

INNOVATIVE CAPITAL MARKETS SOLUTIONS FOR LIFE AND LONG-TERM SAVINGS PRODUCTS

CONVENTION A EUROPE 2024

Marketing Communication – For Professional Investors Only

Not Intended For Further Distribution – Not For Use With Retail Investors

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BNP PARIBAS
GLOBAL MARKETS
20 MARCH 2024



BNP PARIBAS

The bank for a changing world

With You Today!



Christian Eck

**Head of Insurance Germany
Equity and Cross Asset Solutions**

Christian has been working in capital markets for major banks in London and Frankfurt since 2002. At BNP Paribas he is responsible for the cooperation with life insurers. He is a specialist in capital markets and long-term savings solutions. He regularly speaks at industry events and publishes on finance-related topics. Christian studied International Business Administration at Münster University of Applied Sciences and graduated with a Master in Finance from London Business School.

He is member of several working groups of the German Association of Actuaries.

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Marion Olives

**Head of Equity Derivatives Solutions
Structuring EMEA**

As part of her role Marion focuses on life insurance and long-term saving solutions together with Asset Managers and Life Insurances. Marion has more than 15 years' experience in structuring both in Paris and London. Over the last 10 years Marion has been developing various protected solutions and in particular in 2018 Marion has implemented individualized protection for Cardif Vita in Paris working closely with FNZ. Before joining BNP Paribas, Marion has been working 2 years in a tech company in Finance after graduating from Ecole Polytechnique and Ecole des Mines de Paris in 2005



Dominic O'Mahony

**Head of Insurance Equity Research
BNPP Paribas Exane**

Dominic O'Mahony leads the Insurance Equity Research team at BNP Paribas Exane, with a specific focus on UK and Asian life insurance as well as European multiliners. Prior to joining BNP Paribas in 2016, he was a management consultant at the Boston Consulting Group, where he led projects in the financial services sector.



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BNP Paribas – Your Partner For Life Insurance Solutions

We have developed a unique expertise in building strategic partnerships and delivering bespoke products

- We operate in a **fast-evolving financial industry**, addressing the latest challenges in markets and proposing advanced solutions to face the **changing market environments**

- The **Insurance Solutions Teams** have dedicated their efforts in building strategic partnerships with institutional clients

- The teams have developed **solutions** as varied as:

- ✓ Guarantee funds for dynamic hybrid products
- ✓ Bespoke investment strategies for index linked policies
- ✓ Guaranteed fixed-tenor funds
- ✓ Open-ended protection
- ✓ Market linked annuities
- ✓ Price and volume guarantees for option-based solutions

20Y

**Insurance Solutions
Expertise**

10+

**Countries where we are
offering such solutions**



**Established leader in
structured products**



**Solid footprint
across markets**



**Various teams dedicated
to insurance solutions**



Variety of partnerships



We are innovators



Focus on ESG

AA- FITCH

Aa3 MOODY'S

A+ S&P

- 01** EUROPEAN INSURANCE LANDSCAPE
- 02** CHALLENGES AND OPPORTUNITIES
- 03** CURRENT PRODUCT IMPLEMENTATIONS
- 04** INTERESTED IN FURTHER TOPICS?
- 05** Q&A
- 06** APPENDIX - ABOUT BNP PARIBAS



01

EUROPEAN INSURANCE LANDSCAPE



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02

CHALLENGES AND OPPORTUNITIES



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Life Insurance – Current Key Drivers

- 1 Life insurance savings represent several **thousands of billion EUR** in Europe
- 2 It is still one of the main saving schemes in Europe
 - **Tax incentives** for life cycle investments
 - Natural home for **guarantees**
 - Natural home for **longevity**
- 3 It has gone through **massive transformation** over the last decade because of important regulatory changes and interest rate environment
- 4 The recent sharp increase in rates has raised **new concerns** to life insurance business
- 5 As an answer to those concerns, **internal and external innovation is key for** life insurers to stay ahead of competition



Life Insurance – Swot Analysis

STRENGTHS



- **Tax benefits** in most countries
- **Unique capacity to take and monetise longevity risk**
- **Natural “home” for protected/guaranteed** solutions and for long-term saving/retirement products

WEAKNESSES



- **IT systems** often obsolete to accommodate new products (i.e. long time to market)
- **High cost of running business**
- **Difficult to change salesforce selling patterns** and to align interests with non-captive distribution channels

OPPORTUNITIES



- Insurance wrapper are better suited than others **to gain market share in a challenging environment**
 - Ability to track each individual account position (unique proposition)
 - Flexibility in providing capital protection at the account level
 - Possibility of **individualization**
- Unique capacity to be a partner for the decumulation phase

THREATS

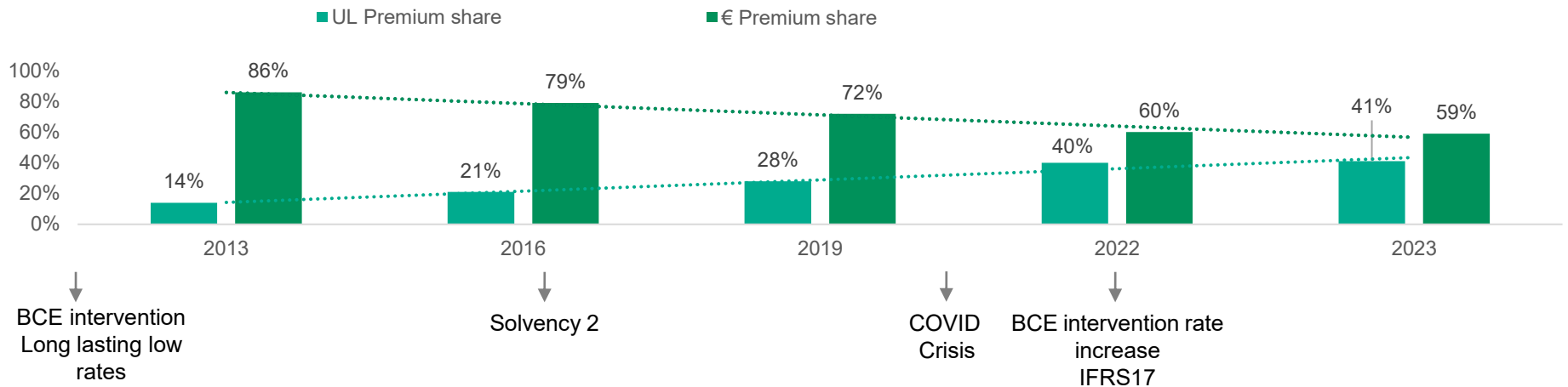


- **Lapse risk:**
 - Standard UL business under threat from fund platforms
 - Competition from deposits and target dated funds
- **Less ability** to adapt to evolving market conditions than banks and asset managers
- **Consequences of cost cutting resources:** some insurers lost resources and expertise for product development



A Transformation Across Europe

Life insurance has shifted to more UL across the years driven by changes in rates and regulation



GENERAL ACCOUNT

- **Guaranteed business** - heterogeneity of guarantees but mainly daily guarantee
- Common pool of assets
- Book value accounting where assets are not all valued in MtM - credited rate based on book return
- Profit sharing with heterogeneity of formulas
- Capital intensive as mostly unhedged

UNIT-LINKED

- **Non guaranteed business** - capital light
- Fee driven business & distribution business
-> *the sustainability of such business model regularly questioned*
- Large variety of supports and very dependent on local country regulation

Source: EIOPA, France Assureurs



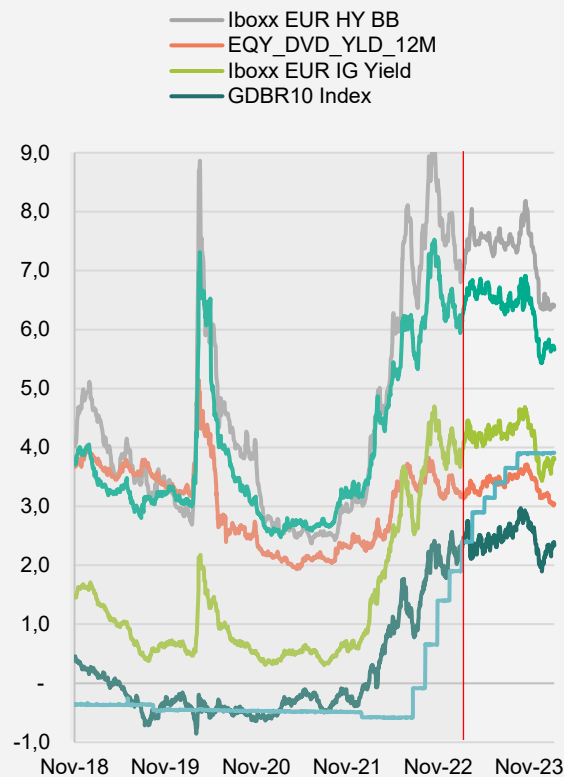
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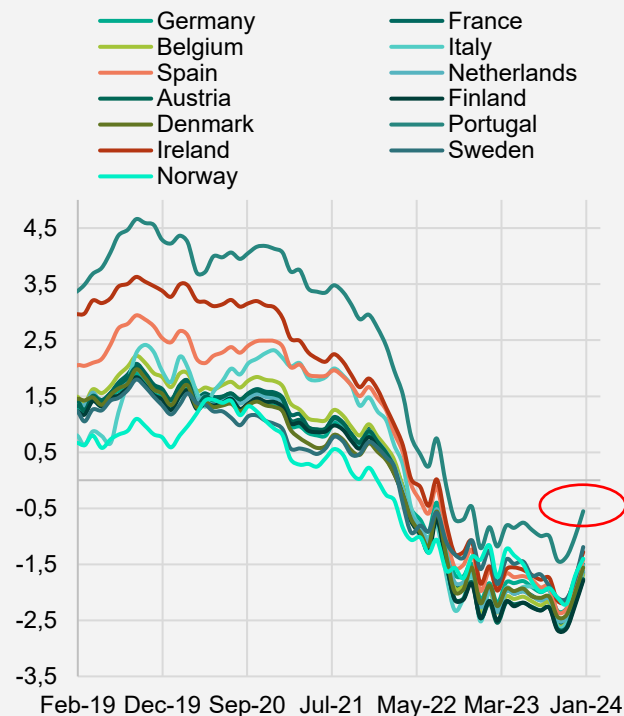
2023 – The Transition Year

Significant change in yields and gap creating an increase concern on life insurance business model

ASSET YIELDS

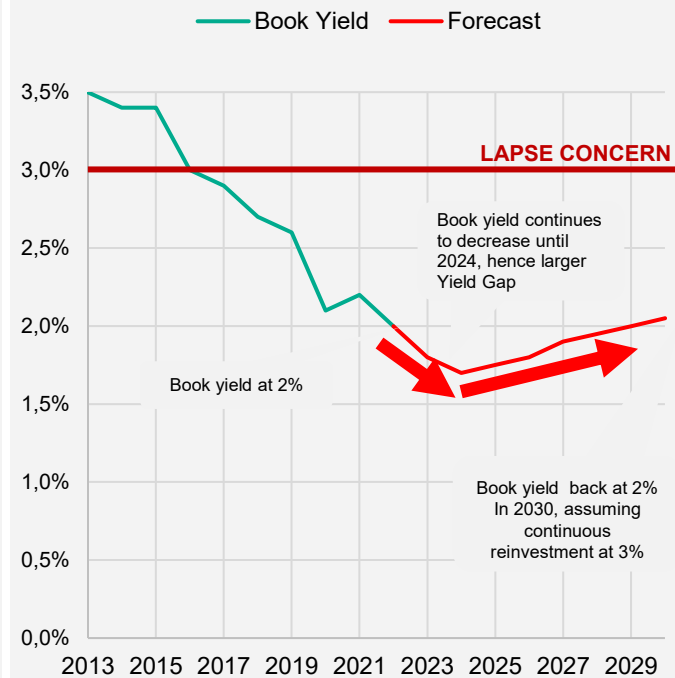


YIELD GAP (BOOK YIELD - 10Y RATE)



Source: BNP Paribas, Bloomberg, January 2024. For illustrative purposes only.

BOOK YIELD LOWER FOR LONGER, DESPITE BETTER REINVESTMENT



Source: ACPR, Analyses & Synthèses, 149/2023. For illustrative purposes only

Source: BNP Paribas

Rethinking The Business Model

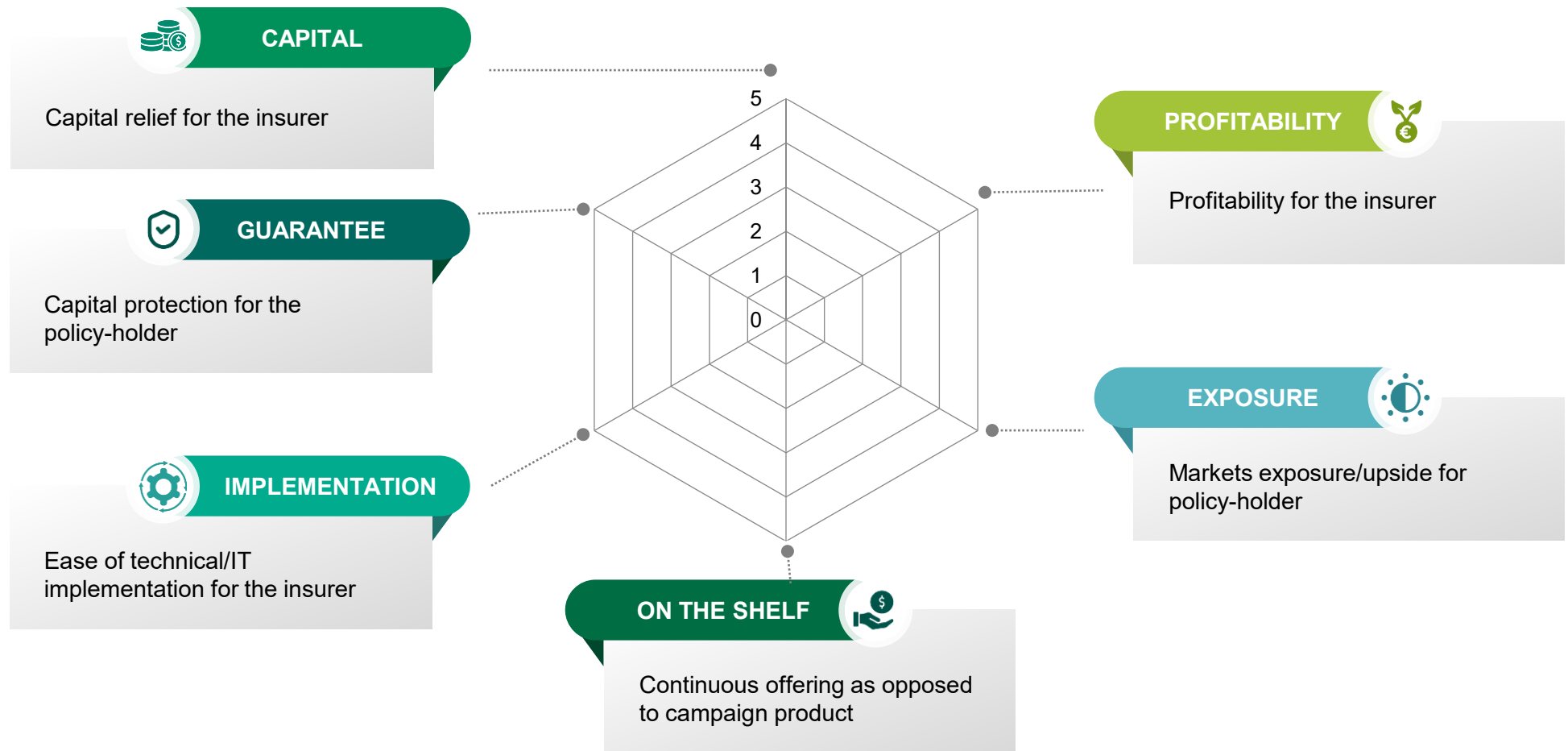
Which angle?	Objectives	General Account and its variations where applicable	Unit Linked or IL where applicable	Hybrid
INSURER	Lower capital requirements?	✗ ✗	✓ ✓	✓
	Easy IT implementation?	✓	Depends on implemented solution	✓
	Increase profitability?	✗	✓ ✓	✓
DISTRIBUTOR	Easy salesforce training	✓ ✓	Depends on implemented solution	✓
	Suitability	✓ ✓	Depends on implemented solution	✓
POLICYHOLDER	Offers Guarantees?	✓ ✓	✗	✓
	Offers Yield?	✓	✓	✓
	Is ESG?	✗	✓	✓

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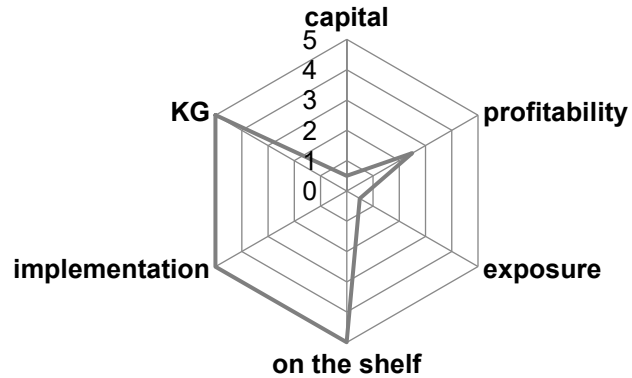
How To Construct The Most Suitable Solution

Let's assign a score from 0 to 5 to each of the following indicators. The higher the score, the better

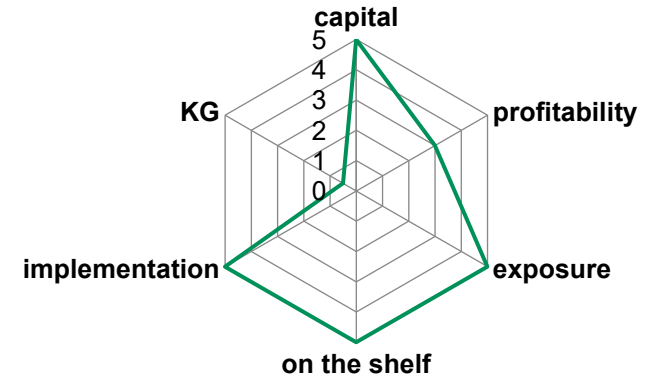


Implementation Examples

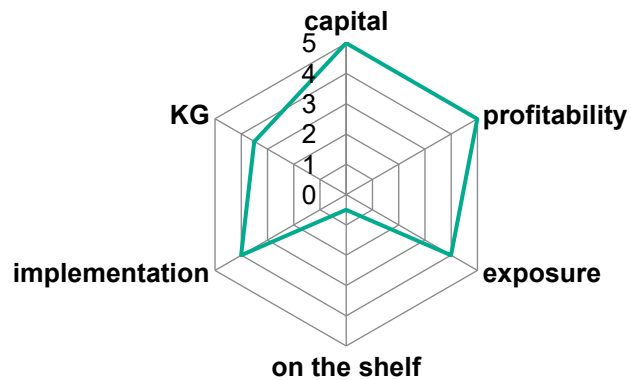
GENERAL ACCOUNT



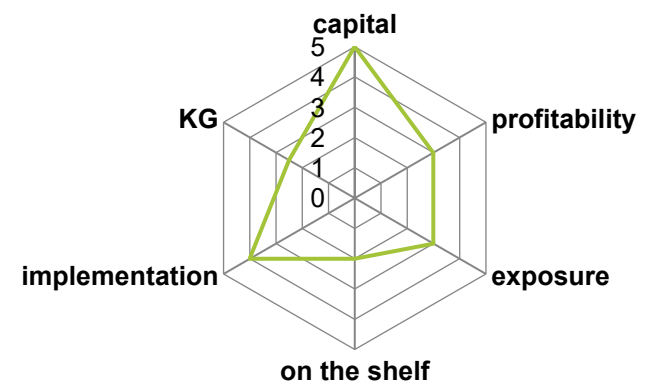
TRADITIONAL UNIT LINKED



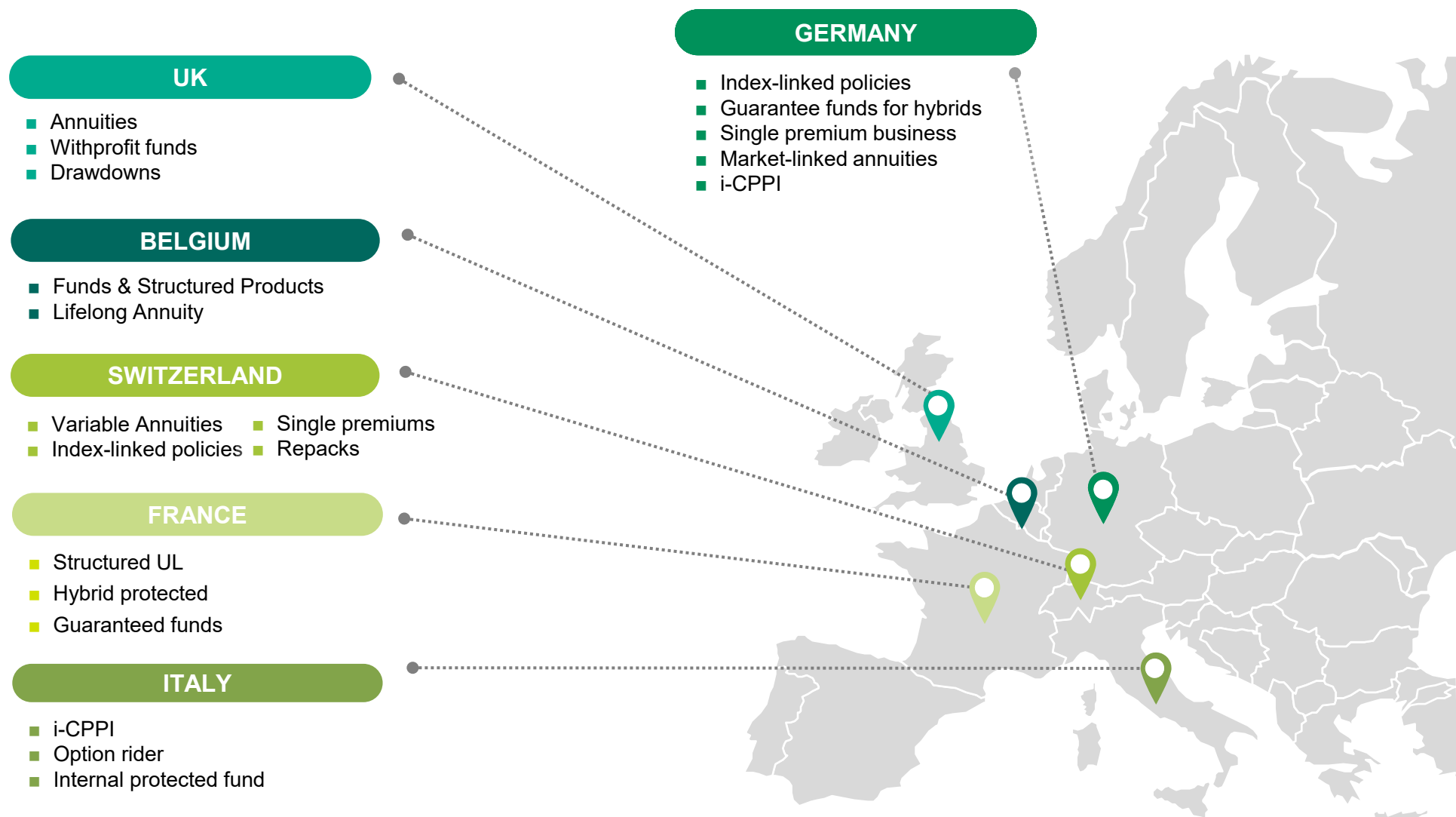
STRUCTURED PRODUCTS



PROTECTED UNIT LINKED



Market Overview Europe



03

CURRENT PRODUCT IMPLEMENTATIONS



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03

FOCUS ON... SINGLE PREMIUM BUSINESS



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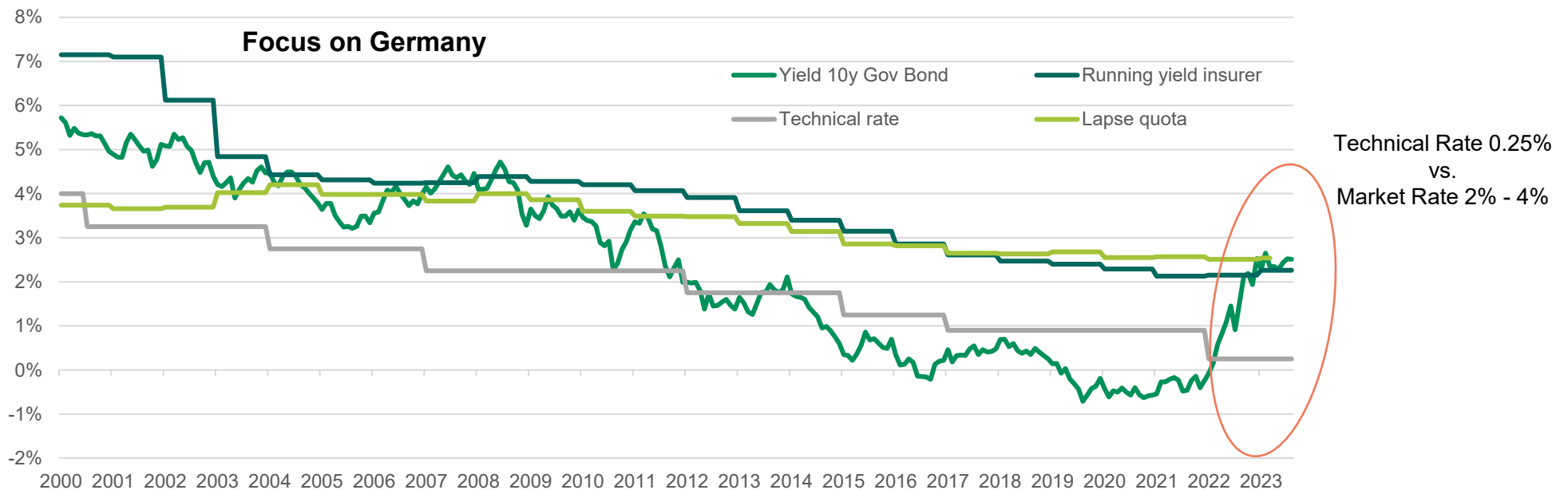
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Current Product Implementations – Single Premium Business

Impact of the rates regime change

- Insurers had hoped for rising rates, but not so fast
- The rates increase has massive impact on both sides of the balance sheet, i.e.
 - Below-par valuations in bond investments = increased liquidity risk
 - Strong impact on distribution volumes, especially single premium business = increased lapse risk

The multi-year competitive advantage vs. banks disappeared „over night“



Source: BNP Paribas, Assekurata

Current Product Implementations – Single Premium Business

Strong impact on single premium business in Germany

- In 2022 the volume of new single-premium business (e.g. 8 to 12 years) declined by 21%
- Insurers are in competition with banks that offer bonds and term deposits with yields up to 3%
- Insurers are only allowed to guarantee 0.25% p.a. based on „internal guarantees“

Possible solution: single premium products with „external guarantees“

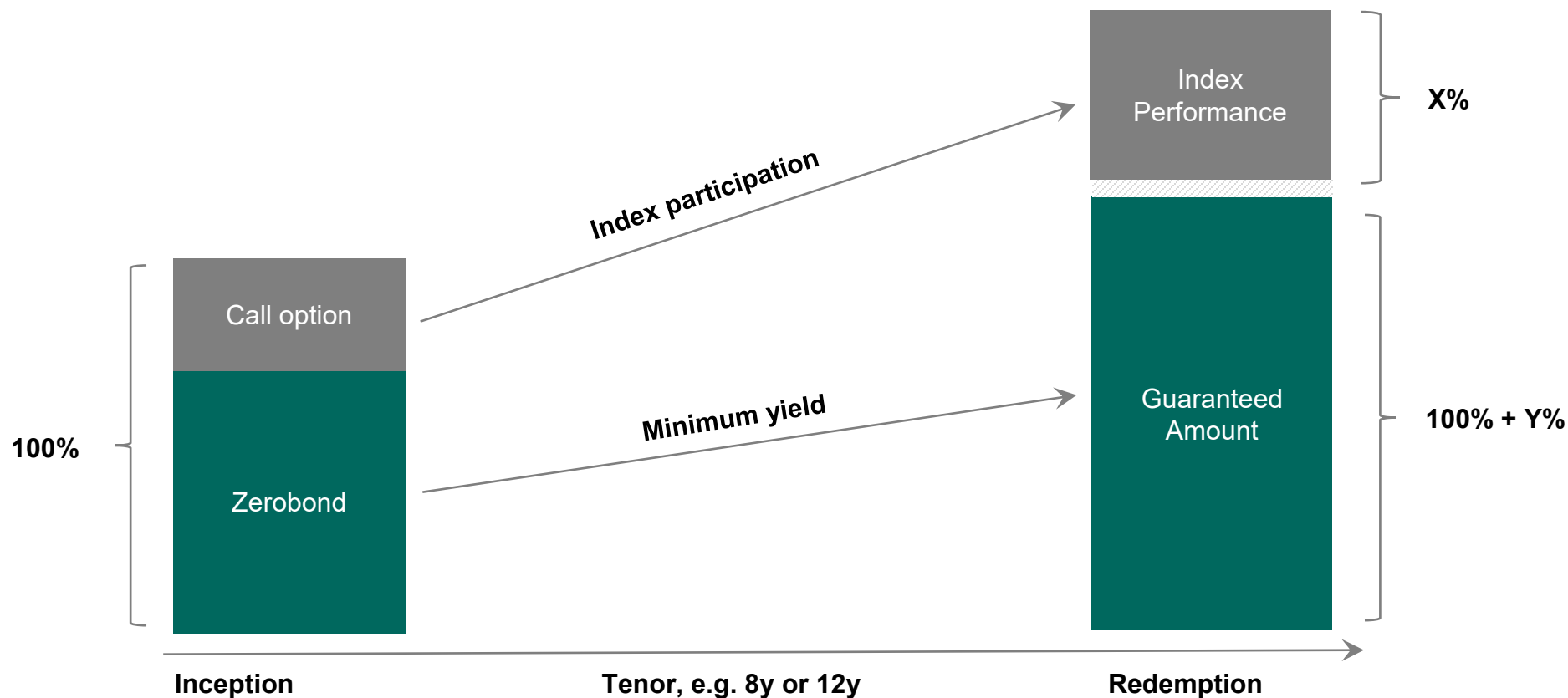
- Taking advantage of the high market rates by using fixed income instruments
- The fixed income instrument defines the minimum repayment at maturity, e.g. 100%
- Possibility for additional returns via index exposure

Traditional implementation via structured notes

- Zerobond issued by a bank
- Embedded call options linked to an index
- The structured note serves as underlying for life insurance policy



Current Product Implementations – Single Premium Business



Note: The guarantee and thus the reimbursement of the products is based on the creditworthiness of the issuer



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Current Product Implementations – Single Premium Business

Zerobond

1. Bank Issuer

- Credit Rating
- Trust and reputation
- Long-term business approach?
- (Regulatory) servicing?

2. Special Purpose Vehicle (SPV)

- Diversification of underlying issuers
- Bank-internal or separate entity
- Complex documentation
- Jurisdiction?



Current Product Implementations – Single Premium Business

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Call Option

1. Benchmark Indices



2. Traditional and alternative beta indices

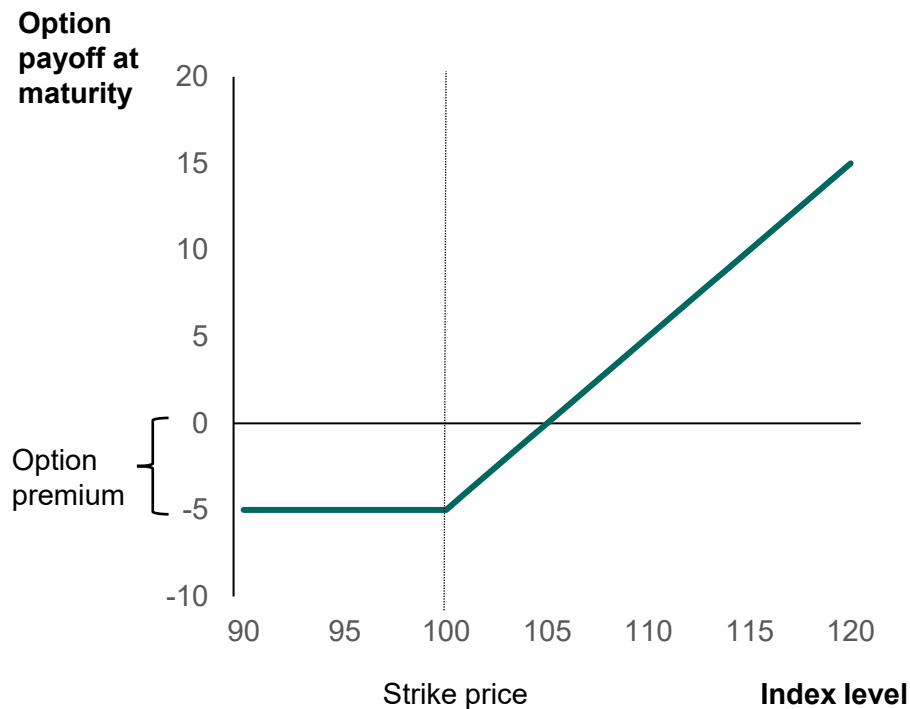
- Market access indices via rolling futures strategies
- Liquid alternative strategies across factors like momentum, carry, defensive, hedging

3. Cross Asset Indices

- Dedicated allocation algorithm
- Volatility control and excess return format
- Tailor-made payoff characteristics

Current Product Implementations – Single Premium Business

Call Option



Main pricing parameters:

- Tenor
- Strike price
- Volatility
- Interest rate
- Index style

The aim should be to control the option price.
Otherwise...

Current Product Implementations – Single Premium Business

Call Option

...prices for call options can fluctuate strongly.

The graph shows the change in costs (in %) for 10-year call options since Jan 2001



Eurostoxx50

- Option prices fluctuate between 10% and 50%
- This is mainly due to implied volatility
- Challenges in marketing as volatile option costs impact product rollouts and perceived attractiveness

Multi Asset Index 5%

- Constant option prices can be achieved through controlled volatility and excess return format
- Prices fluctuate only with PV effect
- Option prices can be guaranteed

Source: BNP Paribas

Current Product Implementations – Single Premium Business

The implementation via structured notes can be challenging

- Creditworthiness and reputation of the zerobond issuer -> policy holders bear the credit risk
- Long time-to-market if insurer has to implement new offering and product documentation
- Challenge to distribute structured notes outside banking sales channels

Innovative solution: a dedicated UCITS fund serves as market-linked hedge for life insurance policy

- Fixed tenor of e.g. 8 or 12 years
- Full capital protection **plus additional formal bank guarantee**
- Flexibility in constructing the collateral/financing portfolio as innovative fixed income instrument
- Possibility for additional index-linked returns
- Article 8 classification is possible!



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Benefits for insurer

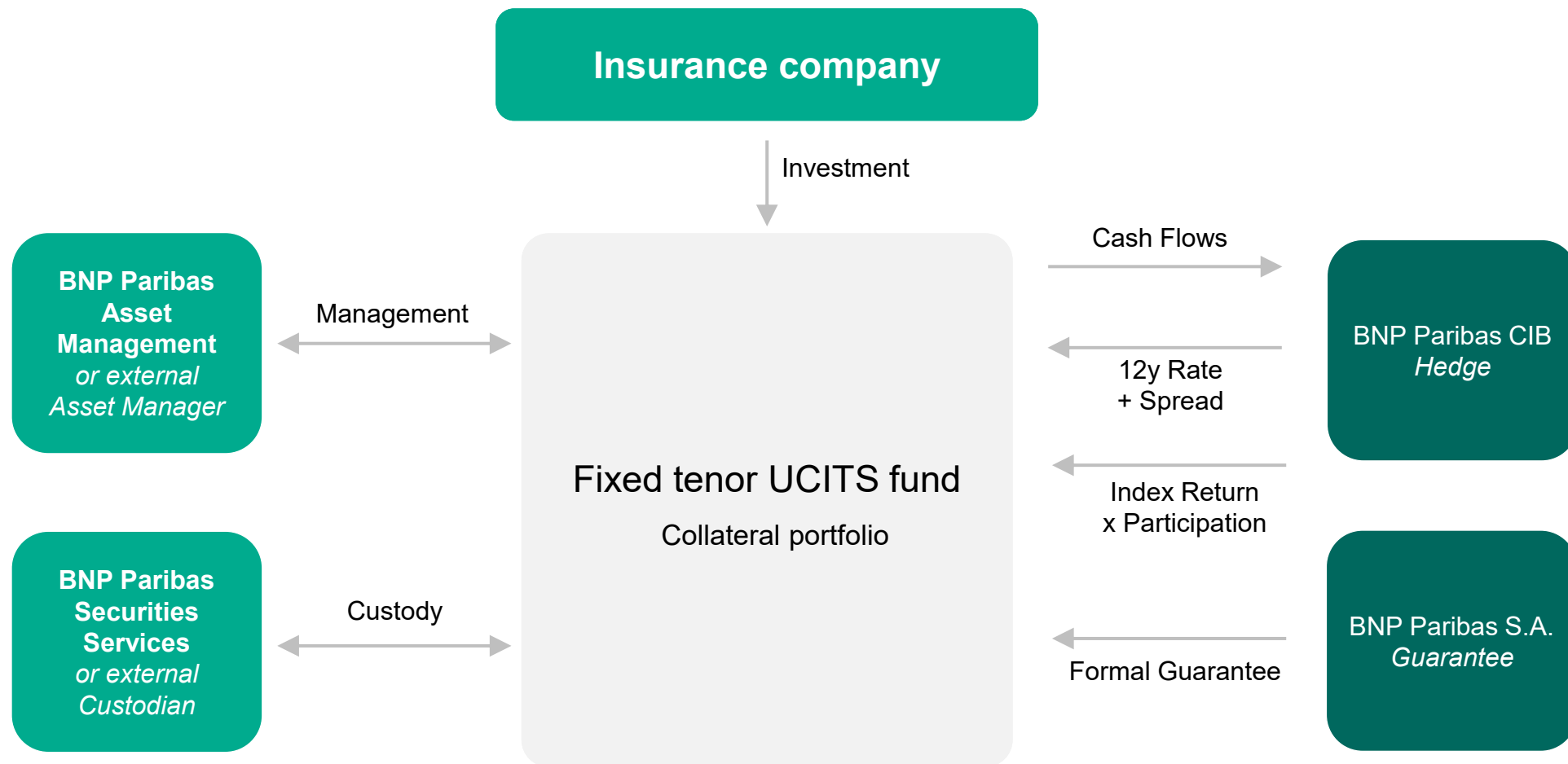
- Reduction of operational burden versus structured notes
- Short time-to-market (regular IT run)
- Wider client range and stronger distribution acceptance thanks to UCITS format

Benefits for policy holder

- Reduction of risks versus structured notes (diversification, secured financing, fiduciary duty)
- Well known investment format
- Taking advantage of market rates plus additional index market upside

Current Product Implementations – Single Premium Business

BNP Paribas offers all fund features from one single source



For illustration purposes only

03

FOCUS ON... THE DECUMULATION OPPORTUNITY



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Current Product Implementations – The Decumulation Opportunity

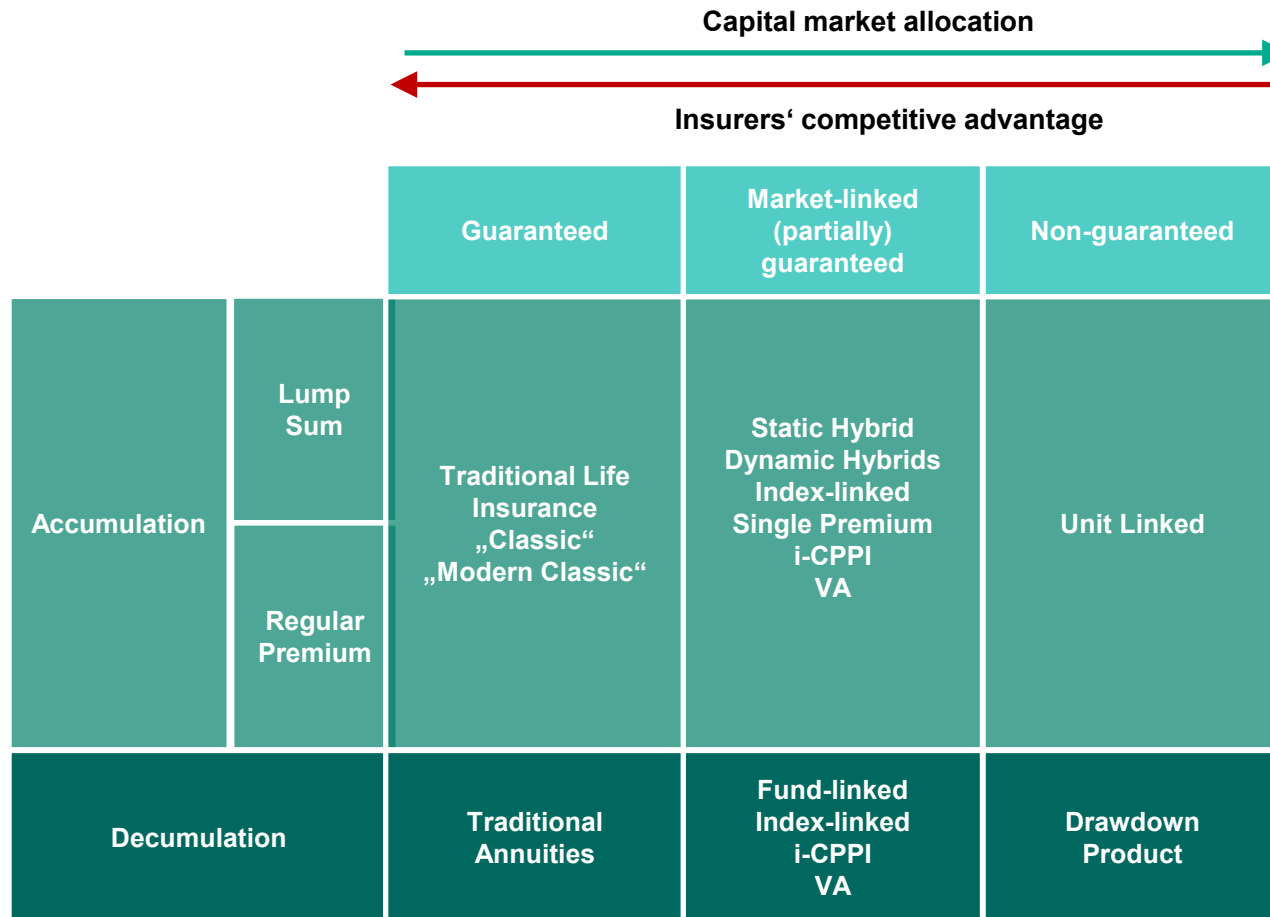
Insurance product landscape Germany

		Guaranteed	Market-linked (partially) guaranteed	Non-guaranteed
Accumulation	Lump Sum	Traditional Life Insurance „Classic“ „Modern Classic“	Static Hybrid Dynamic Hybrids Index-linked Single Premium i-CPPI VA	Unit Linked
	Regular Premium			
Decumulation		Traditional Annuities	Fund-linked Index-linked i-CPPI VA	Drawdown Product

Source: BNP Paribas

Current Product Implementations – The Decumulation Opportunity

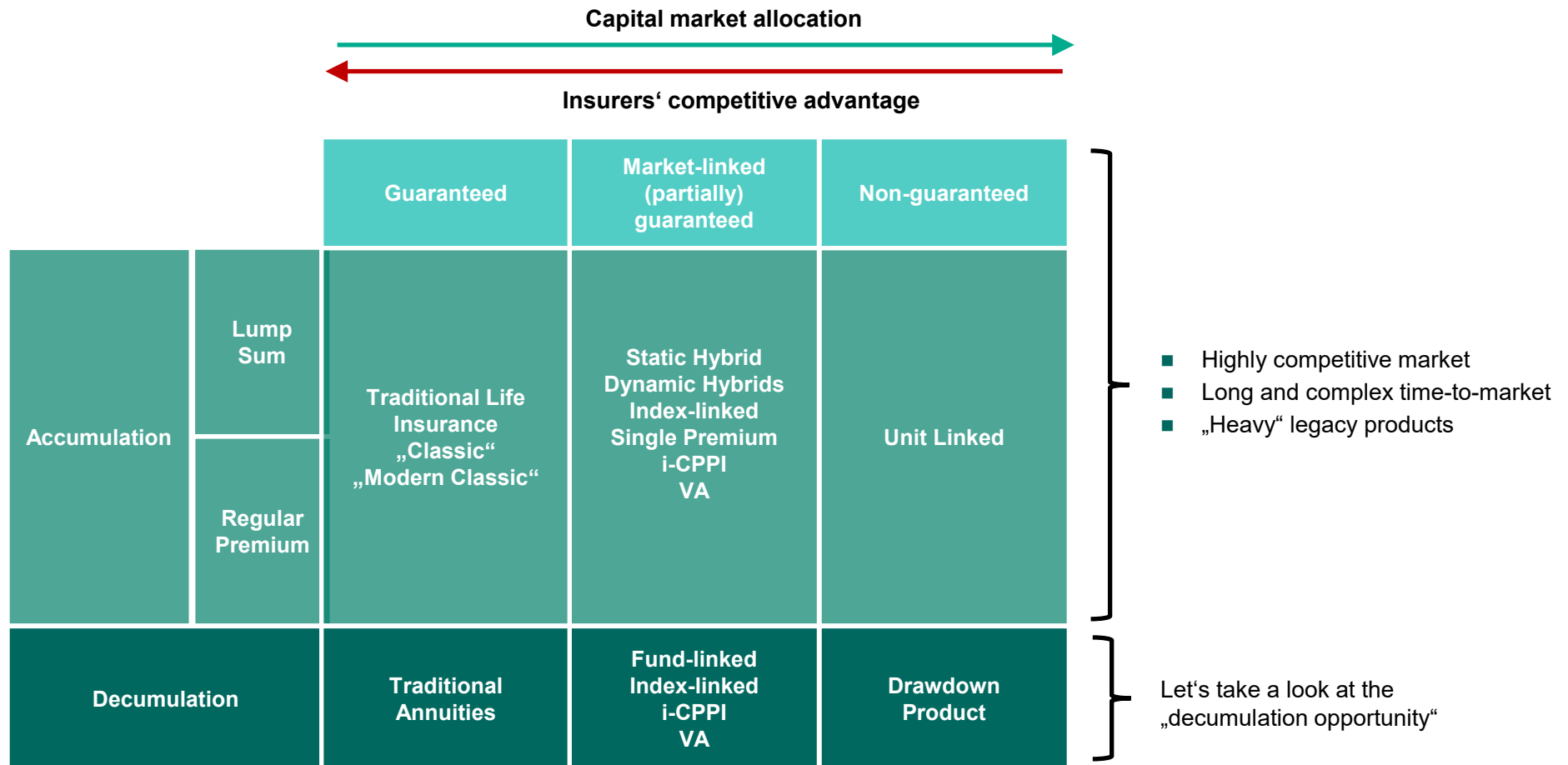
Insurance product landscape Germany



Source: BNP Paribas

Current Product Implementations – The Decumulation Opportunity

Insurance product landscape Germany



Source: BNP Paribas

Current Product Implementations – The Decumulation Opportunity

Not to focus on decumulation solutions poses the following risks...

- Policy holders
 - Underestimate their life expectancy
 - This could lead to a shortfall in income at a later age
- Insurers
 - Face outflows worth billions of EUR each year (from accumulation products) which do not get re-invested
 - This money either gets spent or captured by banks and asset managers

Decumulation solutions offer the following opportunities...

- Policy holders
 - Entering into annuity products, policy holders can hedge their cash flow needs to cover their cost of living
 - Market linked annuities offer the possibility for additional returns
- Insurers
 - Decumulation products offer a means for client retention and business growth potential
 - Focus on their competitive advantage of managing longevity risk
 - Potential for revenues based on conservative longevity tables, margin, etc.



Current Product Implementations – The Decumulation Opportunity

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“A large amount of assets within accumulation products can be attributed to the baby boomer generation, which is on the edge of entering retirement. Insurers should see this demographic change as a major opportunity, the “decumulation opportunity”.

However, traditional annuities are currently not attractive due to low guaranteed annuity rates. Market-linked components can solve this...



Current Product Implementations – The Decumulation Opportunity

First component: Index exposure through call options

Active phase: Index participation

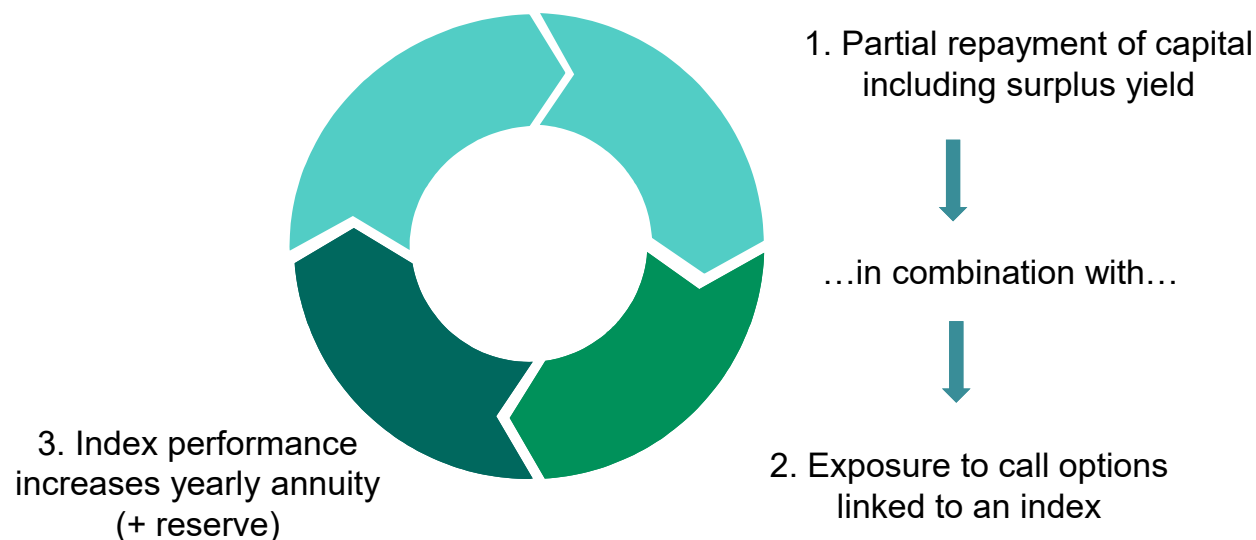


Passive phase: Longevity only

Age 65 to 85

From age 85

Technicalities of active phase with index participation



For illustration purposes only

Current Product Implementations – The Decumulation Opportunity

Second component: Partially adding market rates

Active phase: Index participation



Passive phase: Longevity only

Age 65 to 85

From age 85

Costs for an immediate annuity with one-time contribution

- Technical rate 0.25%
- 65 years
- 12,000 EUR Annuity per year
- **Contribution 340,000 EUR**

Source: BNP Paribas, based on DAV-Sterbetafel 2004 R für Rentenversicherungen

Current Product Implementations – The Decumulation Opportunity

Second component: Partially adding market rates

**Active phase: Index participation
and market-linked annuity brick**



Passive phase: Longevity only

Age 65 to 85

From age 85

Costs for an immediate annuity with one-time contribution

- Technical rate 0.25%
- 65 years
- 12,000 EUR Annuity per year
- **Contribution 299,000 EUR**

**12% lower contribution thanks
to market linked annuity brick**

Disctinctive features

- Combination of reserve asset and market linked exposure
- Annuity brick pays current market rates
- Tenors of up to 50 years possible

The annuity brick allows the insurer to

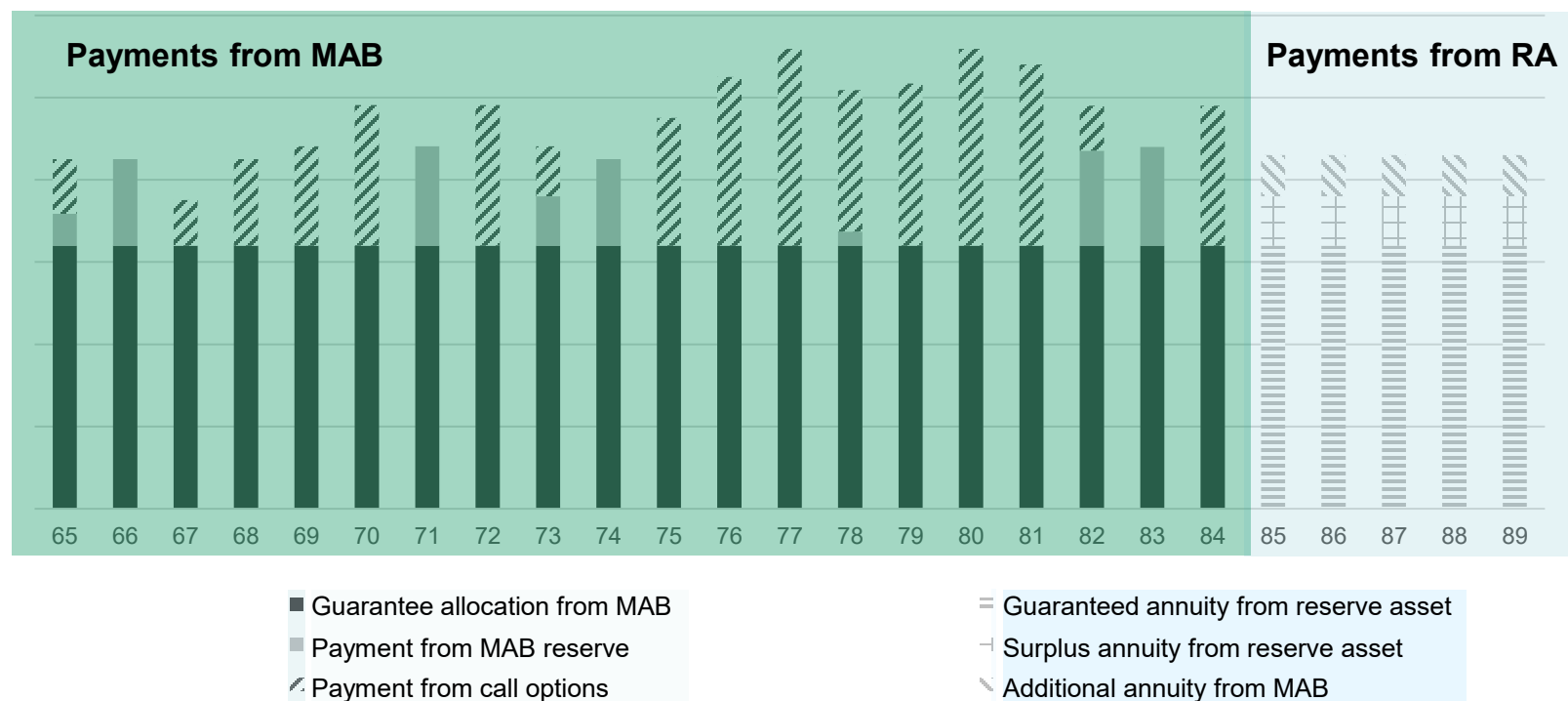
- Lower the contribution
- Increase the index participation
- Increase the guaranteed annuity

Source: BNP Paribas, based on DAV-Sterbetafel 2004 R für Rentenversicherungen

Current Product Implementations – The Decumulation Opportunity

Technicalities and implementation

- The insurance contribution is divided between the reserve asset (RA) and the market-linked annuity brick (MAB)
- The allocation in the reserve asset accrues interest and is paid out from year 85 onwards
- The MAB is used for a guarantee allocation, a capital reserve and for the purchase of call options
- The reserve additionally provides stability in the annual payments through a smoothing mechanism



For illustration purposes only

Overview Of BNPP Solutions For Long-term Savings Products

Investment Strategies

- Rule-based
- Actively managed
- Volatility-controlled
- Multi asset strategies
- Market access and liquid alternatives (QIS)
- Implicit leverage
- Exposure to call options
- Max NAV mechanism

Wrappers

- Swaps
- (Collateralised) notes
- (Collateralised) warrants
- External issuers
- SPV repacks
- BNPP (UCITS) funds
- External funds

Product Implementation

- Dynamic hybrids
- Static hybrids
- External guarantees
- Single premium business
- Index-linked policies
- Annuity solutions
- i-CPPI

Additional offering

- BNP Paribas S.A. formal guarantees for internal and external funds
- Multi-year price guarantees for index-linked derivatives, e.g. call options
- Multi-year volume guarantees for investment strategies

04

INTERESTED IN FURTHER TOPICS?



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Interested In Further Topics?

Publications

- „The impact of the new interest rate environment on product development“; Eck, Dietz, Mahlstedt, Scognamiglio; Zeitschrift für Versicherungswesen; 07|23
- „From dynamic hybrids to static hybrids 2.0“; Eck, Dietz, Mahlstedt; Zeitschrift für Versicherungswesen; Aug 22
- „The impact of equity investments on insurance solvability“; Eck, Dietz, Mahlstedt; Der Aktuar; Sep 20
- „Dynamic hybrid Products and the low yield environment - challenges and solutions“; Eck, Dietz; Zeitschrift für Versicherungswesen; Sep 19
- „Capital efficient investment strategies in a low yield environment“; Eck; Zeitschrift für Versicherungswesen; July 18

Presentations and Panel Discussions (excerpt)

- „Sustainable investments“, Panel discussion, Handelsblatt Strategy Meeting Life Insurance; Aug 23; see [Strategiemeeting](#)
- „Lapse risk “, Dietz, Eck; German Association of Actuaries; Annual Meeting; April 23
- „Effects of decarbonisation on investments and related insurance products “; Eck; German Actuaries Association; Im Focus; Dec 22
- ‘Current challenges in sustainable retirement provisions; Eck, Schneidemann; Initiative Sustainability in Life Insurance; Congress; June 22
- ‘Quo Vadis, index-linked Policies. Do they have a future?; Eck; BNPP Online Event; June 22
- ‘Sustainable investments and guarantees – a practical report’; Burkert, Eck; German Association of Actuaries; Annual Meeting; April 22
- „Regulated Sustainability – A practical insight from proprietary investment to value drivers for insurance products“; Eck; German Association of Actuaries; Annual Meeting; April 19
- ‘Migrating actuarial skills to the banking practice’; Eck, Sarukkali, Tichereva; Panel Discussion; Society of Actuaries; Annual Meeting Nashville Tennessee; Oct 18

Sustainability

BNP Paribas is co-initiator and founding member of Germany’s largest Sustainability Initiative for the Insurance Sector

Visit the Initiative here: [Branchen-Initiative](#)

Contact us at christian.eck@bnpparibas.com

05

Q&A



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Q&A

Let's discuss!

Contact us at christian.eck@bnpparibas.com



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06

APPENDIX - ABOUT BNP PARIBAS



BNP PARIBAS

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A leading European bank and prominent global institution



“

With strong roots in Europe's economic history, BNP Paribas is both a leading European bank and a prominent global institution.

As the 'Bank for a Changing World,' we put you at the centre of our world, innovate on your behalf, and support you through changing times.

”

REVENUES FY 2022

€50.4bn

NET INCOME FY 2022

€10.2bn

LIQUIDITY RESERVE

€461bn

as at 31 December 2022

SOLVENCY RATIO

12.3%

as at 31 December 2022



64
COUNTRIES
& LOCATIONS
(APAC, EMEA, US)



NEARLY
184,000
EMPLOYEES GLOBALLY

AA- FITCH

Aa3 MOODY'S

A+ S&P

Source: BNP Paribas as of December 2022; locations and employees as of March 2023; more info on BNP Paribas ratings (long-term senior debt) at: <https://invest.bnpparibas/en/debt-and-ratings#ratings>



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Consistent client service and innovative strategies via BNP Paribas' Global Markets

From investment, to hedging and financing opportunities across asset classes and geographies, and research and market intelligence to help our clients make strategic decisions. Discover Global Markets' business lines:

GLOBAL EQUITIES

Building on our long-established world-class Equity Derivatives business, BNP Paribas continues to diversify and scale our Equities offering. Clients can now access the combined strengths of our market-leading Prime Services and Cash Equities platforms.

GLOBAL MACRO

Global Macro offers the full spectrum of products across FX, Rates and Commodities in both developed and emerging markets, from millisecond electronic trading supported by the most advanced AI platforms, through to long dated, high touch solutions.

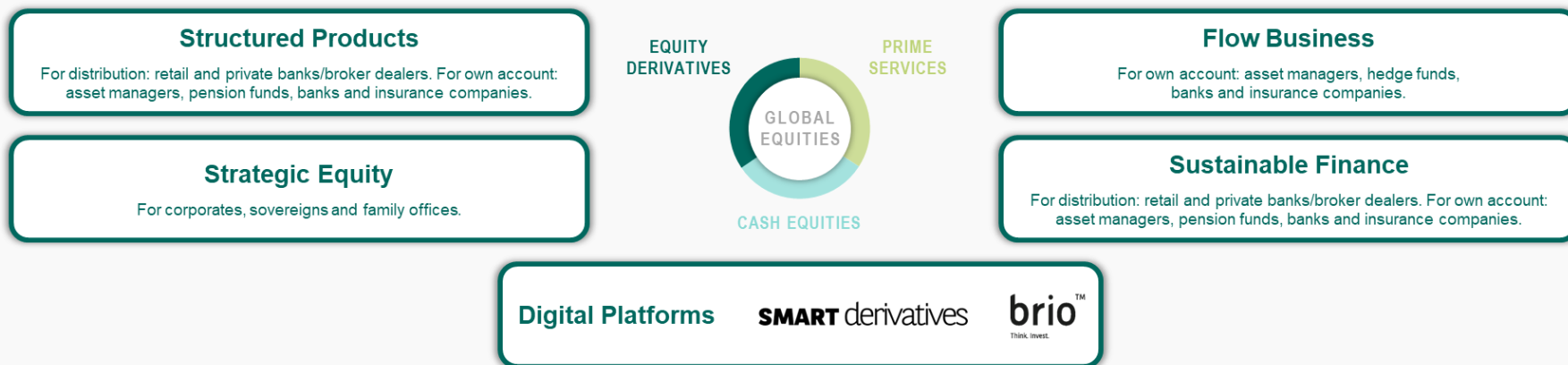
GLOBAL CREDIT

Our Global Credit business enables us to realise synergies while maintaining strict boundaries between the public and private sides. We provide solutions to clients throughout the entire credit continuum from origination through execution to secondary market trading and post trade services.



Building on our long-established world-class Equity Derivatives business

BNP Paribas has over 30 years of track record in developing innovative equity derivatives' strategies. Our comprehensive range of solutions across flow and structured products is designed to meet all our clients' needs.



Global recognition for innovation and excellence



Derivatives
House of
the Year



Equity Derivatives
House of the Year



Investment Bank of
the Year for Equity
Derivatives



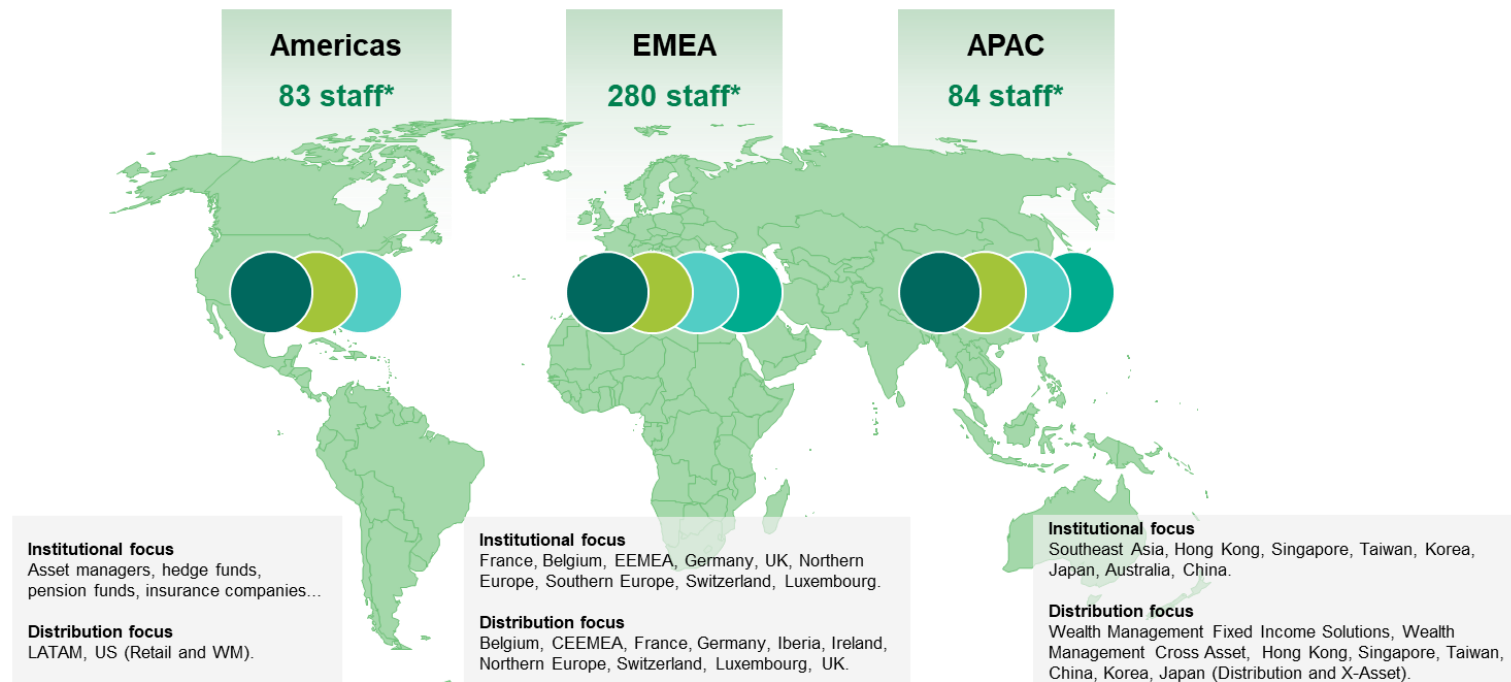
BNP PARIBAS

The bank for a changing world

Equity Derivatives business coverage worldwide

With Exotics and Flow trading desks as well as Corporate, Distribution and Institutional sales representatives in each region

- Institutional Coverage
- Corporate Coverage
- Distribution Coverage
- Exchange Traded Solutions



*Headcount numbers as of May 2023.



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