

Success factors to finance SAF

A Financial Market Perspective Impulse

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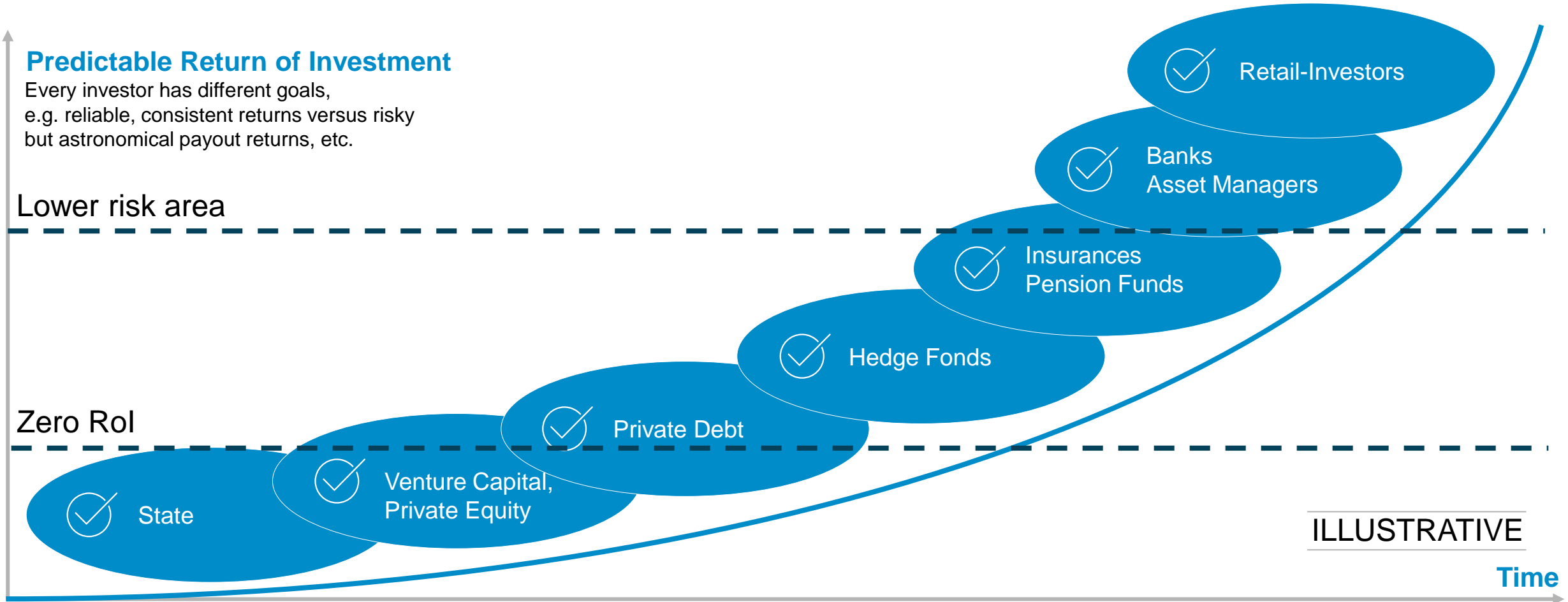
- 19 years national & international management positions at Deutsche Bank
- 7 years management consulting

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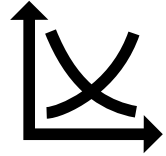
No money without a return – except from the state

– Relevant investors on the capital market



Countries apply ample funding options for new technologies according to the instruments impact on the desired target set

Some public instruments to fund / promote new energy technology




Market Development (liquidity, kick-starting...)


- Specific technology and market legislation with privileges and clear rules
- Standardization (products, infrastructure etc.)
- Marketplace establishment / market making capability support
- Public light house projects


Key insights


- There are different national target motivations to fund hydrogen, e.g.
 - Reducing national GHG emissions
 - Energy supply security
 - Technological leadership
 - Economic country development
 - Innovation support

- Depending on the set of national targets, funding instruments are selected according to their respective impact

 **Germany** uses guaranteed feed-in-compensation (photovoltaic, wind power), Infrastructure support and legislation (power grid, hydrogen port and pipelines) and standardization

 **The USA** focuses more on tax incentives like the Production Tax Credit (PTC) or the Investment Tax Credit (ITC) for renewables

 **China** invests directly in renewable energy technology (R&D) as well as infrastructure on a national level and applies competition protection

 **Denmark** develops its wind power farms by Guaranteed feed-in-compensations as well as support in R&D.

Supply Side Development (cost)

Equity support

- Cash subsidies/grants - earmarked (e.g. R&D) or unconditional
- Contests with trophy money
- Provision of land for the construction of factories
- Direct public equity stakes

Loan support

- Direct loans / State guarantees

Direct public investments

- Public infrastructure construction like pipeline network, grit development, harbours, public power plants/utilities

Cost reduction support

- Tax incentives
- Provision of free premises for respective start-ups
- Provision of free expert advice, e.g. via Universities
- Specialist work force development by provision of respective training infrastructure like offering respective courses of study

Demand Side Development (income)

Demand push

- Guaranteed feed-in-compensations
- Demand push with quota system: utilities are obliged to use a certain quota of the new energy type
- Demand push by demand of public agencies and bodies
- Demand push by consumption / usage subsidies to push other load demand

Competition protection

- Raising custom duties (create demand side price differences) to support local companies from foreign competitors
- Export promotion tools
- Other import restrictions like import volume ceilings

An investments appeal can be described by Horváths Investor Attractiveness Framework

Illustrative

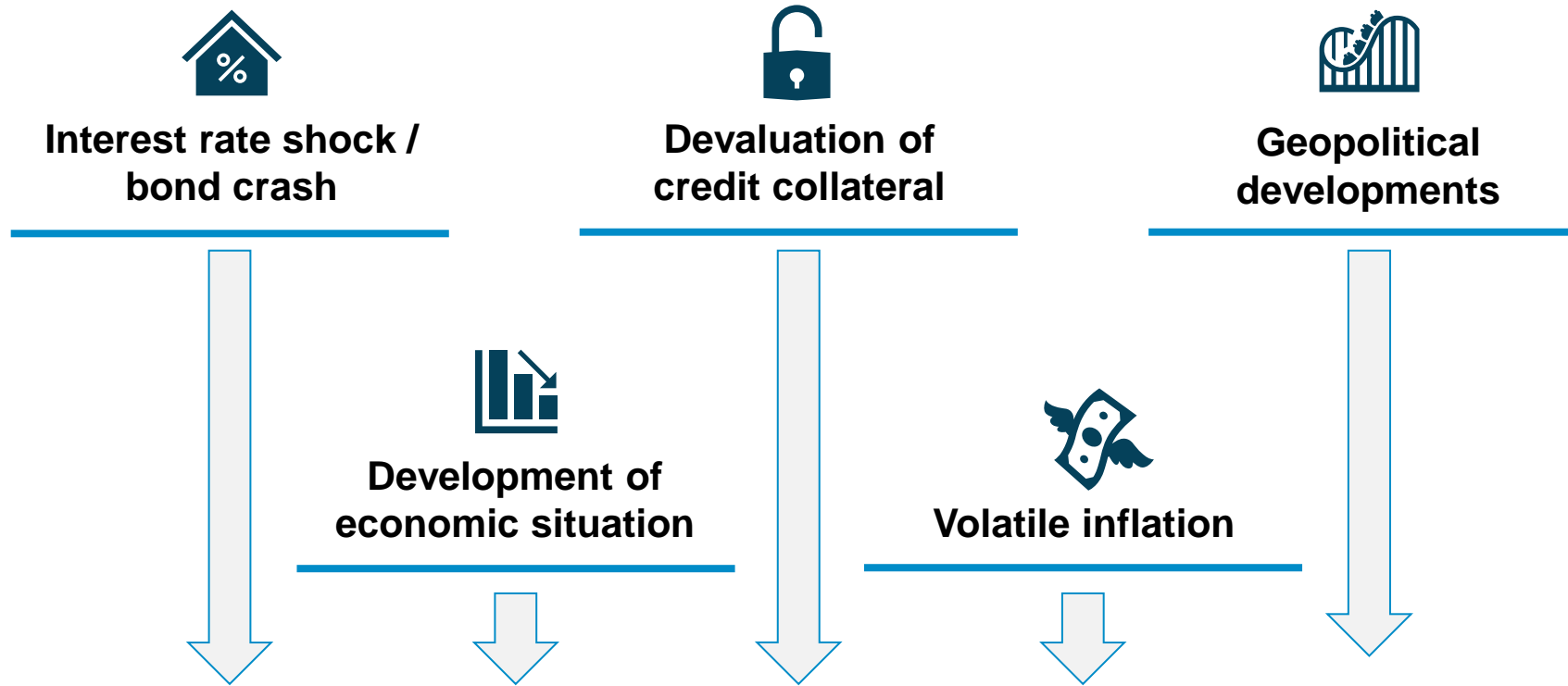
– Horváth Investor Attractiveness Framework

Horváth Investor Attractiveness Framework



The financing environment is very volatile – a challenge for long-term investments

Examples of current financial market influences



Description:

- **The financing strategy is designed** against the background of the external framework conditions on the financial market
- In addition to the **prevailing financing environment**, expected **financial market developments** also play an important role in deriving a **sustainable financing strategy**
- A dynamic environment therefore requires an **agile, dynamic financing strategy** in order to be able to act and react appropriately to new developments at all times

The dynamic environment requires an equally dynamic financing strategy

– Elements of agile financing programs



Examples

Different levels of detail:
the closer, the more detailed



Scenario technique:
The financing strategy must robustly master all scenarios



Buffers: Buffers mean security and enable the seizure of opportunities



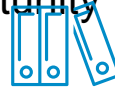
Equity/Loan structure:
Both capital types should be used flexibly according to opportunity



Cost variabilization:
In times of stress, high fixed costs can be fatal



Utilization of maturities: Smart maturity transformation enables opportunity utilization



Risk management:
partner risks, market price risks, etc. must be actively managed

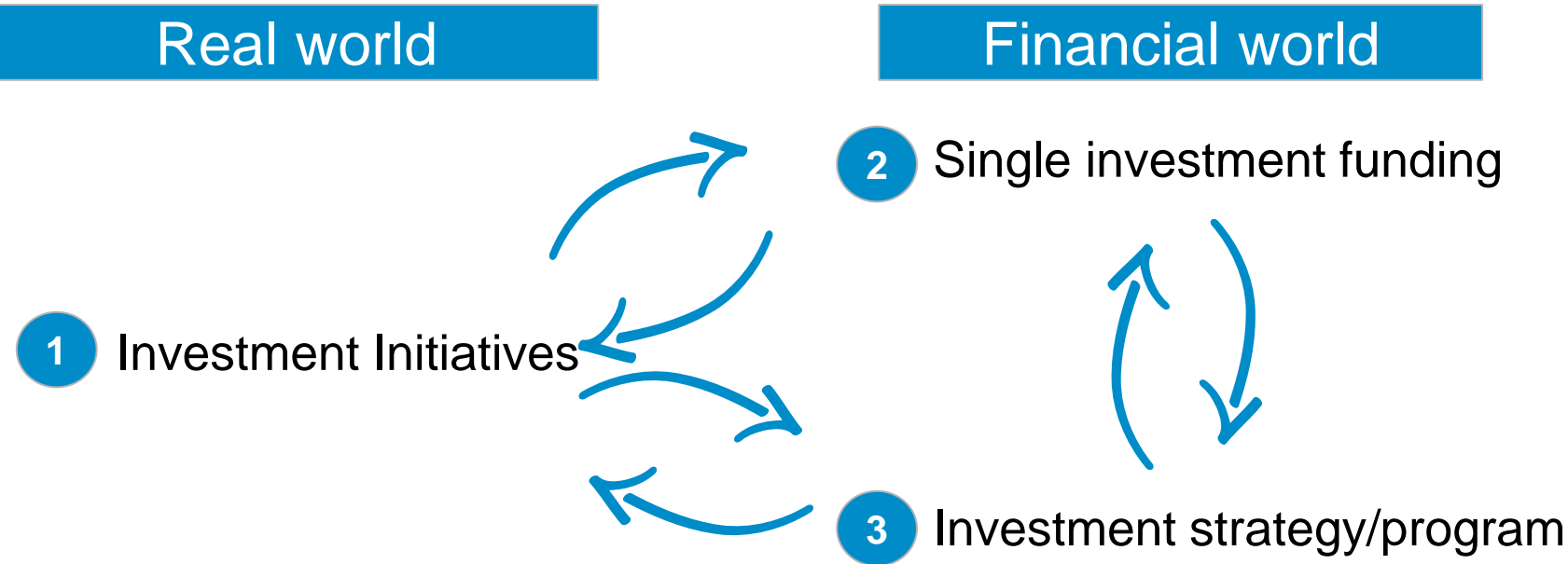


Regulation: Utilization e.g. of the preferential treatment of green bonds by the ECB for collateral



Investment program and funding impact each other in feedback iterations (sprints)

Feedback Loops between real and financial world



Examples: potential impact of financial world on real world

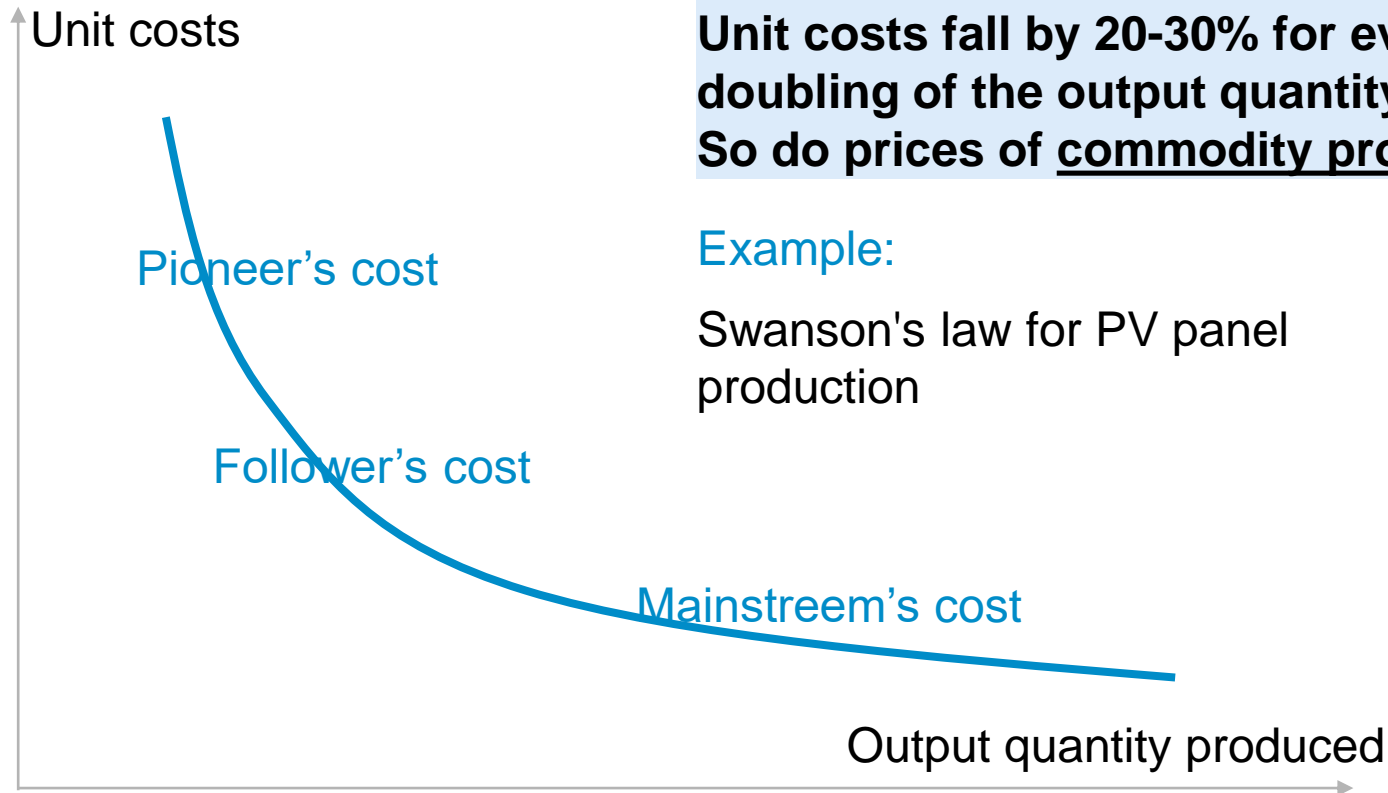
- Delay of investments
- Making investments ealyer
- Reshaping investments for investor attractiveness etc.

Description:

- Investment projects or programs can only be set up in **conjunction** with the financial environment. It makes no sense to consider them in isolation.
- The financial environment has **feedback effects** on the investment components and vice versa.

SAF's internal competition according to the law of the experience curve / mass production is a major risk for pioneers

— Experience Curve



The Law:

Unit costs fall by 20-30% for every doubling of the output quantity. So do prices of commodity products.

Example:

Swanson's law for PV panel production

- First movers / pioneers have the highest costs over the years (steepest part of the curve)
- The curve only flattens out noticeably after years
- **Commodity product Pioneers** only have an advantage if they are already planning to build further capacity in the future and can use their experience to do so (see insolvency of German pioneering PV-industry after 2010, because China produced cheaper)
- This generally implies shorter investment and depreciation cycles and therefore shorter financing cycles. A focus on lower operating cost for higher building costs is advantageous to run facilities longer in a decreasing cost environment
- The agile business case must cover at least 15-20 years



HORVÁTH

Thank you!



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