Global Asset Managers

Beyond the Bounce-Back

Industry revenues have been largely shielded by aggressive policy actions. But growth will slow, and competitive pressures accelerate. To win, asset managers should drive growth (EM clients, private markets, solutions), take share with ESG, and sustain Covid-related productivity for >10% savings.



Oliver Wyman is a global leader in management consulting. For more information, visit www.oliverwyman.com.

Oliver Wyman is not authorized or regulated by the PRA or the FCA and is not providing investment advice. Oliver Wyman authors are not research analysts and are neither FCA nor FINRA registered.

Oliver Wyman authors have only contributed their expertise on business strategy within the report. Oliver Wyman's views are clearly delineated.

The securities and valuation sections of this report are the work of Morgan Stanley only and not Oliver Wyman.

For disclosures specifically pertaining to Oliver Wyman, please see the Disclosure Section located at the end of this report.

Morgan Stanley does and seeks to do business with companies covered in Morgan Stanley Research. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of Morgan Stanley Research. Investors should consider Morgan Stanley Research as only a single factor in making their investment decision.



GLOBAL FOUNDATION

Authors

MORGAN STANLEY

Michael J. Cyprys¹ **EQUITY ANALYST** +1 212 761 7619

Michael.Cyprys@morganstanley.com

Bruce Hamilton¹ **EQUITY ANALYST** +44 20 7425 7597

Bruce.Hamilton@morganstanley.com

Stephanie Ma¹ RESEARCH ASSOCIATE +1 212 296 3552

Stephanie.Ma@morganstanley.com

Shamoli Ravishanker² **EOUITY ANALYST**

+44 20 7677 3610

Shamoli.Ravishanker@morganstanley.com

Peter Kaloostian¹ **RESEARCH ASSOCIATE** +1 212 761 3664

Peter.Kaloostian@morganstanley.com

Andrei Stadnik³ **EQUITY ANALYST** +61 2 9770 1684

Andrei.Stadnik @morganstanley.com

Jenny Hau³ RESEARCH ASSOCIATE +61 2 9770 1687 Jenny.Hau@morganstanley.com **OLIVER WYMAN**

Christian Edelmann PARTNER

+44 20 7852 7557

Christian.Edelmann@oliverwyman.com

Joshua Zwick PARTNER +1 646 364 8414

Joshua.Zwick@oliverwyman.com

Toby Pittaway PARTNER +44 20 7852 7564

Toby.Pittaway@oliverwyman.com

Kamil Kaczmarski PARTNER

+49 69 9717 3573

Kamil.Kaczmarski@oliverwyman.com

Olga Epshteyn **PRINCIPAL**

+1 212 345 0872

Olga.Epshteyn@oliverwyman.com

Amy Yang +1 212 345 0829

Amy.Yang@oliverwyman.com

1 Morgan Stanley & Co. LLC

2 Morgan Stanley & Co. International plc+

3 Morgan Stanley Australia Limited+

Morgan Stanley does and seeks to do business with companies covered in Morgan Stanley Research. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of Morgan Stanley Research. Investors should consider Morgan Stanley Research as only a single factor in making their investment

For analyst certification and other important disclosures, refer to the Disclosure Section, located at the end of this report.

+ = Analysts employed by non-U.S. affiliates are not registered with FINRA, may not be associated persons of the member and may not be subject to NASD/NYSE restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account.

Contents

- **Executive Summary**
- Messages from Our Proprietary Survey
- State of the Industry and Strategic Imperatives for Asset Management

Executive Summary

- Aggressive policy actions by global central banks mitigated impacts on financial markets and stemmed deeper effects on the underlying economy, implicitly sheltering asset management revenue pools.
- In a V-shaped recovery, structural trends, including fee pressures and demographic trends impacting flows, will remain intact; indeed, they
 are likely to be accelerated by the pandemic.
- We see early indicators of core active flows improving since March, along with better active equity performance. We think this will accelerate
 the chasm between winners and laggards, as the former are already widening the performance gap. Our overall view for core active is
 unchanged passive incursion and fee pressures will drive material fee pool compression, though the intensity of the shift could moderate
 for some.
- The crisis brought ESG even more to the forefront of industry discussions as performance (and flows) have proven resilient through the downturn. We expect adoption to accelerate and focus to broaden (to include the social responsibility element of ESG), serving as a competitive advantage for early movers. However, as ESG matures, we expect it to become a capability used across strategies, rather than a long-term fee pool driver.
- We anticipate that key growth zones relevant before the pandemic emerging markets clients, private markets, and solutions will remain intact. Of these, private markets appears most likely to benefit from a V-shaped recovery, as high levels of dry powder provide flexibility to take advantage of new investment opportunities as well as to support struggling portfolio companies.
- The crisis proved the viability of remote working, challenging conventional wisdom and paving the way for more radical changes to operating models. We estimate that structurally embedding efficiency gains revealed by the crisis could deliver 10-15% in cost savings. Taken to the logical extreme, we see the possibility of a fully "virtual" manager, which we believe could operate at a 40% lower cost base vs. traditional managers. While such an extreme transformation would introduce a number of operational and strategic risks, we suggest firms reorient their perspectives and look at the fully "virtual" manager as the "zero base" upon which to build back better.
- Finally, technology will play a pivotal role in enabling operating model changes, not just a transition to flexible and remote working. One area we would highlight where we see asset managers at least five years behind banks is in the adoption of API (Application Programming Interface). We think this is a key path to closer connectivity to distributors as well as an opportunity to streamline data infrastructure and reduce operational costs.





Private markets AuM includes dry powder

Source: Oliver Wyman analysis



Although the pandemic has dampened near-term growth, structural trends remain intact.

While the pandemic brought a sharp and painful recession, swift action from central banks buoyed financial markets. This, combined with early indicators of a V-shaped recovery, leads us to believe that asset management industry revenue pools will be relatively sheltered from the steep declines many expected in March. Key structural trends, including downward fee pressures and an aging population negatively affecting inflows, will remain intact; indeed, they are likely to be accelerated by the pandemic. On net, our expectations are more muted compared to last year, but we still see an overall positive trajectory for revenue and AuM pools through 2024.

Pressures on core active expected to continue, but the intensity could moderate for top performing managers.

Pressures facing active managers remain intense. We think the segment will continue to be challenged by rotation into passive as well as by accelerated churn, favoring players demonstrating strong alpha. However, early indicators point to some moderation in the intensity of the shift to passive — at least for some players. Anecdotal evidence from our conversations with managers points to a "better" crisis in terms of flows for those able to demonstrate relative performance. Additionally, mutual fund flow data from April and May are encouraging for the active segment overall, showing either a reduction in active equity outflows (e.g., US-domiciled funds) or even reversal to inflows (e.g., EU-domiciled funds) vs. prior years.

ESG adoption should accelerate, but in the longer term it is unlikely to serve as a meaningful fee pool driver.

A combination of better relative investment performance and investors' deepening sense of purpose, (likely further accelerated by the wide-ranging societal impacts of COVID) could create a powerful tailwind for further client engagement on ESG investing. We expect this interest to generate near-term flow capture opportunities for early movers who have built credible offerings and purpose-driven value propositions. However, we do not expect ESG to be the sole preserve of active management or to develop into a major unique product category of its own. Rather, over the longer term, we expect ESG to be highly integrated into the risk and investment processes of most managers, becoming a widely adopted capability across strategies and product segments. As a result, while in the short term ESG is likely to create revenue opportunities for early movers, over the long term we do not see it as a meaningful incremental fee pool driver for the industry.

Private markets are most likely to benefit from a V-shaped recovery.

We see private markets as potentially the biggest beneficiary of our base case for a V-shaped recovery as headwinds ease, given concerns about the damage that corporate defaults could do to fund performance and prospects for future fundraising. We expect casualties. But we anticipate that a strong rebound in economic activity, combined with available dry powder to take advantage of new investment opportunities and support struggling portfolio companies, will limit the impact on overall performance. Meanwhile, a persistently low interest rate environment globally, and subdued outlook for returns from traditional asset classes, should feed ongoing client demand (as investors trade liquidity for returns). A more bearish economic outcome of a prolonged recession, however, could clearly change this optimistic assessment as portfolio losses become more pronounced, undermining investor confidence and shrinking any incremental investor demand.

The proven viability of remote working will push many managers to reimagine their operating model and leverage elements of a "virtual" asset manager.

Asset managers were fast and effective in moving to "work from home," challenging conventional wisdom. The industry has proven to be not only resilient from an operational point of view but able to operate at productivity levels close to (if not better than) before the pandemic. Our conversations with managers suggest that many are looking to hold on to efficiency gains revealed through the crisis including widely using flexible work arrangements, reducing travel, and rethinking their location strategies, as well as spend on middle and back office. We estimate that managers who choose to structurally change their operating models to what has proven to work through the pandemic could see a 10-15% reduction in the cost base. Beyond this, we see an opportunity to go further to reimagine the asset manager operating model as an entirely "virtual" one. While this would require radical changes — e.g., moving to almost fully remote working, leveraging technology to a much larger extent (especially APIs), and fully reinventing business processes — the savings could be substantial. We estimate a virtual manager can operate at a 40% lower cost base vs. a traditional manager today. While we know of no fully "virtual" manager operating today, we think senior managements should look past the cost savings and efficiency gains forced upon them by the pandemic, to redefine their own "zero base" as that of a virtual manager, and figure out how to "build back better" from that point.

Messages from Our Proprietary Survey

Key takeaways from our meetings with senior executives of asset managers in the US and Europe with ~\$12 trillion of combined assets under management

Although COVID-19 disruptions have resulted in a near-term drag on growth, managers do not expect fundamental changes to broader trends:

- There are near-term operational and business challenges to work through, but if the current recovery trajectory continues, asset managers have an overall positive outlook and expect to continue investing in growth, while aiming to hold on to productivity gains achieved during the disruption.
- Demographic trends in developed markets (e.g., retirement saving withdrawals) will be more exposed in the near term as inflows fall on the back of higher unemployment.
- Fee pressure remains top of mind across active and passive.
- Scale is as important as ever (for driving success in distribution, to fund technology investments, etc.); executives expect accelerated industry consolidation among small and mid-sized managers.
- The regulatory agenda is likely to shift focus to corporate resilience, which will play through in investment strategy design (e.g., incorporating leverage considerations into investment approaches).

Near-zero rate environment is expected to benefit private markets and outcome-orientated solutions:

- Investors are broadly in a better cash position than in 2008 and looking to take advantage of market dislocations.
- Near-zero rates, a major challenge for investor returns, are supporting demand for a broader range of risk premiums and solutions that can facilitate access to them.
- The private market growth story is likely resilient (thanks to the flexibility of dry powder to support existing portfolio companies and performance of existing funds, as well as investor appetite for new investments), although a prolonged recession could challenge this.

Managers still positive on the size of the onshore China opportunity, but access remains a perennial challenge:

- Executives continue to see a long-term need to grow and diversify the emerging market investor base (including China).
- Firms we interviewed expect geopolitical tensions to accelerate the pace of China onshore market development, and with it the case for global investor allocations to China.
- Many managers have made a cautious commitment to onshore growth; distribution access remains the biggest challenge, despite regulatory-driven transformation and professionalization of local asset management.

While ESG interest was rising before the crisis, it has been reinforced and accelerated by it:

- ESG is becoming mainstream and increasingly integrated into the investment process, although data quality remains a challenge for many managers looking to launch ESG funds.
- Thematic focus is evolving, with many firms expecting increased growth and demand for funds that take into account not only the environmental dimension but also the social responsibility element of ESG.
- Active managers that invest in building expertise and unique data sets to support ESG risk analytics can reap some short-term advantages, but ESG capability will be increasingly seen as table-stakes to winning new mandates.

The lessons learned from COVID-19 will encourage a shift in operating models:

- Many firms are looking to hold on to efficiency gains revealed through the crisis e.g., flexible work-from-home policies and a partial shift away from high-cost locations to optimize real estate costs, together with a permanent reduction in travel and physical marketing expenses.
- However, almost everyone we spoke to see in-person interactions as an essential component of their operating
 models and have said that a safe return to the office was a priority.

State of the Industry and Strategic Imperatives for Asset Management

Although aggressive policy actions have mitigated the immediate impacts on revenue pools, the pandemic and the recession will nonetheless leave a lasting impact on the industry.

Central bank actions buoyed global financial markets and implicitly sheltered the asset management industry.

The early days of Covid-19's spread across the globe saw lockdowns, collapse in economic activity, and a steep market downturn. Equity markets went into a near freefall in the early weeks of March, money markets faced severe liquidity challenges, and credit spreads surged. However, swift action by central banks to lower rates, flood the market with liquidity, and, again, "expand the policy tool set" stabilized markets quickly and led to a strong rebound. As a result, across core active and passive, investors reversed the initial panic that had led to outflows in March. Since then, flows have stabilized and investors have returned to riskier asset classes.

Exhibit 2:

Net Flows for 2019 and Early Months of 2020 (% of prior year AuM for given category)



- 1. Through May 2020
- 2. Onshore money of EM clients

Source: HFR industry reports, Broadridge, Oliver Wyman analysis

Asset managers were fast and effective in moving to "work from home," challenging conventional wisdom.

Within days, most asset managers in developed markets had 90% or more of their staff working from home. This happened even though such a setup was not part of their typical business continuity planning. While we observed occasional challenges in settlement cycles at the end of March, the industry overall has proven resilient from an operational point of view. On the back of some early settlement issues in March, some firms will reconsider their outsourcing agree-

ments. Leaders will seek not only to apply the lessons learned to their business continuity management approaches but to "build back better." They will question multi-

layered decision making processes in favor of greater delegation and flatter organizational structures to drive more agility.

Outlook for the industry for 2020 is only modest revenue pool compression, if markets remain calm.

In our base case, we expect that markets will remain broadly calm through year-end and flows will continue to recover. In response, we expect AuM to rebound and stabilize, reversing most of the sharp declines from 1Q. As a result, we expect revenues to decline only slightly (1-2%) relative to 2019.

Net inflows should be lower for years to come, but product shifts will support revenue pools.

The downturn in the real economy, with lower employment levels, will mute inflows from retail investors. In particular, this is likely to be felt in defined contribution pensions, where net inflows — already slowing in the US due to demographic-driven withdrawals — will be further buffeted as unemployment remains elevated and post-pandemic hiring struggles to reach previous highs. We also expect lower flows from Sovereign Wealth Fund investors, as many suffer from lower oil prices coupled with growing demands to support their domestic economies more strongly. Overall, this leads us to conclude that industry inflows will be muted up to 2024, with a base case forecast of 2.0-2.5% (vs. historical inflows of 3-4%).

On the flip side, aggressive monetary stimulus and sustained low interest rates will likely be a net benefit for the industry as investors shift their product mix into an even more barbell-shaped structure. On the one hand, cheaper core public market strategies (e.g., passive) will continue to gain share; on the other, we expect tailwinds for higher risk, higher return, and higher fee strategies (e.g., private markets, emerging markets, high-yield credit) as investors are forced to make meaningful allocations to maintain returns.



The pandemic will likely accelerate existing trends, forcing managers to take strategic decisions faster than they had anticipated.

The early months of the pandemic have provided a glimpse into the broader impact that it is likely to have. These implications will be far-reaching — from direct impacts on the economy to an acceleration of existing trends that will affect a variety of industries, including asset management.

Exhibit 3:Underlying Trends Created or Accelerated by the Pandemic

Trend	Description	Impact on Asset Management		
Geopolitical Tensions	 Decoupling of trade relationships between the US and China. Strains on access of Chinese companies and investors to US financial markets and/or capital. Potentially reduced role for the USD (in Asia) and growing role for the RMB (over the longer term). 	 Accelerated development of onshore market in China. Growing global investor allocations to China. Continued access uncertainty for global asset managers in China. 		
Social Awareness	 Emphasis on sustainability and social responsibility. Corporations taking a firm stand on ESG issues. Growing transparency into firms' ESG metrics. 	 ESG investing to mature and adoption to accelerate. Near-term opportunity to capture share for those with a compelling offering and credible, purpose-aligned value proposition. 		
Social Distancing	 Acceleration of digitalization. Acceleration of automation, including adoption of APIs. Cross-industry acceptance of more flexible work arrangements. 	 Reduced need for in-person sales and marketing events. Quality of digital interaction channels a real differentiator. Opportunity to realize efficiency gains from flexible working. Tech driving products and solution development. 		
Regulatory Scrutiny	 Post-mortem central bank scrutiny of financial markets, including asset managers. Accelerated scrutiny of/interest in privacy and security topics. 	 Potential for incremental regulation (e.g., fund leverage, corporate balance sheet leverage, liquidity). 		

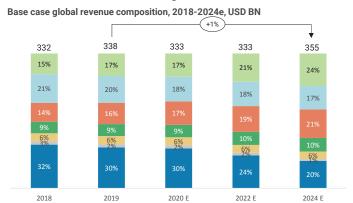
Source: Oliver Wyman analysis



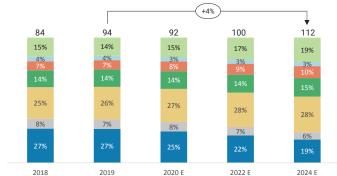
We expect to see a muted but overall positive trajectory for revenue and AuM pools through 2024.

In our base case, a V-shaped recovery, we expect global asset management revenue pools to grow modestly over the forecast period (~1% per annum), from \$337 billion in 2019 to \$355 billion by 2024. This scenario is based on a view that the recession will be sharp but short, with a relatively healthy recovery that begins in the second half of 2020 in most geographies. Under these conditions, we expect that AuM will first stabilize to 2019 highs, with growth subsequently accelerating from 2022 onward. Meanwhile, we expect continued fee pressures in strategies that are struggling to demonstrate added value versus lower cost alternatives.

Exhibit 4:AuM and Revenue Outlook Through 2024







■ Core Active ■ Money Market ■ Passive ■ Solutions ■ Private markets ■ Hedge funds ■ EM clients Private markets AUM includes dry powder. Source Oliver Wuman analysis

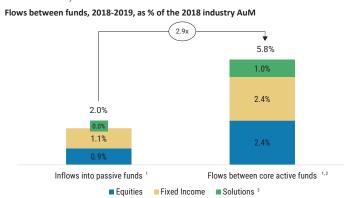
Structural pressures on core active should continue, but we think the intensity of the shift could moderate.

While our fundamental view is unchanged — passive incursion and fee pressures will drive material active fee pool compression in the segment — we are seeing early indicators of a moderation in the

intensity of the shift. Mutual fund flow data from April and May are encouraging, showing either a reduction in active equity outflows (e.g., US-domiciled funds) or even inflows (e.g., EU-domiciled funds) vs. prior years. As a consequence, in the base case, we expect core active revenue pools to decline ~7% p.a. through 2024 (vs. the ~9% p.a. that we forecast in our report last year). However, we are also seeing an acceleration of competitive pressures — flows from active-to-active are 2.9x vs. net flows to passive — which is favoring players demonstrating alpha, as well as scale in product breadth and distribution access. Indeed, we expect to see the crisis reinforce the chasm between winners and laggards, as the former widen the performance gap and see "lift" from outperformance, as is typical during crisis periods.

Exhibit 5:

Flows Between Funds (Inflows into Passive vs. Flows Between Core Active Funds)



Source: Oliver Wyman analysis, Broadridge. Note: 1) Excludes other asset classes; 2) Relative flows between funds of the same asset class based on the evolutions of fund AUMs controlling for market effects; 3) Proxied using "mixed assets" in Broadridge.

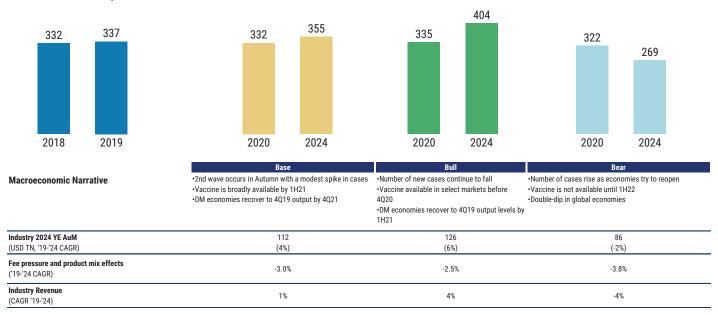
We see substantial downside risks to the industry's trajectory from uncertainty around global governments' ability to contain the pandemic.

Embedded in our base case is a degree of optimism, supported by the type of recovery we experienced in May and June, and incorporating expectations that a potential second wave of the pandemic will be better contained and more manageable than the first. However, the virus spread and vaccine development are the key variables that underlie our alternative scenarios. There is substantial downside risk that the pandemic will not be brought under control soon, and that this will drive a double dip in the global economy, with a subsequent prolonged recovery period. Under such a bear case, we forecast that it would take more than five years to return to AuM levels seen in 2019, which, when coupled with accelerated fee pressures, will result in revenue pools declining (~20% over 2019).

9

On the flip side, in the bull case we assume that the worst is behind us, with reopening ushering in a faster normalization of economic activity than in the base case. Under such a scenario, AuM levels do not experience declines, even in 2020, and stronger inflows cause fee pressures to abate for the industry (vs. the base case). Under this scenario, revenue pools continue to grow and are ~20% higher vs. 2019 levels.

Exhibit 6:Scenarios for Industry Revenues, 2024e, USD BN



Source: Oliver Wyman analysis

Achieving Growth in a Post-Covid World

Making investments into growth zones and ESG capabilities will be key to sustaining topline performance.

Growth zones remain pivotal through the recovery.

Given the relatively contained impact of the recession on many investors, we anticipate that key growth zones relevant before the pandemic — emerging markets clients, private markets, and solutions — will largely remain intact; in some respects, we think they will be accelerated. We expect the revenue pools related to these three zones to grow at an average of 7% p.a. through 2024, to 55% of aggregate industry share. For comparison, all other parts of the industry are expected to contract at $\sim 4\%$ p.a.

However, in a bear scenario private markets are most exposed, as a prolonged recession could test the resilience of private market portfolios. Managers will increasingly face difficult decisions around how

to work through portfolio companies whose balance sheets will be stressed to the breaking point, risking a surge in "zombie" companies that could sap returns (and investor patience) for years.

Success in capitalizing on these growth opportunities will require investments even through the recovery, which, from our conversations, many managers are already making. For example, to tap into net new money flows, many are committed to growing their onshore China business as restrictions on majority foreign ownership are being relaxed. Meanwhile, to tap into the private markets opportunity, private markets managers began to fundraise actively (and, in many cases, successfully) as soon as we had passed the immediate trough in financial markets. Traditional asset managers have also continued looking to build out private markets capabilities — organically, through acquisitions, or both. We expect more of that. Finally, to capitalize on the solutions opportunity, investment in technology and data will be key to delivering value-added analytics and packaged products.



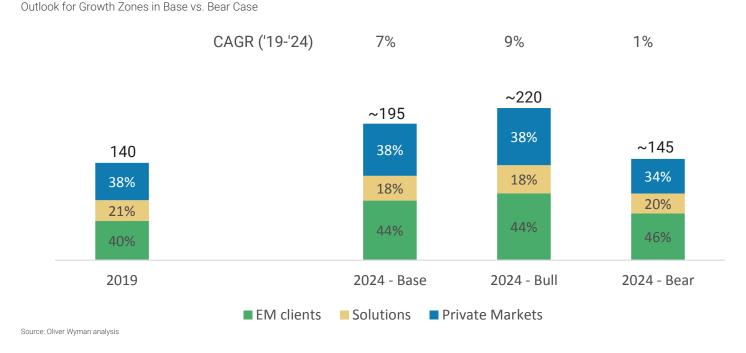
Exhibit 7:

Outlook for Industry Growth Zones

Growth Zone	Base Case Outlook	Flows at risk in a prolonged global recession Prolonged economic impact in EM countries struggling to contain the pandemic. Slower wealth accumulation and less cash available to invest into AM products. Geopolitics challenges access to China West-China geopolitical tensions hit the ability of foreign financial institutions to operate and/or scale onshore presence.		
EM Clients	 Sound fundamentals in net new money Inflows from this segment may slow in the short term, but we expect a strong rebound — ~10% AuM CAGR between 2019 and 2024 (vs. ~2% from clients in developed markets). Decline in global interest rates pushing new clients from bank deposits into asset management products. Onshore China is a major growth catalyst Coordinated actions by the local regulator and industry to drive professionalization of the onshore market. Expect greater domestic and global institutional investor participation. 			
Private Markets	 Potential beneficiary of V-shaped recovery Substantial amount of dry powder being deployed to take advantage of market dislocations. Persistently low rates feed demand Search for yield amidst near-zero interest rates to drive investor demand for illiquidity and other risk premiums. Opportunity from opening access to private markets to defined contribution (DC) pensions (although hurdles remain). 	 Prolonged recession tests portfolio resilience High levels of leverage and exhausted dry powder push many private market managers into the uncharted territory of a true economic downturn, which many managers have not experienced. Surge in "zombie" companies active in sectors most hit by the pandemic, impacting returns of existing funds. Future fundraising is curtailed as investors rebalance stressed portfolios and reassess riskreturn attractiveness of private markets post fees. Additional regulatory headwinds (e.g., leverage restrictions on corporations) impact buyout market. 		
Solutions	 Search for more diversified risk premiums core to demand Traditional 60:40 and income-orientated strategies challenged by near-zero interest rate environment. Investors need solutions to structure exposure to an optimized range of return sources to achieve goals. Technology enables delivery of customized solutions for smaller clients. Helping clients manage ESG obligations Institutional investors increasingly make social commitments while retaining fiduciary responsibilities to end-clients — an opportunity for ESG leaders to produce bespoke solutions to balance ESG obligations. 	 Inflows at risk from a prolonged recession Inflows are reduced substantially as volatility pressures on public market returns. Mounting unemployment and household economic strain lead to lower discretionary spending and falling defined contribution (DC) pension allocations (e.g., target date funds). As some demand growth is contingent upon providing investors access to higher-risk strategies, overall solutions demand dampened as demand for these strategies (including private markets) declines in the bear case. 		

Source: Oliver Wyman analysis

Exhibit 8:



The crisis should accelerate acceptance for ESG and be a source of differentiation, but not necessarily profits.

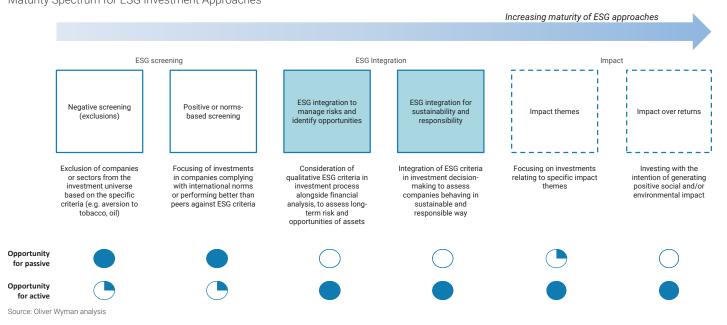
Looking forward, we expect the combination of performance and purpose to create a powerful tailwind for further investor engagement on the ESG topic. In Europe, penetration of ESG is relatively deep, and it is already broadly embedded in institutional investors' fund selection criteria. Within the next five years, we expect this to expand across geographies and for integrated ESG capabilities to become a minimum requirement for winning business/requests for proposals (RFPs). Additionally, our conversations with managers point to increased product innovation and a broader focus to introduce more social responsibility–focused strategies to supplement the environment- and climate-related ones that have dominated until now.

In the short term, early movers can leverage ESG to differentiate offerings and capture flow. As illustrated in Exhibit 9, opportunities will lie in driving maturity of ESG approaches, including (1) ESG integration into risk and investment decision making, (2) greater adop-

tion of impact-driven investing, and (3) investments in proprietary ESG methodologies. We already saw evidence of ESG driving meaningful market share shifts among active managers in 2019 and early 2020, which we expect to persist as the focus and public awareness on the topic broadens.

Finally, while it may be more natural for active managers to take the lead in responding to demand, we do not expect ESG to be the sole preserve of the core active segment. Passive providers with the ability to create bespoke solutions have already demonstrated success in winning flows; they will be able to prove themselves in ESG as well. Indeed, over the next 2-3 years, we expect ESG to be highly integrated into the risk and investment processes of most managers, becoming a widely adopted capability across most strategies and product segments. As a result, while in the short term ESG is likely to create revenue opportunities for early movers with credible offerings and track records who can satisfy increased investor interest, over the long term we do not see it as a meaningful incremental fee pool driver for the industry as a whole.

Exhibit 9:Maturity Spectrum for ESG Investment Approaches



Options to 'Build Back Better'

Proven viability of operating in a remote working environment will push managers to reimagine their operating model more structurally.

Adopting lessons learned from remote working through the pandemic could release 10-15% in savings.

In shifting to remote working, managers' operating models proved highly resilient. Many not only maintained productivity levels but found ways to make improvements (shorten decision making times, create additional capacity for portfolio managers to spend more time with clients, increased reach though digital marketing events). These experiences challenged the conventional wisdom that teams need to be in one location (typically a high-cost location to attract the best talent) and that, as a corollary, salespeople need to spend as much time as possible in the same room with their key clients.

We expect that managers who choose permanently to adopt into their operating models what has proven to work through the pandemic will be able to realize 10-15% in cost savings over a 3- to 4-year horizon. First and foremost, this will require a wider adoption of flexible work arrangements, both to accommodate demands from employees and to capitalize on cost saving opportunities that come

with a smaller physical footprint and a team that is less concentrated in high-cost financial centers. Second, managers will need to reconsider their sales and marketing approaches to incorporate more virtual touchpoints and to think more critically about the value of travel in a post-pandemic world. Finally, we expect many to review their support model: In a world where more teams are working virtually, functions that sit next to the front office will be less important, creating an additional impetus for scaling of shared services, greater adoption of outsourcing, and/or near-shoring to lower cost locations of less critical functions.

How far could this be pushed? We think operating at a 40% lower cost base is possible for "virtual" asset managers.

Traditional asset managers adopting a "virtual" model will rely much more heavily on remote working and technology to power the business (as illustrated in Exhibit 10). We think that such a virtual player will be able to operate at a 40% lower cost base vs. a similar manager with a largely "physical" model. In this paradigm, nearly all staff will work remotely, with a very small physical footprint reserved for high-priority interactions. In distribution, a virtual player may choose to position itself as a pure product-provider, relying on intermediaries (that work like a network of partners and could include wholesalers,

investment consultants, and neobanks or fintechs) to source, onboard, and manage client relationships; much smaller relationship/client service teams may focus almost exclusively on managing these strategic relationships. In this setup, brand will be less relevant, and as a result the cost of marketing and client events will drop significantly. The investment engine will look different as well, more akin to quant funds that exist today, with a much lighter touch of human involvement. Much of the research and risk analysis will become highly automated, with portfolio managers and their lean teams focused on generating ideas, sourcing data, oversight, and refining algorithms. Investment ideas will be implemented in separately managed accounts (with lower cost to operate vs. traditional fund wrappers) to become increasingly accessible to mass retail at lower fees. Meanwhile, trade execution as well as much of operations will be outsourced.

Technology will be crucial to powering the "virtual" operating model. The pace of advancement has accelerated, making it possible to do more with even smaller teams. Natural Language Processing techniques have progressed significantly over the last several years (especially with the arrival of BERT¹), as has adoption of machine learning and alternative data, which are particularly important to making research less human resource-intensive.

A technology that remains widely underestimated and underdeployed is API. Compared to banks, we estimate that asset managers are five years behind banks in setting up open API portals and building out developer communities. Creating these capabilities will be key for the "virtual" manager as they will create a bridge between the manager and its distributors, as well as its custodians and other vendors that will power the middle and back offices.

To be clear, we know of no fully "virtual" manager operating today, but we think it will turn into a viable and attractive option for many types of managers. First, it can be attractive for mid-sized asset managers looking to maintain profitability while conceding to incessant fee pressures. For insurance or bank-owned managers, a "virtual' model can be an attractive "utility model" to serve client franchises in the core businesses. Newer entrants, leading with technology, may see this model as a way to disrupt the industry and quickly gain market share (e.g., create active products that, from a price point perspective, can compete with passives). Others may want to reap firstmover benefits to achieve higher valuation multiples through a rerating more in line with technology-oriented businesses, with a further boost delivered from improved earnings power. Such a valuation multiple uplift would be particularly valuable if consolidation accelerates, as it would improve the relative position of such first movers.

Implementing a pure "virtual" model will not be without risk. Attracting talent and fostering a cohesive culture typically requires some sort of physical presence, and typically in a higher-cost location. However, we think senior managements should reorient their thinking by taking the virtual model as their "zero base" option on which to build features on top — the opposite of the usual approach of starting with the status quo and aiming to reduce.

1Bidirectional Encoder Representations from Transformers is a technique for Natural Language Processing (NLP) developed by Google

Exhibit 10:

Virtual Asset Manager and Potential Cost Savings that Could Be Achieved ~30% of cost base 35% of cost base Distribution Investment Management Middle and Back Office Sales, marketing/brand and product development Research, Portfolio Construction, Trading & Execution Administration, risk mgmt. and processing ·API-based connectivity with distributors allowing for personalized Research co-owned with data scientists with wide adoption of •API-based connectivity with custodians /admins eliminating deep NLP techniques (e.g. BERT) and machine learning •Travel and entertainment closed to zero, with brand/marketing loosing importance and allocated budget ·Portfolio management informed by machines, but remains •Operations widely outsourced with regulatory obligations (e.g. reporting) delivery by third party •Trading and execution outsourced and co-financed through sec ·Innovation in products/solutions co-sourced through API-developer lending and liquidity sponsoring / market making •Clients with 100% look-through on portfolio with self-service, minimizing client service and communication efforts → ~60% cost reduction → ~30% cost reduction → ~60% cost reduction

→ ~40% lower cost base of virtual AM vs. traditional operating model



Disclosure Section

The information and opinions in Morgan Stanley Research were prepared by Morgan Stanley & Co. LLC, and/or Morgan Stanley C.T.V.M. S.A., and/or Morgan Stanley Mexico, Casa de Bolsa, S.A. de C.V., and/or Morgan Stanley Canada Limited. As used in this disclosure section, "Morgan Stanley" includes Morgan Stanley & Co. LLC, Morgan Stanley C.T.V.M. S.A., Morgan Stanley Mexico, Casa de Bolsa, S.A. de C.V., Morgan Stanley Canada Limited and their affiliates as necessary.

For important disclosures, stock price charts and equity rating histories regarding companies that are the subject of this report, please see the Morgan Stanley Research Disclosure Website at www.morganstanley.com/researchdisclosures, or contact your investment representative or Morgan Stanley Research at 1585 Broadway, (Attention: Research Management), New York, NY, 10036 USA.

For valuation methodology and risks associated with any recommendation, rating or price target referenced in this research report, please contact the Client Support Team as follows: US/Canada +1 800 303-2495; Hong Kong +852 2848-5999; Latin America +1 718 754-5444 (U.S.); London +44 (0)20-7425-8169; Singapore +65 6834-6860; Sydney +61 (0)2-9770-1505; Tokyo +81 (0)3-6836-9000. Alternatively you may contact your investment representative or Morgan Stanley Research at 1585 Broadway, (Attention: Research Management), New York, NY 10036 USA.

Analyst Certification

The following analysts hereby certify that their views about the companies and their securities discussed in this report are accurately expressed and that they have not received and will not receive direct or indirect compensation in exchange for expressing specific recommendations or views in this report: Morgan Stanley Research.

Unless otherwise stated, the individuals listed on the cover page of this report are research analysts.

Global Research Conflict Management Policy

Morgan Stanley Research has been published in accordance with our conflict management policy, which is available at www.morganstanley.com/institutional/research/conflictpolicies. A Portuguese version of the policy can be found at www.morganstanley.com.br

Important Regulatory Disclosures on Subject Companies

The equity research analysts or strategists principally responsible for the preparation of Morgan Stanley Research have received compensation based upon various factors, including quality of research, investor client feedback, stock picking, competitive factors, firm revenues and overall investment banking revenues. Equity Research analysts' or strategists' compensation is not linked to investment banking or capital markets transactions performed by Morgan Stanley or the profitability or revenues of particular trading desks.

Morgan Stanley and its affiliates do business that relates to companies/instruments covered in Morgan Stanley Research, including market making, providing liquidity, fund management, commercial banking, extension of credit, investment services and investment banking. Morgan Stanley sells to and buys from customers the securities/instruments of companies covered in Morgan Stanley Research on a principal basis. Morgan Stanley may have a position in the debt of the Company or instruments discussed in this report. Morgan Stanley trades or may trade as principal in the debt securities (or in related derivatives) that are the subject of the debt research report.

Certain disclosures listed above are also for compliance with applicable regulations in non-US jurisdictions.

STOCK RATINGS

Morgan Stanley uses a relative rating system using terms such as Overweight, Equal-weight, Not-Rated or Underweight (see definitions below). Morgan Stanley does not assign ratings of Buy, Hold or Sell to the stocks we cover. Overweight, Equal-weight, Not-Rated and Underweight are not the equivalent of buy, hold and sell. Investors should carefully read the definitions of all ratings used in Morgan Stanley Research. In addition, since Morgan Stanley Research contains more complete information concerning the analyst's views, investors should carefully read Morgan Stanley Research, in its entirety, and not infer the contents from the rating alone. In any case, ratings (or research) should not be used or relied upon as investment advice. An investor's decision to buy or sell a stock should depend on individual circumstances (such as the investor's existing holdings) and other considerations.

Global Stock Ratings Distribution

(as of June 30, 2020)

The Stock Ratings described below apply to Morgan Stanley's Fundamental Equity Research and do not apply to Debt Research produced by the Firm.

For disclosure purposes only (in accordance with FINRA requirements), we include the category headings of Buy, Hold, and Sell alongside our ratings of Overweight, Equal-weight, Not-Rated and Underweight. Morgan Stanley does not assign ratings of Buy, Hold or Sell to the stocks we cover. Overweight, Equal-weight, Not-Rated and Underweight are not the equivalent of buy, hold, and sell but represent recommended relative weightings (see definitions below). To satisfy regulatory requirements, we correspond Overweight, our most positive stock rating, with a buy recommendation; we correspond Equal-weight and Not-Rated to hold and Underweight to sell recommendations, respectively.

	Coverage Universe		Investment Banking Clients (IBC)		Other Material Investment Services Clients (MISC)		
Stock Rating Category	Count	% of Total	Count	% of Total IBC	% of Rating Category	Count	% of Total Other MISC
Overweight/Buy	1252	39%	323	43%	26%	565	38%
Equal-weight/Hold	1430	44%	336	45%	23%	690	47%
Not-Rated/Hold	5	0%	0	0%	0%	3	0%
Underweight/Sell	553	17%	84	11%	15%	225	15%
Total	3,240		743			1483	

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months. Due to rounding off of decimals, the percentages provided in the "% of total" column may not add up to exactly 100 percent.



Analyst Stock Ratings

Overweight (O). The stock's total return is expected to exceed the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Equal-weight (E). The stock's total return is expected to be in line with the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Not-Rated (NR). Currently the analyst does not have adequate conviction about the stock's total return relative to the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Underweight (U). The stock's total return is expected to be below the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Unless otherwise specified, the time frame for price targets included in Morgan Stanley Research is 12 to 18 months.

Analyst Industry Views

Attractive (A): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be attractive vs. the relevant broad market benchmark, as indicated below.

In-Line (1): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be in line with the relevant broad market benchmark, as indicated below.

Cautious (C): The analyst views the performance of his or her industry coverage universe over the next 12-18 months with caution vs. the relevant broad market benchmark, as indicated below.

Benchmarks for each region are as follows: North America - S&P 500; Latin America - relevant MSCI country index or MSCI Latin America Index; Europe - MSCI Europe; Japan - TOPIX; Asia - relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

Important Disclosures for Morgan Stanley Smith Barney LLC Customers

Important disclosures regarding the relationship between the companies that are the subject of Morgan Stanley Research and Morgan Stanley Smith Barney LLC or Morgan Stanley or any of their affiliates, are available on the Morgan Stanley Wealth Management disclosure website at www.morganstanley.com/online/researchdisclosures. For Morgan Stanley specific disclosures, you may refer to www.morganstanley.com/researchdisclosures.

Each Morgan Stanley Equity Research report is reviewed and approved on behalf of Morgan Stanley Smith Barney LLC. This review and approval is conducted by the same person who reviews the Equity Research report on behalf of Morgan Stanley. This could create a conflict of interest.

Other Important Disclosures

Morgan Stanley Research policy is to update research reports as and when the Research Analyst and Research Management deem appropriate, based on developments with the issuer, the sector, or the market that may have a material impact on the research views or opinions stated therein. In addition, certain Research publications are intended to be updated on a regular periodic basis (weekly/monthly/quarterly/annual) and will ordinarily be updated with that frequency, unless the Research Analyst and Research Management determine that a different publication schedule is appropriate based on current conditions.

Morgan Stanley is not acting as a municipal advisor and the opinions or views contained herein are not intended to be, and do not constitute, advice within the meaning of Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act.

Morgan Stanley produces an equity research product called a "Tactical Idea." Views contained in a "Tactical Idea" on a particular stock may be contrary to the recommendations or views expressed in research on the same stock. This may be the result of differing time horizons, methodologies, market events, or other factors. For all research available on a particular stock, please contact your sales representative or go to Matrix at http://www.morganstanley.com/matrix.

Morgan Stanley Research is provided to our clients through our proprietary research portal on Matrix and also distributed electronically by Morgan Stanley to clients. Certain, but not all, Morgan Stanley Research products are also made available to clients through third-party vendors or redistributed to clients through alternate electronic means as a convenience. For access to all available Morgan Stanley Research, please contact your sales representative or go to Matrix at http://www.morganstanley.com/matrix.

Any access and/or use of Morgan Stanley Research is subject to Morgan Stanley's Terms of Use (http://www.morganstanley.com/terms.html). By accessing and/or using Morgan Stanley Research, you are indicating that you have read and agree to be bound by our Terms of Use (http://www.morganstanley.com/terms.html). In addition you consent to Morgan Stanley processing your personal data and using cookies in accordance with our Privacy Policy and our Global Cookies Policy (http://www.morganstanley.com/privacy_pledge.html), including for the purposes of setting your preferences and to collect readership data so that we can deliver better and more personalized service and products to you. To find out more information about how Morgan Stanley processes personal data, how we use cookies and how to reject cookies see our Privacy Policy and our Global Cookies Policy (http://www.morganstanley.com/privacy_pledge.html).

If you do not agree to our Terms of Use and/or if you do not wish to provide your consent to Morgan Stanley processing your personal data or using cookies please do not access our research.

Morgan Stanley Research does not provide individually tailored investment advice. Morgan Stanley Research has been prepared without regard to the circumstances and objectives of those who receive it. Morgan Stanley recommends that investors independently evaluate particular investments and strategies, and encourages investors to seek the advice of a financial adviser. The appropriateness of an investment or strategy will depend on an investor's circumstances and objectives. The securities, instruments, or strategies discussed in Morgan Stanley Research may not be suitable for all investors, and certain investors may not be eligible to purchase or participate in some or all of them. Morgan Stanley Research is not an offer to buy or sell or the solicitation of an offer to buy or sell any security/instrument or to participate in any particular trading strategy. The value of and income from your investments may vary because of changes in interest rates, foreign exchange rates, default rates, prepayment rates, securities/instruments prices, market indexes, operational or financial conditions of companies or other factors. There may be time limitations on the exercise of options or other rights in securities/instruments transactions. Past performance is not necessarily a guide to future performance. Estimates of future

performance are based on assumptions that may not be realized. If provided, and unless otherwise stated, the closing price on the cover page is that of the primary exchange for the subject company's securities/instruments.

The fixed income research analysts, strategists or economists principally responsible for the preparation of Morgan Stanley Research have received compensation based upon various factors, including quality, accuracy and value of research, firm profitability or revenues (which include fixed income trading and capital markets profitability or revenues), client feedback and competitive factors. Fixed Income Research analysts', strategists' or economists' compensation is not linked to investment banking or capital markets transactions performed by Morgan Stanley or the profitability or revenues of particular trading desks.

The "Important Regulatory Disclosures on Subject Companies" section in Morgan Stanley Research lists all companies mentioned where Morgan Stanley owns 1% or more of a class of common equity securities of the companies. For all other companies mentioned in Morgan Stanley Research, Morgan Stanley may have an investment of less than 1% in securities/instruments or derivatives of securities/instruments of companies and may trade them in ways different from those discussed in Morgan Stanley Research. Employees of Morgan Stanley not involved in the preparation of Morgan Stanley Research may have investments in securities/instruments or derivatives of securities/instruments of companies mentioned and may trade them in ways different from those discussed in Morgan Stanley Research. Derivatives may be issued by Morgan Stanley or associated persons.

With the exception of information regarding Morgan Stanley, Morgan Stanley Research is based on public information. Morgan Stanley makes every effort to use reliable, comprehensive information, but we make no representation that it is accurate or complete. We have no obligation to tell you when opinions or information in Morgan Stanley Research change apart from when we intend to discontinue equity research coverage of a subject company. Facts and views presented in Morgan Stanley Research have not been reviewed by, and may not reflect information known to, professionals in other Morgan Stanley business areas, including investment banking personnel.

Morgan Stanley Research personnel may participate in company events such as site visits and are generally prohibited from accepting payment by the company of associated expenses unless pre-approved by authorized members of Research management.

Morgan Stanley may make investment decisions that are inconsistent with the recommendations or views in this report.

To our readers based in Taiwan or trading in Taiwan securities/instruments: Information on securities/instruments that trade in Taiwan is distributed by Morgan Stanley Taiwan Limited (*MSTL*). Such information is for your reference only. The reader should independently evaluate the investment risks and is solely responsible for their investment decisions. Morgan Stanley Research may not be distributed to the public media or quoted or used by the public media without the express written consent of Morgan Stanley. Any non-customer reader within the scope of Article 7-1 of the Taiwan Stock Exchange Recommendation Regulations accessing and/or receiving Morgan Stanley Research is not permitted to provide Morgan Stanley Research to any third party (including but not limited to related parties, affiliated companies and any other third parties) or engage in any activities regarding Morgan Stanley Research which may create or give the appearance of creating a conflict of interest. Information on securities/instruments that do not trade in Taiwan is for informational purposes only and is not to be construed as a recommendation or a solicitation to trade in such securities/instruments. MSTL may not execute transactions for clients in these securities/instruments.

Morgan Stanley is not incorporated under PRC law and the research in relation to this report is conducted outside the PRC. Morgan Stanley Research does not constitute an offer to sell or the solicitation of an offer to buy any securities in the PRC. PRC investors shall have the relevant qualifications to invest in such securities and shall be responsible for obtaining all relevant approvals, licenses, verifications and/or registrations from the relevant governmental authorities themselves. Neither this report nor any part of it is intended as, or shall constitute, provision of any consultancy or advisory service of securities investment as defined under PRC law. Such information is provided for your reference only.

Morgan Stanley Research is disseminated in Brazil by Morgan Stanley C.T.V.M. S.A. located at Av. Brigadeiro Faria Lima, 3600, 6th floor, São Paulo - SP, Brazil; and is regulated by the Comissão de Valores Mobiliários; in Mexico by Morgan Stanley México, Casa de Bolsa, S.A. de C.V which is regulated by Comision Nacional Bancaria y de Valores. Paseo de los Tamarindos 90, Torre 1, Col. Bosques de las Lomas Floor 29, 05120 Mexico City; in Japan by Morgan Stanley MUFG Securities Co., Ltd. and, for Commodities related research reports only, Morgan Stanley Capital Group Japan Co., Ltd; in Hong Kong by Morgan Stanley Asia Limited (which accepts responsibility for its contents) and by Morgan Stanley Asia International Limited, Hong Kong Branch; in Singapore by Morgan Stanley Asia (Singapore) Pte. (Registration number 199206298Z) and/or Morgan Stanley Asia (Singapore) Securities Pte Ltd (Registration number 200008434H), regulated by the Monetary Authority of Singapore (which accepts legal responsibility for its contents and should be contacted with respect to any matters arising from, or in connection with, Morgan Stanley Research) and by Morgan Stanley Asia International Limited, Singapore Branch (Registration number T11FC0207F); in Australia to "wholesale clients" within the meaning of the Australian Corporations Act by Morgan Stanley Australia Limited A.B.N. 67 003 734 576, holder of Australian financial services license No. 233742, which accepts responsibility for its contents; in Australia to "wholesale clients" and "retail clients" within the meaning of the Australian Corporations Act by Morgan Stanley Wealth Management Australia Pty Ltd (A.B.N. 19 009 145 555, holder of Australian financial services license No. 240813, which accepts responsibility for its contents; in Korea by Morgan Stanley & Co International plc, Seoul Branch; in India by Morgan Stanley India Company Private Limited; in Indonesia by PT. Morgan Stanley Sekuritas Indonesia; in Canada by Morgan Stanley Canada Limited, which has approved of and takes responsibility for its contents in Canada; in Germany and the European Economic Area where required by Morgan Stanley Europe S.E., regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin); in Spain by Morgan Stanley, S.V., S.A., a Morgan Stanley group company, which is supervised by the Spanish Securities Markets Commission (CNMV) and states that Morgan Stanley Research has been written and distributed in accordance with the rules of conduct applicable to financial research as established under Spanish regulations; in the US by Morgan Stanley & Co. LLC, which accepts responsibility for its contents. Morgan Stanley & Co. International plc, authorized by the Prudential Regulatory Authority and regulated by the Financial Conduct Authority and the Prudential Regulatory Authority, disseminates in the UK research that it has prepared, and approves solely for the purposes of section 21 of the Financial Services and Markets Act 2000, research which has been prepared by any of its affiliates. RMB Morgan Stanley Proprietary Limited is a member of the JSE Limited and A2X (Pty) Ltd. RMB Morgan Stanley Proprietary Limited is a joint venture owned equally by Morgan Stanley International Holdings Inc. and RMB Investment Advisory (Proprietary) Limited, which is wholly owned by FirstRand Limited. The information in Morgan Stanley Research is being disseminated by Morgan Stanley Saudi Arabia, regulated by the Capital Market Authority in the Kingdom of Saudi Arabia, and is directed at Sophisticated investors only.

The information in Morgan Stanley Research is being communicated by Morgan Stanley & Co. International plc (DIFC Branch), regulated by the Dubai Financial Services Authority (the DFSA), and is directed at Professional Clients only, as defined by the DFSA. The financial products or financial services to which this research relates will only be made available to a customer who we are satisfied meets the regulatory criteria to be a Professional Client.

The information in Morgan Stanley Research is being communicated by Morgan Stanley & Co. International plc (QFC Branch), regulated by the Qatar Financial Centre Regulatory Authority (the QFCRA), and is directed at business customers and market counterparties only and is not intended for Retail Customers as defined by the QFCRA.

As required by the Capital Markets Board of Turkey, investment information, comments and recommendations stated here, are not within the scope of investment advisory activity. Investment



GLOBAL FOUNDATION

advisory service is provided exclusively to persons based on their risk and income preferences by the authorized firms. Comments and recommendations stated here are general in nature. These opinions may not fit to your financial status, risk and return preferences. For this reason, to make an investment decision by relying solely to this information stated here may not bring about outcomes that fit your expectations.

The trademarks and service marks contained in Morgan Stanley Research are the property of their respective owners. Third-party data providers make no warranties or representations relating to the accuracy, completeness, or timeliness of the data they provide and shall not have liability for any damages relating to such data. The Global Industry Classification Standard (GICS) was developed by and is the exclusive property of MSCI and S&P.

Morgan Stanley Research, or any portion thereof may not be reprinted, sold or redistributed without the written consent of Morgan Stanley.

Indicators and trackers referenced in Morgan Stanley Research may not be used as, or treated as, a benchmark under Regulation EU 2016/1011, or any other similar framework.

Other Important Disclosures from Oliver Wyman

Copyright © 2020 Oliver Wyman. All rights reserved. This report may not be reproduced or redistributed, in whole or in part, without the written permission of Oliver Wyman and Oliver Wyman accepts no liability whatsoever for the actions of third parties in this respect.

This report is not a substitute for tailored professional advice on how a specific financial institution should execute its strategy. This report is not investment advice and should not be relied on for such advice or as a substitute for consultation with professional accountants, tax, legal or financial advisers. Oliver Wyman has made every effort to use reliable, up-to-date and comprehensive information and analysis, but all information is provided without warranty of any kind, express or implied.

Oliver Wyman disclaims any responsibility to update the information or conclusions in this report. Oliver Wyman accepts no liability for any loss arising from any action taken or refrained from as a result of information contained in this report or any reports or sources of information referred to herein, or for any consequential, special or similar damages even if advised of the possibility of such damages.

This report may not be sold without the written consent of Oliver Wyman.

The Oliver Wyman employees that contributed to this report are neither FCA nor FINRA registered. Oliver Wyman is not authorised or regu-lated by the Financial Conduct Authority or the Prudential Regulatory Authority. As a consultancy firm it may have business relationships with companies mentioned in this report and as such may receive fees for executing this business.

Please refer to www.oliverwyman.com for further details.

OLIVER WYMAN

EMEA

55 Baker Street London

W1U 8EW

United Kingdom Tel: +44 20 7333 8333

Insights.emea@oliverwyman.com

Americas

1166 Avenue of the Americas

29th Floor

New York, NY 10036

United States

Tel: +1 212 345 8000

Insights.na@oliverwyman.com

Asia Pacific

8 Marina View #09-07 Asia Square

Tower 1 018960

Singapore

Tel: +65 6510 9700

Insights.apr@oliverwyman.com

Morgan Stanley

© Morgan Stanley 2020

The Americas

1585 Broadway New York, NY 10036-8293 United States

Tel: +1 (1) 212 761 4000

Europe

20 Bank Street, Canary Wharf London E14 4AD United Kingdom

Tel: +44 (0) 20 7 425 8000

Japan

1-9-7 Otemachi, Chiyoda-ku Tokyo 100-8104 Japan

Tel: +81 (0) 3 6836 5000

Asia/Pacific

1 Austin Road West Kowloon Hong Kong

Tel: +852 2848 5200