South African Reserve Bank

BIS Meeting on Reserve Management
Mexico City

Reserves management trends / Asset vs Risk factor investing

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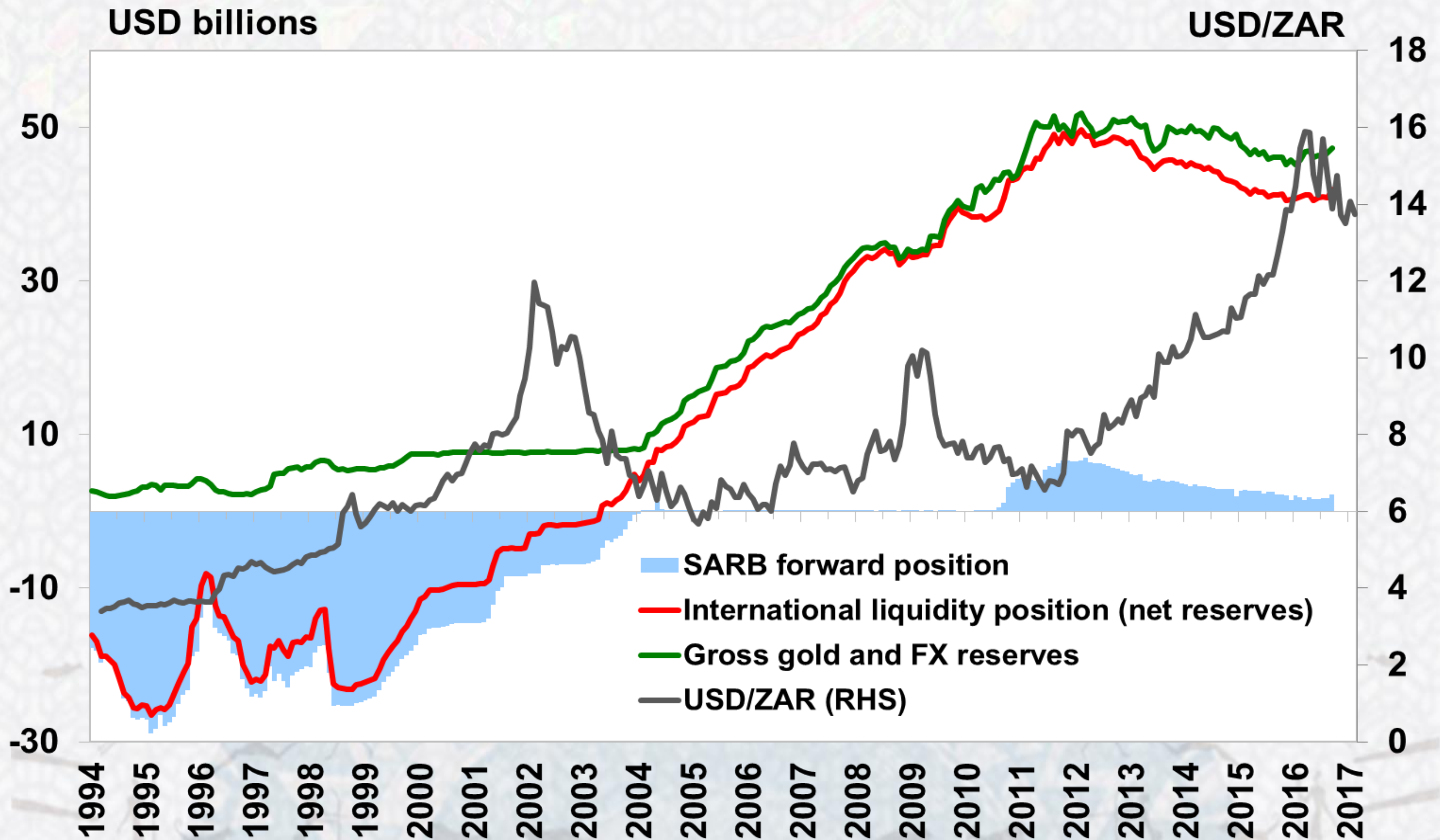
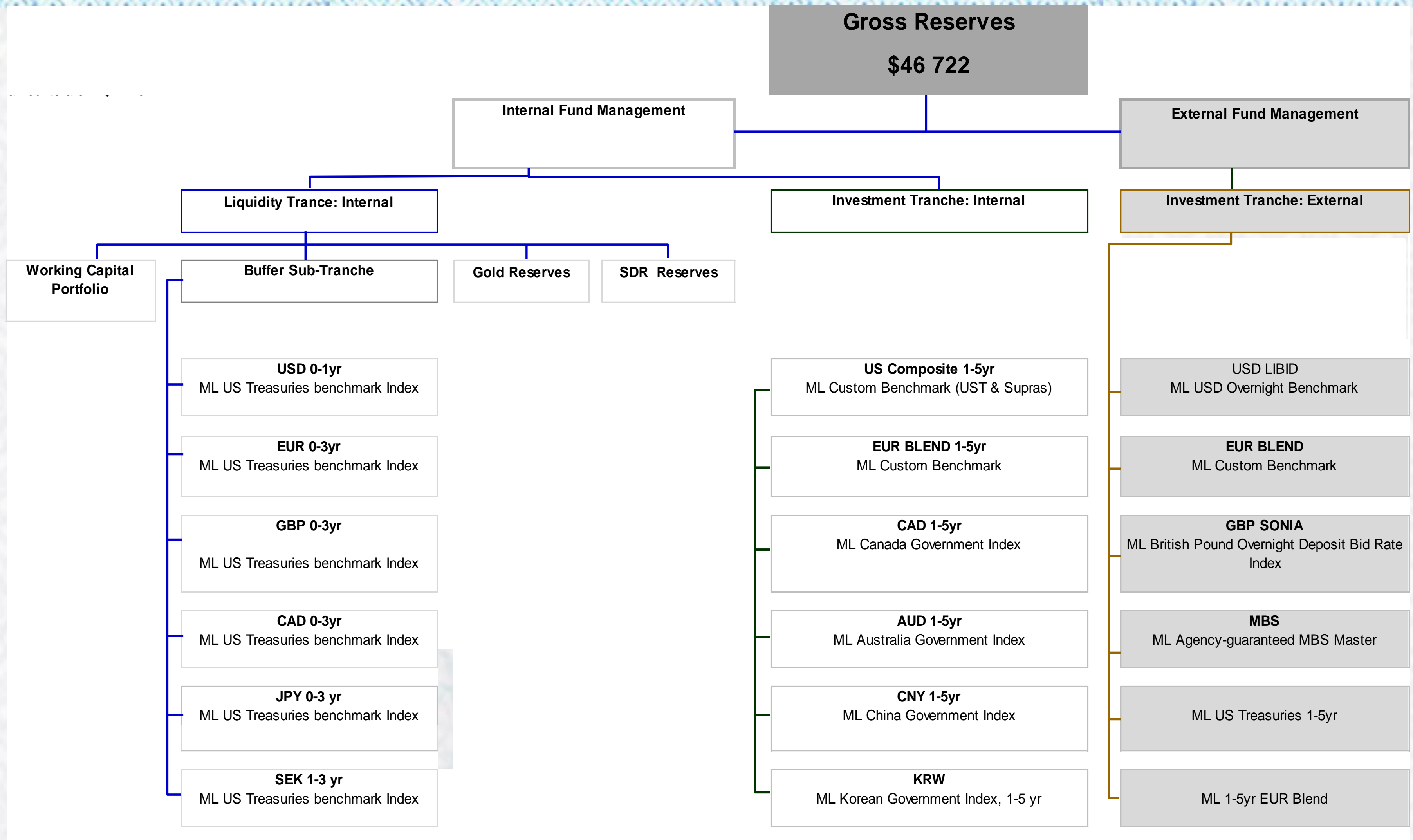
Gross reserves



Portfolio Structure (current)



Reserve Management Trends

- Increased focus on reserves adequacy - more now than before
- Increased diversification: by asset class and currency
- Cautious increase in duration and search for yield
- Expansion of the universe of eligible assets
- Increased moderation of risk appetite
- Increased allocation to the US dollar and reduction in the euro
- Renewed emphasis on diversification
  - Reducing exposure to DM sovereign bonds and deposits with official institutions
  - Increased appetite for corporate bonds and EM sovereign bonds
- Regulatory burden limiting use of repos and securities lending
- Widening of investable credit rating lower bound to A-/BBB
- Capital preservation and Liquidity remain top objectives but increased focus on return objective
- Use of currency derivatives rising and widespread but use of gold options declining

Factor Investing
vs
Diversification

Contents

- Definitions
- Traditional (Pre-Crisis) Portfolio Construction
- Factor (Post-Crisis) Portfolio Construction
- Factor Investing and Diversification Benefits

Definitions

- Portfolio construction is the process of combining securities;
- Diversification is the process of mitigating overall portfolio volatility by combining instruments from different asset classes with low volatility correlations;
- Factor investing is investing in portfolios or asset classes that are most representative of the identified risk factors
- Smart beta is a benchmark-driven form of factor investing
- Risk factor is the underlying risk exposure that drive the return of an asset class

Traditional Portfolio Construction

- Focused on total portfolio return and volatility
- Uses asset class correlation structure to build efficient portfolios with high diversification benefits
- Diversification across managers in multiple alpha mandates
- Assumes that asset classes have distinct and complementary risk characteristics that offer diversification benefits in all market regimes
- Asset owner manages overall investment strategy through asset allocation and manager selection
- Risk control focuses on managing exposure to asset classes and external managers

Factor Portfolio Construction

- Identifies underlying key risk exposures that drive asset class returns
- Risk factors can be macro factors (real rates, inflation and economic growth) and style factors (see table below)
- Diversification across strategies in multiple factor index mandates
- Asset owner manages strategy through factor allocation
- Risk control focuses on managing exposure to risk factors

	Equity Market	DM Bond Market	EM Bond Market	Commodity Market	REITs Market	Currency Market
Equity Risk	×	×	×	×	×	×
Interest Rate Risk		×	×		×	×
Roll & Carry		×	×			
Term Premium		×	×			
Curve Shape		×	×			
Credit Risk		×	×			
Currency Risk	×	×	×	×		×
Momentum Risk	×			×	×	×
Size Factor	×					
Low Volatility Factor	×					
Quality Factor	×					
Value Factor	×					

Factor Investing vs Diversification

- Factor Investing
  - Rationale
    - Deep roots in academic literature : "Arbitrage pricing theory" (APT) popularized use of "multi-factor models"
    - Ability to capture factors through indexation has resulted –
      in low cost active return strategies
      In more relevant benchmarks
      Transparent implementation choices
  - Pros
    - Replicates risk exposures of active investments
    - Can be used to actively position portfolios for specific risk and return objectives
    - Potentially offers transparency and control over risk exposures in a cost-effective manner
    - Factors can be used to explain manager returns and monitor manager style drift
  - Cons
    - Concentrated factor portfolios
    - Diversification of specific risk most overlooked dimension
    - Possible presence of unrewarded risks: firm-specific risks and systematic risks

- Diversification
  - Rationale
    - Deep roots in academic literature: CAPM and MPT
    - Diversification benefits from mix of less correlated asset class and manager allocations
    - Results in optimal balance of risk and rewards
  - Pros
    - Offers good diversification benefits during normal markets, reducing portfolio expected loss and volatility
    - Computationally easy to implement using Mean-Variance Optimization
  - Cons
    - Asset class and manager correlations are not stable
    - Correlations tend to converged to 1 during financial crisis
    - Does not offer good diversification benefits during global financial markets crisis

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Sources

- Source Story: By Dan Draper, Head of Invesco PowerShares, Wednesday, 7 Sep 2016 http://www.cnbc.com/2016/09/07/use-factor-investing-to-build-a-diversified-portfolio.html
- Source: CFA Publications. Portfolio Structuring and The Value of Forecasting by Jacques Lussier, PhD, CFA, Editor http://www.cfapubs.org/doi/pdf/10.2470/rfbr.v2.n4.1?s_cid=ppc_RF_Google_Search_FactorInvesting
- https://personal.vanguard.com/pdf/ISGFBI_042015_Online.pdf
- http://www.nasdaq.com/article/factor-investing-how-it-addresses-diversifications-shortcomings-cm616755
- http://www.theam.bnpparibas/is-equity-factor-investing-an-improvement-compared-to-traditional-quantitative-strategies/
- https://www.pimco.com/handlers/displaydocument.ashxohD
- http://insights.som.yale.edu/insights/what-is-factor-based-investing
- https://www.msci.com/documents/10199/71b6daf5-9e76-45ff-9f62-dc2fcd8f2721
- http://www.edhec-risk.com/edhec_publications/all_publications/RISKReview.2015-11-03.2644/attachments/EDHEC_Publication_Limitations_Factor_Investing.pdf