EXPLORING THE **CONCEPT OF RISK** IN **INDEX TRACKING** INVESTMENTS

ASSA Investment Seminar

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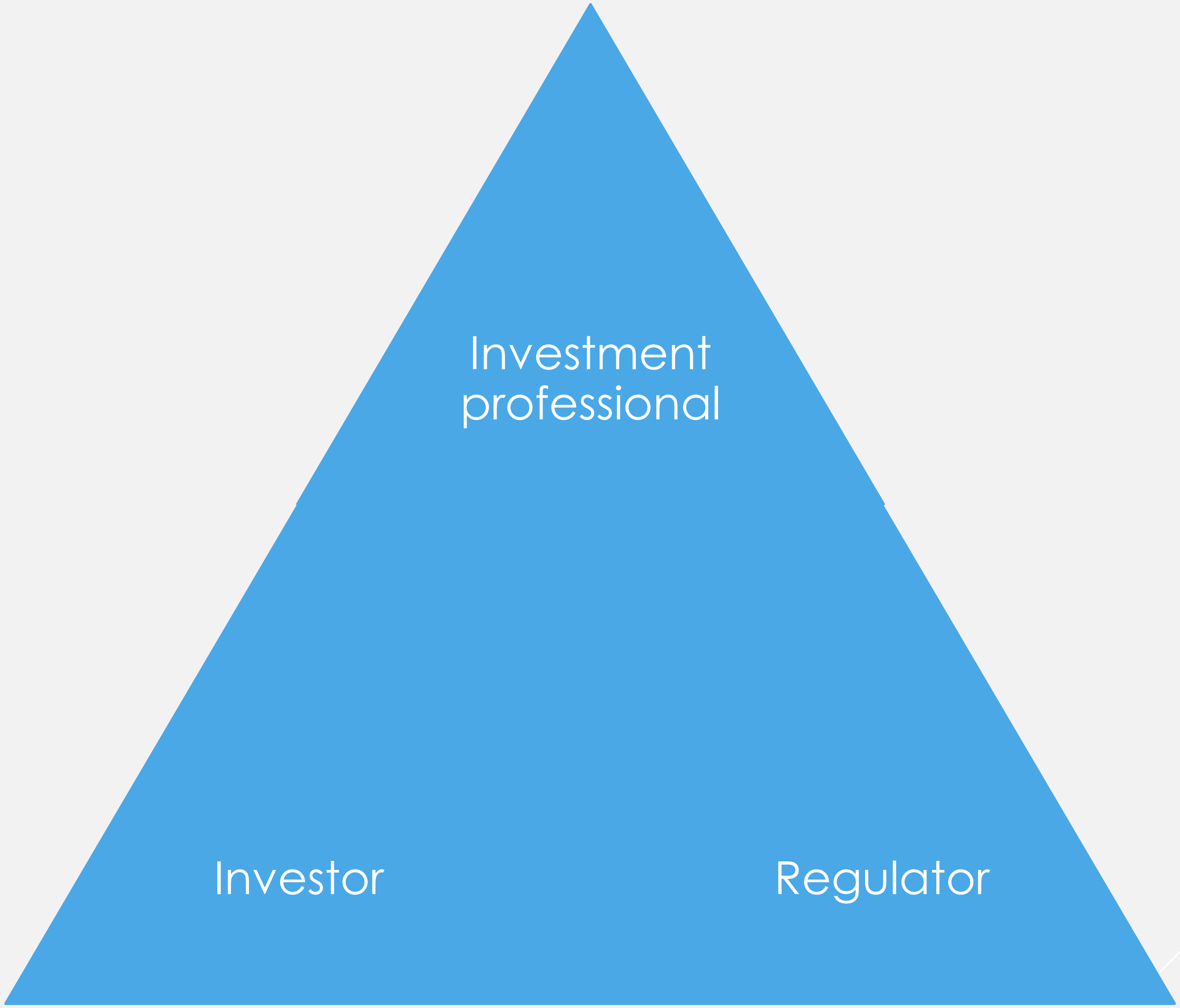
WHOSE RISK IS IT ANYWAY?



INVESTMENT RISK – DEFINITION

Investopedia:

- Different versions of risk are usually measured by calculating the **standard deviation** of the **historical returns** or average returns of a specific investment. A high standard deviation (volatility) indicates a high degree of risk (*primary concern for **investment professional***)
- Risk includes the **possibility of losing some or all** of the original investment (*primary concern for **investor***)
- The chance that an investment's **actual** return will be **different** than **expected** (*primary concern for **regulator***)

How do we reconcile these very different concepts of risk?

Source: Investopedia

VOLATILITY / STANDARD DEVIATION

- A **statistical measure** of the **dispersion** of returns for a given security or market index
- Volatility can be **measured** by using the standard deviation or variance
  - Either between returns from that same security (***absolute***)
  - Or between returns ***relative*** to the market index (e.g. beta)

*<u>Problem</u>: **Historical** volatility tells us nothing about **future** volatility – or future **direction** – especially in the short term*

Source: Investopedia

DOWNSIDE RISK / DEVIATION

- An estimation of a security's **potential to suffer a decline in value** if the market conditions change, or the amount of loss that could be sustained as a result of the decline
- Downside risk **explains a "worst case" scenario** for an investment, or how much the investor stands to lose

Problem: ***Difficult to calculate****, especially for the non-professional investor*

Source: Investopedia

TRACKING ERROR

- A **divergence** between the **price behaviour** of a **portfolio** and that of a **benchmark**
- Often used in the context of an investment that **did not perform as intended**, creating an unexpected profit or loss instead
- Tracking errors are reported as a **"standard deviation percentage" difference.** This measure reports the **difference** between the **return** an investor receives and that of the benchmark he or she was attempting to imitate

*<u>Problem</u>: Not useful on a **forward-looking basis**, unless there is an understanding of the **causes** of the tracking error*

Source: Investopedia

ACTIVE RISK

- A type of risk that a fund or managed portfolio creates as it **attempts to beat the returns of the benchmark** against which it is compared
- The more a fund **diverges from a stated benchmark** (*in terms of* ***holdings / exposure***), the higher the chance that the returns of the fund could also diverge from that of the benchmark
- A fund that **replicates an index** as closely as possible usually provide the **lowest levels of active risk**

Solution! *Minimising* ***active risk*** *is the best way to minimise* ***relative risk*** *AND* ***match return*** *(i.e. minimal tracking error)*

Source: Investopedia

FULL REPLICATION INDEX TRACKING

Theoretically gives you:

- Zero **active risk**
- Zero **tracking error**
- Guarantee of **relative performance**
- Certainty of **matched exposure**
- Full **asset backing**
- Full **transparency**

FULL REPLICATION INDEX TRACKING

In **practise**, discrepancies may occur due to:

- **Costs**
  - **Frictional costs** associated with replicating a "costless" index
  - Management, administration, regulatory – **unavoidable charges**
- **Non-replicability** in benchmark index
  - **Corporate actions** (timing of cash flows, complexities e.g. mergers, unbundling, rights issues)
  - Benchmark in **breech** of **mandate**
- **Rounding** differences
  - the smaller the fund the bigger the problem

PRICE INDEX OR TOTAL RETURN INDEX?

- **Price** index
  - Full replication is done at this level
  - “Relatively” **easy to do** (except for the issues mentioned before)
  - **Success** – as measured through relative return and relevant risk metrics – is achieved
  - Risk of relative (total return) performance is carried by **investor**
- **Total return** index
  - What is required goes beyond “full replication”
  - Corporate actions are a significant **source of uncontrollable risk**
  - Risk of relative performance is carried by **investment manager**

ALTERNATIVES TO FULL REPLICATION

- **Partial** replication
  - Useful in case of **high number** of index **constituents**, or **difficult-to-access** markets
  - Attempts to balance **implementation risk** with **operational efficiencies**
  - **UCITS** allow up to 10% synthetic replication to improve efficiency
- **Synthetic** replication
  - Useful in case of **difficulties with direct**, or **cost prohibitive**, **ownership**
  - Use of **sampling** to reduce implementation cost
  - In extreme cases, **performance is manufactured** using derivatives etc.

*Problem: Introduction of **model risk***

ENHANCED INDEXATION

- Strategy that attempts to **exceed returns** of a reference index while also **minimising** the effects of **tracking error**
- Considered a **hybrid between active** and **passive** management
- Used to describe any strategy that is used in conjunction with index funds for the purpose of **outperforming a specific benchmark**
- Investors can outperform a benchmark by **reducing exposure** to **poor performing** stocks and **increasing exposure** to relative **outperformers**

*Problem: **Success** depends on being **positioned correctly** on a **relative** basis*

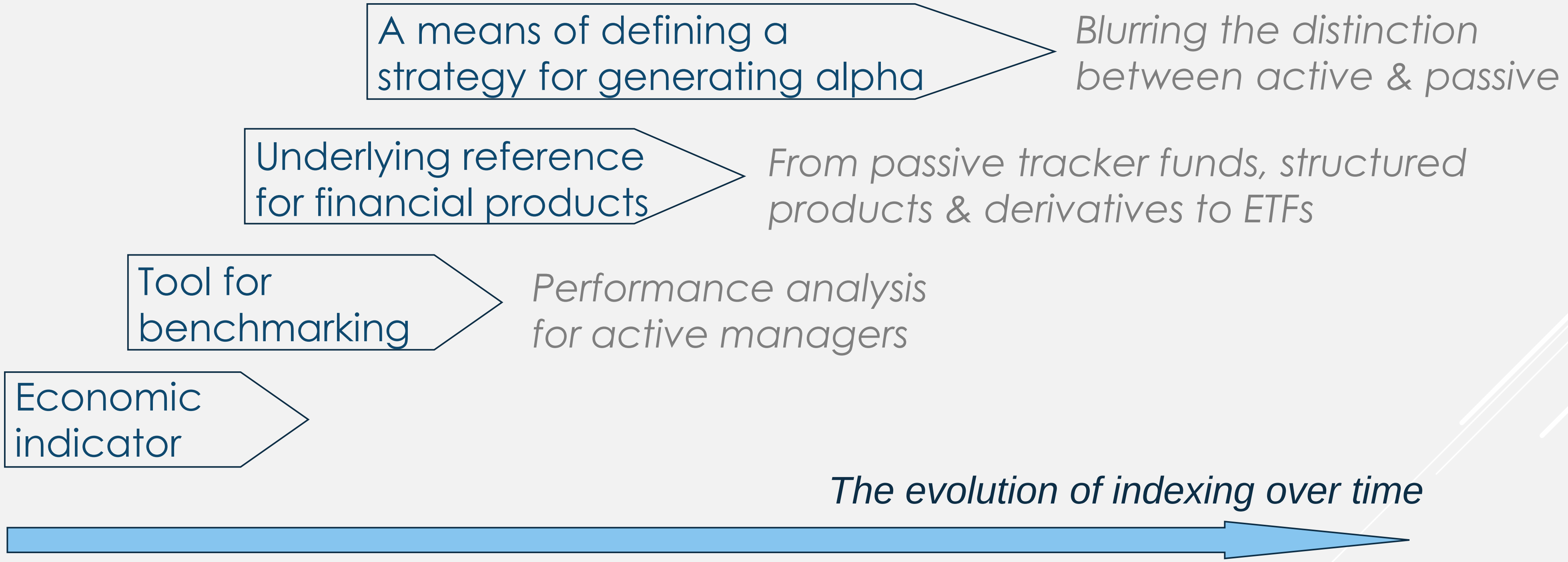
Source: Investopedia

EXOTICS

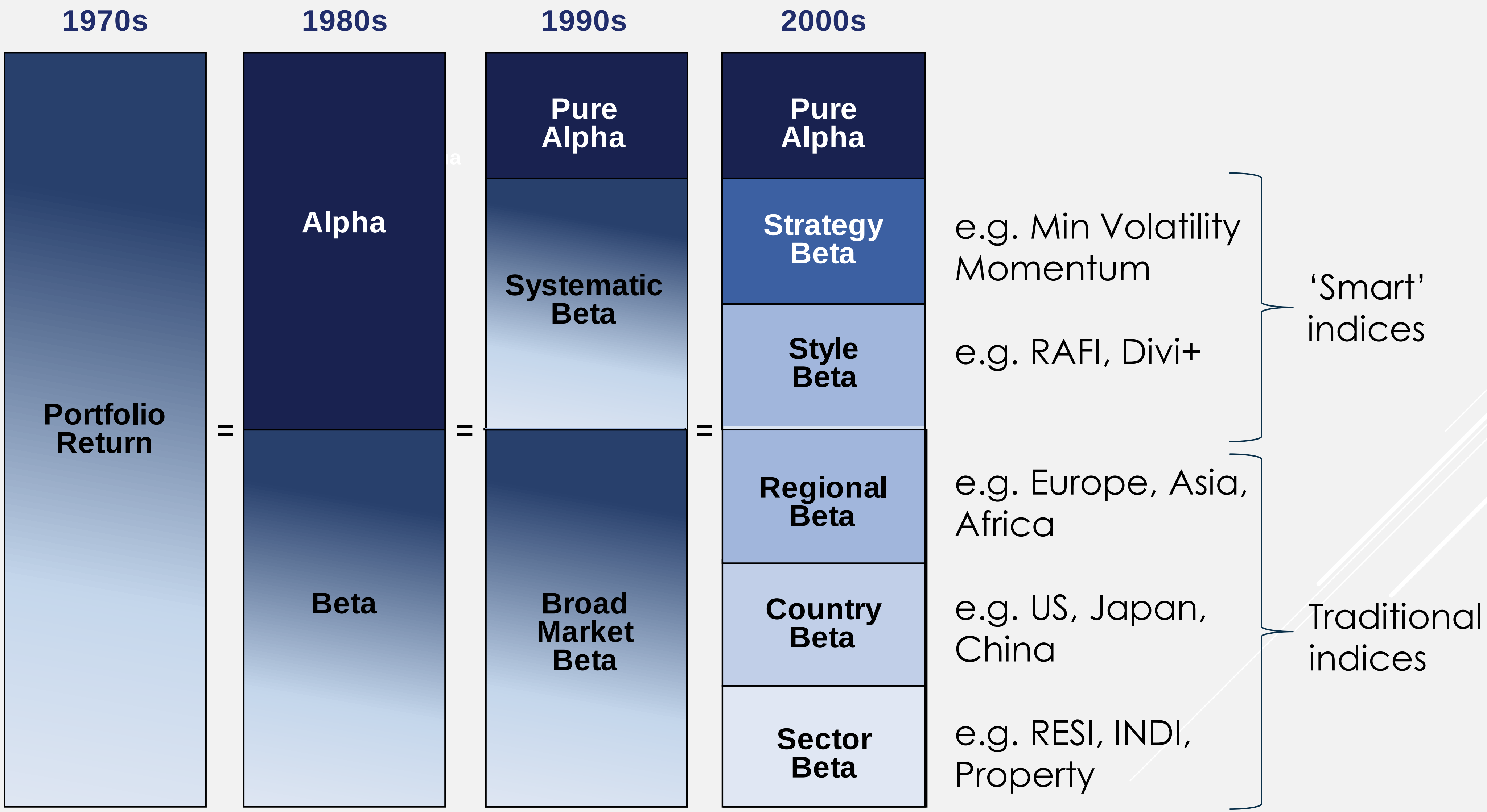
- **Purposeful deviation** from index performance, but still **referenced to the index**, e.g.
  - Geared
  - Leveraged
  - Inverse
- **Not allowed in SA** under Collective Investment Schemes (incl. ETFs)
- **Popularity** in international markets have **declined** since global financial crisis
  - Less risk appetite
  - Increased regulations

THE EVOLUTION OF INDEXING

As **design and application** of indices **evolve** with new indexation concepts, it creates **new investment opportunities and choice**



INDICES REFLECT DIFFERENT *SOURCES* OF RETURN



BEYOND MARKET CAP WEIGHTING

- Risks associated with **“traditional” indexation**
  - **Full participation** in price “**bubbles**” and **crashes**
  - **Behind the curve**: inclusion after price increases and exclusion after price falls
  - **Assumption** that **size** is the **only driver** of return
- **Rise of smart** / factor / strategy indices
  - Alternative **selection** criteria
  - Alternative **weighting** methodologies

*Problem: Introduction of **style / factor risk***

FINAL THOUGHTS

Regulatory risk, or safety:

- **Exchange Traded Funds (ETFs)** in SA are also registered as **Collective Investment Schemes** (unit trusts) with the FSB
- Investor enjoys **protection of two regulators** – FSB and JSE

Exchange Traded Notes (ETNs) vs. ETFs:

- ETNs *sound* a lot like ETFs, but they come with a range of potential **additional risks**:
  - **Credit risk** (promissory note or debenture)
  - **Asset class specific risk** beyond what is allowed in ETFs (e.g. physical commodities, currencies, etc.)
  - **Mandate risk** – investing in a listed security or "look-through" principle?

IN CLOSING

Factors to consider in the **use of risk metrics** in **index investments**

- To the **investor**:
  - do not confuse *relative* risk metrics with levels of *absolute* risk,
    i.e. do not confuse **certainty** and **predictability** with **low risk**
- To the **fund manager**:
  - select risk **metrics** that are **fit-for-purpose**
  - **investor / client risk**, rather than own business risk
- To the **multi-manager / asset consultant**:
  - do not assign all (**measured**) risk to the fund **manager**
  - select **mandate benchmark indices** on the basis of **alignment with purpose**

QUESTIONS?

Thank you!

For ETF and index investment insights and news, follow me on Twitter: ***@Nerina_Visser***

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