



FUTURE STATE OF THE INVESTMENT PROFESSION

PURSuing BETTER OUTCOMES—FOR THE END INVESTOR, THE INDUSTRY, AND SOCIETY

Investment Industry Ecosystem



THE PURPOSE OF FINANCE AND HOW WE GOT HERE

The Purpose of Finance

CFA Institute believes that finance is a means to an end. In its most simple form, it enables excess funds of savers to be made available to those entities in need of monies to put their ideas into action. Ideally, it produces outcomes in which all the participants in the transaction benefit. This textbook definition can be summarized in a guiding principle for all who lead the investment profession and claim the title of "professional":

The fundamental purpose of finance is to contribute to society through increases in societal wealth and well-being.

Indeed, finance has contributed enormously to economic growth and prosperity in the past. This research analyzes how finance's future societal footprint can be strongest. Our focus here is on the investment function of finance, which lies alongside the payment, lending, and insurance functions of the industry.

Key Takeaways

- Looking at finance as an ecosystem reveals important interconnections and points of friction in how finance currently works.
- Even when forecasts are directionally correct in finance, they are usually specifically wrong. Consequently, we use scenario planning to reveal insights about the future state of the investment profession, regardless of what future unfolds.
- Investment management firms and their professionals need to prepare for several inevitable megatrends, including shifting demographics, disruptive technologies, economic imbalances, regulatory scrutiny, and natural resource constraints.
- Opportunities exist for firms that are adaptive to changing circumstances and focus on their end clients by delivering on their fiduciary duty.

More specifically, the core purposes of the investment industry lie in two overlapping areas:

Wealth creation:

Mobilizing capital for society-wide jobs and growth; the capital managed in this chain creates societal wealth and well-being.

Savings and investments:

Deploying investment services for wealth and risk management; the savings and investments managed in this chain allow inter-temporal (over time) risk management and increases in wealth.

The effectiveness of the industry is best judged in relation to its ability to produce sustainable societal wealth and well-being. Societal wealth is measured directly by financial success, and societal well-being in its widest form maps to sustainable development goals (such as those outlined by the United Nations).

The Problem with the Investment Industry

We believe the investment industry is struggling to recognize these end purposes. Too often the business side is put ahead of the client side, and finance then becomes an end in its own right rather than a facilitator of economic activity. Investors and those who make capital markets work need to reconnect their work with the larger purpose of using capital to be supportive of societal wealth and well-being.

We see this disconnect in the industry's obvious preoccupation with trading claims to wealth, with a lesser focus on actually creating wealth. Although this might be valuable in providing savers with appropriate assets, and plays a role in efficient price discovery, these benefits do not appear to be commensurate with the revenue earned by the industry or its size in the context of the overall economy. Evidence suggests investors are not supplying significant innovation capital in listed equities; the size of the public equity market has, at best, moved sideways in recent times, with share buybacks diminishing the capital stock.¹ There are slightly better signs with increased allocations to private equity, but that has natural limits and, for example, has not extended to filling the huge needs for infrastructure financing.

The second source of evidence that the investment industry's purpose is murky comes from unpacking the value proposition of investors in which the industry scores well on its own account, but much less well on its clients' account. Where is the industry falling short in its value proposition? The assessment should be gauged in terms of the criteria of alignment to purpose, cost, and efficiency. Most experts would agree that the alignment is poor, the costs are excessive, and the efficiency standards could be higher.² At right, we summarize some analysis on this scorecard.

Historical Context

Though our focus is on the future, we can better understand the industry of today and its trajectory if we look back to the asset management industry of the late 1980s and early 1990s.³ In doing so, we see an industry that had the following features:

Smaller

- Fewer assets, less than half of today's values in real terms
- Fewer asset management firms involved; in particular, fewer alternative asset management firms
- Smaller asset owner organizations, which had yet to develop any material scale or organizational capability; reliance on asset management firms was far greater

Narrower in scope

- Simpler business models
- Simpler investment allocations; balanced multi-asset portfolios dominant and largely contained publicly listed securities; asset class choice was around equities and bonds, and much more local than global; alternative assets were quite unusual; simplicity allowed for easy explanation

Culture of a young industry

- More cultural alignments between asset management firms and their clients, with less attention paid to the manager's own financial performance; asset management firms were trusted by their clients
- Less sophisticated and less efficient; technological streamlining had yet to emerge
- Similar costs per unit of value, but costs less transparent to investors

Less regulated

- Lighter regulation, which was less costly; in the intervening years, regulations have been considerably tightened and have become steadily more costly

In sum, the evolution of the industry thus far has been characterized by four important vectors: scaling up, scoping up, evolving the culture, and coping with increased regulation.

Investment Industry Effectiveness

We argue that the overall industry state is best judged by reference to its achievements in producing sustainable societal wealth and well-being. The elements of this are alignment, costs, and efficiency as outlined in the following table.

Notes:

Alignment: By alignment, we mean the extent to which the objectives, roles, and incentives of the participants in the investment value chain align with the interests and goals of the end investor.

Costs: These are percentage costs and their transparency to end investors.

Efficiency: This considers how well resources of the industry are focused and used toward the production of value, looking separately at asset owner and asset manager organizations.

The scores below were derived by asking a panel of 35 Thinking Ahead Institute members to evaluate the industry on these measures.

| INVESTMENT INDUSTRY FACTORS | 2015 INDUSTRY ASSESSMENT (OUT OF 10) | COMPARED WITH LAST 20-30 YEARS |
|-----------------------------|--------------------------------------|--------------------------------|
| ALIGNMENT | | |
| - Trust | 4½ | Weaker |
| - Process transparency | 4½ | Stronger |
| - Ethical condition | 5 | Similar |
| - Incentives | 3 | Similar |
| - Culture | 4 | Weaker |
| - Regulation | 4½ | Stronger |
| COSTS | | |
| - Total costs | 3 | Weaker |
| - Cost transparency | 3 | Stronger |
| EFFICIENCY | | |
| - Asset owner | 4 | Stronger |
| - Asset manager | 6 | Stronger |
| TOTAL SCORE | 4 | Similar |

Source: Thinking Ahead Institute, "State of the Industry," Willis Towers Watson (2015).

Evolution of the Industry in Scale and Scope

On scaling up, it is a truism that the investment industry is a relatively young one. We take a positive view of the industry's journey through growing pains and adolescence. The level of professionalism in some parts of the industry—such as client service practice, communication, and diversification within portfolios—has markedly improved. We find less evidence of progress, however, in relation to the value of the outcomes that the industry has produced net of the costs incurred.

One reason for this lack of progress is that the gains from diversification have been hard-won because they have largely been achieved by adding to private market investing and other alternative assets, such as hedge funds. Alternative assets are complex to manage and hard to scale. This expanded scope of asset classes has certainly added to investment efficiency through improved diversification, but at a high cost per unit of assets. Moreover, the industry still faces challenges in integrating alternative assets, and they continue to be governed, managed, and measured in inconsistent ways.

Evolution of the Industry in Culture and Regulation

Over the previous two to three decades, we have observed deterioration in some parts of the asset management industry in regard to firm culture, specifically in terms of misalignments with client interests and poor ethical behaviors. We can also find evidence from the Edelman Trust Barometer of low levels of trust in financial services broadly and the investment industry's role in that erosion.⁴

For example, in 2008, 69% of the public said they trusted banks "to do what is right." The level of trust fell to just 36% in 2009 following the financial crisis. Edelman now tracks financial services more broadly, but the level of public trust did not cross the 50% mark again until 2016. In 2017, trust in financial services stands at 54%.

The tacit and deferred nature of asset management products invites the risk of organizations not "putting their money where their mouths are."

Obstacles to trust have been evident in three specific areas:

1. Priorities: Setting priorities and principles within a professional organization should clearly involve putting client interests first and your own second, but this is under challenge through apparent shifts in values. For example, we have observed a self-centered focus of many asset management firms over the past two or three decades, with a rise in commercial self-interest being favored over client interests.⁵

2. Expectations: Investment organizations have not managed expectations appropriately. The tacit and deferred nature of asset management products invites the risk of organizations not "putting their money where their mouths are." Organizations all too often say one thing but do something different and produce a different outcome from what was expected. For example, alpha targets are often both unrealistic *ex ante* and underachieved *ex post*. Many instances of breakdowns of trust are associated with this gap.

3. Time horizons: There is also the trend in which shorter-term pressure on financial performance has been at the expense of longer-term, value-adding actions. Significant, value-adding activities often have lags and uncertainty in their payoffs, both of which are too easily discounted in a short-term world. When quarterly profits become the most important measure of success to organizations and investors, long-term value creation is the casualty. Success on these terms does not signal long-term progress as much as a short-term win, often with compensation attached. The short-termism of investment practice appears to be present in the cultural profile of many institutional investors.

Meanwhile, the efficiency of the investment industry has increased, but transparency has been slow to evolve without regulatory intervention.

Two or three decades ago, regulatory presence in the industry was slight and ineffective; currently, it is much heavier and, in theory, it is able to limit the worst excesses. All the same, its effectiveness is still limited, which is substantially because industry complexity has grown faster than regulators can respond.

When viewed in aggregate, the organizations, people, and relationships described have the classic characteristics of a system in which many interconnected participants and moving parts are motivated by goal-seeking and adaptive behaviors with evolutionary components.⁶ The adaptive and evolutionary elements in which "survival of the fittest" principles apply suggest we can use an ecosystem model to better understand the future of the investment industry.

ECOSYSTEM THINKING AS A SMARTER WAY TO EVALUATE THE FUTURE

To best show the many interconnections within the financial industry, as well as the many exchanges between its participants, we use an ecosystem model. We believe it is more descriptive because it shows important properties not present in other models of the industry.

An ecosystem model is:

- **Connected:** It fully recognizes the multiple diverse participants, people, and organizations and their connections with each other and the wider landscape. While the system is served by many specialists, there is a need to understand the bigger picture.
- **Reflexive:** It incorporates the two-way nature of those connections and dependencies. Specifically, it allows for reflexivity, where landscape changes affect and are affected by participants' beliefs and actions.
- **Non-linear:** It allows for the jumps, or tipping points, that characterize some of the properties of the system and are difficult to explain with traditional theory. Simply put, crises happen.

At its heart, the financial ecosystem involves modeling the interactions of the system's participants (individuals and, particularly, organizations) with each other and with their environment. This requires understanding the motivational forces derived from the participants' functions, values, and beliefs and accompanying business models. See below for more about values and beliefs.

An ecosystem model allows finance to be shown in relation to all the participants, and, in turn, it uncovers elements either ignored or underweighted in most other models—for example, how finance relates to legislatures, regulators, the ideas of academics, the environment, and society. See the box on page 18 for more about the ecosystem framework.

Values and Beliefs

Values are the feelings and preferences that guide the actions of people and organizations. In an organizational setting, values should follow from the mission and goals that identify organizational purpose in the context of the stakeholders and their respective priorities.

Beliefs are working assumptions that relate to the spectrum of issues that confront individuals and organizations. In an investment organization, beliefs will be concerned with investment opportunities and how best to exploit them. Like values, they will act as a guide to behaviors, actions, and decisions.

Beliefs and values are likely to differ across team members and stakeholders, but it is critical to settle on an agreed set. In their presence, organizations can succeed through superior culture. In their absence, organizations are destined to stay in a strategic wasteland of interesting thinking and talking without moving forward.

A good values and beliefs process will surface sensitive issues, encourage constructive thinking, socialize the issues, and settle the differences. The best values and beliefs are smart and edgy (incorporate deep insights), balanced (recognize the trade-off between what is desirable and what is achievable), and thoroughly socialized (widely understood and acted upon).

CFA Institute has a working set of values and beliefs as follows :

- Investment professionals contribute to the ultimate benefit of society through the sustainable value generated by efficient financial markets and by effective investment institutions.
- Good stewardship and high ethical standards are necessary for trust and confidence to be secured and for society to be served.
- Financial markets should afford every investor the opportunity to earn a fair return.
- Financial markets are more effective when participants are knowledgeable.
- High ethical principles and professional standards are essential to positive outcomes; rules and regulations, while necessary, are not sufficient by themselves.
- Investment services will thrive only if principals and asset owners have trust in the system and obtain fair and sustainable results from the services and actions of agents.
- Significant systemic risks arise from the complexity and interconnectedness of markets and instruments, to which effective industry structure and excellent practice are critical.
- Economic and political power is broadening out across a wider range of countries and regions, requiring significant strategic rebalancing.
- Imbalances in the macroeconomic and geopolitical environment present significant opportunities, challenges, and risks.
- Transformational changes in demography, the environment, and the limits to natural resources present significant challenges and opportunities.

Description of the Financial Ecosystem

In essence, the entirety of the financial ecosystem rests on a *fundamental transaction*: those with a surplus of capital (investors) provide their capital to those with a surplus of ideas (i.e., inventors, entrepreneurs, or businesses). When those ideas are economically successful, both the providers and users of capital earn investment returns, and in aggregate terms, societal well-being increases.

The fundamental transaction provides a framework for evaluating the choices of participants (a.k.a. "ecosystem actors") within the ecosystem. If a choice improves the utility of the fundamental transaction, then it is encouraged. Choices that do not increase utility are discouraged (e.g., subprime mortgages to first-time buyers with no down payment and shaky credit history).

Ordering the ecosystem around the fundamental transaction makes the functional roles of participants in the system more obvious—that is, how the actors serve the fundamental transaction. Functions, by definition, are permanent requirements for the workings of an ecosystem and so provide a meaningful framework to consider future innovations.

The Ecosystem Framework

Classic investment models are linear (a response to any shock is proportionate to the size of the shock) and one-way (economic shocks affect investors and their actions and not vice versa), and capture only the primary dependencies in the system (supply/demand, price sensitivity).

The real world evidence is that this is too simple. There are certain abrupt and discontinuous changes following shocks, and economic shocks affect and are affected by investor responses. The system has many secondary and tertiary dependencies that at times are impactful. In summary, the financial system is non-linear, reflexive, and multi-layered in its codependencies.

The financial ecosystem is fundamentally a wealth creation chain in which capital taken from savers is put to work every day through the ideas and energies of multiple businesses in public and private ownership. At the same time, it is an overlapping investment chain that links these savings to investments through institutional intermediation across time horizons, geographies, and population segments.

A number of respected academics and commentators have given support to this way of thinking, but this view of the financial system has not developed an academically rigorous framework. That said, the work of Professor Andrew Lo, and what he describes as the Adaptive Markets Hypothesis, is one widely discussed viewpoint which incorporates an ecosystem that captures the aspects of evolving business models through conceptions of competition, innovation, and natural selection.⁷

Ecosystem Actors

CFA Institute believes investment services only thrive when each of the ecosystem's actors honors the mutually beneficial nature of the fundamental transaction that matches investors with opportunities. Under these conditions, trust is strengthened, value is created, and the sustainability of the industry is ensured.

The table on the next page provides a brief overview of the actors in the ecosystem and their functional and interactive roles. More detailed descriptions are available in Appendix A.

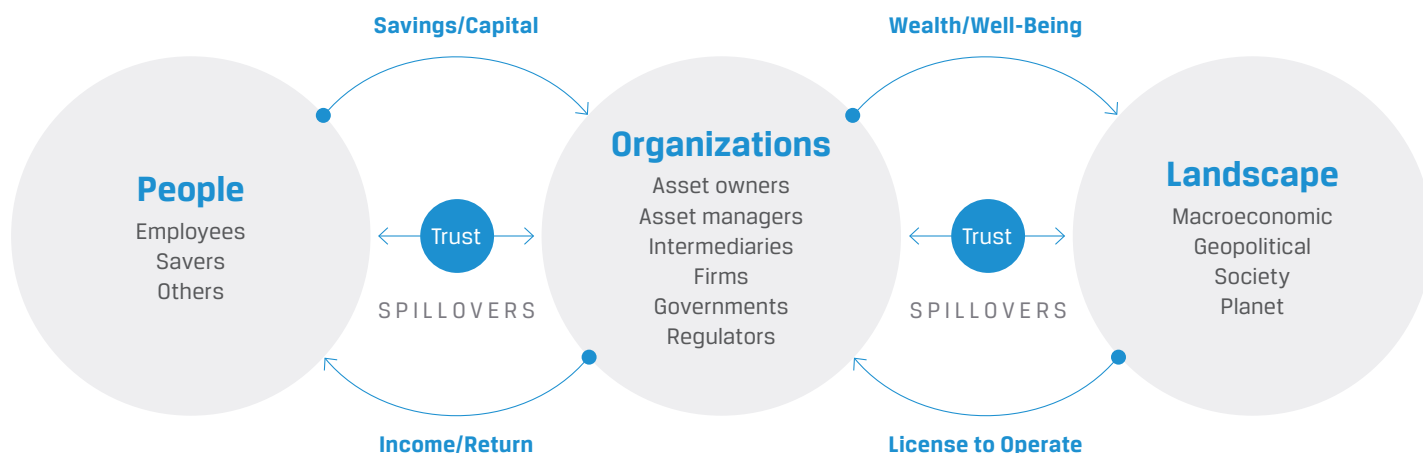
In this report, we take note of the entire financial system to understand context, but we focus on where the investment industry's energies are most concentrated (i.e., asset managers, including private wealth firms, and asset owners).

The benefits of the ecosystem way of seeing the industry flow from improved understanding in a number of places, including

- the wider systemic issues affecting the industry, given that the system has greatly increased global interconnectivity.
- the interplay of public and private goods. A particular example is the concept of passive management, which has both public and private benefits.
- the business models for corporations, and how competition and cooperation are best considered.
- regulations, with multiple consequences, often unintended.
- the integration of ethical and effective practice. Motivational factors can be explored in the context of realistic business models.
- the exploration of the externalities of the system—examples lie in environmental, social, and governance (ESG) aspects.
- the exploration of the connection between investing and corporate wealth creation. Investors invest in things that are growing wealth—as tangents to the wealth creation process—which makes them necessary but far from sufficient to wealth creation and increases to societal well-being.

The main principles at work are that organizations are subject to evolutionary forces and disruptive changes, and their responses to these factors condition their survival and degree of prosperity. As Lo describes, "The hope is that evolutionary ideas [and the ecosystem framework] will become more commonplace as they demonstrate their worth."

THE FINANCIAL ECOSYSTEM



ECOSYSTEM ACTORS

| ACTORS | FUNCTIONS | CORE INVESTMENT JOBS |
|--|---|---|
| SAVERS Individual investors Pension fund members | Providers of capital | None |
| ASSET OWNERS Pension funds, sovereign wealth funds (SWFs), foundations, endowments | Fiduciary investors in capital as owners | Investment professionals (investment managers and analysts); investment support roles |
| ASSET MANAGERS Independent firms, or those owned by banks or insurance companies, private wealth managers | Fiduciary investors in capital as agents | Investment professionals (investment managers and analysts); investment support roles |
| INTERMEDIARIES Specialist financial companies Providers of investment services Advisers, investment bankers, traders, sell-side analysts | Providers of investment products and services | Investment bankers, traders, sell-side analysts, commercial bankers, brokers, consultants, custodians, exchanges, index providers, data providers |
| FIRMS Companies, both public and private | Users of capital | None |
| REGULATORS AND NONGOVERNMENTAL ORGANIZATIONS Central banks, self-regulatory organizations, professional bodies, lobbyists, business schools | Controlling/influencing actors that exercise various forms of authority | None |

The Investment Professional's Role in the Ecosystem

The breakdown of actors principally deals with organizations, but of course, each organization is directed by the individuals within them. (See the "Organizational Game Changers" chapter for more on these.) Given our focus on the investment industry, we are particularly interested in those individuals who are influential in allocation decisions in such areas as investment strategy, portfolio construction, and trading.

These investment professionals are the central actors in the investment ecosystem, and they make intellectual capital contributions in several ways, including in the following critical functions:

- **At a macro level**, investment professionals highlight return and risk opportunities across markets and asset classes, and allocate capital accordingly. In doing so, they facilitate the fundamental transaction taking place in an environment of rationality and trust.
- **At a micro level**, investment professionals give opinions and allocate capital based on the nature and quality of the ideas of the users of capital/providers of ideas, as well as contribute to other aspects of the fundamental transaction, such as asset/security specific issues.
- **At a trading level**, investment professionals aid price discovery and liquidity.

Investment professionals, by our definition, are at work in multiple types of organizations: asset management organizations, including the asset owner, asset managers, and alternatives firms (private equity, real estate, hedge funds) as well as private wealth and investment advisory

firms. They also by our definition work in organizations we term "intermediaries," including sell-side firms, independent research firms, ratings firms, and by extension, economic think tanks and publications.

The Ideas and Forces That Influence the Ecosystem

Ideas and concepts that permeate the financial ecosystem inform the functioning of it. For example, certain investment ideas can come into vogue among investors, while others go out of fashion. These ideas and concepts influence the behavior of each of the financial ecosystem actors, as well as the evolution of the system itself.

Influential forces include trends, industry structure, business models, and incentives. A particularly important point here is how much incentives matter. To understand incentives, consideration must be given to each part of the industry and their interconnectedness. It is our belief that finance at its best grounds its ideas and philosophies in values, beliefs, and norms that serve the health of the entire financial ecosystem, and it builds institutions to uphold and to advance these values.

Therefore, values are the DNA of the industry. When values lead and institutions are in service to and alignment with them, then magic happens in the form of sustained value that benefits the entire ecosystem. It is a virtuous circle. If, however, values are meant to serve the institutions themselves rather than their clients, then imbalances occur in the ecosystem, and it eventually suffers.

Disruption

In a review of many financial industry monographs, white papers, and presentations, we noted many uses of the word disruption. Few, however, endeavored to actually define the word, which leads to confusion for readers.

We accept that disruption may be simply the reference to abrupt and significant change. But the critical context for using disruption in this report is in its effects on organizations. In the financial ecosystem, "organizations" means asset owners, asset managers, other intermediaries, and firms.

Normally, there are two types of disruption:

- **Adaptive disruption:** Existing organizations adapt to new business models to curb the opportunities of new organizations.
- **Destructive disruption:** Organizations with new business models destroy existing organizations.

Implicit in both types is that disruption should be evaluated at the organizational level. That is, who will win: new organizations, or old? Furthermore, the outcome will be determined by the

innovation(s) used. Therefore, we should always consider disruption alongside innovation.

The use of scenario planning rather than forecasting is desirable because the goal is to open minds to large possibilities, not to narrow them to incremental probabilities. When we speak of disruption we mean it to be the effects of megatrends and the forces of change over the time frame considered. It is then the effects on the respective business models of the industry that we need to anticipate.

In this definition, the focus is on the disruptions themselves, and the types of innovation involved, rather than on which organizations are likely to survive.

The parts of the investment industry that are ripe for disruption generally involve grumpy clients that feel no trust for or empathy with their providers, or clunky business models that have value-for-money issues and other gaps.

The innovations may involve doing new things, but more often they are likely to involve finding new ways of doing old things.

MEGATRENDS & OTHER DISRUPTIVE FORCES

We now turn our attention to the many changes and disruptions occurring in the investment industry. We consider the possible ramifications of these changes for each ecosystem actor in the context of multiple unique scenarios. (See previous page for more on disruption.)

We prefer scenario planning to forecasting, which typically represents a "best guess." Scenario planning is about opening minds and painting pictures of the future that decision makers can refer to when digesting current news and making investment and business decisions.

Our scenarios draw on a number of megatrends—large scale changes in circumstances that are omnipresent in all facets of our world—that are identified as virtually certain to disrupt the ecosystem regardless of how the future unfolds.

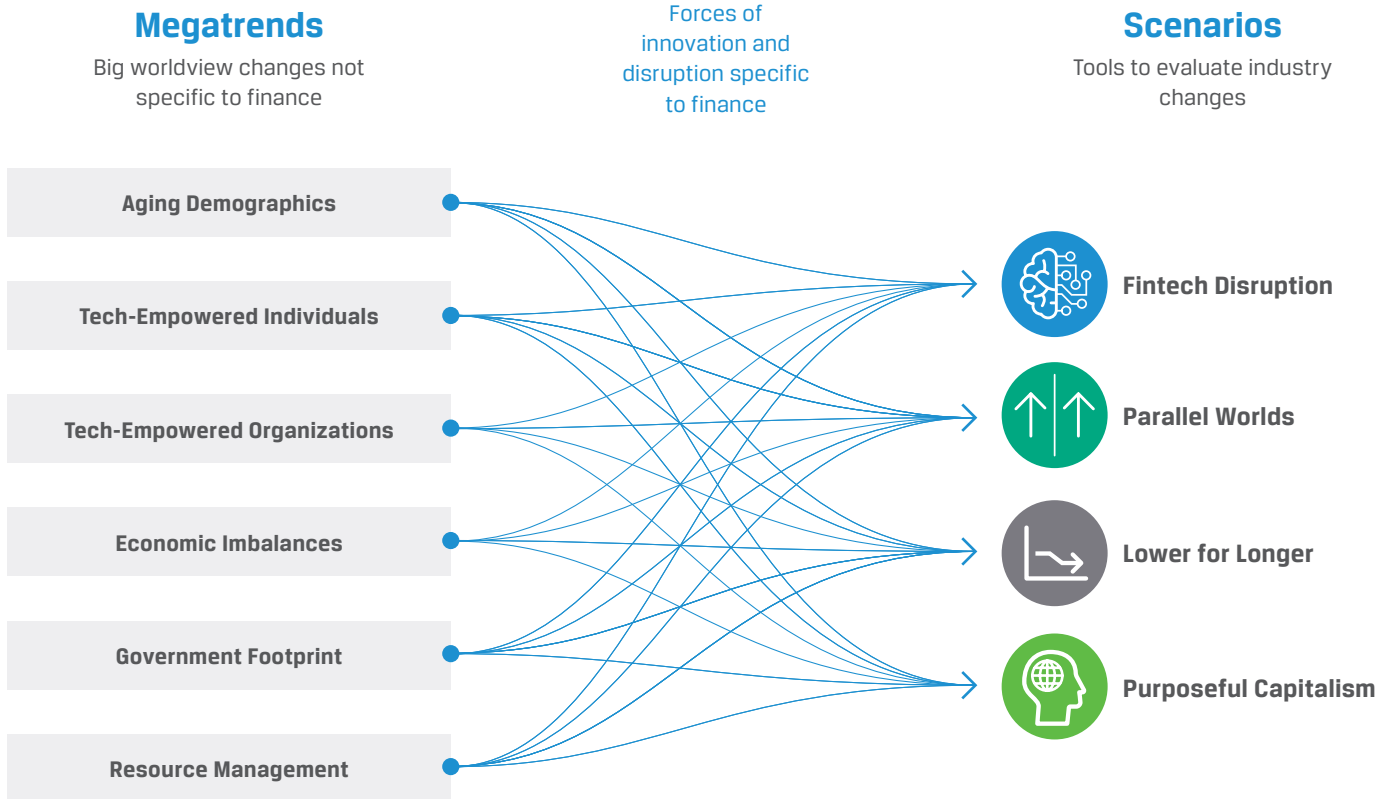
Our scenarios then draw on other finance-specific forces that may disrupt the ecosystem in as-yet unidentified ways.

Finally, the megatrends are mixed with these finance-specific forces in different combinations to create unique scenarios in the form of narratives about the future. These narratives never take the form of most likely/outperform/underperform scenarios. That, after all, would just be forecasting in disguise. Instead, each narrative strives to tell a unique story. With these stories in mind, decision makers are equipped to recognize the narratives as the future unfolds, thus providing them with actionable harbingers.

In scenario planning, the time frame must be explicit. Our time frame is the medium term (i.e., 5–10 years). This time period is long enough to allow business models to substantively change in response to the disruptive megatrends and forces we identify, but not so long as to be overly futuristic.

An example of how scenario planning differs from forecasting may be instructive. In a traditional discounted cash flow model, an

MEGATRENDS COMBINE FOR POSSIBLE FUTURES



analyst identifies her most likely scenario for the prospects of a business. However, she also recognizes that certain things may be better or worse for the business. Revenues, for instance, may come in higher or lower than forecast. Consequently, the analyst creates three models of the future: most likely, outperform, and underperform. Definitively, this is not scenario planning.

In successful scenario planning, narratives about the future of the business are created. One may be, for example, the business-as-usual scenario, in which the preceding discussion on discounted cash flow forecasting would be a part. But another scenario may be: What if the founder and CEO abruptly leaves? While another scenario may be: What if the company's products are made irrelevant by a new technology? Notice that each of the possible narratives represents unique and separate disruptions affecting a company, rather than just variations of the same disruption, as in forecasting.

In summary, every scenario includes the same megatrends, but they differ in their narratives based on how, and which, forces are preeminent.

Forecasting typically represents a "best guess." Scenario planning is about opening minds and painting pictures that can help decision makers.

Megatrends

In our view, there are six overarching trends that are important to society, the environment, government, companies, and across the investment industry. For a comprehensive look at the investment ecosystem we should consider this wider context.

In our opinion, and consistent with other studies, such as those of the National Intelligence Council, the most important among possible megatrends for the investment industry are demography and technology.

Aging Demographics

- Very few young countries, high dependencies, migration, urban
- Savers/dissavers balance creates capital imbalances
- Intergenerational issues, Baby Boomers through Millennials

Economic Imbalances

- Effects of deleveraging following peak of debt supercycle
- Lower rates for longer stemming from excess capital and insufficient return
- Growth outlook affected by aging and technology outcomes

Tech-Empowered Individuals

- New "isms": nationalism/populism fed by knowledge, realism, gaps
- Tech empowers nonstate actors, reveals inequality issues
- Work pattern disruptions create class divides

Government Footprint

- Geopolitical multipolar/weak global governance
- Nationalist and factional influences create conditions of uncertainty
- Business/financial regulation affected by ideological climate

Tech-Empowered Organizations

- Interconnectedness among governments, workforces, consumers, society, environment
- New technologies, fast clock speed
- Disruptions from change; firms adapt or get stranded

Resource Management

- Degradation of natural capital, water, food, and so on
- Climate change, growth, societal conscience nexus
- Evolving energy industry with less carbon, more renewables

Aging Demographics

Our knowledge of the world's population and increasingly sophisticated actuarial tables makes demographic projections relatively simple, incorporating trends that are not easily reversed. Furthermore, the number of people in a country and their place in the financial life cycle (as consumers, savers, or investors) has a significant impact on financial outcomes.

Graying of Almost Every Major Economy

As shown in table, global GDP at the end of 2015 stood at \$73.4 trillion, with the top 10 economies contributing 79.8% to the total.

GLOBAL GDP AND GDP OF TOP 10 ECONOMIES

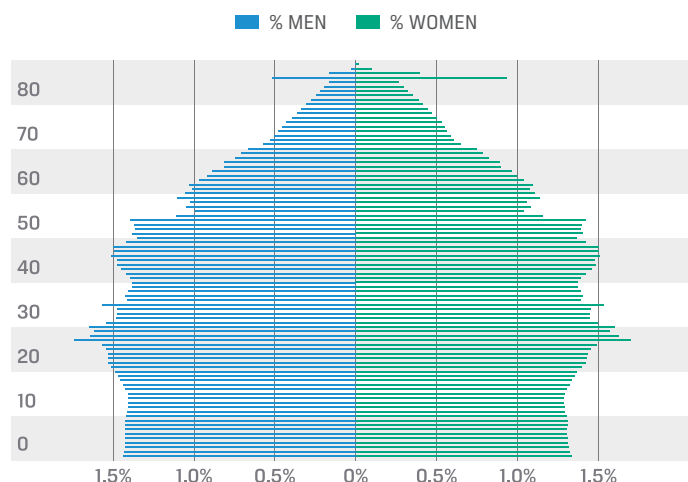
| Countries | GDP (trillions) | % |
|-----------------------|-----------------|--------|
| Global | \$73.4 | 100.0% |
| 1 United States | \$17.9 | 24.4% |
| 2 European Union | \$16.2 | 22.1% |
| 3 China | \$10.9 | 14.8% |
| 4 Japan | \$4.1 | 5.6% |
| 5 India | \$2.1 | 2.8% |
| 6 Brazil | \$1.8 | 2.4% |
| 7 Canada | \$1.6 | 2.1% |
| 8 Republic of Korea | \$1.4 | 1.9% |
| 9 Australia | \$1.3 | 1.8% |
| 10 Russian Federation | \$1.3 | 1.8% |
| Total | \$58.6 | 79.8% |

Source: Data are from the World Bank, and as of the end of 2015.

Unfortunately for the investment industry, these economies are also aging rapidly, as the population picture makes clear. It shows the size of each age group, ranging from 0–100+, and the split between the male (left) and female (right) population in the top 10 economies at each age.

In an ideal situation, the population picture would range from the shape of a pillar to that of a pyramid. A pillar shape, for example, means that younger generations are similarly sized to older generations, and such

TOP 10 ECONOMIES POPULATION PICTURE



Sources: Based on data from the US Census Bureau and CFA Institute.

economic obligations as public pensions, health care, and other social programs, as well as economic growth of the "more mouths to feed" variety, are shared equally by a culture. Put another way, it means there is not an intergenerational wealth imbalance, where younger generations are overburdened by older generations' promises, because equal numbers of younger generations can support their forebears.

A pyramid shape indicates that younger generations are larger than older generations, and assuming even a modicum of economic growth, it means that they can contribute to, and support, consumption and government spending (GDP = consumption + investment + government spending + net exports) without strain, assuming that real economic growth is at least the same as that of preceding generations.

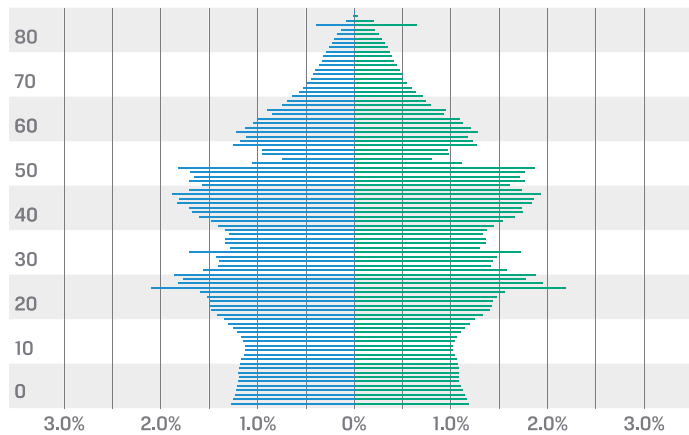
In the case of the world's top 10 economies (79.8% of total GDP and 55.5% of total population), there are three important trends to notice. First, notice the significant bulges in the demographics at ages 26–34, and again at 42–54. These groups of people are large enough to support preceding generations, although the gap in the middle (35–41) helps to explain flagging GDP growth subsequent to the 2008–2009 recession.

Second, and more importantly, notice the significantly smaller population that constitutes the 0–24 age group in these economies. This cadre is likely to be overburdened by preceding generations, in terms of paying for government entitlements. These entitlements sponge up excess capital that could otherwise be directed toward generating returns on capital, not returns of capital.

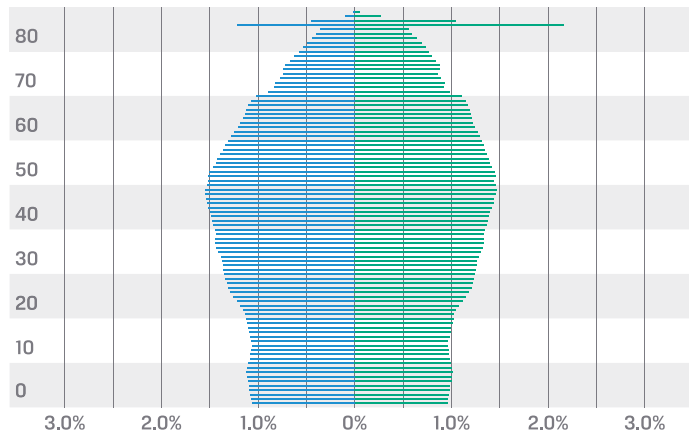
Third, another way of examining these graphs is to look at the population of successive generations—that is, the height. Notice that the size of the 0–24 generation is nearly the same size as subsequent generations. This means that even if a sudden uptick in birth rate should occur, this generation is likely to experience slower economic

CHINA POPULATION PICTURE

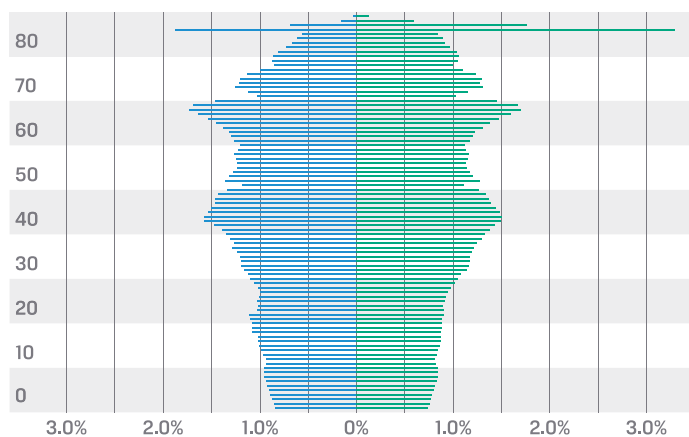
■ % MEN ■ % WOMEN



EU POPULATION PICTURE



JAPAN POPULATION PICTURE



growth than previous generations. Barring a global tragedy, such as a pandemic or war, these global population demographics are likely to remain stable and to influence the entirety of the financial industry.

The combined population picture mutes some of the more pressing challenges at an individual economy level. For example, China, the EU, and Japan, together making up 42.5% of global GDP in 2015, each have top-heavy population pictures, as the breakouts by country illustrate. One way of interpreting these pictures is to draw vertical lines from the edges of those aged 0 up to the top of the image.

Any excess population straying outside of those lines indicates the possibility for economic dislocation. Clearly, this possibility is true in each of the population pictures here and has ramifications for the finance industry globally.

In fact, of the top 10 global economies, only India and Brazil (which combined are just 5.2% of global GDP) have favorable population demographics (i.e., pyramid shapes), with the United States being neutral (i.e., roughly pillar shaped, and 24.4% of global GDP).

In short, economic growth on an absolute basis is likely to slow globally due simply to slowing population growth. For financial services, this slowing has a number of consequences, ranging from underfunded pensions to a lower capital stock to slowing consumption, and, therefore, more slowing of economic growth.

But this is just the quantitative part of the story. The data also paint a challenging picture qualitatively, with significant intergenerational differences in economic preferences. The following differences are noteworthy:

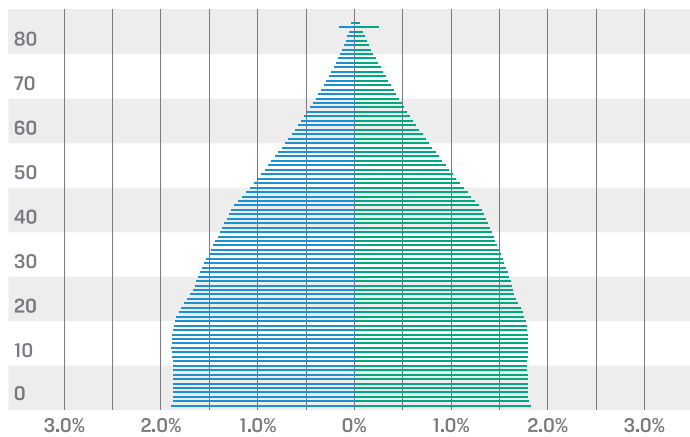
- In North America and Europe, younger generations (e.g., "Millennials") are displaying a higher inclination to save than their forebears.
- China is transforming its cultural preferences for savings toward more consumer-oriented habits.
- The affinity for technology distinguishes all Millennials, and presumably the Generation Z that follows them.

Among the top 10 global economies, only India and Brazil (a combined 5.2% of global GDP) have favorable population demographics.

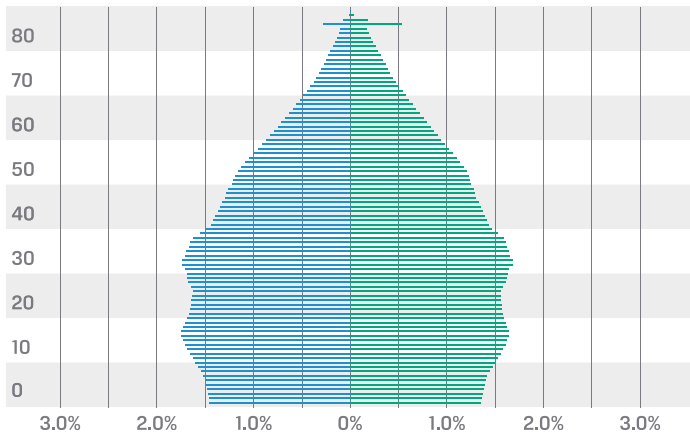
Sources: Based on data from the US Census Bureau and CFA Institute.

INDIA POPULATION PICTURE

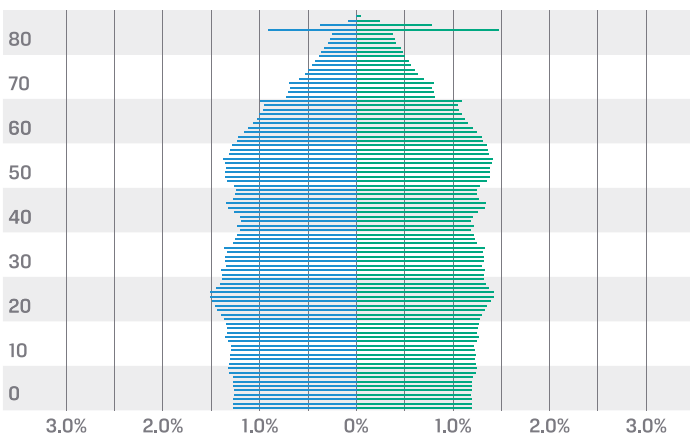
■ % MEN ■ % WOMEN



BRAZIL POPULATION PICTURE



US POPULATION PICTURE



Implications for Financial Ecosystem

- Defined benefit pension design will struggle to support the intergenerational trust implicit in that pension model, and a major transition to defined contribution pensions will result.
- There will be increases in the needs of lifetime wealth management, given declining state pension availability and increasing numbers of retirees.
- Workplace savings will operate in more empowered ways, requiring greater use of behavioral science (applying "nudge" principles).
- There will be increased appetite for income producing assets—for example, infrastructure—because of retirement needs.
- The social, economic, and political significance of urbanization that is moving the world population quickly from 50% urbanized to 60% is influencing how work is organized and supported by infrastructure.

Although demographic change happens slowly, we are living through an unprecedented period of such change, and its implications are fundamental to all actors and to the state of the financial system.

Economic growth on an absolute basis is likely to slow globally due simply to slowing population growth. The consequences of this trend include underfunded pensions, lower capital stock, and slowing consumption.

Sources: Based on data from the US Census Bureau and CFA Institute.

Technological Megatrends

Technology as a megatrend comprises a number of fast-moving elements:



IT-enabled: Devices and services with rapid uptake and diffusion likely because equipment costs will decrease as demand increases.



Big data: Used to drive increasingly sophisticated systems and processes; robotics, smart algorithms, machine intelligence, and artificial intelligence (AI) increasingly automate processes and services in concert with the data availability explosion.



Social media feedback loops: Internet technology creates more efficient service intermediation (like Uber and Airbnb); consumer models similarly streamlined (similar to Amazon and Netflix).



Energy technologies: Growth in the renewables area, particularly solar; ways of reducing carbon deposits, such as carbon capture and storage; energy storage and management.



Biotechnology: Developments in combating disease, increasing food production, reducing pollution, and enhancing the quality of life.



Materials technology and nanotechnology: Prime example, 3D printing.



Online education: Rise of open universities and peer-to-peer learning supporting new models of skills acquisition and delivery.



Interdisciplinary sharing: Boundaries between disciplines, such as natural sciences and computer science, become increasingly blurred, enabling greater application of methodologies.

Although space does not allow us to give much coverage to each of these as broad megatrends, we will give illustrations of technology's application in the financial sector. The key elements are that individuals are becoming empowered by technology, and successful organizations are adaptive to technological improvement.

In a survey of CFA Institute members, we asked them what financial technology they thought would have the greatest impact on the industry in one to five years. Robo-advisers were at the top of list, with blockchain and peer-to-peer lending being second and third.

Big Data and Machine Intelligence

Big data refers to the emerging trend of gathering, parsing, and using increasing amounts of data across increasing numbers of categories of data. For example, the Computer Sciences Corporation estimates that by 2020 data production and storage will be 44x greater than it was in 2009. All parts of business life are being affected, especially the sectors in which a systems perspective is most relevant. Finance clearly lands in that category.⁸

Within the financial ecosystem, intermediaries (such as investment banks, commercial banks, investment companies, insurance companies, securities exchanges, trading desks at investment banks, and so forth) have long relied on proprietary information in order to contribute value to the system. In addition, much data gathering is now done by independent third parties, and the data can be stored in the cloud—that is, vast data storehouses accessible via the internet.

Traders, who match demand and supply of securities, are also ecosystem actors that rely on large data gathering. As data becomes easier to gather and parse, it is likely to lead to a narrowing of bid-ask spreads and increased liquidity.

In a world where the cost of information discovery races to almost zero, the speed of parsing this data also increases far beyond human capability. Enter machine intelligence. Combining these things with consistency and freedom from human bias is a recipe for significant disintermediation.

The informational gains from big data can flow from natural language query, plus the combination of predictive and prescriptive analytics, driven by computers whose hardware and software architectures are designed to emulate human thinking. In short, if what a financial professional does relies on a formula, then it is ripe for disintermediation and margin erosion as machine intelligence, coupled with big data, takes over. Examples of formulaic activities in finance include financial statement analysis, reading annual reports, listening to earnings calls, valuation, and trading.

Of course, finance has always relied on judgment and drawing valid inferences from data, which is the good news for financial jobs. But finance professionals do suffer from cognitive biases and limitations, and machine learning is designed to de-bias subject matter. "Technology is an asset," says a CFA charterholder who manages a \$20 billion portfolio at a Canadian asset management firm. "It doesn't have to be a threat. You should be strong enough in your convictions to be able to use that technology to better service your clients."

Big data, when coupled with sophisticated computing, also likely increases the ability of regulators to better execute timely and accurate scrutiny of the quality of regulatory filings, trading activity, and global capital flows. Regulators benefit from machine intelligence as well because it allows their staffs to scale up their regulatory efforts so that they are no longer solely reliant on whistleblowers and auditors' sampling techniques to discover improprieties.

Technology-Enhanced Consumer Models, Including Robo-Advisers

The innovations that eBay, Uber, and Airbnb have introduced all involve a combination of fast, personal, and trustworthy systems that address consumer needs in markedly more efficient ways than their predecessors. Something similar is potentially developing in finance: Robo-advisers are basically a class of financial adviser/intermediary that provides portfolio management with minimal human intervention. Instead of human-based active portfolio management and asset allocation, extensive customer questionnaires about finances, coupled with passive management strategies and asset allocation algorithms, are used to construct investment portfolios.

Implications for Financial Ecosystem

- Financial analysis and investment banking with far fewer people.
- With commercial and investment banks disintermediated, effects follow on the money multiplier; so, reducing the systemic risk of traditional banks, but increasing the need for effective underwriting before loans are issued.
- Investment in technology increases and becomes more specialized.
- New levels of specialization of financial products emerge, such as hyper-customized asset allocations.
- Omnipresent risk management and enforcement with real-time financial analysis of the entirety of a business' financial performance.
- Peer-to-peer trading of securities, like an eBay for financial securities, both liquid and illiquid.
- Increasing allocations to energy technology in the impact investing category.
- Creation of transnational currencies (like bitcoin).

Although demographics and technology are the two megatrends with the largest effects on finance, other megatrends—economic imbalance, the size of governments and regulatory frameworks, and resource management—also figure into scenarios.

Economic Imbalances

The macroeconomic environment is challenged from the effects of deleveraging after the peak of the debt supercycle. This environment has led to historically low sustained interest rates, stemming from excess capital and insufficient return. Meanwhile, the growth outlook is affected by aging demographics, reducing consumption, and technology that is disinflationary.

In addition, technological advances tend to benefit a few innovators while disrupting many others in lower wage roles. Income inequality is another related factor; in the developed world, inequality has increased on a relative basis. On an absolute basis, the numbers of the middle class globally are growing. Another way of looking at the data is to see that although the ceiling is getting higher (the rich are getting richer), the floor is also rising, just not as fast. The uneven

distribution of benefits from the growth of global economy creates tensions in politics, both nationally and internationally as well as within businesses.

Government Footprint

In this area, we focus on two main areas: the level and type of regulation and actions by politicians that impact the investment industry. In both, we see increased levels of activity as the industry has struggled to earn the trust of investors or the public, so investor protection is invoked, especially after the 2008–09 recession.

As a result, industry groups, and even individual investment firms, have expanded their lobbying efforts in Washington, DC, and Brussels. The predominance of national jurisdictions in finance creates attractions for regulatory arbitrage.

Meanwhile, geopolitical rifts in the EU and elsewhere have weakened global governance. The hegemonic influence of the United States has declined and in its place a world of multipolar politics has emerged, or a G–0 world, in the words of geopolitical expert Ian Bremmer.⁹ The 2017 World Economic Forum revealed a disjointed political order and a lack of clarity around ways to move forward. This comes with nationalist, populist, and factional influences that are creating conditions of uncertainty, and a recognition of the downsides of globalization.

Resource Management

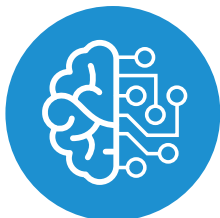
Across industries, issues of resource management are growing in importance, and thus have direct and indirect effects on the investment industry. Although a cataclysmic event is not likely soon, the impact of climate change, regardless of its causes, has been noticed by markets. The increase in insurance premiums for beachfront properties, for example, shows that the risk calculations have changed. Environmental regulations, and such agreements as COP21, also add requirements that are changing corporate product mixes.¹⁰

Other effects will likely include conflicts over food, water, and other sources of natural capital. Mitigating factors include improvements in renewable energies, like solar and wind and including energy storage, improvements in energy efficiency, desalination of water, and others.

Scenarios

Having combined the omnipresent megatrends with certain finance-specific forces, we can now provide structure to the following scenarios about the future state of the investment industry. These narratives are constructed as tools to help decision makers recognize the indications of change around them prior to the entirety of a scenario playing out. Ideally, decision makers craft strategies that work well no matter which scenario unfolds.

SCENARIOS



Fintech Disruption

New technologies promote new business models; disruption and creative destruction are endemic; challengers do better than incumbents; major disruptions to the world of work.

Summary

- Quickening pace of technological innovation in digitization and digitalization, with the potential to evolve or disrupt people, businesses, and governments.
- Fintech develops globally, with a particularly strong Asia-Pacific element.
- Regulatory infrastructure in finance gradually integrates technology-driven models.
- Many financial organizations choose pure-play business models; some emphasize vertical integration. In both cases, success with technological advancement is critical.
- Traditional active management community shrinks in size, but active management still flourishes in evolved form in private equity, real estate, infrastructure, and hedge funds as well as pure beta/smart beta indexing and outcome-oriented/solutions areas.
- Smart machines and systems, data analysis, and inference play a highly disruptive and destructive role in finance's evolution, in jobs, and in ways of working.
- Financial services becomes highly personalized and digitalized everywhere, but has particular impact on Asian markets via voice recognition.
- Robo-advice and its variants become preferred style or tool for delivering investment advice and execution to much of the retail/private wealth segment.

Among the major forces shaping this scenario, peer-to-peer lending is a financial example for which the internet is used to connect lenders (savers) and borrowers (companies and governments). Interest rate quotes are driven by algorithms that compare the supply and demand for debt between lender and borrower, while evaluating such nontraditional factors as educational achievement and social network connections in credit analysis, to construct mutually beneficial securities.

Lending is not the only traditional business line in finance disrupted by peer-to-peer technologies. Equity underwriting can also be handled via peer-to-peer networks (crowdsourced funding).

In the finance area, we highlight blockchain technology as particularly disruptive. Blockchain is parlance for a fully distributed and open digital ledger. In other words, participants in a blockchain network unanimously agree to the terms of transactions within the network, and with full transparency. Benefits of this thinking and technology include lower transaction costs, increased access to capital markets globally, and enhanced security. Transfer agents currently provide blockchain-like functions, yet the parties to a transaction are reliant on a third party, the transfer agent itself, to verify title, funds, and transfer. In the not-too-distant future, securities transactions are likely to be executed by blockchain.

One lens used to make sense of this scenario is where organizations fall on the thriving, surviving, and dying spectrum of business competition.

Challengers ascendant. One possibility is that specialist fintech firms deploy superior technology, such as big data, machine intelligence, robo-advisers, peer-to-peer, blockchain, mobile, and social media, so rapidly as to engage the large Millennial demographic, with their well-known preference for technology, transparency, purpose, and speed. Here these firms outflank the leaders of 20th-century finance and margins are driven to near zero, making finance a predominately low-cost, volume-driven business.

Incumbents resplendent. Another possibility is that established investment organizations, recognizing the growing impact of their fintech competitors, acquire competitive expertise. This is done by deploying their rich capital reserves to develop their own versions of these technologies, but sold to their significantly larger and more

intimate customer base. Or, alternatively, the incumbents acquire the expertise by purchasing fintech firms themselves. In this scenario, margins still race to the bottom, but volumes are maintained.

Perhaps incumbents are so threatened by the new challengers that they begin offering truly tailor-made products for individuals' niche goals. Alternatively, differentiation comes from a highly customer-service-oriented investment delivery, for which the skills are listening, interviewing, empathy, and creativity, rather than rapid absorption, analysis, and execution of data. It could be that some firms become concierges for their clients, handling all manner of financial decisions, such as rent versus buy, vacation or staycation, education or vocation, and so forth.

Muddy Muddling. Finally, it is possible that fintech challengers compete head-to-head against incumbents, with neither side ever gaining much of a permanent advantage. Here, fintech firms seek differentiation in their product offerings by offering their spin on old products, such as investment banking, trading, and analysis. Here also, incumbents seek differentiation by altering their product portfolios to look like those of the fintech entrants, including such products as free passively managed funds, proprietary peer-to-peer networks, and so forth. Again, margins still shrink, but volumes are evenly shared. In all likelihood, a permanent arms race develops in which gimmicky customer offerings are invented to gain a temporary advantage over the competition. But the competition quickly catches up with its own version of the gimmick. Given the emphasis on marketing as a differentiator, the doors for ethical misdeeds open, and regulations likely stiffen under this version of fintech.

We asked in the 2016 CFA Institute Fintech Survey about the benefits and drawbacks to investors related to automated financial advice. Lower costs and greater access were cited as positives, product choice was mixed, and the risks were market fraud/mis-selling and quality of service.

Due to the lack of human intervention, these services can be offered for very low costs with large disruption to the traditional ecosystem intermediaries.

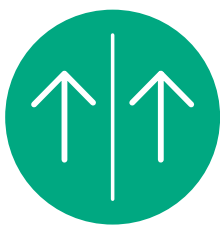
Given the global Millennial preference for technological and ethical solutions, it is likely that robo-advising becomes a preferred method of investing in some segments. In some versions of this scenario, passive management becomes commoditized, with a race to near-zero-cost expense ratios.

Given the powerful combination of big data, combined with machine intelligence, it becomes very easy for highly refined, goal-specific asset allocations to become possible. For example, imagine a world in which the unique risks identified by a customer are mitigated by a customized, algorithm-created, derivative product with a complicated design but noncomplex and user-friendly engagement.

Impact of the Fintech Disruption Scenario

- Passive funds are offered as loss-leaders to attract customers to value-add products, such as asset allocation, retirement planning, estate planning, and so on.
- Active funds become specialty shops for which the fees are much lower than today. Basically, active managers deploy energy and expertise to areas where there is poor digitization of data, there is poor liquidity, and price discovery is more art than science.
- Robo-fund models and variants become substantially core to the private wealth management field.
- Credentialed financial professionals likely find themselves in a wider array of job titles and functions than in 20th-century finance. Finance as a career becomes less attractive for new graduates, especially those who are money-motivated.
- Regulators could constrain fintech by clinging to regulations designed for 20th-century finance. However, given the supranational, hyper-distributed nature of blockchain, regulators' influence could be diminished over time. The issue of regulatory arbitrage comes up as well, and some jurisdictions may see first-mover advantages.

Blockchain technology is particularly disruptive in this scenario, driving lower transaction costs, increased access to capital markets globally, and enhanced security.



Parallel Worlds

Different segments—by geography, generation, and social group—engage in society differently; a higher baseline for financial services participation with wider dispersion; product preferences for personalization, simplicity, and speed.

Summary

- Better worldwide education, with the "haves" getting access to better health care and telecommunications, which produces increased amounts of innovation.
- Social media carries potency in a number of new channels: to spread legitimate disaffection with political issues (e.g., Arab Spring); to incite illegitimate expectations, notably on immigration, public services, social infrastructure (e.g., fake news); and as a superficial and transactional part of the political process.
- Antiglobalization feelings increase, which can carry over into authoritarian nationalism.
- Investment products become more customized and targeted at specific demographic segments; more reflection of personal value systems in successful investment products and services.
- Big data has bifurcated effects, improving speed and lowering cost of meeting personal needs, yet allowing manipulation of personal feelings by companies and political factions.
- Improvement in financial literacy and in widely available technologies produce better financial participation in some segments.
- The "have-nots" act on their disillusionment with the system through support for nationalism and populism, with anti-elite overtones and financial services disengagement.
- The trustworthiness of the tech model, in tangible products and immediate gratification contexts, is tested in investment contexts, where the outcomes are highly tacit and slow to emerge.

The societal segmentation is starkest at the "haves" and "have-nots" level when it comes to direct participation in what society can offer generally, and finance's particular offerings.

In this scenario, economic actors previously not fully included in the golden marriage of capitalism with democracy see increasing participation on an absolute population basis. Examples include: women; minorities within countries with clear majorities; and, undeveloped regions, both politically and economically. The driver for this change is the universal dispersion of social media, and other nontraditional media, such as texting, that builds confidence through simple and immediate access to worldview perspectives, consumer products, and over time, financial services.

These technologies allow huge numbers of the previously disenfranchised to peer into the lives of others and to see how they live, including their economic opportunities and moral values. In turn, this causes a refusal to remain disenfranchised and a "reaching up" to new opportunity. Additionally, those fortunate enough to be franchised also peer into the worlds of the disenfranchised, leading to increased "reaching down" to include as many people as possible in the golden marriage. The emphasis on "activities with purpose" by the Millennial generation serves as a catalyst in this regard.

The increasing usage of social media cannot be viewed as a positive trend in all contexts. It is often the case that people do not consider views dissimilar from their own, or worse yet, are not interested in understanding others, and thus they can get an incorrect picture of reality. It is apparent that social media can accentuate differences of perspectives, rather than helping to integrate them, because of the choices that can be made to take advice from peers online rather than traditional authority figures. Taken to an extreme, social media can border on pure propaganda and detract significantly from its benefits in disseminating information and perspectives.

All technologies hold out promise and challenges for the financial industry, but most notably mobile technology and social media. Both technologies connect people and institutions into seamless, hyper-distributed networks. Consequently, information finds its intended audience with little effort and for nearly zero cost. Here, traditional aggregations of power, such as governments and businesses, are simply other nodes, or peers, within the overall network. In other words, they are viewed less in a hierarchical fashion, and more as just one of billions of other participants. Yet, to the businesses that adapt to the network node world, there is vast potential to reach customers and to do so exactly where they want to be reached, as

Social media allows the previously disenfranchised to peer into the lives of others and to see how others live, including their economic opportunities and moral values.

indicated by their social media networks. In sum, it is a marketer's dream come true.

When it comes to the "have-nots" in the financial services realm, they remain angry at the exclusivity of capitalism. When the "Occupy" and "99%" movements launched in 2011 and 2012, they captured an initial zeitgeist. In this scenario, that outpouring from pent-up feelings plays out in much greater social resentment of those in positions of power and wealth.

Income and wealth inequality on a relative basis may still grow, which will deepen societal tensions. Schisms by class and gender are likely, with support for nationalist and populist causes as a result.

As is traditionally the case, generational divides in this scenario remain large and lack intergenerational understanding. This is even truer in a world whose complexities and possibilities are increasing at a quickening speed. For example, the developed world's Millennials demonstrate lower levels of consumption and higher levels of savings than previous generations. Another significant difference is in consumption preferences. Younger generations consider luxury to be possessions that are customized to their unique preferences, whereas in previous generations, luxury was understood to be more about the expense of an item. Due to the ubiquity of inexpensive and sophisticated technology that measures preferences, and the rapid decline in the cost to manufacture and distribute customized products, notions of luxury are changed.

China and Japan historically have populations that are savers rather than consumers, regardless of generation, but now China, in particular, is shifting its people from savers to consumers. That said, in most projections, much of the world's growth in savings comes from the growth of the Chinese middle class.

More optimistically, the greater enfranchisement of the majority in the benefits of capitalism and globalization leads to more universal access to basic quality of life goods and services. This does not mean that people are happy about their economic lot, just that the floor on quality of life rises, even if not as fast as the ceiling rises. Interactions between firms and regulators vary greatly in this scenario, as some are accorded special access.¹¹

There are also improvements in the utility of meeting personal values and needs as exact segments are served. This shows up in many areas, for example customization of financial services for women, Millennials, and Generation Z. In general, financial services become cheap and available to many more segments of global society. These products range from microfinance to on-demand mobile asset allocation.

Here, much of the economic opportunity is of a "low-hanging fruit" variety: the building of economic infrastructure, education, telecommunications, and so forth. In the undeveloped world, there is the opportunity to skip generations of economic evolution and begin using current technologies. For example, those in sub-Saharan Africa do not need to build land-based phone lines and can instead

emphasize internet and wireless telephony. One leverage point is the rise of the ability to rent, rather than buy, many things, allowing more segments to compete in access to goods and services. In this scenario, if more of the world's people become better educated, through the emergence of a global middle class with access to better health care and telecommunications, then in all likelihood a follow-on effect is increased amounts of innovation supportive to economic growth.

There is a special place for organizational superstructure in this growth. New technologies and social media platforms are driving change in how value is created. Current examples are the FANGs (Facebook, Amazon, Netflix, Google) in network capabilities, collective intelligence, and interconnectedness. Such organizations and their adaptive successors will likely have a footprint in financial services in the future. (A good current example of that footprint is the Alibaba Yu'e Bao \$90 billion deposit platform, created in less than a year.)

The trustworthiness of these tech giants has been demonstrated in tangible products and immediate gratification contexts. The test will be the extent to which they can transfer this trust to the service-oriented and long-term-outcome contexts of saving and investment success.

Impact of the Parallel Worlds Scenario

- Individual empowerment, where vast coalitions form rapidly around context and moment-specific interests and memes, leaves corporations very vulnerable to reputational damage.
- Technology should serve the human elements—respect, transparency, communication, knowledge, experience, and trust—and not try to unwind or obscure them.
- Luxury is defined by customization more than price tag.
- Women become increasingly large players in capital formation and allocation, with different skills and preferences.
- The talents of hundreds of millions of people previously limited by societal and economic systems are unleashed, leading to an acceleration of innovation.
- Governments try to adapt to the plurality of needs, but governments' importance in raising living standards is less than the effect of profit-driven corporations.
- Uncertain geopolitics, in which the promised benefits of globalization are not fully realized by those at the center of populist movements.



Lower for Longer

New normal low interest rates and returns become embedded for the foreseeable future (5–10 years), accentuated by lower levels of global growth and higher levels of political instability.

Summary

- Central banks have limited success with interest rate normalization.
- There are headwinds to growth from indebtedness, excess savings, reduced benefits from connectivity growth, adverse demography, lesser growth from China, limited labor market reform, and companies hoarding cash versus reinvesting. Geopolitical and financial instability also hamper growth.
- Deepening pension crises, large gaps in pension coverage, and increased longevity combine to create prime conditions for pension poverty offset by longer working lives.
- Costs are seen as an unacceptable drag on returns precipitating transitions to lower-cost, higher-tech investment solutions, and putting a high premium on innovation; significant margin pressure causes asset management firms to consolidate.
- Private markets carry growing weight in capital raising but are disrupted by various failures with opaqueness, illiquidity, and agency and overcrowding issues.
- Corporate and public pensions costs rise to pay for increased longevity, and reduced returns; this deepens deficits, which often can only be fixed by pension reductions.
- Trust in financial firms stays at low levels given the disappointment with outcomes, particularly if bubbles and crashes emerge; investment skill is under pressure to show its value.
- Geopolitical instability connects with social instability and produces deeper inequality fissures; negative feelings deepen around job fears, immigration, inequality, and getting a fair share of a nonincreasing pie.

In this scenario, multiple "lows" combine to extend the long period of low economic growth in the aftermath of the global financial crisis, with a world awash in too much capital, leading to low returns. There are many headwinds, but government and private indebtedness, excess savings, and demographic imbalances are central. The tailwinds from technology or inflationary fiscal policies are insufficient to counter these. Central bank interventions are seen as necessary and stay around longer even as their influence diminishes.

Financial instability from low rates creates a mispricing of risk with consequences for booms, bubbles, and busts as investors reach for return to escape negative yield conditions. Bubbles and troubles spread intergenerational and intersegmental strife with the potential to generate secular stagnations.

Corporate and public pension costs rise to pay for increased longevity and make up for the return premiums previously expected, producing further declines in corporate values and increasing pension fund deficits.

The most common path chosen to address the fragile recovery is one that avoids a public investment surge to limit future public indebtedness. In this scenario, we see central banks continue low interest rate and negative interest rate policies in their attempt to spur aggregate demand. Yet, lying just beneath the surface are the low growth in working age population, and low demand for capital, that are the fundamental drivers of low economic growth.

Furthermore, in an age of low costs of capital, there is little incentive for new radical innovations that might spur on economic growth. After all, capital projects are evaluated on returns compared with costs, relatively; and when capital is cheap, there is less reason to risk capital in game-changing ideas. These low returns on capital, in turn, lead to low pricing power, which leads to arithmetic, not geometric, economic growth—which brings us back to low interest rates.

In the very long run, there is the possibility of economic growth in the aggregate stalling because of the "more mouths to feed" problem (i.e., favorable demographics) and inflation. The "more mouths to feed" problem is that much economic "growth" is really just growth in "output." More children equal more demand for clothes, food, housing, cars, schooling, and other necessities. But this is not true economic growth when viewed on a per capita basis—that is, getting more from the same set of resources, or getting the same from a smaller set of resources.

There are consequences to this lower economic growth in the aggregate. In a world of shrinking population growth, there is stranded capital in fixed assets, such as real estate and infrastructure. In turn, this creates dislocations for policymakers stuck in old ways of thinking about how to drive output and not productivity.

Another possible manifestation in "lower for longer" is continued growth on a unit basis, but declines in returns coming from positive price appreciation. In other words, the consumer surplus grows while corporate profits shrink, despite actually producing more. As demographics start to improve, some of the characteristics of "lower for longer" begin to ameliorate. However, the diffusion of lower prices for consumers globally and for bare essentials leads over time to increased quality of life parity. That is, larger numbers of consumers have nearly identical access to food, shelter, transportation, communication, computing, and other goods and services.

These conditions are all highly disruptive to investment institutions because the underlying arithmetic supporting their sustainability is structurally altered and in material ways. The need is for innovation to adapt, and there are a number of opportunities:

- Streamline asset owner governance and allow more management to be efficiently handled internally; use lower-cost vehicles, pooled funds, and exchange platforms
- Lower-cost commoditized offerings (where forms of passive investing will continue to grow)
- Further expand factor and thematic investing with greater systematic components
- Allocate more capital to developing economies and those where demographics and demand for necessities continue to grow
- Emphasize the importance of the very best active management, which can produce a higher proportionate impact on net returns
- More outcome-oriented products and solutions
- Improved whole life products; fulfillment during all ages of a person's life, rather than delayed fulfillment at the end

Pension reform continues as an evergreen theme in this scenario, with regulators addressing improved investor protections, safe harbors, solvency requirements, and fiduciary duty. The integration of government benefits with employer-sponsored arrangements will no doubt undergo further tinkering. The likelihood of sufficient political will to address the core challenges with pension systems seems remote given shortening political horizons. The application of globally systemically important financial institutions to asset owners and asset managers will be settled one way or another.

Impact of the Lower for Longer Scenario

- Asset management margins are compressed by lower returns and lower fee rates, which must vie with naturally increasing costs in compliance and marketing.
- Asset owners turn increasingly to internal forms of management to manage their net returns.
- Fund flows from institutional assets turn negative. Fund flows from private wealth management remain positive.
- Cash continues to accumulate on balance sheets and leads to many businesses becoming self-funding. Economic innovation is largely of an incremental "good idea" kind and not of the "amazing idea" variety.
- Listed markets are much more limited in their uses. Capital is raised more through unlisted markets than listed markets.
- Many capital providers turn to unusual sales and marketing efforts to incentivize users of capital to transact with them. In turn, this leads to increased scrutiny on the part of regulators.
- In a low-return world, participants in secondary markets trade more frequently, commensurate with reducing costs to trading, in an attempt to capture the limited amounts of alpha. This bias toward action may not actually improve outcomes.
- Financial markets become more efficient, in terms of nearly instantaneous and artificially intelligent price discovery, but less liquid due to a lack of acceptable returns on capital.

Headwinds in this scenario include government and private indebtedness, excess savings, and demographic imbalances. Technology and inflationary fiscal policies are insufficient to counter these.



Purposeful Capitalism

Capitalism's working evolves; the investment industry raises its game with more professional, ethical, and client-centric organizations acting in aligned-to-purpose, lower-cost, and efficient ways.

Summary

- Governments and regulators aim for a more purposeful, societally conscious capitalism with stronger stewardship; finance's purpose aligns behind achieving increases in societal wealth and well-being through mobilizing capital for jobs and growth.
- Central banks and regulatory authorities focus particularly on making organizations trustworthy, managing systemic issues, and reducing risks of financial crashes and crises.
- Markets for publicly listed equity and private equity are more fair, efficient, and deep over time. Corporations seek more capital for pursuing innovative ideas rather than hoarding cash.
- Firms, including investment institutions, try to integrate their wider purpose alongside their profit motivations in business models incorporating corporate social responsibility.
- The asset owner institutions adopt a bigger role in the investment ecosystem through greater collaboration and alignment with longer-term value creation and attention to sustainability/ESG/ impact investing
- Attention to fiduciary responsibility increases, with tighter fiduciary alignment between investment institutions and clients.
- There is competition for professional talent among investment organizations, particularly on the leadership level; diversity and culture are factors in employee value propositions
- Individuals increasingly want their financial services providers to demonstrate a "clean license to operate," with pressure to demonstrate empathy and to work under ESG principles.

This scenario concerns the continuing tussle between a capitalist system that progresses more inclusively (finance serving everyone's benefit) and a version that stays self-serving to those in finance. The investment part of finance will play out its own struggle between developing a stronger value proposition by working through more professional, client-centric organizations or remaining an industry in which the value created continues to disappoint.

This scenario recognizes that the world is a fast-changing, interconnected place. Market-based economies seem to be adaptable, but when finance is viewed as an ecosystem, the tight coupling of its participants and the forces that drive them demonstrate many vulnerabilities.

The market-based chain of intermediation from savings to investment is long and growing longer as an aging demography develops, adding costs along the way. Furthermore, in a world facing shortages of resources in energy, rare earth elements, water, food, productive space, and land, corporations and the institutions that own them must consider how to operate in a way that is congruent with sustainable development.

Attempts are made in this scenario to improve the markets' moral compass and mechanisms consistent with the fundamental tenet that financial markets should be fair and efficient. This scenario takes an optimistic view that recent declines in public market issuance do not turn into lasting damage. The system requires a healthy balance of listed and unlisted capital to support the fundamental transactions that support innovation. The system is stronger with diversity of thinking and actions.

As discussed earlier, one essential for participants in the ecosystem is the economic exchange of trust. Without trust, the costs of conducting business in finance are either higher, or transactions do not occur at all. Trust is thus a powerful, positive force, and a stronger and more purposeful system will require improvements in the weak current starting position. (Evidence of this can be found in two large scale surveys CFA Institute conducted with Edelman in both 2013 and 2016.¹²)

The other major disruption lies in giving increased attention to sustainability issues within institutional portfolios, a movement that is currently nascent. The issues of sustainability are tangled, but can be straightened out in this scenario's evolution. First, this factor is about shaping clearer and more far-sighted investment beliefs. Second, there is a mission-related consideration because of the evolving nature of fiduciary duty and institutional legitimacy.

Although fiduciary responsibility places "hard" financial considerations in the prime position, there are still certain "soft" ancillary considerations to be integrated with respect to investor responsibility. This factor is about values. Are portfolios' exposures to externalities just about financial risk because any pro-social issues lie with governments? Or should financial institutions "taint" their pure financial views with more than a trace exposure to the pro-social issues? All institutional investors have their own sustainability premised on a "license to operate," and keeping that license "clean" must entail management of reputational issues. Inevitably, there is a conflation of these issues; the financial and extra-financial factors need to come together in one investment strategy.

The evolution of the purposeful capitalism scenario has to deal with the difficulty of trade-offs. That is, are asset owners willing to trade possibly lower returns for improved long-term system sustainability? In essence, this requires a shift in mindset, in which asset owners and investors take a holistic view of investing, applying ecosystem thinking over a long-term horizon. As an example, with a more integrated perspective, it is clearly suboptimal for an asset owner to simultaneously own tobacco and health care stocks because of the negative spillovers. Interestingly, integrating values in the investment process embeds human beings into the investment process because only they can make sense of the conflicts of, and contest for, contexts and values. This contrasts sharply with pure factor investing and clinical asset allocation that generally ignore those values.

Within the strong collaborative processes that large asset owners increasingly undertake together in this scenario, there is the need for extensive thinking on longer-range investment issues and what constitutes risk—both instances where stranded assets and the wider sustainability area are particularly relevant. The financial materiality of ESG is uncertain, but its consideration, and possibly also its size, is set to rise in this scenario.

The key idea is that the mission of any asset owner needs greater clarity with respect to their responsibilities to stakeholders and the time horizons that matter. This brings into consideration the particular place of so-called "universal owners," very long-term owners of portfolios that are large enough for their actions (singly or through collaboration) to influence markets and companies. In their ecosystem position, they recognize that through their portfolios, they own and will always own a slice of the whole economy. After all, their flexibility to sell is significantly limited by their size, but they can adapt their actions to try to help the whole economy/market to a more prosperous and sustainable future. They are simply thinking about effective long-term finance. This thinking comes from understanding changing circumstances and particularly the spillovers and externalities involved, including those that affect other portfolio companies and society more widely. Their ability to reduce their portfolio exposures to society's externalities will often represent both a private gain and public good.

Thus far we have been mostly focused on the big asset pools, particularly pensions. We should be clear that there are almost exact parallels in the retail investing and private wealth areas where

fiduciary thinking is evolving, and individuals' freedom to express their values in investment products are becoming democratized.

All of these issues involve multiple strands and legions of judgments. In this scenario, the opportunities for leadership from investment institutions are significant. What crystallizes in this scenario on the spectrum of outcomes depends on the quality of leadership that emerges.

Impact of the Purposeful Capitalism Scenario

- Debates become increasingly expansive regarding what responsibilities companies (particularly large multinationals) should assume.
- Investment organizations demonstrate public leadership; such institutions are more trusted by their stakeholders for their readiness to express convictions that resonate.
- Investment organizations differentiate themselves with reference to values and culture.
- ESG and stewardship become completely mainstream as a component of risk management; regulatory framing and enforcing of ESG and stewardship are stronger.
- Developments in trust in the investment industry and its products affect the wider reach of investment organizations.
- The skill profile of investment professionals will have to develop in both ability to understand deep-rooted technological development, and with respect to softer skills.
- A more professional and value-adding investment industry can emerge that at its core operates closer to the parameters of a profession. A profession, by definition, "extends a public warranty that it has established and maintains conditions of entry, standards of fair practice, disciplinary procedures, and continuing education for its particular constituency."¹³

Trust is a powerful, positive force. Without it, the costs of conducting business in finance are either higher, or transactions do not occur at all.

SUMMARY AND WAY FORWARD

Key components of this chapter include an ecosystem framework, forces that are driving change, and four scenarios that are critical to the future state of the investment profession.

- **Ecosystem actors:** asset managers, asset owners, firms, intermediaries, regulators and other nongovernmental organizations, and savers.
- **Megatrends:** worsening demographics, increases in disruptive technology, persistent economic imbalances, depth and breadth of regulation, and strains on resources.
- **Fintech Disruption:** New technologies promote new business models; disruption and creative destruction are endemic; challengers do better than incumbents; major disruptions to the world of work.
- **Parallel Worlds:** Different segments—by geography, generation, socioeconomic group, and values—engage in society differently; a higher baseline for financial services participation with wider dispersion; major impact on business models, particularly for products requiring personalization, simplicity, and speed.
- **Lower for Longer:** New normal low interest rates and returns become embedded for the foreseeable future (5–10 years) accentuated by lower levels of global growth and higher levels of political instability.
- **Purposeful Capitalism:** Capitalism's working evolves; the investment industry works to raise its game with more professional, ethical, and client-centric organizations acting in aligned-to-purpose, lower-cost, and efficient ways.

This chapter provides a foundation for "Organizational Game Changers," which makes significant references to the scenarios.

As a reminder we aim to shape not just the actions of CFA Institute, but also the actions of the investment industry to create the best possible outcome for the end investor, the industry, and society.

ENDNOTES

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