

The Seoul Asian Financial Forum 2019
April 17(Wed), 2019
Grand Ballroom, Westin Chosun Hotel, Seoul

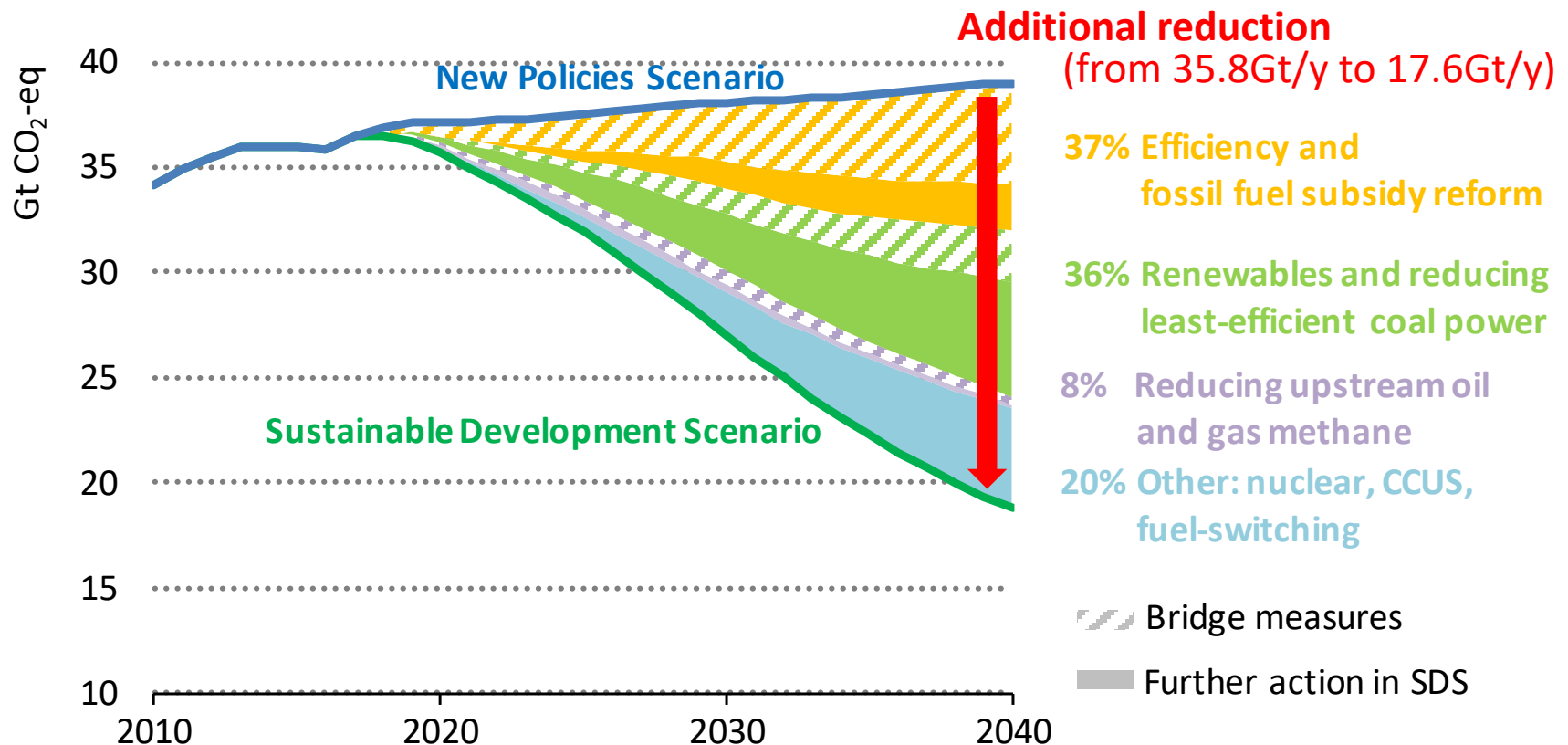
Green Finance and Investment

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Paris Agreement and Climate Finance

Paris Agreement and investment opportunity

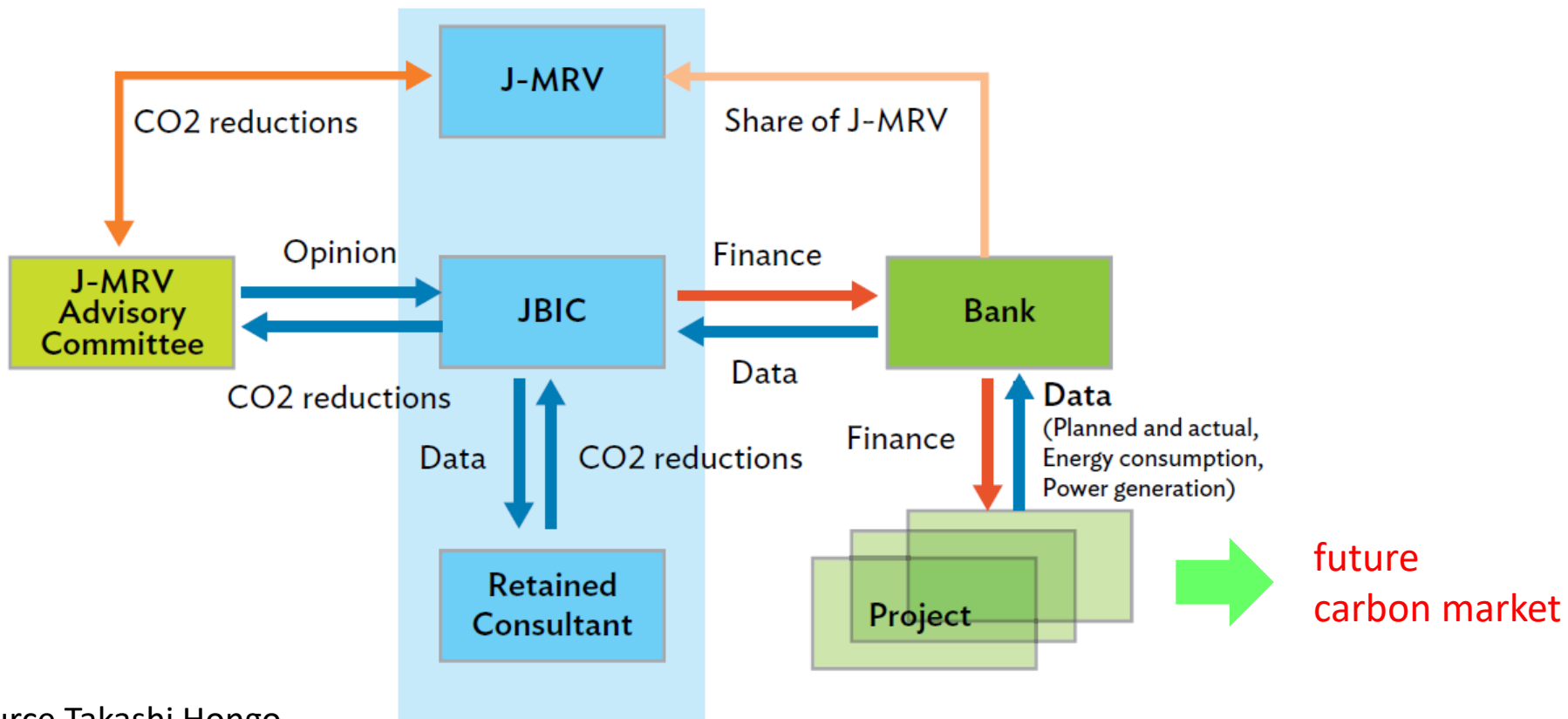
- “2 degree target” was agreed at Paris Agreement (2015)
- Additional reduction is needed for achieving the target.
 - Its cost will be \$6 trillion by 2040 (\$30/CO2 ton. \$10.5 trillion when \$50/CO2 ton)
- Other side of “cost” is business opportunity.
- However, limited finance supply. Why?
 - Barriers; investment climate, policy uncertainty, etc.



J-MRV and Green

- Enormous amount of climate finance has been provided. What is their outcome?
- JBIC's Green is an example of effective climate finance; provide long term and low interest finance when they conform GHG reduction by MRV (Measurement, Reporting and Verification).
- A bottle neck of MRV is implementation. ⇒ JBIC develops simple and practical MRV system.
- Confirmed reduction project can be converted to carbon credits.

Structure of Green Credits line

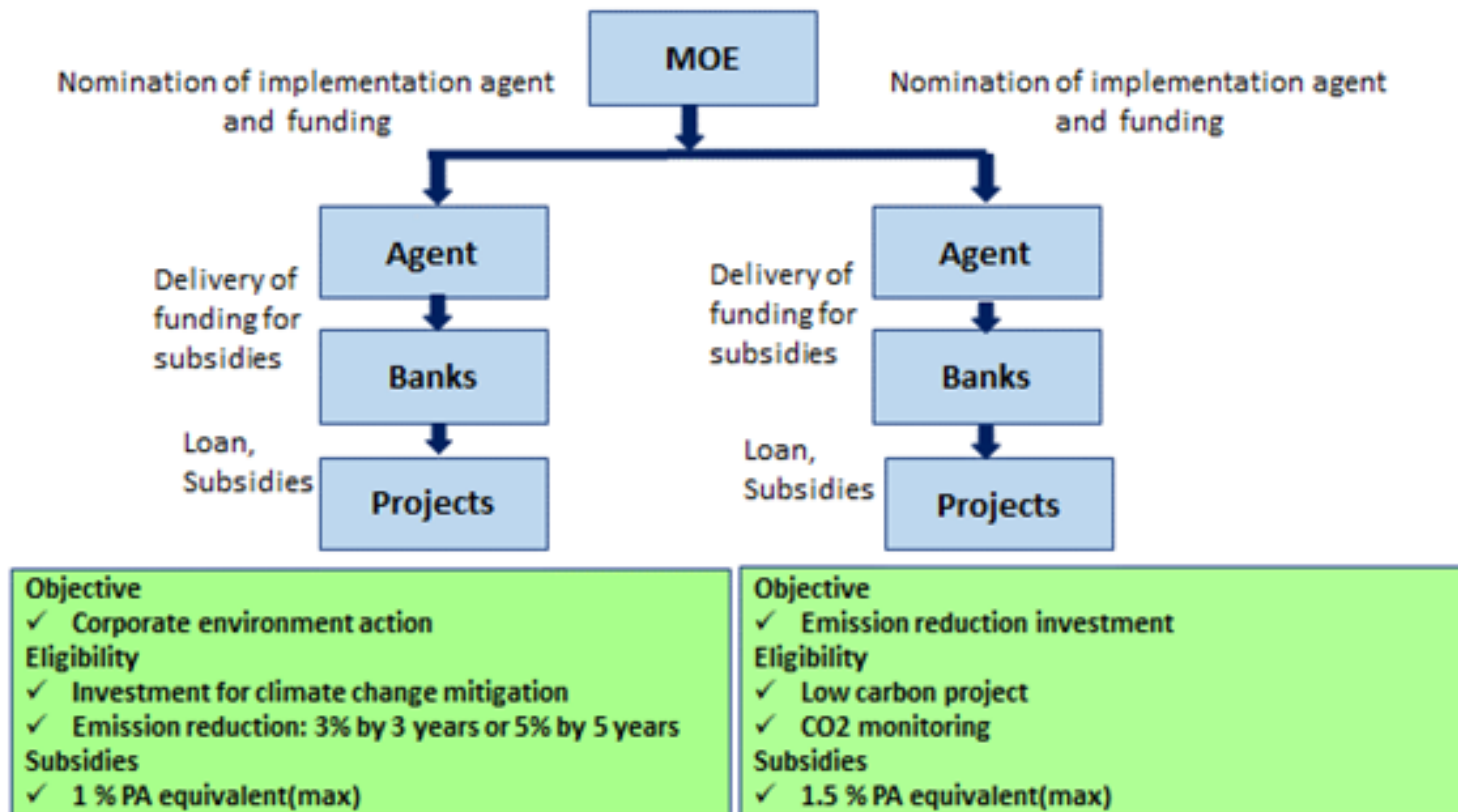


Incentives through bank lending

- Carbon Tax ; revenue should be used for reducing emission effectively because price effect on emission reduction is rather small.
- ⇒ Ex-post review is needed.
- Transformation to performance base(outcome base) finance is an option of innovation.

Structure: Incentive for CO2 emission reduction is delivered by banks when banks confirm reduction at the projects. – performance base incentive

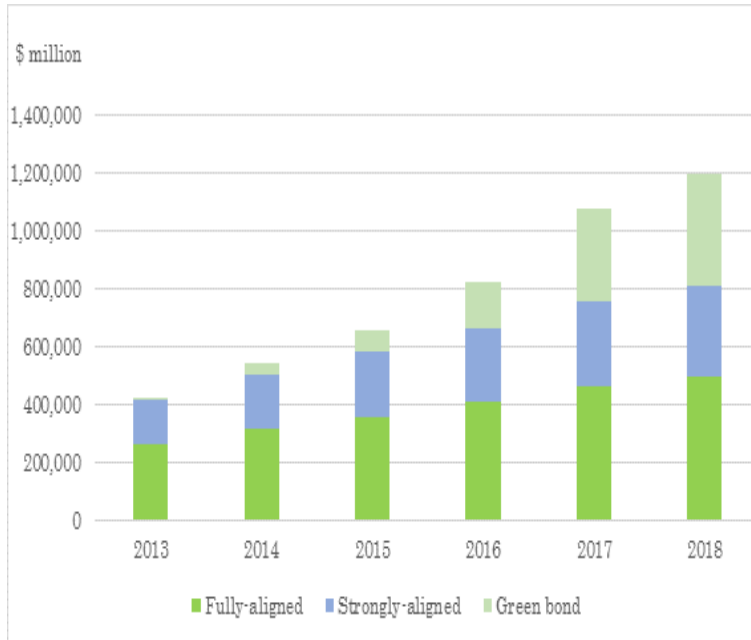
Benefits: reduction outcome, technology neutral, and one stop shopping



New Trend of Green Finance

Green Bond

Outstanding of Green Bond



Eligibility of Green Bond

Category	Project types	Eligibility	Remarks
Energy	PV, CSP, wind	△	No more 15% from non-renewable
	Bioenergy	△	80% emission reduction compare to fossil fuel base one and be sustainable.
	Hydropower	△	Consider environment and social risk
	Nuclear	○	
	Coal without CCS	X	
Transport	Coal with CCS	△	100% capture is required
	Gas with/without CCS	△	
	EV and charging infra.	○	
	New road construction	X	
	Bus (electric/hydrogen)	○	Infra for bus is “○ or △“
	Train(rolling stock & infra)	○	
	Maritime (vessels)	△	Use of low GHG fuel.
Building	Aviation (aircraft)	-	Use of low GHG fuel
	Office, residence	△	Top 15% low emission in the area
Urban develop.		△	Top 15% low emission in the area
Industry	Cement, steel, chemical – primary resources	-	
	CCS	△	100% capture is required
	Processing	-	
	Supply chain	△	

Pricing of Green Bond

	Over subscription (EUR Bond)	Over subscription (USD Bond)	IPT gap (EUR Bond)	IPT gap (USD Bond)
Green Bond	2.3 x	3.4 x	-8 bps	-17 bps
Vanilla Bond	2.0 x	3.0 x	-7 bps	-14 bps
Gap	+0.3 x	+0.4 x	1 bps	3 bps

Climate Bond Initiative

Climate Bond Initiative

Green Bond in Japan

	ESG amount (2014)	ESG amount (2016)	Share of ESG (2014)	Share of ESG (2016)
EU	10,775	12,040	58.8%	52.6%
US & Canada	7,481	9,809	19.2%	23.4%
Aus. & NZ	148	516	16.6%	50.6%
Asia (excl. Japan)	45	52	0.9%	0.8%
Japan	7	474	-	3.4%
Total	18,276	22,890	30.2%	26.3%

Tokyo Pro-bond Market



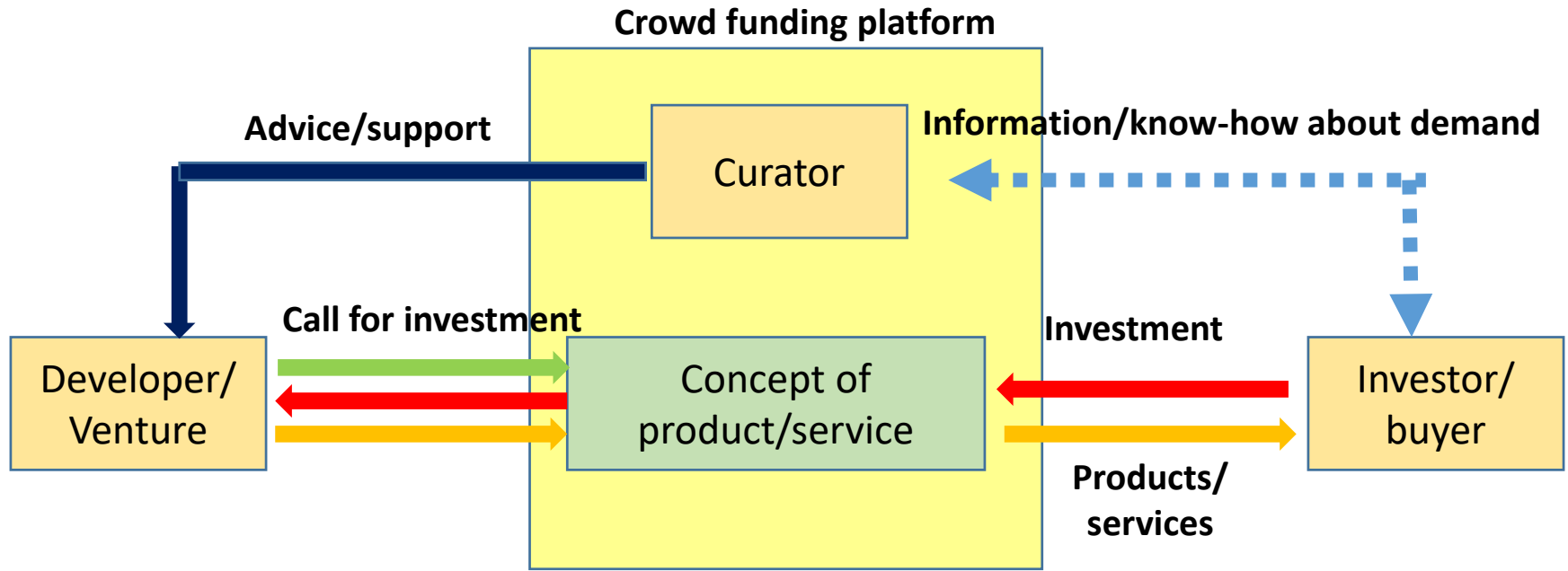
Recommended to use Green Bond Principle or Green Bond Guideline but allow flexibility.

⇒ Encourage market by flexibility

Condition of listing is not rigid/not standardized because target investors are profession

- Green Bond market is growing and Asian market has big potential for further growth.
- However, it will be saturated without proper carbon policy

Potential of Crowd Funding



- Crowd funding can apply to Green Business too. e.g.
 - “Small technology” including IOT & AI
 - PV power project under FIT (Feed-in-Tariff) because its technology is proven, needs less maintenance services, and secured revenue.

Crowd funding market in Japan



注1. 1年間の新規プロジェクト支援額ベース
 注2. 2018年度は見込値
 注3. クラウドファンディング運営企業の扱い分野を見直したため、2016年度の全体および類型別の新規プロジェクト支援額を見直した。
 矢野経済研究所調

Role of industry finance

Why industry finance is needed?

1/ Finance for growing industry

Large scale project: by project finance, Green Bond, revenue bond etc.

Small scale project, venture project: venture capital, crowd finance

⇒ Who finance medium scale corporate and/or new industry?

2/ “Soft landing” to low carbon economy

Some industry will be depressed by the trend of low carbonization and restructuring of business portfolio. Who finance these industry and support people? - safety net is needed.

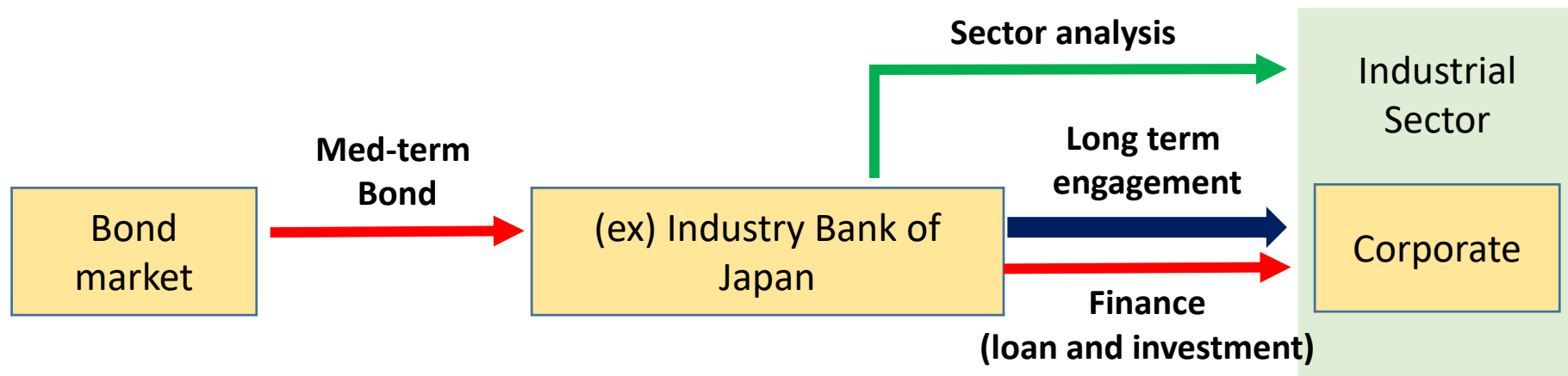
Industry finance (classic model)

- Industry Bank of Japan (IBJ) pushed and led restructuring of industry for the high economic growth, particularly 1950', 1960', 1970' and 1980', by using finance resources and by engaging corporate's management.

e.g.

Merger of Nissan Motor by Nissan Motor and Prince Motor (1966)

Merger of Nippon steel by Yahata Steel and Fuji Steel (1970)



- IBJ was incorporated into a mega bank by the merger with city banks

- Why IBJ's mission is over?

1/ Slow down of economic growth

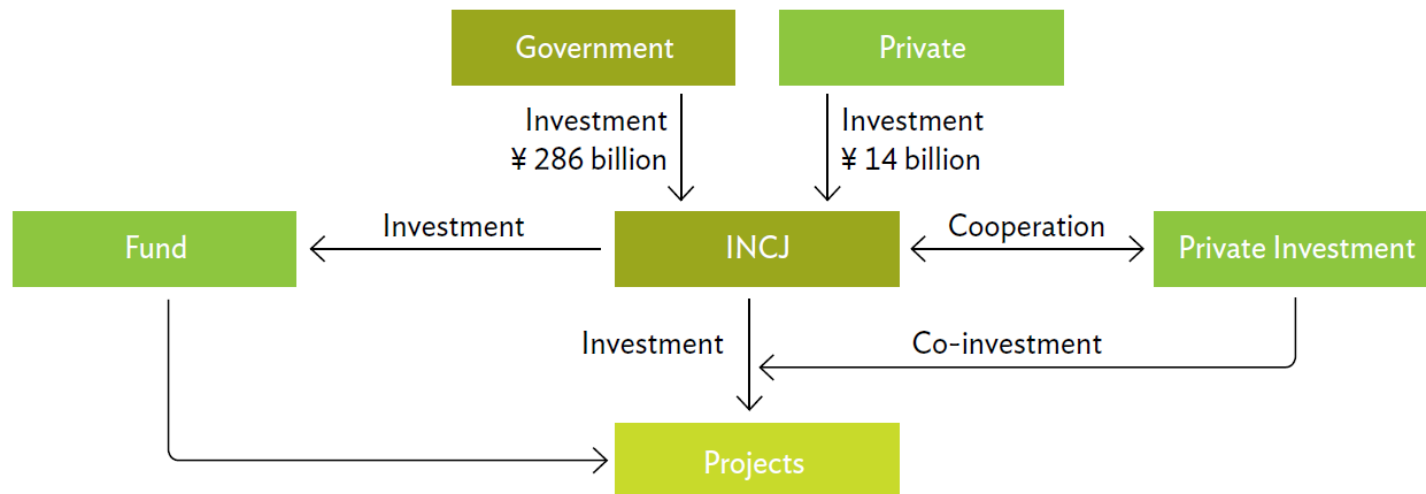
2/ Development of capital market and weak retail business (money glad)

3/ Low return from long term business (rating system)

New industry finance by public private initiative

- Innovation Network Cooperation of Japan (INCJ) was established in 2009 as public private partnership, under the government initiative.
- INCJ is a big venture capital and may support for Green Business and restructuring. Investment portfolio : 24% for venture, 56 % for restructuring, and 20 % for overseas.

Figure 8. Innovation Network Corporation of Japan
(Public-Private Venture Capital Fund)



Investment

- ✓ Robots to perform maintenance inspection on industry and infrastructure
- ✓ Global 3D dynamic mapping platform
- ✓ Lantium-ion battery for automobile.
- ✓ Automation system through AI base solution

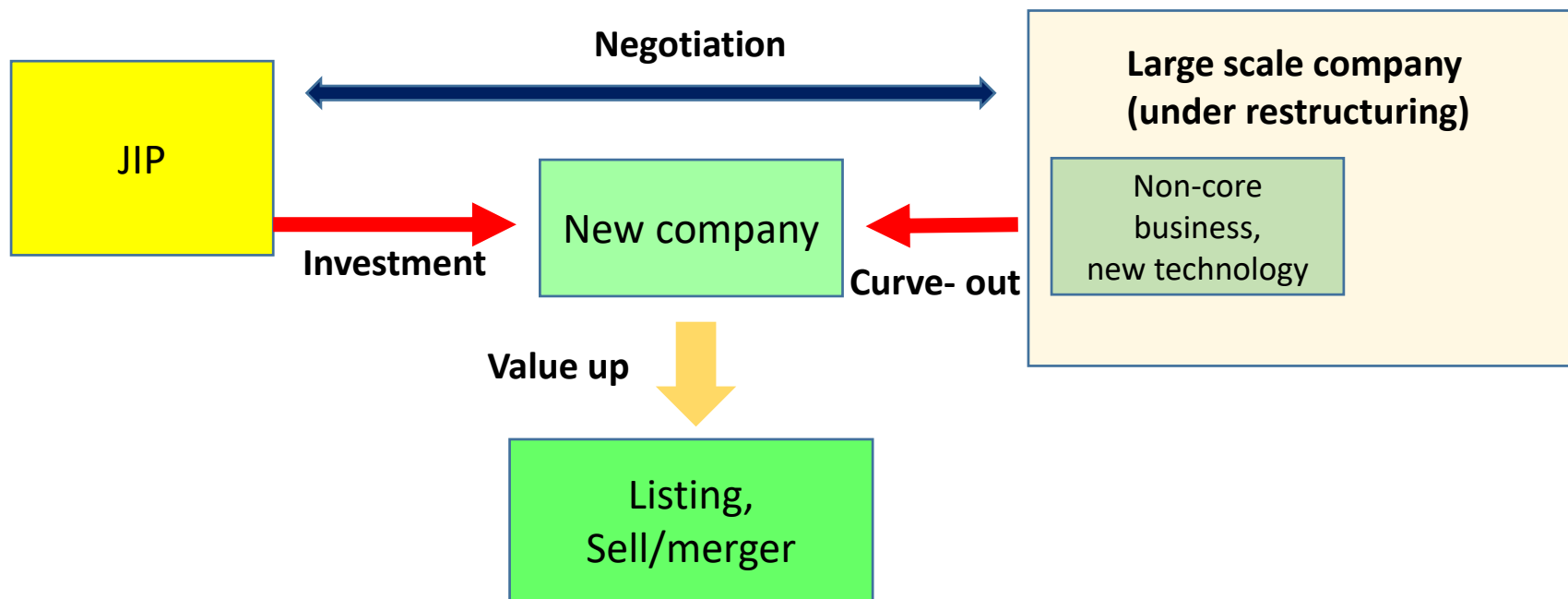
Source; Takashi Hongo,
Innovation of Finance for
Industry 4.0 in ASEAN,
ERIA

Venture fund for restructuring

- Japan Industry Partners Inc(JIP) was funded by the support of ex IBJ but is independently operated. JIP aims to support curve-out of technology and new business from the large scale company or conventional business when it is non-core business or new technology.

e.g. VAIO (computer) from SONY.

BIGLOBE (internet provider) from NEC



Conclusion – Beyond the Green Finance

➤ **Potential and limitation of Green Finance**

Green Finance is needed for the transition to low carbon economy. But Green Finance will be saturated without proper climate policy. Carbon Price is a key.

➤ **Money Glut and Green Finance**

Enormous amount of funds invests in speculative finance market. Green Business is a promised market and will lead to economic growth. Double benefit is possible.

➤ **Innovation of finance**

Varieties of finance tool is needed. No silver bullet. But a key to innovative finance is “contribution for people”, not for money.