ΟΙΚΟΝΟΜΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ
ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS

Wealth Management

Theodore N. Krintas, CIIA, Ph.D.

MSc International Shipping Finance and Management
Athens University of Economics and Business

May - July 2024

KOUBARAS

Lecturer

Theodore Krintas, Ph.D.
Koubaras, Founder & CEO

Basics

Wealth Management

You have meaningful goals. Our Financial Advisors can help you reach them. For nearly 80 years, we have worked with individuals, families, businesses and institutions—to deliver services and solutions that help build, preserve and manage wealth. We understand our clients' aspirations, and we're as devoted to their goals as they are.

Morgan Stanley

We help our clients pursue their wealth management goals through careful advice, astute investment management and access to the capabilities and network of Goldman Sachs.

We work closely with high-net-worth individuals, families and select foundations and endowments to develop wealth and investment management strategies. We then identify investment opportunities to help them reach their objectives. We complement these services with robust execution capabilities and attentive client service. Where appropriate, we introduce our clients to the broader network and resources of Goldman Sachs.

Goldman Sachs

Wealth and Investment Management

You lead a busy, complex life. So you need an approach to managing your wealth that provides expertise and flexibility to help you achieve the lifestyle you want. Investments can fall in value. You may get back less than you invest.

BARCLAYS

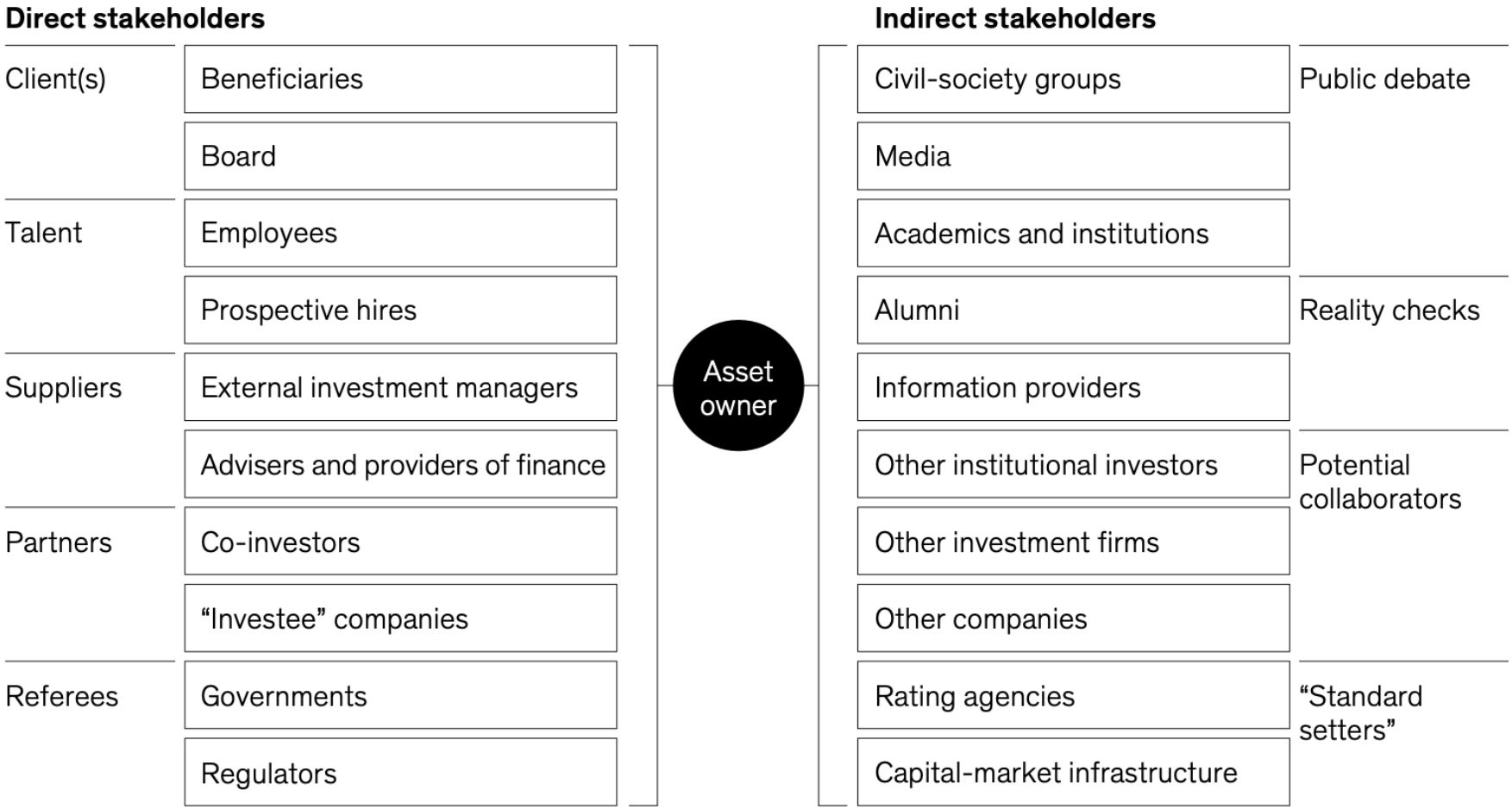
Basics

A further defining quality of wealth management is that it is **delivered in a consultative manner**. By being consultative, wealth managers are truly client-centered. A good wealth manager meets a client without any **presupposition** about what financial products or services are appropriate for that affluent individual.

Basics

While it is common for a wealthy individual to be sitting with a wealth manager to address a particular need (investment management, say), the consultative wealth manager's overriding objective is **to understand the person and find out what's important and why**. Then the wealth manager is able to bring in the appropriate experts and provide the appropriate financial products.

Asset owners' stakeholders



Source: McKinsey analysis

Example

1. Creative Planning

Main office address	3400 College Blvd., Leawood, KS 66211
Main office telephone number	913-338-2727
Website	**www.thinkingbeyond.com**
Years in business	31
Total assets under	$10,005,258,748

Mission

At Creative, our mission is to provide our clients with the best path to wealth accumulation, retention, and transfer of assets by creating and implementing strategies that are tailored to their unique goals.

We are driven to provide our clients with uncluttered, professional advice that enhances their quality of life and leads to sustained and actionable solutions.

We offer thorough counsel on each client's wealth management issues. Our goal is to provide clients with clarity, to educate, and to make significant and tangible progress toward every client's financial goals.

We are our clients' financial advocate, striving to organize and simplify life in such a way that maximizes the family's enjoyment of their wealth now and in the future.

Example

Creative Planning
ASSET MANAGEMENT

Private Wealth Management

Investment management is the core of our services. With over $15 billion under management, all acquired primarily through referrals, our team has extensive experience managing money in both bull and bear markets. We do not experiment with our clients' money, and we do not invest based on a hunch. For most of our clients, the focus is capital preservation followed by growth, but each client has different needs and unique circumstances. We analyze all aspects of a client's current financial situation and desired outcomes prior to constructing a portfolio.

Creative's investment committee focuses on cost-effective, after-tax results, recognizing that the only performance that matters is the kind a client actually receives. We are not married to any gimmick, such as putting 100% of a client's money in mutual funds, exchange traded funds, or anything else. Rather, we focus on searching for and utilizing 'best-in-class' investment vehicles for every component of the client's portfolio.

Creative steadfastly refuses to offer proprietary funds because of the conflicts of interest that they create. As a registered independent advisor, Creative also serves as a fiduciary, a legal standard by which we must employ the highest standard of care when it comes to advising clients on their money.

Example

To us there are no foreign markets.™

Canaccord Genuity Wealth Management is a premier global, independent wealth management firm. We focus on helping successful families reach the coordinates that define their life goals. To achieve this, we search the globe for investment opportunities, and deliver targeted long-term and near-term investment strategies for clients in Canada, Australia, the U.K. and Europe.

Learn More

The luxury of simplicity

With access to financial, estate and insurance planning specialists, Canaccord Genuity Advisors are committed to providing clients with a broad array of wealth management solutions to simplify their busy lives and achieve their financial goals.

Learn More

COMPLETE CANACCORD

Growing my investments

Your Canaccord Genuity Advisor can provide strategies for generating growth or a steady stream of income, tax and estate planning solutions, and one or more portfolio solutions.

Planning for my future

Planning for the future includes working with your Canaccord Genuity Advisor to create a portfolio of investment solutions that meet your longer-term needs.

Giving back to my community

Your Canaccord Genuity Advisor will help you create a long-term plan with details about caring for your loved ones and any philanthropic donations you wish to make to your favourite causes.

If you're an investor with a substantial portfolio, we offer a broad range of wealth planning products and services and can provide you with in-depth guidance designed to help you preserve your wealth and maximize growth potential.

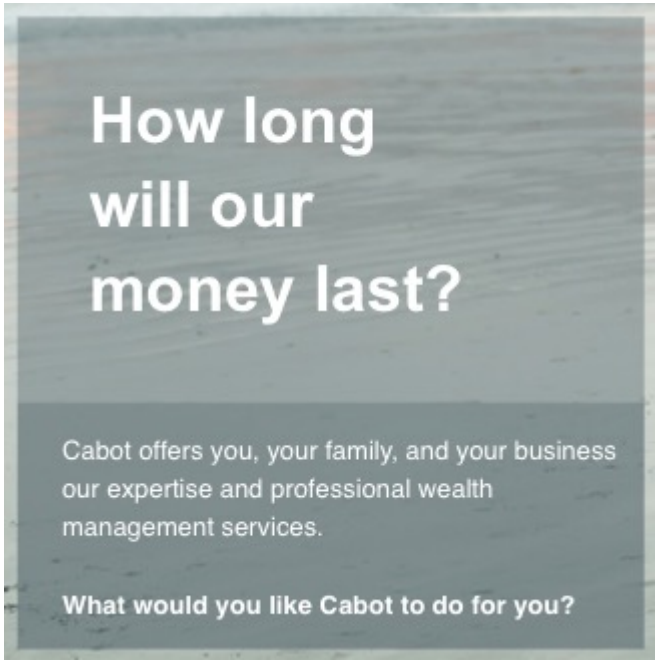
Fidelity

Example

Washington Trust provides holistic and comprehensive wealth management services customized to your specific circumstances and needs.

- → **Sophisticated strategies** to mitigate risk and enhance returns
- → **Integration** of a comprehensive suite of services
- → **Knowledgeable wealth advisors** working collaboratively
- → **Responsive** client service
- → **Trusted** for more than 215 years

WASHINGTON TRUST
Wealth Management



Cabot
WEALTH MANAGEMENT

Example

BNP PARIBAS
WEALTH MANAGEMENT

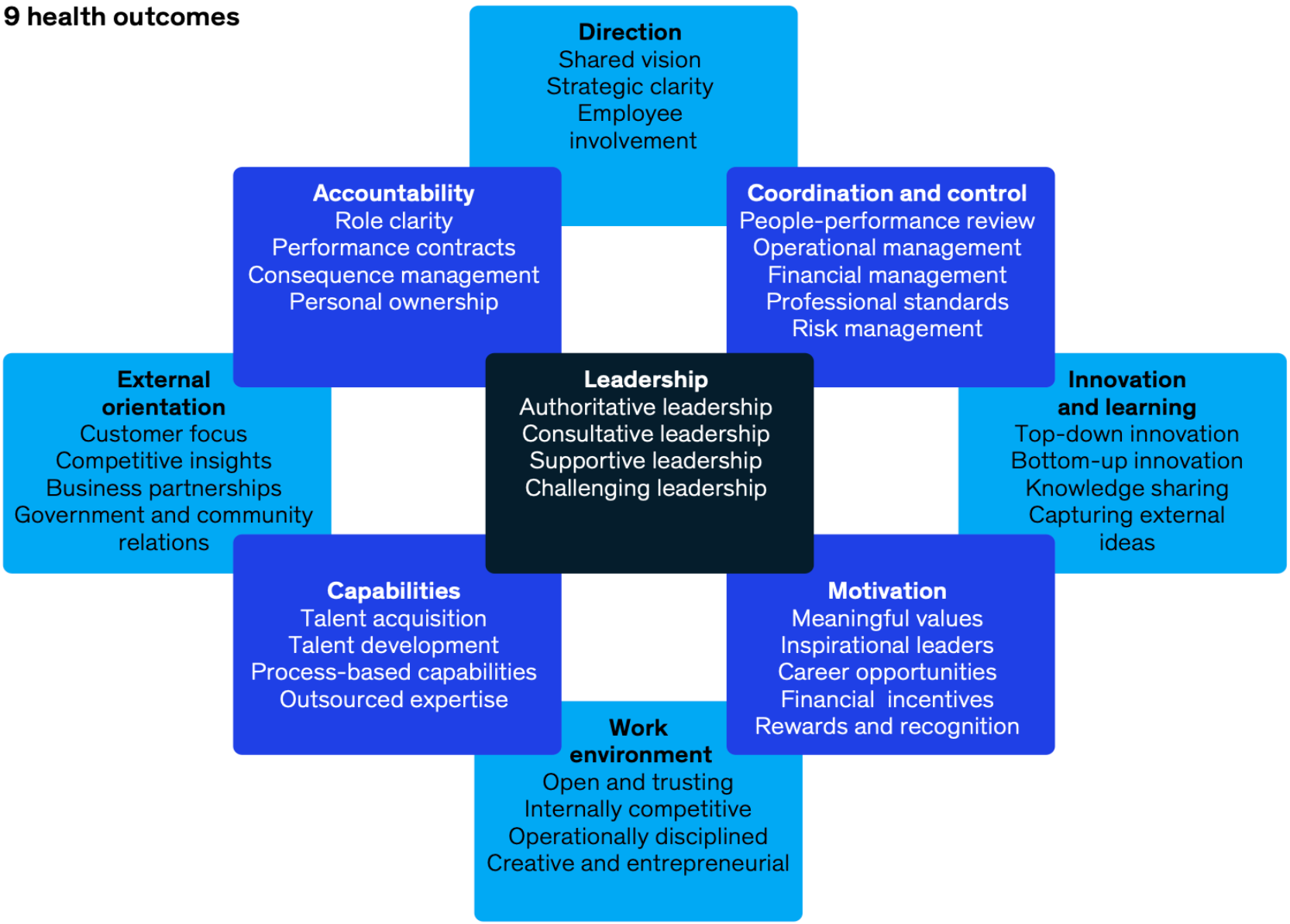
WHAT MAKES US UNIQUE

At BNP Paribas Wealth Management, we know that your wealth is unique. It's an expression of yourself that deserves to reach its full potential, and we are here to help bring that to life.

Innovation is at the core of our offering. We tap into an **international network** that leverages the **deep industry expertise of our specialists** and a **personalized service** that ensures you get the attention needed that is tailored to your needs and aspirations.

We are also passionate about giving back. We strive to **raise awareness and promote dialogue around philanthropic subjects**, awarding prizes annually to recognize extraordinary individual efforts. Our innovative **Women Entrepreneur Program**, a personal and professional development forum for women around the world, further illustrates our dedication to empowering and promoting feminine entrepreneurship.

Practices are ‘what you do’



The whole picture

The Process

That has always a beginning and never ends…

Investment Process

➢ Introduction

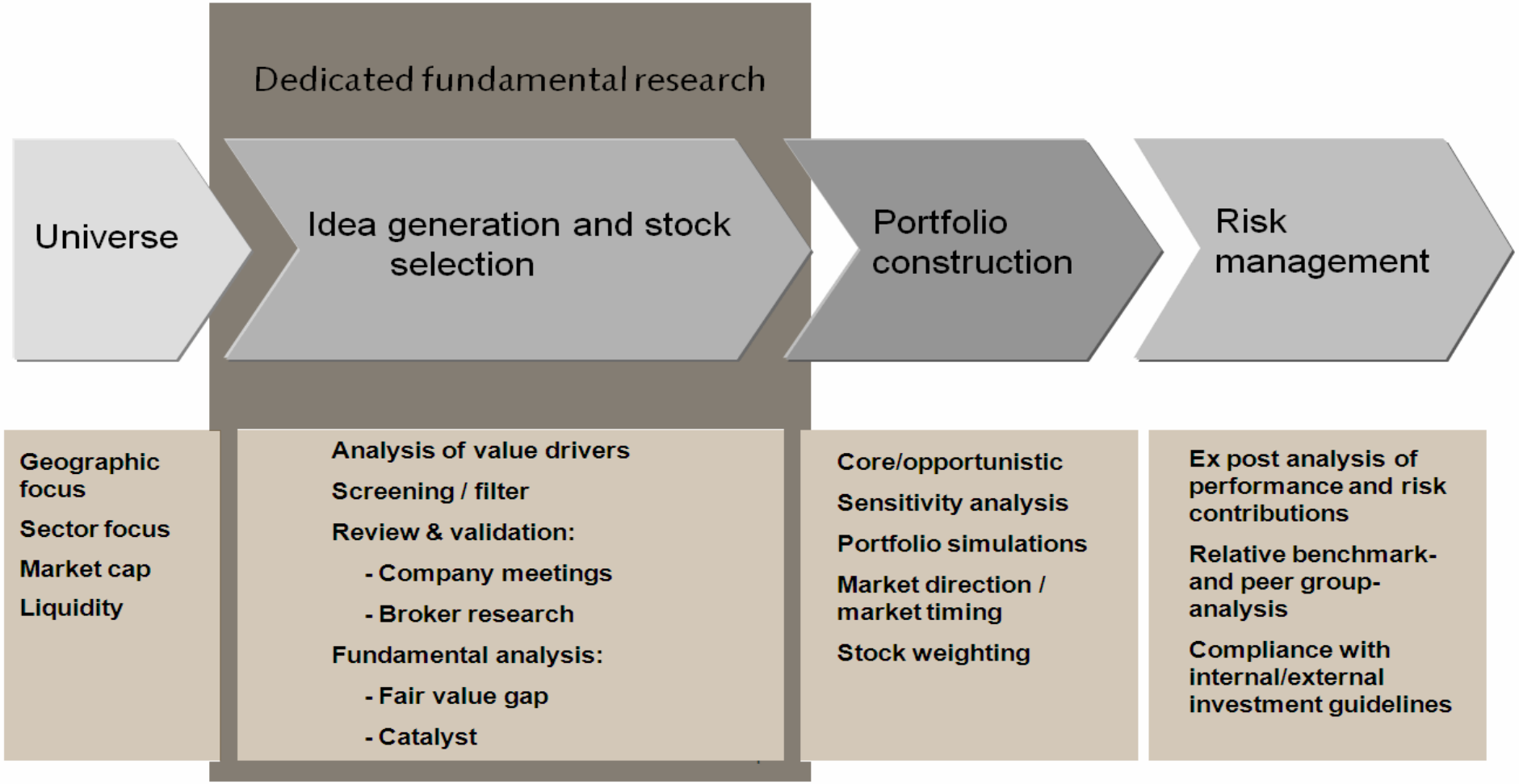
- **Fundamental research** is hard work and constantly challenges a team's ability to draw the right conclusions and combine all the different pieces in **a compelling and profitable way**

- **Specialized** management teams **analyze** the most attractive financial instruments & companies in their respective investment universe, **draw up** detailed financial models and maintain a **constant dialog** with company executives and leading industry experts

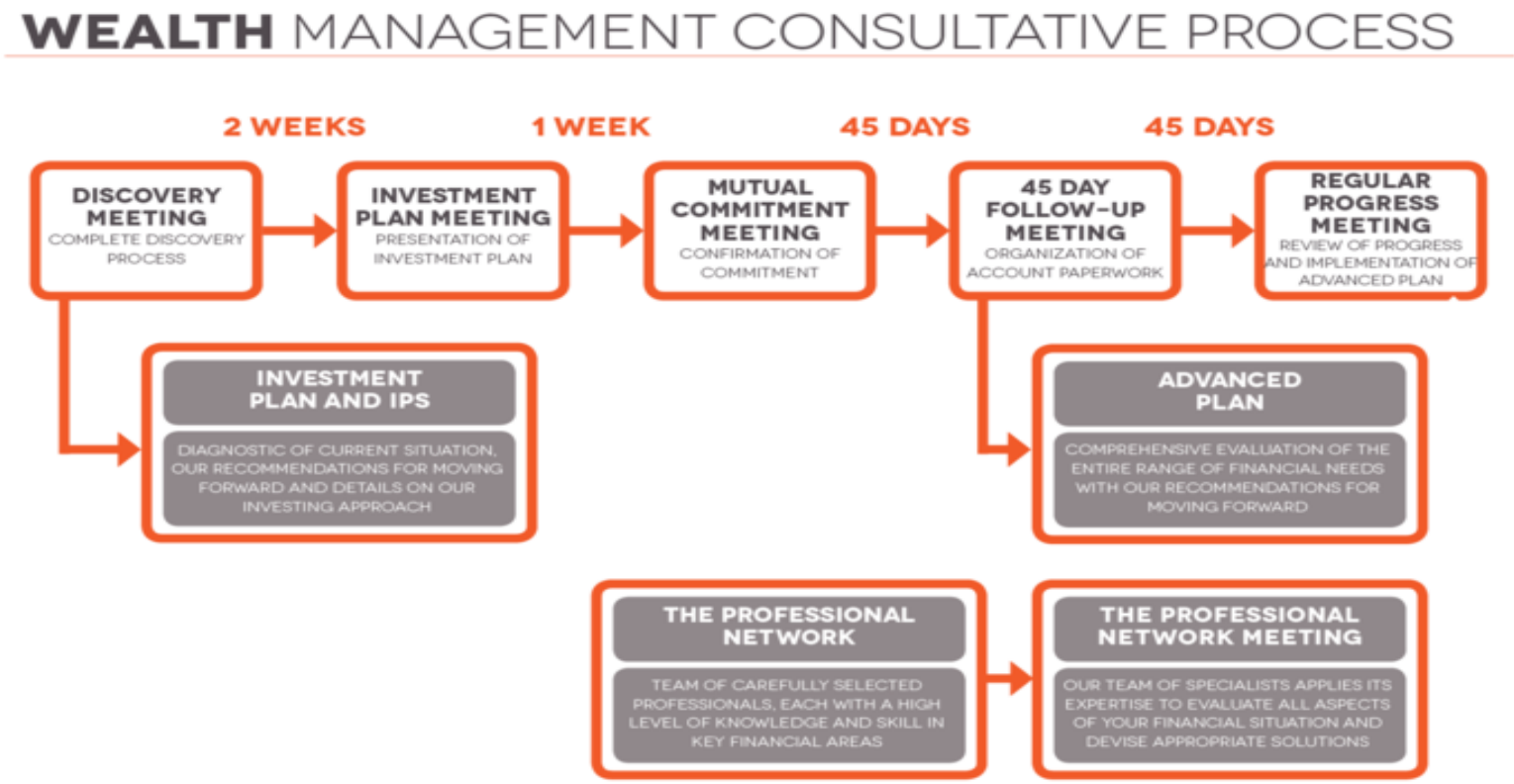
Investment Process

- **Step 1:** Definition of investment universe
- **Step 2:** Generation of ideas and financial instruments and stocks selection
- **Step 3:** Portfolio construction
- **Step 4:** Risk Management

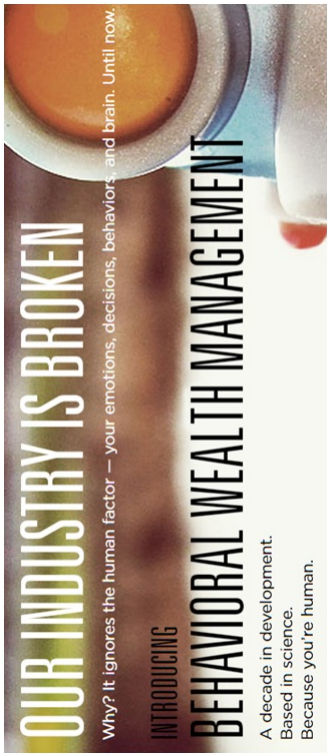
Investment Process



Consultation



Consultation

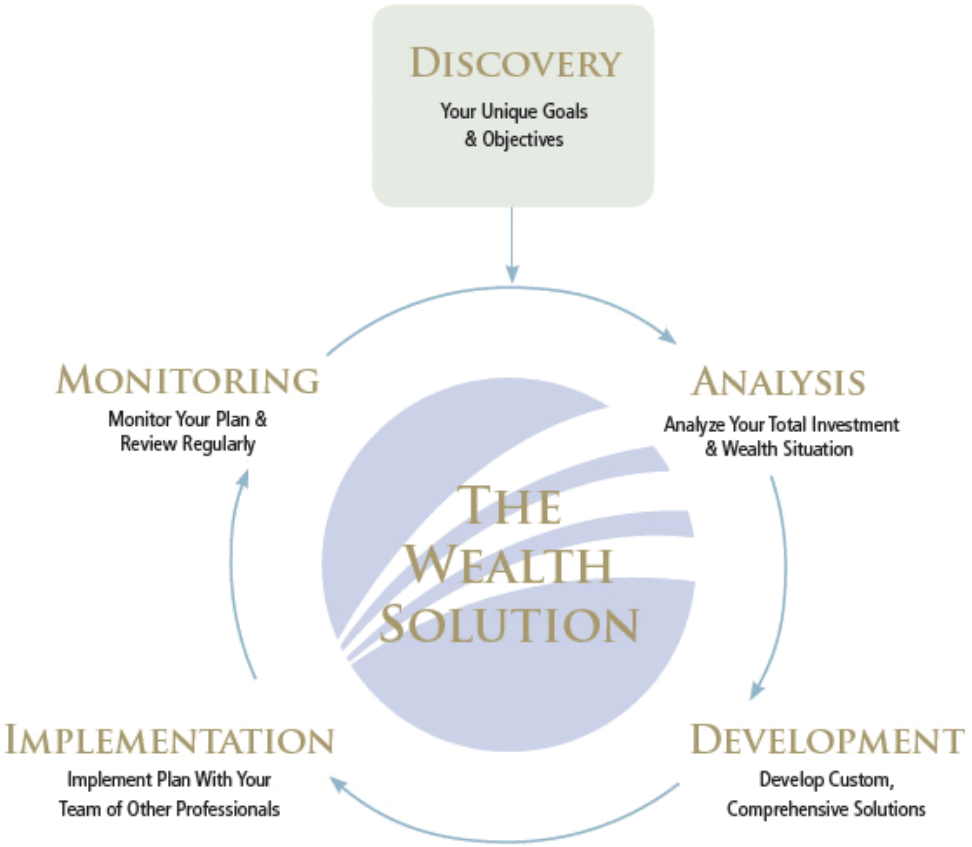


THE HABERLING FINANCIAL GROUP CONSULTATIVE WEALTH MANAGEMENT PROCESS

DIY


1
Understand your goals
Together, we define your needs, goals, and risk profile.
2
Create a plan
We determine the appropriate allocation of assets to realize your particular objectives.
3
Craft your portfolio
We identify the specific investments that align with and support your strategy.
4
Stay on course
We assess performance on a regular basis, making changes and refinements to your portfolio and strategy as needed.

Example



In order to help you maximize your potential for success in all areas of your financial life, we take a comprehensive approach.

Example

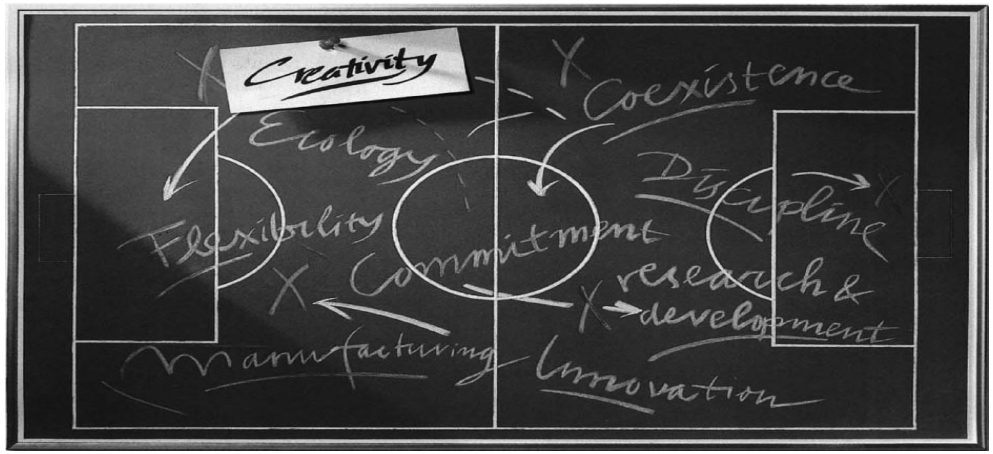
WEALTH MANAGEMENT PROCESS

DISCOVERY & INSIGHTS | ASSET ALLOCATION | STRUCTURAL ANALYSIS | ASSET LOCATION | IMPLEMENTATION | ACTIVE MANAGEMENT

It's about the best ideas of many serving the needs of one.

We take a long, thoughtful look at your unique situation, considering multiple, often complex, options before recommending the most appropriate solution. In doing so, we leverage a disciplined process designed expressly for our private clients. This ongoing process revolves around your needs and ensures consistent, highly disciplined application of our best thinking on your behalf.

BNY MELLON
WEALTH MANAGEMENT



Client goals and constraints

Nothing is like a good night sleep…

Strategy

Strategic Wealth Planning & Asset Allocation

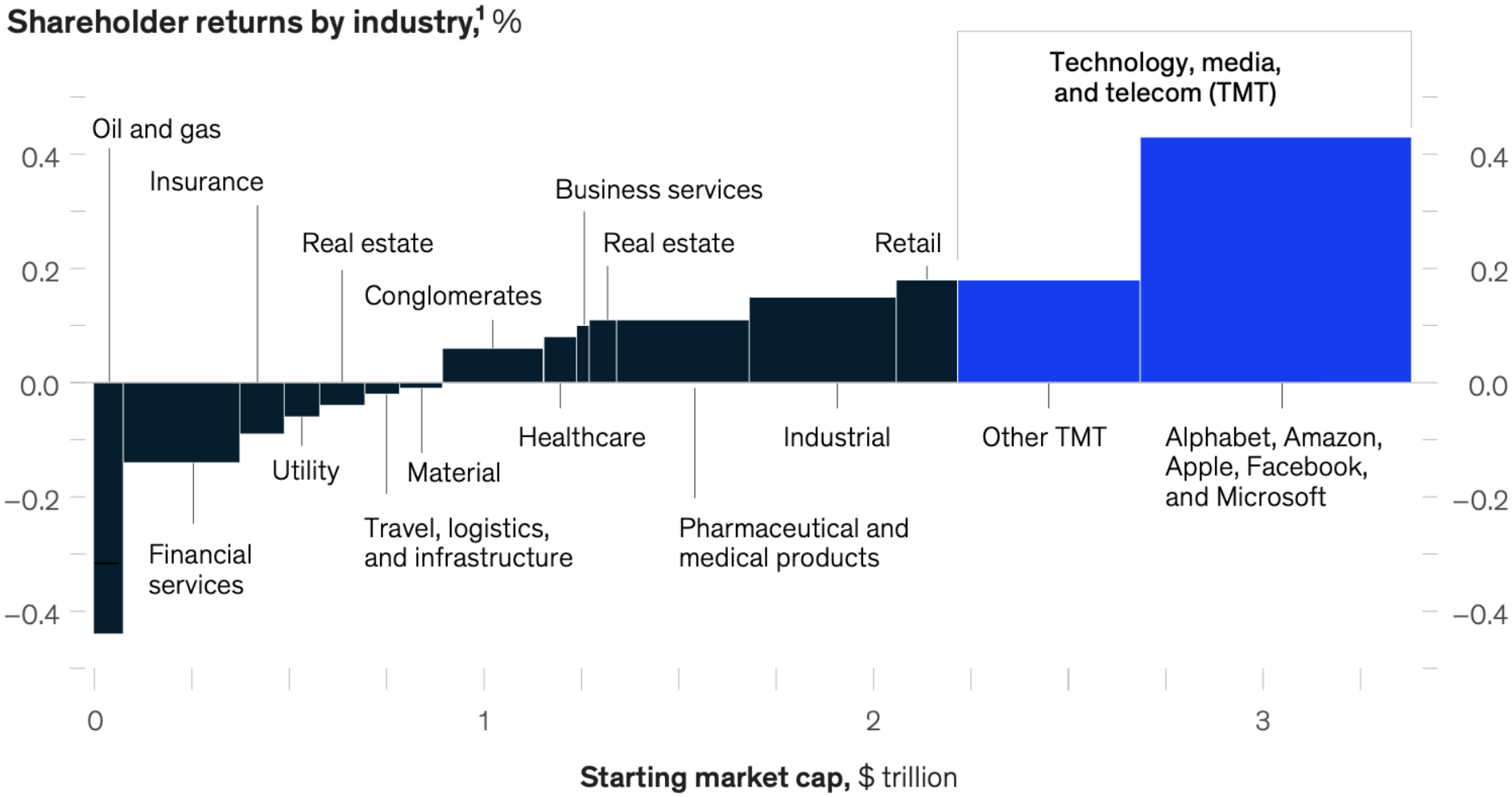
True wealth management starts and continues with a conversation. How secure is your income? What is your appetite for risk? Do you have other constraints, such as a single stock position or a closely held business that needs to remain intact? What are your family's lifestyle needs, your retirement plans, your legacy intentions?

There are as many answers as there are individuals, and their circumstances are always changing. So too are the opportunities and risks associated with the broader economic, monetary, and political environment. It is our job to marry the two – so that individuals, families, and related institutional clients may benefit from our best thinking in the context of their needs and aspirations.

Evercore | Wealth Management

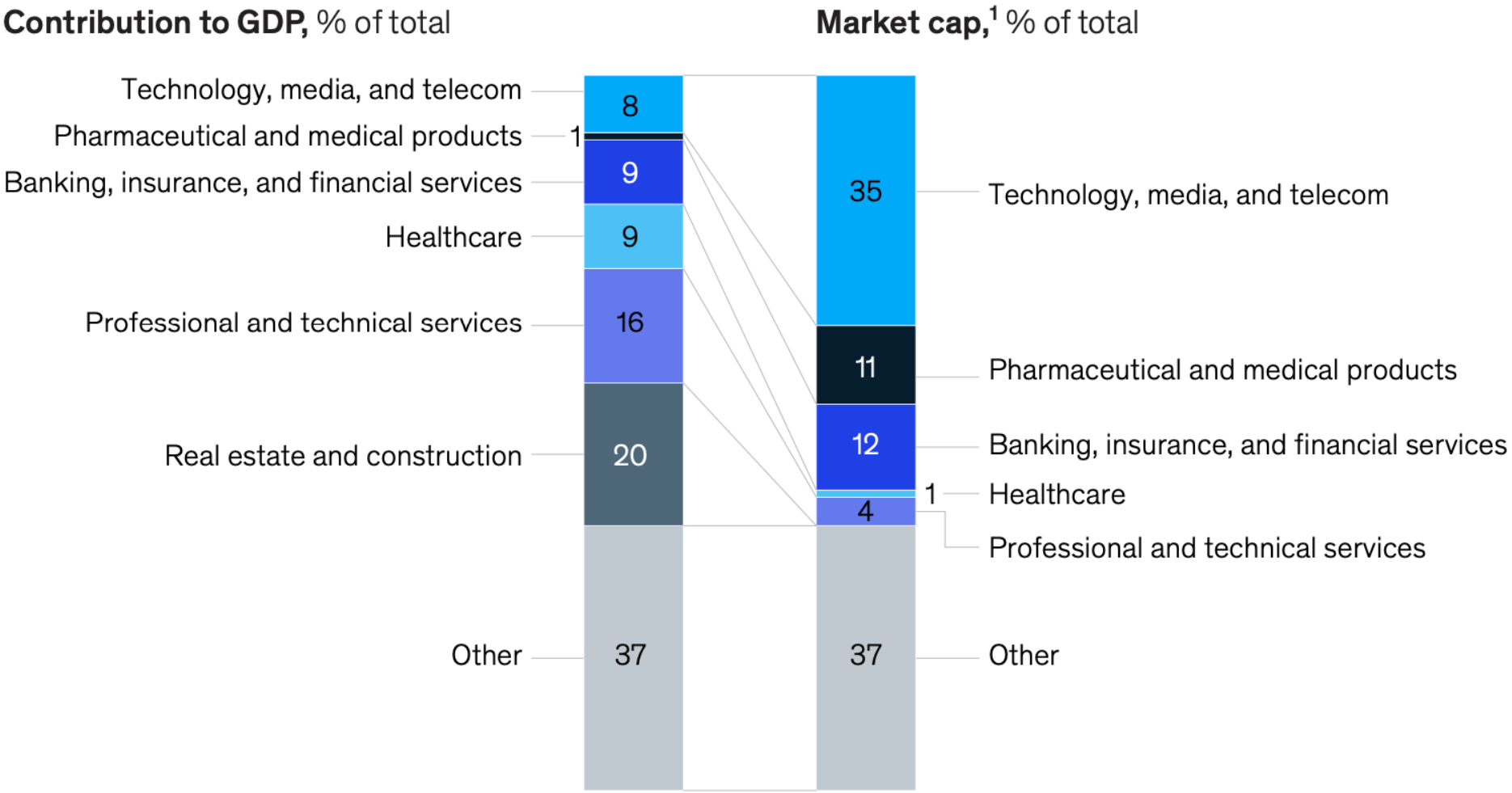
THE NEW STANDARD IN WEALTH MANAGEMENT

Technology companies in US



[1]Largest 1,000 US companies. Year-to-date (September 15, 2020) weighted average; local currency.
Source: S&P Global; Corporate Performance Analytics by McKinsey; McKinsey analysis

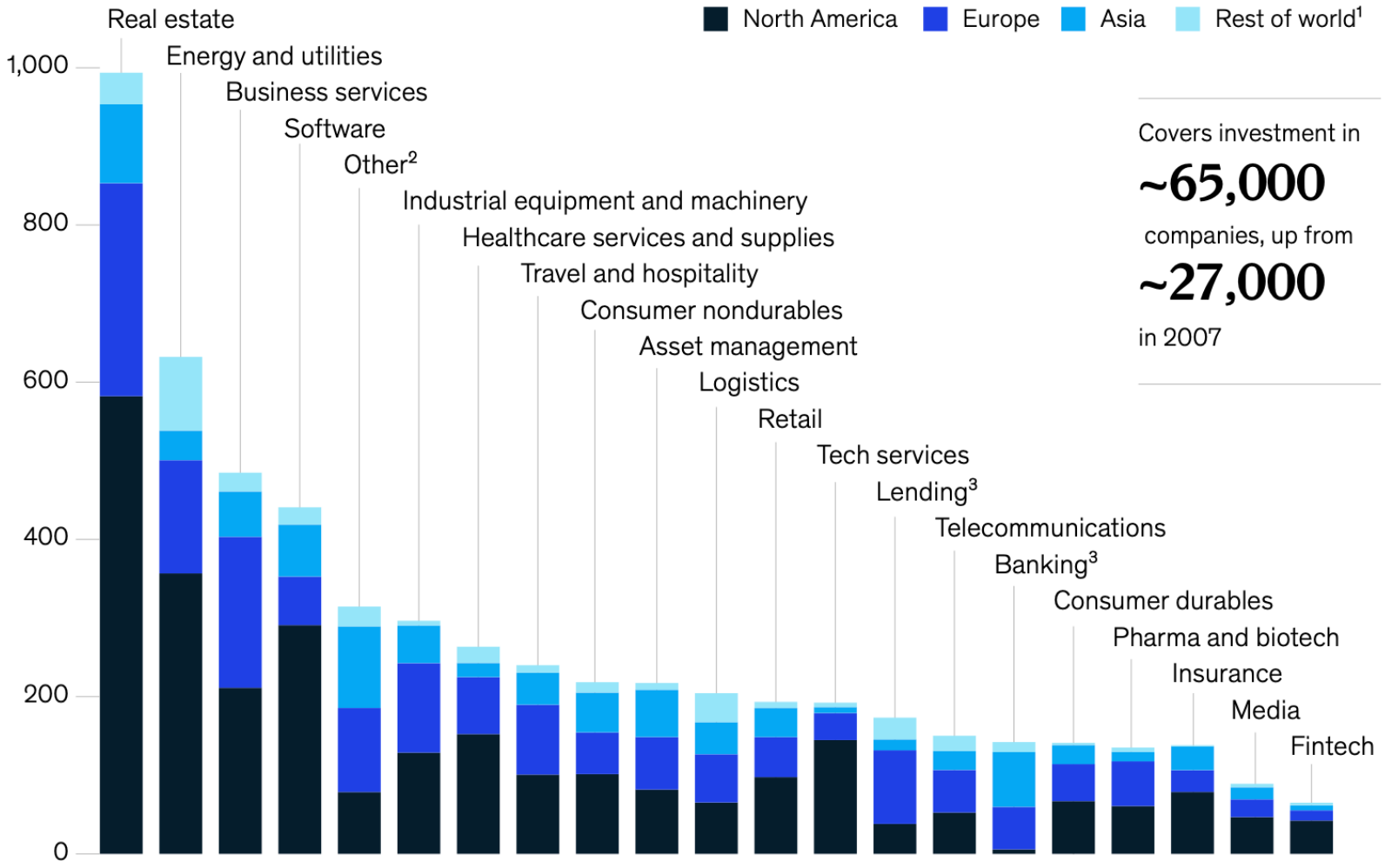
Versus economic drivers



[1]Largest 1,000 US companies as of September 15, 2020.
Source: S&P Global; Corporate Performance Analytics by McKinsey

PE manage $5.7T AUM

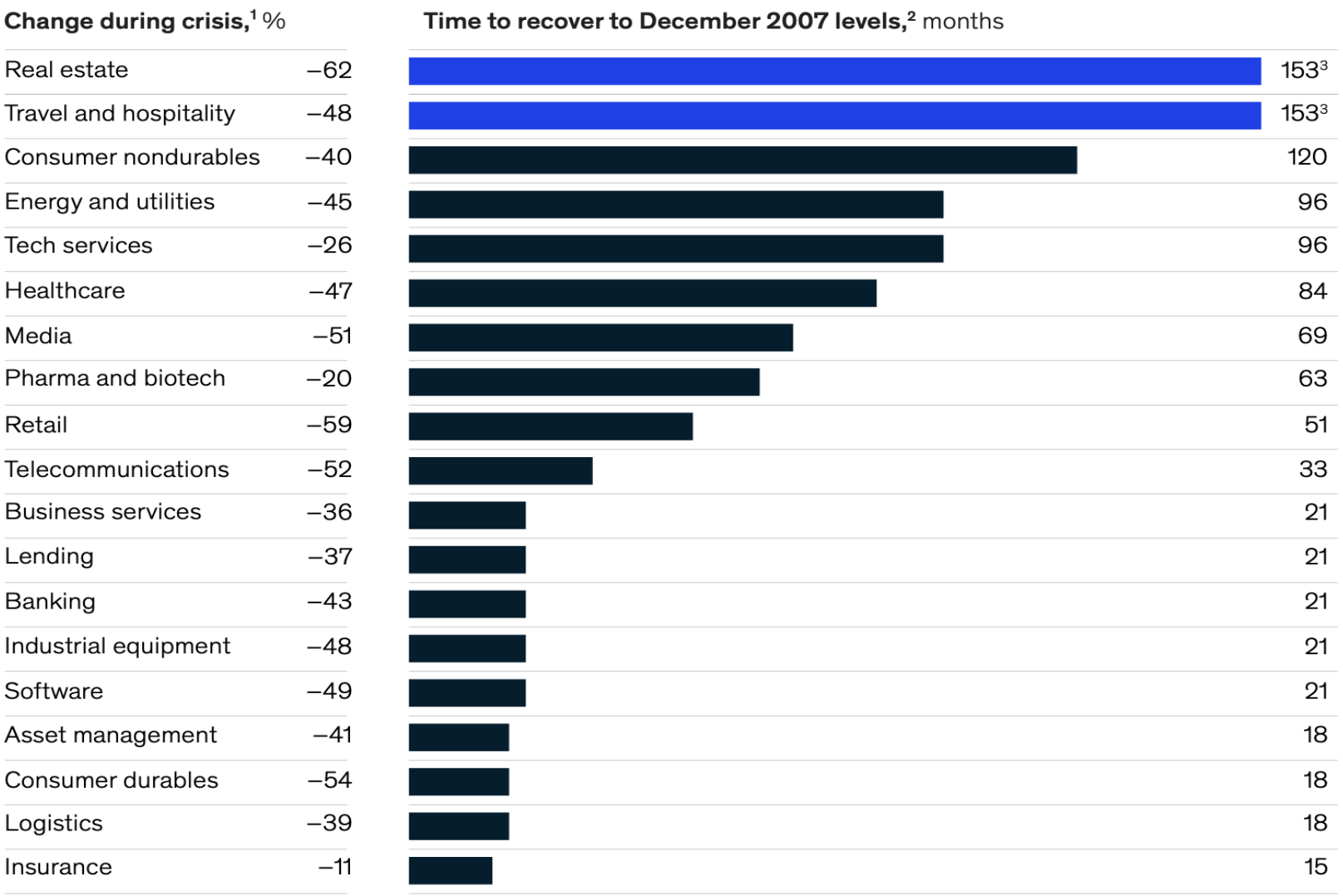
Global private equity assets under management (AUM), March 31, 2020, $ billion



[1]In some deals, geography is not specified.
[2]Other includes chemicals, minerals and natural resources, construction equipment, agriculture, and other business products and services.
[3]Lending includes stand-alone nonbank financial companies and lending companies; banking includes commercial banks.
Source: Pitchbook; Preqin; McKinsey analysis

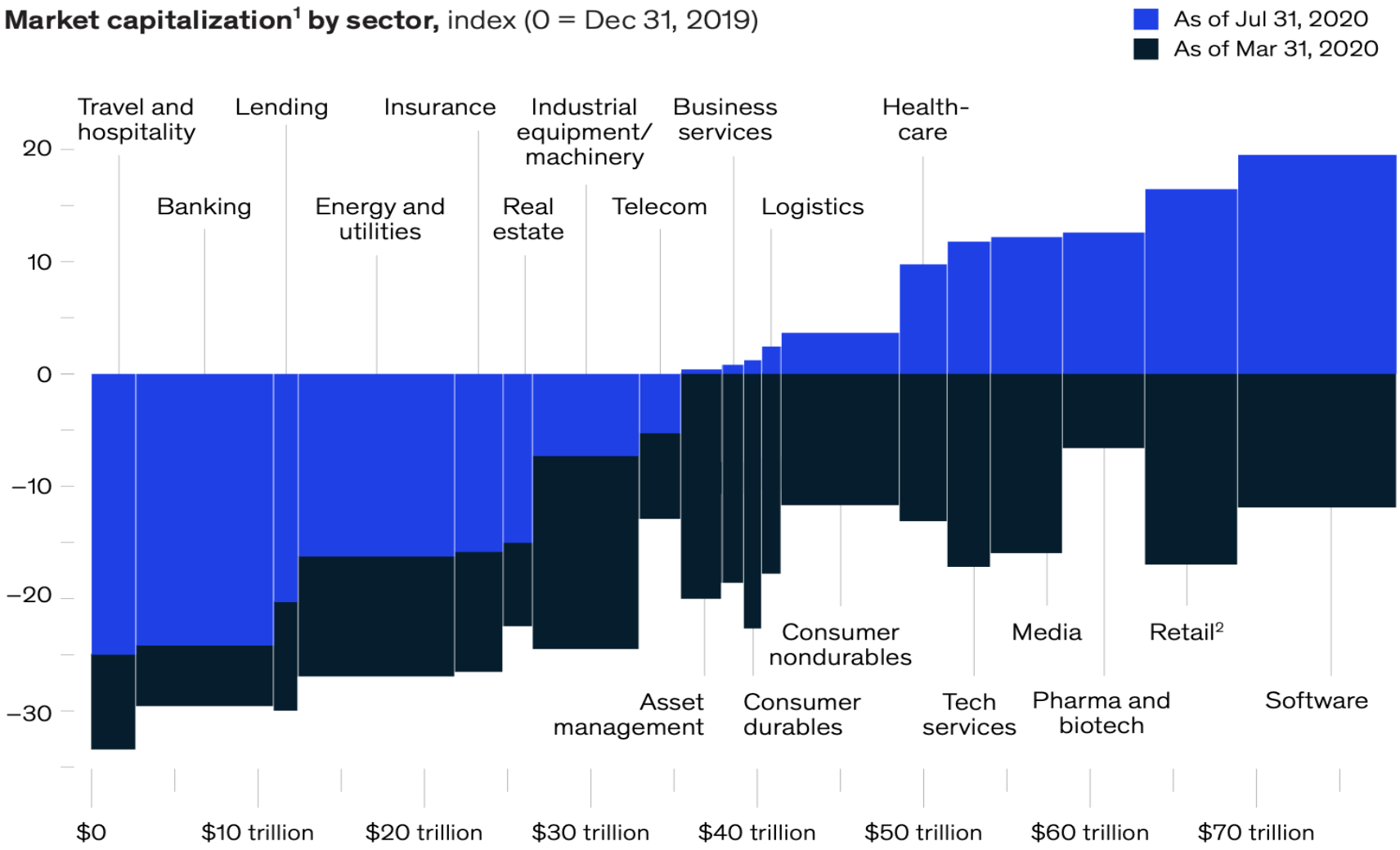
2008 Financial Crisis Impact

P/E-multiple disruption during and rebound from 2008 financial crisis



[1]Publicly listed companies around the world with revenue of more than $100 million in their sectors. Change is measured December 2007–December 2008.
[2]Defined as achieving and sustaining at least 90 percent of December 2007 levels.
[3]Not recovered as of September 2020.
Source: S&P CapitalIQ; McKinsey analysis

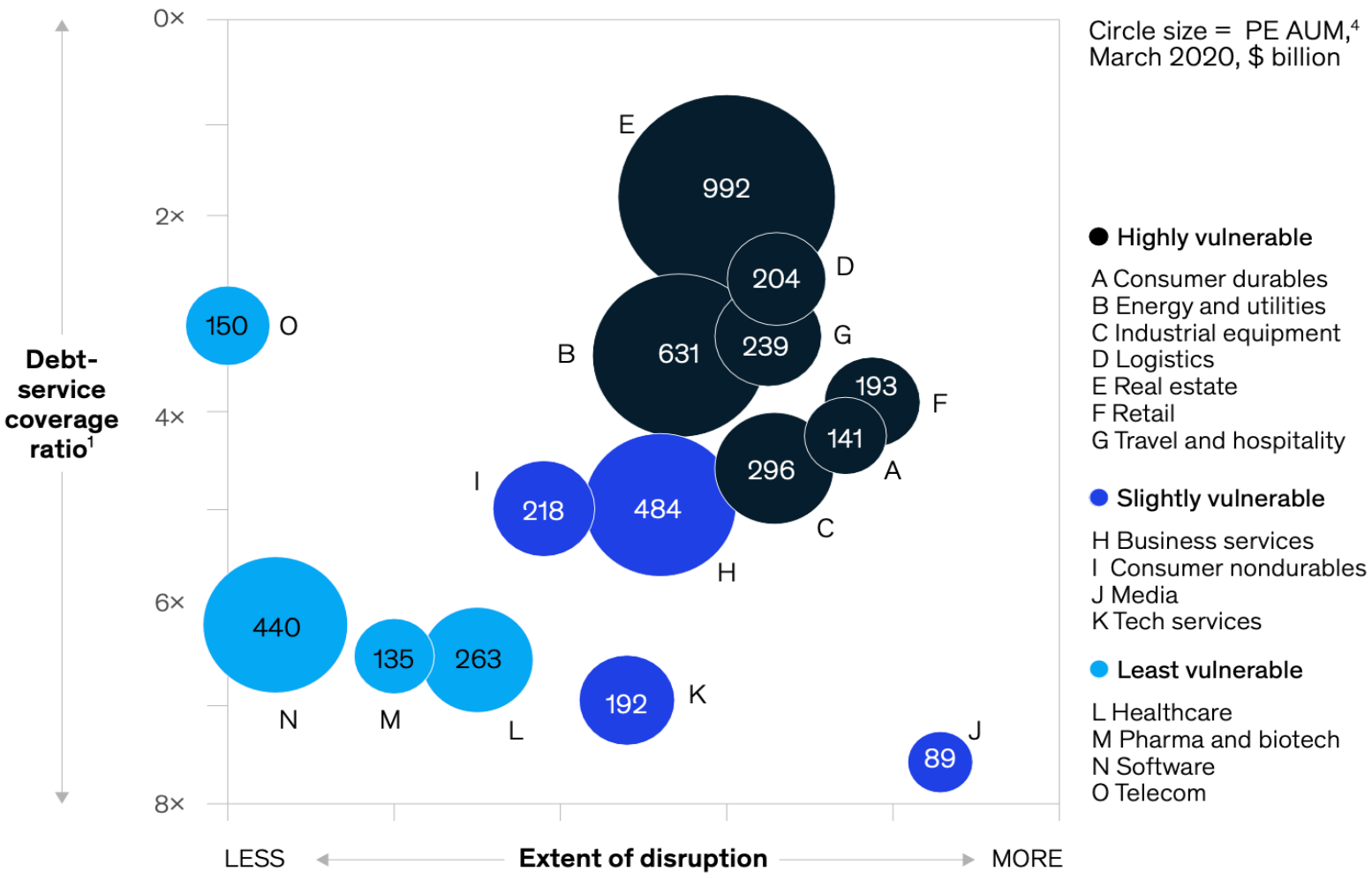
Covid-19 Impact



[1]For 15,500 public companies with revenue of more than $100 million in their sectors. Adjusted for dividends and buybacks. Width of bar equals proportion of all value as of December 31, 2019.
[2]Including e-commerce.
Source: S&P Capital IQ; McKinsey analysis

Financially Vulnerable Sectors

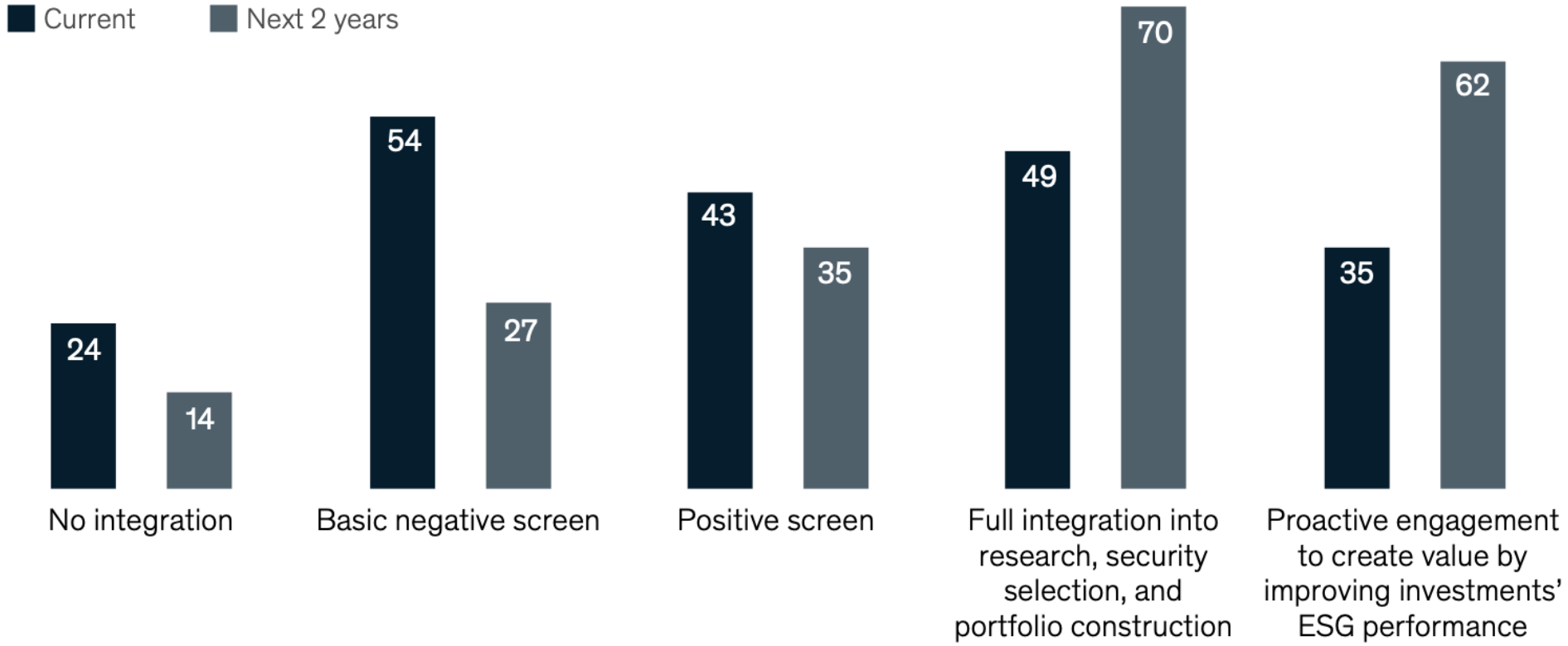
Debt-service coverage ratio[1] and disruption,[2] by sector[3]



[1]As of March 31, 2020. Calculated as (EBITDA April 2019–March 2020) / (current debt April 2019 + interest expense April 201 9–March 2020); sector average.
[2]Qualitative assessment of disruption from COVID-19, geopolitical tensions, economic inequality, and other factors.
[3]Excludes banking, lending, and insurance, where capital-adequacy ratios or solvency ratios are more relevant.
[4]Private equity assets under management.
Source: Pitchbook; Preqin; McKinsey analysis

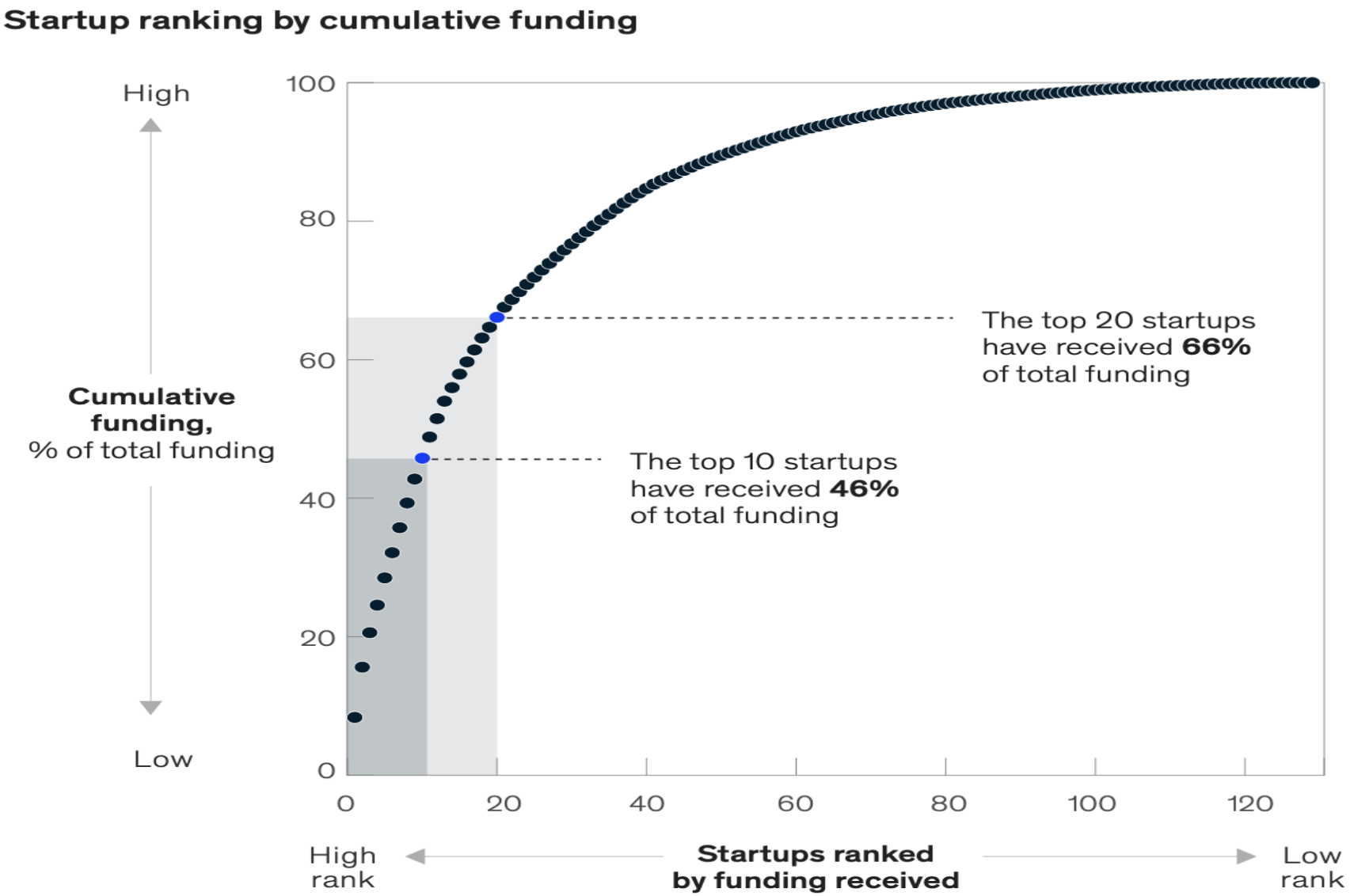
ESG Integration

Methods of integrating assessments of environmental, social, and governance (ESG) performance into regular investment-analysis process,[1] % of respondents[2]



[1]Question: How do you integrate assessments of ESG performance into your regular investment-analysis process?
[2]Respondents could select more than one option; n = 37.
Source: McKinsey Institutional Investor Survey 2019

Money? Yes. 4all? No!



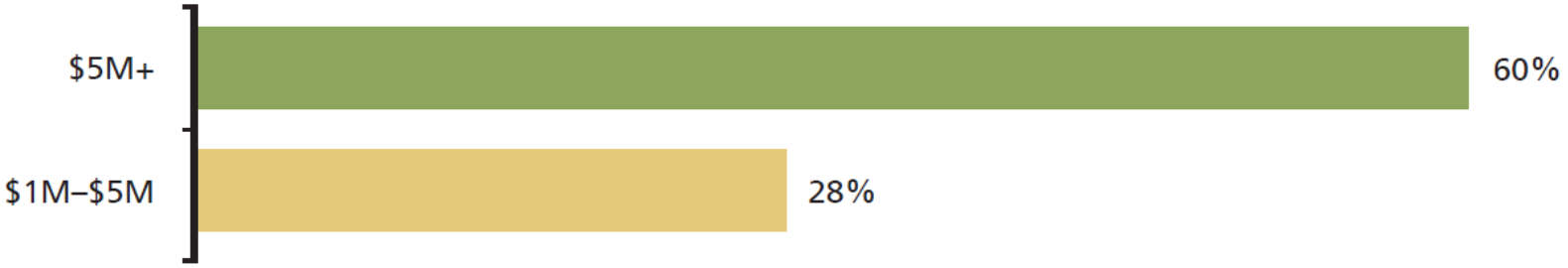
 Source: Crunchbase

Research

Wealth equals no financial constraints on activities

Most millionaires do not consider themselves to be wealthy (only 31% do). Having $5 million in investable assets seems to be the key threshold, as 60% of these investors feel wealthy.

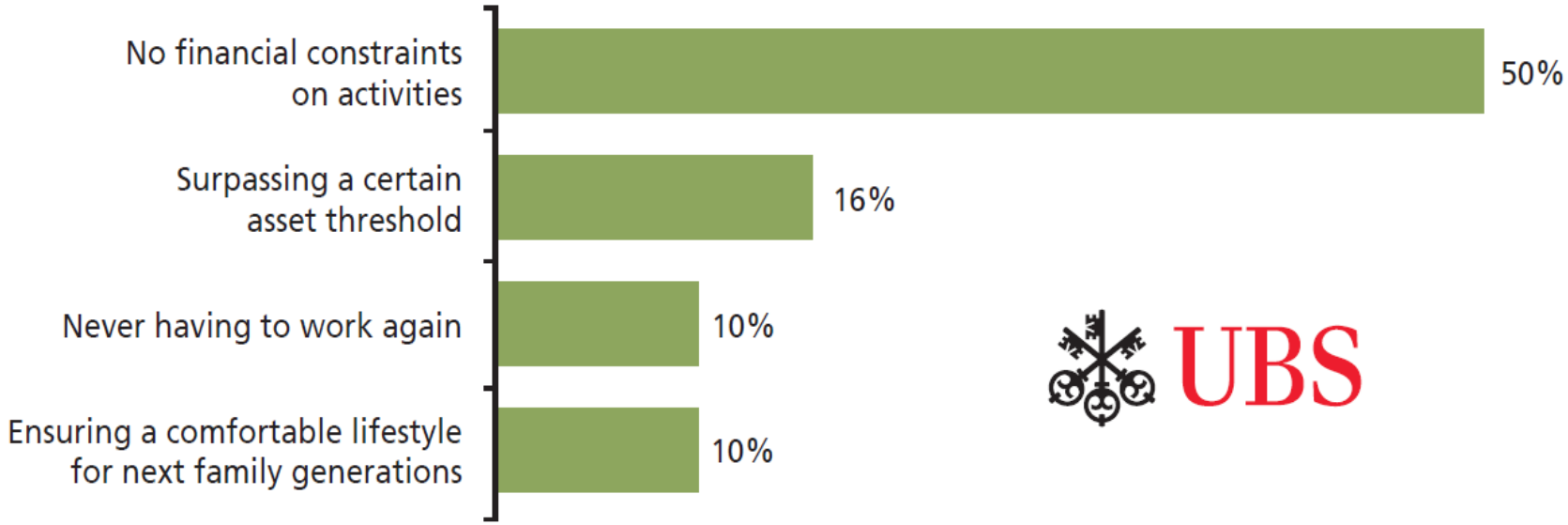
View of own wealth
Question: *"Do you consider yourself wealthy?"*



However, while assets clearly matter, investors define wealth as not having financial constraints on their activities (50%).

Research

View of what it takes to be wealthy
Question: *"What does it take to be considered 'wealthy'?"*

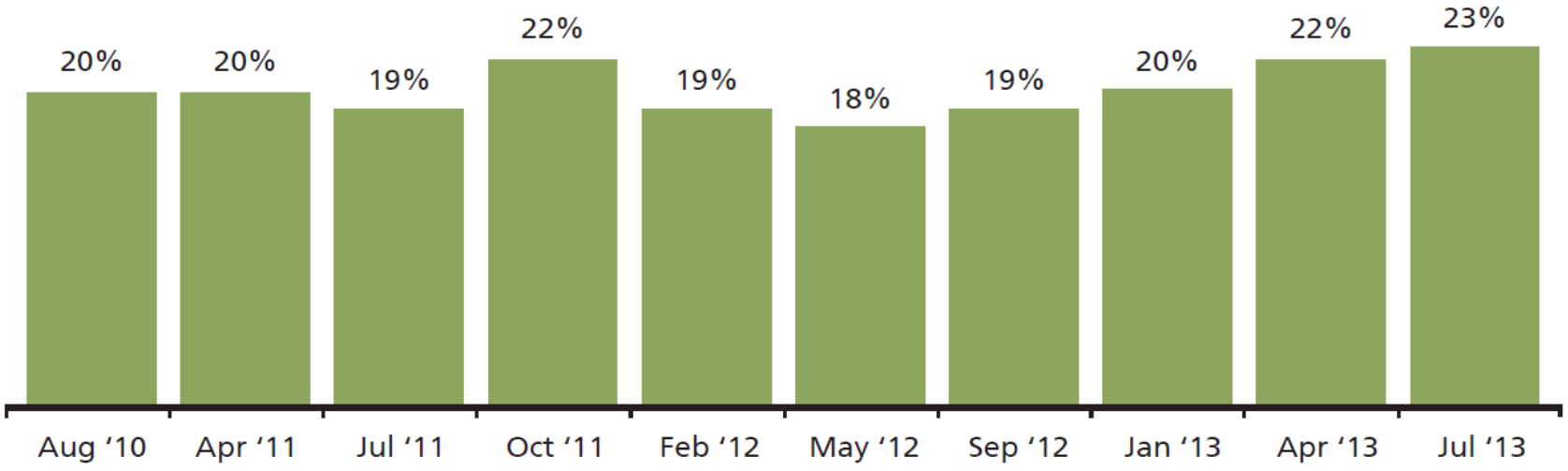


UBS

Research

Cash allocation over time

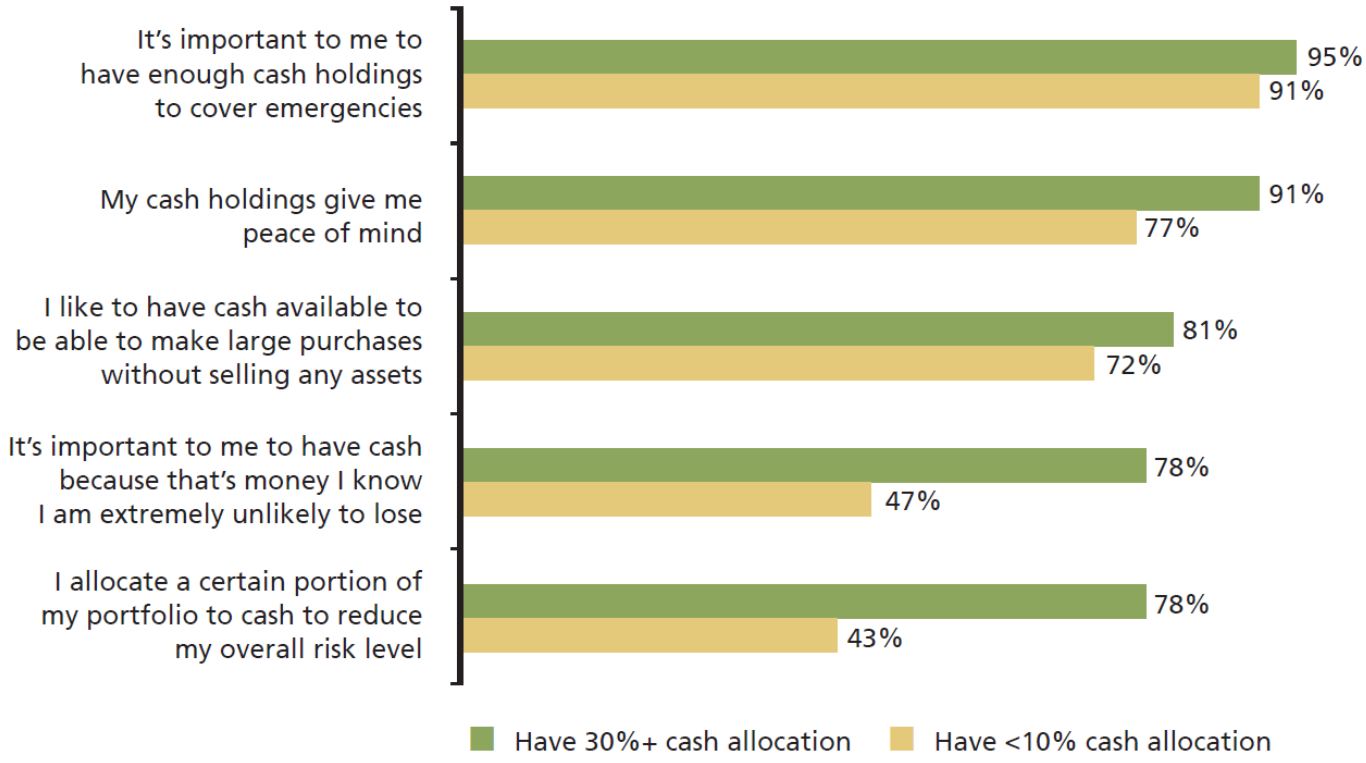
Question: *"Please provide your approximate overall asset allocation across all of your accounts."* Proportion shown is sum of cash, CDs and money market funds.



UBS

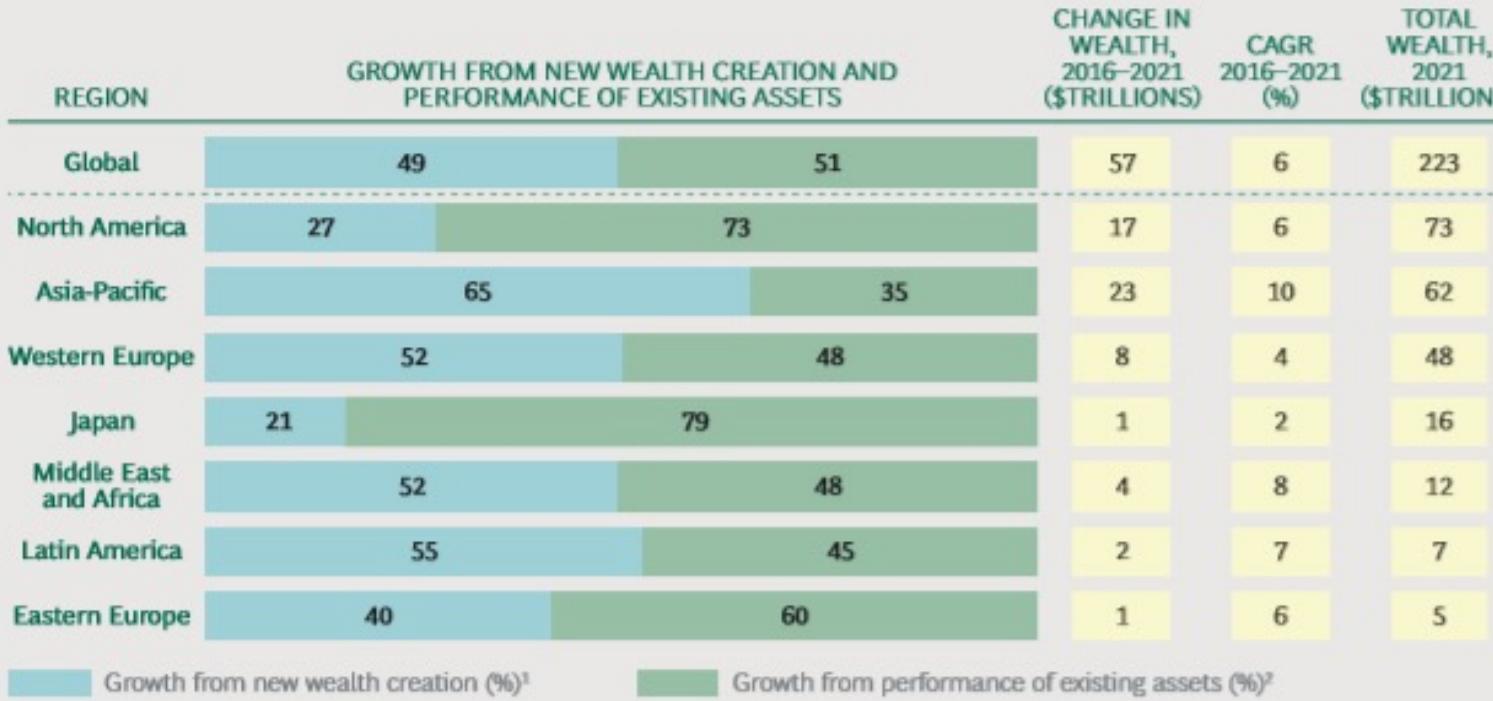
Research

Views on cash by size of cash allocation
Question: *"Do you agree or disagree with each of the following regarding your cash holdings?"*
Proportion who agree shown.



Research

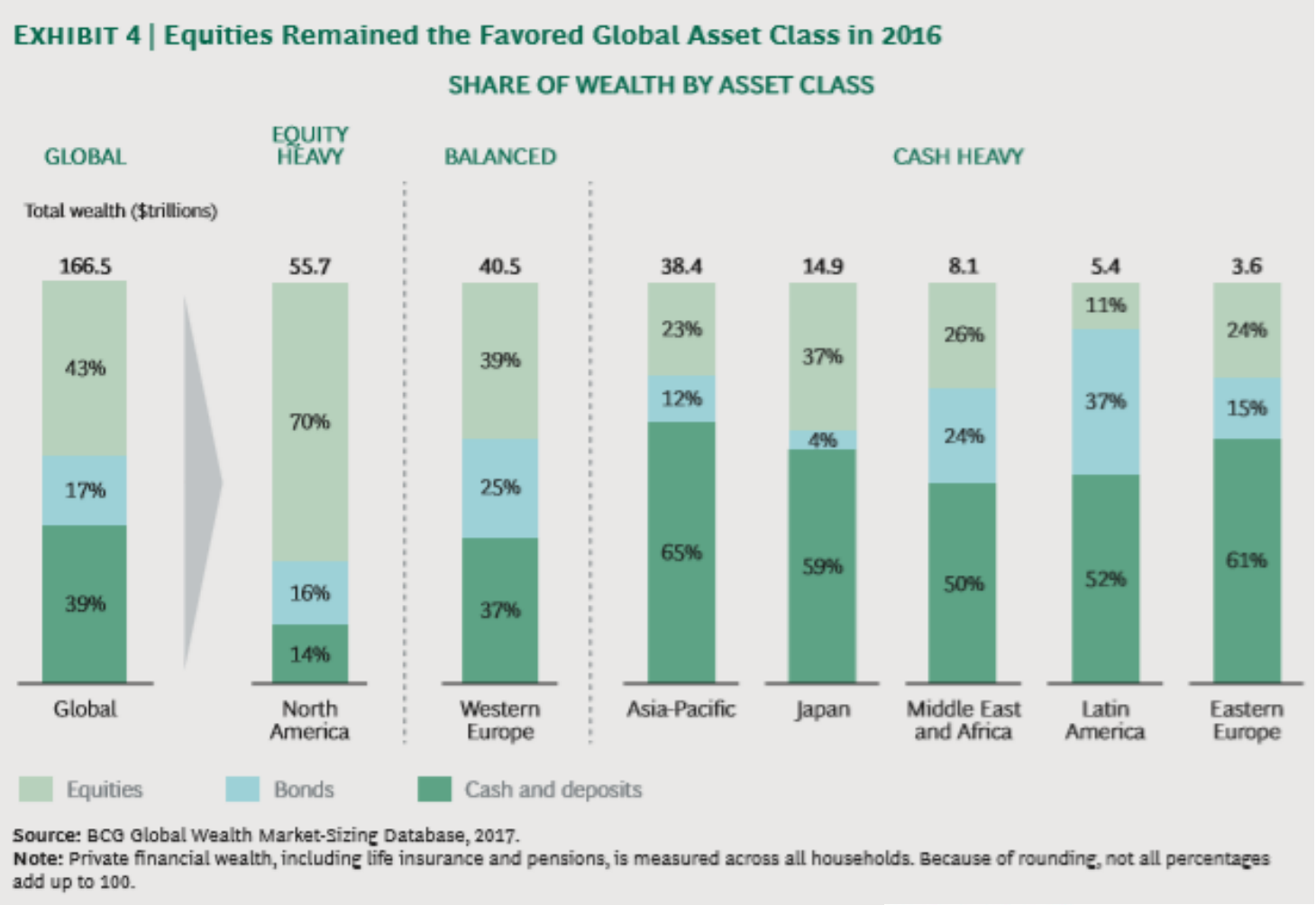
EXHIBIT 2 | Drivers of Growth in Wealth Will Be Relatively Balanced from 2016 Through 2021



Source: BCG Global Wealth Market-Sizing Database, 2017.
Note: Private financial wealth, including life insurance and pensions, is measured across all households. New wealth reflects GDP growth and savings rates. All growth rates are nominal. Amounts for all years were converted to US dollars at average 2016 exchange rates in order to exclude the effect of currency fluctuations. Percentage changes and global totals are based on complete (not rounded) numbers. Calculations for all years reflect updates to our methodology. CAGR = compound annual growth rate.
[1]The drivers of new wealth creation are savings rate and GDP growth.
[2]The drivers of the performance of existing assets are the performances of equities, bonds, and cash and deposits.

BCG
THE BOSTON CONSULTING GROUP

Research



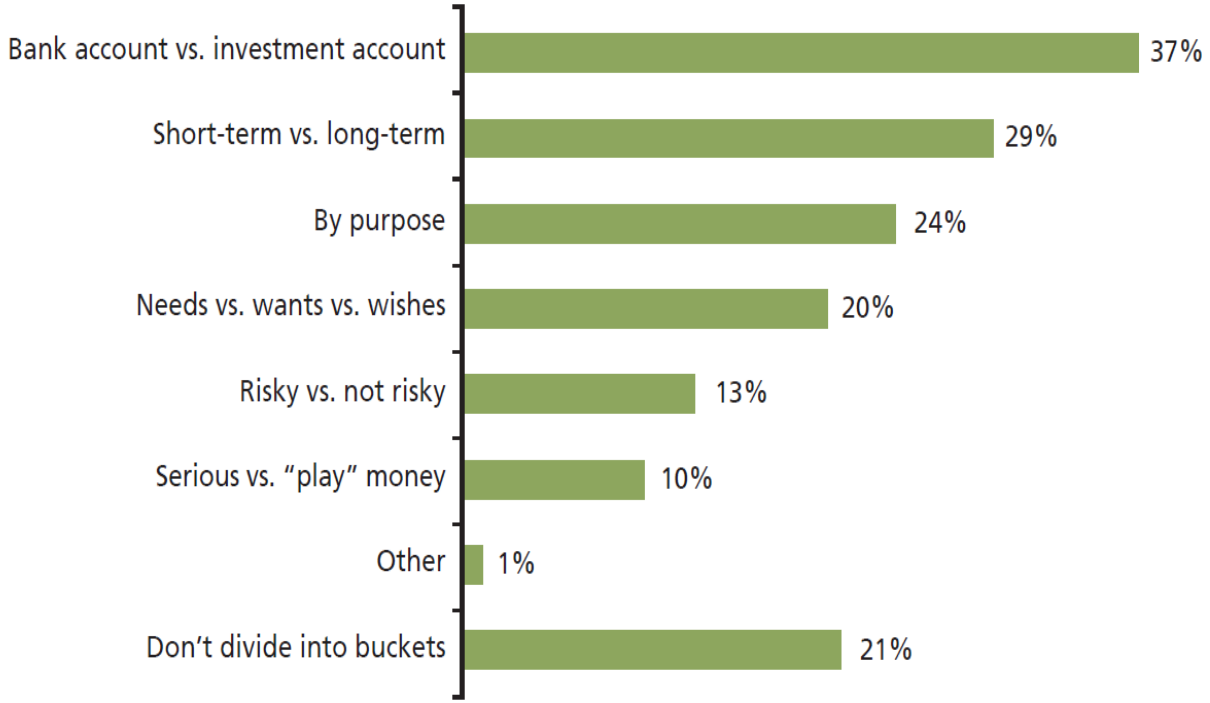
Source: BCG Global Wealth Market-Sizing Database, 2017.
Note: Private financial wealth, including life insurance and pensions, is measured across all households. Because of rounding, not all percentages add up to 100.

BCG
THE BOSTON CONSULTING GROUP

Research

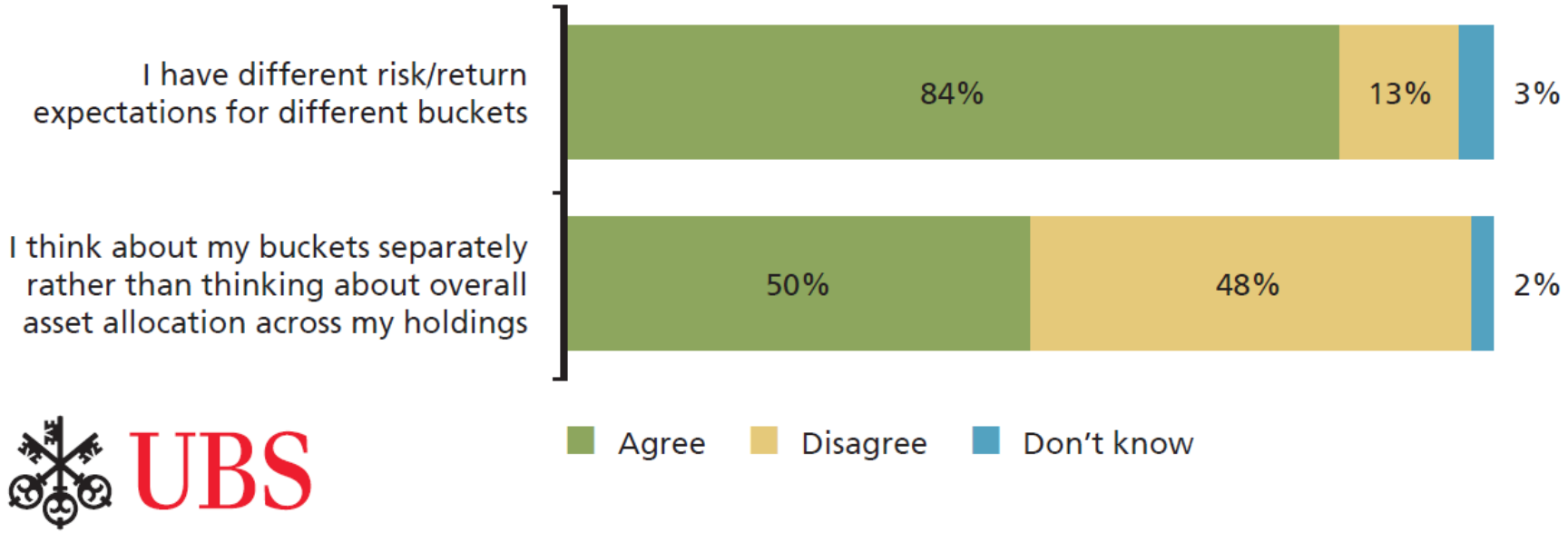
Investor use of asset "buckets"

Question: *"Many people divide (mentally, by account or by location) their assets into different 'buckets' based on their expected use. Which of the following matches the ways you think about your assets?"*



Research

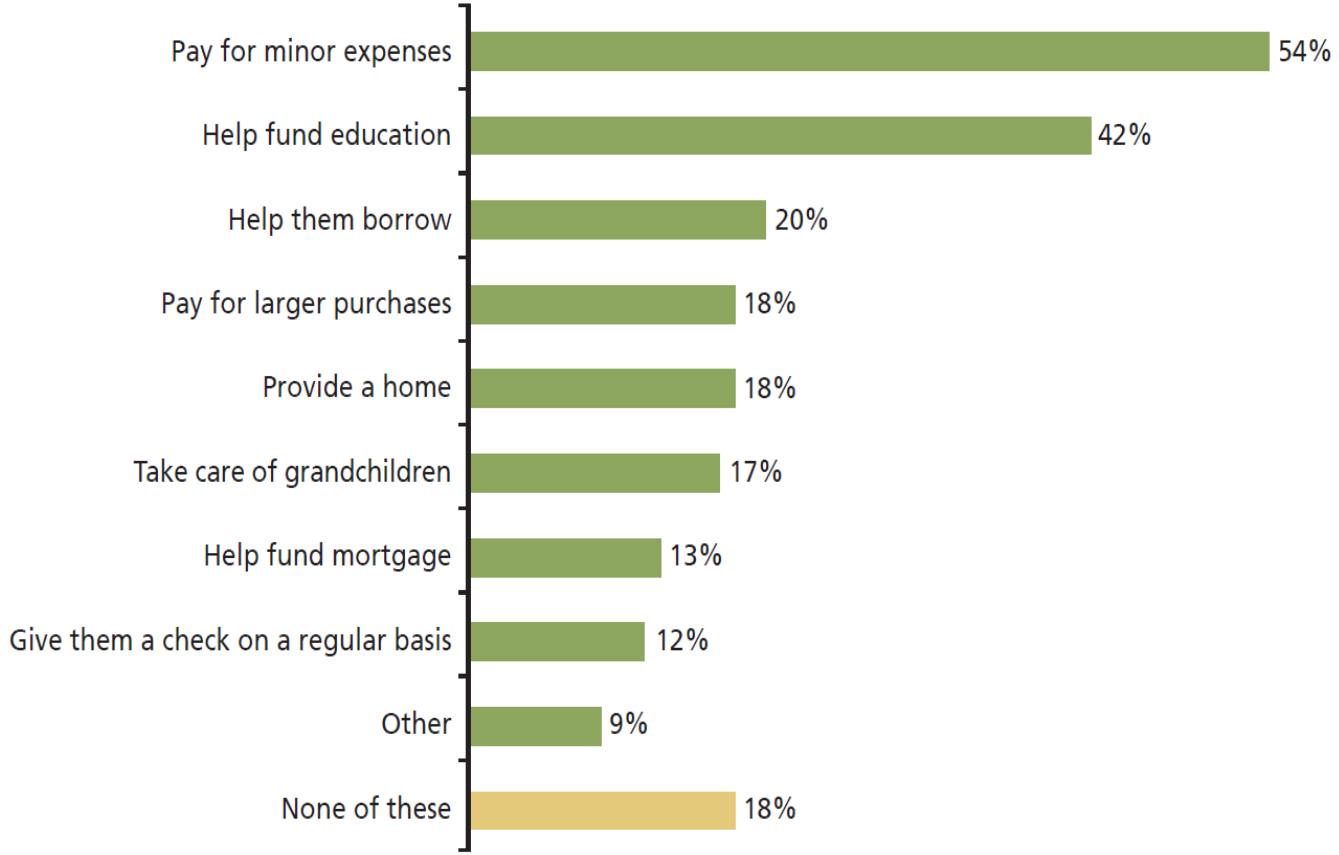
Investor perspectives on asset "buckets"
Question: *"Do you agree or disagree with each of the following regarding the 'buckets' you use in thinking about your assets?"*



UBS

Research

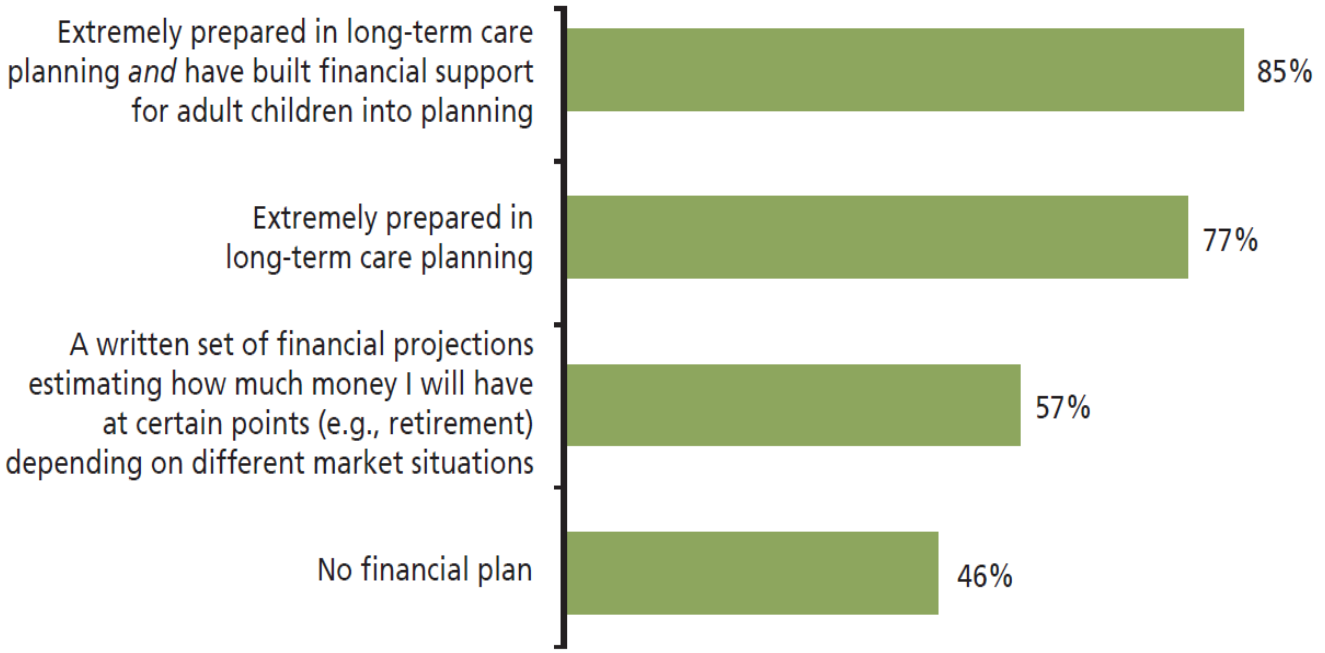
Ways investors support other family generations
Question: *"In which ways do you currently financially support any of your adult children/ grandchildren/parents?"*



Research

Confidence in achieving goals by extent of financial planning

Question: *"Do you have a financial plan that you created with your primary financial advisor? Which of the following best describes your financial plan? How well-prepared do you feel regarding long-term care planning? Please indicate if you have incorporated the financial support you provide your children (beyond education funding) into your financial planning."*



Research

Age effects

Younger investors highly concerned about medical expenses in retirement

Younger investors, surprisingly, are even more concerned than older investors about healthcare costs in retirement and affording long-term care—issues that these younger investors will face decades from now. This focus on truly long-term concerns is likely because of the complexity and uncertainty that surrounds availability and cost of care, and from watching their parents wrestle with these issues now. They are not any more concerned than their older counterparts regarding covering their medical expenses in the next five years. But they are significantly more concerned about affording medical expenses in retirement and how expensive long-term care costs could be. In fact, the only related area where older investors are more worried is potential cuts/changes to Medicare.

UBS

Research

Gender gaps

Men embrace the extension of the traditional "provider" role

Men are more likely than women to feel financially responsible for other generations within their family and derive greater enjoyment out of providing that financial support. Men are significantly more likely than women to feel responsible for the financial well-being of their adult children, grandchildren and parents.

UBS

Research

Asset allocation in private wealth management: Theory versus practice♦

David Schröder

Birkbeck College, University of London
Department of Economics, Mathematics and Statistics
Malet Street, London WC1E 7HX, United Kingdom
Tel: +44 (0)207 631 6408
d.schroeder@bbk.ac.uk

Research

The results of this survey have a number of implications, both for academics and practitioners. First, partly inadequate advisory practice for wealthy individuals suggests that the large mass of retail clients face even more difficulties to obtain sound investment advice. After all, wealth advisors for the upper market segment tend to have fewer clients, and hence more time and resources compared to retail bankers, and should therefore provide better investment recommendations.

Second, private wealth managers should be more willing to adopt contemporary asset allocation models when advising clients. Insufficient advice in private banking is not a consequence of a lack of appropriate investment tools and concepts. Rather, modern allocation strategies are not actually used. More training for practitioners could increase investment returns of private clients significantly, thereby improving client satisfaction and helping financial institutions to differentiate themselves from competitors.

Finally, financial economist should strengthen their efforts in developing asset allocation models that incorporate insights of rigorous economic theory, but that are at the same time viable in practice. One implication of this study is that the most sophisticated theories will probably never be used. Only a sensible mix between financial theory and practical considerations will enhance investment quality for private investors.

Research

Table 3: Evaluation of asset allocation strategies by private wealth managers

Asset allocation strategy	Response rate	(1) Spending objectives	(2) Risk preferences and time horizon	(3) Client communication	Average
Mean-variance analysis	76%	0.95	1.58	1.56	1.36
Black-Litterman allocation model	41%	0.66	1.30	1.15	1.04
Asset liability management	65%	1.34	1.54	1.59	1.49
Goal-based allocation	67%	1.51	1.72	1.61	1.61
Life-cycle portfolio choice	53%	1.28	1.56	1.42	1.42
Portfolio insurance (CPPI, OBPI)	41%	0.98	1.42	1.33	1.24
Dynamic risk budgeting	55%	1.15	1.53	1.33	1.34
Average	57%	1.12	1.52	1.43	

Research

Table 4: Importance of investment risks in private wealth management

Investment risk	Average perceived importance
Inflation risk	3.75
Interest rate risk	4.05
Currency risk	4.16
Stock-market risk	4.78
Business cycle risk	3.39
Income/professional risk	2.61
Risk of underperforming the market	3.15
Longevity risk	2.51
Average response rate: 92.5%	

This table summarizes the private wealth managers' perceived importance of investment risks in private wealth management. The table reports the average score among all responses received. The Likert-type scale goes from 0 to 6 (0=not important, 6=very important).

Research

Table 5: Importance of investment parameters in private wealth management

Investment parameter	Average perceived importance
Client's risk aversion	5.07
Client's investment time horizon	4.93
Nature of the client's income	3.62
Current market conditions	3.54
Client's specific spending objectives	3.48
Client's general spending objectives	3.18
Average response rate: 95.2%	

Research

Table 6: Incorporation of client parameters

Panel A: Risk-aversion	Respondents	Percentage
Asset allocation derived from the client's utility function	63	40%
Risk budgeting (in terms of, e.g., volatility, VaR, CVaR.)	73	46%
Floor on wealth (maximum drawdown)	67	43%
Portfolio optimization including risk objectives	68	43%
Other techniques	8	5%
Total	157	100%
Panel B: Investment time-horizon		
Considering the life-cycle of assets	73	48%
Mean reverting modeling of asset classes such as stocks	42	27%
Respecting constraints at the time horizon, e.g., dynamic risk budget management	52	34%
Other techniques	9	6%
Total	153	100%
Panel C: Spending objectives		
Controlling the risk related to the spending objectives	51	33%
Analysis of capacity to meet future spending objectives	77	50%
Separation between a portfolio to seek performance and a portfolio to cover risks related to spending objectives	64	42%
Other techniques	7	5%
Total	153	100%
Panel D: Income risk		
Yes	100	64%
No	56	36%
Total	156	100%

Research

Table 7: Dynamic asset allocation

Panel A: Rebalancing intervals	Respondents	Percentage
Frequent rebalancing of asset weights	103	69%
Buy-and hold strategy over longer periods	47	31%
Total	150	100%
Panel B: Optimization technique for asset weights		
Multi-period optimisation that takes into account the future evolution asset weighs	61	45%
Repeated single-period optimisation at different points in time	74	55%
Total	153	100%
Panel C: Implementation of life-cycle investments		
Use of existing target-date funds that match a given client profile	41	30%
Designing a specific allocation for each client	94	70%
Total	135	100%

This table summarizes how private wealth managers implement dynamic asset allocation strategies. Panel A reports how often wealth managers rebalance the portfolio of their clients, panel B reports the usage of optimization techniques for asset weights over long time horizons, and panel C shows how wealth managers implement life-cycle investments. The percentages refer to the number of respondents to each question. All questions are multiple-choice questions (select one).

Research

Table 8: Quantitative market models

Usage of quantitative market models	Respondents	Percentage (out of total)	Percentage (out of sub-sample)
Yes, out of which (select many):	34	23%	
Correlated random walks	10	7%	33%
Mean-reverting models	19	13%	63%
Markov-switching models	3	2%	10%
Other models	10	7%	33%
Total	30		100%
No	116	77%	
Total	150	100%	

This table summarizes the private wealth managers' usage of long-run quantitative market models. The percentages refer to the number of respondents to each question. The main question is multiple-choice (select one), the sub-question is multiple-choice (select many).

The investment Building blocks

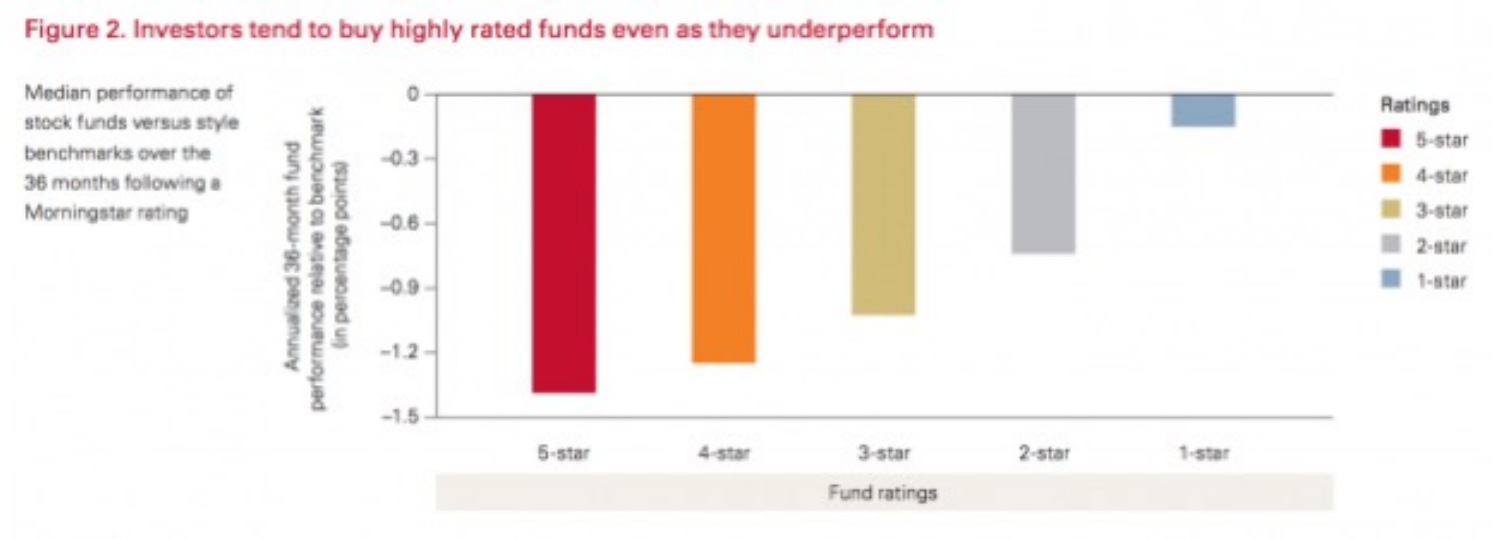
All ingredients matters…

Asset Classes

Class	Benefits	Risks
Cash	• Liquid asset providing stable growth • Best for short-term conservative investors	• Lower expected returns than the other asset classes • Cash returns do not always keep up with inflation
Bonds	• Returns have historically been better than cash • Bonds are less volatile than equities	• Returns are historically lower than equities • Vulnerable to inflation and changes in interest rates
Property	• The risk and return of property has historically been between that of equities and bonds but can outperform or underperform these asset classes at times.	• Illiquid asset class • Property bubbles can inflict large losses
Equities	• Often provides the highest return compared to the other asset classes, but also often at the highest risk. • Suitable for long-term investors	• More volatile than other asset classes • Can suffer from market crashes

Assets & Returns

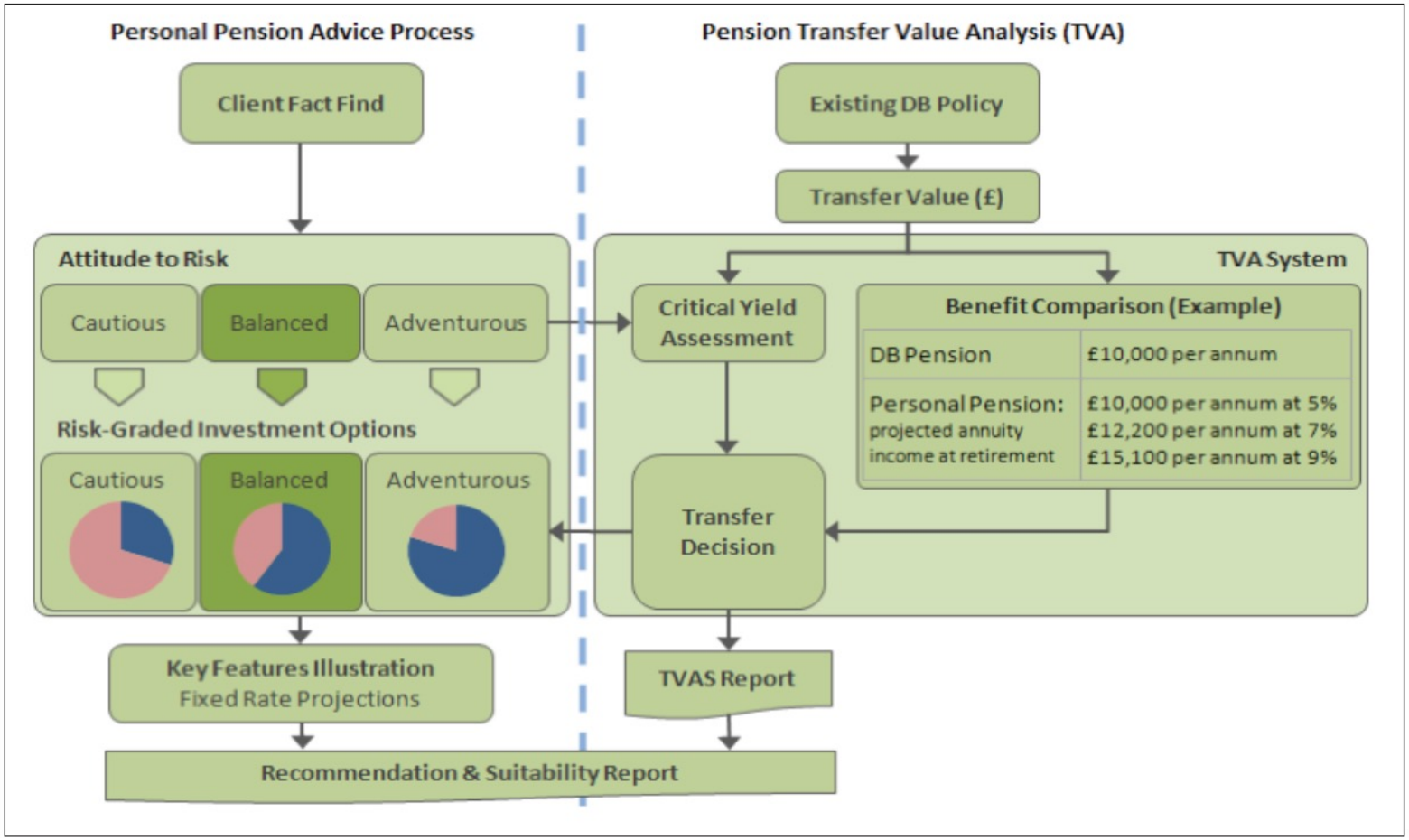
Asset Classes



This chart comes from the first of four sections of the report which are designed to help an investor put together a coherent and comprehensive investment plan:

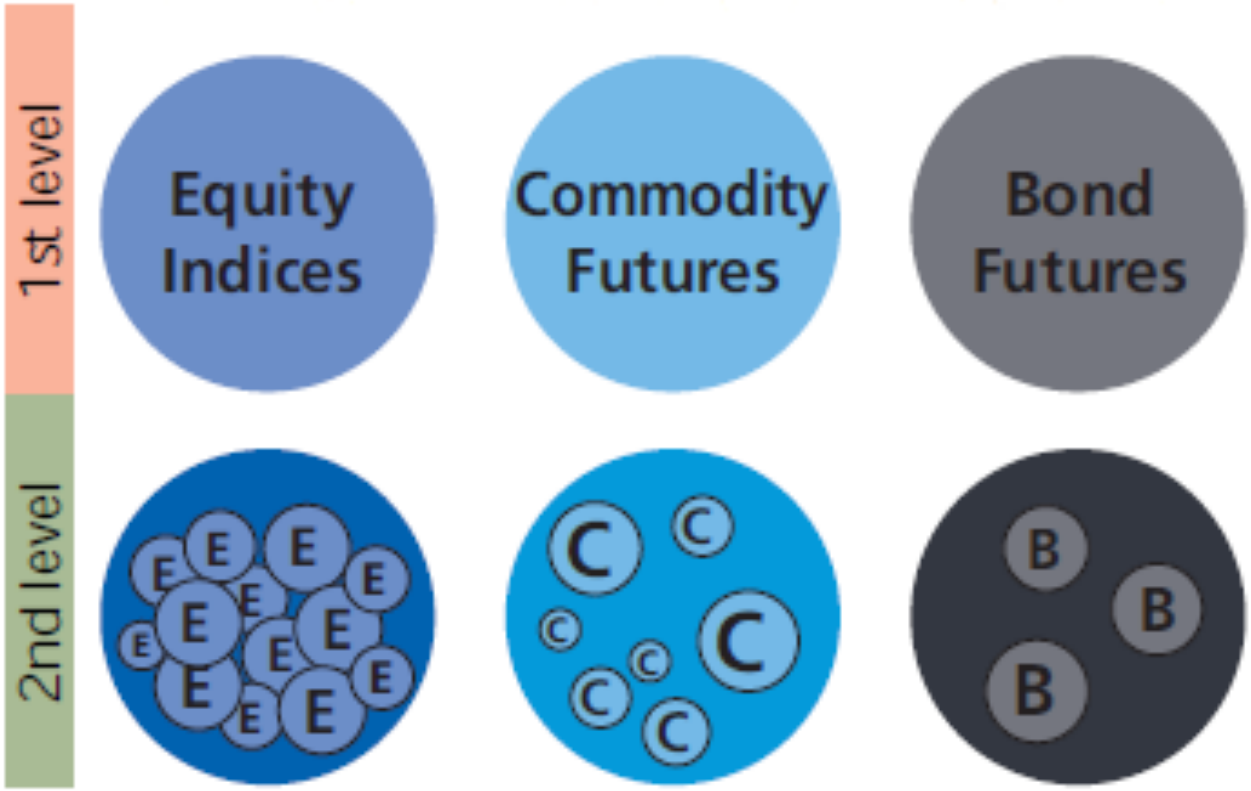
- Goals: create clear and appropriate investment goals;
- Balance: develop a suitable asset allocation using broadly diversified funds;
- Cost: minimize costs;
- Discipline: maintain perspective and long-term discipline.

Transfer Value



Diversification

Chart 1: Diversification on two levels



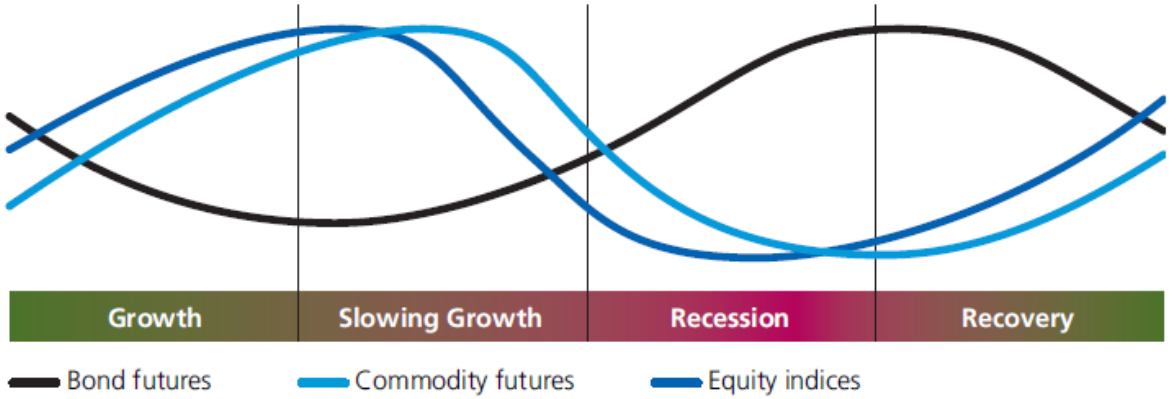
Zürcher Kantonalbank

Source: Zürcher Kantonalbank

Timing

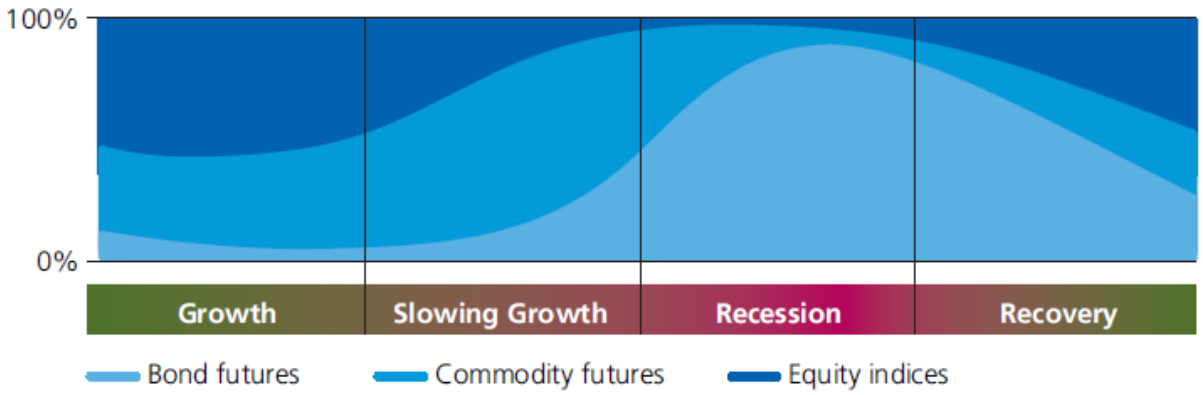
Zürcher Kantonalbank

Chart 2: Asset classes during an economic cycle



Source: Zürcher Kantonalbank

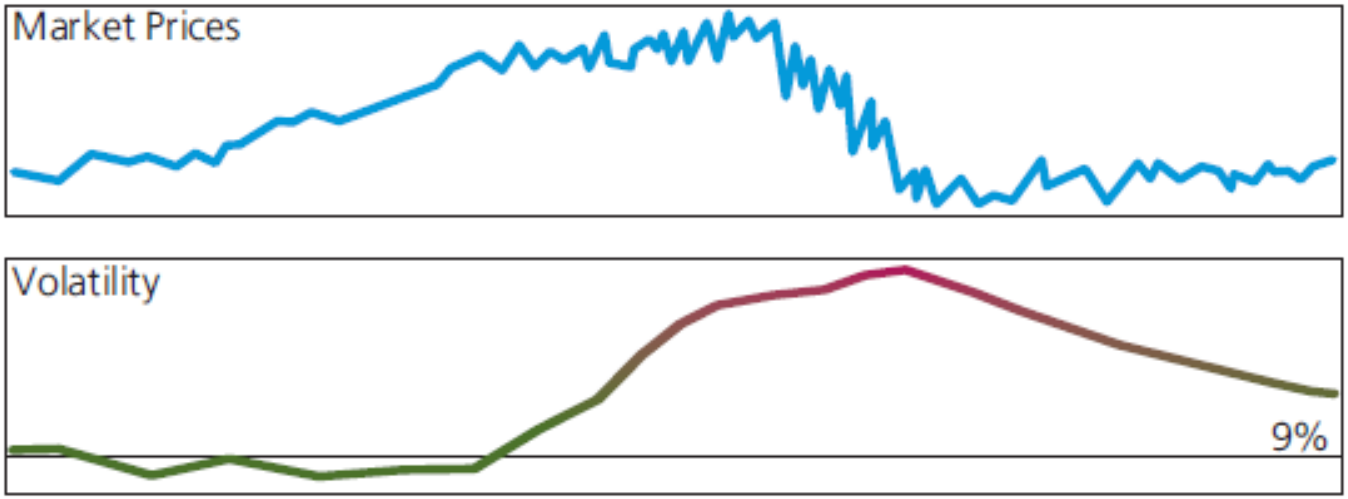
Chart 3: Asset Allocation



Source: Zürcher Kantonalbank

Volatility

Chart 4: Volatility and market prices



Source: Zürcher Kantonalbank

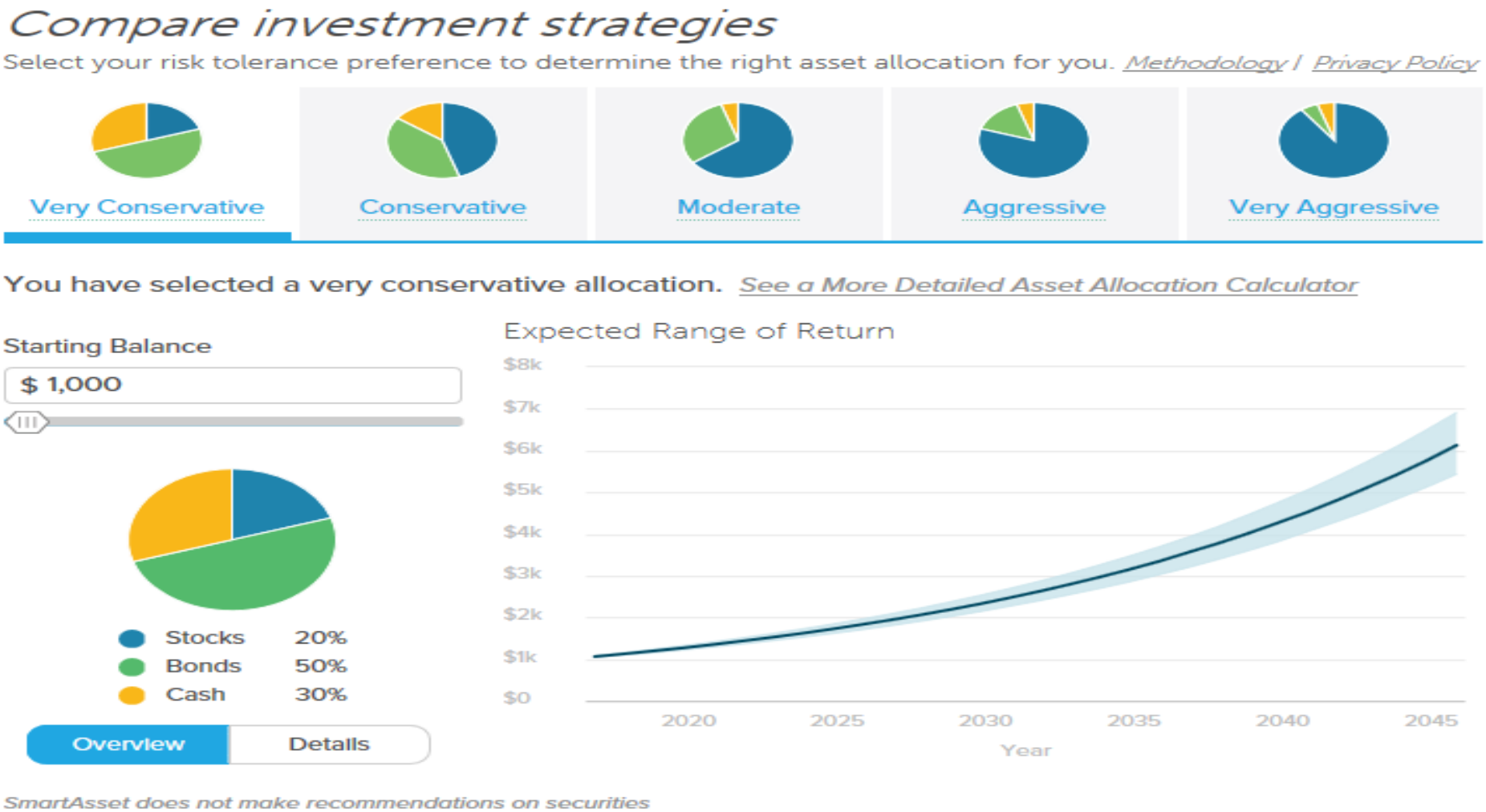
Zürcher Kantonalbank

Periodic Returns

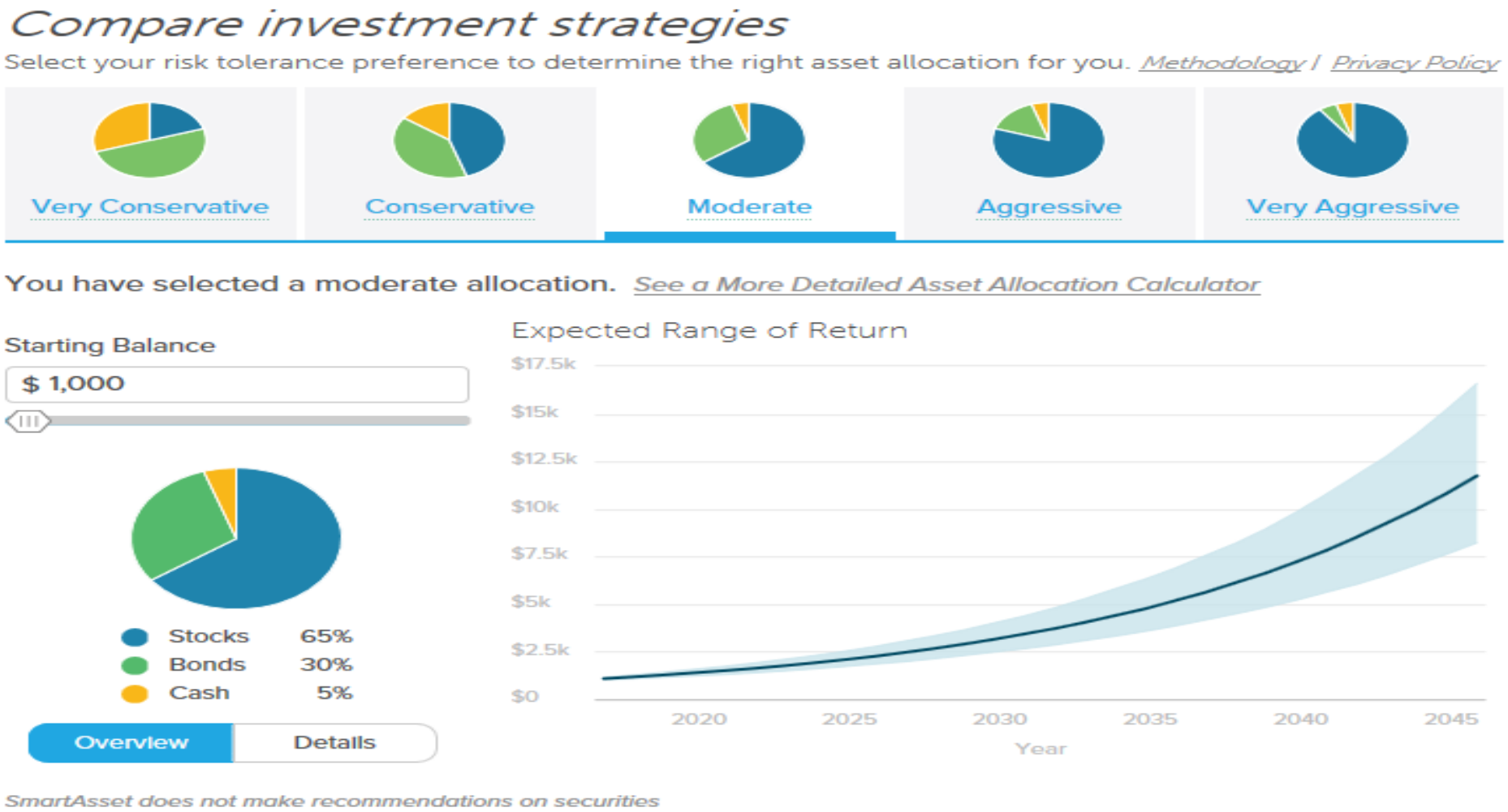
2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Emerging Market Equity 55.82%	Real Estate 37.96%	Emerging Market Equity 34.00%	Real Estate 42.12%	Emerging Market Equity 39.38%	U.S. Fixed Income 5.24%	Emerging Market Equity 78.51%	Small Cap Equity 26.85%	U.S. Fixed Income 7.84%	Real Estate 27.73%	Small Cap Equity 38.82%	Real Estate 15.02%	Large Cap Equity 1.38%	Small Cap Equity 21.31%	Emerging Market Equity 37.28%	Cash Equivalent 1.87%	Large Cap Equity 31.49%	Small Cap Equity 19.96%	Large Cap Equity 28.71%	Cash Equivalent 1.46%
Small Cap Equity 47.25%	Emerging Market Equity 25.55%	Real Estate 15.35%	Emerging Market Equity 32.17%	Dev ex-U.S. Equity 12.44%	Glbl ex-U.S. Fixed 4.39%	High Yield 58.21%	Real Estate 19.63%	High Yield 4.98%	Emerging Market Equity 18.23%	Large Cap Equity 32.39%	Large Cap Equity 13.69%	U.S. Fixed Income 0.55%	High Yield 17.13%	Dev ex-U.S. Equity 24.21%	U.S. Fixed Income 0.01%	Small Cap Equity 25.52%	Large Cap Equity 18.40%	Real Estate 26.09%	High Yield -11.19%
Real Estate 40.69%	Dev ex-U.S. Equity 20.38%	Dev ex-U.S. Equity 14.47%	Dev ex-U.S. Equity 25.71%	Glbl ex-U.S. Fixed 11.03%	Cash Equivalent 2.06%	Real Estate 37.13%	Emerging Market Equity 18.88%	Glbl ex-U.S. Fixed 4.36%	Dev ex-U.S. Equity 16.41%	Dev ex-U.S. Equity 21.02%	U.S. Fixed Income 5.97%	Cash Equivalent 0.05%	Large Cap Equity 11.96%	Large Cap Equity 21.83%	High Yield -2.08%	Dev ex-U.S. Equity 22.49%	Emerging Market Equity 18.31%	Small Cap Equity 14.82%	U.S. Fixed Income -13.01%
Dev ex-U.S. Equity 39.42%	Small Cap Equity 18.33%	Large Cap Equity 4.91%	Small Cap Equity 18.37%	U.S. Fixed Income 6.97%	High Yield -26.16%	Dev ex-U.S. Equity 33.67%	High Yield 15.12%	Large Cap Equity 2.11%	Small Cap Equity 16.35%	High Yield 7.44%	Small Cap Equity 4.89%	Real Estate -0.79%	Emerging Market Equity 11.19%	Small Cap Equity 14.65%	Glbl ex-U.S. Fixed -2.15%	Real Estate 21.91%	Glbl ex-U.S. Fixed 10.11%	Dev ex-U.S. Equity 12.62%	Dev ex-U.S. Equity -14.29%
High Yield 28.97%	Glbl ex-U.S. Fixed 12.54%	Small Cap Equity 4.55%	Large Cap Equity 15.79%	Large Cap Equity 5.49%	Small Cap Equity -33.79%	Small Cap Equity 27.17%	Large Cap Equity 15.06%	Cash Equivalent 0.10%	Large Cap Equity 16.00%	Real Estate 3.67%	High Yield 2.45%	Dev ex-U.S. Equity -3.04%	Real Estate 4.06%	Glbl ex-U.S. Fixed 10.51%	Large Cap Equity -4.38%	Emerging Market Equity 18.44%	Dev ex-U.S. Equity 7.59%	High Yield 5.28%	Large Cap Equity -18.11%
Large Cap Equity 28.68%	High Yield 11.13%	Cash Equivalent 3.07%	High Yield 11.85%	Cash Equivalent 5.00%	Large Cap Equity -37.00%	Large Cap Equity 26.47%	Dev ex-U.S. Equity 8.95%	Small Cap Equity -4.18%	High Yield 15.81%	Cash Equivalent 0.07%	Cash Equivalent 0.03%	Small Cap Equity -4.41%	Dev ex-U.S. Equity 2.75%	Real Estate 10.36%	Real Estate -5.63%	High Yield 14.32%	U.S. Fixed Income 7.51%	Cash Equivalent 0.05%	Glbl ex-U.S. Fixed -18.70%
Glbl ex-U.S. Fixed 19.36%	Large Cap Equity 10.88%	High Yield 2.74%	Glbl ex-U.S. Fixed 8.16%	High Yield 1.87%	Dev ex-U.S. Equity -43.56%	Glbl ex-U.S. Fixed 7.53%	U.S. Fixed Income 6.54%	Real Estate -6.46%	U.S. Fixed Income 4.21%	U.S. Fixed Income -2.02%	Emerging Market Equity -2.19%	High Yield -4.47%	U.S. Fixed Income 2.65%	High Yield 7.50%	Small Cap Equity -11.01%	U.S. Fixed Income 8.72%	High Yield 7.11%	U.S. Fixed Income -1.54%	Emerging Market Equity -20.09%
U.S. Fixed Income 4.10%	U.S. Fixed Income 4.34%	U.S. Fixed Income 2.43%	Cash Equivalent 4.85%	Small Cap Equity -1.57%	Real Estate -48.21%	U.S. Fixed Income 5.93%	Glbl ex-U.S. Fixed 4.95%	Dev ex-U.S. Equity -12.21%	Glbl ex-U.S. Fixed 4.09%	Emerging Market Equity -2.60%	Glbl ex-U.S. Fixed -3.09%	Glbl ex-U.S. Fixed -6.02%	Glbl ex-U.S. Fixed 1.49%	U.S. Fixed Income 3.54%	Dev ex-U.S. Equity -14.09%	Glbl ex-U.S. Fixed 5.09%	Cash Equivalent 0.67%	Emerging Market Equity -2.54%	Small Cap Equity -20.44%
Cash Equivalent 1.15%	Cash Equivalent 1.33%	Glbl ex-U.S. Fixed -8.65%	U.S. Fixed Income 4.33%	Real Estate -7.39%	Emerging Market Equity -53.33%	Cash Equivalent 0.21%	Cash Equivalent 0.13%	Emerging Market Equity -18.42%	Cash Equivalent 0.11%	Glbl ex-U.S. Fixed -3.08%	Dev ex-U.S. Equity -4.32%	Emerging Market Equity -14.92%	Cash Equivalent 0.33%	Cash Equivalent 0.86%	Emerging Market Equity -14.57%	Cash Equivalent 2.28%	Real Estate -9.04%	Glbl ex-U.S. Fixed -7.05%	Real Estate -25.10%

The Callan Periodic Table of Investment Returns: Year-End 2022

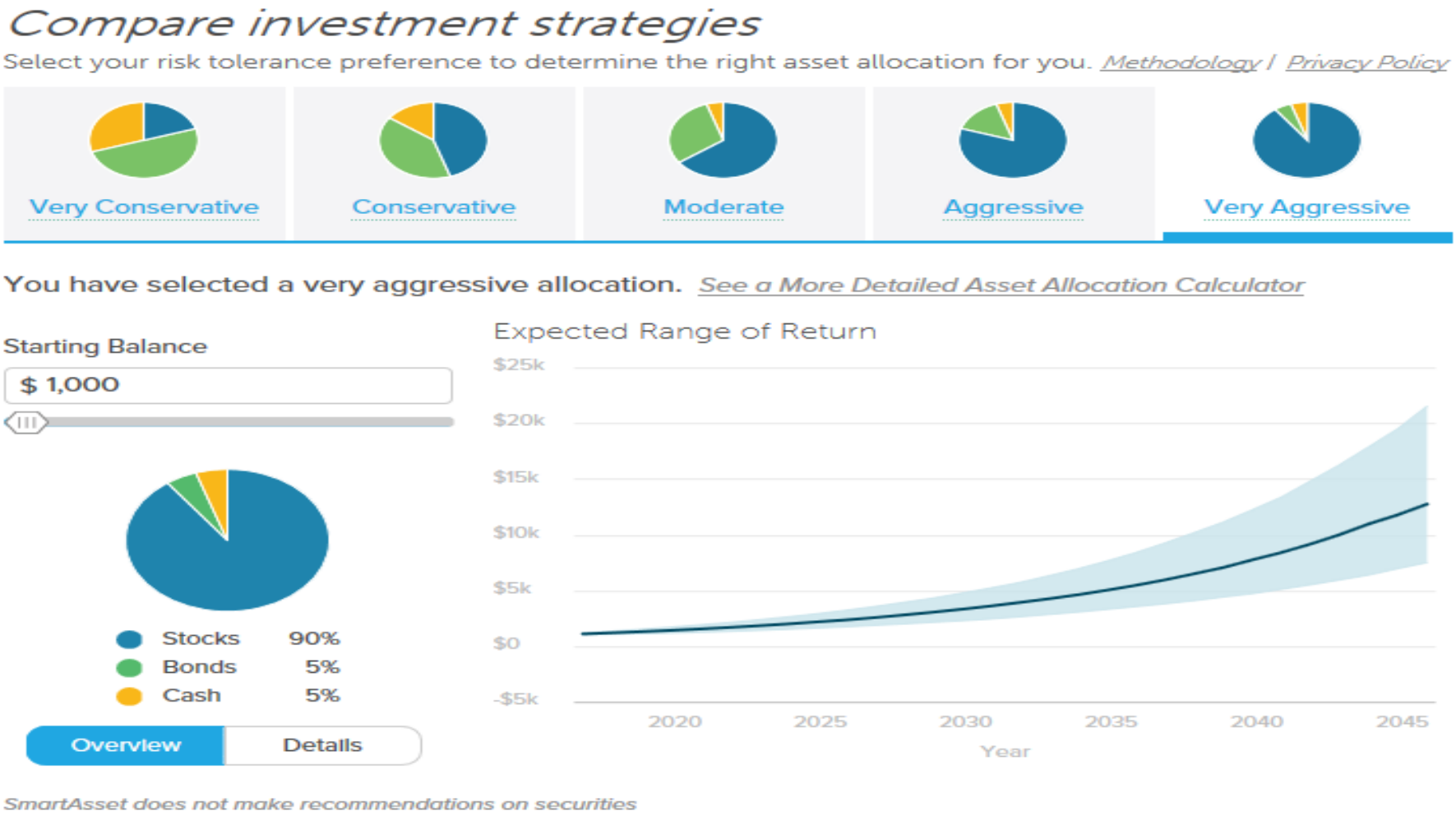
Strategies


Compare investment strategies
Select your risk tolerance preference to determine the right asset allocation for you. Methodology / Privacy Policy
Very Conservative
Conservative
Moderate
Aggressive
Very Aggressive
You have selected a very conservative allocation. See a More Detailed Asset Allocation Calculator
Starting Balance
$ 1,000
Stocks 20%
Bonds 50%
Cash 30%
Overview
Details
Expected Range of Return
$8k
$7k
$6k
$5k
$4k
$3k
$2k
$1k
$0
2020
2025
2030
2035
2040
2045
Year
SmartAsset does not make recommendations on securities

Strategies


Compare investment strategies
Select your risk tolerance preference to determine the right asset allocation for you. Methodology / Privacy Policy
Very Conservative
Conservative
Moderate
Aggressive
Very Aggressive
You have selected a moderate allocation. See a More Detailed Asset Allocation Calculator
Starting Balance
$ 1,000
Stocks 65%
Bonds 30%
Cash 5%
Overview
Details
Expected Range of Return
$17.5k
$15k
$12.5k
$10k
$7.5k
$5k
$2.5k
$0
2020
2025
2030
2035
2040
2045
Year
SmartAsset does not make recommendations on securities

Strategies


Compare investment strategies
Select your risk tolerance preference to determine the right asset allocation for you. Methodology / Privacy Policy
Very Conservative
Conservative
Moderate
Aggressive
Very Aggressive
You have selected a very aggressive allocation. See a More Detailed Asset Allocation Calculator
Starting Balance
$ 1,000
Stocks 90%
Bonds 5%
Cash 5%
Overview
Details
Expected Range of Return
$25k
$20k
$15k
$10k
$5k
$0
-$5k
2020
2025
2030
2035
2040
2045
Year
SmartAsset does not make recommendations on securities

Modelling liabilities/Risk

Unless you measure it, you can't manage it…

Equation

Risk Management

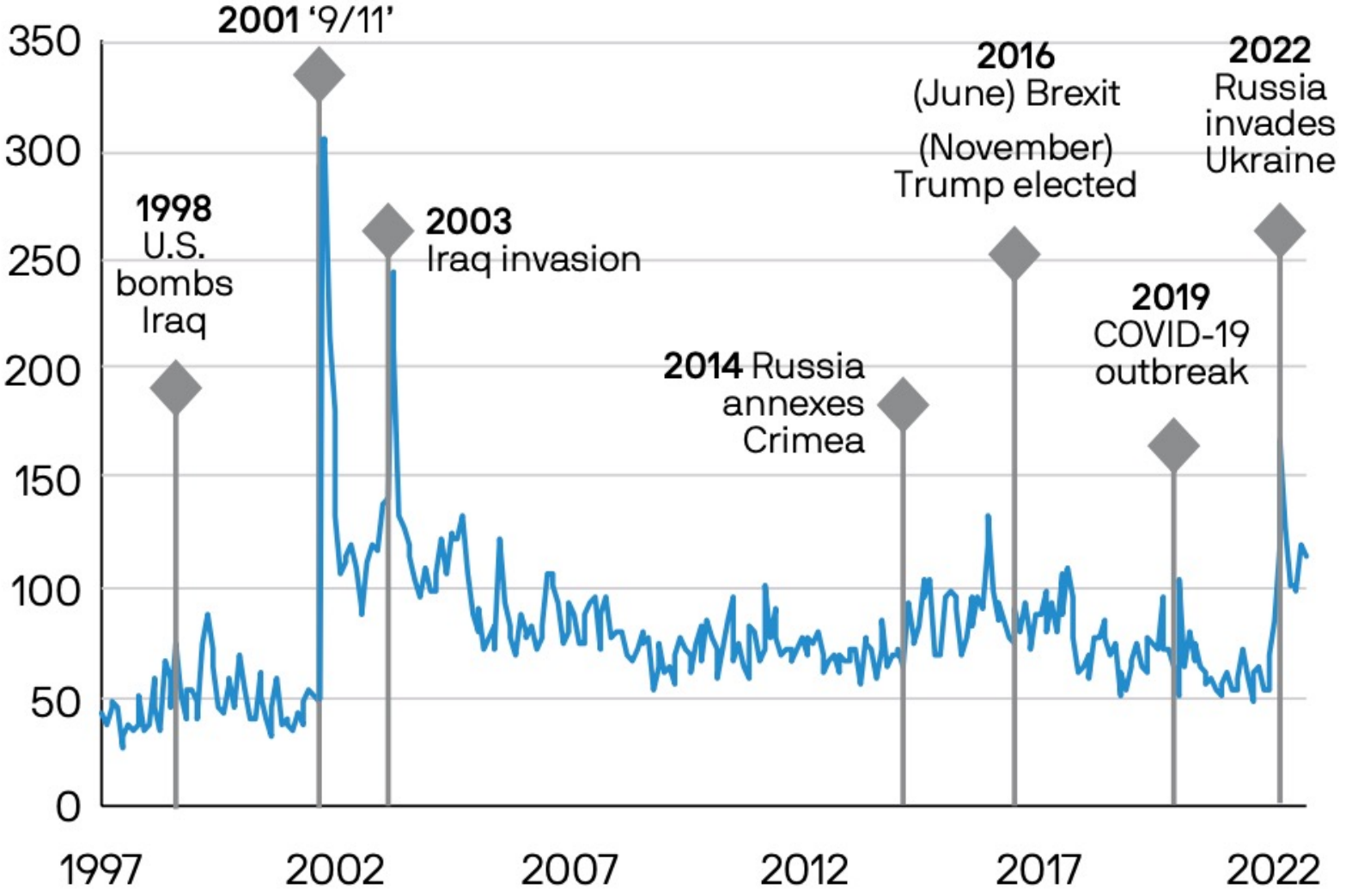
SELF STORAGE
SS RMA
RISK MANAGEMENT ASSOCIATION

Risk Management

SELF STORAGE
SS RMA
RISK MANAGEMENT ASSOCIATION

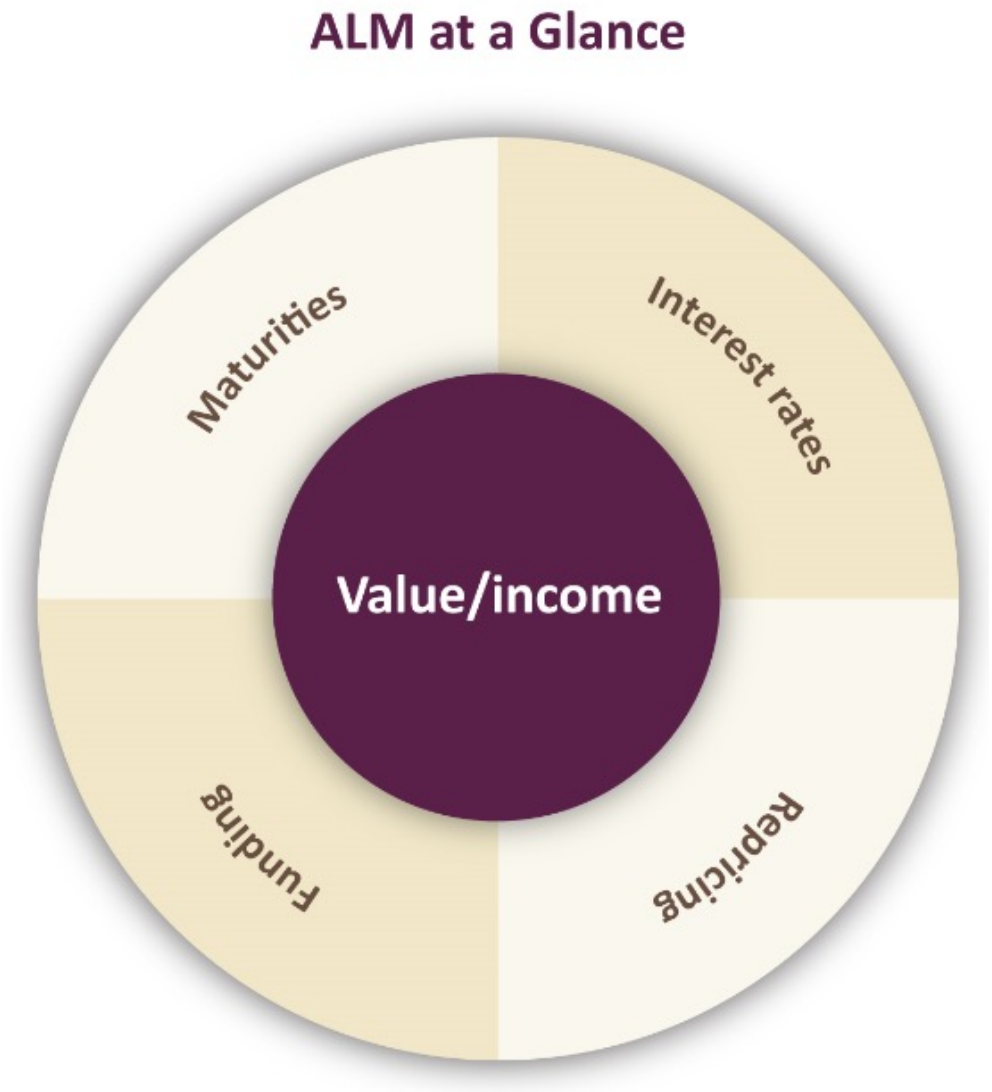
Risk Management

Global geopolitical risk



Source: Federal Reserve, IFR, Measuring Geopolitical Risk – Dairo Caldara and Matteo

Risk Management

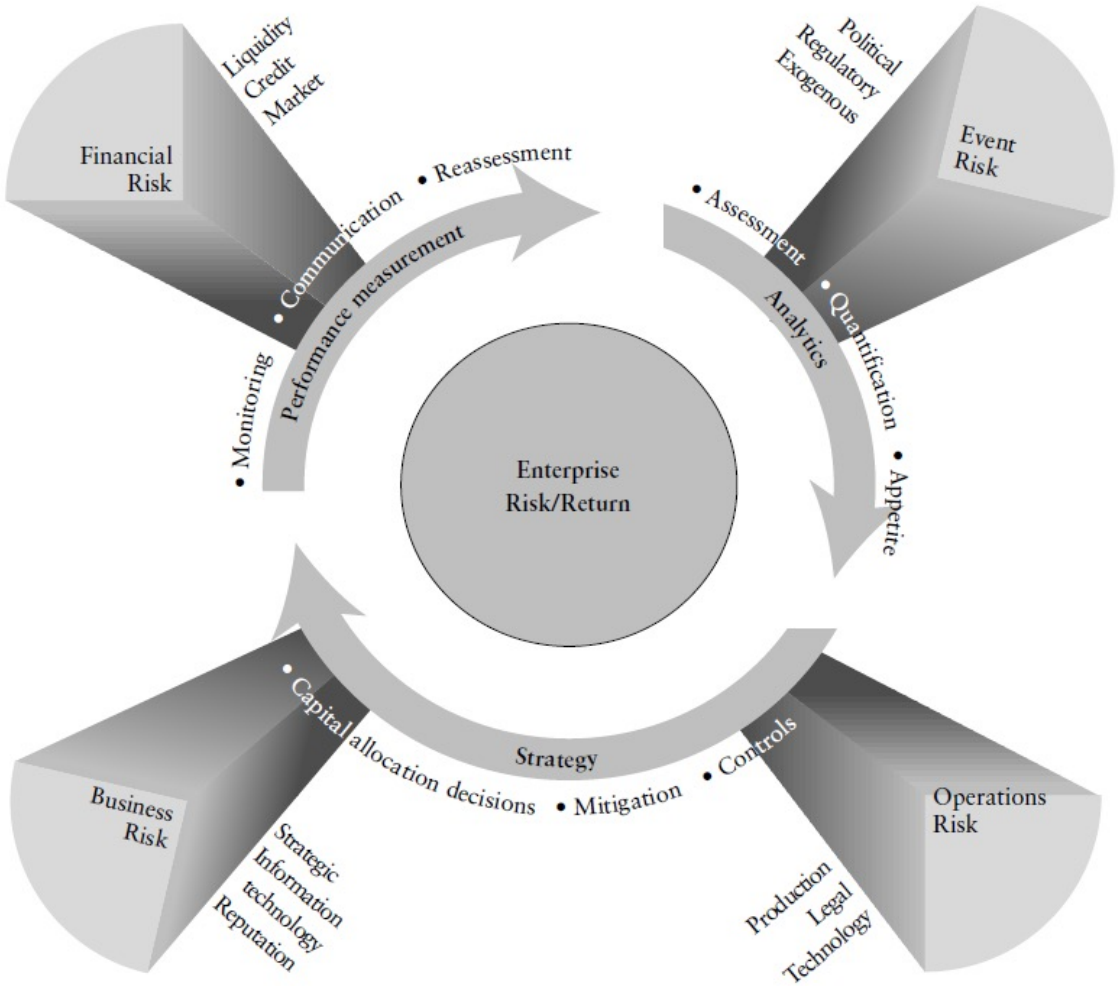


Risk Management

The Management of Contingent Liabilities: A Risk Management Framework for National Governments

Christopher M. Lewis and Ashoka Mody

Integrated enterprise risk management: Optimizing enterprise returns under uncertainty



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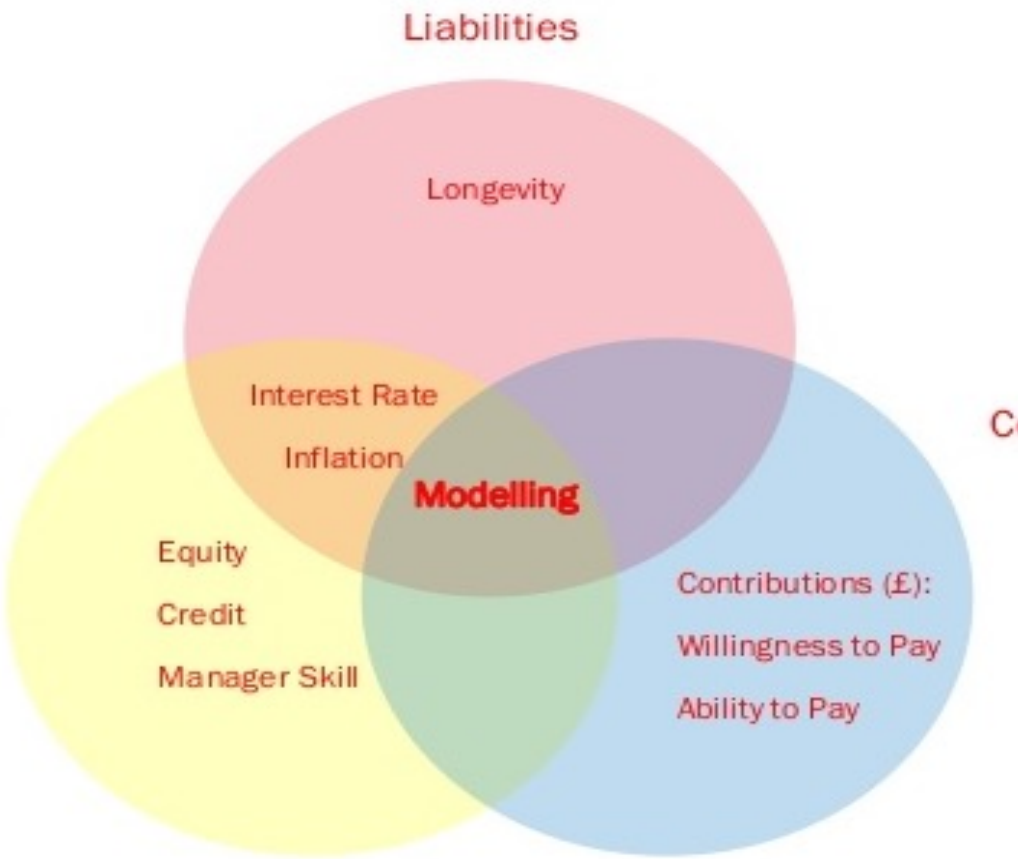
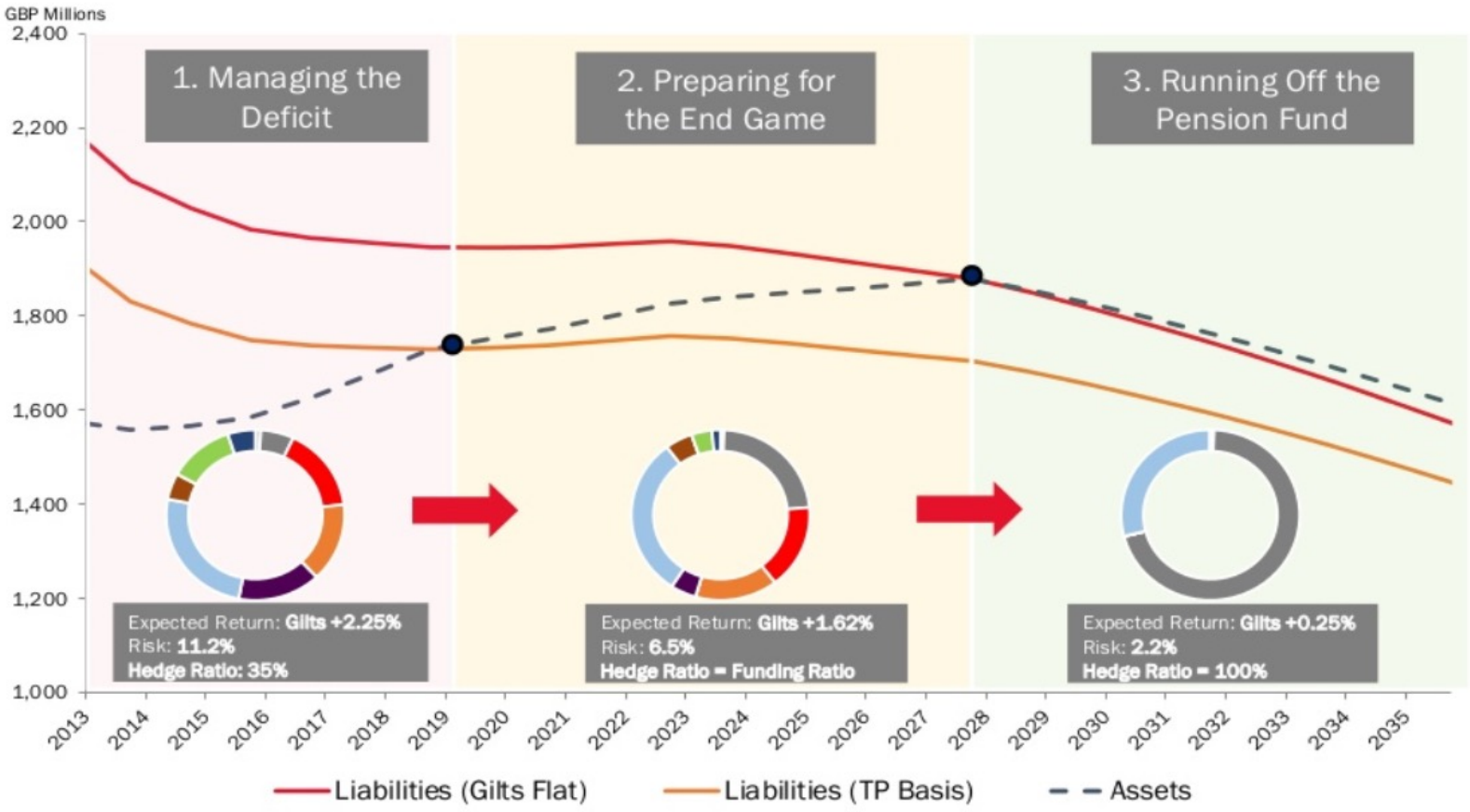
Risk Management

What are the Key Risks to a Pension Fund?



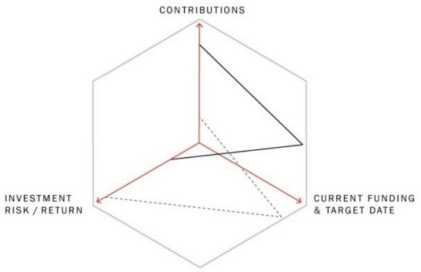
Pension Funds

What are the Different Stages of a Defined Benefit Pension Fund?

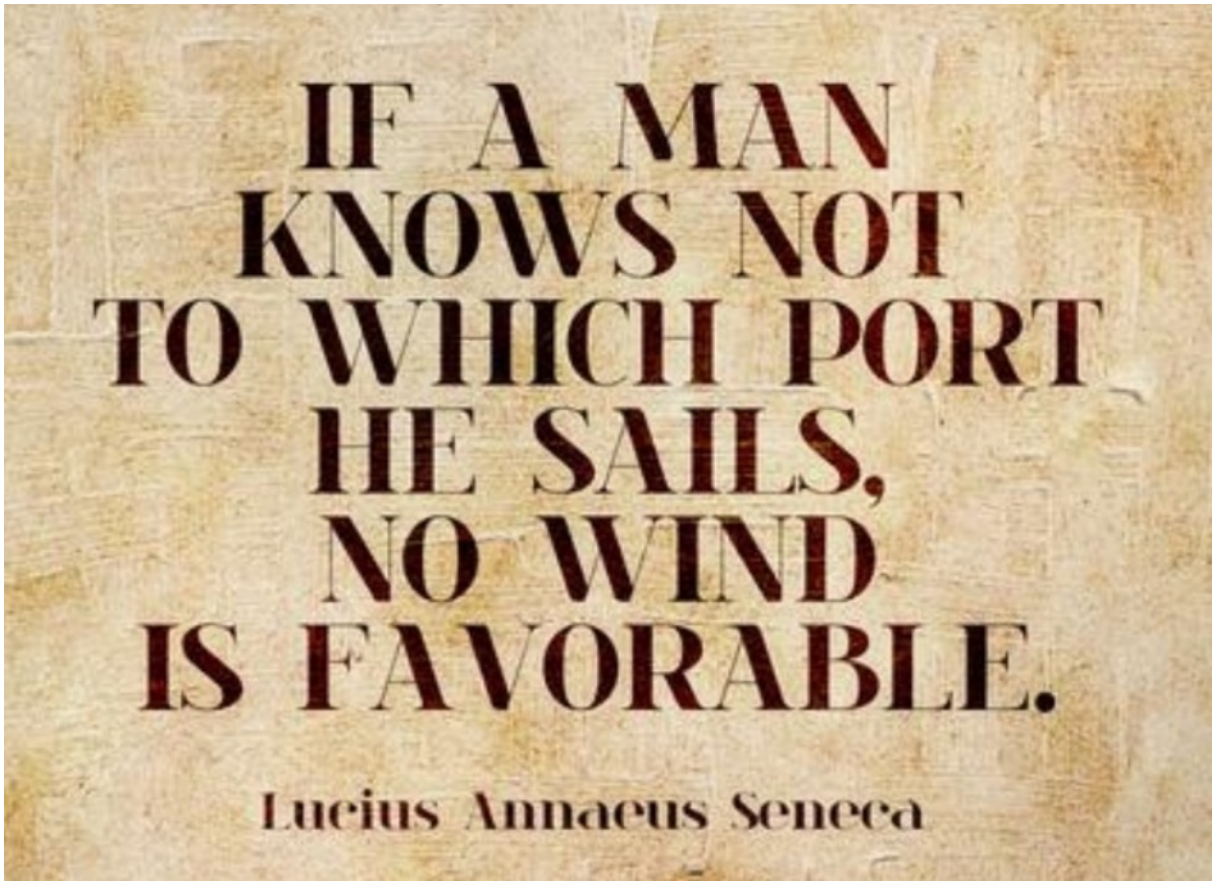


Risk Ratio

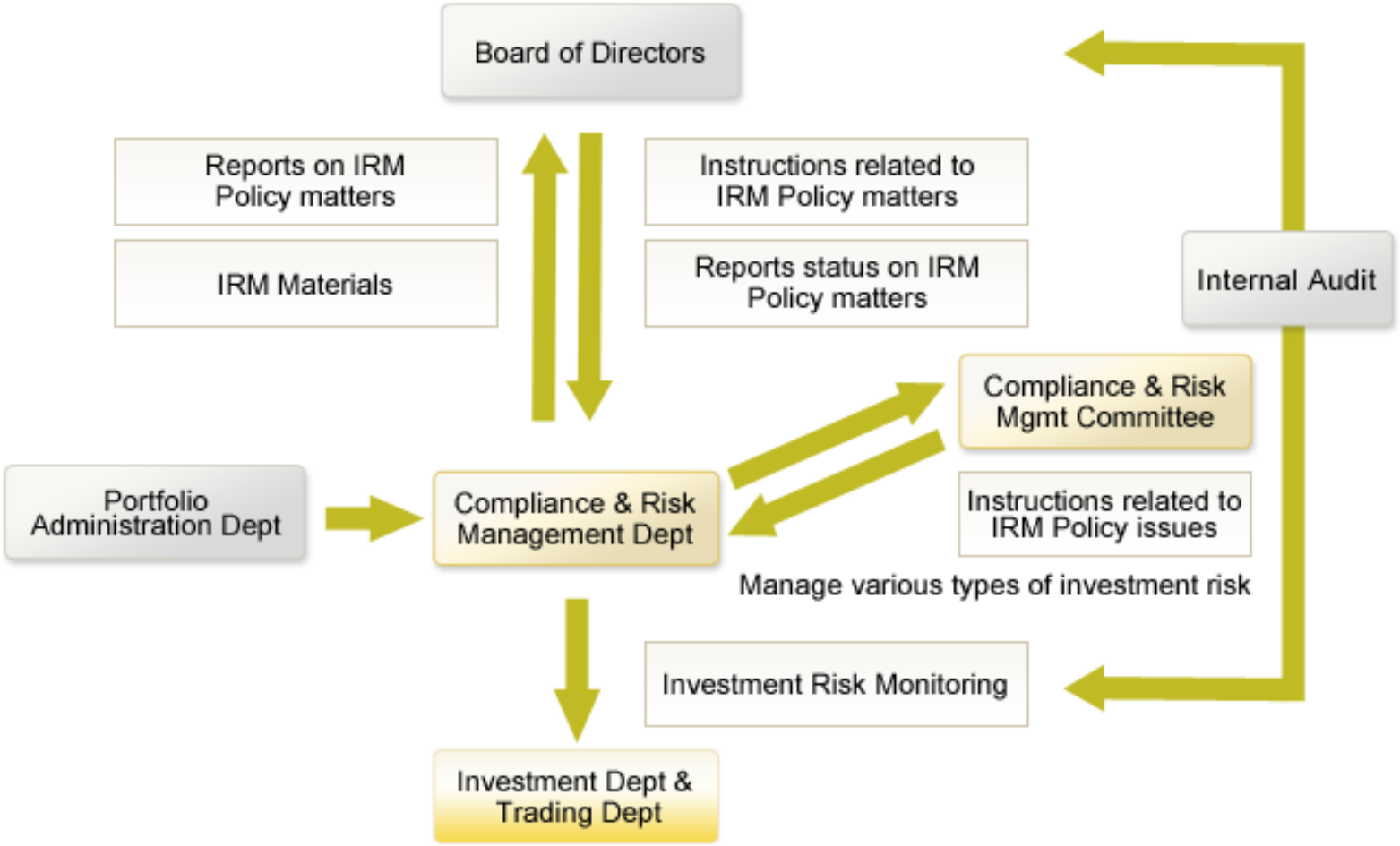

Funding Ratio at Risk
REDINGTON
Percentage of Total Liabilities
15
12.5
10
7.5
5
2.5
0
1.08%
0.53%
0.06%
2.68%
0.66%
0.44%
1.79%
2.90%
3.13%
7.52%
5.70%
Equity Risk
Alternative Risk
FX Risk
Credit Risk
Insurance Risk
Interest Rate Risk
Inflation Risk
Interest Rate Basis Risk
Inflation Basis Risk
Diversification
Total
Risk Type


CONTRIBUTIONS
INVESTMENT RISK / RETURN
CURRENT FUNDING & TARGET DATE

REDINGTON


IF A MAN
KNOWS NOT
TO WHICH PORT
HE SAILS,
NO WIND
IS FAVORABLE.
Lucius Annaeus Seneca

SOMPO HOLDINGS
Sompo Japan Nipponkoa Asset Management



R-Squared

- **Hybrid** models give the best of all worlds. By combining time series, active and statistical factors, even transient factor effects are captured and stock risk really is stock-related!

- The **leader** in risk modelling with an unrivalled record of innovation since 1980, R-Squared is the **pioneer** of customised risk models since 2003. More...

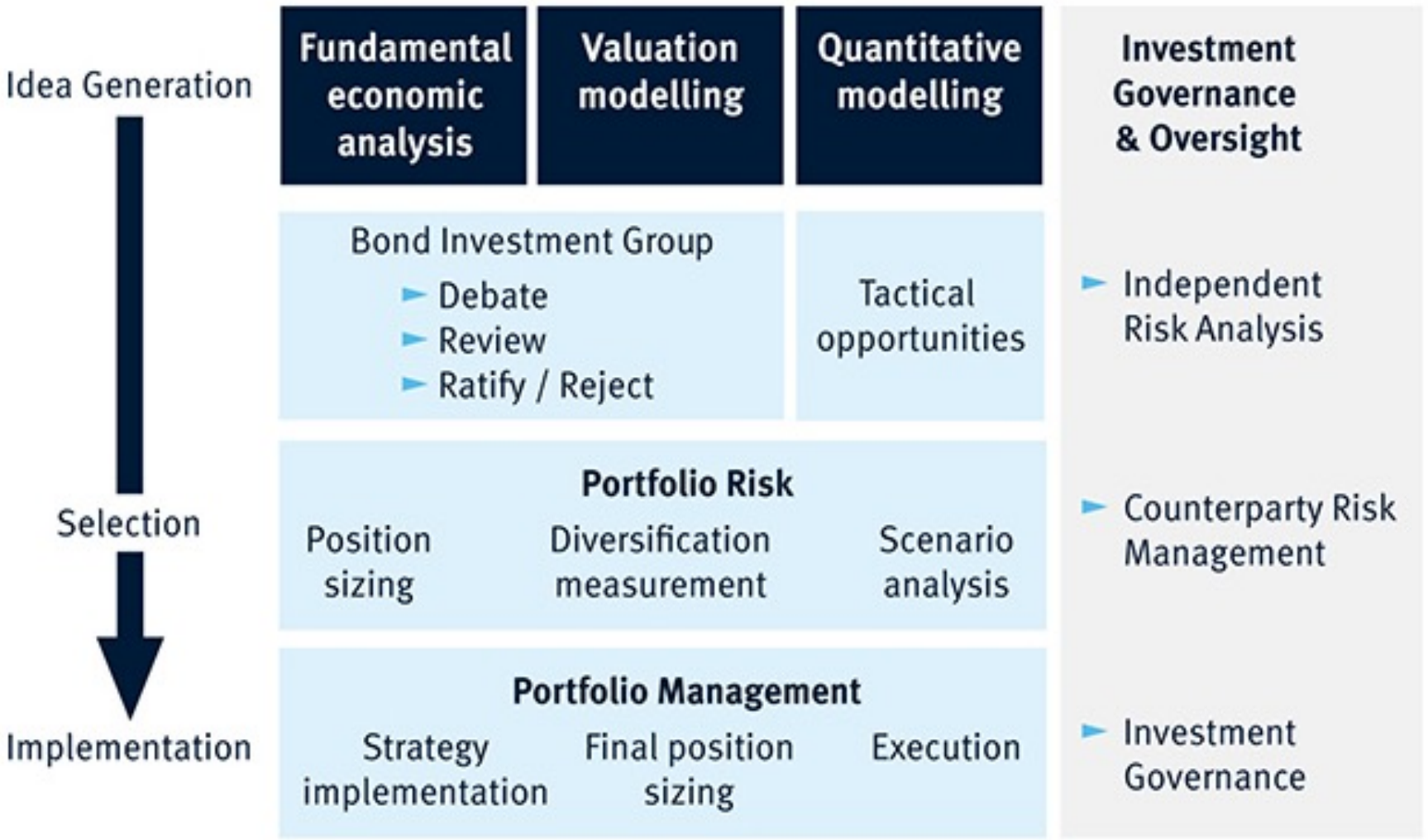
- We emphasise the **quality of our covariance matrices**, using **time series factors** to give stable and accurate risk forecasts. More...

- R-Squared risk models are designed specifically to **harness your unique skill**, thereby **enhancing your performance**. More...

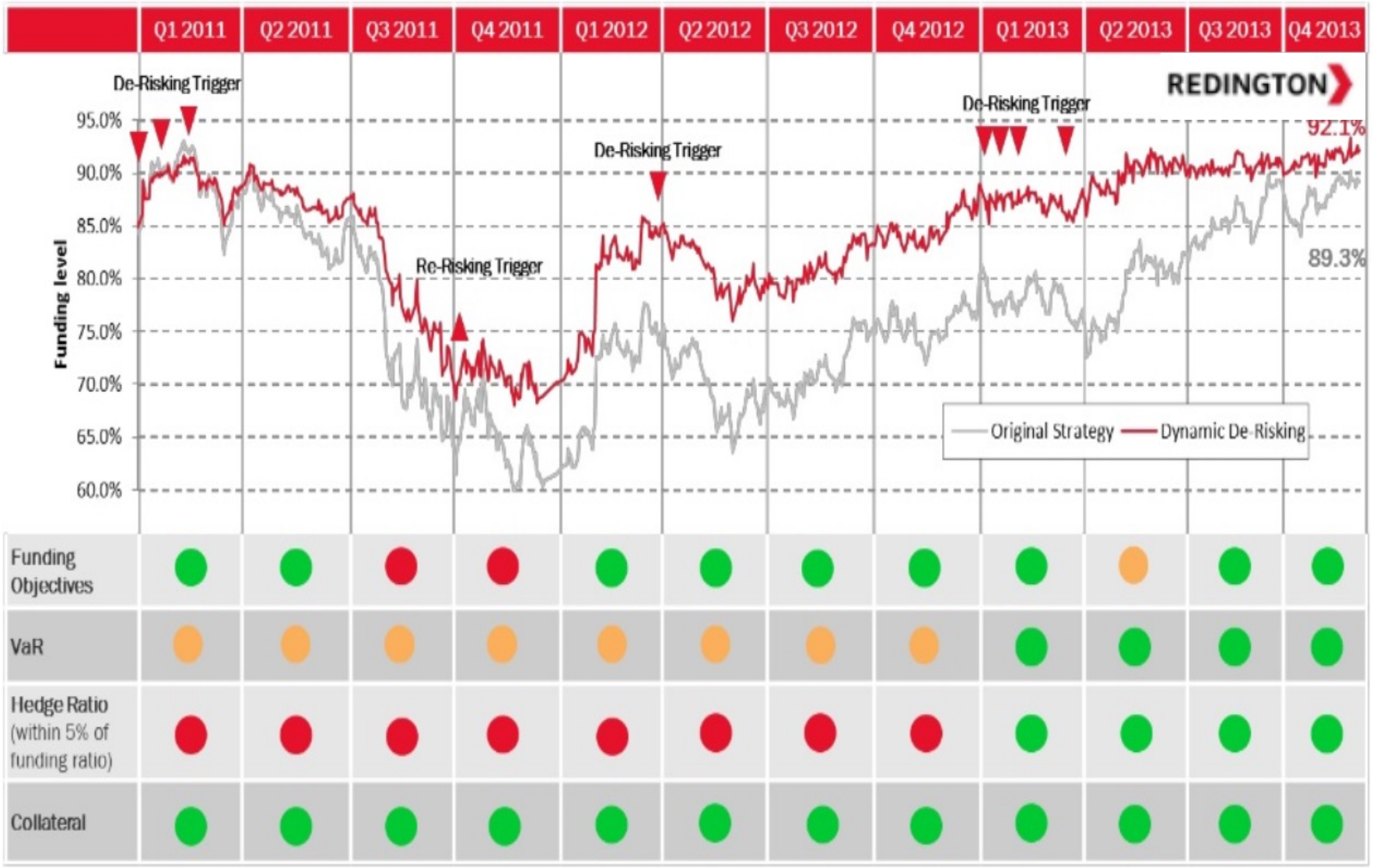
- **Realistic betas** that are statistically significant give **realistic risk forecasts**. We eschew popular, but simplistic, dummy variables. More...

- **Multi-manager** gives valid and relevant risk profiles at fund and portfolio level even without full transparency of the underlying portfolios. More...

In the Process



Risk Adjustment



Example


11) View
12) Actions
13) Settings
14) Trade Simulation
Portfolio & Risk Analytics
Characteristics
Holdings
VaR
Scenarios
Tracking Error/Volatility
Performance
Attribution
Main View
Allocation
Port ATTICA DYNAM vs Default (None by Asset Type > in EUR
As Of 04/07/16
Date
Trend
Name % Wgt Mkt Val Pos Px Close Crncy
ATTICA DYNAMIC ASSET ALLO... 100.00 6,288,714
Cash 2.41 151,528
Funds 97.59 6,137,186
Funds 97.59 6,137,186
AMUNDI ETF EURO CORPORA... 9.13 574,182 2,700.00 212.66 EUR
AMUNDI ETF GOVT BOND LO... 8.56 538,434 2,360.00 228.15 EUR
AMUNDI ETF MSCI EUROPE H... 1.49 93,877 970.00 96.78 EUR
BNPP EASY FTSE EPRA EUR... 2.66 166,968 720.00 231.90 EUR
BNPP EASY MARKIT IBOXX L... 8.59 540,041 2,280.00 236.86 EUR
CONSUMER STAPLES SPDR 1.50 94,401 2,000.00 53.70 USD
DBX II IBX SOV EUROZONE 8.90 559,629 2,430.00 230.30 EUR
DBX II EONIA - 1C 7.91 497,237 3,570.00 139.28 EUR
ISHARES EURO GOV BND 3-5 9.10 572,288 3,400.00 168.32 EUR
ISHARES GLOBAL TELECOM ... 1.50 94,645 1,750.00 61.53 USD
ISHARES GLOBAL UTILITIES... 1.48 93,267 2,250.00 47.16 USD
ISHR EUR 600 HEALTH CARE... 1.49 93,496 1,300.00 71.92 EUR
LYX ETF EURMTS INV GRADE... 8.59 540,037 3,030.00 178.23 EUR
LYX ETF EURO CASH 7.64 480,474 4,500.00 106.77 EUR
POWERSHARES DB GOLD FUND 2.55 160,052 4,550.00 40.02 USD
POWERSHARES S&P 500 LO... 1.52 95,806 2,700.00 40.37 USD
PROSHARES SHORT S&P500 1.31 82,557 4,620.00 20.33 USD
Holdings as of: 2/29/2016
Submitted at: 11:34:36
Zoom
100%

Example

11) View | 12) Actions | 13) Settings | 14) Trade Simulation | Portfolio & Risk Analytics

Characteristics | Holdings | VaR | Scenarios | Tracking Error/Volatility | Performance | Attribution

Main View | Summary | Factors | Risk Bets | Trends | Exposures

Port ATTICA DYNAM vs Default (None by Asset Type > in EUR As of 04/07/16

Model Bloomberg Ris Unit Returns (% Horizon 1 Year

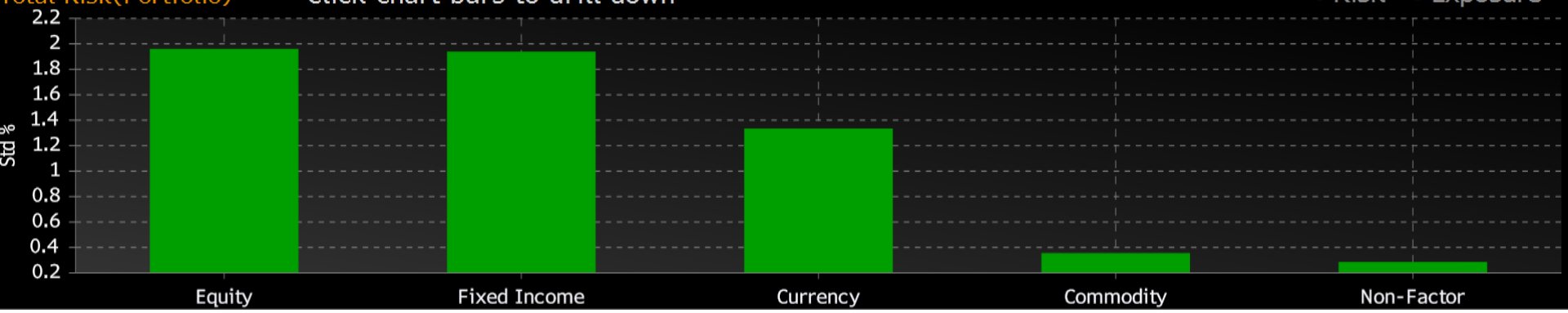
Portfolio Value 6,288,714.88 EUR (22 name(s), 100% Gross MV) Portfolio Beta(Ex-Ante) NA

	Risk (Std)			Factor Risk (Std)			
Item	Total Risk	Factor	Non-Factor	Equity	Fixed Income	Currency	Commodity
Portfolio	3.41	3.40	0.29	1.96	1.94	1.34	0.36
Benchmark	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Active	3.41	3.40	0.29	1.96	1.94	1.34	0.36

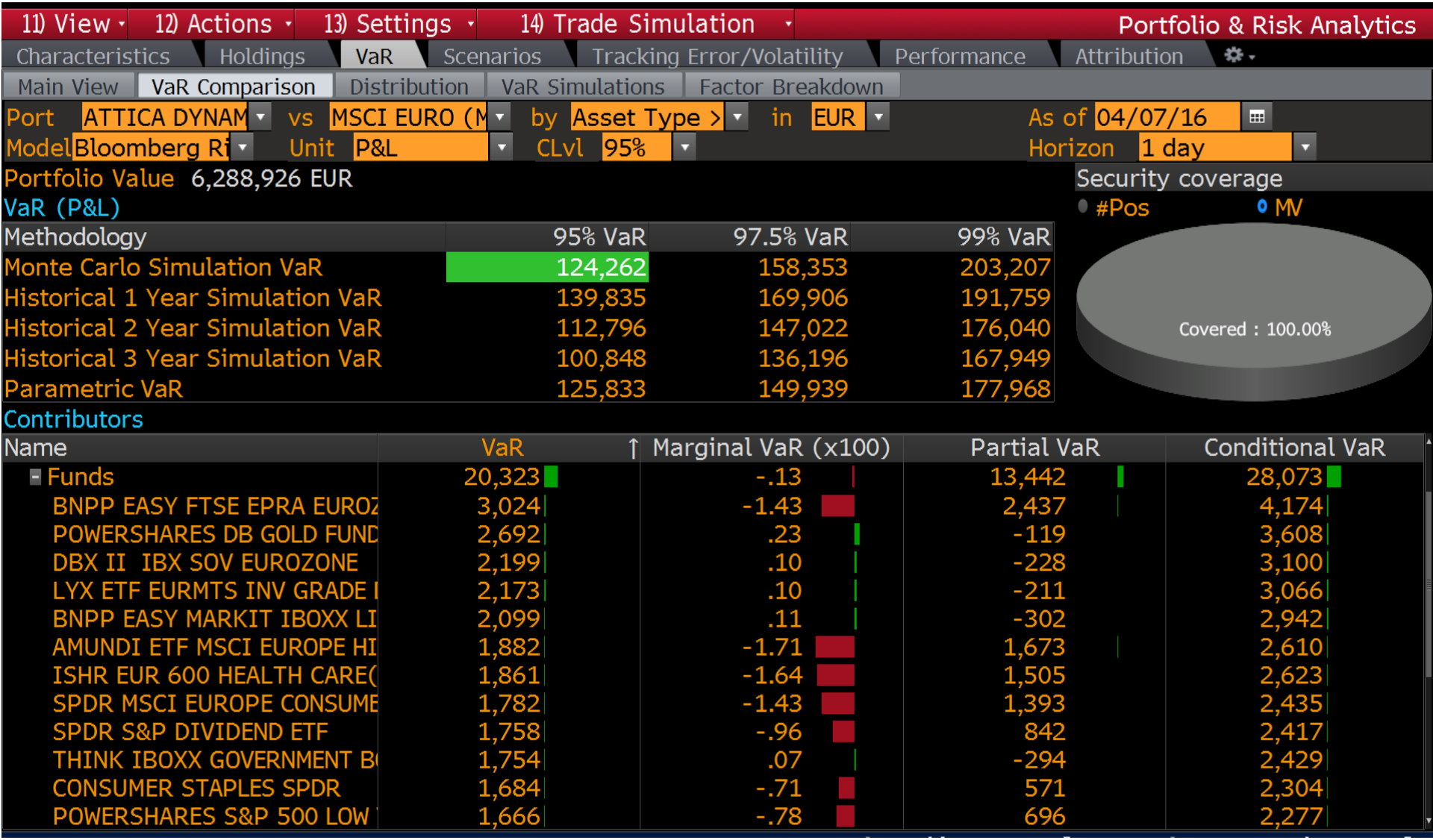
Click a number to see breakdown

	Risk Contribution (%)			Factor Risk Contribution (%)			
Item	Total Risk	Factor	Non-Factor	Equity	Fixed Income	Currency	Commodity
Portfolio	100.00	99.30	0.70	38.80	38.38	21.69	0.43
Benchmark	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Active	100.00	99.30	0.70	38.80	38.38	21.69	0.43

Total Risk(Portfolio) Click chart bars to drill down Risk Exposure



Example



Methodology	95% VaR	97.5% VaR	99% VaR
Monte Carlo Simulation VaR	124,262	158,353	203,207
Historical 1 Year Simulation VaR	139,835	169,906	191,759
Historical 2 Year Simulation VaR	112,796	147,022	176,040
Historical 3 Year Simulation VaR	100,848	136,196	167,949
Parametric VaR	125,833	149,939	177,968

Name	VaR ↑	Marginal VaR (x100)	Partial VaR	Conditional VaR
Funds	20,323	-.13	13,442	28,073
BNPP EASY FTSE EPRA EUROZ	3,024	-1.43	2,437	4,174
POWERSHARES DB GOLD FUND	2,692	.23	-119	3,608
DBX II IBX SOV EUROZONE	2,199	.10	-228	3,100
LYX ETF EURMTS INV GRADE I	2,173	.10	-211	3,066
BNPP EASY MARKIT IBOXX LI	2,099	.11	-302	2,942
AMUNDI ETF MSCI EUROPE HI	1,882	-1.71	1,673	2,610
ISHR EUR 600 HEALTH CARE(	1,861	-1.64	1,505	2,623
SPDR MSCI EUROPE CONSUME	1,782	-1.43	1,393	2,435
SPDR S&P DIVIDEND ETF	1,758	-.96	842	2,417
THINK IBOXX GOVERNMENT B	1,754	.07	-294	2,429
CONSUMER STAPLES SPDR	1,684	-.71	571	2,304
POWERSHARES S&P 500 LOW	1,666	-.78	696	2,277

Example

11) View | 12) Actions | 13) Settings | 14) Trade Simulation | Portfolio & Risk Analytics

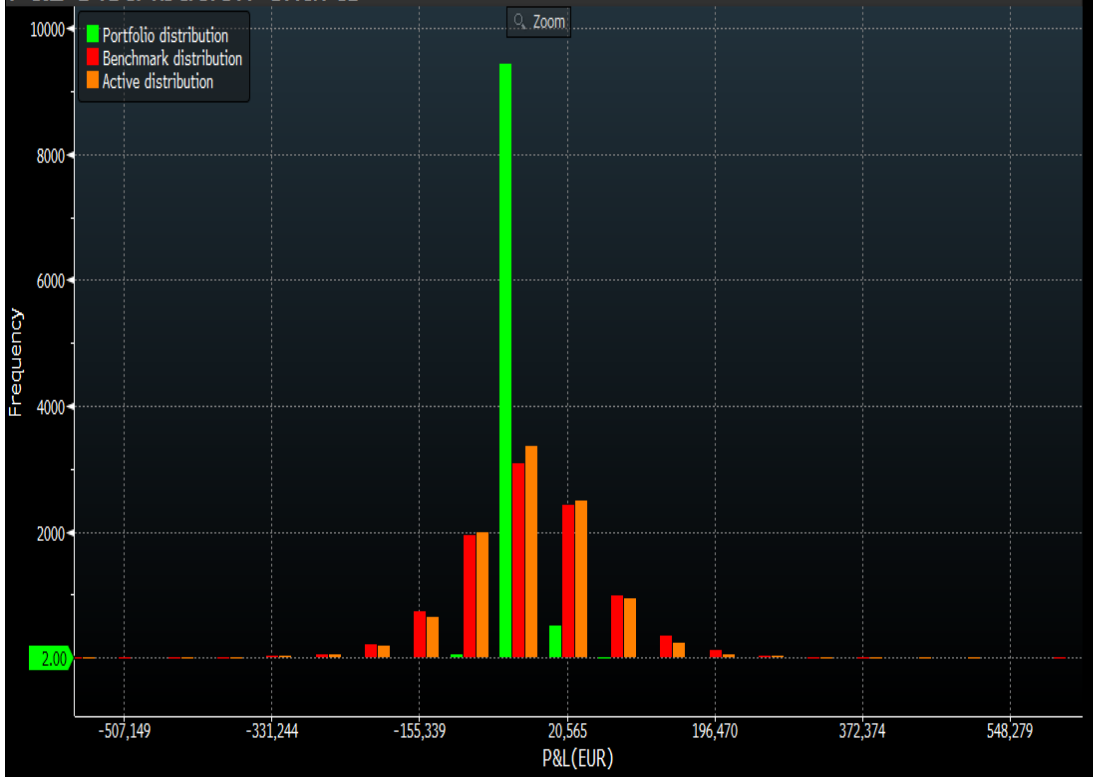
Characteristics | Holdings | VaR | Scenarios | Tracking Error/Volatility | Performance | Attribution

Main View | VaR Comparison | Distribution | VaR Simulations | Factor Breakdown

Port ATTICA DYNAM vs MSCI EURO (M by Asset Type > in EUR As of 04/07/16

Model Bloomberg Ri Unit P&L CLvl 95% Horizon 1 day

P&L Distribution Charts



Show Probability Distribution Graphs for

☑ Portfolio ☑ Benchmark ☑ Active

Scenarios near confidence level of 95%

Percentile	P&L (P)	P&L (B)	P&L (+/-)
4.94%	-20,439	-131,544	-124,868
4.95%	-20,433	-131,473	-124,855
4.96%	-20,404	-131,472	-124,409
4.97%	-20,353	-131,329	-124,404
4.98%	-20,341	-131,249	-124,318
4.99%	-20,314	-131,121	-124,218
5.00%	-20,290	-130,934	-124,137
5.01%	-20,284	-130,879	-123,978
5.02%	-20,279	-130,771	-123,840
5.03%	-20,269	-130,620	-123,835
5.04%	-20,266	-130,616	-123,697
5.05%	-20,265	-129,991	-123,611
5.06%	-20,260	-129,960	-123,467

	Portfolio	Benchmark	Active
Mean(EUR)	50	821	-771
STD Dev(EUR)	12,918	84,358	76,907
Skewness	.11	-.01	.01
Exc. Kurtosis	2.26	2.10	2.14

Pick Percentile 5

Example

11) View | 12) Actions | 13) Settings | 14) Trade Simulation | Portfolio & Risk Analytics

Characteristics | Holdings | VaR | Scenarios | Tracking Error/Volatility | Performance | Attribution

Main View | Summary | Factors | Risk Bets | Trends | Exposures

Port ATTICA DYNAM vs MSCI EURO (M by Asset Type > in EUR As of 04/07/16

Model Bloomberg Ris Unit Returns (% Horizon 1 Year

Asset Class All Asset Group by All Facto Hide zero exposures

		Exposure			Risk			
	Factor	Portfolio	Benchmark	Active	Factor Vol (Std %)	Tot. Active (Std)	Marginal (X100)	Contribution %
1.	EUR Sov:Sov Slope	5.19	0.00	5.19	0.011	0.06	0.00	0.01
2.	Eurozone:France	1.02	0.00	1.02	0.159	0.16	-0.02	-0.11
3.	Currency:EUR	0.85	0.99	-0.14	0.000	0.00	0.00	0.00
4.	EUR YC:10Y KR Sov	0.78	0.00	0.78	0.619	0.48	0.10	0.40
5.	EUR YC:7Y KR Sov	0.69	0.00	0.69	0.521	0.36	0.08	0.30
6.	Eurozone:Italy	0.69	0.00	0.69	0.531	0.37	-0.08	-0.29
7.	Eurozone:Germany	0.67	0.00	0.67	0.111	0.07	-0.01	-0.04
8.	Eurozone:Spain	0.49	0.00	0.49	0.477	0.23	-0.06	-0.15
9.	EUR YC:20Y KR Sov	0.44	0.00	0.44	0.837	0.37	0.12	0.28
10.	EUR YC:5Y KR Sov	0.43	0.00	0.43	0.430	0.18	0.07	0.16
11.	EUR YC:3Y KR Sov	0.42	0.00	0.42	0.297	0.12	0.05	0.10
12.	EUR YC:30Y KR Sov	0.39	0.00	0.39	0.848	0.33	0.12	0.25
13.	EUR YC:Cvx Sov	0.19	0.00	0.19	0.070	0.01	0.01	0.01
14.	Eurozone:Belgium	0.18	0.00	0.18	0.195	0.03	-0.02	-0.02
15.	Eurozone:Netherlar	0.17	0.00	0.17	0.127	0.02	-0.01	-0.01
16.	EUR YC:5Y KR Swp	0.14	0.00	0.14	0.438	0.06	0.06	0.05
17.	EUR Sov:Sov Liq	0.14	0.00	0.14	0.344	0.05	-0.04	-0.03
18.	Currency:USD	0.10	0.00	0.10	10.326	1.00	-0.58	-0.29
19.	Eurozone:Other No	0.10	0.00	0.10	0.137	0.01	-0.02	-0.01
20.	EUR YC:2Y KR Sov	0.09	0.00	0.09	0.251	0.02	0.04	0.02

Example


11) View
12) Actions
13) Settings
14) Trade Simulation
Portfolio & Risk Analytics
Characteristics
Holdings
VaR
Scenarios
Tracking Error/Volatility
Performance
Attribution
Main View
Total Return
Period Analysis
Seasonal Analysis
Statistical Summary
Port ATTICA DYNAM vs MSCI EURO (M by Asset Type > in EUR As Of 04/06/16
Unit Percentage
Name
% End Wgt
Tot Rtn 1D
Tot Rtn MTD
Tot Rtn YTD
Port
Bmrk
+/-
ATTICA DYNAMIC ASSET ALLOC...
100.00 100.00 0.00 0.07 0.65 -0.58 0.02 -2.92 2.94 1.42 -9.70 11.12
11) View
12) Actions
13) Settings
14) Trade Simulation
Portfolio & Risk Analytics
Characteristics
Holdings
VaR
Scenarios
Tracking Error/Volatility
Performance
Attribution
Main View
Summary
Port ATTICA DYNAM vs MSCI EURO (M by Asset Type > in EUR Time Custo 03/31/14 - 04/06/16
Model Total Return Unit Percentage Curve Swap
Return Summary
Portfolio Return 9.96
Benchmark Return 1.44
Active Return 8.52
Active Return Attribution Summary
Active Return 8.52
Allocation 4.32
Selection 0.00
Currency 4.21
Excess Return Summary Graph
Avg Active Weight
Total Attribution

Example

11) View | 12) Actions | 13) Settings | 14) Trade Simulation | Portfolio & Risk Analytics

Characteristics | Holdings | VaR | Scenarios | Tracking Error/Volatility | Performance | Attribution

Main View | Total Return | Period Analysis | Seasonal Analysis | Statistical Summary

Port ATTICA DYNAM vs MSCI EURO (M by Asset Type > in EUR As Of 04/06/16

Unit Percentage

ATTICA DYNAMIC ASSET ALLOC FUND OF FUNDS BALANCE

	3 Months		6 Months		Year To Date		1 Year	
Portfolio Statistics	Port	Bench	Port	Bench	Port	Bench	Port	Bench
2. Return								
Total Return	1.27	-6.10	2.18	-7.59	1.42	-9.70	-1.47	-17.47
Maximum Return	0.75	3.32	0.86	3.32	0.75	3.32	0.86	4.52
Minimum Return	-0.55	-3.76	-1.29	-3.76	-0.55	-3.76	-1.29	-5.18
Mean Return (Annualized)	7.43	-26.35	6.30	-16.67	7.86	-38.86	-1.89	-20.20
Mean Excess Return (Annualized)	45.81		27.55		76.27		22.93	
3. Risk								
Standard Deviation (Annualized)	3.76	26.33	3.87	23.23	3.69	26.30	4.55	24.45
Downside Risk (Annualized)	2.49	18.51	2.83	16.39	2.44	18.54	3.42	17.42
Skewness	0.42	0.01	-0.70	-0.01	0.41	0.01	-0.68	-0.05
VaR 95% (ex-post)	-0.33	-2.38	-0.29	-2.29	-0.32	-2.79	-0.41	-2.45
Tracking Error (Annualized)	23.62		20.75		23.72		22.09	
4. Risk/Return								
Sharpe Ratio	1.45	-0.74	1.19	-0.52	1.56	-1.12	-0.28	-0.61
Jensen Alpha	7.55		6.00		8.79		0.34	
Information Ratio	1.31		0.92		2.11		0.72	
Treynor Measure	0.51		0.40		0.56		-0.12	
Beta (ex-post)	0.11		0.12		0.10		0.11	
Correlation	0.7541		0.6906		0.7347		0.5871	
Capture Ratio	0.03		0.15		0.04		0.11	

Data gathering and analysis

Garbage in, garbage out…

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MARKET NEWS

Dollar sinks again after Fed remains cautious

LONDON The dollar's fall against the yen deepened on Thursday after minutes of the U.S. Federal Reserve's most recent policy meeting offered little optimism over the state of global growth and the prospect of a rise in interest rates in June.

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MARKETS

U.S. EUROPE ASIA SECTORS

Sector Summary

ENERGY	▲ +0.29%
BASIC MATERIALS	▲ +0.36%
INDUSTRIALS	▲ +0.38%
CYCLICAL GOODS & SERVICES	▲ +0.07%
NON-CYCLICAL GOODS & SERVICES	▲ +0.15%

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SEARCH STOCKS

Enter stock symbol or name SEARCH

GAINERS & LOSERS

NYSE | NASDAQ | AMEX | FTSE | NIKKEI

GAINERS

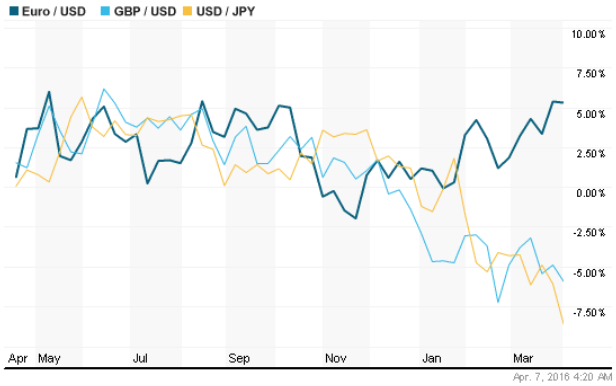
Symb	Last	Change	Chg %
VSLR.N	3.08	+0.63	+25.71
CWEI.N	11.75	+2.16	+22.52
VRX.N	34.17	+5.44	+18.93
BSI.N	3.15	+0.43	+15.81
OAS.N	7.90	+0.95	+13.67

LOSERS

Symb	Last	Change	Chg %
AEL.N	13.69	-2.48	-15.34
JCAP.N	12.33	-2.10	-14.55
OZM.N	3.68	-0.43	-10.46
HOG.N	46.34	-3.50	-7.02
TREC.N	8.85	-0.60	-6.35

Data as of Thu Apr 7, 2016 4:53am EDT. Source: Thomson Reuters

OVERVIEW



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Global Market Data

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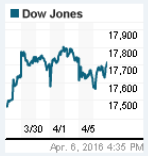
AMERICAS

Data as of 7 Apr 2016. All quotes delayed at least 15 minutes.

Symb	Index	Time	Last	Chg	Chg %
.DJI	Dow Jones Industrial Average	6 Apr 2016	17,716.05	+112.73	+0.64%
.SPX	S&P 500	6 Apr 2016	2,066.66	+21.49	+1.05%
.IXIC	Nasdaq Composite Index	6 Apr 2016	4,920.71	--	--%
.TRXFLDUSP	Thomson Reuters Equity US Index	6 Apr 2016	182.56	+1.96	+1.08%

» All Americas Indices



Apr. 6, 2016 4:35 PM

EUROPE

Symb	Index	Time	Last	Chg	Chg %
.FTSE	FTSE 100 Index	4:35am EDT	6,193.75	+32.12	+0.52%
.GDAXI	DAX Index	4:34am EDT	9,689.51	+65.00	+0.68%
.FCHI	CAC 40 Index	4:34am EDT	4,312.83	+28.19	+0.66%
.TRXFLDEUPU	Thomson Reuters Equity Europe Index	4:19am EDT	131.81	+0.40	+0.30%

» All European Indices

Apr. 7, 2016 9:42 AM

ASIA PACIFIC

Symb	Index	Time	Last	Chg	Chg %
.N225	Nikkei Stock Average 225	2:15am EDT	15,749.84	+34.48	+0.22%
.HSI	Hang Seng Index	4:01am EDT	20,266.05	+59.38	+0.29%
.SSEC	Shanghai Composite Index	3:09am EDT	3,009.51	-41.08	-1.35%
.AORD	ASX All Ordinaries Index	3:42am EDT	5,042.32	+17.76	+0.35%

» All Asia Pacific Indices

Apr. 7, 2016 3:15 PM

CURRENCIES

1.00 Euro (EUR)

-- US Dollar (USD)

GO

EUR/USD	1.1374	-0.19%
GBP/USD	1.4067	-0.35%
USD/JPY	108.64	-1.04%
USD/CHF	0.95640	+0.13%
USD/CAD	1.3069	-0.14%
AUD/USD	0.75800	-0.17%

» All Currencies

REUTERS VIDEO

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BREAKINGVIEWS VIDEO

Breakingviews: The Pfizer blame game

Treasury and Congress both look bad for their roles in the aborted $160 bln Allergan merger. Antony Currie and Robert Cyran explain the companies are most at fault for pushing a bad deal.

Breakingviews: Twitter-ball

Jen Saba and Reynolds Holding discuss the social-media service's deal to stream 10 NFL football games for a reported $10 mln and how the rights could boost its flagging user base.

Breakingviews: Virgin M&A territory

Alaska Air is paying $2.6 bln for Richard Branson's Virgin America. Antony Currie and Jeffrey Goldfarb discuss the merits of a rare airline merger done in the absence of financial duress.

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☐	**Thomson Reuters Stock Report - Apple Inc (AAPL-O)** StockReports+ gathers Thomson Reuters independent research, ratings and market data into a single report that optimizes the i...	06 Apr 2016	Thomson Reuters Stock Report		12	$25.00

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4:36am EDT

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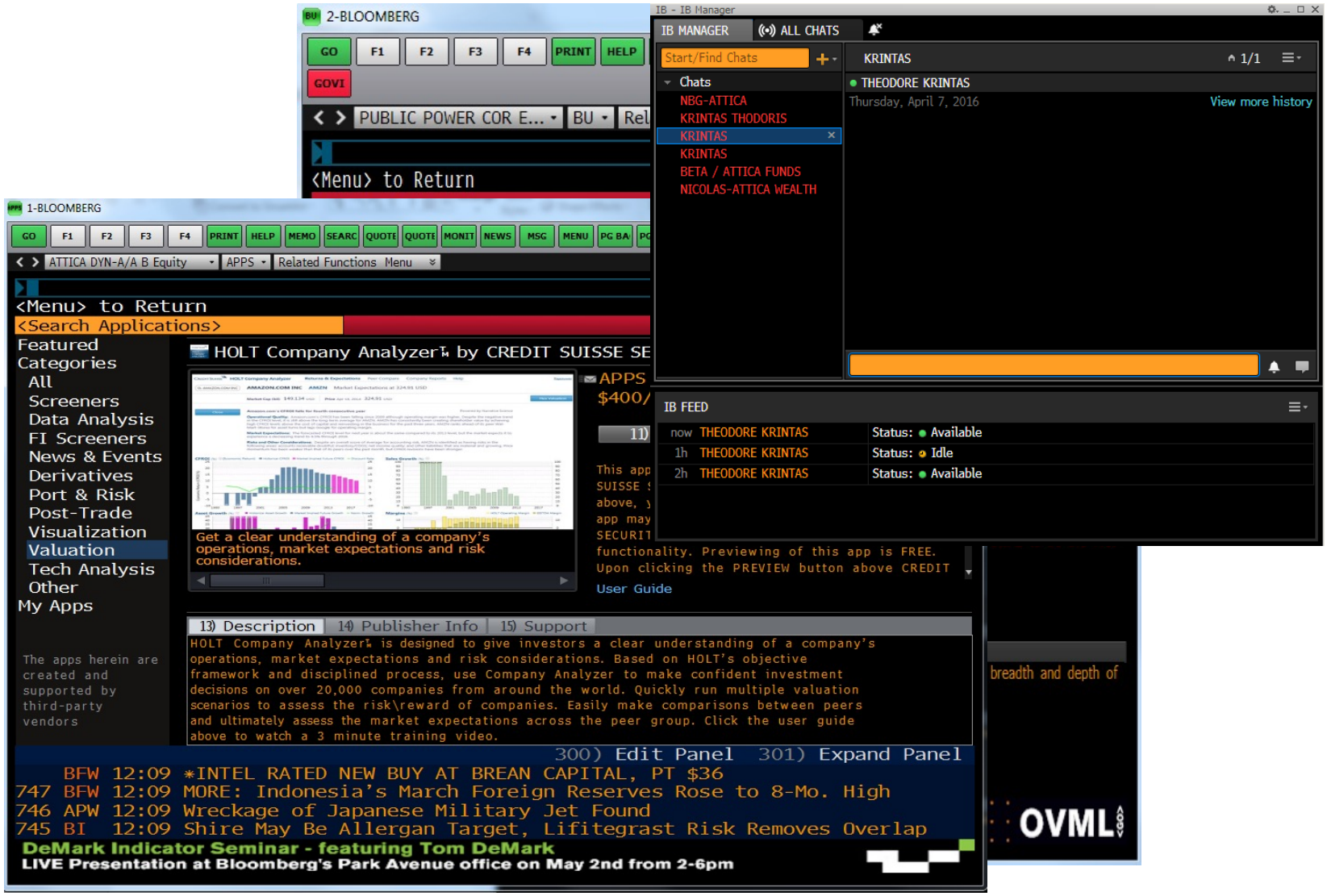
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LIVE Presentation at Bloomberg's Park Avenue office on May 2nd from 2-6pm
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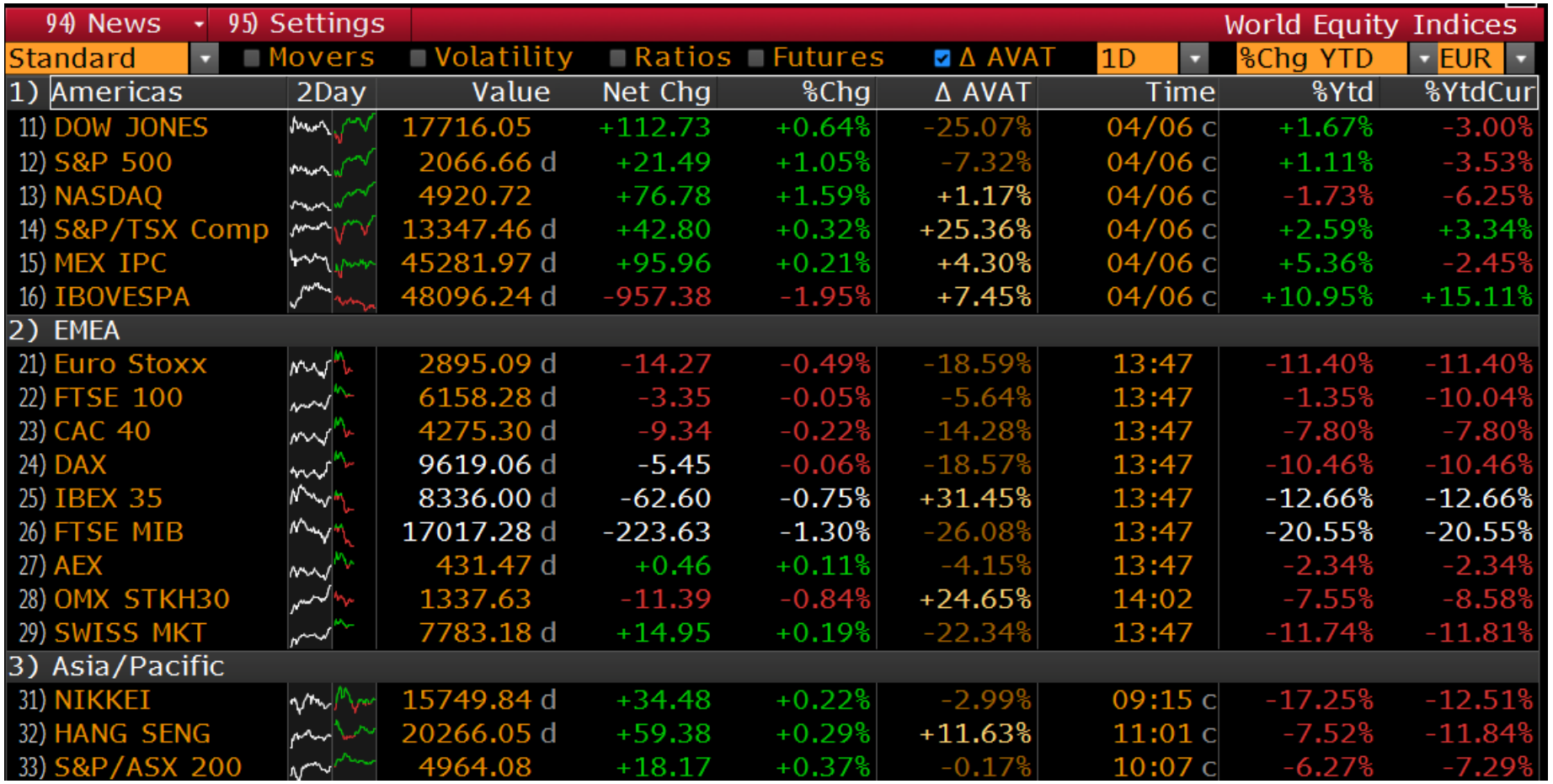

94) News | 95) Settings | World Equity Indices

Standard | Movers | Volatility | Ratios | Futures | Δ AVAT | 1D | %Chg YTD | EUR

1) Americas	2Day	Value	Net Chg	%Chg	Δ AVAT	Time	%Ytd	%YtdCur
11) DOW JONES		17716.05	+112.73	+0.64%	-25.07%	04/06 c	+1.67%	-3.00%
12) S&P 500		2066.66 d	+21.49	+1.05%	-7.32%	04/06 c	+1.11%	-3.53%
13) NASDAQ		4920.72	+76.78	+1.59%	+1.17%	04/06 c	-1.73%	-6.25%
14) S&P/TSX Comp		13347.46 d	+42.80	+0.32%	+25.36%	04/06 c	+2.59%	+3.34%
15) MEX IPC		45281.97 d	+95.96	+0.21%	+4.30%	04/06 c	+5.36%	-2.45%
16) IBOVESPA		48096.24 d	-957.38	-1.95%	+7.45%	04/06 c	+10.95%	+15.11%
2) EMEA								
21) Euro Stoxx		2895.09 d	-14.27	-0.49%	-18.59%	13:47	-11.40%	-11.40%
22) FTSE 100		6158.28 d	-3.35	-0.05%	-5.64%	13:47	-1.35%	-10.04%
23) CAC 40		4275.30 d	-9.34	-0.22%	-14.28%	13:47	-7.80%	-7.80%
24) DAX		9619.06 d	-5.45	-0.06%	-18.57%	13:47	-10.46%	-10.46%
25) IBEX 35		8336.00 d	-62.60	-0.75%	+31.45%	13:47	-12.66%	-12.66%
26) FTSE MIB		17017.28 d	-223.63	-1.30%	-26.08%	13:47	-20.55%	-20.55%
27) AEX		431.47 d	+0.46	+0.11%	-4.15%	13:47	-2.34%	-2.34%
28) OMX STKH30		1337.63	-11.39	-0.84%	+24.65%	14:02	-7.55%	-8.58%
29) SWISS MKT		7783.18 d	+14.95	+0.19%	-22.34%	13:47	-11.74%	-11.81%
3) Asia/Pacific								
31) NIKKEI		15749.84 d	+34.48	+0.22%	-2.99%	09:15 c	-17.25%	-12.51%
32) HANG SENG		20266.05 d	+59.38	+0.29%	+11.63%	11:01 c	-7.52%	-11.84%
33) S&P/ASX 200		4964.08	+18.17	+0.37%	-0.17%	10:07 c	-6.27%	-7.29%

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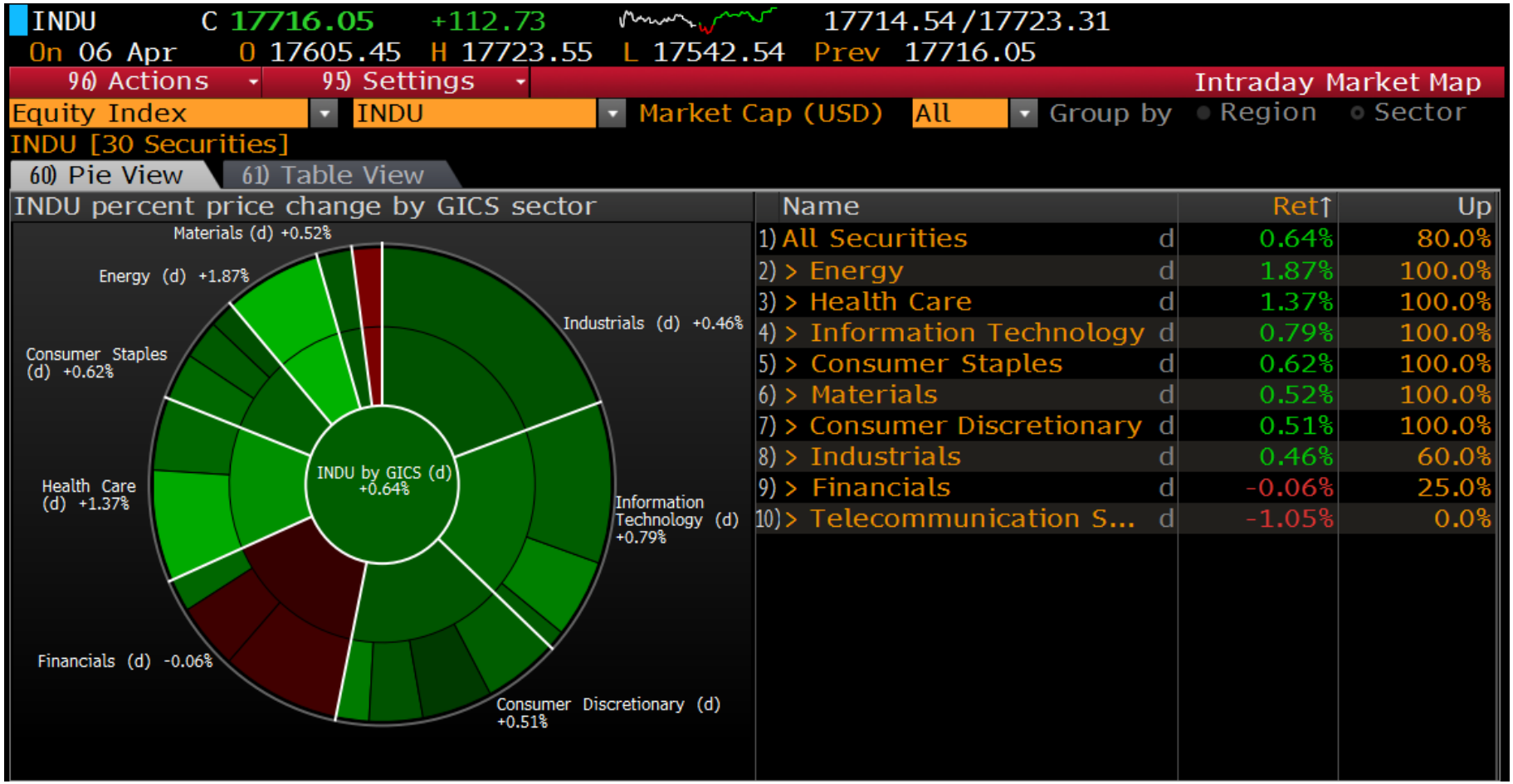
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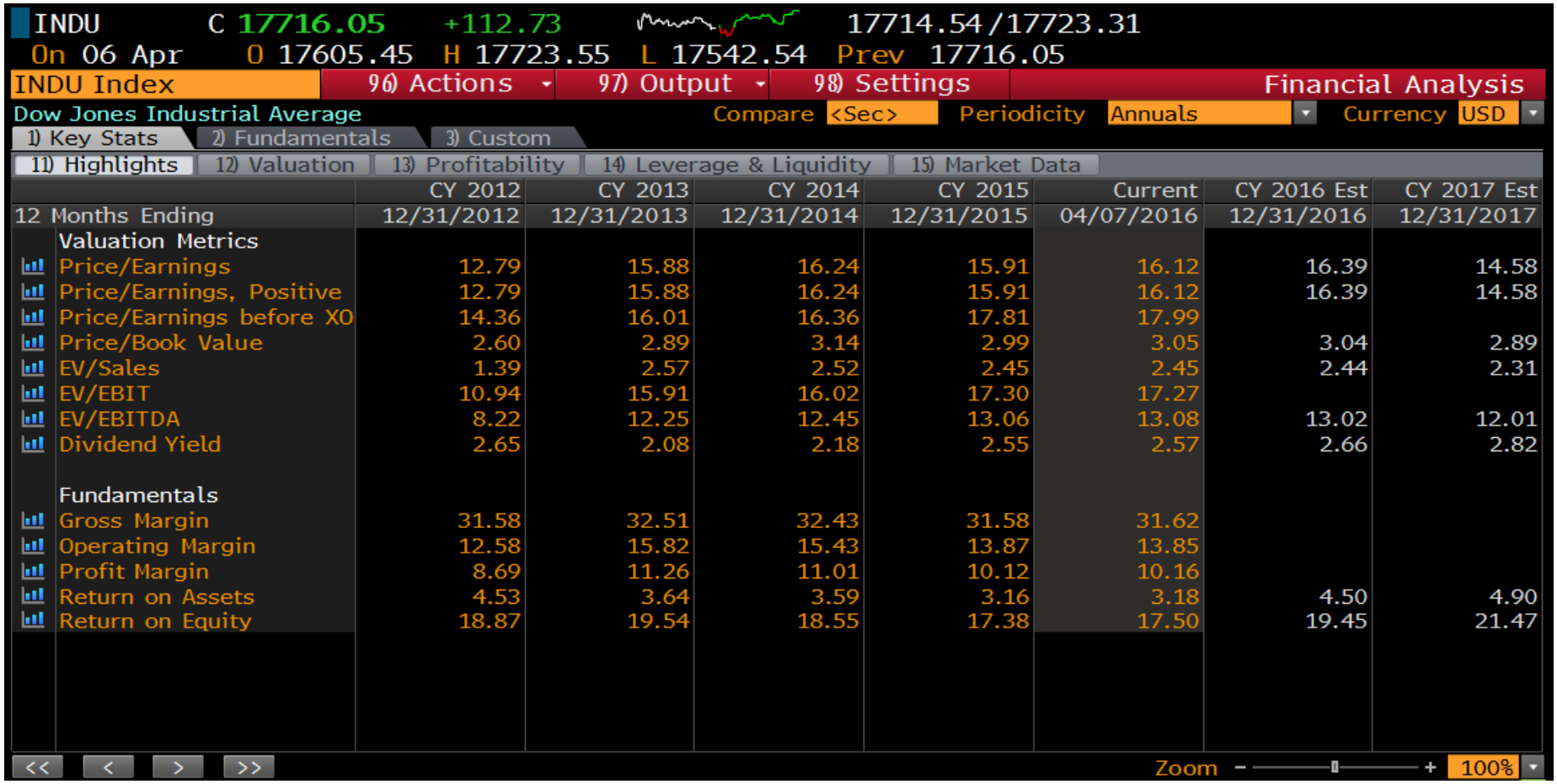
On 06 Apr O 17605.45 H 17723.55 L 17542.54 Prev 17716.05
96) Actions 95) Settings Intraday Market Map
Equity Index INDU Market Cap (USD) All Group by Region Sector
INDU [30 Securities]
60) Pie View 61) Table View
INDU percent price change by GICS sector
Materials (d) +0.52%
Energy (d) +1.87%
Industrials (d) +0.46%
Consumer Staples (d) +0.62%
Health Care (d) +1.37%
INDU by GICS (d) +0.64%
Information Technology (d) +0.79%
Financials (d) -0.06%
Consumer Discretionary (d) +0.51%
Name Ret↑ Up
1) All Securities d 0.64% 80.0%
2) > Energy d 1.87% 100.0%
3) > Health Care d 1.37% 100.0%
4) > Information Technology d 0.79% 100.0%
5) > Consumer Staples d 0.62% 100.0%
6) > Materials d 0.52% 100.0%
7) > Consumer Discretionary d 0.51% 100.0%
8) > Industrials d 0.46% 60.0%
9) > Financials d -0.06% 25.0%
10) > Telecommunication S... d -1.05% 0.0%

Bloomberg

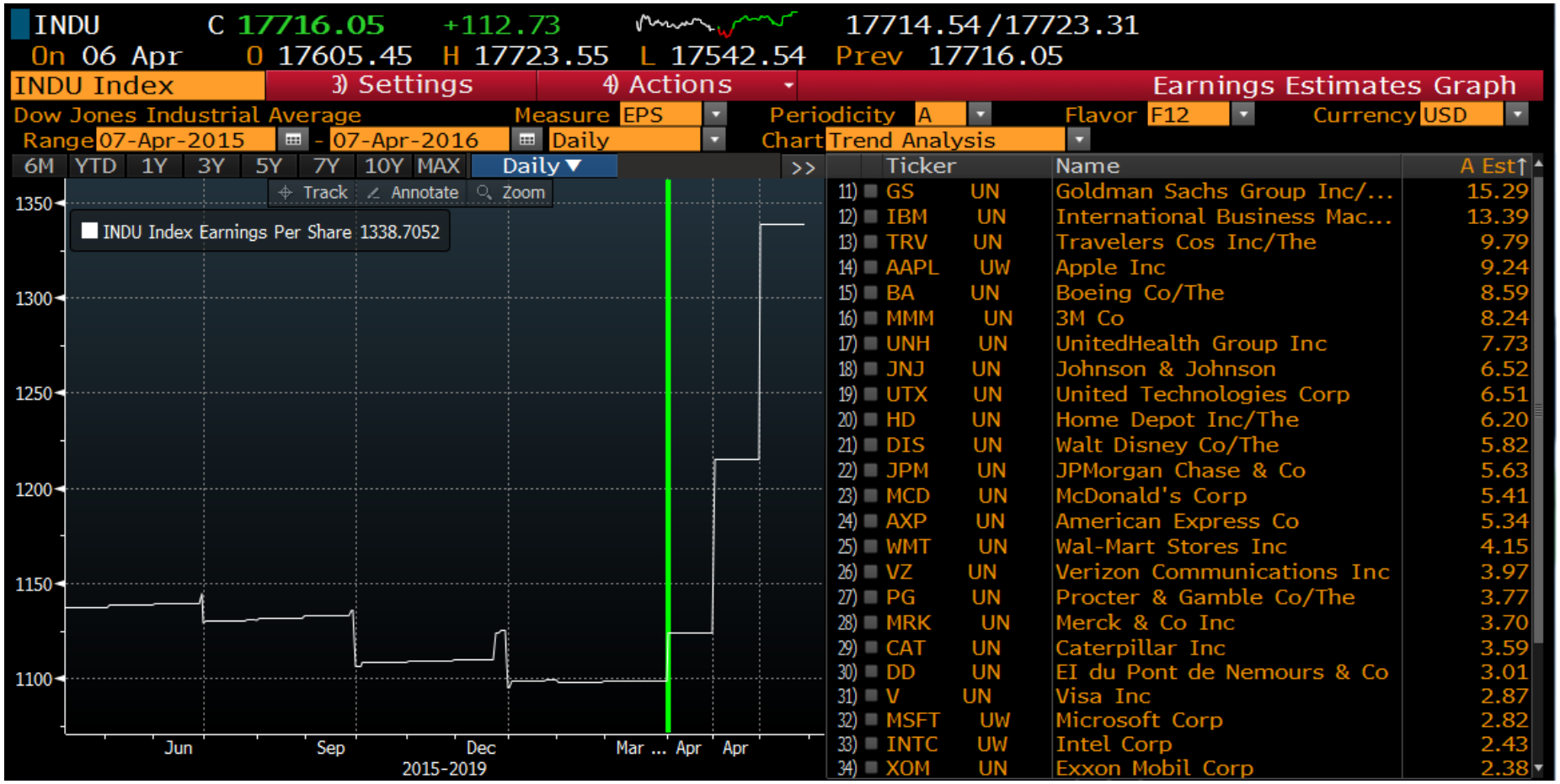

INDU C 17716.05 +112.73 17714.54/17723.31
On 06 Apr O 17605.45 H 17723.55 L 17542.54 Prev 17716.05
INDU Index
96) Actions
97) Edit
G 12: Graph 12
INDU Index : Dow Jones Industrial Average
Daily 4/8/2015-4/7/2016
1D 3D 1M 6M YTD 1Y 5Y Max Daily Table Security/Study
Track Annotate News Zoom
Reset
Last Price 17716.05
High on 05/19/15 18351.36
Average 17312.83
Low on 08/24/15 15370.33
SMAVG (30) on Close 17261.17
18500
18000
17716.05
17500
17261.17
17000
16500
16000
15500
INDU
MACD(12,26) 239.281
Sig(9) 254.7506
239.281
0
-200
-400
Volume 99.411M
High on 12/18/15 344.599M
Average 114.656M
Low on 12/24/15 40.349M
300M
200M
99.411M
Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar
2015
2016

Bloomberg

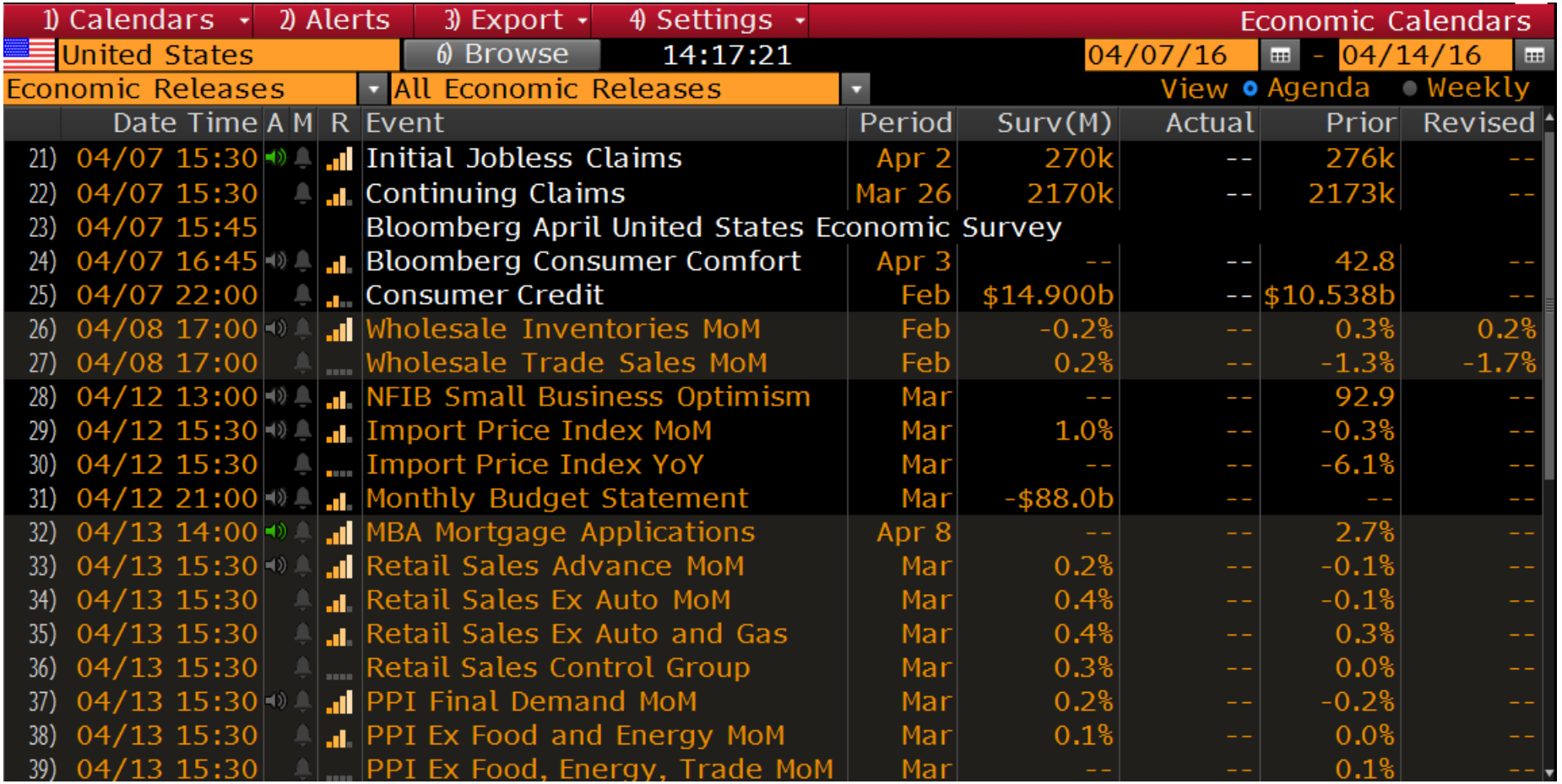


	CY 2012	CY 2013	CY 2014	CY 2015	Current	CY 2016 Est	CY 2017 Est
12 Months Ending	12/31/2012	12/31/2013	12/31/2014	12/31/2015	04/07/2016	12/31/2016	12/31/2017
Valuation Metrics							
Price/Earnings	12.79	15.88	16.24	15.91	16.12	16.39	14.58
Price/Earnings, Positive	12.79	15.88	16.24	15.91	16.12	16.39	14.58
Price/Earnings before XO	14.36	16.01	16.36	17.81	17.99		
Price/Book Value	2.60	2.89	3.14	2.99	3.05	3.04	2.89
EV/Sales	1.39	2.57	2.52	2.45	2.45	2.44	2.31
EV/EBIT	10.94	15.91	16.02	17.30	17.27		
EV/EBITDA	8.22	12.25	12.45	13.06	13.08	13.02	12.01
Dividend Yield	2.65	2.08	2.18	2.55	2.57	2.66	2.82
Fundamentals							
Gross Margin	31.58	32.51	32.43	31.58	31.62		
Operating Margin	12.58	15.82	15.43	13.87	13.85		
Profit Margin	8.69	11.26	11.01	10.12	10.16		
Return on Assets	4.53	3.64	3.59	3.16	3.18	4.50	4.90
Return on Equity	18.87	19.54	18.55	17.38	17.50	19.45	21.47

Bloomberg

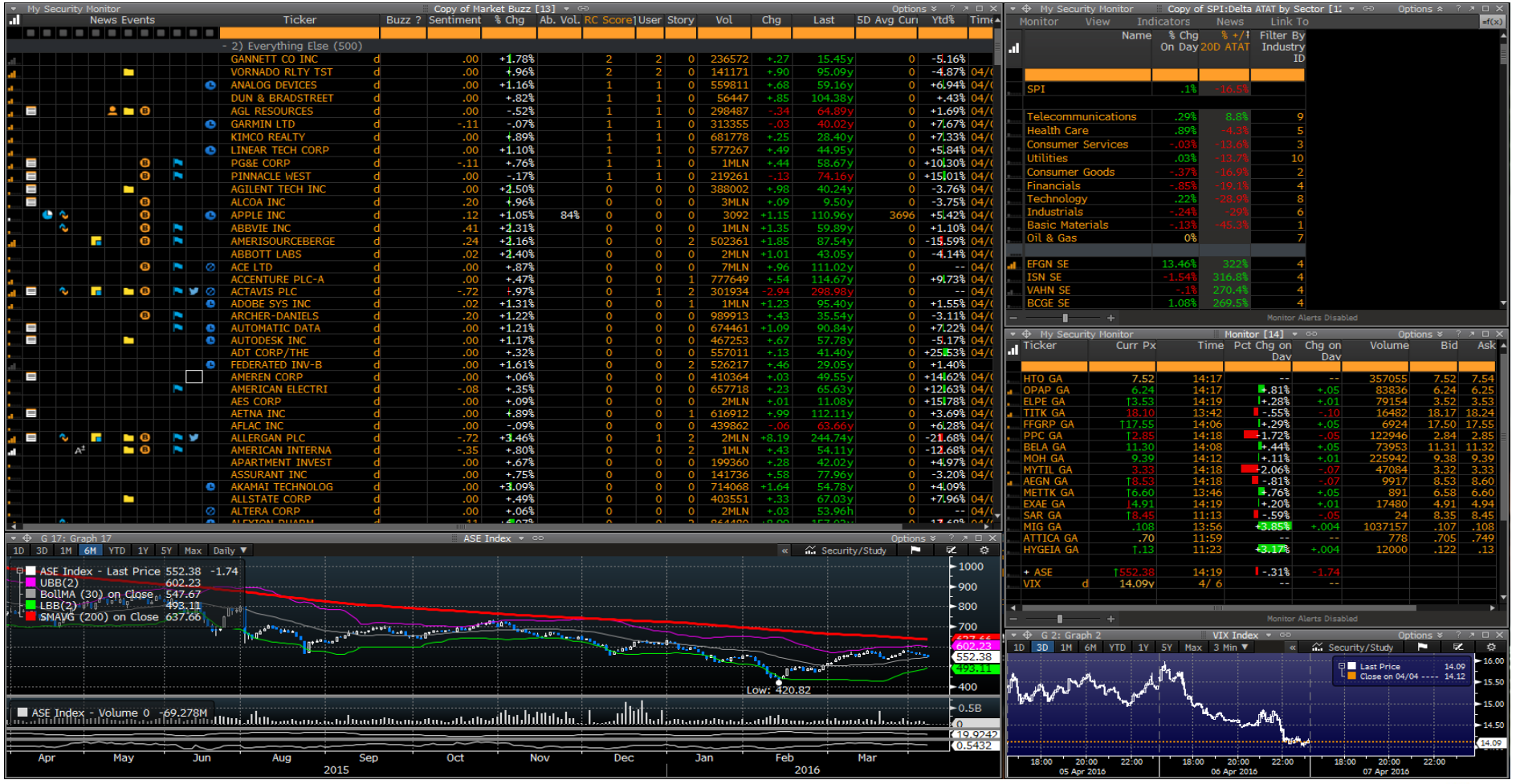

INDU C 17716.05 +112.73 17714.54/17723.31
On 06 Apr O 17605.45 H 17723.55 L 17542.54 Prev 17716.05
INDU Index 3) Settings 4) Actions Earnings Estimates Graph
Dow Jones Industrial Average Measure EPS Periodicity A Flavor F12 Currency USD
Range 07-Apr-2015 - 07-Apr-2016 Daily Chart Trend Analysis
6M YTD 1Y 3Y 5Y 7Y 10Y MAX Daily
Track Annotate Zoom
INDU Index Earnings Per Share 1338.7052
1350
1300
1250
1200
1150
1100
Jun Sep Dec Mar ... Apr Apr
2015-2019
Ticker Name A Est
11) GS UN Goldman Sachs Group Inc/... 15.29
12) IBM UN International Business Mac... 13.39
13) TRV UN Travelers Cos Inc/The 9.79
14) AAPL UW Apple Inc 9.24
15) BA UN Boeing Co/The 8.59
16) MMM UN 3M Co 8.24
17) UNH UN UnitedHealth Group Inc 7.73
18) JNJ UN Johnson & Johnson 6.52
19) UTX UN United Technologies Corp 6.51
20) HD UN Home Depot Inc/The 6.20
21) DIS UN Walt Disney Co/The 5.82
22) JPM UN JPMorgan Chase & Co 5.63
23) MCD UN McDonald's Corp 5.41
24) AXP UN American Express Co 5.34
25) WMT UN Wal-Mart Stores Inc 4.15
26) VZ UN Verizon Communications Inc 3.97
27) PG UN Procter & Gamble Co/The 3.77
28) MRK UN Merck & Co Inc 3.70
29) CAT UN Caterpillar Inc 3.59
30) DD UN EI du Pont de Nemours & Co 3.01
31) V UN Visa Inc 2.87
32) MSFT UW Microsoft Corp 2.82
33) INTC UW Intel Corp 2.43
34) XOM UN Exxon Mobil Corp 2.38

Bloomberg



	Date Time	A	M	R	Event	Period	Surv(M)	Actual	Prior	Revised
21)	04/07 15:30				Initial Jobless Claims	Apr 2	270k	--	276k	--
22)	04/07 15:30				Continuing Claims	Mar 26	2170k	--	2173k	--
23)	04/07 15:45				Bloomberg April United States Economic Survey					
24)	04/07 16:45				Bloomberg Consumer Comfort	Apr 3	--	--	42.8	--
25)	04/07 22:00				Consumer Credit	Feb	$14.900b	--	$10.538b	--
26)	04/08 17:00				Wholesale Inventories MoM	Feb	-0.2%	--	0.3%	0.2%
27)	04/08 17:00				Wholesale Trade Sales MoM	Feb	0.2%	--	-1.3%	-1.7%
28)	04/12 13:00				NFIB Small Business Optimism	Mar	--	--	92.9	--
29)	04/12 15:30				Import Price Index MoM	Mar	1.0%	--	-0.3%	--
30)	04/12 15:30				Import Price Index YoY	Mar	--	--	-6.1%	--
31)	04/12 21:00				Monthly Budget Statement	Mar	-$88.0b	--	--	--
32)	04/13 14:00				MBA Mortgage Applications	Apr 8	--	--	2.7%	--
33)	04/13 15:30				Retail Sales Advance MoM	Mar	0.2%	--	-0.1%	--
34)	04/13 15:30				Retail Sales Ex Auto MoM	Mar	0.4%	--	-0.1%	--
35)	04/13 15:30				Retail Sales Ex Auto and Gas	Mar	0.4%	--	0.3%	--
36)	04/13 15:30				Retail Sales Control Group	Mar	0.3%	--	0.0%	--
37)	04/13 15:30				PPI Final Demand MoM	Mar	0.2%	--	-0.2%	--
38)	04/13 15:30				PPI Ex Food and Energy MoM	Mar	0.1%	--	0.0%	--
39)	04/13 15:30				PPI Ex Food, Energy, Trade MoM	Mar	--	--	0.1%	--

Bloomberg


My Security Monitor
Copy of Market Buzz [13]
News Events
Ticker
Buzz ?
Sentiment
% Chg
Ab. Vol.
RC Score
User
Story
Vol
Chg
Last
5D Avg Curr
Ytd%
- 2) Everything Else (500)
GANNETT CO INC
VORNADO RLTY TST
ANALOG DEVICES
DUN & BRADSTREET
AGL RESOURCES
GARMIN LTD
KIMCO REALTY
LINEAR TECH CORP
PG&E CORP
PINNACLE WEST
AGILENT TECH INC
ALCOA INC
APPLE INC
ABBVIE INC
AMERISOURCEBERGE
ABBOTT LABS
ACE LTD
ACCENTURE PLC-A
ACTAVIS PLC
ADOBE SYS INC
ARCHER-DANIELS
AUTOMATIC DATA
AUTODESK INC
ADT CORP/THE
FEDERATED INV-B
AMEREN CORP
AMERICAN ELECTRI
AES CORP
AETNA INC
AFLAC INC
ALLERGAN PLC
AMERICAN INTERNA
APARTMENT INVEST
ASSURANT INC
AKAMAI TECHNOLOG
ALLSTATE CORP
ALTERA CORP
My Security Monitor
Copy of SPI:Delta ATAT by Sector [1
Monitor
View
Indicators
News
Link To
Name
% Chg On Day
20D ATAT
Filter By Industry ID
SPI
Telecommunications
Health Care
Consumer Services
Utilities
Consumer Goods
Financials
Technology
Industrials
Basic Materials
Oil & Gas
EFGN SE
ISN SE
VAHN SE
BCGE SE
Monitor Alerts Disabled
My Security Monitor
Monitor [14]
Ticker
Curr Px
Time
Pct Chg on Day
Chg on Day
Volume
Bid
Ask
HTO GA
OPAP GA
ELPE GA
TITK GA
FFGRP GA
PPC GA
BELA GA
MOH GA
MYTIL GA
AEGN GA
METTK GA
EXAE GA
SAR GA
MIG GA
ATTICA GA
HYGEIA GA
+ ASE
VIX
Monitor Alerts Disabled
G 17: Graph 17
ASE Index
Security/Study
ASE Index - Last Price 552.38 -1.74
UBB(2) 602.23
BollMA (30) on Close 547.67
LBB(2) 493.11
SMAVG (200) on Close 637.66
Low: 420.82
ASE Index - Volume 0 -69.278M
Apr
May
Jun
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
2015
2016
G 2: Graph 2
VIX Index
Security/Study
Last Price 14.09
Close on 04/04 14.12
05 Apr 2016
06 Apr 2016
07 Apr 2016

Local Players

Asset Allocation

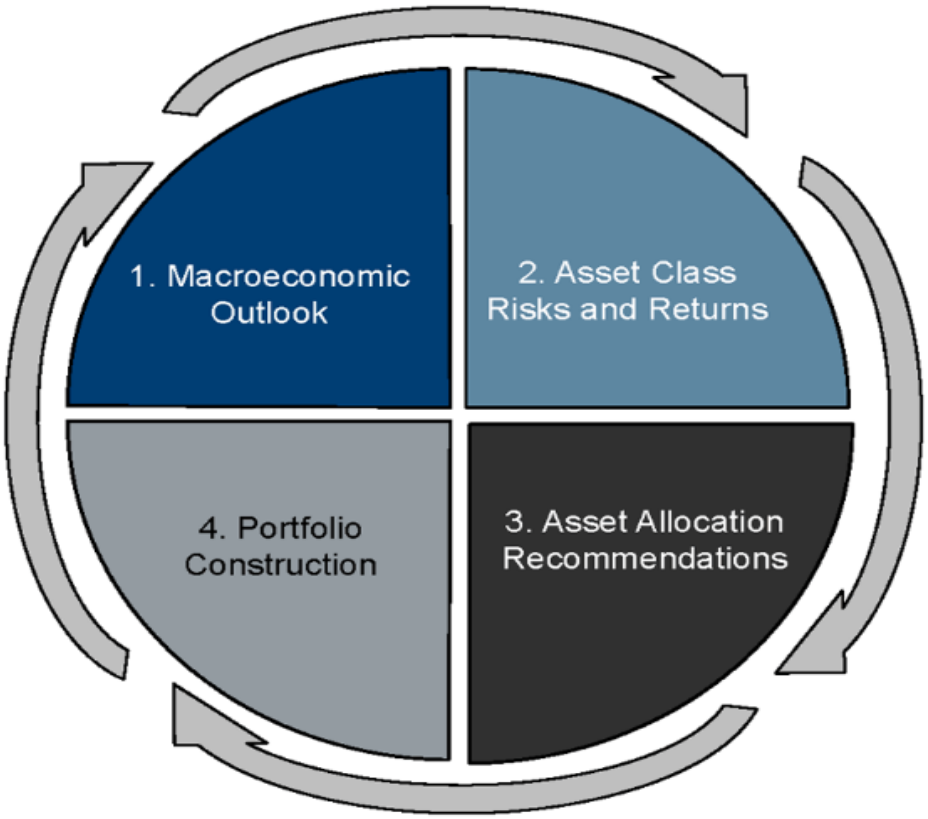
Diversify, go global or loose…

City National Rochdale
INVESTMENT MANAGEMENT

A. Establish long run secular outlook for growth

B. Analyze leading indicators, high frequency data, strategist viewpoints

C. Proprietary recession model and equity/fixed income scorecards



A. Analyze historical return and risk measures

B. Consider macro outlook themes/expectations

C. Establish equity risk premium/fixed income premium levels and develop capital market assumptions

A. Utilize asset class risk and return assumptions, review historic correlations

B. Adjust for expected macro / financial outlook. Consider risk limits and asset class ranges.

C. Optimize asset class weights for portfolio

A. Utilize quantitative fundamental tools

B. Identify superior risk/reward opportunity

C. Structure portfolio to outperform on risk adjusted basis

INVEST YADNYA

3 Factors to Decide Asset Allocation Strategy

Time Horizon

What is the time horizon available to achieve your financial goals

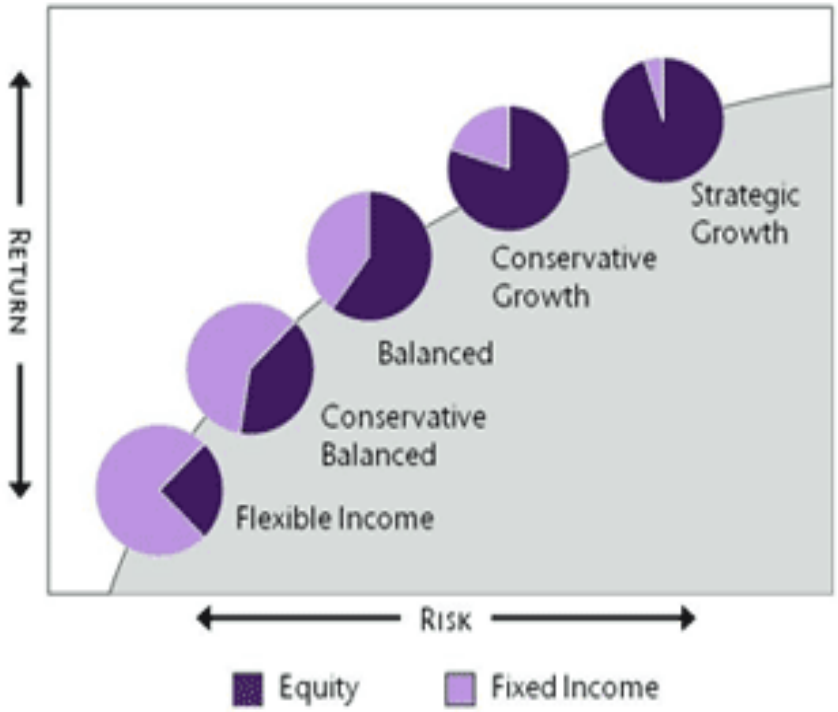
Risk Tolerance

This defines the Limits or Boundaries of the Risks you can take

Financial Situation

What is Your Current Net Worth? Assets you can Allocate for your Goals

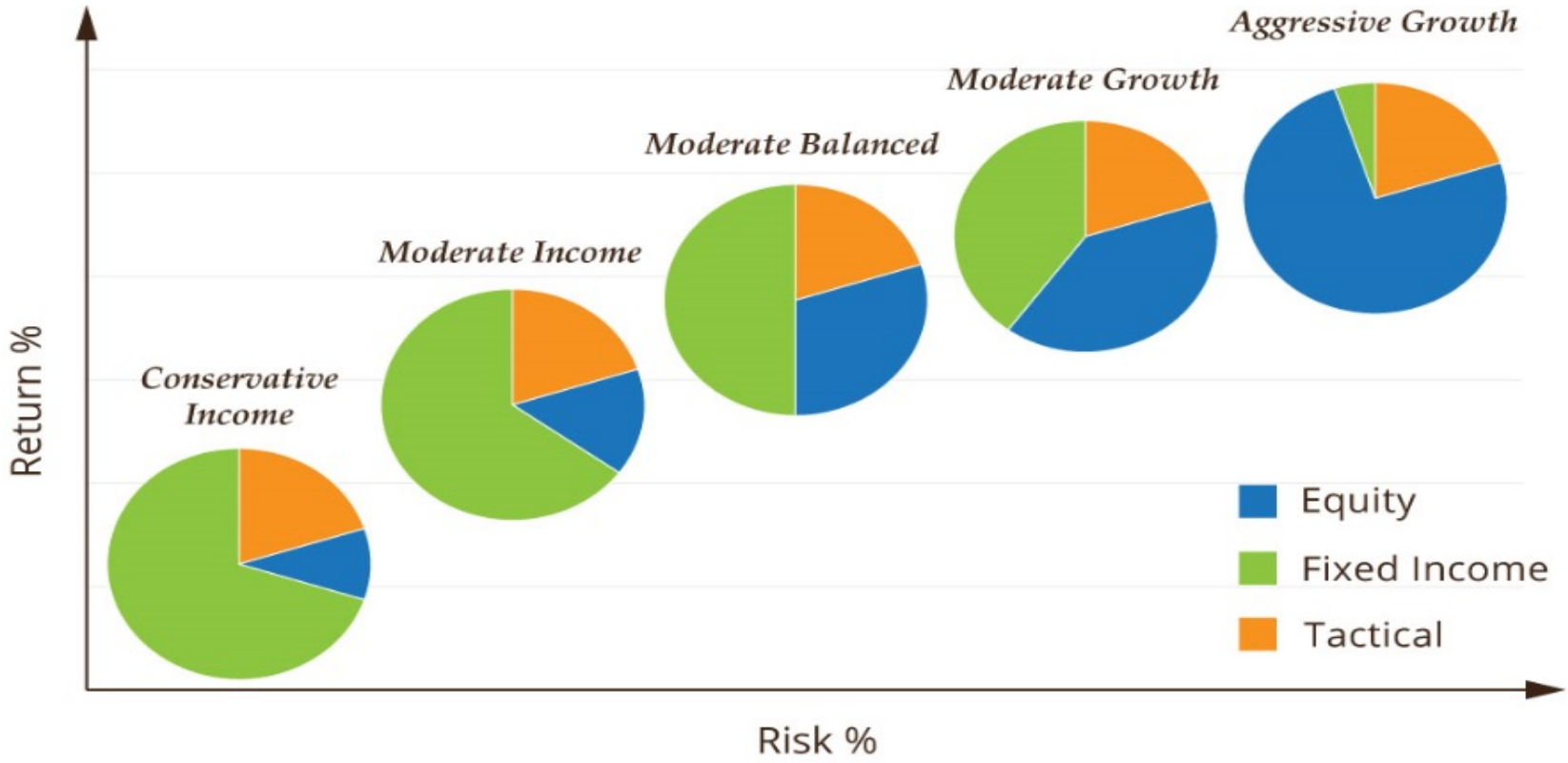
Strategic AsAL



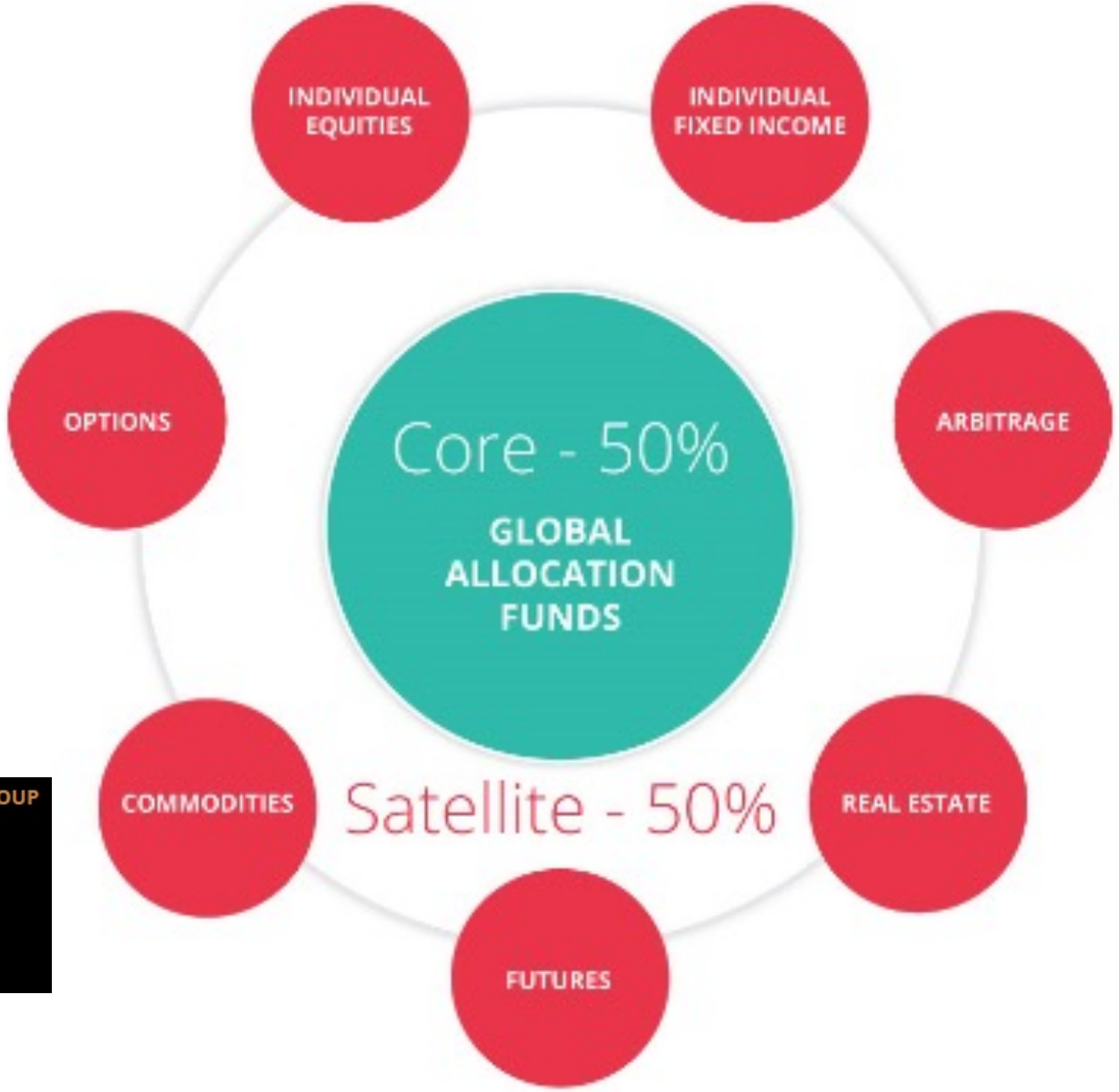
	Benchmark Equity/Fixed
Flexible Income	25/75
Conservative Balanced	40/60
Balanced	60/40
Conservative Growth	80/20
Strategic Growth	100/0

EDGE ASSET MANAGEMENT

ETF Portfolio



Core - Satellite

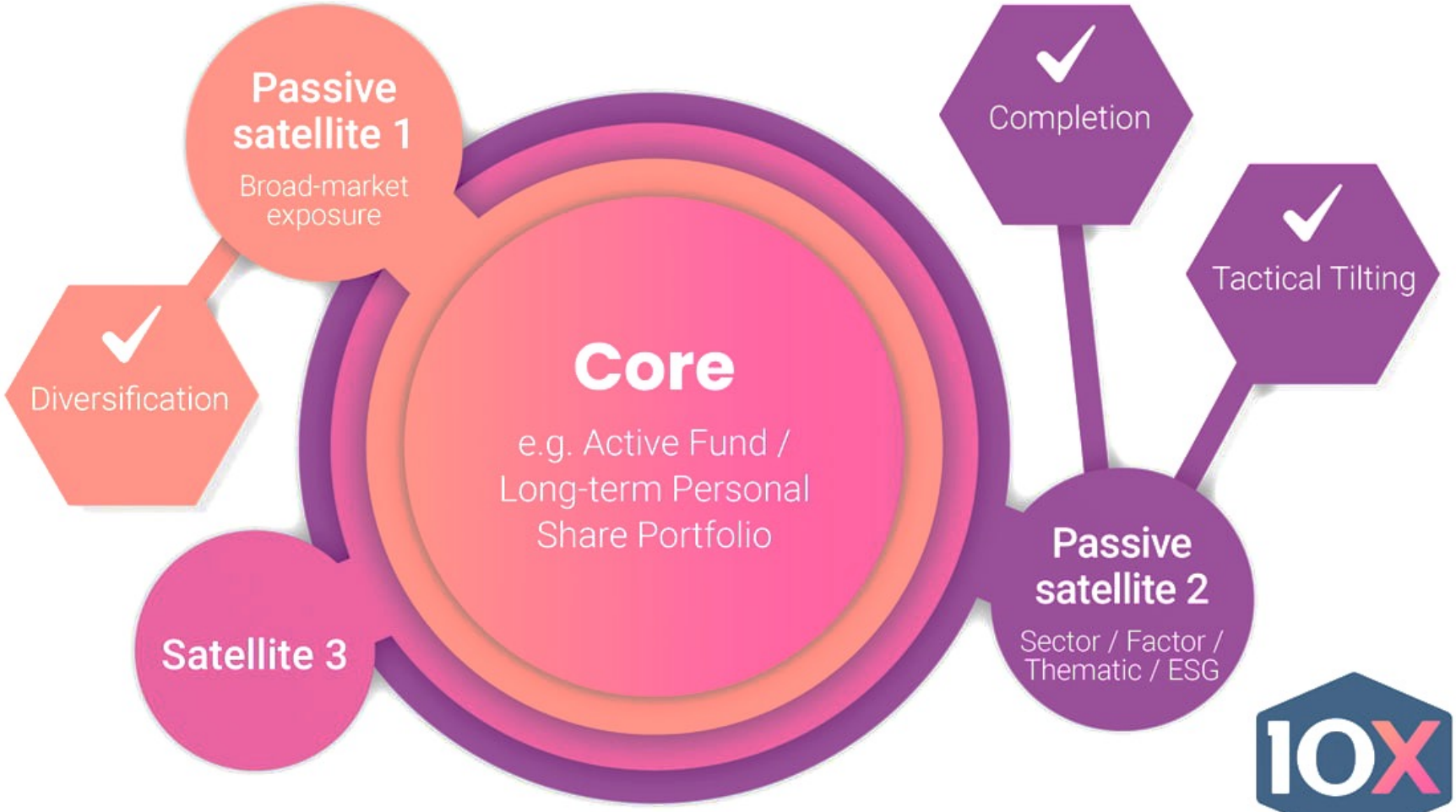


WORTH FINANCIAL ADVISORY GROUP

WORTH FINANCIAL TAX SERVICES

COACHNETWORTH

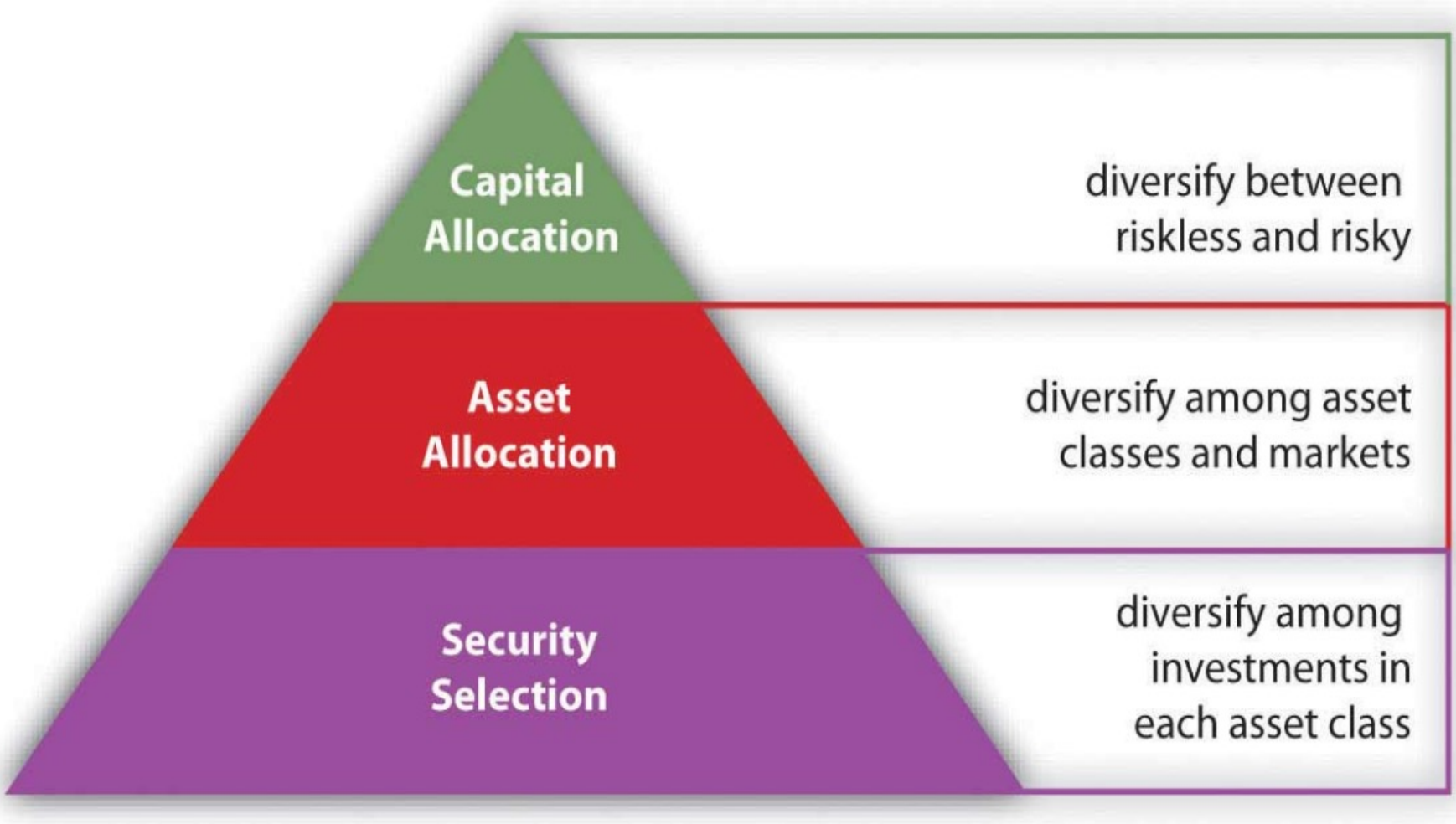
Passive - Passive



Source: CoreShares Investment Managers. This is for illustrative purposes only and does not constitute financial advice.

10X CORESHARES™

Levels


Capital Allocation
diversify between riskless and risky
Asset Allocation
diversify among asset classes and markets
Security Selection
diversify among investments in each asset class

Ways

Top-down analysis

Macroeconomic research done by UBP economist

Bottom-up analysis

Microeconomic analysis through fundamental and quantitative analysis on companies and sectors

Investment committee

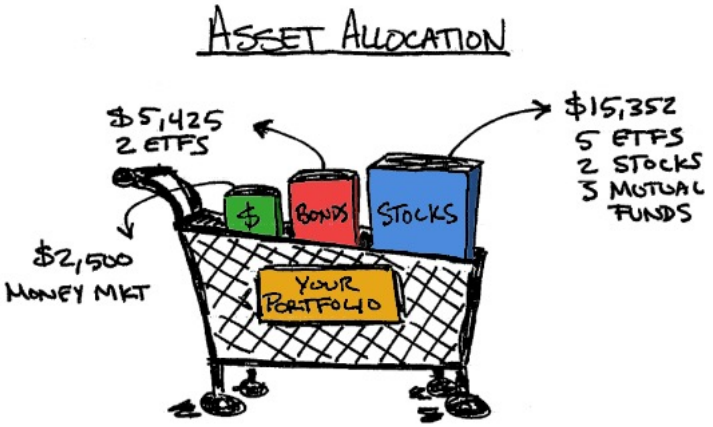
Strategic and tactical asset allocation; investment policy and exposure recommandation, according to risk profile; definition of UBP's strategic benchmark

Portfolio construction

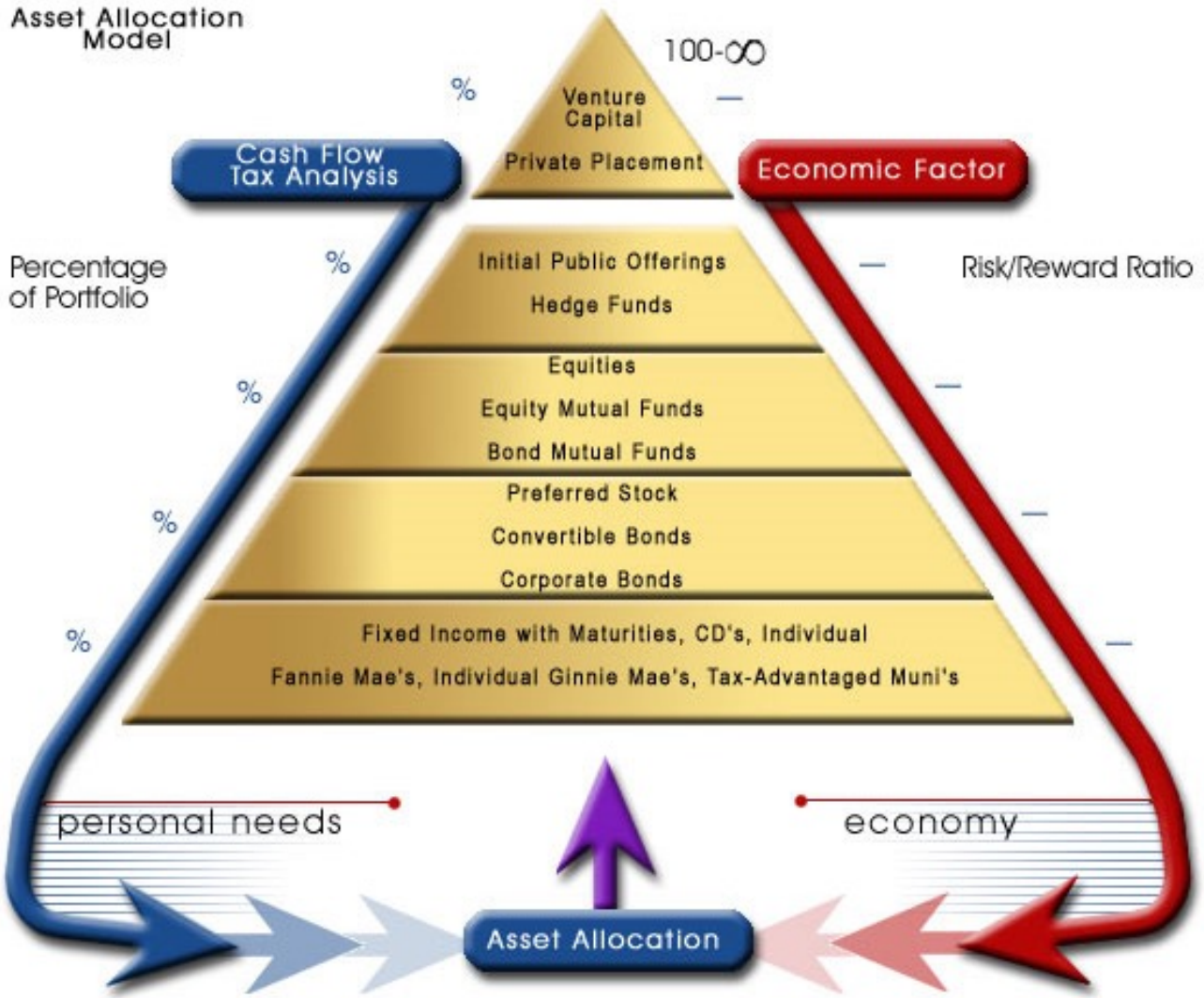
Investment decision according to risk budgeting implementation of investment policy; active management of the portfolio

Risk management

Risk attribution and performance analysis; controlling guidelines and performance and risk report review done by the risk management team

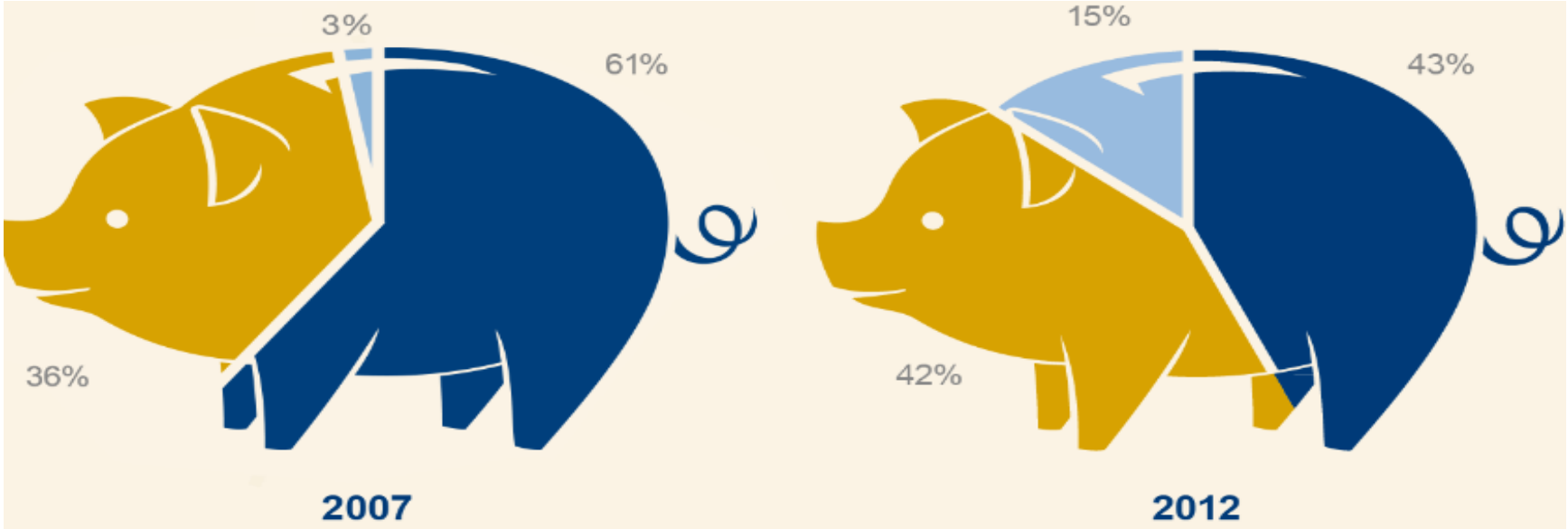


Ways



For complete information on the individual investment vehicles listed in the Risk Reward Pyramid, please review the Investment Features Comparison Chart.

Profiles Change



	2007	2010	2012
Equities	61%	50%	43%
Bonds/Loans	36%	41%	42%
Others	3%	9%	15%

UBS

CHANGES THIS MONTH

1) Equities Slight downgrade of US large cap growth stocks in favor of International; focus equity overweight in US mid and small cap.

2) Fixed income We reduce EM to neutral and consolidate our credit overweight in US high yield; still prefer munis to IG corporates.

3) Foreign exchange No change to currency views as we continue to favor US dollar versus euro given the gap in economic outlook.

LEGEND

- Overweight: Tactical recommendation to hold more of the asset class than specified in the strategic asset allocation (see pages 24-27)
- Underweight: Tactical recommendation to hold less of the asset class than specified in the strategic asset allocation (see pages 24-27)
- Neutral: Tactical recommendation to hold the asset class in line with its weight in the strategic asset allocation (see pages 24-27)

NOTE: TACTICAL TIME HORIZON IS APPROXIMATELY SIX MONTHS

Types

Strategic Asset Allocation

This method establishes and adheres to a "base policy mix" - a proportional combination of assets based on expected rates of return for each asset class. For example, if stocks have historically returned 10% per year and bonds have returned 5% per year, a mix of 50% stocks and 50% bonds would be expected to return 7.5% per year.

Constant-Weighting Asset Allocation

Strategic asset allocation generally implies a buy-and-hold strategy, even as the shift in values of assets causes a drift from the initially established policy mix. For this reason, you may choose to adopt a constant-weighting approach to asset allocation. With this approach, you continually rebalance your portfolio. For example, if one asset is declining in value, you would purchase more of that asset; and if that asset value is increasing, you would sell it.

There are no hard-and-fast rules for timing portfolio rebalancing under strategic or constant-weighting asset allocation. However, a common rule of thumb is that the portfolio should be rebalanced to its original mix when any given asset class moves more than 5% from its original value.

Types

Tactical Asset Allocation

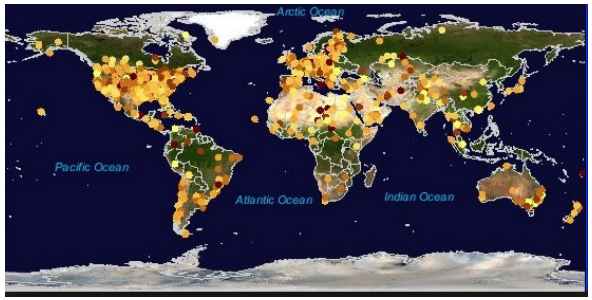
Over the long run, a strategic asset allocation strategy may seem relatively rigid. Therefore, you may find it necessary to occasionally engage in short-term, tactical deviations from the mix to capitalize on unusual or exceptional investment opportunities. This flexibility adds a market timing component to the portfolio, allowing you to participate in economic conditions more favorable for one asset class than for others.

Tactical asset allocation can be described as a moderately active strategy, since the overall strategic asset mix is returned to when desired short-term profits are achieved. This strategy demands some discipline, as you must first be able to recognize when short-term opportunities have run their course, and then rebalance the portfolio to the long-term asset position.

Dynamic Asset Allocation

Another active asset allocation strategy is dynamic asset allocation, with which you constantly adjust the mix of assets as markets rise and fall, and as the economy strengthens and weakens. With this strategy you sell assets that are declining and purchase assets that are increasing, making dynamic asset allocation the polar opposite of a constant-weighting strategy. For example, if the stock market is showing weakness, you sell stocks in anticipation of further decreases; and if the market is strong, you purchase stocks in anticipation of continued market gains.

Types



Insured Asset Allocation

With an insured asset allocation strategy, you establish a base portfolio value under which the portfolio should not be allowed to drop. As long as the portfolio achieves a return above its base, you exercise active management to try to increase the portfolio value as much as possible. If, however, the portfolio should ever drop to the base value, you invest in risk-free assets so that the base value becomes fixed. At such time, you

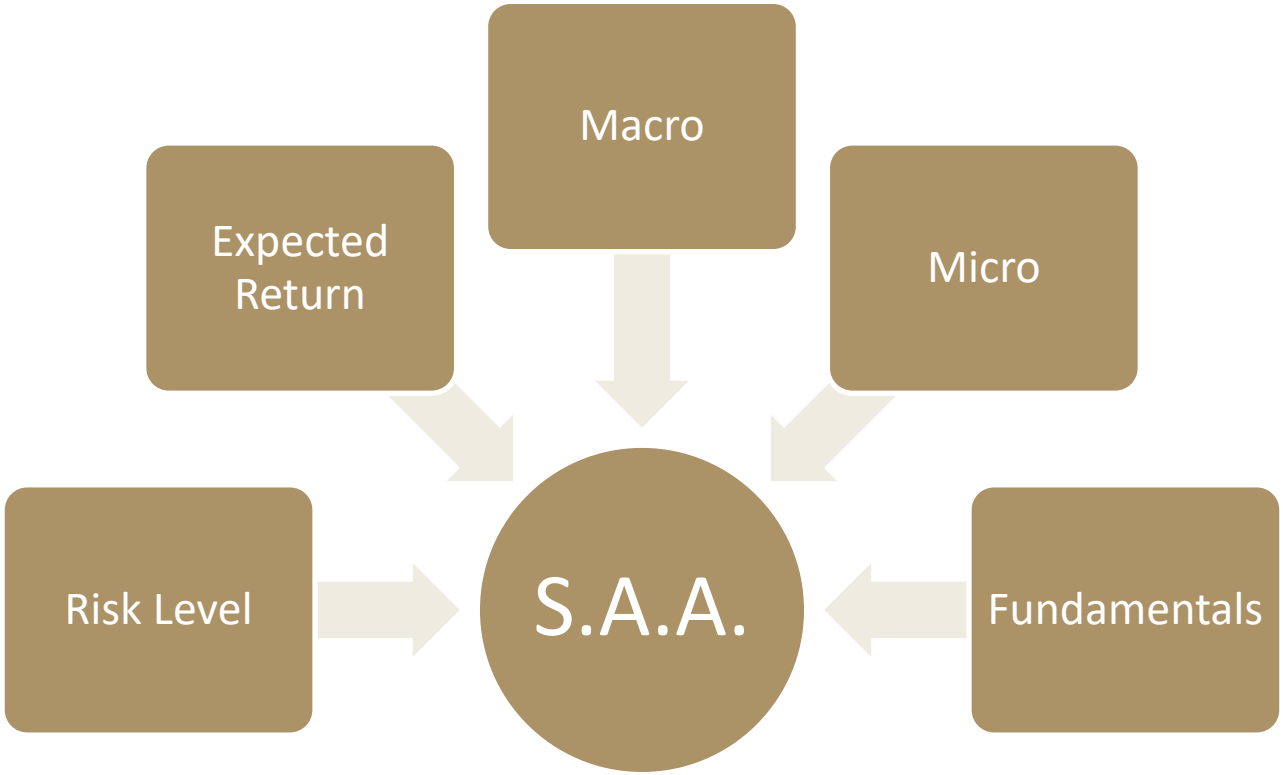
Integrated Asset Allocation

With integrated asset allocation, you consider both your economic expectations and your risk in establishing an asset mix. While all of the above-mentioned strategies take into account expectations for future market returns, not all of the strategies account for investment risk tolerance. Integrated asset allocation, on the other hand, includes aspects of all strategies, accounting not only for expectations but also actual changes in capital markets and your risk tolerance. Integrated asset allocation is a broader asset allocation strategy, albeit allowing only either dynamic or constant-weighting allocation. Obviously, an investor would not wish to implement two strategies that compete with one another.

ASSET ALLOCATION

- STRATEGIC ASSET ALLOCATION (S.A.A.)
  - Portfolio Strategy that involves setting Target Allocations for Various Asset Classes.
  - Factor Analysis determines Original Target Allocation.
  - Suitable for Buy and Hold Strategy.
- TACTICAL ASSET ALLOCATION (T.A.A.)
  - Moderate Active Trading Approach to complement S.A.A..
  - Re-iterate S.A.A. to take advantage of certain market conditions.
  - On going Quantitative and Quality Factor Risk Analysis.
  - Difference vs S.A.A. is called Active Weight.
  - Return to original S.A.A. when conditions are set to (or near) original situation.

S.A.A. - FACTORS (example)



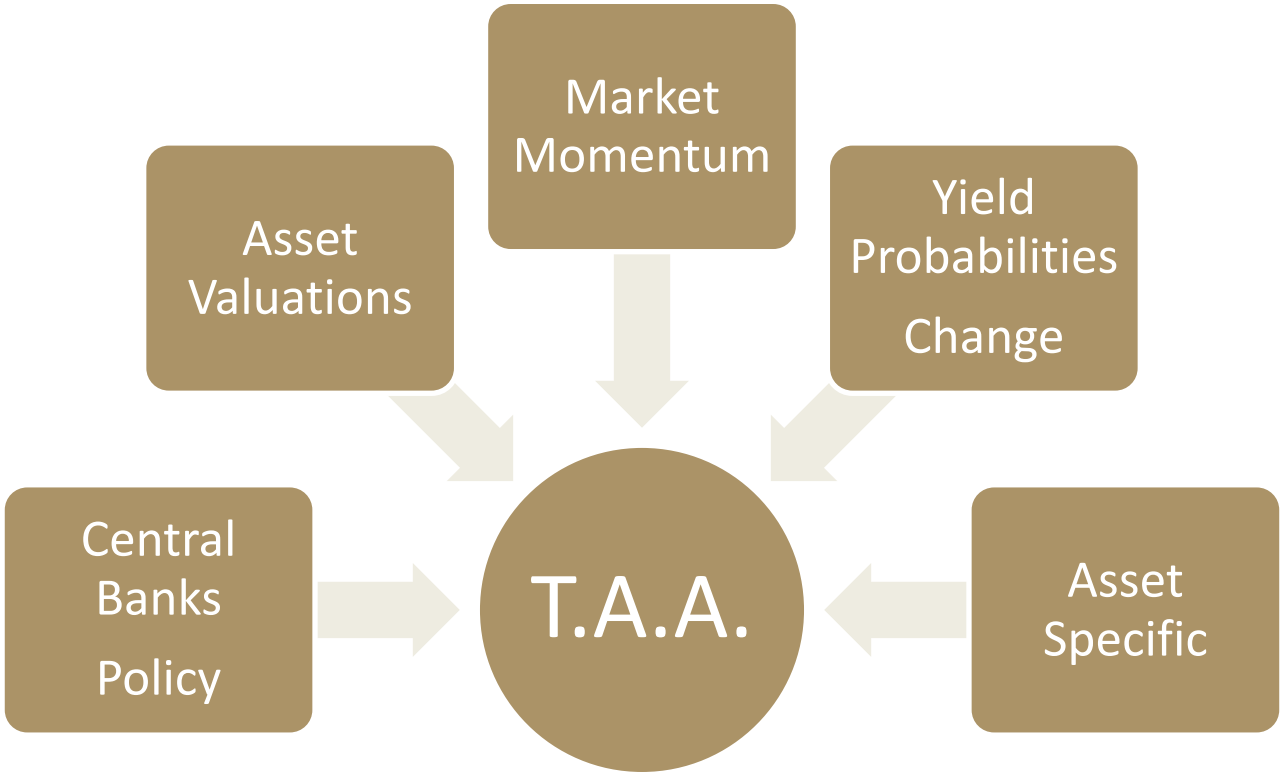
S.A.A. -BALANCED PORTFOLIO

- STRATEGIC ASSET ALLOCATION (S.A.A.) – INITIAL REBALANCING

BALANCED PORTFOLIO

ASSET CLASS	SAA	S.A.A.	CURRENT ALLOCATION	REQUIRED TRADES
Cash	**12,0**	**600.000**	**0**	**600.000**
Fixed Income	**48,0**	**2.400.000**	**3.200.000**	
Sovereign Eurozone	20,0	1.000.000	650.000	350.000
Sovereign USA	15,0	750.000	1.200.000	-450.000
Corporate EUR	8,0	400.000	250.000	150.000
Corporate USD	5,0	250.000	650.000	-400.000
Emerging Markets	0,0	0	450.000	-450.000
Equity	**32,0**	**1.600.000**	**1.600.000**	
Europe	15,0	750.000	650.000	100.000
USA	10,0	500.000	500.000	0
Asia Pacific	7,0	350.000	450.000	-100.000
Commodities/Precious Metals	**8,0**	**400.000**	**200.000**	
Gold	5,0	250.000	100.000	150.000
Oil	3,0	150.000	100.000	50.000
	INVESTED	**4.400.000,00**	**5.000.000,00**	
	Cash	600.000	0	
	TOTAL	**5.000.000,00**	**5.000.000,00**	

T.A.A. - FACTORS (example)



ACTIVE WEIGHT GENERATION

- TACTICAL ASSET ALLOCATION (T.A.A.) – MARKET CONDITIONS IMPACT

Impact of real current market conditions on ACTIVE WEIGHT drives Portfolio T.A.A. (calculated quantitative and qualitative methods):

- ECB enhances QE : **Positive** for Eurozone Sovereign Bonds/EUR Corporate Bonds.
- ECB keeps lowering rates: **Positive** for Eurozone Sovereign Bonds/EUR Corporate Bonds.
- Oil Price Stabilization: Stability for US Energy Sector Corporate Bonds and increased probability for rating pressure lift: **Positive** for US Corporate Bonds.
- US Equity Market valuations are stretched at SP500 levels above 2000p: **Negative** Active weight due to market conditions.
- China possible slowdown: **Negative** Active Weight in Asian Pacific Markets. **Positive** on Australian Government Bonds.
- Oil Price Rally Stalls. OPEC negotiations Stalemate: **Negative** Active Weight for Oil Assets.
- Gold has reached Upper technical bound. EUR Equity positive Outlook remains: **Negative** Active Weight for real Gold Assets.
- **Increase** in Cash in order to cover increasing margin requirements.

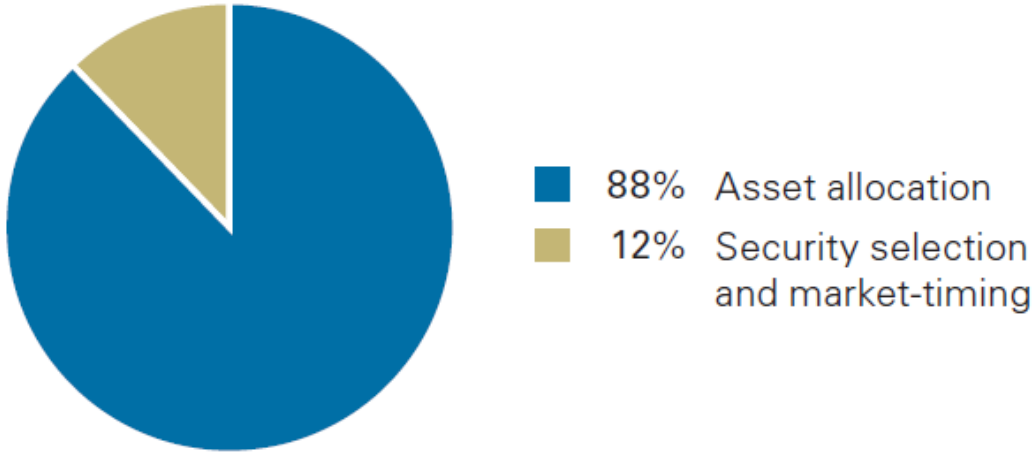
T.A.A. -BALANCED PORTFOLIO

- TACTICAL ASSET ALLOCATION (T.A.A.) – MODERATE REBALANCING

BALANCED PORTFOLIO						
ASSET CLASS	SAA	Active Weight	TAA	S.A.A.	T.A.A. REBALANCING	REQUIRED TRADES
Cash	**12,0**		**17,5**	**600.000**	**875.000**	**-275.000**
Fixed Income	**48,0**		**58,0**	**2.400.000**	**2.900.000**	
Sovereign Eurozone	20,0	4,0	24,0	1.000.000	1.200.000	-200.000
Sovereign USA	15,0	0,0	15,0	750.000	750.000	0
Corporate EUR	8,0	4,0	12,0	400.000	600.000	-200.000
Corporate USD	5,0	2,0	7,0	250.000	350.000	-100.000
Emerging Markets	0,0	0,0	0,0	0	0	0
Equity	**32,0**		**22,0**	**1.600.000**	**1.100.000**	
Europe	15,0	0,0	15,0	750.000	750.000	0
USA	10,0	-5,0	5,0	500.000	250.000	250.000
Asia Pacific	7,0	-5,0	2,0	350.000	100.000	250.000
Commodities/Precious Metals	**8,0**		**2,5**	**400.000**	**125.000**	
Gold	5,0	-2,5	2,5	250.000	125.000	125.000
Oil	3,0	-3,0	0,0	150.000	0	150.000
	INVESTED			**4.400.000,00**	**4.125.000,00**	
	Cash			600.000	875.000	
	TOTAL			**5.000.000,00**	**5.000.000,00**	

Figure 1. Investment success is largely determined by the long-term mixture of assets in a portfolio

Percentage of a portfolio's movements over time explained by:



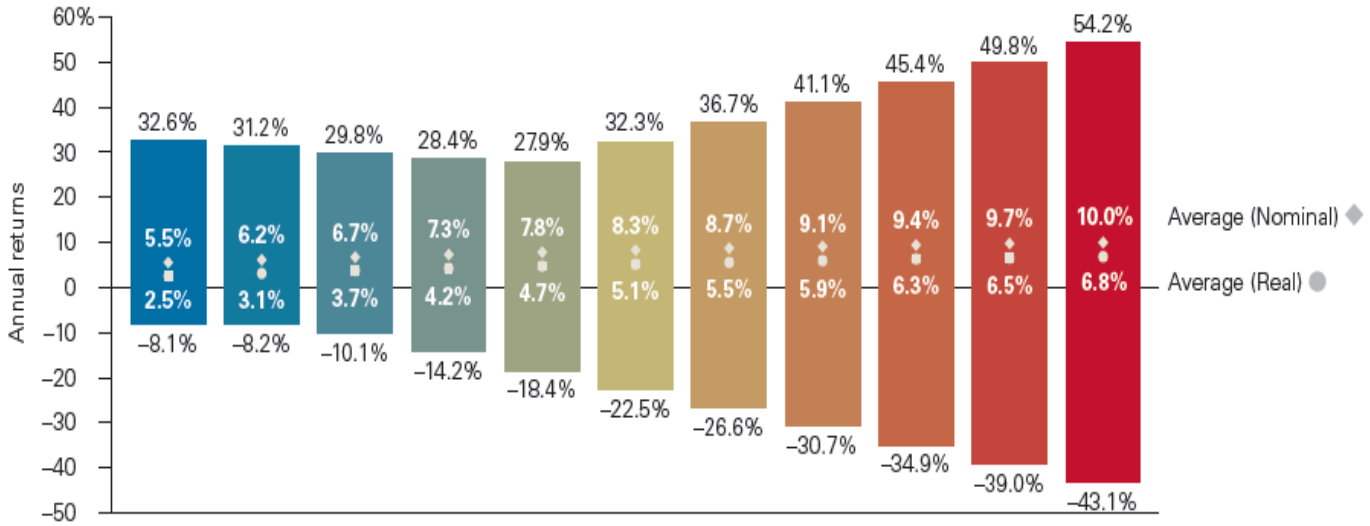
Notes: Calculations are based on monthly returns for 518 U.S. balanced funds from January 1962 through December 2011. For details of the methodology, see the Vanguard research paper *The Global Case for Strategic Asset Allocation* (Wallick et al., 2012).

Sources: Vanguard calculations, using data from Morningstar.

Figure 2. The mixture of assets defines the spectrum of returns

Moving from left to right, the stock allocation relative to bonds increases in 10% increments. The length of the bars indicates the range of annual returns for each allocation; the longer the bar, the larger the variability. The numbers inside the bar are the average annual nominal* and real returns for that allocation for the 87 years indicated.

Portfolio allocation											
Bonds	100%	90%	80%	70%	60%	50%	40%	30%	20%	10%	0%
Stocks	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

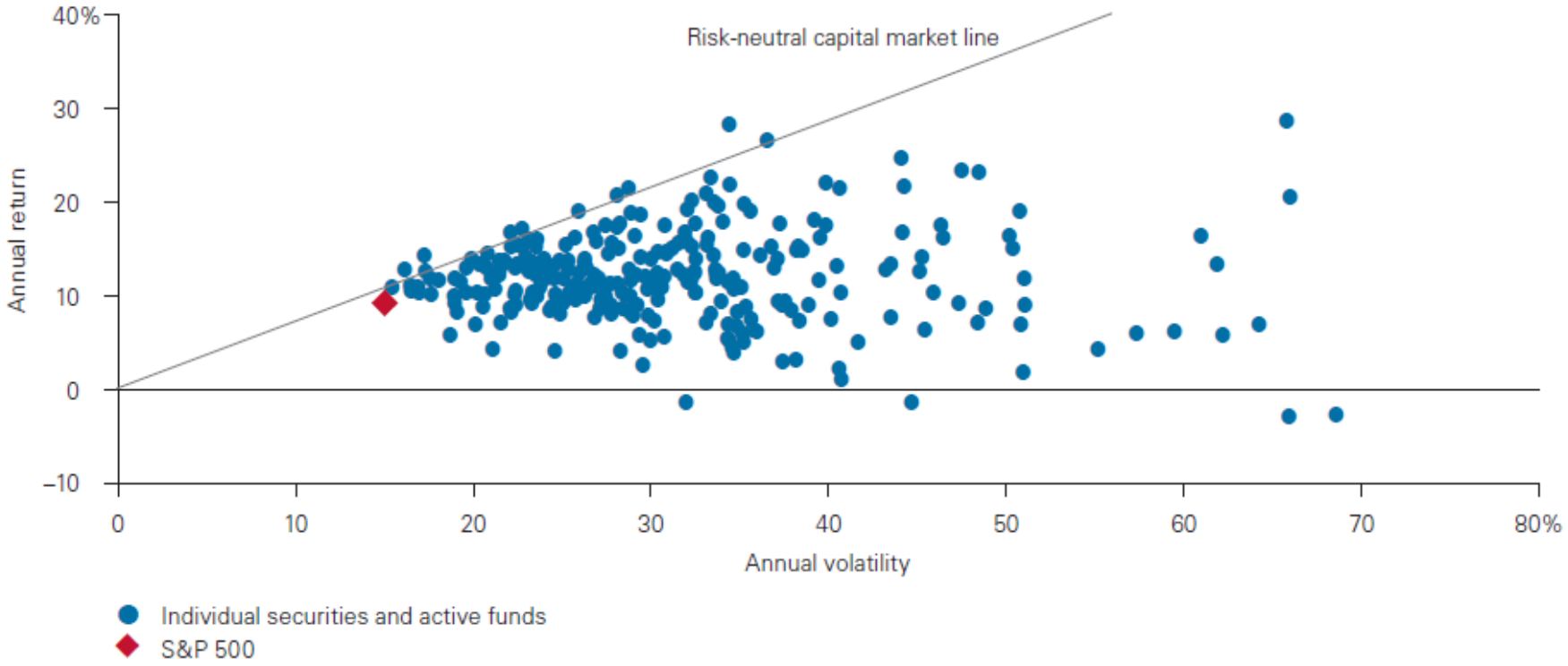


*Nominal value is the return before adjustment for inflation, real value includes the effect of inflation.

Notes: Stocks are represented by the Standard & Poor's 90 Index from 1926 through March 3, 1957; the S&P 500 Index from March 4, 1957, through 1974; the Wilshire 5000 Index from 1975 through April 22, 2005; and the MSCI US Broad Market Index thereafter. Bonds are represented by the S&P High Grade Corporate Index from 1926 through 1968; the Citigroup High Grade Index from 1969 thorugh 1972; the Barclays U.S. Long Credit AA Index from 1973 through 1975; and the Barclays U.S. Aggregate Bond Index thereafter. Data are through December 31, 2012.

Source: Vanguard.

Figure 4. S&P 500 constituents' return and volatility, 1988–2012



Note: Constituents shown are as of December 31, 2012.

Sources: Vanguard calculations, using data from Morningstar.

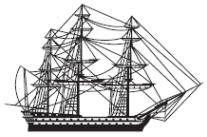


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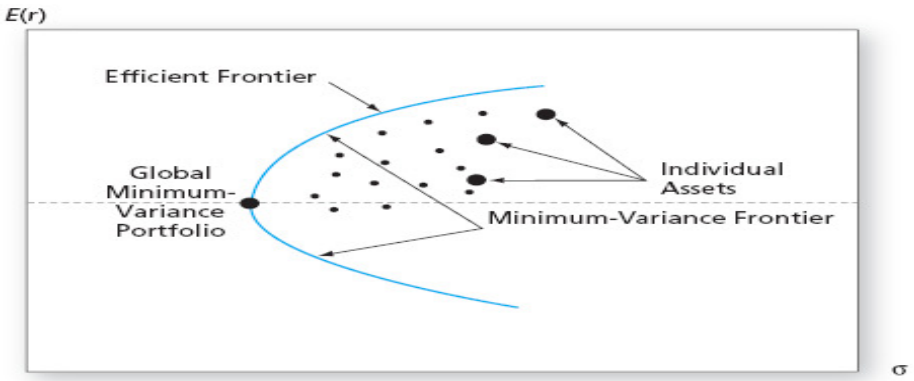
Figure 5. Historical performance of alternative rebalancing rules for a 60% equity/40% bond portfolio (1926–2012)

Monitoring frequency	Monthly	Monthly	Quarterly	Annually	Never	Income
Threshold	0%	5%	5%	5%	None	None
Average equity allocation	60.1%	61.2%	60.9%	60.8%	84.6%	60.9%
Costs of rebalancing						
Annual turnover	2.7%	1.8%	1.6%	1.5%	0.0%	0.0%
Number of rebalancing events	1,044	61	51	29	0	0
Absolute framework						
Average annualized return	8.6%	8.6%	8.8%	8.7%	9.2%	8.5%
Volatility	12.1%	12.2%	12.1%	11.7%	14.4%	11.2%

Notes: This illustration does not represent the return on any particular investment. All returns are in nominal U.S. dollars. There were no new contributions or withdrawals. Except in the "Income" column, dividend payments were reinvested in equities; interest payments were reinvested in bonds. The Income column shows a 60% stock/40% bond portfolio that was rebalanced by investing the portfolio's dividend and interest payments in the underweighted asset class from 1926 through 2012. There were no taxes. All statistics were annualized.

Stocks are represented by the Standard & Poor's 90 Index from 1926 through March 3, 1957; the S&P 500 Index from March 4, 1957, through 1974; the Wilshire 5000 Index from January 1, 1975, through April 22, 2005; and the MSCI US Broad Market Index from April 23, 2005, through December 31, 2012. Bonds are represented by the S&P High Grade Corporate Index from 1926 through 1968; the Citigroup High Grade Index from 1969 through 1972; the Lehman Long-Term AA Corporate Index from 1973 through 1975; and the Barclays U.S. Aggregate Bond Index from 1976 through 2012.

Sources: Vanguard calculations, using data from Standard & Poor's, Wilshire, MSCI, Citigroup, and Barclays.



Portfolio Optimization

Taking the process one step forward…

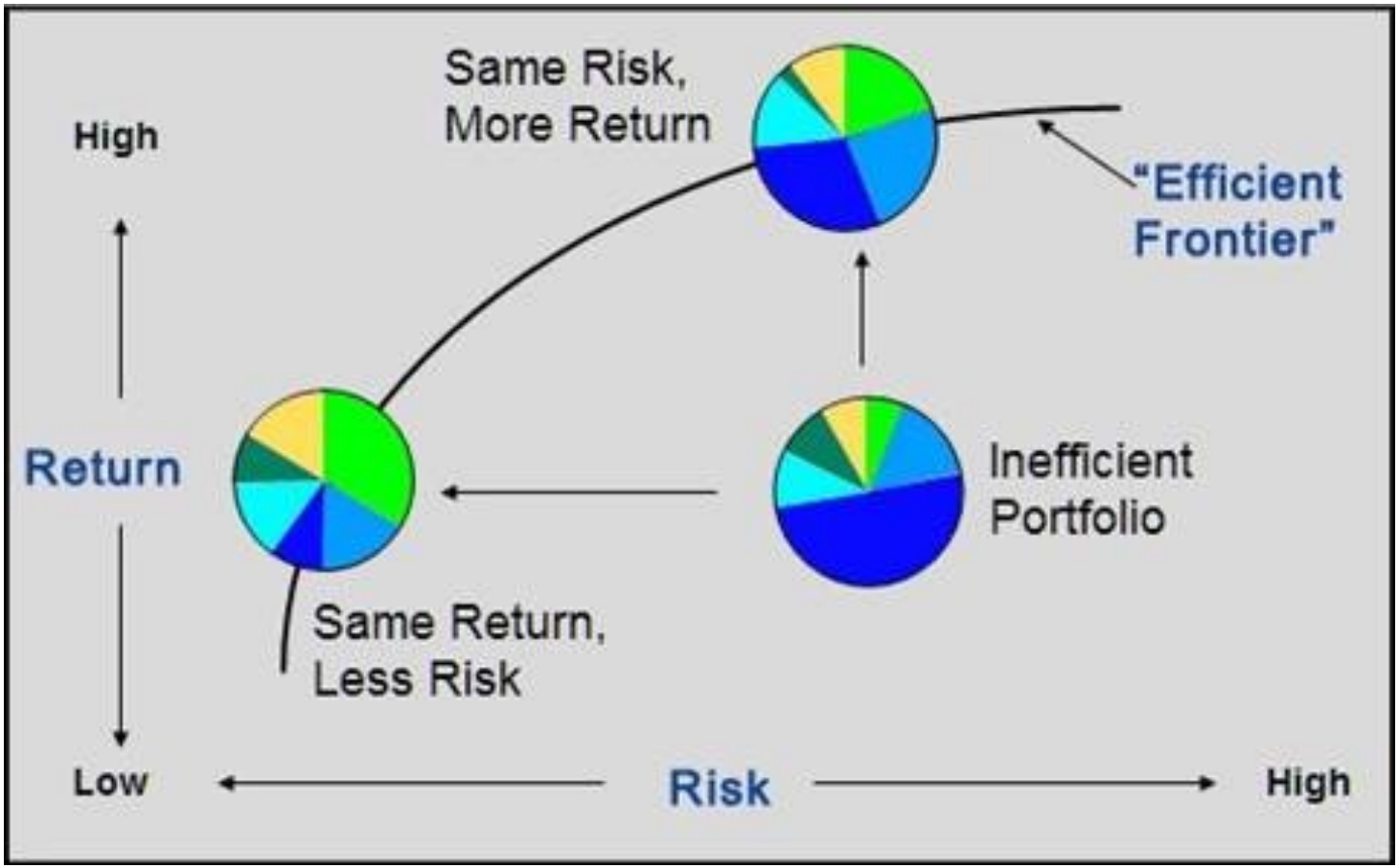
Basics

Portfolio optimization is the process of choosing the proportions of various assets to be held in a portfolio, in such a way as to make the portfolio **better than any other** according to some criterion. The criterion will combine, directly or indirectly, considerations of the expected value of the portfolio's rate of return as well as of the return's dispersion and possibly other measures of financial risk.

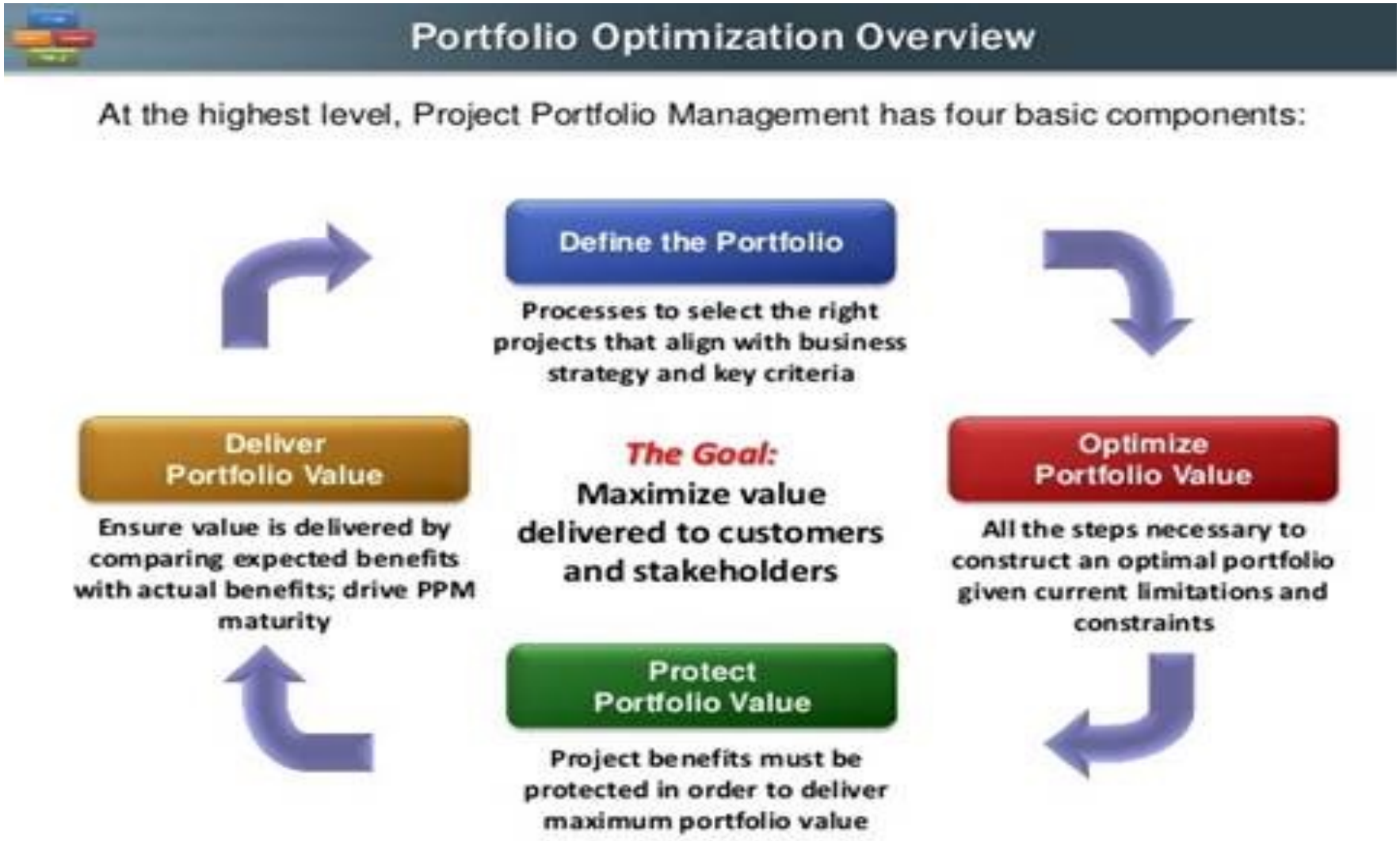
Basics

Modern portfolio theory, fathered by **Harry Markowitz in the 1950s**, assumes that an investor wants to maximize a portfolio's expected return contingent on **any given amount of risk**, with risk measured by the standard deviation of the portfolio's rate of return. For efficient portfolios, achieving a higher expected return requires taking on more risk, so investors are faced with a trade-off between risk and expected return.

Basics


Same Risk,
More Return
High
"Efficient
Frontier"
Return
Inefficient
Portfolio
Same Return,
Less Risk
Low
Risk
High

Overview


Portfolio Optimization Overview
At the highest level, Project Portfolio Management has four basic components:
Define the Portfolio
Processes to select the right projects that align with business strategy and key criteria
Optimize Portfolio Value
All the steps necessary to construct an optimal portfolio given current limitations and constraints
Protect Portfolio Value
Project benefits must be protected in order to deliver maximum portfolio value
Deliver Portfolio Value
Ensure value is delivered by comparing expected benefits with actual benefits; drive PPM maturity
The Goal:
Maximize value delivered to customers and stakeholders

Optimization Problems

Problem 1: portfolio optimization is too hard

If you are using a spreadsheet, then this is indeed a problem. Spreadsheets are dangerous when given a complex task. **Portfolio optimization qualifies as complex** in this context. If you are using a more appropriate computing environment, then it isn't really all that hard. There are a few issues that need to be dealt with, but taking them one at a time keeps the task from being overwhelming.

Optimization Problems

Solution

If you are using spreadsheets, my prescription is to switch to R. When there is real money on the line, using a spreadsheet for portfolio optimization seems to me to be penny wise and dollar foolish.

Optimization Problems

Problem 2: portfolio optimizers suggest too much trading

A major frustration with optimizers is that the turnover can be excessive.

Solution

All reasonable portfolio optimizers allow:

- turnover constraints
- transaction costs

Use either of these to reduce the turnover to a suitable amount.

Optimization Problems

Problem 3: expected returns are needed

First off, this isn't strictly true. You can find minimum variance portfolios which need a variance matrix but not expected returns. The success of low volatility investing is a reason to go down this route.

But assuming that you are an active investor, you need expectations in some sense. There are a number of techniques that don't require numerical expected returns.

Optimization Problems

Solution: target portfolio

Anyone should be able to provide an ideal target portfolio — the portfolio that you would like to hold when **all constraints are ignored**. Once you have the target portfolio, then you can get a portfolio that is "close" to the target but does obey the constraints. One of those constraints should almost surely be turnover.

Optimization Problems

Solution: reverse optimization

The technique of reverse optimization (also called **implied alpha**) can be used iteratively to try to find a portfolio that looks like what you want in terms of the expected returns that are implied. This avoids actually doing optimization, but it is labor-intensive and it depends on the constraints not spoiling the implied alphas (which is perhaps doubtful).

Optimization Problems

Solution: asset ranks

If you can order the assets in your universe in terms of expected returns, then it is feasible to produce expected returns to give to an optimizer. Ranking assets is much easier than giving numerical estimates of returns. A paper by **Almgren and Chriss** explains how to turn ranks into numerical expected returns.

Optimization Problems

Problem 4: mean-variance optimization is restrictive

There is a myth that mean-variance optimization is only useful when returns are normally distributed. That's backwards. **If returns are normally distributed**, then mean-variance optimization is all that can be done — all other utilities will be equivalent. True, If the return distribution of any assets in the universe are not reasonably close to symmetric.

Optimization Problems

Solution

If indeed you are in a situation — including fixed income or options — where mean-variance optimization is not appropriate, then you should probably do **scenario optimization**.

Optimization Problems

Problem 5: portfolio optimization inputs are noisy estimates

Portfolio optimizers are stupid enough to believe what we tell them. The optimizer gives us a solution as if we really knew the expected returns and the variance matrix. In fact, **(a)** estimates of expected returns are almost total noise and **(b)** estimates of the variance matrix are quite noisy "almost total noise" applies to the best fund managers — the "almost" needs to be dropped for below-average fund managers.

Optimization Problems

Solution: Black-Litterman type operations

Some people think that doing something like Black-Litterman is a solution to this problem. **It isn't.** If done intelligently, then it reduces — but does not eliminate — the noise in the expected returns.

Optimization Problems

Solution: robust optimization

The real solution to this problem goes by the name of robust optimization. I find this term unfortunate since there are several uses of the term “robust” which can easily be confused with the meaning of getting good solutions to a trade optimization from noisy inputs. There is a rather large selection of proposals for implementing solutions. Most of them are quite complicated.

Optimization Problems

Solution: shrinking

There is a simple and easily implemented solution (though the exact number probably needs to be found via experimentation).

It is easy to shrink the trade either by imposing a (stronger) turnover constraint or by increasing the transaction costs. How much to do that is an issue, of course, but the principle is simple. A guess is likely to be better than not doing it at all.

Optimization Problems

Problem 6: transaction costs are tricky

This is true. But there's an even trickier bit: either the transaction costs need to be scaled to match the expected returns and variance, or the expected returns and variance need to be scaled to match the transaction costs. The three entities all appear in the **utility function**, and scaling is necessary for the utility to make sense.

Optimization Problems

Solution

The coward's way out is just to impose a turnover constraint.

The other way is to work and think hard about trading costs. And probably to use an optimizer that allows flexible specification of costs.

Optimization Problems

Problem 7: risk and alpha factor alignment trouble

There has been talk among the portfolio optimization literati about alpha eating and factor alignment. The whole thing sounds seriously geeky. The gist of it is that if there are factors used in the expected returns that are not factors in the risk model, then the optimizer will think those factors are essentially riskless and use them too much.

Optimization Problems

Solution

One of the main “solutions” to this is to add the missing factors to the risk model. This of course assumes that there are factors in the expected returns model. The real problem is that factor models are the wrong technology to use as the variance matrix in optimizers. The solution, then, is better technology. My suggestion is to use **Ledoit-Wolf** estimates which shrink towards equal correlation.

Performance appraisal and evaluation, manager selection

From the end to beginning…

Basics

1. How should we deal with the conflict between long-term investment goals and short-term evaluation cycles?
2. Should performance evaluation be quantitative or qualitative?
3. Should performance for active and passive portfolios be measured differently?

Basics

EXHIBIT 1: The mathematical definition of active share is straightforward, and allows for three possible sources of active share within a portfolio.

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$$\text{Active Share} = \frac{1}{2} \sum_{i=1}^{n} \left| \text{weight}_{\text{portfolio, } i} - \text{weight}_{\text{benchmark, } i} \right|$$

Sources of portfolio active share:

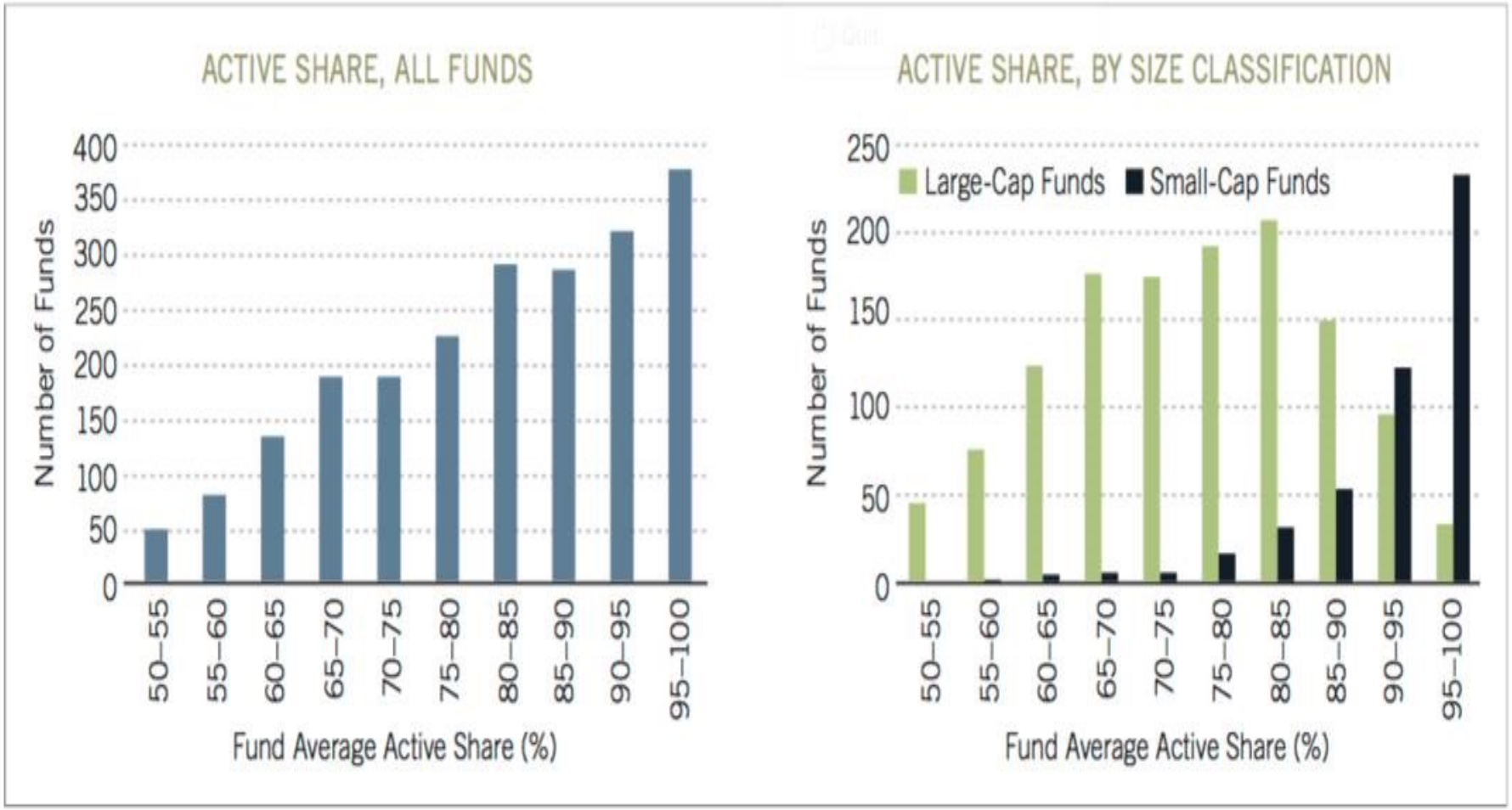
- Including stocks that are not in the benchmark
- Excluding stocks that are in the benchmark
- Holding benchmark stocks in different weights than the benchmark

Basics

Historically, the industry has used tracking error as the best measure of active risk in a portfolio. Tracking error quantifies the volatility of a portfolio's relative returns (returns different from the benchmark's). Cremers and Petajisto's article argues that tracking error alone is not the best indicator of how actively managed a portfolio is in terms of "stock selection," because "factor timing" (changing a portfolio's exposures to systemic risk factors such as industries, sectors, or other criteria) can influence tracking error as much as or more than a manager's stock-selection practices. According to them, active share—which focuses on the composition of the portfolio itself and not on returns—can be used to get a better indication of a manager's degree of active management.

Basics

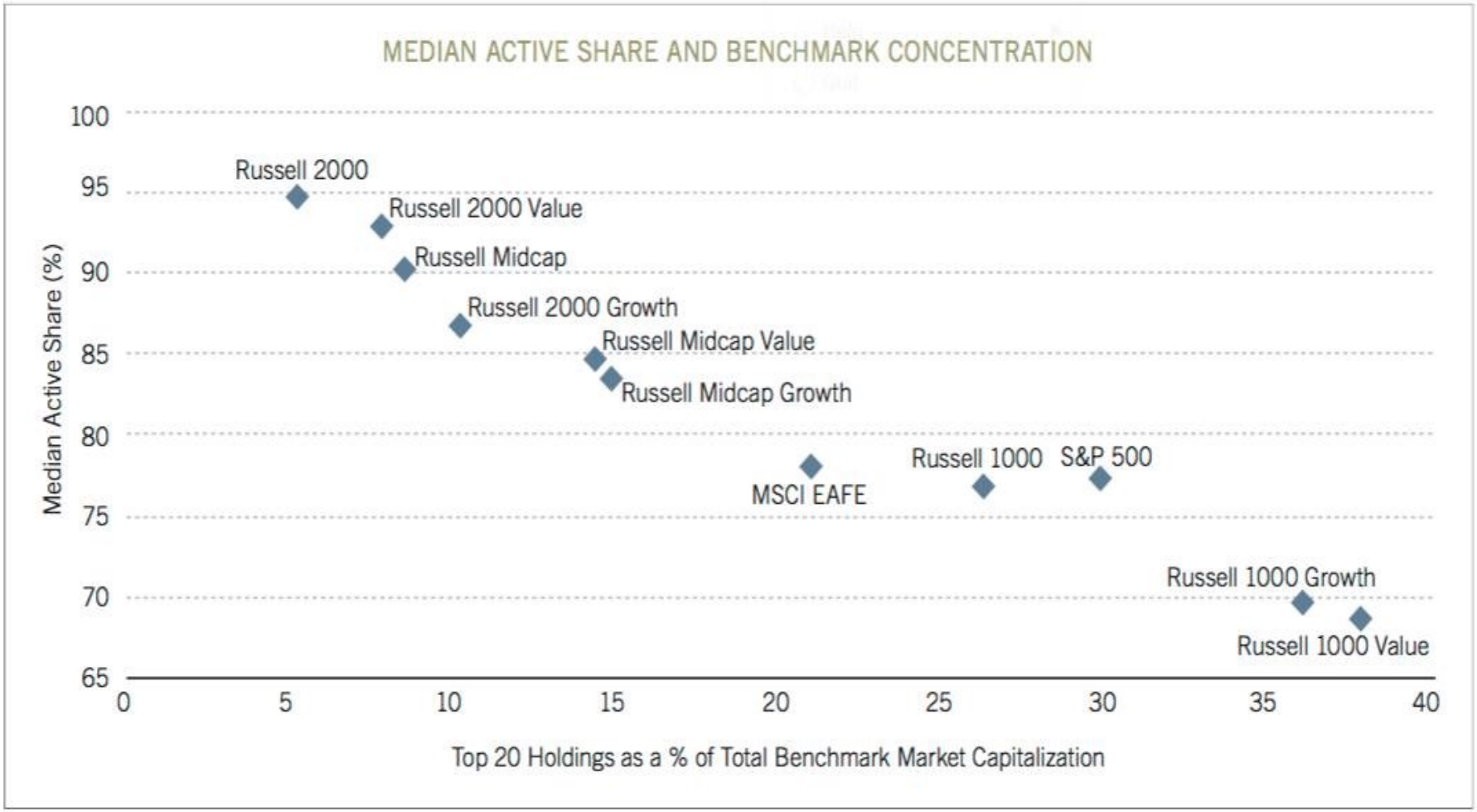
EXHIBIT 2: Most small-cap funds have very high active share, while large-cap funds tend to distribute normally around lower ranges.



Fidelity INVESTMENTS

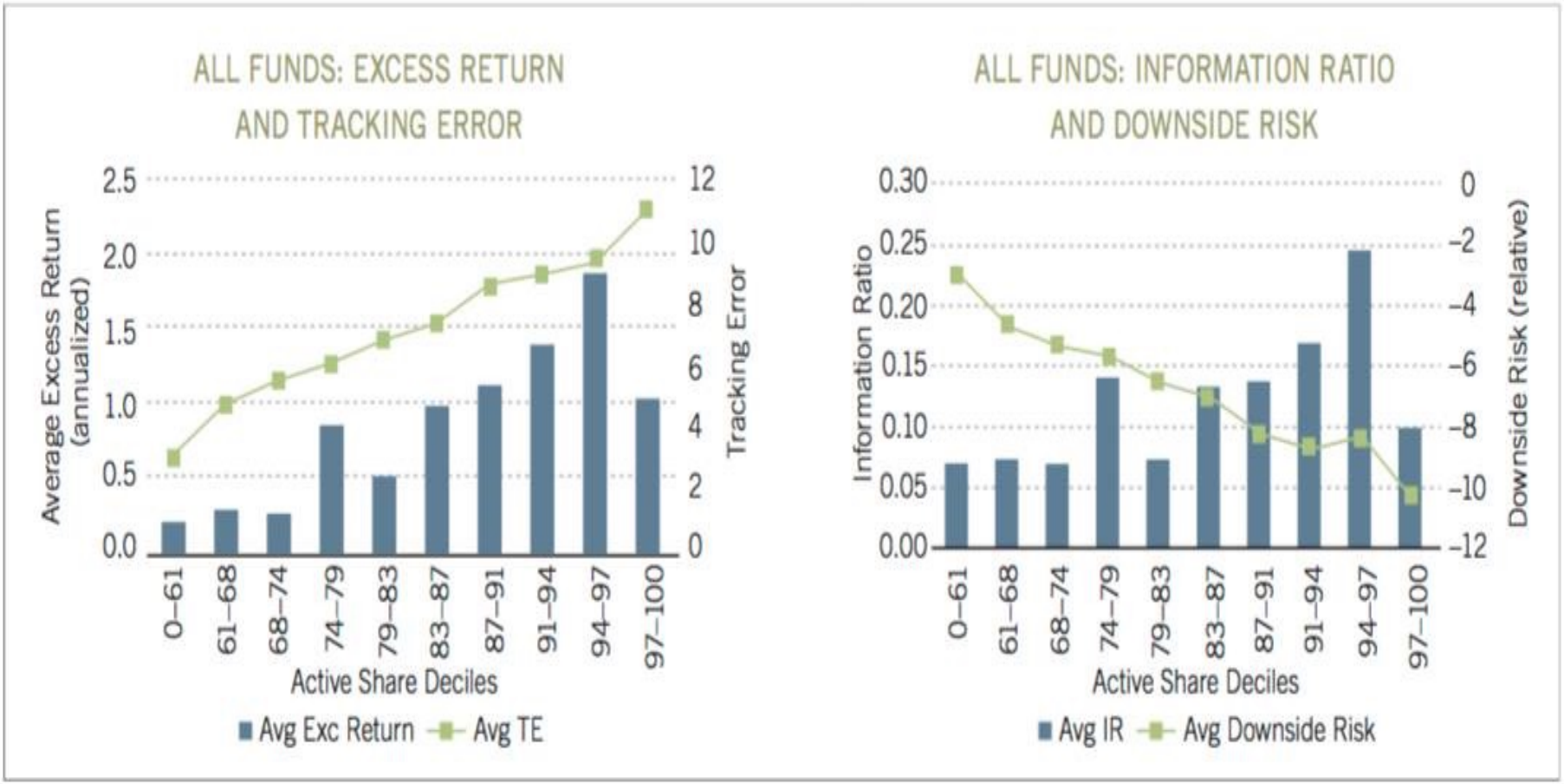
Basics

EXHIBIT 3: Top-heavy indices tend to lead to lower active shares for active managers benchmarked to those indices.



Basics

EXHIBIT 4: Over the past 15 years, higher active share has on average been accompanied by higher excess return and higher tracking error; however, the relationship with information ratio has been less clear, while downside risk tends to increase with active share.



Fidelity INVESTMENTS

Process


Process Overview
Selection Process
Strategic Oversight
Monitoring Process
1 Initial Research and Screen
2 Quantitative and Qualitative Analysis
3 Request for Proposals
4 On-Site Review
5 Final Selection
A Ongoing Global Market Assessment
B Monthly Manager Analysis
C Quarterly Performance Review
D Quarterly Compliance Audit
E Annual Assessment and Site Visit

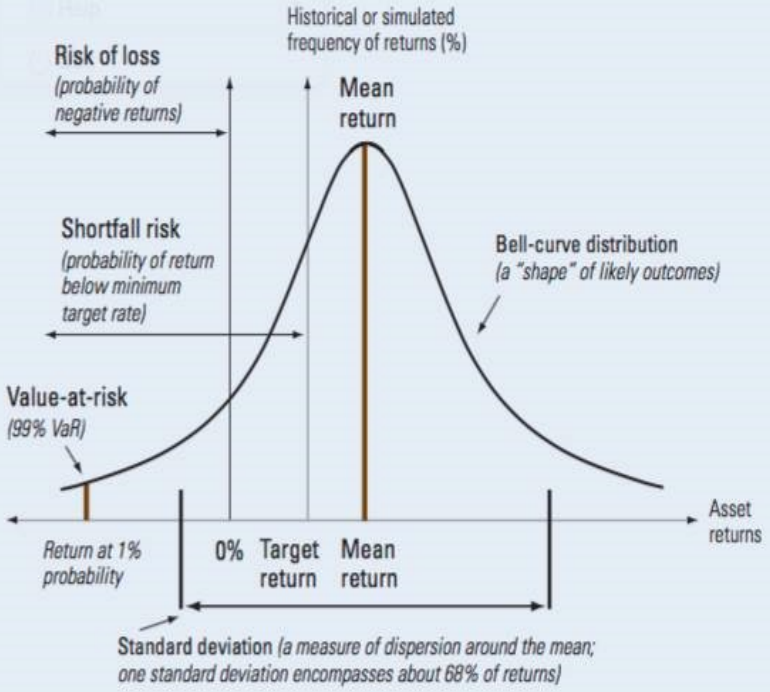
Process

NEI

12-MONTH MONITORING CYCLE

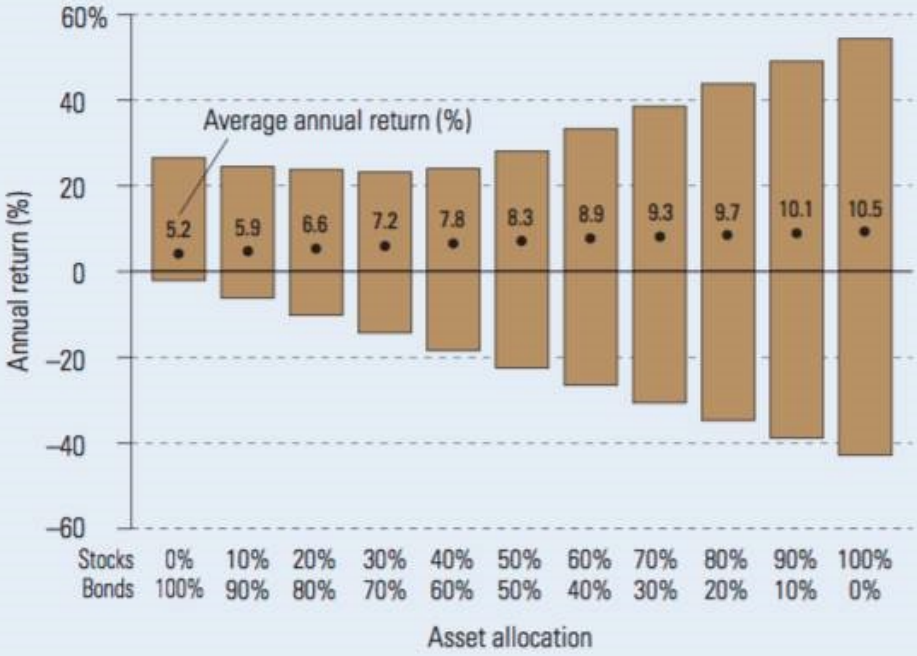
Returns

Figure 2. Various absolute risk measures for investment returns



Source: Vanguard Investment Counseling & Research.

Figure 1. Range of calendar-year returns for various stock and bond allocations, 1926–2006



Benchmarks

Stocks = Standard & Poor's 500 Index, 1926–1970; Dow Jones Wilshire 5000 Composite Index, January 1, 1971–April 22, 2005; Morgan Stanley Capital International (MSCI) US Broad Market Index, April 23, 2005–December 31, 2006.

Bonds = Ibbotson Intermediate Government series, 1926–1972; Lehman Brothers Intermediate U.S. Treasury Index, 1973–2006.

Characteristics

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Historical value-at-risk

Historical value-at-risk is based on a security's worst results over a given period. The measure can be derived from a fixed percentage of the worst observations—the worst 1% or 5%, for example—or a fixed number of those observations.

Risk of loss

Risk of loss is a useful counterpart to historical VaR, describing the frequency of bad results. It measures the percentage of outcomes below a certain total-return level, usually 0%. This risk metric is most often used to assess the likelihood that a portfolio will fall below a specific return or asset value target. Value-at-risk and risk of loss can be used by almost any portfolio as the ultimate test of risk tolerance. Would there be comfort if an extreme negative event occurred, or should risk levels be reduced?

Portfolio standard deviation

Standard deviation, a basic statistical tool, is widely used to measure the degree of fluctuation in a portfolio's return. The larger the standard deviation, the greater the magnitude of the fluctuations from the portfolio's average return. Consider a portfolio with an average return of 10% and a standard deviation of 15%. Its returns should fall between −5% and 25% in 68% of all observations.

Excess return

Excess return is a security's return above or below that of a benchmark or a theoretically risk-free asset such as Treasury bills. Excess return is simply the portfolio's or security's return minus that of the benchmark, making it easy to understand and calculate. If an actively managed mutual fund returns 11%, and its benchmark returns 10%, the fund's excess return is 1%.

Characteristics

Tracking error

Tracking error is the standard deviation of excess return. Like portfolio standard deviation, tracking error assumes that returns are normally distributed. It combines both upside and downside risk. Consider an index fund that has no excess return relative to its benchmark when measured over a long period, but that produces an annualized tracking error of 10 basis points (0.1 percentage point). If the benchmark returns 10% per year, the fund's return should be between 9.9% and 10.1% (10 basis points on either side of the benchmark return of 10%) in 68% of the observed one-year time periods (one standard deviation).

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Shortfall risk

Shortfall risk is the probability that an investment's value will be less than is needed to meet portfolio objectives. This probability can be measured using a variety of approaches, including historical time-path simulation and Monte Carlo simulation. The shortfall-risk metric is most often used to help create a comprehensive investment plan, taking into account current assets and estimated future liabilities in both the accumulation and spending phases. The metric might indicate, for example, that an investment portfolio stands a 25% chance of being depleted before the end of the liability funding period.

Sharpe ratio

The Sharpe ratio is a representation of the risk-adjusted return of a portfolio or security. The Sharpe ratio measures how much return is being obtained for each theoretical unit of risk. To calculate a Sharpe ratio, an asset's excess return versus a risk-free asset such as Treasury bills is divided by the standard deviation of the asset's returns.

Characteristics

Beta

Beta is the magnitude of an investment's price fluctuations relative to the ups and downs of the overall market. The market (or index) is assigned a beta of 1.00; if a portfolio has a beta of 1.20, its price would rise or fall by 12% when the market rises or falls by 10%. Beta is best used to measure the systematic or market risk of an investment and can be appropriate in evaluating an investment for possible inclusion in a diversified portfolio.

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Information ratio

The information ratio is the risk-adjusted return of a portfolio or security versus a benchmark. To calculate the information ratio, an asset's excess return is divided by its tracking error relative to the benchmark. (The Sharpe ratio is actually an information ratio that uses the risk-free return as the benchmark.) This metric is typically used to measure a manager's skill versus peers.

Treynor ratio

The Treynor ratio is the risk-adjusted return of a portfolio or security versus the market. It is an asset's excess return versus a risk-free asset such as Treasury bills, divided by the asset's beta. The Treynor ratio is an appropriate measure of a portfolio's return per unit of risk. The measure has a drawback, however, in that it assumes a portfolio manager has diversified away all of the unsystematic (company-specific) risk, and that only systematic (market) risk is left. This limits the use of the Treynor ratio to comparisons involving extremely well-diversified portfolios.

Pitfalls

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Limitations of history

All risk metrics use historical data to make assumptions about future risk. But what if the future proves to be very different from the past? Until October 19, 1987, history suggested that the historical VaR for any one-day period in the U.S. stock market was –12.8%—the decline of the Dow Jones Industrial Average (DJIA) on October 28, 1929. On October 19, 1987, the DJIA fell by 22.6%, and the Wilshire 5000 Index lost 17.2% of its value.

Time-period dependency

As the October 1987 crash suggests, risk is time-period dependent. Risk metrics based on a longer time series are less influenced by short-term extremes, but the entire history of our financial markets is, in essence, just one time period. How do we address the risk of time-period dependency?

Data integrity

Data can present an incomplete picture of the opportunities available to real-world investors. In less-liquid markets, such as emerging markets or the small-cap stock arena, for example, higher transaction and management costs diminish the opportunities implied by cost-free benchmarks and risk metrics. This difference between expectations and reality can lead to flawed conclusions about an asset's optimal weight or a manager's success.

Benchmark selection and manager risk

Benchmark selection is an equally tricky adaptation issue. Relative risk measures such as excess return, tracking error, and beta are based in part on the performance of a benchmark. If the benchmark does not represent the portfolio effectively, these risk measures will fail to provide useful information.

Pitfalls

Precise objective is key to success

The more precisely you define your objective, the better your ability to select metrics that can help you evaluate your portfolio's performance and risk exposures. Examples of objectives and possible primary risk measurements include:

- *Objective:* Reach a targeted real-return level to meet current annual distributions. *Possible key risk measure:* Find the investment or portfolio with the lowest percentage of real-return observations below the target—a risk-of-loss metric.
- *Objective:* Minimize present value of future investment contributions. *Possible key risk measure:* Measure standard deviation of returns relative to a target return.
- *Objective:* Accumulate wealth to meet a future level of real liabilities. *Possible key risk measure:* Measure the shortfall risk of each potential investment or portfolio and choose the one with the lowest probability of missing the target liability level.
- *Objective:* Match the return of a specified benchmark. *Possible key risk measure:* Measure the tracking error of the portfolio versus that benchmark.
- *Objective:* Maximize risk-adjusted performance. *Possible key risk measure:* Look for an investment or combination of investments with the highest Sharpe ratio.

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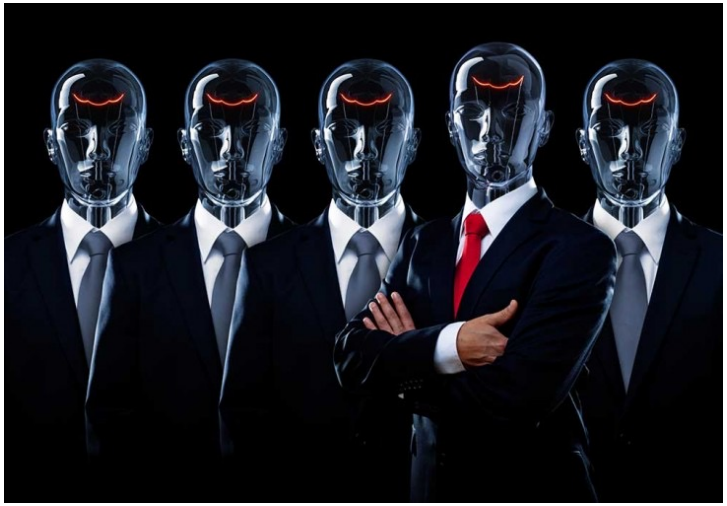
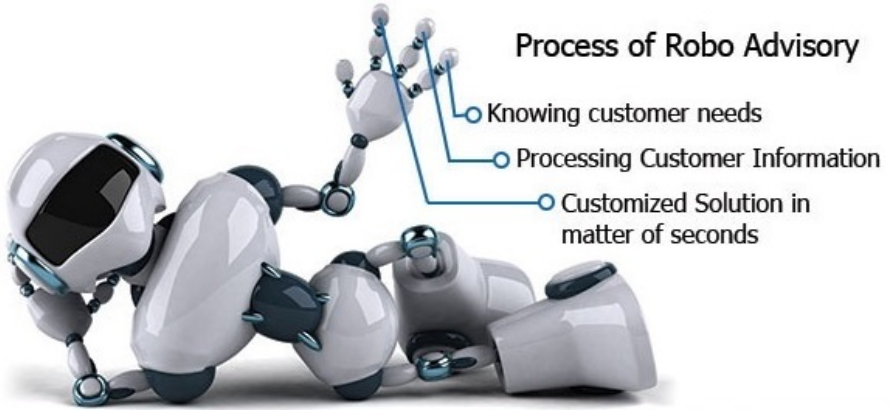
THE FUTURE: ROBOTICS & MACHINE LEARNING



Learning to fly…

Model



COST SAVINGS

- Approx 30-60% labour cost
- Lower Infrastructure costs
- Savings on ad hoc managed tasks

VALUE

QUALITY

- Access to a skilled staff
- Quantifiable metrics
- Increase security
- Improved quality assurance

PRODUCTIVITY

- Improve service levels
- Systems and process standardisation
- Faster turnaround
- Access to state of art technology
- More agile and responsive to change
- Labour flexibility
- Greater control
- You focus on core business
- We assist with non core processes

Automating the Service Onboarding Process

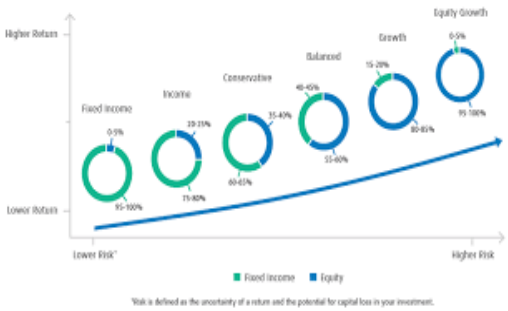
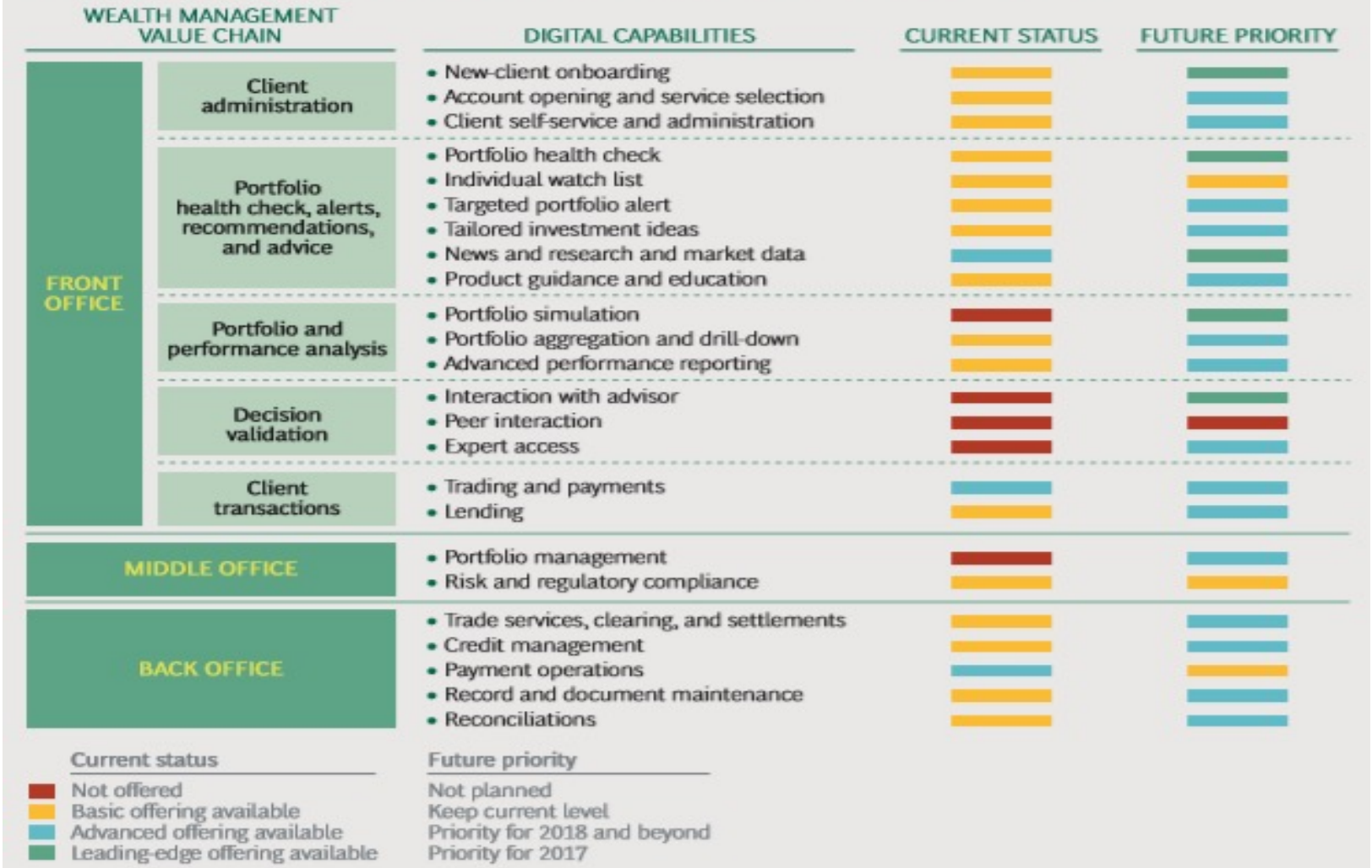
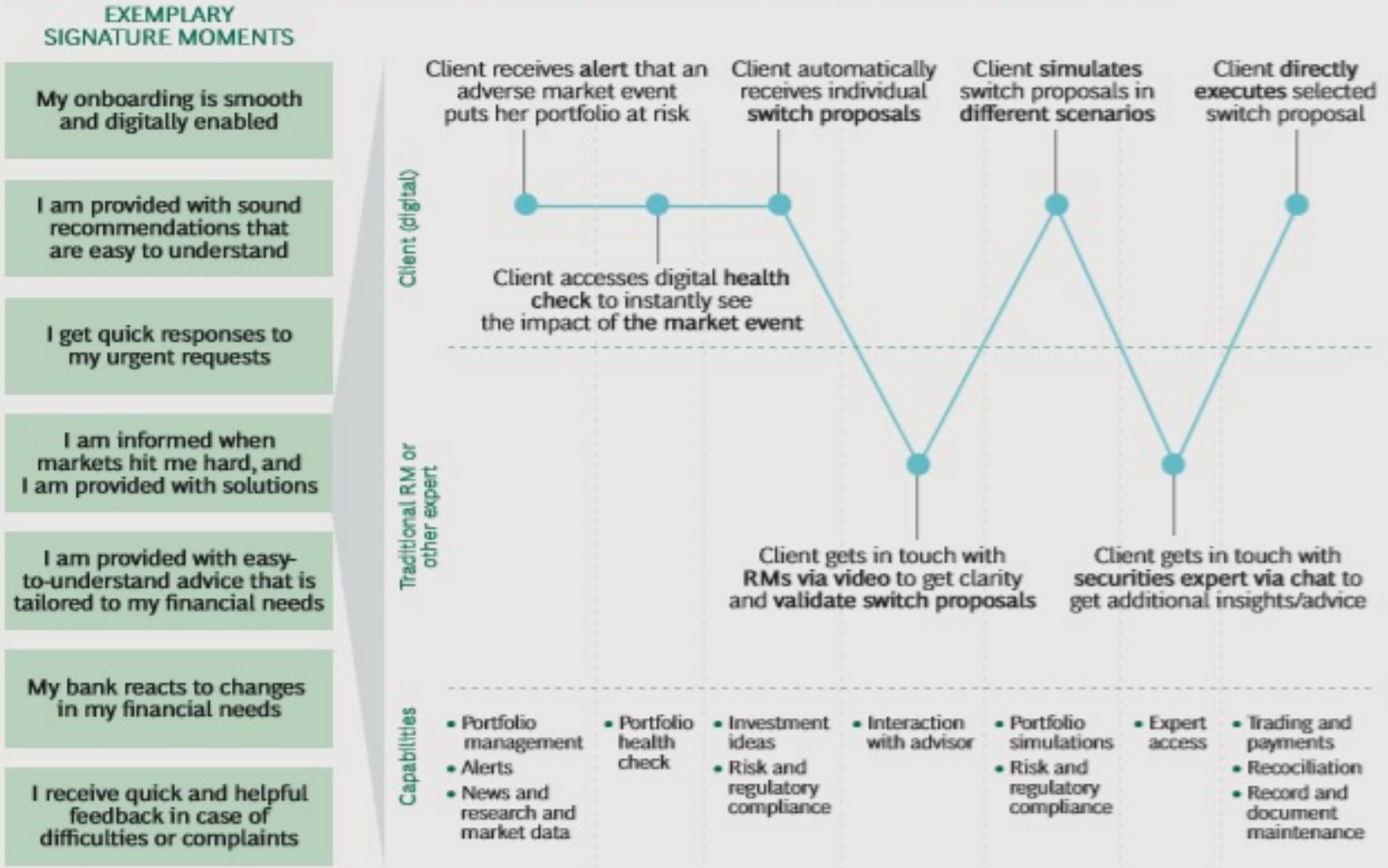


EXHIBIT 9 | Many Wealth Managers Today Offer Only Basic Digital Capabilities



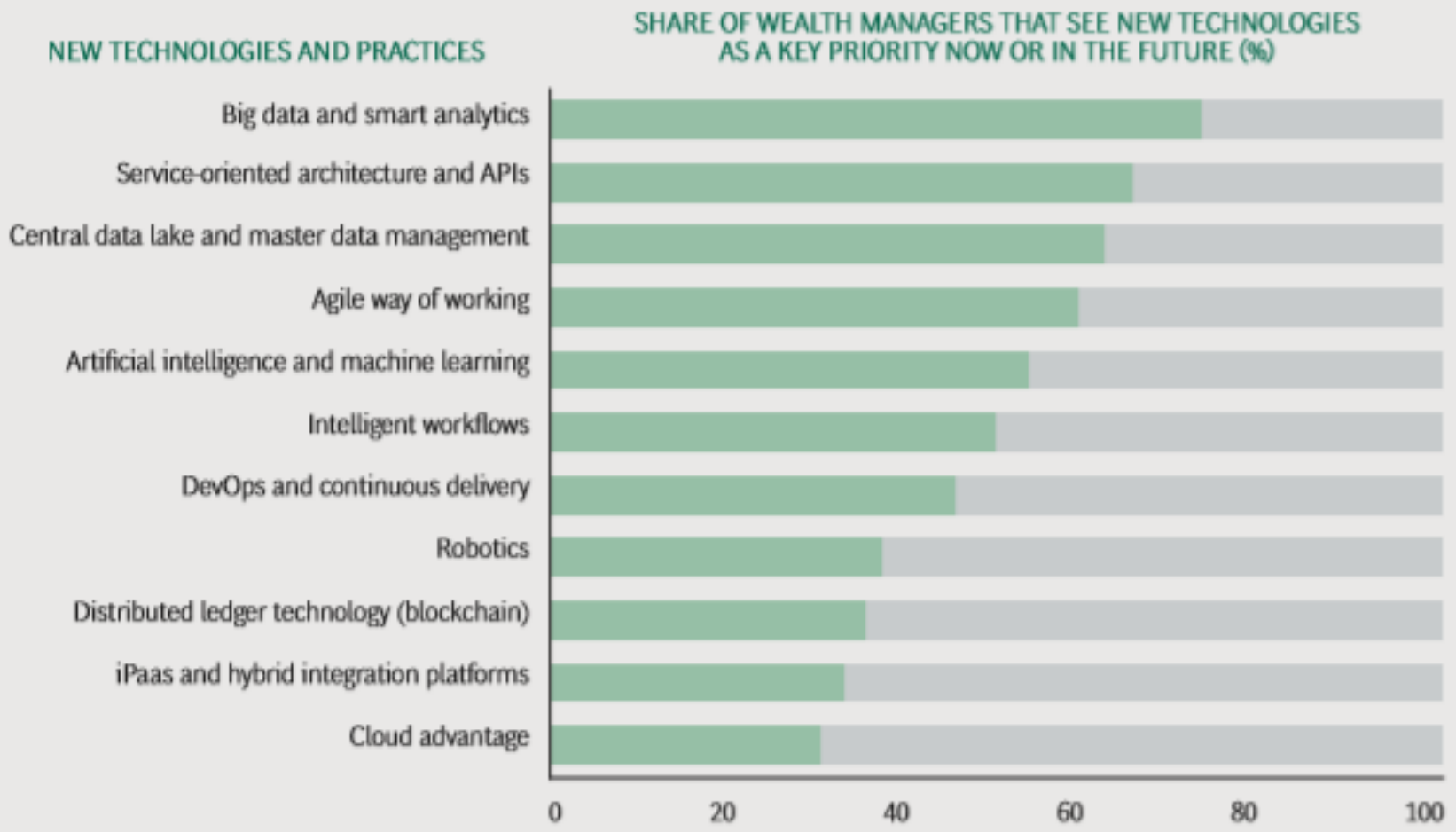
Source: BCG Global Wealth Manager Performance Benchmarking Database, 2017.

EXHIBIT 10 | The Client Experience Must Be Transformed Across the Value Chain



Source: BCG Global Wealth Manager Performance Benchmarking Database, 2017.
Note: RM = relationship manager.

EXHIBIT 12 | New Technologies Are High Priorities for Most Wealth Managers



Source: BCG Global Wealth Manager Performance Benchmarking Database, 2017.
Note: API = application program interface; iPaas = integration platform as a service.

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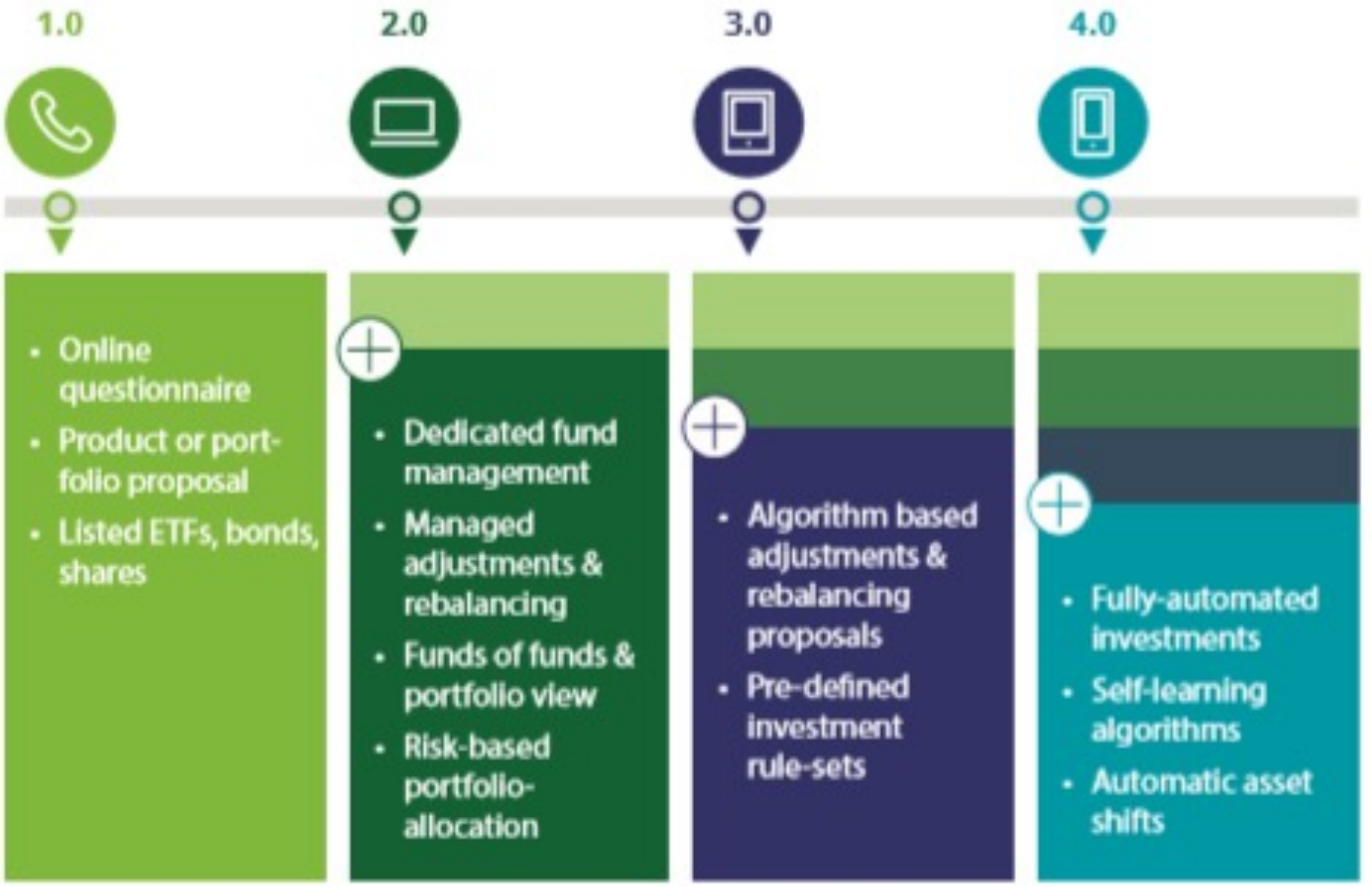
Evolution



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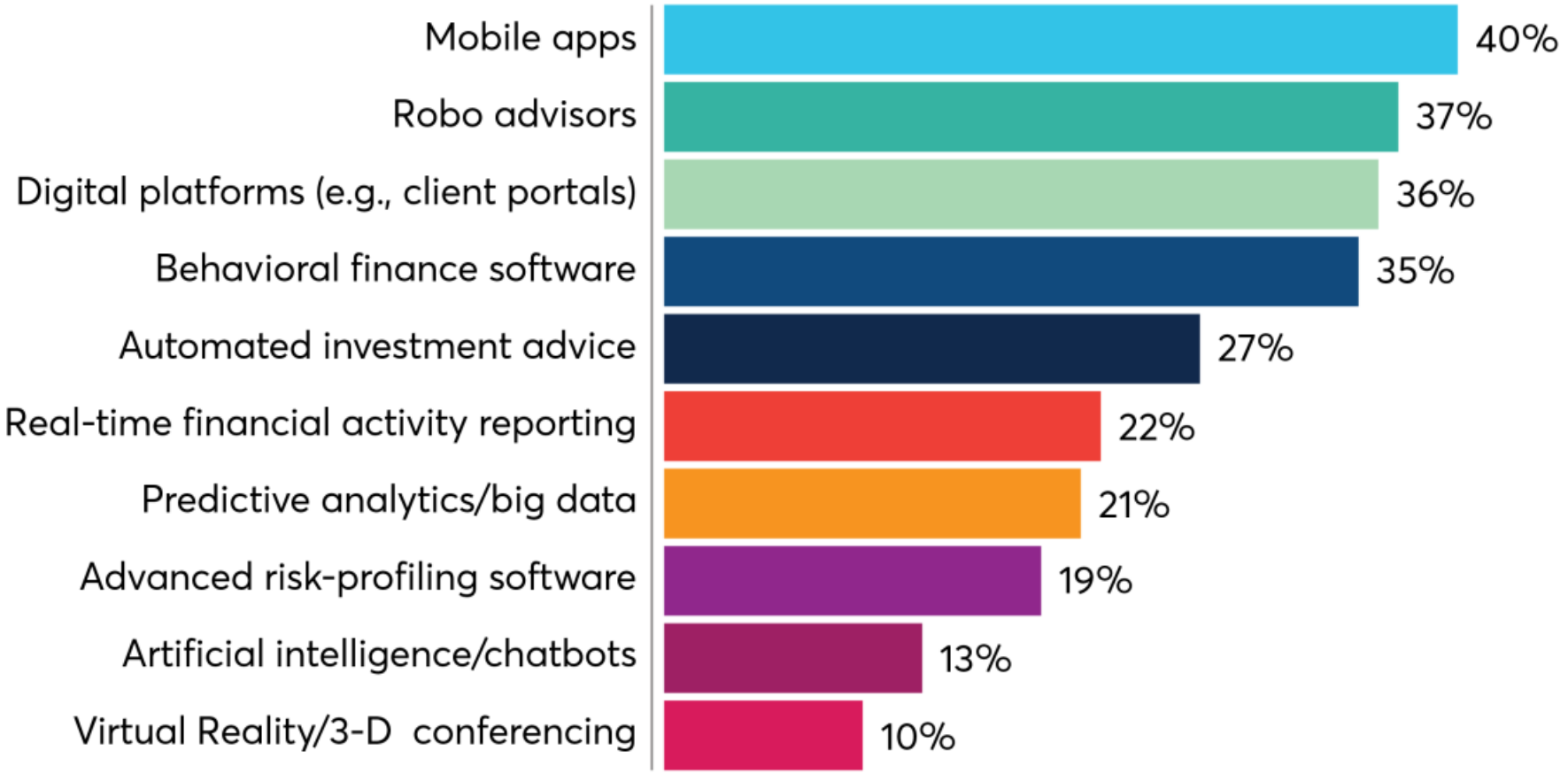
WEALTH MANAGEMENT, BEHAVIORAL INTELLIGENCE & MARITIME ECONOMICS

Actual life…

Wealth Management

Tech That Will Change Wealth Management



Behavioral Intelligence

What is *Behavioral Intelligence*?

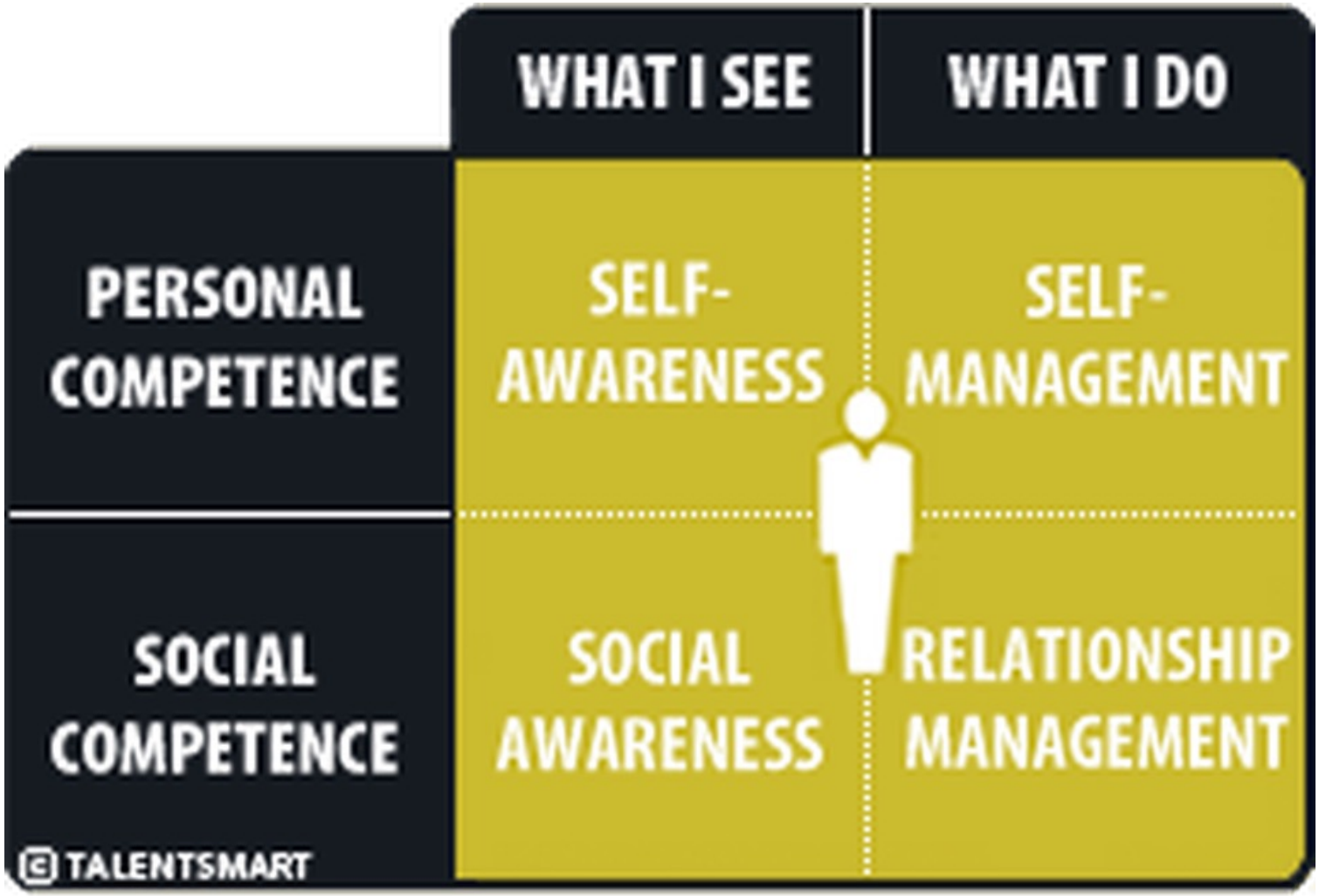
The application of skills and abilities to accurately **explain** existing behavior, **predict** future behavior, **influence** other people's behavior, and **control** one's own behavior.

Explain

Predict

Influence

Control

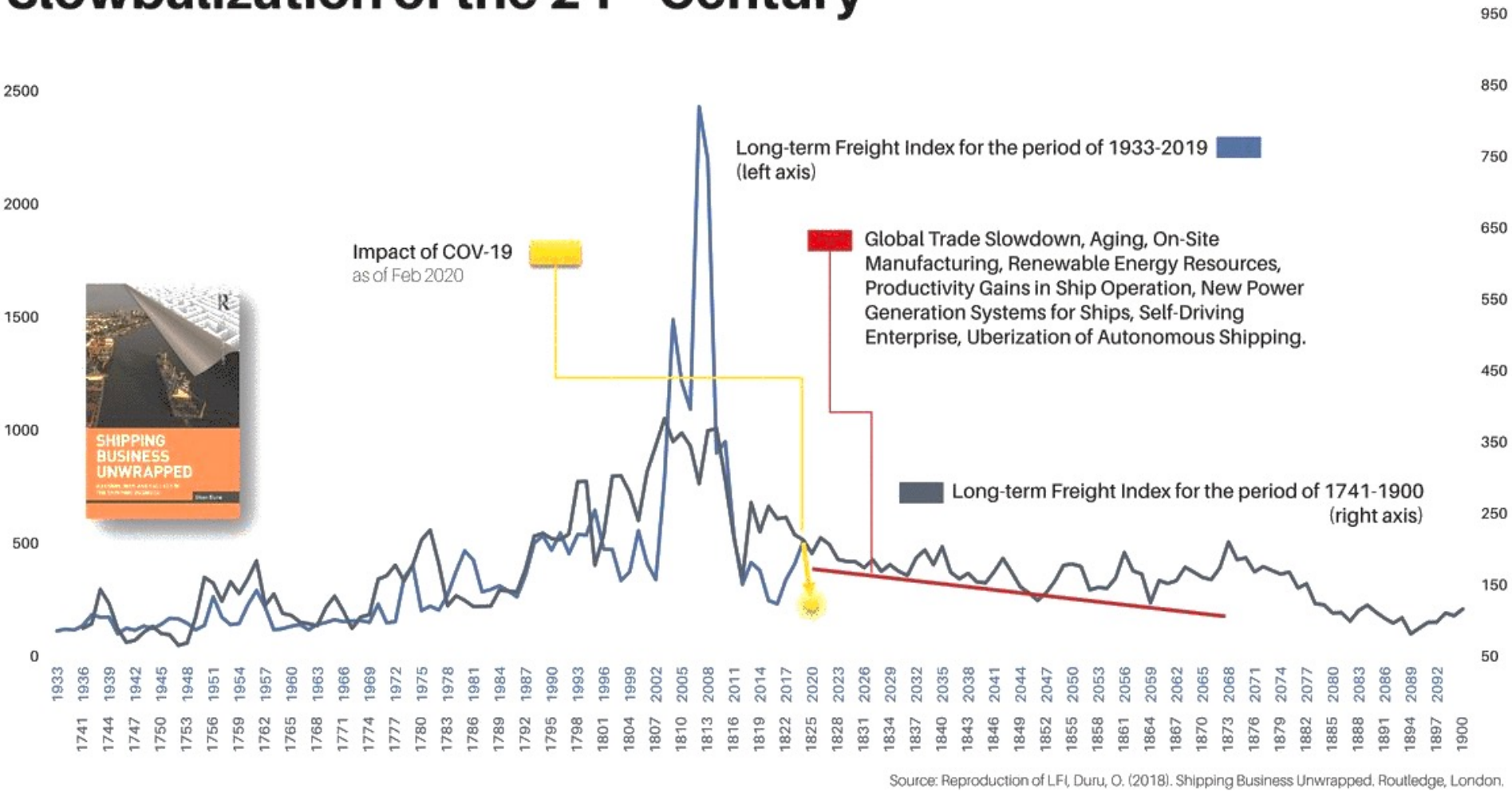


Emotional intelligence is made up of four core skills.


Financial advisor model
A digital version the firm's top advisor in each segment to provide recommendations
Value-based segmentation
Financial advisors are categorized based on their alignment with the firm's values
Best Practice Recommendation (BPR) model
An extension of the Financial advisor model, BPR offers advice on complex topics such as market events or client-specific needs
Compatibility scoring
Match the personality, lifestyle, behavior of a prospect/investor with a financial advisor for compatibility that drives conversion
Know Before They Know (KBTK)
Determine a course of action before clients become aware of a problem
Propensity scores
Uncover patterns in the ways advisors conduct business to better target firm messages

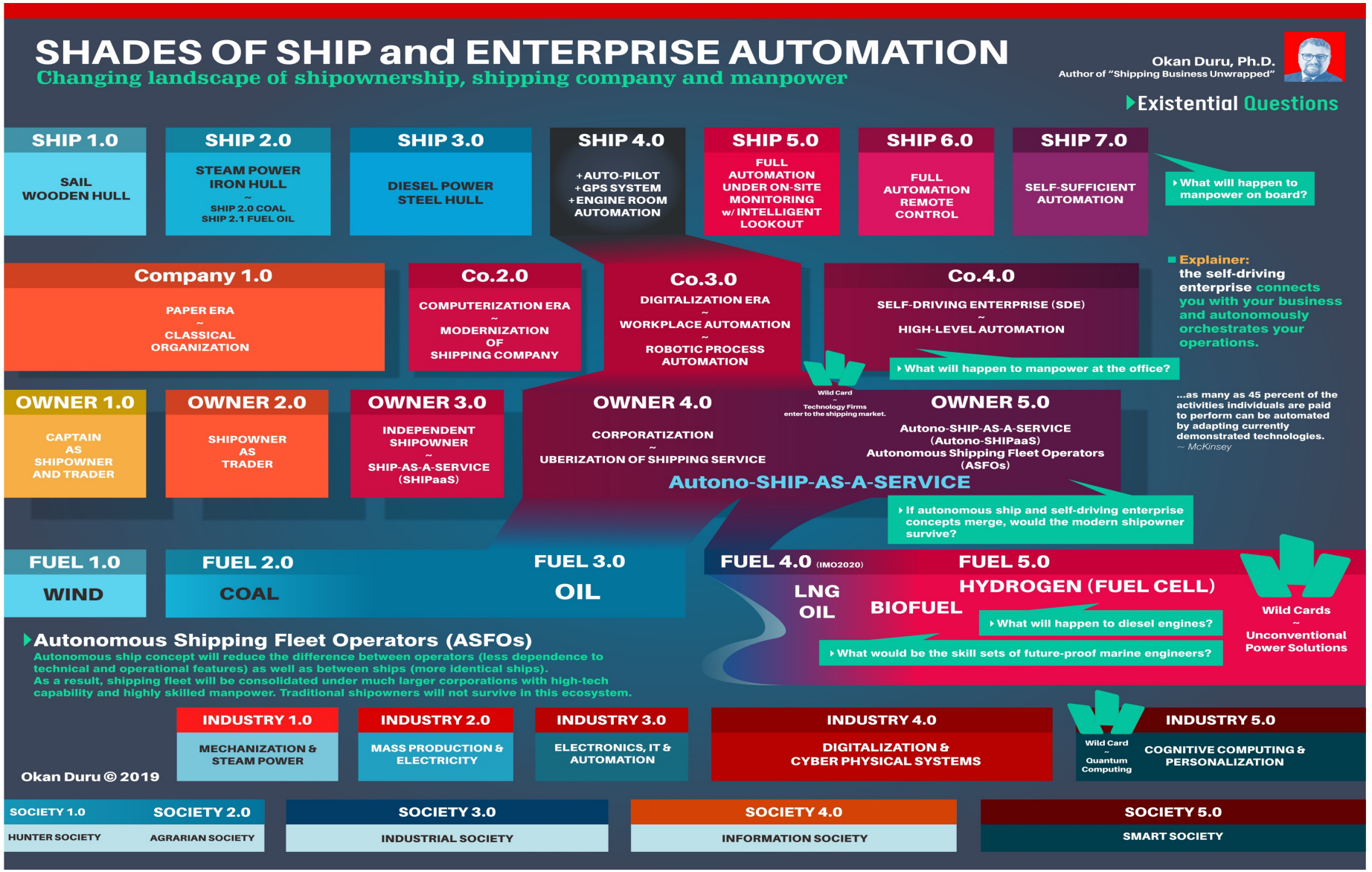
Maritime Economics

Slowbalization of the 21st Century



Source: Reproduction of LFI, Duru, O. (2018). Shipping Business Unwrapped. Routledge, London.

Maritime Economics



Maritime Economics

ΟΙΚΟΝΟΜΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ
ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS

Theodore N. Krintas, PhD, CIIA

Thank you!

KOUBARAS