728
Others	16,659	-	622	3,442	6,632	5,963
Reserve for operation	1,173	583	589	-	-	-
Prices adjusted	(10,630)	-	(635)	(3,453)	(4,266)	(2,276)
Interest	848	-	-	-	-	848
Total investment	**311,583**	**583**	**17,062**	**81,049**	**130,347**	**82,542**
Properties sales	197,653	-	11,472	72,185	85,696	28,300
Deposit for lease	60,544	-	-	4,731	15,021	40,792
Equity	26,682	1,000	25,682	-	-	-
Debt	26,704	-	-	-	13,254	28,300
Total capital	**311,583**	**1,000**	**37,154**	**76,916**	**113,971**	**82,542**

Source: Korea Land Corporation

Note 1) Investment was considered 3.6%/yr prices change

2) Construction cost was prepaid 10%, then under progress payment on every Feb.

3) Land was assumed to be acquired at the time of construction

4) Interest payment included interest payment on loans from financial institutions.

2. Implications on case analysis

So far three well known Project Finance cases were delved into. The Chonan-Nonsan expressway project is conceived an advanced Project Finance case in Korea,

because as previously shown, this case succeeded in funding about KRW 730 billion by issuing ABS not using plain loans. However, structurally the Chonan-Nonsan expressway project has some limitations. One representative limitation is that the project was originated and sponsored by the government. Of course, it is the same with the Jukjeon development case which led by the Korea Land Corporation. Besides these two cases, we can easily see many cases that have gotten the government sponsor. Especially in large project, most cases were initiated by the government. Project companies normally want the government's involvement because when the government involves in the project, the project company can lessen relevant risk. However it means that Korean PF market is still immature and has long way to go. There should be more systematic and legal support for individual private sectors.

The second intuition from case analysis is that the structure of securitization needs to be more complex and effective. PF ABS structures in most cases are so simple and issue straight bonds. One of most important considerations in securitization is a credit enhancement and a low the interest rate. For example, by introducing senior /subordinate structure, securitization can be more attractive and diversify some risk to various market participants. These limitations on introduced cases are not restricted to only those cases. Most of the Project Finance cases are in similar situations.

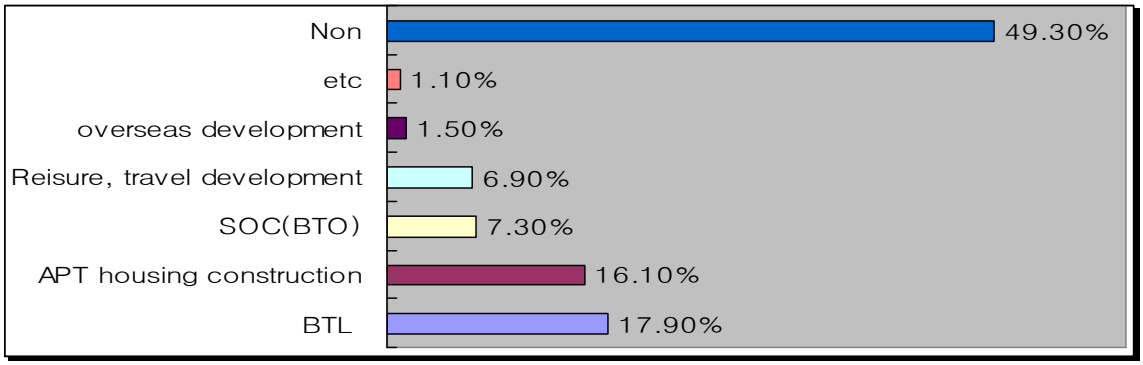
Ⅳ. Current problems and recommendations

1. Problem diagnosis

1) Limited accessibility to Project Finance market

According to a survey by the Construction Association of Korea in FY 2006, among the 753 construction companies that answered the survey, about 49% replied that they did not have any experiences in Project Finance and even had no schedules to use Project Finance. Furthermore, small sized-construction companies constituted about 56.7% of non experienced companies and large companies was made up only 2.9%.

Figure 5) Survey results on PF experience



Source: Construction Association of Korea, 2006

It means that though Project Finance is one of the popular financial products in the current real estate market, only large sized-companies that have affluent collateral or

credit scores are accessing the financial market and are enjoying the advanced finance product.

Project Finance was developed on the concept that loans are made according to the project itself, without project sponsors' guarantee or collaterals. But reality shows a different story. In most Korean Project Finance cases, we can easily find that lenders require satiable security or a third party guarantee for the risk of lending. We have already seen this in the case analysis. This means that financial institutions do not strongly consider the project sponsors' credit worthiness in deciding to issue loans and loan limits. We need time to think about what the real Project Finance case look like.

2) **Limitation on maximum lending allowance to one major borrower**

The government is currently imposing financial institutions lending limits to certain companies under incumbent law. The limitation of maximum loans to the largest 30 companies and their affiliates is made to prevent a concentration of economic power and at the same time to give smaller sized-companies an equal chance. But it is considered a block for Project Finance loans. Structurally, Project Finance consumes a large amount of money, so conglomerates and large companies' participation are necessary for the Project Finance market to develop. However, under this limitation, conglomerates' investments shrinkage is ineluctable.

3) **Practically full recourse made available to project sponsors**

Though Project Finance is a representative of non recourse finance, in reality many Project Finance cases in Korea showed that lenders have required a project sponsors' guarantee or a thirty party's joint liability as a guarantee for a project. It means that lenders are still not sure for the profitability of the project. It also shows the level of the intrinsic value and the concept of Project Finance are not effectively exploited. One of the reasons is that there are not enough Project Finance experts in the Korean market. Another reason is that financial institutions do not have a proper system to test a project's likelihood of success.

We can also see this phenomenon from The Santa Elena Condominium Project case[15] in the US. This case involves the Dongah construction company which is building a 86,245 square feet, 2-3 story condominium with 85 houses and 12 building complex. The Dongah construction company estimated the Dong ah USA, an US local entity, and also established the Santa Elena Associates with a US local partner, the DW Sunnyvale Associates for the project. The total construction cost was estimated at USD $13.3 million, so Dongah construction company decided to finance USD $6 million as line of credit provided by the City bank. But City bank demanded

[15] Dong Ah construction, US Santa Elena Condominium Project, 1997

a guarantee from the parent company, the Dongah construction company in Korea. That's not the general case for Project Finance. Ordinarily, a project company finances about 70% or more of its required money without a project sponsors' guarantee in the US. This case indicates that Dongah construction company failed to explain the project feasibility and to persuade city banks properly. Hence, we need market experts and professional negotiators on PF who can better lobby on behalf of Korean constructors.

4) **Savings banks' too heavily involved in PF**

As previously discussed, about 10% of the current Korean Project Finance market is dominated by savings banks, and Project Finance loans from saving banks are dramatically increasing, currently more than doubling each year.

According to the Financial Supervisory Service, the total Project Finance loan volume by savings banks has increased to KRW 11 trillion in FY 2006. The volume has skyrocketed by 100.2 % compared with that of a year before, and KRW 8 trillion jumped compared with the figure of FY 2004. But the profitability of savings banks has worsened. Savings banks' ROE on Project Finance loans were 17.2% as of FY 2004 and 15.8% for the first half of 2006 respectively. What makes matters worse is the delinquency rate has increased by 4.5% from 5.8% to 10.3% in FY 2006.

One problem is that most of the savings banks' Project Finance loans are defined as bridge loans with a short term maturity and a relatively higher risk. As of FY 2006, about 50% of savings banks' loans are loans for Project Finance according to the Korea Depository Insurance Corporation. With the recent real estate market recession, the Project Finance loans' delinquency rate is up to 10%. Even though savings banks were established for the purpose of promoting savings in the middle and small sized households, they are now investing too risky assets. When considering the inflexibility of savings' banks to market fluctuations, it could lead a big social and economic problem in the case of the economy and the real estate market enters a depression.

Therefore recent savings banks' aggressive marketing activities and the overheated Project Finance market are making headlines. If the real estate market goes into a recession, savings banks could be in a lot of trouble and even enter into bankruptcy. Therefore preemptively, some tractable and vigilant measures are needed to bridle in the Project Finance lending.

5) **Drifting Project Finance Vehicle law**

In Nov 2oo1, the Korean government originally had planned to enact a PFV (Project Finance Vehicle) law to induce funds from the financial market into investing

in SOC, housing plants constructions. This planned law's core contents contained that permission of equity participation such as pension funds and MMAA (Military Mutual Aid Association) is needed as well as lessening the government tax payment burden.

First, the Korean government is now levying heavy registration fees (1.2%) for a legal entity newly established within the metropolitan area. But if a paper company is qualified as a PFV, heavy taxation can not be applied.

Second, when a PFV is invested in kind, an acquisition fee (2%) and a registration fee (3%) are exempted. This was to stimulate the Project Financing by providing financial incentives.

Third, when distributing more than 90% of the earnings after tax, corporate level tax is exempted. Double taxation, a traditional problem in the Korean tax system could be solved. Double taxation means that a corporate tax is levied at the level of corporate, and later when distributing the profits to investors, in the level of individual investors, income tax would be levied again.

Forth, deregulation for financial institutions' investment and equity participation. Originally, financial institutions can only invest up to 15% into for other corporations, according to the Bank law. That regulation is exempted.

However the government's new suggestion was declined in The National

Congress and the PFV law's enactment was denied. So the government revised the corporate tax law and the Restriction of the Special Taxation Act to reflect the PFV law's main substances: tax exemption on income from dividends and tax reduction upon property acquisition. Even though the double taxation problem was solved by tax laws revision, it was just a stopgap measure and not sufficient enough.

6) **Limitation on PF ABS credit ratings**

About 53% of PF ABS had a credit rating of BBB and the rating was linked with the constructors or project sponsors' credit. It is because in practice, project completion is highly dependent on the constructors' credibility for construction completion.

Construction completion risk and market risk are the most important two parameters in measuring ABS credit ratings. Among these, market risk can not be controlled by project participants, but construction completion risk can be controlled by reflecting the constructors' credit rating when rating PF ABS. That is the reason the credit rating of PF ABS is linked with constructors' credit scores.

However this kind of credit rating structure can be an obstacle for Project Finance market growth. The principal of Project Finance is that all relevant legal and financial responsibilities should be dependent on only both the project itself and the project

company involved. But when rating a PF ABS, rating companies consider only the project and the profitability itself, ignoring the project sponsors or constructors' credit worthiness.

7) Overheated ABCP market

According to the Bank of Korea, PF ABCP market has hugely expanded. In the first half of FY 2007, the total issuance volume of PF ABCP was KRW 4.8 trillion, increased by KRW 1trillion for one year. In addition, the portion of PF ABCP among the total PF securities volumes outstanding is 35% now. On the other hand, due to the government's recent regulations on PF and global warning to subprime mortgage turmoil concurring in the US, PF ABS issuances recently showed a decrease in net issuances. The Bank of Korea announced that the total issuances of the first quarter of FY 2007 decreased by KRW 1.9 trillion to KRW 5.6trillion from KRW 7.5 trillion. Then what dose this mean? It indicates that the need for funding through ABS issuances has transferred to the ABCP market, which has looser regulations and qualifications on issuances.

A problem can now occur in the case of a money market recession. As previously argued, ABCP has a short term maturity of typically 3 months, so it should be refunded with another newly issued ACBP. It means that ABCP has a credit risk from

a maturity mismatch if the secondary market of ABCP falls into a recession.

Lately the Korean government's strong regulations on the real estate market have led to the increase of unsold apartments. To make matters worse, a sharp increase in the short term market interest rate has made the money market more inactive. If this bad situation turns worst, a chain of defaults in asset securitization and the real estate development market can be induced and lead the real estate market into a recession. No one can deny that ABCP is a good financial tool to the market participants. However we have to beware that an overheated ABCP issuance market can also evoke irrevocable disaster in a real estate market such as the subprime turmoil occurring in the US.

2. Recommendations for market advancement

1) Develop more sophisticated feasibility study model

It seems that the Korean Project Finance market can not enjoy the real Project Finance's merits. Even though Project Finance is a representative non recourse financing method that insulates the project sponsors from the project both financially and operationally, many Project Finance cases in Korea shows that project sponsors provided additional security for the project or a guarantee. It is because Korean financial institutions like commercial banks do not have much experience in dealing

with Project Finance, and therefore they do not have accurate valuation models for Project Finance feasibility studies.

As already known, Project Finance was used for natural resource development and infrastructure development projects, but now Project Finance is being used for many other fields such as communication business, apartment complex. As the objective projects become various, market participants also need to set up new sophisticated project valuation models. Expected future cash flows, improved related legal and financial risks, appropriate discount rate for NPV methods and improved risk management mechanisms should be reflected in estimating a project's feasibility.

2) Market needs more trained market experts

These days, Project Finance has become a very famous concept, but its applications are not easy because there are many complicated things to consider and solve. Compromise among investors or participants is strongly needed. For example, when conducting Project Finance, project sponsors need legal and financial consultations from professionals, but actually there are not enough experienced experts in Korea. Korean Project Finance market needs to have many legal consultants and financial evaluators to foster the market.

The most important task in Project Finance is to value the project properly. Real

estate development project is different from infrastructure and natural resources development projects in many aspects, and in Korea, Project Finance is being aggressively used for real estate development projects. So to reflect the Korean market traits and relevant market risk, we have to cultivate experienced legal experts who not only know the Korean culture well but specifically understand the market just as well.

3) More legal support from government: PFV law enactment

To induce private sector's fund to SOC development, the Korean government enacted the private capital inducement special law in 1991. In Aug, 1994, the private capital inducement act on SOC was passed, which later was revised into the private capital investment law on SOC. Under this legal support, the Inchon international airport expressway ground was broken in 1995, and a power plant construction project in the Inchon international airport followed. It was successful to have grounds to induce and utilize the private sector's money. SPC as a paper company for securitization and REITs had tax exemption and benefits from the government. But that was not the case to PF SPC. For this reason, to avoid double taxation[16] like other paper companies and to `stimulate the Project Finance market, PFV (project finance

[16] After corporate level tax levied, income tax on dividends was also confined. So tax can be levied twice on the same profits

vehicle) law was proposed to be enacted in 2001.

As the PFV law however failed to be passed as prescribed, so the government revised the current tax laws and reflected the benefits from the PFV law in 2004. If some conditions are fulfilled, double taxation can be avoided. The conditions are these. First, 5% or more of a financial institutions investment is required. Second, the capital investment needs to be more than KRW 5 billion. Third, the SPC should live more than 2 years. Finally more than 90% of distributable income should be paid among the relevant investors as dividend. Even though the double taxation problem was solved with the revised tax laws, but it was just a makeshift and only parts of the PFV law were reflected in it. For more stable and sustainable market development, a new PFV law should be enacted as soon as possible. The PFV law draft proposed should be reflected as proposed below.

Table 24) The Draft PFV Law

Requirement	Specifics
Business	• Only for PF • Long term and larger project (more than 2years)
Establishment	• Registry to FSC • Temporary Paper company • Financial institutions' minimum investment (more than 10%) • Private collection of investors (within 50 shareholders) • Minimum capital requirement KRW 5 billion
Contents	• Acquirement management and foreclosure of assets • Debt financing and issuance of bonds • Other contracts
Asset & Cash management	• Project prospects, asset management by assignment contracts • Escrow accounts
Longevity & Condition for closing	• More than 2years sustain • Cancel of registration, sustaining period expired, establishing objectives fulfilled.
Financial & Tax support	• Though setup SPC within metropolitan area, heavy registration fee unapplied • When invest in kind on PFV, acquirement and registration fee exempted • When distribute more than 90% of the earnings corporate tax exempted • Deregulation of financial institutions' investment limits

Source: Ministry of finance and economy, 2001

Besides, to support and stimulate the Project Finance market both financially and legally, a bank's investment limit (15%) to a company according to The Banking law needs to be deregulated. Furthermore, a REIT or Real Estate Funds as a legal financial institution is required. These days REITs and Real Estate Funds are playing an important roles as major fund providers in the real estate market, and their role would be enhanced for upcoming decades. So it is necessary to legally regard REITs and REFs as financial institutions such as the National Housing Fund in Korea to attract funds into the real estate market.

4) Inducing foreign banks to invest in the Korean PF market

The Project Finance loan market in Korea was heavily localized. It means the Korean Project Finance market consisted of mostly domestic financial institutions. Furthermore major commercial banks and insurance companies dominated the market. So thin a class of investors or lenders can be blocks for the development of the Korean Project Finance market. While the Korean Project Finance market has been expanding and globalizing, but the Korean Project Finance market still has low level of participation from foreign investors. For a more advanced and dynamic market, the market participants need come from more diverse parts of the world. The Korean

Project Finance market needs various foreign investors. In the overseas SOC and natural resource development project market, we can see foreign investors directly investing in Korean Project Finance projects. But until now this is not the case for domestic development projects.

Benjamin C. Esty (2002) showed that both legal and financial systems affect the ability to raise external finance. According to his research [17]foreign banks are more willing to finance large, long term, illiquid project companies in countries that provide strong creditor rights backed by reliable legal enforcement. At the same time, they are likely to finance projects in countries with less government involvement in the banking systems. The government needs to refrain itself from intervening in the market, and leave it more to the care of the invisible hand. In addition, the government has to put forth its strength in setting up new inducement measures such as fortifying the legal and financial system that project and strengthen the creditors' right to the foreign investment community.

5) Utilize securitization method more proactively

Securitization is the most appropriate financing way in that it is insulated from project sponsors and conducted by only the project's cash flows and profitability. By

[17] Benjamin C. Esty, 2002, When do foreign banks finance domestic projects? New evidence on the importance of legal and financial systems

issuing PF ABS, the project company could also finance their project only with the project's profitability without any additional collateral. In combination of these two systems: securitization and project finance, an SPC can take the role as a project company for PF and a paper company for securitization at the same time. This structure can strengthen the independence of the operational and financial structure.

Securitization may be applied for the project that has a continuous and stable cash flow. So it is not appropriate for properties sales project, but it will be suitable for lease and product manufacturing projects. From the perspective of lenders or banks, financial institutions also can securitize a PF loan for a project company and collect back quickly by issuing a PF ABS.

Not only "pay through" but also a "path through" structure can be considered when setting up the financial structure. In addition, to get a better credit score on PF ABS, the project company can enjoy a credit enhancement by using the PF guarantee program from the KHFC (Korea Housing Finance Corp). The KHFC is a state run corporation that has an AAA credit rating, which has the same effects as receiving a government's guarantee. At last, we can also consider a further combination with derivatives such as credit linked note and credit default swap for structuring an ABS.

To vitalize the PF ABS market, the long term bond market and the longer term real estate finance market need to be more developed enough to induce issuing longer

term securities. Due to the Korea Housing Finance Corporation, the long term bond market has been expanding since 2004, but it is still not enough. Most housing development cases issued short term securities because the underlying assets are mostly shorter term PF loans from commercial banks, these project terms are within 3 to 5 years. Without selling properties after its completion, but by converting them to leasing projects, project terms can be expanded, and PF ABS can enjoy longer terms. Through issuing long term securities, issuers can have the same effects as directly issuing long term bonds.

6) Public sectors' proactive involvement needed

In 2000, the Korea Land Trust succeeded in financing a required fund for construction by issuing a PF ABS. The Korea Land Trust was entrusted the apartment sites under construction in Kwangju city, Kyungki province from small construction companies, and Korea Land Trust completed the construction without any additional debt financing through securitization. It was a good case that the government-run corporation was utilized in securitizing claims or rights on the uncompleted properties.

When state-run corporations are involved in real estate development projects, the project's reliability and properties sales could be improved like Jukjeon development project case. Furthermore, in reality, the most important thing in a real estate

development project is to acquire the valuable construction site. But most of the undeveloped land belongs to the government or is restricted as a Green belt[18]. This means a lot potentially valuable land is owned by the government.

Therefore cooperation between state-run corporations and private sectors should be enhanced and vitalized. The government agencies' credibility and private sectors' effectiveness can make strong synergy effects and surely can increase the possibility of a project's success.

Table 25) Korea Land Corporation's main PF cases

(Unit: Pyung, KRW 100million)

	Jukjeon, Yongin PF	Dongbaek, Yongin PF	Dongtan, Hwasung PF	Taejeon Expo PF
Land size	14,956	13,596	29,040	51,674
Const. size	66,300	61,154	235,739	167,808
Project cost	3,116	3,880	14,883	9,396
Project period	Jan.2002 ~ Dec.2007	May.2002 ~ Dec.2007	April.2004 ~ Dec.2010	Jun.2004 ~ Dec.2009
Major facilities	Sports center Multi theaters	Concert halls Discount stores	Apartments Department store	Officetel Offices
SPC	Green city	Junev	Metapolice	Smart city
Capitals	11	30	40	50
Major equity investors	KLC Shinsegye consortium	KLC Sangsu construction	KLC Posco, pan pacific, Woori bank	KLC Daewoo construction. KDB

Source: Korea Land Corporation

[18] Green belt is the area construction or further development is prohibited from government's policy

7) Develop more various ABS credit rating factors

The current ABS credit rating mechanism is so simple that it can not reflect the real risk of a project's underlying assets. Actually, the credit rating of a PF ABS has been determined by the constructors or project sponsors' credit rating rather than by the project itself. It is because the Korean Project Finance market does not have sophisticated rating models yet.

A PF ABS is different from a general ABS and MBS, therefore its rating system and reflecting items should be also different. More various ABS rating factors need considered and developed. By segmenting the project progress more precisely, we can develop more factors to better reflect the credit quality of the project such as construction progress, sales in parcel ratio in rating an ABS. Eventually we have to pursue to make a more delicate credit rating model that is insulated from the constructors and can be rated only by the project's credit worthiness itself.

Recently the subprime mortgage crisis froze the global credit market and mortgage securities market. However, this credit turmoil could have been potentially projected. Due to the recent real estate market boom for about the last 10 years, US lenders released a lot of money to lower incomers who have potentially high risk and enjoyed higher interest gains without a tight credit analysis. Furthermore, through derivatives products such as CMO (Collateralized Mortgage Obligation) and CDO

(Collateralized Debt Obligation), mortgage lenders hid the risk of subprime mortgage, and assigned those securities as lower risk and higher gain product. To complete one's misery, the credit rating companies that have duties to rate those securities strictly gave risky investment assets an investment level of credit or better. Fundamentally, the subprime mortgage crisis contains a high level of delinquency and default risk, but U.S financial institutions and credit rating companies dressed up those risks as safe assets. Some see it as an actually kind of fraud and irresponsible behavior. If the subprime mortgage and related securities were assessed properly and rigorously, the credit market crisis could be likely have been prevented. From this subprime crisis in the US, we have to let this failure be a lesson to the Korean PF market.

8) Disclosure system to be enhanced

Under the current Korean disclosure system, the access to project information is much restricted. The result of a feasibility study, consulting outputs and Project progress should be publicly announced for protection of PF ABS investors. A transparent disclosure system can be a kind of measure to protect investors and make the market more transparent. Project Finance has relatively a high risk such as market risk, completion risk, interest rate risk and so forth. All these calculations need to be disclosed. This can be a further step to the advanced Korean Project Finance market.

Ⅴ. Summary and Conclusions

Since 1997 Asian financial crisis, Korea has undergone much adverse circumstances and changes in the real estate finance market. The first one was a change to a demand oriented market from a supplier oriented market. The second one was introduction of structured financing methods and derivatives. Of course in the course of these changes, Project Finance cast anchors into the real estate development market such as housing and residential constructions as well as traditional infrastructure development projects. In Korea, Project Finance started to highly be utilized from 2000 and as of 2006. The PF loan balance was measured at around KRW 20.3 trillion. The PF ABS issuance was also vitalized from 2004 and at the end of 2006, the PF ABS issuance volume was KRW 58.9 billion, constituting about 25% of the overall ABS market in Korea.

There are no arguments about the quantitative expansion of the Korean Project Finance market. However, simultaneously there existed some points at issue. In terms of the PF loans market, limitations on access to PF loans, actual recourse to project sponsors, lack of financial and tax inducement measures, and savings banks' aggressive market share growth in PF are among those.

In the perspective of financing, ABS structures are so simple and risk factors reflected to provide the adequate credit rating on PF ABS are not various and even too

much dependence is on a constructors' level of credit worthiness. Under the current legal system, a SPC with a low credit rating can not issue an ABS, so most PF ABS issuers are financial institutions, and PF loans to project companies consist mostly of a project companies' underlying assets.

The insulation from a project sponsor or constructors though an SPC is one distinguishable trait of PF, but past cases show that developers did not make an SPC and financial institutions required more security or joint liability from developers and project sponsors which means that PF loans are not determined as a project in and of itself.

To advance, the PF market in Korea, I suggested some ideas here. The most important point is that we have to make more sophisticated feasibility study models applicable regardless of project and cultivate more market experts on project valuation.

In Project Finance, success or failure of a Project is determined by the project's profitability and stable cash flows. So a proper valuation on a project is the most critical success factor in PF. And another suggestion is that we have to make a financial cultures or environment not to require additional security or guarantee from project sponsors. The Project Finance's main benefit is bankruptcy remoteness, which means if the project proves a failure, the project sponsors would not have any

responsibilities for that project. But as in many past cases, the project sponsors have to provide additional recourse. They could not free themselves from the project likelihood of default. Finally, the Project Finance Vehicle law which did not pass a few years ago needs to be enacted as soon as possible to boost up the quality of Project Finance in Korea.

As for the PF ABS, the underlying assets of a Project Finance project need to be various. So the government mitigates the conditions of the underlying assets with the Asset Securitization Act, and stimulates the ABS issuance of project companies (SPC). Another task is to actively utilize a government guarantee program such as one provided by the KHFC (Korea Housing Finance Corporation), or the KFGC (Korea Housing Guarantee Corporation). Linkage or combination with a guarantee from a state run corporation can raise the credit rating of a PF ABS to A- or above, which would lower the issuing cost and financing costs.

Recently the subprime mortgages woes in the US are spreading worldwide. The losses could be as high as USD $ 100bn, according to the Federal Reserve. There are fears in the financial market that a rash of bankruptcies at subprime lenders could prompt a market-wide recession, which could affect not only the upper level prime mortgages market but even other markets such as the equity market. Project Finance could be a victim of the subprime mortgage credit crunch. The previous cases

analyzed in this thesis showed us that most of the cases have barely been exposed to market risk. Project Finance is relatively a long term financing technique that is sensitive to credit risk and market risk. After all, for the advanced Project Finance market, more sophisticated risk management is needed.

The Project Finance method has now become one of the most popular financial tools in the Korean real estate finance market. However there is also a concern about a Project Finance maker' hangover. Furthermore, the Korean real estate market shall have big changes such as "Post construction sales in parcels system" and "transparent construction cost system" Of course these regulations could make the market somewhat freezing, but at the same time it could be a new chance for the development of project finance. With the Post lotting - out system, developers and project sponsors have to finance the fund needed to complete the project before selling properties to clients. But only a few large developers can finance these types of projects on their own. Therefore in that case, I believe Project Finance could play a further important role in the real estate finance market in the near future.

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