



## **A 'paradigm shift' in the climate affair**

***A monetary plan for upgrading climate finance and support a sustainable development***

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## The economics of a 'paradigm shift'

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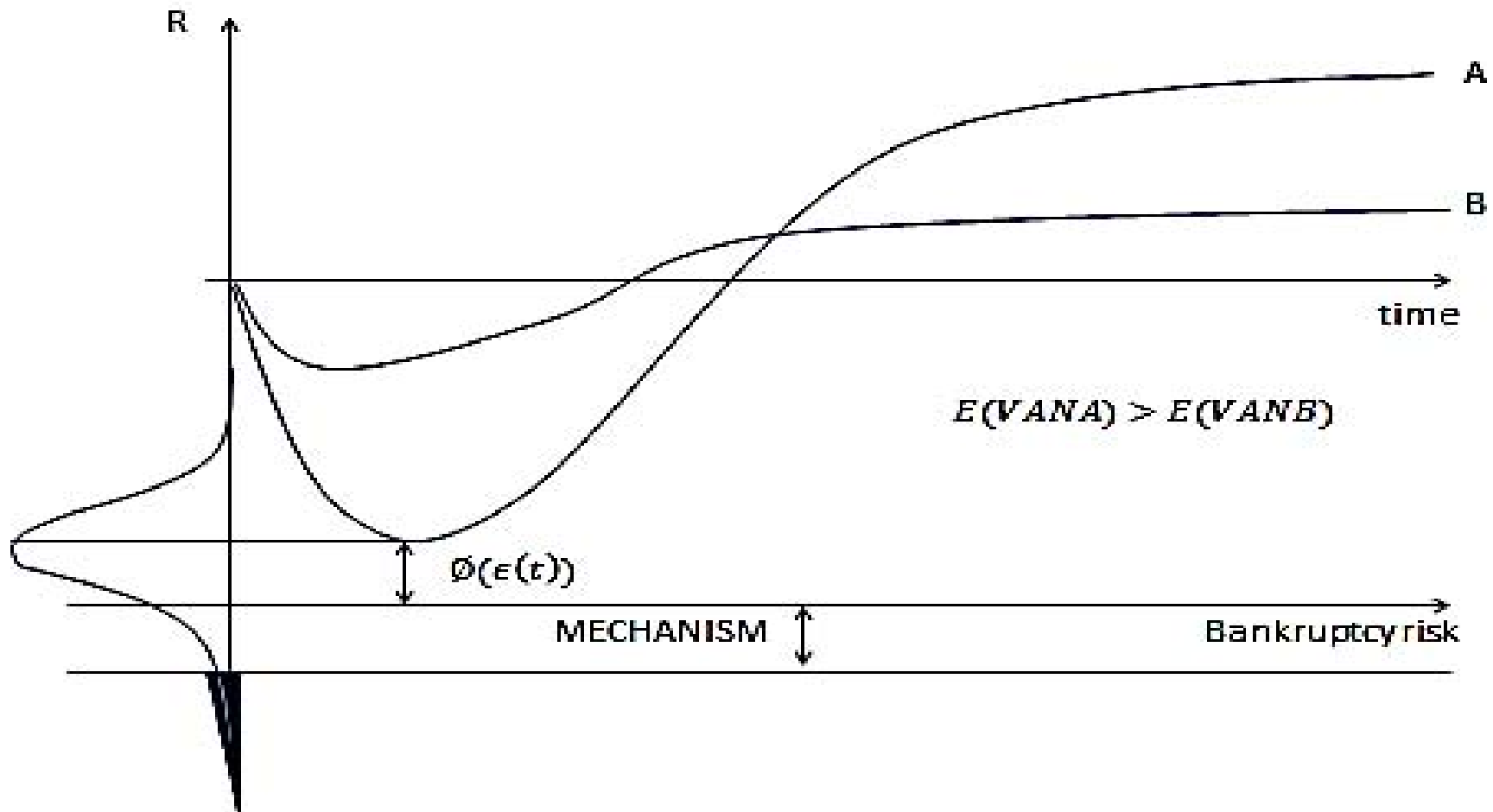
## Lessons from Kyoto's unfinished business

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A 'mental map' (a world cap and trade system with *unique carbon price* through all sectors and countries with *compensating transfers*) which

- does not indicate that significant carbon prices:
  - **Hurt existing capital stock** in developed countries and mobilize
  - **hurt emerging economies over the short run** (higher share of energy expenditures in households budget and in production costs) and do not prevent their **lock-in** carbon intensive growth pattern
- ignores that technologies are not selected in function of their levelized costs in a **'shareholder' regime** of firm management
- indicates **impossible 'fair' compensating transfers, focusses on how to share the very few remains**
- **does not indicate the benefits of cooperation**

# Why price-signals does not suffice. Why 'finance' matters in an uncertain world



# Climate Finance at risks of the distrust?

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- A context of *'depression economics'*, *'public debts'* and *rebalancing of the world economic equilibrium* can only:
  - exacerbate the **'donor fatigue'** in the Annex 1 countries
  - Reinforce the **social resistance** to carbon pricing (explicit or implicit)
- A problem of **orders of magnitude: a funding gap of 90%????**
  - **leveraged invest costs < upfront invest costs < induced invest costs**
  - **Redirected invest height times higher than incremental invest costs**

# The economic rationale for turning the question upside down

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*Can we afford climate policies? <-> No debt bailout and economic recovery w/o climate policy*

- *A shift of less than 1% of the GDP is needed to fund incremental costs*
- *Concerned sectors represent around 40% of the GCF and some are critical for inclusive growth*
- *The redirection of investments concerns about 8-9% of the GCF*
- *Climate policies can contribute to a stimulus for a sustainable and inclusive growth recovery finance*
- *If this is the case climate finance should not remain a marginal department of global finance*
- *Is linking two sensitive issues is a **diplomatic non-starter?** ignoring the short term constraints on economies leads to a **diplomatic dead-end***

## A diplomatic non starter?

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- Is linking two sensitive issues **diplomatically dangerous?**
- ignoring the short term economic and political constraints leads to a *diplomatic dead-end*
- To go out of the 'sharing the pie' approach implies to *link a diversity of domestic an international co-benefits*
- **Getting the support of 'non climate concerned' policy-makers: the European Case**

# Turning the question upside-down

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## The world economy between 'instable growth' and 'depression economics'

- « *Saving glut* » and « *Buridan's Donkey* » dilemma for investors
- Risks of *depression* vs risks of *re-unleashing speculative bubbles*
- *Banking systems* still *fragile* and in process of *deleveraging*
- Tensions due to a « *currency cold war* »

## Any new growth regime implies

- To *redirect savings towards infrastructure and industry* instead of speculation
- a *more inward-oriented industrialisation*
- A *more resilient financial and monetary order*

**Low carbon finance is a good candidate to contribute to sustainable economic recovery with .... less « ups and downs »**





## A 'C4' device

# The agenda

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- *Inject liquidity, provided that it is used to fund low-carbon investments (LCI)*
- *Awake the Buridan's Donkey*: public guarantee to lower the risks of LCIs and *enhance the solvency of low-carbon entrepreneurs'*
- Make the *Banking System interested* in funding LCIs:
  - banks can better face their prudential constraints and *improve their risk-weighted assets (RWA)*
- **Make institutional investors** interested in carbon-based financial products to attract savings (instead of real estates and others ...)
- Trigger a *wave of LCI in infrastructure*
  - *Revitalizing the industrial fabric* in OECD countries
  - *More inward-oriented growth* in emerging economies

# Sketching a possible mechanism

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1. ***Its anchor*** : an agreement, under UNFCCC on ***a Social Value of Avoided Carbon Emissions*** (SVC)
2. ***Voluntary commitments by governments***, over every five years to back a quantity of ***carbon assets***,
3. Central banks open ***drawing rights on these carbon assets*** and accept as repayment ***carbon certificates (CC)*** to fund LCIs
4. ***After certification*** of project completion: ***asset swap*** .... CCs are turned into carbon assets that appear on the balance sheet of central banks (like gold), banks or enterprises
5. ***An Independent Supervisory Body***
  1. Negotiates with governments which **NAMAs** these LCI should contribute to
  2. Secures the « ***statistical additionality*** » of the investments

# The SVC, a notional value not a carbon price

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1. A signal of the political will 'to do sth' against climate change
2. It increases over time -> counterbalance the role of discount rate against investing in long lived capital stocks
3. Surrogate of a « global price signal »: it does not hurt existing capital stock and *avoids the fragmentation* of climate finance
4. Politically negotiable :
  - The cost of cement in India will not be doubled and the peasant will not be obliged to pay more for irrigation
  - The SVC differs theoretically across countries but is conditional upon the content of their development policies (Shukla)
  - Countries may thus accept *similar SVC for different reasons*, including various views of the co-benefits of climate mitigation

**Governments**

I

Agreement on the « SCC »

II

Monetary policy announcement

III

Monitoring  $\searrow$  CO2

Supervisory Body

MRV

Low-carbon projects

Repayment

\$ et CC

Loans

IV

Redirecting long term saving

Central Bank	
Asset	Liability
Gold	Currency
SDR	Bank's deposits

$\searrow$  CO2

Liquidity

CC

\$

Banks	
Asset	Liabilities
Loans	Climate bonds
- low-carbon loans	Deposits
- BAU loans	-\$
	Net worth

interests

\$

\$

Saving  
Households  
Institutional Investors

# Gvt's commitments and issuance of carbon-based liquidity by Central Banks

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## Central Bank balance sheet

Asset	Liability
Gold	Bills and coins
Sovereign bonds	Banks' deposits

% of Governments' "CO <sub>2</sub> commitment"	Liquidity drawing right	} Out of balance sheet
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New credit lines for commercial banks, refundable with  $\searrow$  of CO<sub>2</sub>

**Table 1: Balance sheets at the opening date of the low-carbon loan**

Central Bank		Commercial Bank		Entrepreneur	
Asset	Liability	Asset	Liability	Asset	Liability
				$1000R^{LC}$	
Loan CO <sub>2</sub>		$+900r^l$	$+900r^d$		$+900r^l$
+100	+100	+100	+100		+100
			$+0.08(900r^l)$		

10 CO <sub>2</sub>	100
Reduction of CO <sub>2</sub>	Drawing rights

## Balance sheets at the end of the payback period of the low-carbon loan before the asset swap

Central Bank		Commercial Banks		Entrepreneur	
Asset	Liability	Asset	Liability	Asset	Liability
Loan CO <sub>2</sub>		+0	+0	$1000R^{LC}$	
+100	+100	+100	+100	-900r <sup>l</sup>	+0
			+0	+ 10 CC	+100

10 CO <sub>2</sub>	100
Reduction of CO <sub>2</sub>	Drawing rights

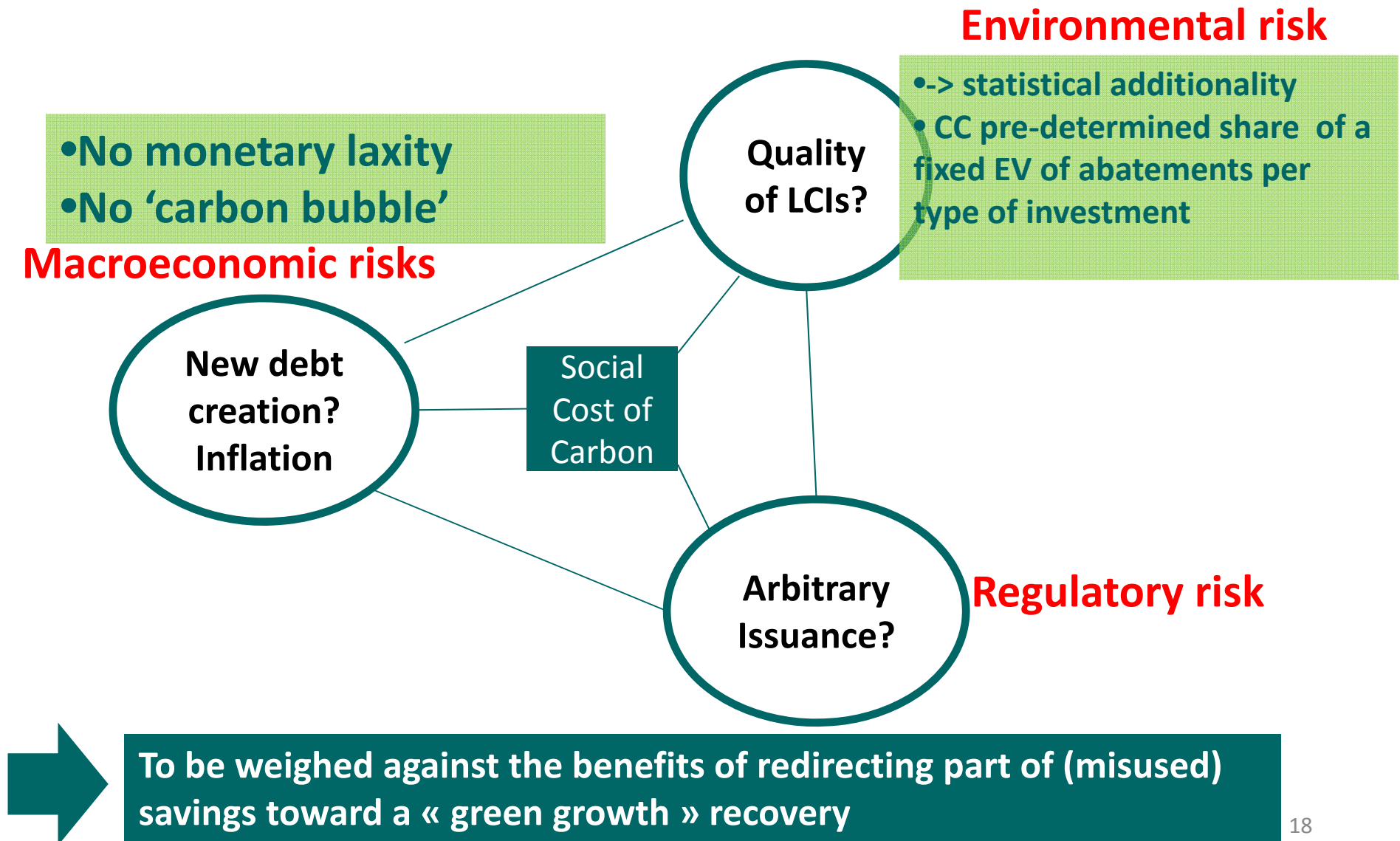


## Balance sheets after the carbon asset swap

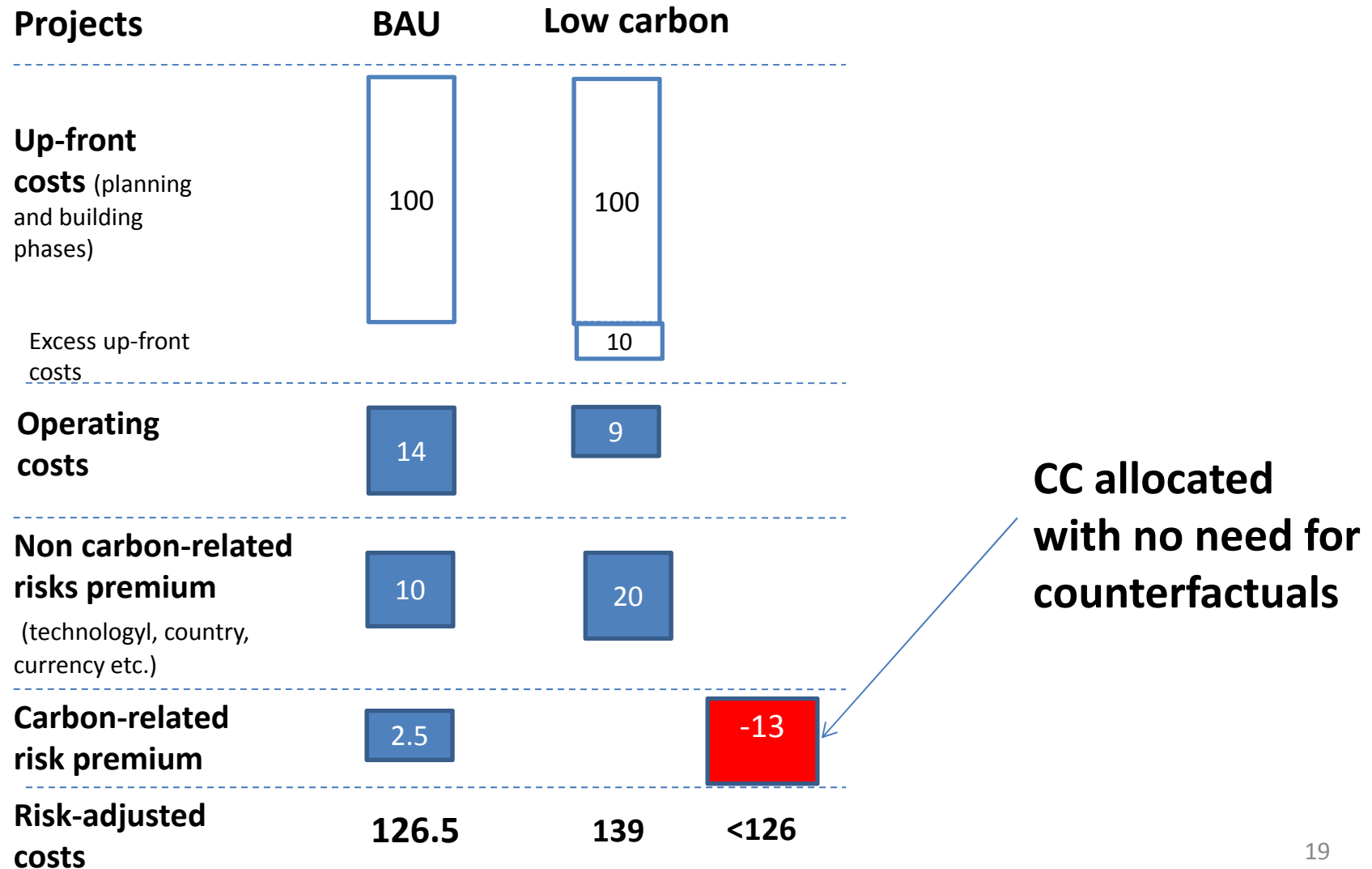
Central Bank		Commercial Bank		Entrepreneur	
Asset	Liability	Asset	Liability	Asset	Liability
10 CC	+100			$1000R^{LC}$	
<del>Loan CO<sub>2</sub></del>		+0	+0	$-900r^l$	+0
<del>+100</del>		<del>+100</del>	<del>+100</del>	<del>+10 CC</del>	<del>+100</del>
			+0		

<del>10 CO<sub>2</sub></del>	100
Reduction of CO <sub>2</sub>	Drawing rights

# Addressing potential risks of the system



# Risk-adjusted costs, a matter of total costs and not of only 'incremental' costs: need of 'statistical additionality'



**Preliminary numerical assessments  
'based on last IEA World Energy Outlook'**

# The nature of the funding challenge

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1. Energy Investments in the US in 2035
  - BAU: 470 B\$
  - LCS: 510 B\$
  
2. Energy Investments in the world
  - **BAU: 2000 B\$**
  - LCS: 1800 B\$

## Orders of magnitude of the 'carbon based money issuance (in 2035)

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	OECD	DC (Middle East Excl)
Total Energy INV	<b>988</b>	<b>1143</b>
Redirected INV	<b>494</b>	<b>571</b>
<b>Need of Carbon Assets</b>		
Leverage 5	<b>98</b>	<b>114</b>
Leverage 10	<b>49</b>	<b>57</b>
% of the total GDP	<b>between 0.19 and 0.30</b>	

**A « pull-back force » to secure both 'decarbonation' and 'equitable access to development'**

## *Key Principles for a global architecture*

- targets and timetables per countries with a controlled degree of “when” and “where” flexibility (COP3, 1997)
- leave all latitude to Parties to select the NAMAS apt to align their climate and development policies ..... no misgiving about environmental colonialism
- “common but differentiated responsibilities (CBDR)”
- motivate countries to respect announced emissions pledges and to narrow the gap between these pledges and an emissions trajectory compatible with the 2°C target
- deprive a defaulter country of the benefits of the system supported by a club of voluntary countries



## A Pull-Back force hung on three pillars

- *allocating* to each participating country part of the global emissions budget through a long term convergence trajectory (*compromise easier than in the case of a cap and trade system*)
- emissions commitments to issue carbon assets by countries above their convergence trajectory, no geographical restriction on the use of 'credit lines'
- Emissions pledges announced by countries below their convergence trajectory

## To sum up

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1. A deal on the « **Social Cost of Carbon** »
2. **Money creation backed on real wealth** (*Avoided climate risks, Infrastructure investments*)
3. **No risk of ‘speculative bubble’** on carbon
4. **Normative targets** with when flexibility and **back pulling force**
5. A concrete way to secure « **equitable access to development** » by supporting **NAMAs’** full incremental costs’ by a real inflow
6. A respected **CBDR that can be progressively extended to** the most advanced emerging economies
7. Can **support any carbon trading mechanism and bottom-up initiatives** (sectorial arrangements in the industry, cities initiatives ....) and **stabilize the ‘business context’**