



The Infrastructure Challenge – provision, funding and delivery

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AGENDA

- What is the problem?
- What are the options?
- How has the economic crisis affected finance and delivery?
- How would a RAB-based model work?
- What role might an infrastructure bank play?
- What are the practical implications?

What is the problem?

Multiple market failures



By definition, a public – private “partnership

- Time inconsistency : $MC < AC$ *ex post*
- Market power and networks
- externalities

The scale of the challenge

UK Infrastructure investment requirements to 2020

Sector Requirement	£ billion
Energy Replacement requirement	42
Energy Investment in the networks	65
Energy Renewables	136
Energy Energy efficiency	21
Transport Rail networks and high speed lines	69
Transport London transport	32
Transport Roads	9
Transport Air transport	10
Communications Nationwide roll-out of Fibre	5
Water Water and sewerage networks	37
Water Flood and coastal defences	8
TOTAL	434

Source: POLICY EX DOC

The options

I. In the 20th century \Rightarrow NATIONALISATION

- Impact on cost of capital
- Internalised regulation
- Avoided inflexible long-term contracts

BUT

- Inefficiencies in project design and execution
- Subject to short run government budgets

The options

II. PFI / PPP -type structures

- Max private sector incentives
- Long term fixed contracts
- Risk assignment for project delivery

BUT

- Very high cost of capital
- Inflexibility
- Public hostility

The options

III. Privatisation

- Asset – transfer
- Long term physical asset base
- Lower cost of capital than PFI / PPP

BUT

- Works less well for projects
- Requires intensive regulation
- Degree of public hostility

The origins of the financial crisis

2000
Stock
market
crash

2000-2006
 $i \downarrow$
spending \uparrow

2006
 $i \uparrow$
real

2007
Sub-
prime

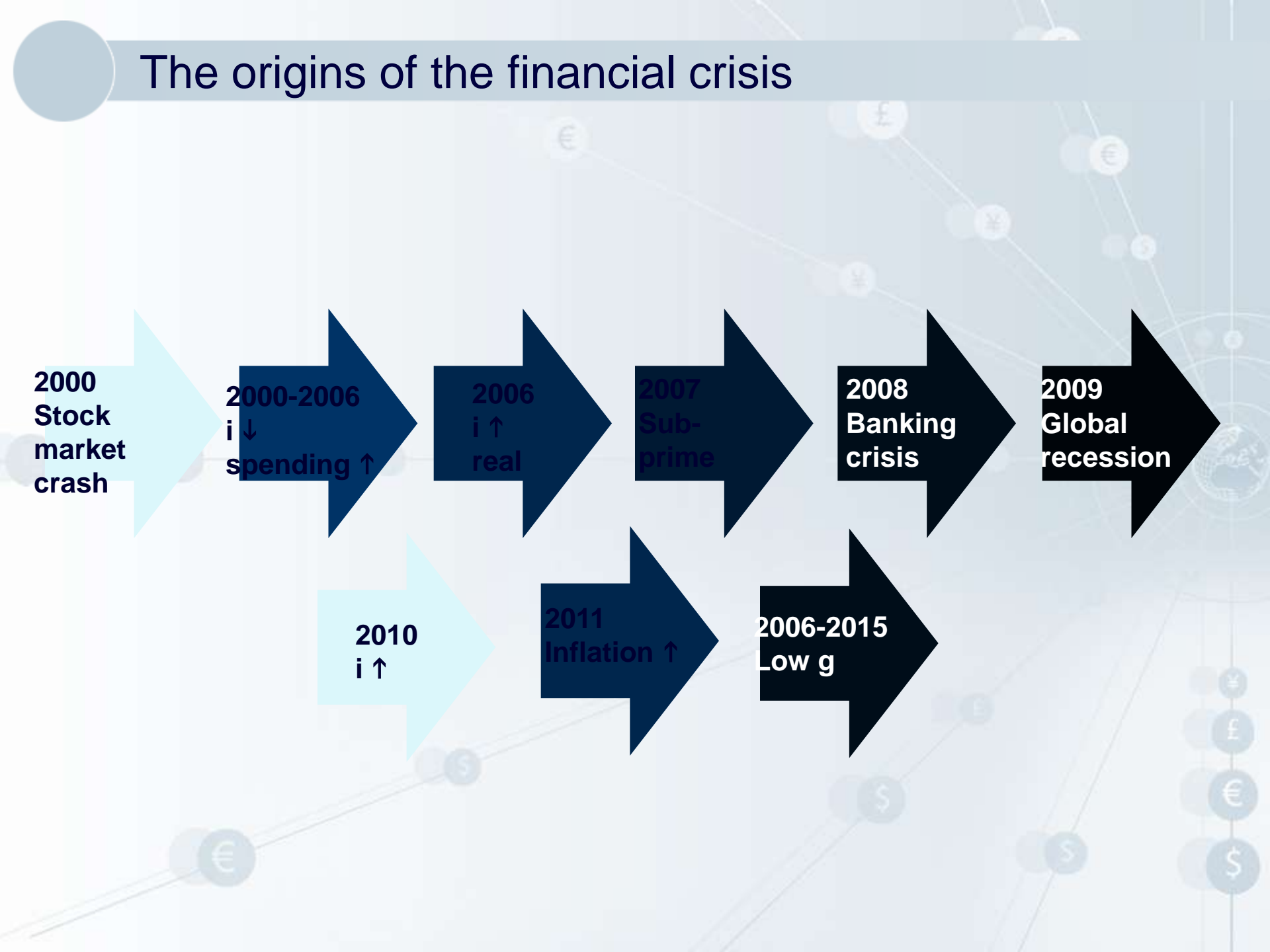
2008
Banking
crisis

2009
Global
recession

2010
 $i \uparrow$

2011
Inflation \uparrow

2006-2015
Low g



Impact of the financial crisis

- Changed the capital market conditions
- Reduced government budget flexibility

AND

- Changed the *zeitgeist*
- Greatly increased size and role of the State
- Put nationalisation back on the table

The RAB Model

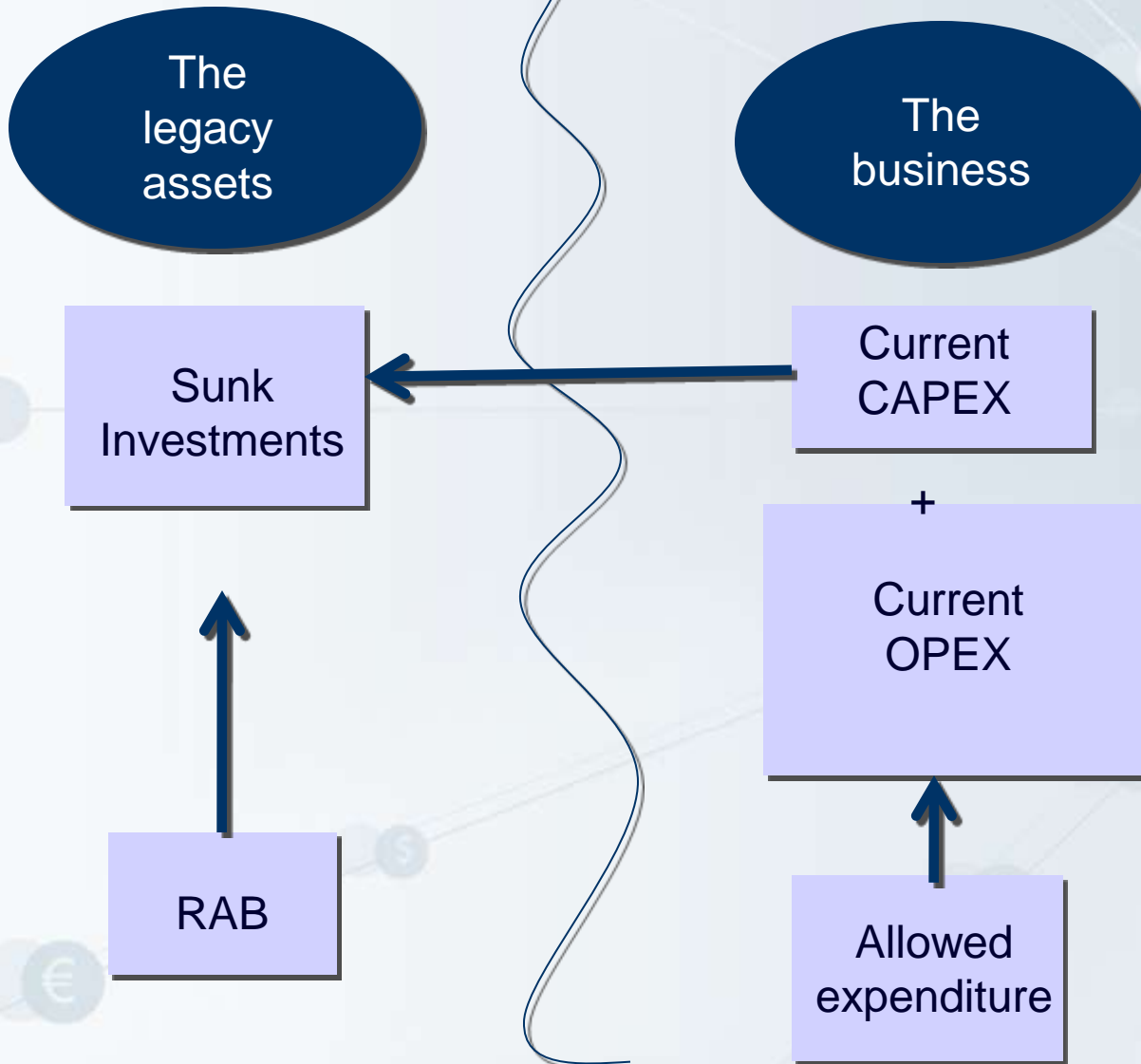
RAB + rate
of return

Duty to
finance
functions

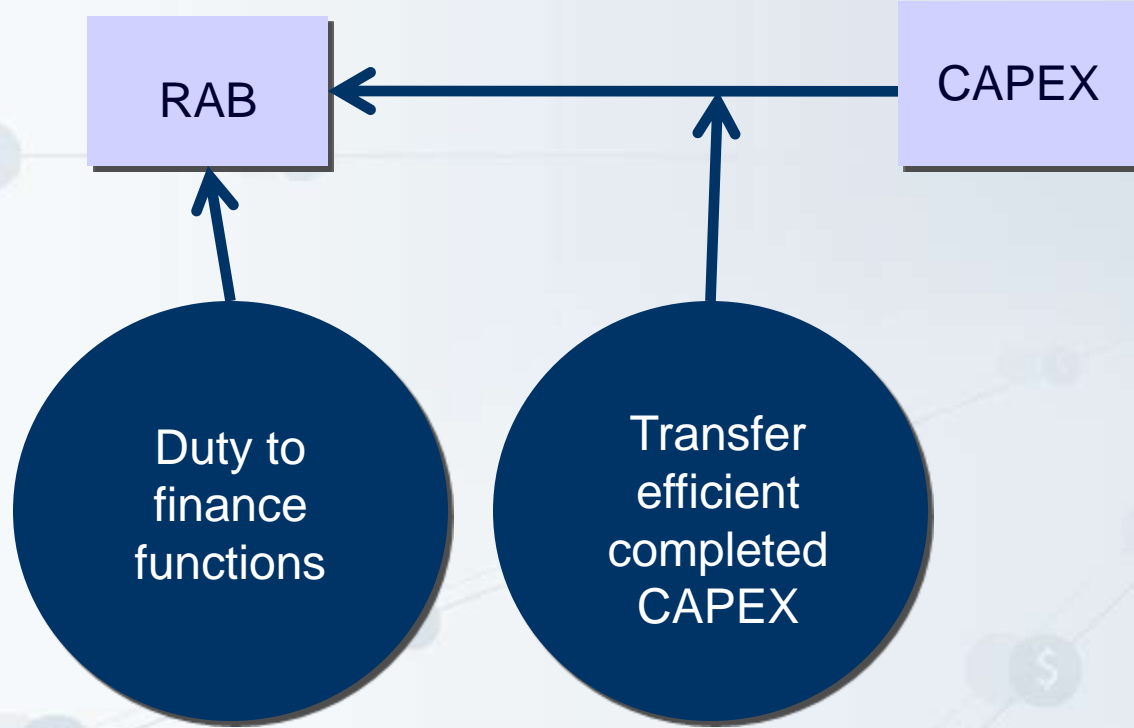
Statutory
instrument +
independent
regulation

⇒ MINIMISE COST OF CAPITAL = COST OF DEBT

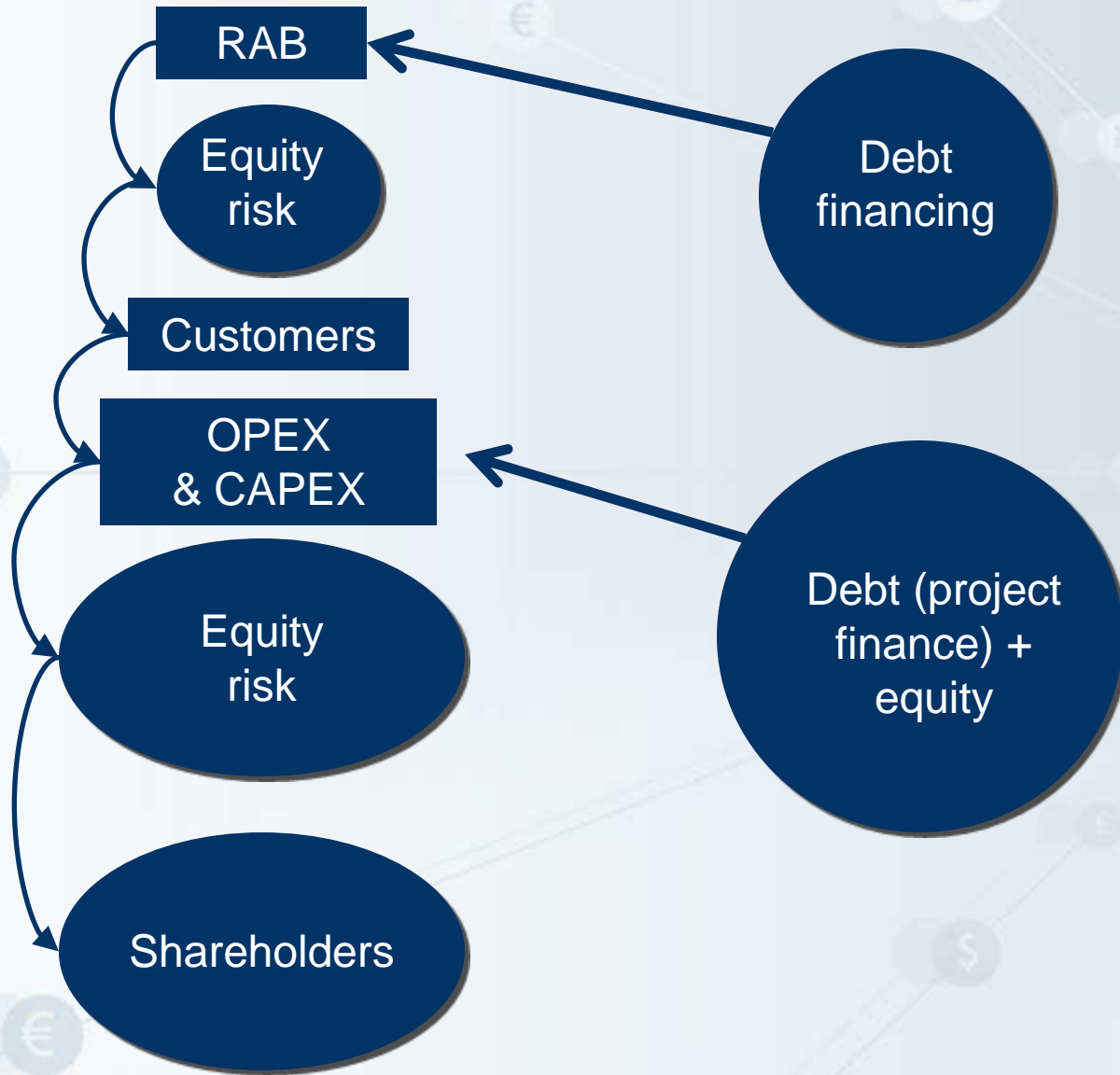
The RAB model – between the state and the market



The role of regulation



Equity risk allocation



The split cost of capital

Competitive tendering

Duty to finance functions

CAPEX + OPEX

RAB

Equity & project
finance

Debt-only

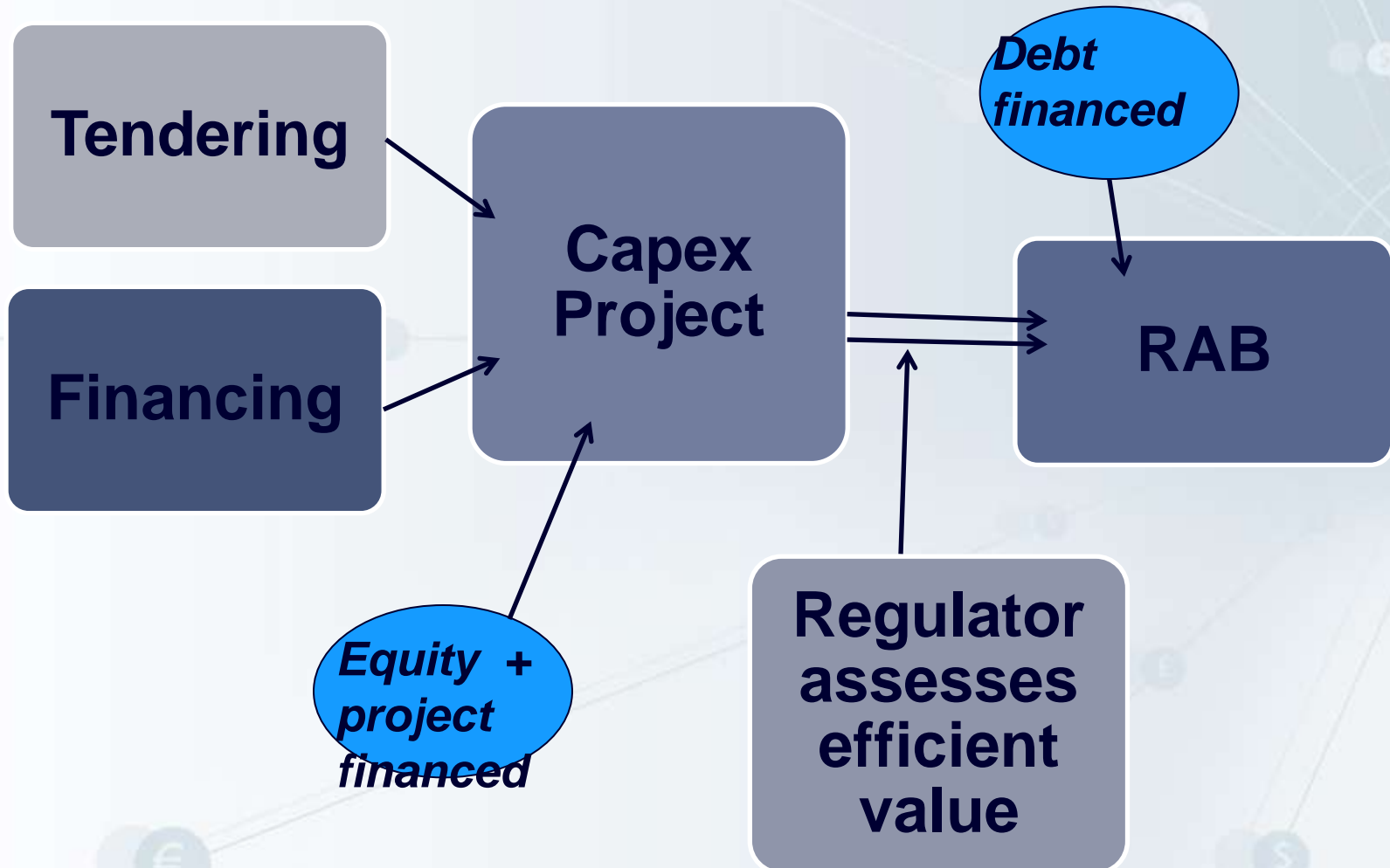
WACC

Marginal
cost of
equity

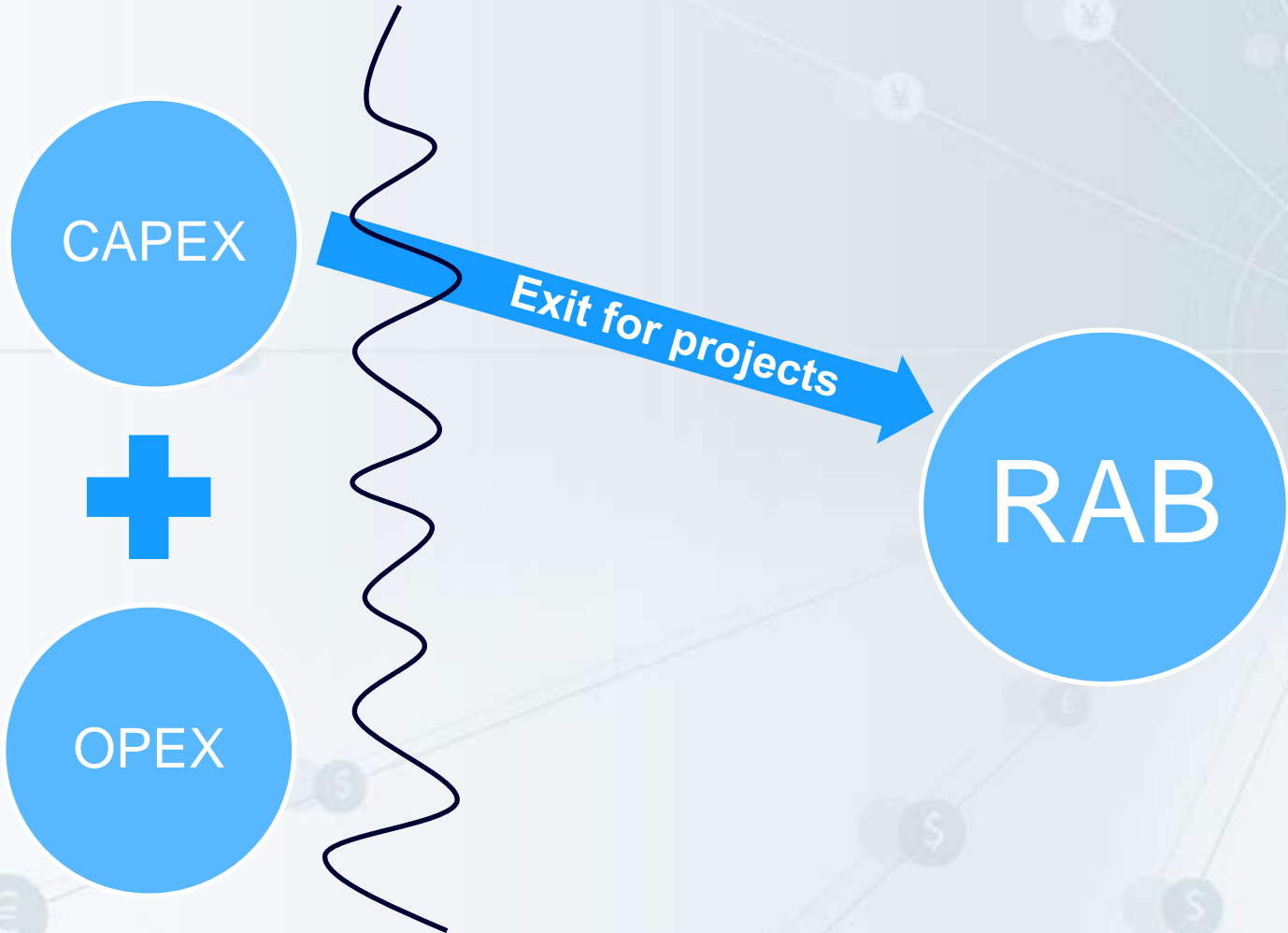
(massive)
Financial
arbitrage

Marginal
cost of
debt

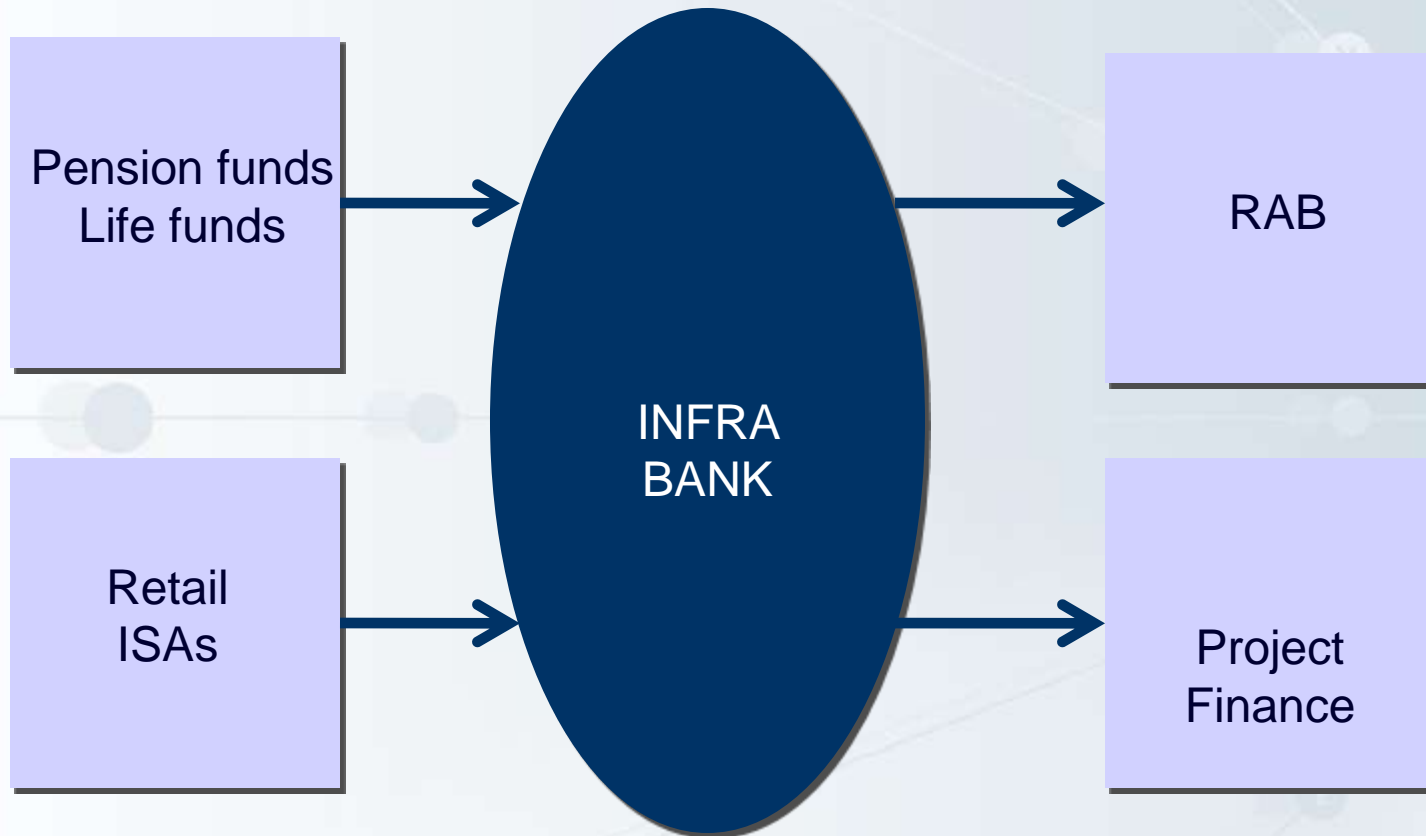
The CAPEX process



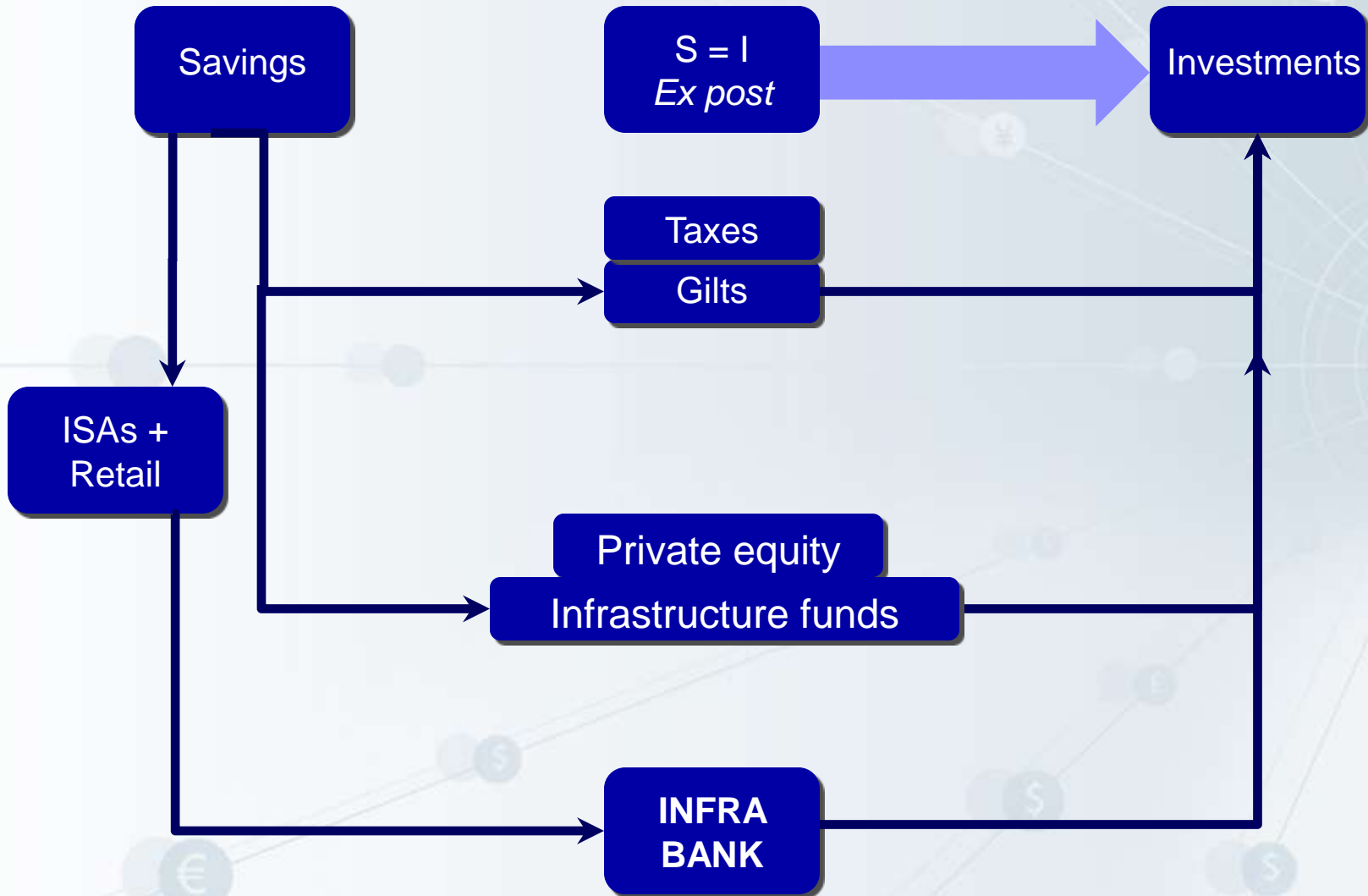
The implications for business structure



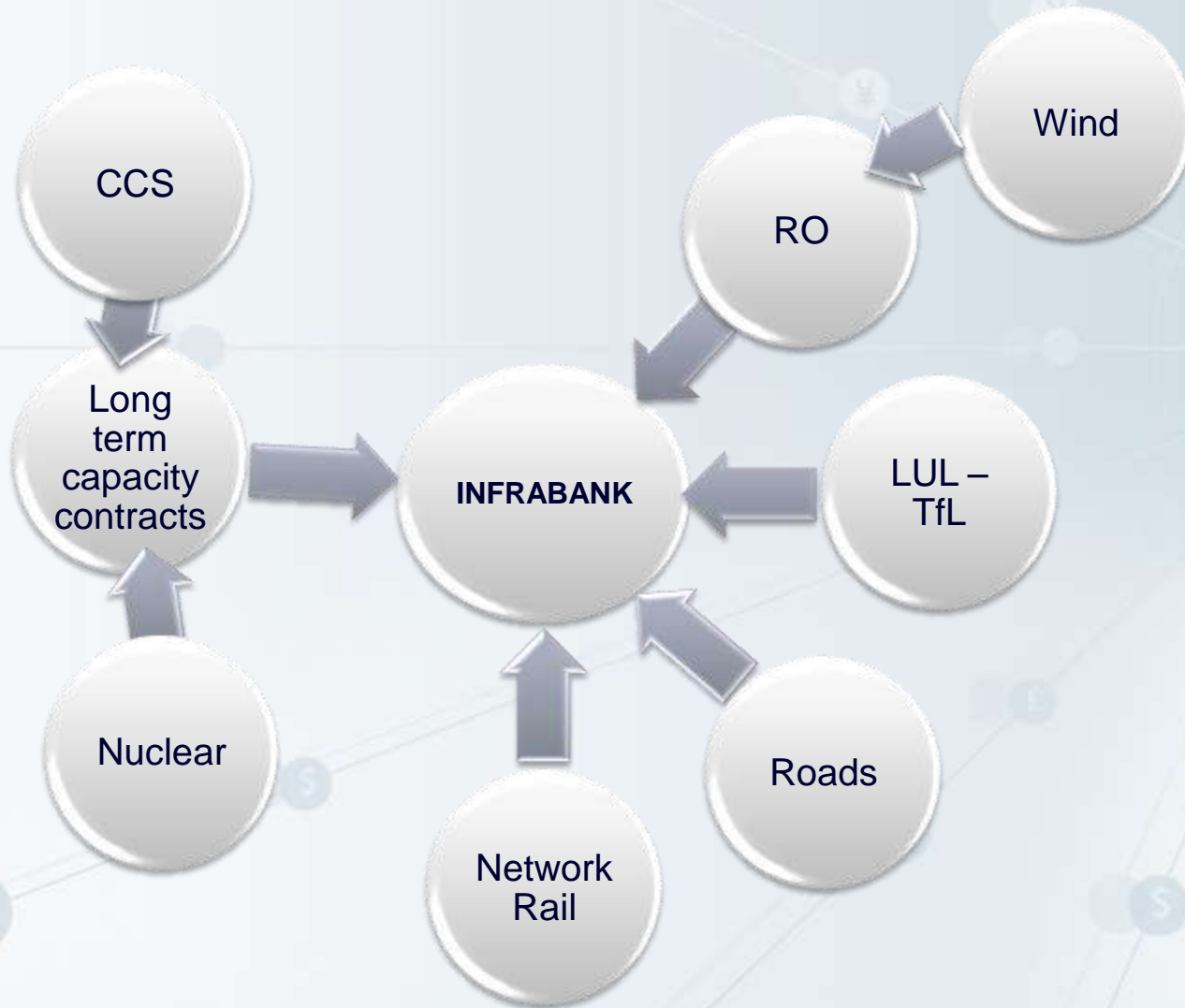
The Infra bank



The infra bank and savings and investment



Candidates for Infra bank



The practical implications

- The scale of the challenge is huge
- The capacity of the state is limited
- The cost of capital matters

⇒ Combine implicit guarantee to sunk costs (RABs) with equity risk of OPEX and CAPEX

⇒ Use Infrabank as ONE conduit

⇒ Mobilise retail funds

OR.... Nationalisation and low investment

Further information:

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