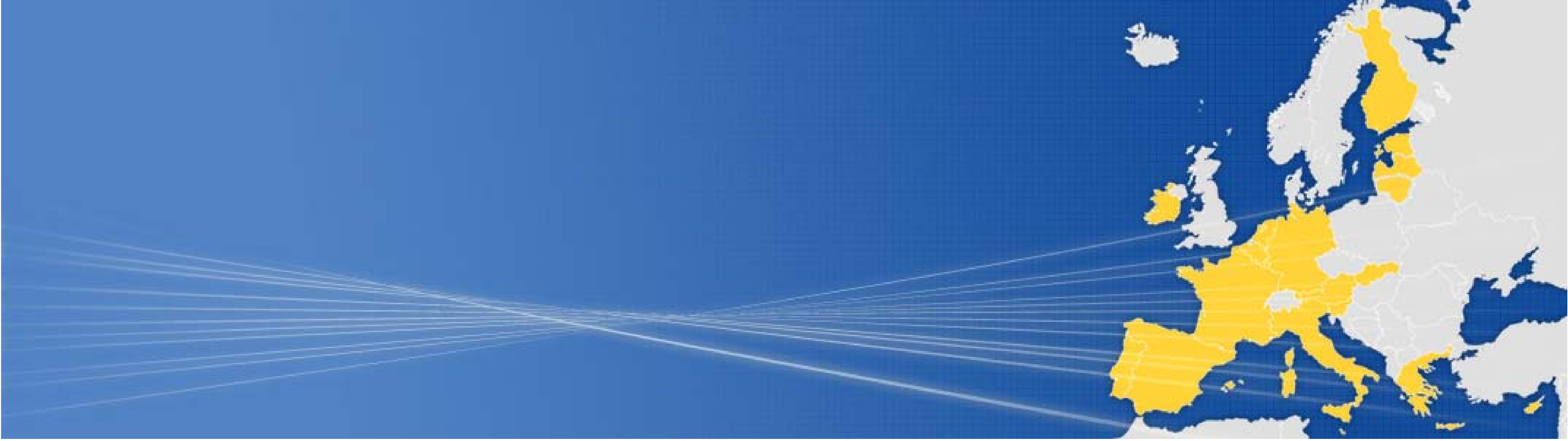

Recent changes in investment approach

The European Stability Mechanism

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European Stability Mechanism

ESM's investment framework and market conditions

- **The ESM was created in 2012. It manages €80Bn of Paid-in capital and short-term liquidity portfolios**
- **The ESM's investment framework is based on two key principles:**
  - Constant availability of €75Bn, to ensure high credit rating. This principle implies:
    - High credit quality of assets: €75Bn of assets with a rating equal or above AA-,
    - High liquidity of assets: primarily large public issuers with diversification approach,
    - Low market volatility: VaR below 3%
  - Capital preservation over the medium term, which implies a positive return of assets;
- **Changes in market conditions (negative yields, market liquidity) and the development of the institution have led to various changes in the ESM's framework**
- **In that context, the ESM has been engaged in three types of actions:**
  - Optimization of the investment framework to fit the mandate‘s core principles,
  - Increase in financial sophistication to extract more value from a prudent investment framework,
  - Implementation of a multiyear investment approach to avoid short term biases, that can leads to lower returns.

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1. Optimization of the investment framework (a)

- **Enlargement of the investment universe**
  - Revision of investment Guidelines in 2015 and 2016 to enlarge its investment universe,
  - Increase in the number of eligible issuers, from 55 in 2014 to 120 in 2017,
  - Effort to suppress unnecessary constrains: micro diversification rules, excessive liquidity requirements, excessive credit constrains, etc.
- **Changes have required understanding rating agency methodologies and in depth credit analysis**, to ensure the changes in the credit universe do not affect the ESM's rating.
- **New asset classes are under review:** Highly rated corporate securities could be added. Indexed linked bonds would require technical implementation.

Changes in investment framework since 2012

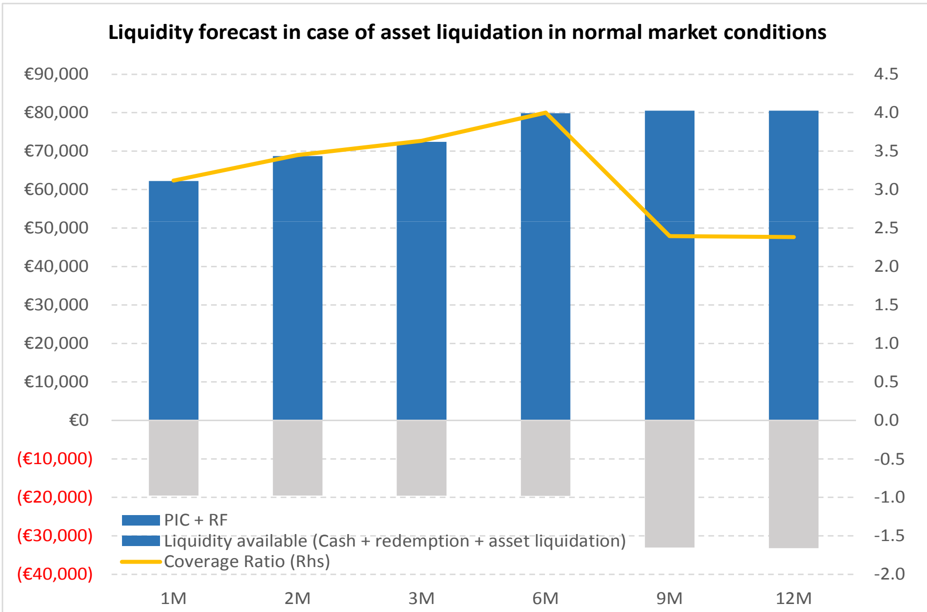
General Eligible Asset List (EUR 75Bn)			
Issuers	**2012**	**2015**	**2016**
Central Banks	>AA	>AA	>AA-
Sovereign	>AA	>AA	>AA-
Supranational Institutions	>AA	>AA	>AA-
Euro Area Govt. related Agencies	>AA	>AA	>AA-
Non-Euro Area Govt. related Agencies	-	>AA	>AA-
Sub-Sovereign	-	>AA	>AA-
Govt. Guranteed securities	-	>AA	>AA-
Financial Institutions	-	AAA	AAA

Enlarged Eligible Asset List			
Issuers	**2012**	**2015**	**2016**
Euro area Central Banks	None	None	None
Euro Area Sovereign	None	>BBB-	>BBB-
Non Euro area Central Banks	>AA	>A	>A
Non Euro Area Sovereign	>AA	>A	>A
Non-Euro Area Govt. related Agencies	>AA	>A	>A
Supranational Institutions	>AA	>A	>A
Financial Institutions	>AA	>AA	>AA
Sub-Sovereign	-	>A	>A
Govt. Guranteed securities	-	>A	>A

Red indicates changes to the Investment guideline

1. Optimization of the investment framework (b)

- **Broaden the liquidity framework by implementing a portfolio base approach**
  - Traditional liquidity management is based on micro-measures: short term liquidity tranche, highly rated assets discounted with large haircuts. This approach has its limitations for large portfolios in an environment where counterparties are less able to absorb large volumes.
  - The ESM is enhancing its framework by using liquidation scenarios to adjust more precisely the investment structure to potential liquidity needs. Scenarios assume different liquidation speed, given the assets types, in relatively normal market conditions.
- **Introduction of Repo operations to increase channels to raise liquidity**
- **Further adjustment to the liquidity framework should be discussed at a later stage:** possible introduction of assets with strong diversification characteristics in crisis situation.



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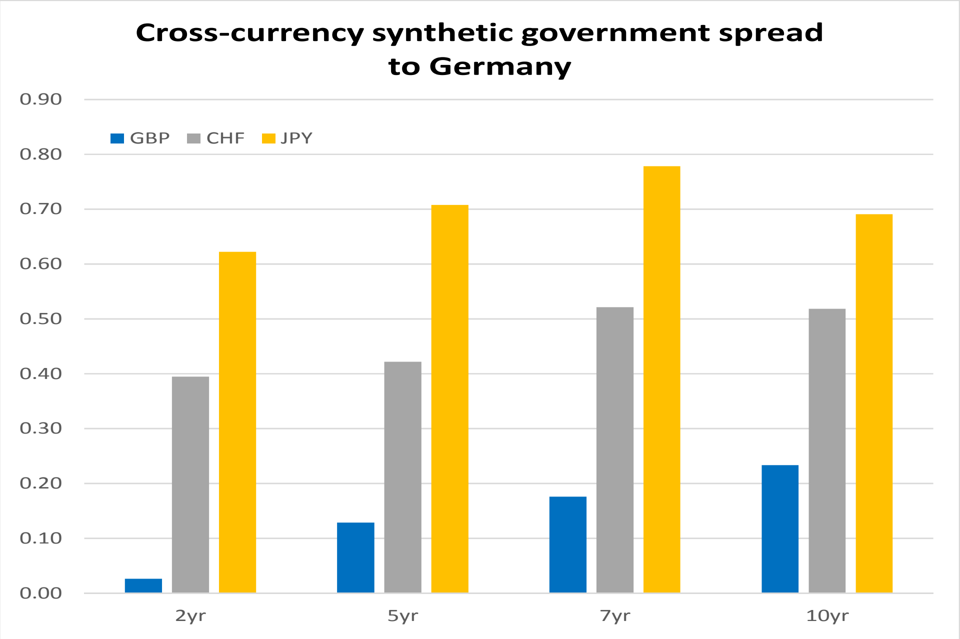
2. Increase in sophistication to extract more value from investments (a)

- **Development of currency hedging to take advantage of basis swaps return:**
  - Introduction of short term FX swaps in 9 currencies in 2015 (1-year, then 2-year maturity) to enhance return, and improve diversification, with reduced credit risk. Two currencies have been used as of 2017.
  - Introduction of cross currency swaps in 2017, with 2-way CSA, to improve return and diversification:
    - 2-way CSA enable to reduce cost of trading, improve transparency and access to the market,
    - 2-way CSA require the implementation of a solid risk and liquidity framework to manage potential collateral needs.
    - First CSAs signed in 2017 (18 month internal preparation, 4 month negotiation).



Charges applied, by a selection of banks, to Derivatives, depending on CSA characterisitics

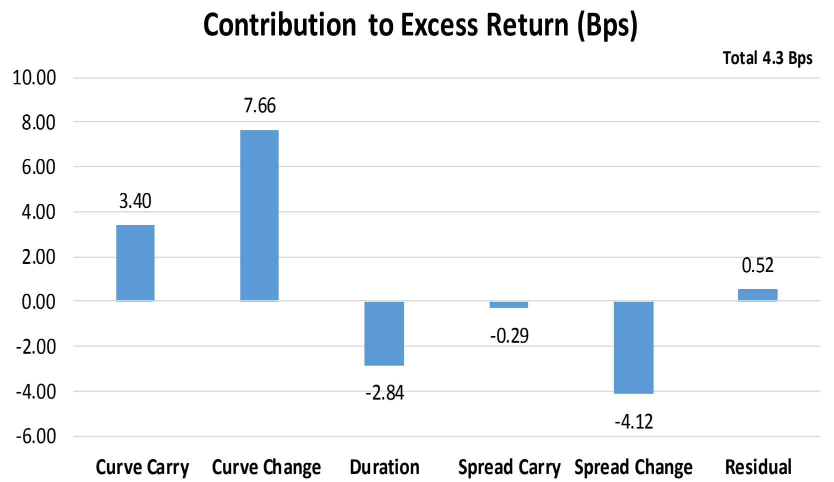
Survey conducted by the ESM in Q1 2016

	3Y CCS		*10Y CCS*		*5Y IRS*	
Bank	**Sym. CSA**	**Asym. CSA**	**Sym. CSA**	**Asym. CSA**	**Sym. CSA**	**Asym. CSA**
a	0.00	4.13	0.00	7.42	0.00	0.70
b	0.00	2.96	0.00	5.03	0.00	0.80
c	-0.93	3.87	-3.71	7.83	0.00	0.97
d	0.00	3.84	0.00	4.98		
e	0.00	3.15	0.00	6.55	0.00	1.10
f	1.70	6.70	3.70	24.30	0.90	4.80
g	0.00	2.80	0.00	8.00		
h	2.12	9.79	2.55	17.64	0.22	2.18
Average	**0.36**	**4.65**	**0.32**	**10.22**	**0.19**	**1.76**
Range	-0.9/2.1	2.8/9.7	-3.7/3.7	5/24.3	0/0.9	0.7/4.8

2. Increase in sophistication to extract more value from investments (b)

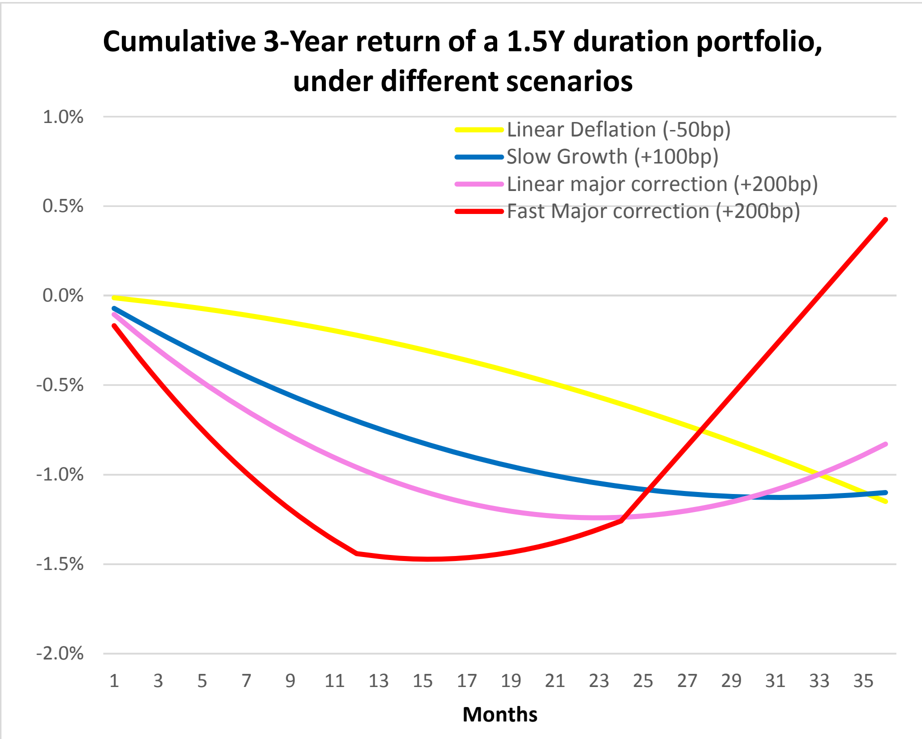
- **Implementation of an active management framework to take advantage of market volatility:**
  - Increase in portfolio managers specialization, by creating 3 sub-portfolios, with geographic distribution. Portfolio managers can proceed to arbitrage among asset classes, in a subset of the investments.
  - Improvement of strategic benchmarking to improve monitoring and incentive to look for arbitrage opportunities. The ESM has moved from Euro-area Sovereign indices to a more granular structure, aligned with the ESM investment constrains/objectives. Tactical benchmarks are currently under review.
  - Implementation of monthly relative performance attribution to identify the source of return.
- **Expansion of investment instruments to enlarge investment arbitrages:** IRS are about to be launched in 2017; Futures should follow in 2018.

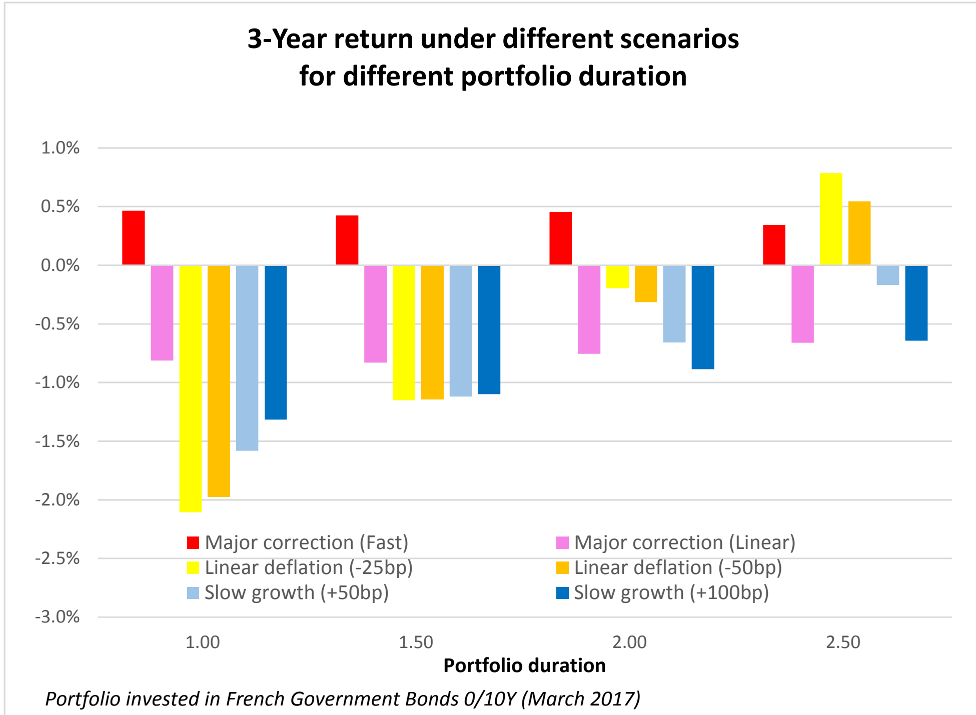
Example of performance attribution analysis



3. Implementation of a multiyear investment approach (a)

- **Build up of reserves to create buffer for future expected losses.** The ESM has built up €1426M of reserves as of December 2016, before the transfer of 2016's profits. Scenario analyses were a strong element to convince of the importance to save past returns.
- **Implementation of scenario based approach, to avoid the trap of short term volatility indicators**
  - <u>Traditional risk measures (Duration, VaR) tend to give excessive focus on short term volatility</u>. They can lead to implement a framework where investors hedge against the "Best case scenario" of rate rises.
  - <u>Reinforce scenario based approach </u>to target a portfolio structure that enhance return over medium term.





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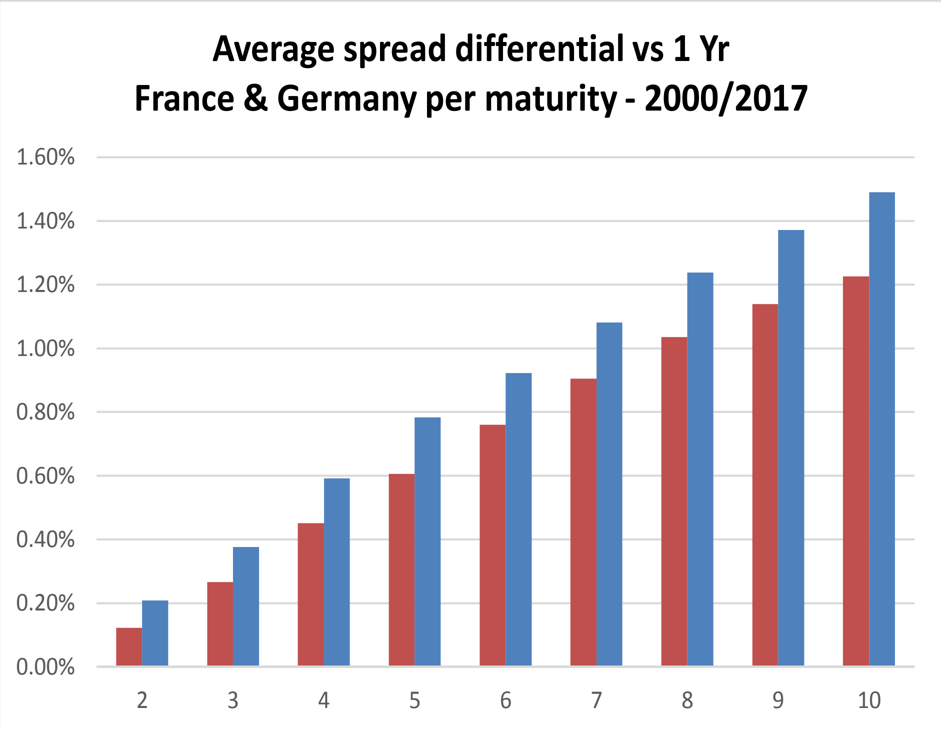
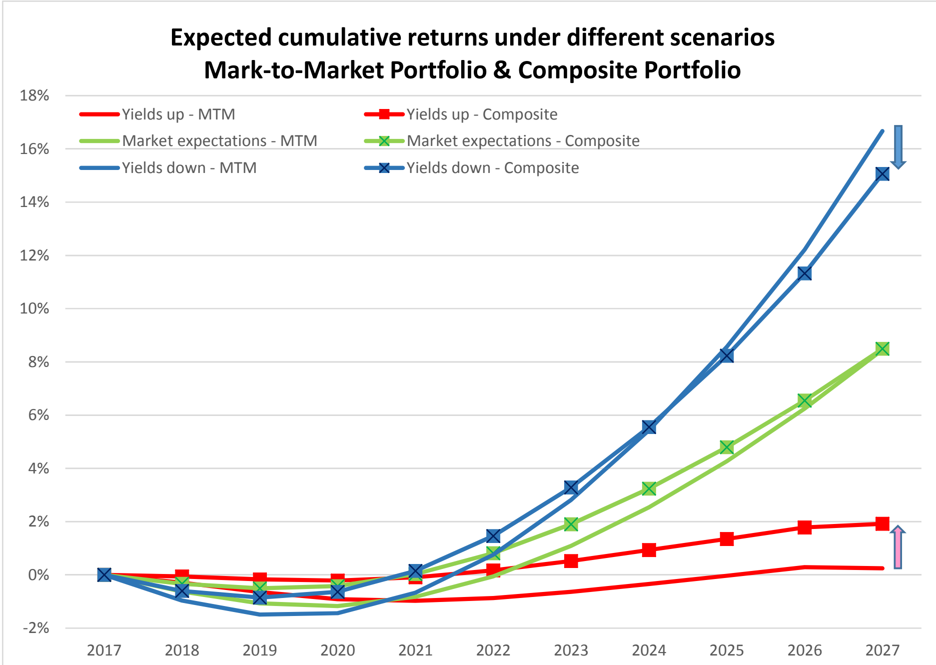
3. Implementation of a multiyear investment approach (b)

- **Under review: implementation of a hedging approach, by introducing Long-term Hold-to-Maturity portfolio**
  - Long term positions enable to capture term premium, historically.
  - HTM approach enables to benefit from regular stream of interest, which would reduce accounting losses over the next 3 years, and act as a hedge in case yields would remain low for an extended period of time.
  - HTM portfolios generate an opportunity cost that would materialize, in the "best case scenario" of yield rise. In that case they would reduce the absolute positive return.





MTM: 2-year duration portfolio; Composite: 80% MTM & 20% 10-year HTM, invested at the start.
Estimate based on European yields levels in February 2017 (50% France, 30% Netherlands, 20% Germany).

A last word: the difficulty to introduce changes

- **The ESM has managed to implement major changes over the last 2 years in its investment framework. However, the process is slow and difficult.**
- **Any change to the investment framework requires large effort to convince:**
  - Natural risk aversion bias of decision makers and preferences for over conservative approach,
  - Major guidelines changes require heavy regulatory process: agreement from 19 countries is required with, in some cases, parliamentary approval.
- **New instruments and more sophisticated approach, require enhancing tools and analysis:**
  - The implementation of IT systems can be long,
  - The introduction of 2-way CSA require in depth analysis of the legal, credit and liquidity risks,
  - Scenario based analysis can lead to difficulty to agree on reasonable scenarios,
  - Staff need to have the necessary skills to implement new approaches.