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# Reform of PFS and VfM reflecting Social Factors

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Korea's Leading Think Tank **KDI**<sup>1</sup> PIMAC

# C O N T E N T S



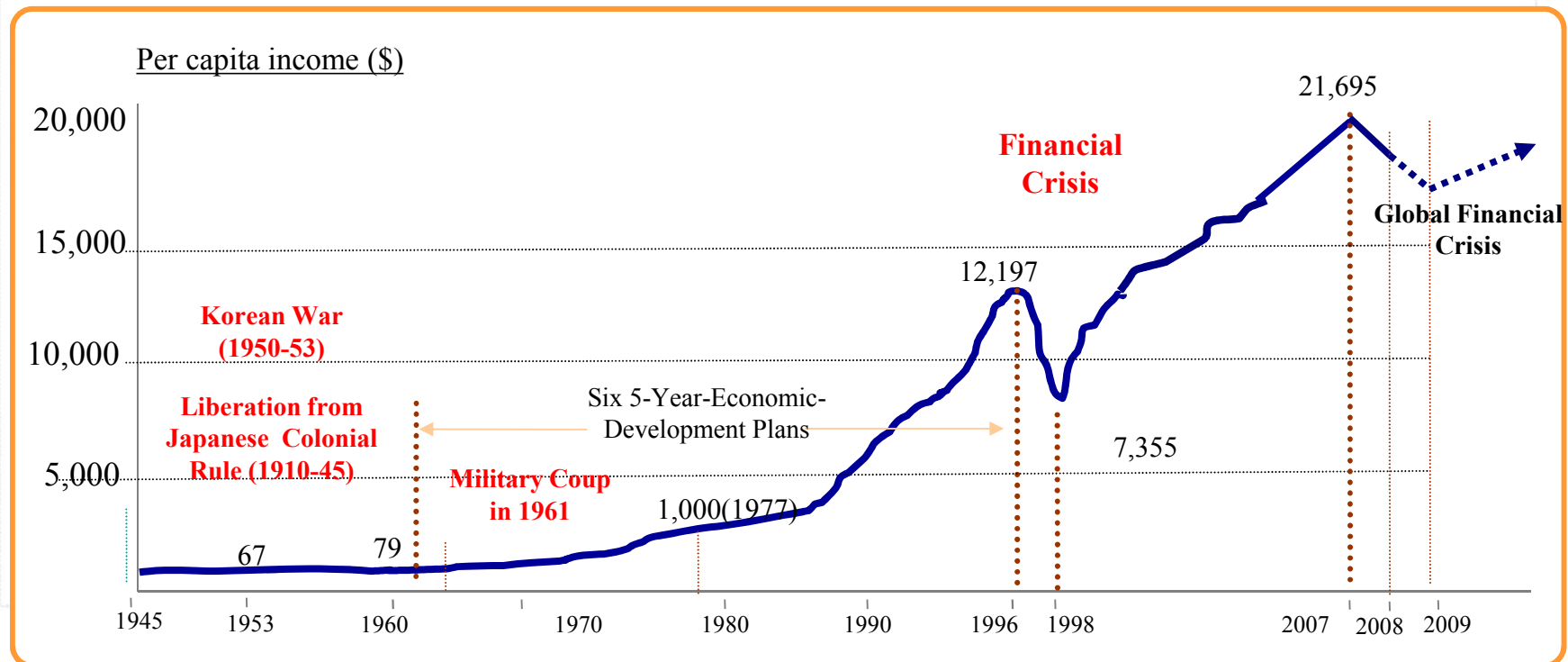
1. Current Status of PPPs in Korea
2. Recent Reform of PFS in Korea
3. Reform Efforts of VfM in Korea
4. Lessons Learnt

# Part-01 | Current Status of PPPs in Korea

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# Background of PPP Introduction

- **Financial crisis in the last half of 1997 had a devastating impact on the Korean economy**
  - In the wake of the financial crisis, the issue of fiscal soundness became an urgent policy agenda



## Introduction and Development of PPPs in Korea

- **Faced with fiscal soundness issues, PPP was introduced to provide an adequate level of infrastructure for economic development**
  - Government embraced the PPP model as a way to facilitate the investment needed to expand and modernize economic infrastructure
  - The PPP Act (legislated in 1994) was reinforced in 1999 although it has undergone several important revisions
- **After more than 20 years of experiences in PPP, Korea is regarded as one of best examples in terms of PPP systems**
  - Implemented approximately 800 projects including road, railway, airport, education, energy, logistics, and environmental facilities
  - Growing concerns regarding social inequality and regional disparities which may aggravate social cohesion and sustainable economic growth

## Procurement Schemes of PPPs in Korea

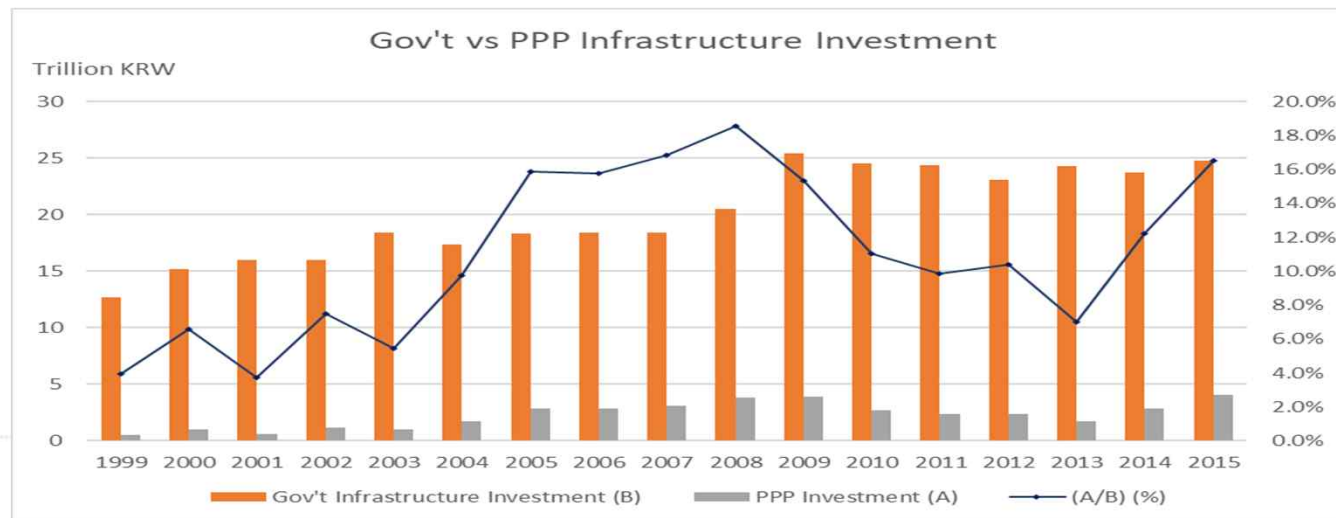
- **Concession-type (BTO) and service purchase-type (BTL) are the main procurement types in Korean PPP**
  - Generally, concession-type (BTO) is more common in developing countries, while service purchase-type (BTL) is more common in developed countries
  - Korea has utilized both types of procurement schemes while both solicited and unsolicited types are available too

	Number of Projects				Total Cost of Projects (Trillion KRW)			
	Terminated	Operating	Under Construction	Under Preparation	Terminated	Operating	Under Construction	Under Preparation
BTO	12	189	32	4	0.48	59.1	12.7	4.7
BTL	-	444	29	2	-	26.1	4.7	0.1
Total	12	633	61	6	0.48	85.2	17.4	4.8

Source: PIMAC Internal data as of Dec. 31. 2017.

# Economic Contribution of PPP in Korea

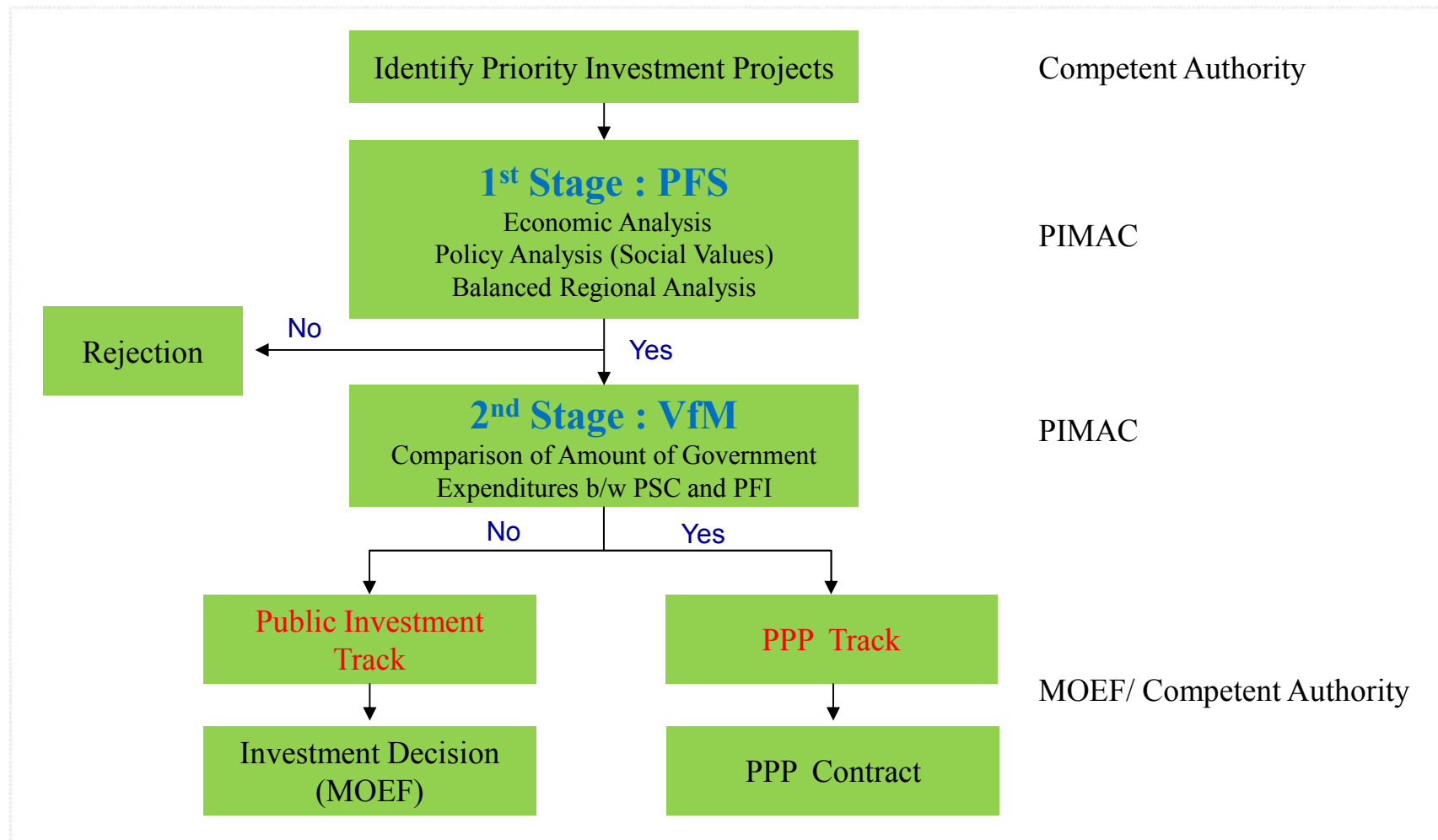
- **PPPs have played a significant role in infrastructure investment as the ratio of PPP investment ranges from 4% to 18.5% compared to government's infrastructure investment**
  - Faced with the budget constraint, the Korean government has utilized PPPs as a financial option to fill the infrastructure gap
  - The promotion of PPPs has helped expand fiscal spaces, channeling the scarce resources into other areas in demand



# Process of Project Evaluation

- **PPP projects are assessed by two-stage analyses, Pre-Feasibility Study (PFS: 1<sup>st</sup> stage) and Value for Money (VfM: 2<sup>nd</sup> stage) test in Korea**
  - 1<sup>st</sup> Stage: Appraisal (Pre-Feasibility Study)
    - No special treatment to PPP projects because both fiscal (traditional) and PPP projects entail economic costs and should create socio-economic benefits from the national viewpoint
    - PFS is more focused on the socio-economic feasibility of the projects, which consists of 1) Economic Analysis, 2) Policy Analysis and 3) balanced regional development Analysis
    - Only projects that have socio-economic feasibility can proceed to the 2<sup>nd</sup> stage(VfM test)
  - 2<sup>nd</sup> Stage: Value for Money (VfM) Test
    - VfM test is more focused on the fiscal efficiency of the project between fiscal and PPP procurements
    - Compares government's life-cycle costs(LCCs) of the project between fiscal and PPP procurements
    - Projects contributing to the government's financial efficiency can be implemented by PPPs, otherwise traditional procurement methods are utilized

# Process of Project Evaluation



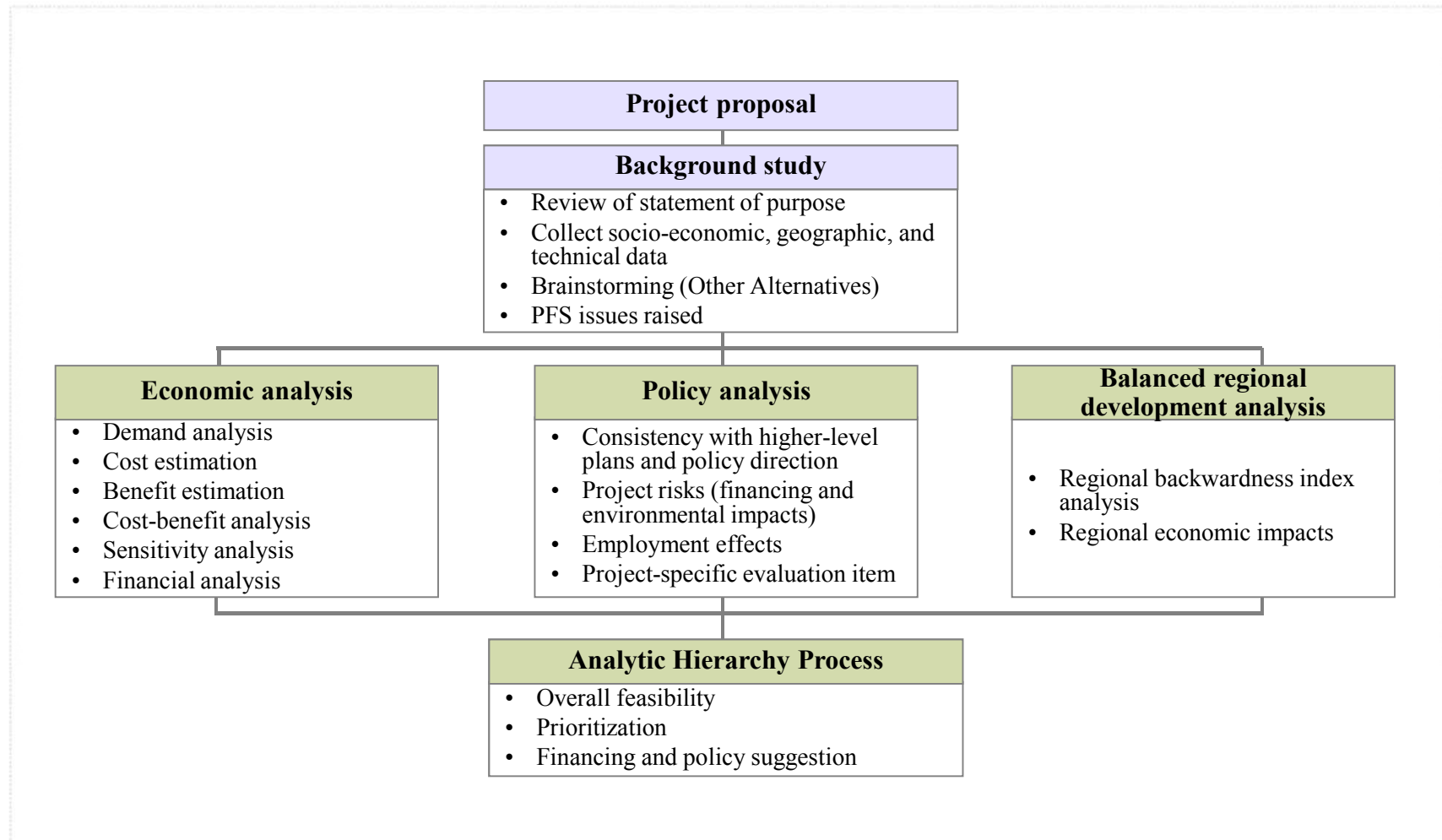
**Part-02 | PFS (1<sup>st</sup> stage) and its  
Reform reflecting Social Needs**



## Introduction to PFS

- **PFS is an ex ante evaluation (appraisal) system in Korea for efficient and sustainable public investment**
  - Introduced in 1999 to address fiscal soundness issues caused by the Asian financial crisis in late 1997
  - Evaluates the overall feasibility (economic, policy, and balanced regional development) of large-scale public investment projects before budget decision
  - Owned by the MOEF and performed by independent evaluation unit, PIMAC of KDI since 1999
  
- **PFS is used to check the feasibility of both fiscal and PPP projects**
  - Initially introduced in 1999 to evaluate feasibility of fiscal investment projects but has been used to evaluate the 1<sup>st</sup> stage feasibility of the PPP projects from the national socio-economic perspectives since 2005 when PIMAC took the evaluation role of both fiscal and PPP projects

# PFS Evaluation Items



## Growing Needs to Incorporate Social Values

- **Social needs to consider various social values have been growing as Korea became more confronted with critical social issues**
  - PFS has recently faced criticisms from various stakeholders for focusing heavily on B/C and overlooking social values and balanced regional development
  - Too much emphasis on B/C may aggravate economic inequality, social polarization, and regional disparities
- **Definition of social values is vague and still under discussion**
  - Key concepts of social values are seemingly equality among citizens and regions, job creation, environment, and quality of life although various definitions of social values of infrastructure are under discussion



## Recent Reforms of PFS

- **In 2019, the MOEF modified PFS for fiscal projects to reflect recent changes in economic and social conditions**
  - PFS modifications aimed at incorporating social values and enhancing balanced regional development within the PFS framework
  - PFS modifications for PPP projects are still under discussion but will be incorporated soon
- **In short, social value items were added in the policy analysis and evaluation weights among economic, policy and balanced regional development analysis were modified**
  - Social value items such as job creation, living conditions and preference of residents towards the project were added
  - Evaluation weights were differentiated depending on the level of regional development

## Recent Reforms of PFS (Evaluation Items)

- **Introduced new evaluation items to reflect social values**

Before Modification			After Modification		Remarks
Level 1	Level 2	Level 3	Level 2	Level 3	
Policy Analysis	Consistency with higher level plan	Preference of competent authorities	<b>Social Conditions</b>	-	Removed
		Consistency with policy and higher level plans		Internal conditions (Consistency with policy and higher level plans / preparedness)	Combined
		Preparedness		External Conditions (Preference of Residents)	New
		-		-	-
	Project risks	Availability to finance	<b>Social Values</b>	-	Moved
		Environmental impact assessment		Environmental impact assessment	Unchanged
	Employment effects	Induced employment effects (quantity)	Employment Effect (quantity and quality)	Combined	New
		Induced employment effects (quality)			
	-	-	Residents' living conditions	New	
	-	-	Safety	New	
	Project-specific items	-	Project-specific items	Availability to finance	Moved
		Other project-specific factors		Other project-specific factors	Unchanged

## Recent Reforms of PFS (Evaluation Weights)

- **Weights among economic, policy, and balanced regional development analysis were modified**
  - Focus of the modification was to enhance balanced regional development, providing more opportunities for under-developed regions
    - No evaluation for SMA where penalty was given before the modification
    - More weights for balanced regional development with only incentives for non-SMA

		Before the Reform	After the Reform	
Regional Differentiation		N.A	Developed Regions (Seoul Metropolitan Area)	Under-developed Regions (Outside of SMA)
Evaluation Weight	Economic Analysis	35~50%	<b>60~70%</b> (20~25%p ↑)	<b>30~45%</b> (5%p ↑)
	Policy Analysis	25~40%	<b>30~40%</b> (0~5%p ↑)	<b>25~40%</b> (Same)
	Balanced regional development	25~35%	- (25~35%p ↓)	<b>30~40%</b> (5%p ↓)

**Part-03** | **Reform Efforts of VfM Test  
reflecting Social Needs**

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# Concept of VfM Test

## ▪ What is Value for Money?

- The best available outcome after taking account of all benefits, costs and risk over the whole life of the project (HM TREASURY)
- The VfM test in Korea consists of **1<sup>st</sup> stage VfM test** (PFS) which looks at the overall feasibility from the national socio-economic perspective and **2<sup>nd</sup> stage VfM test** which is basically a comparison of government's financial expenditures between PSC (Public Sector Comparator) and PFI (Private Finance Initiative)

## ▪ Two types of VfM Test

- Quantitative VfM assessment
  - Compares PSC against PFI in terms of the value of taxpayer's money
- Qualitative VfM assessment
  - Compares other qualitative factors which affects VfM but is difficult to quantify
  - Allocation of risks, service qualities, less delay and early completion of construction are such examples

# VfM Test Method

## Quantitative VfM assessment

- Compare present values of government payment between PSC and PFI options
  - Using financial discount rate considering the risk of project (BTO: 4.5%, BTL 2.5%)

$$VfM(\%) = \frac{GP(PSC) - GP(PFI)}{GP(PSC)}$$

Government Payment	PSC	PFI
BTO	(+) Capital costs (+) Operating costs (-) Revenue	(+) Construction subsidy (+) Compensation costs (+) Additional government support
BTL	(+) Capital costs (+) Operating costs (-) Revenue	(+) Construction subsidy (+) Compensation costs (+) Additional government support <b>(+) Lease Payment</b> <b>(+) Operating costs</b> <b>(-) Revenue</b>

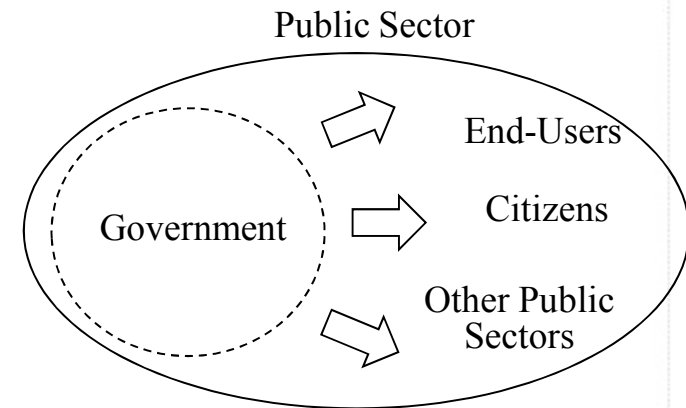
## Limitation of Quantitative VfM Test (User Payment)

- **Analyzing VfM from the viewpoint of fiscal savings of the government, not incorporating the viewpoint of the general public**
  - The reason why the current VfM test focuses on the amount of the government's payment is that PPPs were historically introduced with an aim of mitigating government's budget constraints and expanding fiscal spaces
  - According to the survey on the recognition of the PPP project (KDI, 2017), however, the general public recognizes user fees (e.g. tolls) of the PPP project too high especially in terms of the concession type (e.g. BTO)
    - Private sector determines user fees to recover their investment, which leads to higher user payment without sufficient government's subsidies
  - Along with the demand for a reduction in user fees, demand of the public and the National Assembly to include user payment in the VfM analysis has been increasing as the public interest for equality (same service, same user fees) and the general public's understanding of the PPP projects increases

## Efforts for Improving VfM Test (User Payment)

- **A research is underway to expand the viewpoint of VfM to the general public**

- Additional research is needed, however, because a fair comparison between PSC and PFI is very important
- And it is necessary to measure and include transferable risks that the government bears by directly carrying out the project

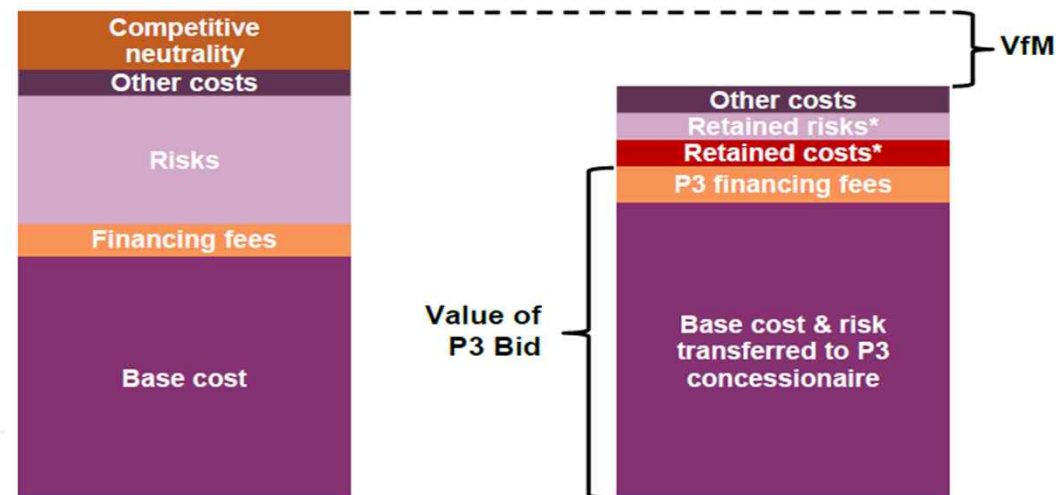


Type	PSC	PFI
BTO	(+) Capital costs (+) Operating costs (-) Revenue (+) <b>Transferable risks</b>	(+) Construction subsidy (+) Compensation costs (+) Additional government support (+) <b>Additional user's payment</b>

- Since the impact of incorporating the public perspectives (e.g. inclusion of user fees) on the VfM results is high, it is necessary to set up a rigorous methodology and make a close consultation with the budget ministry before actual application

## Limitation of Quantitative VfM Test (Risk)

- **Additional consideration of risk adjustments is required to secure a fair comparison between PSC and PFI**
  - Construction and operation risks are currently quantified and reflected in both PSC and PFI to a degree (as insurance premiums), but demand (or revenue) risks are not
    - Demand risks are currently considered by the sensitivity analysis
  - PSC demand risks that might have been transferred to the private sector and are currently borne by the government should be measured and included in the VfM test



## Efforts for Improving VfM Test (Risk)

- **Risks are generally reflected through 1) identification, 2) registration, and 3) valuation**

- PIMAC has many years of experiences in terms of identification and registration of risks but not enough experiences in terms of valuation of risks



- **A related research is underway to measure the risks borne by the private as well as by the public sector**
  - Optimism Bias : Deducting demand by optimism bias
  - Value at Risk (VaR) : Measuring the risk of loss with a given probability
  - Discount Rate : Differentiating discount rates based on the risk
- **Discussions need to be continued to accurately measure the risks**

## Efforts for Improving VfM Test (Qualitative factors)

- **Quantitative VfM test needs to be supplemented by relative qualitative ways**
  - PPP may have advantages compared to traditional procurement in many ways
  - Not all factors are quantifiable due to the existence of hidden costs
- **PPPs may provide more benefits to the society compared to traditional procurement by lower delay of completion and higher quality of service**
  - PPPs may provide more benefits to the public due to early commencement and early completion of the construction (lower time overrun)
  - PPPs may provide more benefits to the public by providing a higher level of services
  - PPPs may provide more benefits to the whole society by managing risks more efficiently
- **It would be worth considering a multi-criteria decision making technique to combine quantitative and qualitative elements of evaluation**

## Part-04 | Lessons Learnt

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## Lessons Learnt

- **The PIM (public investment management) system of Korea has contributed to enhancement of the efficiency of public investment in Korea**
  - It has been highly recognized as one of the best practices worldwide but changes are needed if there are social needs
- **Reflecting social needs to enhance economic equalities and balanced regional development, PFS evaluation methods have been modified**
  - Social values were added and evaluation weights were modified
- **Evaluations on PPPs would also need to actively reflect changes in social needs**
  - Incorporating the public perspective in the current VfM test may be considered
- **PIMAC needs to move forward to respond to the socio-economic changes by conducting more rigorous research and making a closer discussion with the public, the budget ministry, and global experts (e.g. APN)**