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OLIVER WYMAN

BLUEPAPER

Wholesale Banks & Asset Managers

Winning Under Pressure

Pressures on Asset Managers are reshaping the securities industry. To emerge a winner, Asset Managers must cut costs & enhance investment processes, requiring tech investment. Banks must focus on faster growing corporate wallet & innovate to unlock growth. Act now before market appreciation slows.

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Contents

Executive Summary

The contrast between winners and losers should be stark as Wholesale Banks and Asset Managers battle for near-term growth while positioning themselves to benefit from powerful longer-term shifts.

10 years since the financial crisis, the focus is back on growth. Rising rates, robust economic tailwinds and tax stimulus in the US promise a more favorable trading and investment environment that should provide near-term relief for both Banks and Asset Managers.

At the same time a confluence of factors creates conditions for a new wave of strategic shifts that will define the future industry structure:

- Investors challenging value-for-money in active asset management, pressuring revenue pools across buy- and sell-side
- A race to apply new technologies and approaches from Big Tech to reinvent core processes and value propositions
- An easing of capital pressures on Wholesale Banks, and an abundance of growth capital for challengers
- New regulations that increase transparency across the buy- and sell-side, eroding some traditional bank advantages and putting new obligations on the buy-side

These fundamental trends will drive a reorientation of market share. We expect profit pools for both Wholesale Banks and Asset Managers will be under pressure after a robust 2018. Yet these structural changes also create opportunities to build new propositions and business models. The winners will be those that can both capture the near-term growth and invest in building innovative capabilities that will create the next set of competitive advantages.

Priorities for the C-Suite

Revenue pools are pressured and their mix is changing – how to capitalize:

Asset Managers

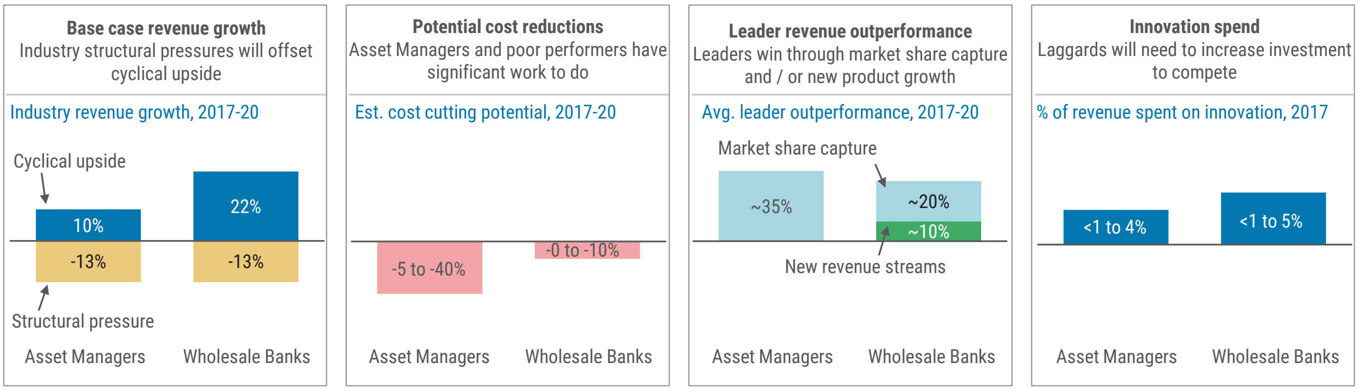
- Don't be fooled by rising markets: while AuM grew by 13% last year, revenue growth lagged by 4ppt with the gap widening.
- Address costs now: costs have not been contained, implying margins are vulnerable. We think outsourcing, automation and changing compensation structures can address 40% of total costs.
- Re-invent core activities: apply data science to distribution and embed in the investment process.

Wholesale Banks

- Innovate in new models to serve institutional clients as growth slows to 2% CAGR in that segment.
- Increase focus on the expanding corporate wallet, growing 4% in the medium term.
- Invest in automation and integrated services to win CFO-down corporate business.
- Focus on areas of strength to capture market share. New Active Solutions can add $15-20bn to revenue pools.

Exhibit 1:

2020 outlook for Asset Managers and Wholesale Banks. 2017-20(f), key performance drivers



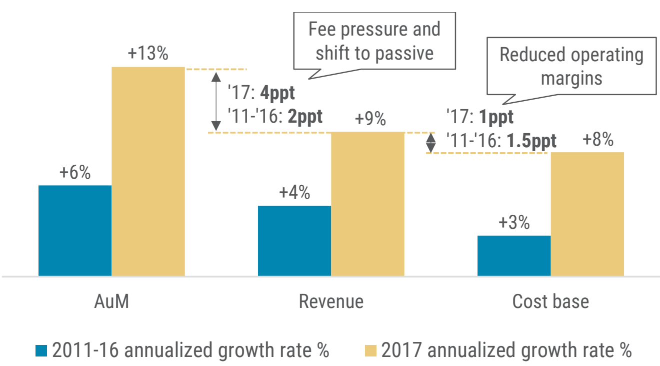
Source: Oliver Wyman analysis; f = forecast

Asset Managers

Continued cost challenges could reach a critical level. In 2017, Asset Managers did not deliver positive operating leverage despite strong AuM growth. Industry revenues grew 4ppt slower than AuM in 2017, while absolute costs increased by 8%. Fee pressure is not evenly spread. Firms with capacity-constrained strategies have been more resilient. For others we do not expect pressure to abate. In our base case, we project industry-wide AuM growth of 10% from 2017 to 2020 to be offset by 13% in fee pressure and the continued shift to passive. Lower market returns combined with fee pressure will force the industry to evolve its stubborn cost structure. A bear case could force much more significant restructuring.

Exhibit 2:

We estimate Asset Manager revenue growth has lagged AuM by 4ppt, while costs have grown broadly in-line with revenues.
Externally managed assets, industry revenues and costs
2011-16 vs 2016-17 growth rates



Source: Oliver Wyman analysis

Disruption in the distribution layer is a key risk. In the most extreme case, distribution would move to an Amazon-type marketplace meaning funds directly provided to end investors, eroding Asset Managers' control significantly. We estimate that up to 50% of fees would be at risk in this scenario as the industry would face a magnetic pull to Vanguard-like pricing for actively managed products, which we reflect in our new bear case. At the same time the growth of OCIO (outsourced chief investment officers who source high conviction active strategies and cheap beta portfolios) offers the opportunity for Asset Managers to capture value in advisory – and the risk of being pushed out of this space by third parties.

How to win under pressure? In the near term, data and technology efforts should be focused on tangible cost and efficiency gains. We estimate automation can reduce costs by ~20% on average and outsourcing by a further ~10%. Data management still represents 10-20% of costs. Many managers have attempted large scale re-platforming but have achieved only mediocre savings, struggled with future-proofing and hampered their front-end agility. The use of data aggregation software can more effectively support near-term growth initiatives.

Data science and artificial intelligence can help streamline the investment and distribution processes – but this will only be source of real alpha for a few. Building an edge around proprietary data and analytics is increasingly difficult as publicly available data and algorithms proliferate. While technology offers great potential to streamline the investment process, we think only a handful of managers with truly distinctive talent models or sources of proprietary data/analytics will be able to use this to drive alpha. Applying these techniques to better hone and target distribution may have a more immediate impact.

In our view, these factors will shift revenue capture away from traditional product providers and towards other providers in adjacent parts of the value chain:

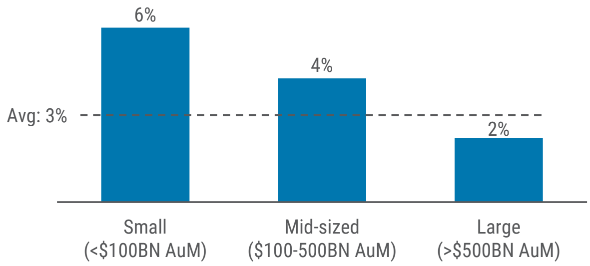
- New services that transform costs from pressured mid-size and smaller firms into revenues for service providers.
- Revenue capture by the sources of proprietary data as they take a slice of the alpha they create.
- Polarization of distribution between high-touch solutions (such as OCIO) and low-frill distribution platforms, forcing traditional product providers to concede on fees.
- The biggest shift may yet be in product provision itself with cheap beta and Alternatives or capacity-constrained alpha products squeezing the rest.

The biggest are better positioned. Cost as a proportion of AuM for large firms is on average half that of smaller peers. Meanwhile, active outflows for Asset Managers with <$100 billion in AuM have been twice the industry average despite the ability of many to outperform their larger peers. This indicates growing economies of scale in distribution. Larger firms have also proven to be better positioned to shift the business towards growth opportunities, such as Alternatives, and to fund innovation.

Exhibit 3:

We estimate outflows for small active Asset Managers have been 3 times higher than for large peers.

CAGR outflows, all asset classes, 2015-17, %



% of funds with outperformance	~25%	~10%	~20%

Note: Outperforming funds identified as having overall 2015-17 returns above those of their stated benchmark

Source: Morningstar, Oliver Wyman analysis

Wholesale Banks

Short-term rebound, but muted longer-term revenue growth. We estimate industry revenues will grow ~5% in 2018, driven by a rebound in volatility and robust macroeconomic growth. Wholesale banks with a broader perimeter will also benefit from the positive impact of rate rises on adjacent deposit-taking businesses. We take a more cautious view on the longer-term outlook, expecting industry revenues to slow to ~3% per annum to 2020, due to structural pres-sure on the institutional wallet. Our bull/bear range is +5% / -21% versus our 2020 base case estimate.

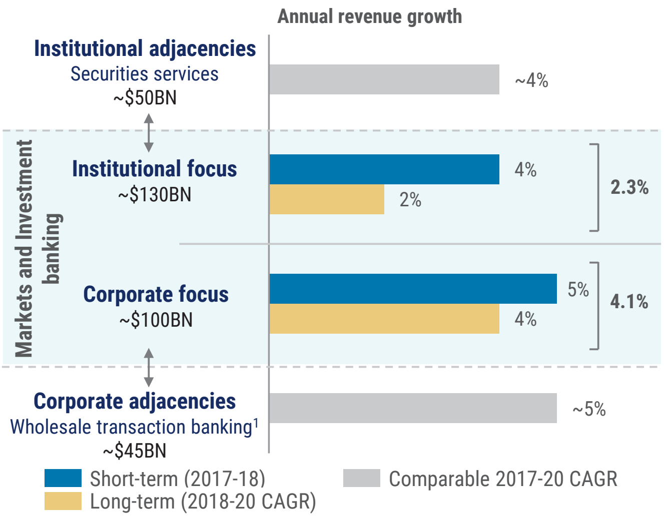
Winning market share will be key to individual banks' RoE outperformance. Banks delivered an average 10% RoE in 2017, and while US tax changes (worth up to +2ppt to RoE), capital and regulatory relief will be positives, we expect performance across banks will be skewed. The spread between top and bottom quartile RoEs is already more than 5ppt, but we believe the fight for share could widen this significantly.

There will be a material shift from institutional to corporate wallets. We estimate the institutional wallet faces $15-25 billion of structural pressure, limiting growth in our 2017-20 base case scenario to 2% CAGR. In contrast, we estimate the corporate wallet will grow at 4% CAGR and will be more resilient. However, corporates are expensive to cover – including lending costs, the industry earned less than its cost of equity in 2017. Wholesale Banks with a broader perimeter will benefit from rising rates and a better ability to monetize fixed lending and infrastructure costs across broad product offerings.

Exhibit 4:

We estimate institutional revenues will grow more slowly than corporate revenues, with adjacent products driving higher growth in both segments.

Projected institutional and corporate focused revenue growth, 2017-20(f), CAGR



1. Wholesale Transaction Banking defined as Global Transaction Banking including PCM and Trade finance revenues from large corporate, MNC, FIG and Public clients captured by major Wholesale Banks. Total transaction banking ~$270 billion, with slightly lower growth rate

Source: Oliver Wyman analysis

Scope of business model and client mix will drive further skews. For the institutional pool, new technology and increasing transparency drive value to the largest players and technology-driven specialists. Capital remains a source of advantage but margins will be pressured as banks swarm around the same opportunities. For corporates, banks skewed towards the IBD-driven "CFO-up" activity set should achieve higher but more volatile returns. Banks focused on the "CFO-down" activity set, including debt and transaction banking, are likely to see lower returns but more stable growth. Rising rates will contribute to an expected uplift of $10 billion for these products. Leaders will invest this incremental revenue in building the technology to create new competitive advantages and defend against FinTech disruption.

The race is on to develop Active Solutions with growth potentially worth $15-20 billion in revenues. Efforts by banks to monetize data have had mixed results to date. Banks should learn from Big Tech to design propositions that bind together data and function, and tackle broader client problems. Examples include outsourced execution or risk analytics for institutional clients, and integrated treasury solutions for corporates. But this revenue will be competed for not just by banks, but also tech providers, funds and market infrastructure firms.

The effectiveness of innovation and technology spend should be the key focus. We estimate the leading players are outspending mid-tier rivals on innovation by as much as 3 to 1. Yet it is not all about the amount of spend – focus and disciplined execution are vital to drive initiatives to scale. And with total technology spend now worth $30 billion across the industry (15-20% of industry cost-base), managing the transition to a modular platform architecture and to an agile delivery model will also be critical.

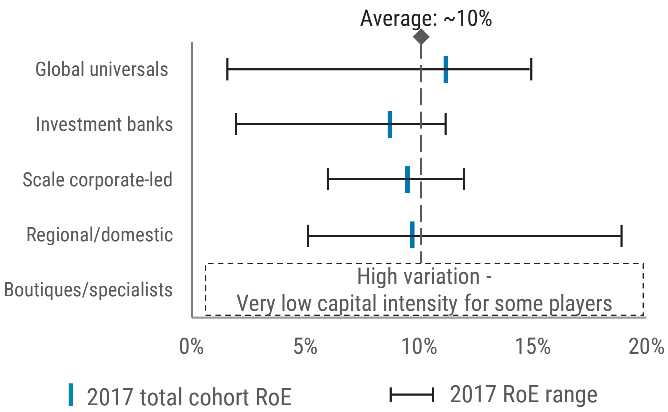
Scale players, broad-based corporate franchises and specialist players are well placed, while regional skews are increasingly stark. Large US banks have gained 8ppt of revenue share over the last 5 years, and tax reform adds to their advantages. This raises profound questions for EU banks and policymakers over the future shape of the wholesale sector in Europe. Policy on Brexit and cross-border consolidation are key debate points.

The war for talent will separate the diamonds from the rough. As banks reimagine the business around technology and data, they will need to manage a transition in the talent model – including a ~20% shift in spend away from traditional roles and towards technologists and quants. Positioning for this shift in talent and operating model will be vital to win in the long run. And it must be delivered while also winning the near-term hunt for share and earnings advantage.

Exhibit 5:

We observe high skews in returns across different cohorts of banks; Global universals are strongest performing.

Wholesale RoE dispersion by cohort, 2017, %



Global universals: Large scale presence across products and regions
Investment banks: Global presence but focused on investment banking and markets

Scale corporate-led: International presence but skewed towards debt issuance and wholesale transaction banking

Regional/domestic: Similar to scale corporate-led but with a stronger regional/local skew, or at smaller scale

Boutiques/specialists: Specialist market makers and boutique investment banks

Source: Oliver Wyman analysis

Asset Managers

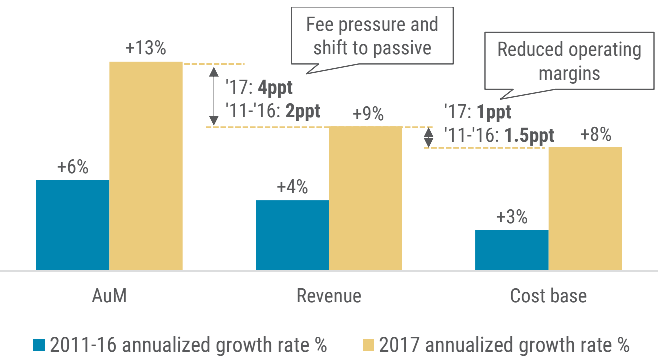
1. Growing pressure points

Buoyant global markets have bought time for Asset Managers. Industry AuM grew 13% in 2017, with strong markets accounting for ~70% of this, and pushing revenues up 9%. The removal of central bank liquidity from markets has been a significant driver of more conducive conditions for active managers and – at an industry level – outflows from active strategies halted in 2017. Yet structural pressures did not abate – the gap between AuM and revenue growth is increasing, effectively taking 4ppt off industry revenue pools. Flows into passive have reached all-time highs, growing by almost 20% over a two-year period. Our discussions with investors suggest a deep shift in their perception of value-for-money that is unlikely to reverse. Our base case for 2020 anticipates a further 13% structural drag on industry revenues, implying modestly declining industry-wide revenue pools.

Exhibit 6:

Asset Manager revenue growth has lagged AuM by 4ppt, while costs have grown broadly in-line with revenues.

Externally managed assets, industry revenues and costs - 2011-16 vs 2016 -17 growth rates

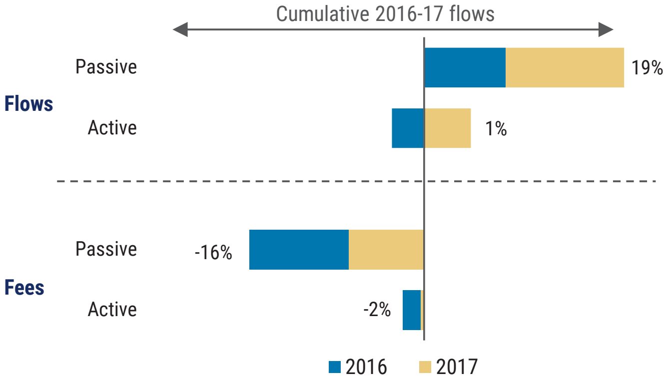


Source: Oliver Wyman analysis

Exhibit 7:

Active funds experienced positive flows in 20 17 but fee pressure remained.

Net flows and fee change, 2016-17

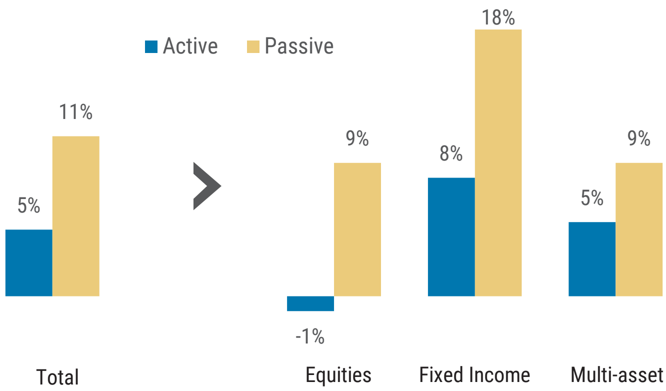


Source: Oliver Wyman analysis

Pressure is most acute within equities. Active equities saw net outflows through 2016 and 2017 despite the supportive market backdrop. Asset Managers will need a demonstrable improvement in their ability to generate alpha in 2018 to stem further flows to passive. Yet, industry-level averages disguise growing dispersion across firms. In US equities, 53% of total industry AuM in actively managed products sits in low performance / low fee strategies. Yet we find the strongest flows for high performance / high fee strategies, which are mainly strategies with capacity constraints. This bucket also shows signifi-cantly lower fee pressure, as managers can hold the line on fees for capacity-constrained offerings.

Exhibit 8:

Fixed Income and Multi-asset funds drove increases in active AuM. Flows as a proportion of AuM, 2017, %

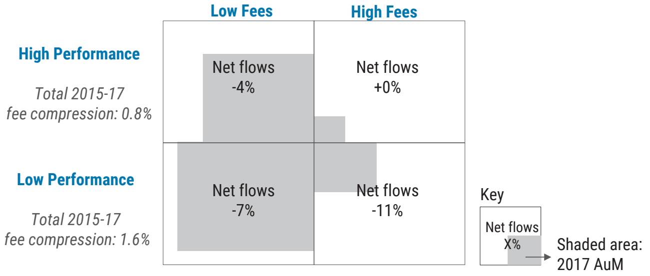


Source: Oliver Wyman analysis

Exhibit 9:

We observe performance as a key driver of active flows.

% 2015–17 yearly net flow, % of US active equity AuM



Note: Funds allocated to high / low performance & fee buckets relative to sample median

Source: Oliver Wyman analysis

Active fixed income products grew AuM, albeit at less than half the rate of their passive siblings. We are seeing fast-growing acceptance of passive structures in fixed income as a portfolio (hedging) tool and as an investment class, and we expect further growth. Passive accounts for only 19% of fixed income AuM today, compared to 39% in equities.

Cost management is an increasingly important value driver. The industry made little progress on the cost agenda in 2017. Growing compensation pay-outs (often for beta), new investments and regulatory costs offset any cost saving initiatives, pushing absolute costs up 8%. In addition, firms are anticipating MiFID II driven cost increases as they begin to bear the cost of sell-side research, upgrade risk, reporting and trading systems among other elements. The lack of more positive operating leverage (i.e. revenue growth in excess of cost growth) in a year of stellar AuM growth is a major source for concern. Managers able to instil stronger cost discipline will be at an advantage when the cycle turns.

A bear scenario could trigger much deeper restructuring. Our base case is for solid asset growth, with the gradual adjustment of interest rates and their knock-on effect weighing on equity valuations. This translates into 10% AuM growth by 2020 versus 2017, and revenues slightly down. Our bull case would see a stronger recovery, buying the industry time. Our bear scenario factors in a sharp asset price correction, which when combined with greater fee pressure could see industry revenues fall by nearly 30%.

Exhibit 10:

Looking out to the end of the decade we have mapped out three scenarios for industry revenues, driven by macro-economic conditions.

Outlook scenarios, 2020(f), % change vs 2017

	Bear	Base	Bull
	• Growing inflationary pressures drive central banks to proceed with faster than expected pace of tightening and withdrawal of QE • Sharp price corrections across asset classes • Value for money shifting more towards the 'money' end of the equation and active managers struggling to attract flows despite a potentially more conducive investment environment • Accelerated shift to lower cost distribution models	• Broad-based (but moderate) economic growth • Gradual rate rises and some isolated asset price corrections as QE unwinds, though volatility remains range-bound; asset returns more in line or slightly below historical averages • Continued, but outside Passive, still moderate fee pressure, particularly in Equities, and continued AuM barbelling • Slight shift towards more direct distribution models but main distribution dynamics remain intact	• Sustained uptick in economic growth, supporting asset prices • Rates increase and yield curves steepen at a faster rate without negative transmission into the real economy • Re-emergence of active investing as managers demonstrate value in world of more normalized volatility levels • Fee pressure largely limited to Passive and funds / mandates with sustained underperformance • No material change in distribution dynamic
Industry AUM ($TN, % change)	$75TN -13%	$95TN +10%	$105TN +22%
Fee pressure and product mix shift effects (% change)	-16%	-13%	-4%
Revenue (% change)	**-29%**	**-3%**	**+18%**

Source: Oliver Wyman analysis

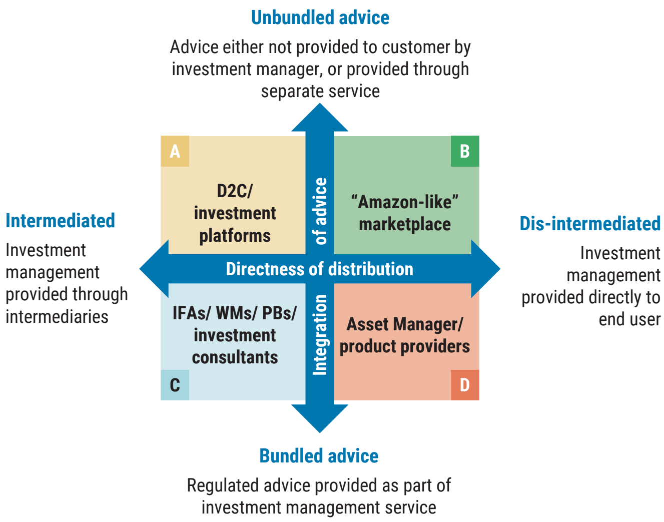
A bear market is likely to have a more sustained impact than in the past. In prior cycles, it has taken AuM less than ~3 years to recover, hence limiting the need to structurally address the cost problem. We believe that in the current environment of increased regulatory scrutiny and a growing demand for value-for-money the next bear market may have a more sustained impact by triggering a shift in pricing levels on the back of distribution models where Asset Managers will become more of a price taker.

Shifts in distribution dynamics will be a key determinant of how far and how fast the industry moves. Current distribution models come with some control for Asset Managers, supporting higher fee structures. In an extreme case, we could see the emergence of an Amazon-like marketplace – distribution largely disintermediated (i.e. directly provided to end investors) and unbundled from advice. This is the exact opposite from how most markets are structured today where advice remains bundled and intermediated, for example via bank distributors, independent financial advisers (IFAs) or investment consultants. Such an outcome would lead to significantly more price transparency and a magnetic pull to a Vanguard-like pricing for active management. We estimate this could eliminate up to 50% of industry revenues. While an outlying scenario and subject to geographic variation, we believe this has the potential to be pioneered in large EM markets such as China.

Exhibit 11:

The prominence of future distribution models will depend on the degree of bundling and intermediation.

Asset management distribution models



Source: Oliver Wyman analysis

We believe that a change in distribution dynamics and the associated fee pressure is the far more likely outcome of a bear market than an accelerated shift to new pricing models. Indeed, pricing models such as fulcrum fees (which adjust up or down based on benchmark outperformance / underperformance) are already being tested in the market. Yet investors we have spoken to almost unanimously raise as a major concern the inherent conflicts of interest that occur in more performance-driven fee structures. We also note that most Asset Managers lack the required capitalization levels for a large-scale shift in pricing models to be feasible.

In the US, the growth of OCIO creates a further distribution headache for Asset Managers. We see growing potential for Asset Managers to be disintermediated as the value in portfolio composition and creation is increasingly captured by OCIOs (outsourced chief investment officers) who look to serve asset owners by sourcing high conviction active strategies and cheap beta portfolios. Asset Managers face a challenging question: whether to build in-house OCIO capabilities, but possibly dilute a more distinct value proposition as an alpha or beta manufacturer, or treat third-party OCIOs as a growing distribution channel with a strong value-for-money emphasis in asset sourcing. Moderating this view, we observe evi-dence of the opposite, primarily in Continental Europe, as even smaller asset owners look to keep more capabilities in-house.

2. The role of technology and data: efficiency first

Cost reduction is the most tangible outcome of technology and data in the short term. We believe technology and data will transform the industry in three ways, by:

- Significantly lowering the cost structure,
- Offering enhanced ways to create alpha, and
- Reshaping the existing workforce.

While some of these are already under way, changes are unlikely to be uniform nor are they likely to occur at the same pace or magnitude. We view the cost opportunity to be the most material and tangible in the short term. In contrast, most traditional firms are at an experimental stage in terms of applying new data-sets and AI in the investment process. The impact on the workforce of the future is often neglected but should be an emerging top 3 item on the agenda of CEOs.

Cost

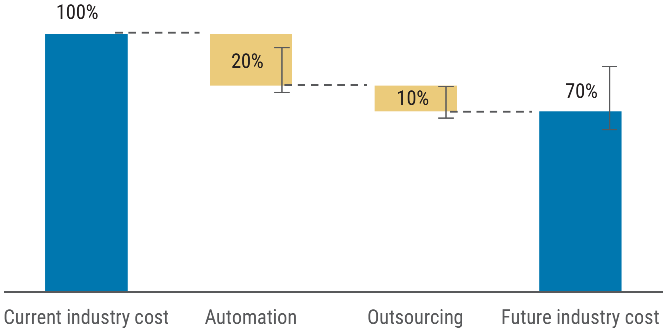
The biggest potential cost lever is automation and better use of data and analytics. Firms typically spend 10-20% of their cost base on data management and are now thinking hard about how to increase the impact of their spend. Many have viewed this as a re-platforming challenge requiring large scale rationalization via multi-year programs. However, mediocre savings, the difficulty of future-proofing, and the negative impact on front-end agility have forced a change in mindset. Use of data aggregation software presents a more immediate solution, while rationalization (internally and of vendors) can continue behind the scenes. In our view, success in data aggregation is a much higher priority than distributed ledger technology – a space a few Asset Managers have been experimenting with. We expect it will be the vendors who will likely drive change in distributed ledger technology rather than Asset Managers.

More radical outsourcing can offer significant savings that are as yet unrealized. We estimate ~40% of processing and administration costs are personnel, despite the high potential for automation. The battle is on among provider companies (trust banks, infrastructure firms, and some Asset Managers themselves looking to bring more scale on their proprietary platforms) to develop the winning proposition, with the goal to deliver a more robust, scalable technology-driven solution compared to prior waves of lift-outs. In addition, deploying these as a service hosted on vendor platforms can strip out further IT infrastructure costs. Together, these can offer material savings in the middle and back office – we estimate up to 10% for the average Asset Manager. The maturing vendor landscape will increase potential savings in existing outsourced functions, but also increase the scope for outsourcing. This will spread more into front office activities, for example execution and order management in liquid asset classes.

Exhibit 12:

We estimate the industry can save ~30% of costs through automation and outsourcing.

% of total industry cost base



Note: Black bars represent achievable range in cost cutting i.e. the players which can cut large amounts of the cost base from greater future Automation and Outsourcing will be on the lower end of the bar. These bars are not additive as firms which can cut large costs from automation (generally larger firms) cannot also cut large costs from outsourcing and vice-versa.

Source: Oliver Wyman analysis

Economies of scale in the middle and back office are likely to be undermined. Mid-sized and smaller firms will increasingly be able to buy scale rather than having to build it, eroding the advantage of larger peers. Bargaining power will still allow large players to access best-in-class vendors at lower cost, but this advantage is receding. Rising regulatory overheads will preserve economies of scale for large players, though activities like reporting will also be outsourceable. We also see indirect regulatory impacts: as Asset Managers begin to bear the cost of research and make additional infrastructure changes (e.g. reporting/audit) due to MiFID II, we expect smaller firms to have less latitude to bring research in-house or negotiate lower prices with providers.

We see scope to reimagine the operating model using 'greenfield' builds. Many Asset Managers still rely on infrastructure and technology dating back decades. We see a strong case for 'greenfield' builds. Under this approach, technology firms, working in partnership with Asset Managers, could launch a platform-based offering with a core data integration and orchestration layer, combined with a strong analytics environment, and an open application programming interface (API) front-end. The speed of transformation for Asset Managers migrating to such a platform could be rapid.

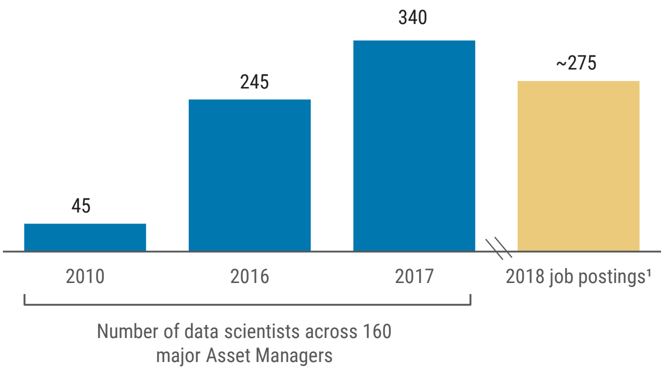
Alpha Generation

The near-term impact of artificial intelligence (AI) on the investment function is over-estimated. Although alternative data has been utilized by some Asset Managers for years, the fear of falling behind has recently prompted most firms to act. Specialist alternative data teams are being created and data scientists are being hired. The current number of job openings for data scientists is comparable to the current stock already employed by Asset Managers. But it is often unclear how they fit into the investment process: in our experience many analysts and portfolio managers are unclear on the role data scientists should play. Few firms have managed to build the required bridges.

Exhibit 13:

2018 job postings point to continued rapid growth in data scientist headcount at Asset Managers.

Number of employees and job openings, 2010-18



1. Data scientist and data analyst job postings at major Asset Managers as of February 2018

Source: AlternativeData.org, LinkUp, Oliver Wyman analysis

Proliferation may already threaten the opportunity. Over 100 alternative data vendors have emerged, and the number of alternative data types continues to grow. Some hedge funds are now looking for exclusive access but the half-life of proprietary data is likely to shorten as the creation and provision of data accelerates. There is also a growing number of publicly available libraries of machine-learning algorithms. We see leaders in this space working with a hybrid approach, developing proprietary capabilities in conjunction with vendor-provided or publicly available components. However, when proliferated broadly, inherent alpha decay will occur.

In our view, this will be an arms race but not necessarily all about scale. Spend on data, data scientists and technology will naturally favor deep pockets. But we believe that success in this space will go beyond financial firepower. We see four components of success in data and AI; only one or two of these are ultimately scale driven.

- Cultural integration: need to define upfront how new data-driven insights are embedded in the investment process and what KPIs are used to measure success.
- Technical expertise: primarily driven by the level of sophistication of data analytics, but having a rapid feedback loop to test and improve is critical.
- Financial firepower: ability to hire the best talent and acquire or generate proprietary data.
- Risk management: ability to understand new risks such as data protection laws or potential infringement on patent rights.

Exhibit 14:

We believe scale players will be advantaged in unlocking the potential of AI.

Success factors for AI and importance of scale

Success factor	Key questions	Importance of scale
Cultural integration	• How embedded are data driven insights in the investment process? • What are the KPIs, measurement of success? • How do you attribute alpha?	• Coherence and commitment of the investment team as main success driver
Technical expertise	• How to overcome traditional data aggregation challenges? • Are we accessing the right high quality data? • What is our level of sophistication and access to advanced data analytics capabilities? • Are we able to extract unique insights from data? • Do we have rapid feedback loops to test & improve analytical approaches?	• Scale benefits investment in the right capabilities • Scale advantage reduces by ability to focus, prioritize and learn faster
Financial firepower	• Can we afford top talent? • Do we build/source the required support & infrastructure? • Can we access differentiating data sources?	• Emerging superstar economics for talent • Proprietary data providers likely to take a slice of alpha
Risk management	• Have the first and second line of defense adjusted to the new data / AI world? • How do we ensure we are compliant, e.g. with data protection laws or potential intellectual property issues? • Can we always delineate between what is material non-public vs. proprietary data?	• Size and capability of the risk and compliance team a critical factor

Source: Oliver Wyman analysis

The power of data may be greater in distribution. While the long-term battle may indeed be in investment management, leveraging data effectively can yield more short-term results in distribution. In the institutional space, few firms systematically mine customer relationship management (CRM) and other internal information and combine it with readily available third-party information on clients' or prospects' asset allocation and mandate performance. Client cohort analysis with behavior flags and predictive analytics for assets at risk are other areas where we see leaders building capabilities quickly. In wholesale distribution, we believe managers with access to data collected from distributors can derive differentiated insights on product needs and usage.

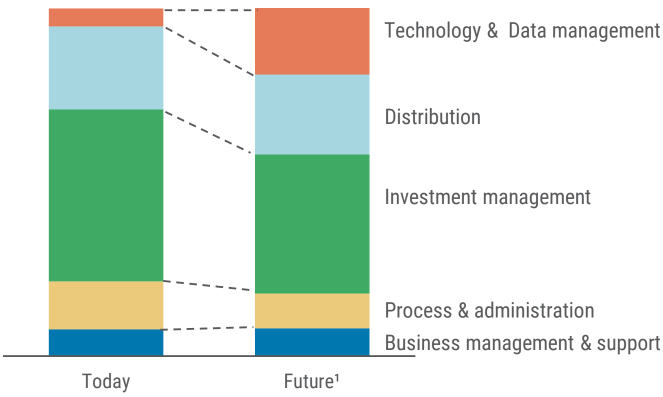
Workforce

The long-term impact of technology will be a fundamental shift in the workforce. We expect headcount to reduce due to automation and externalization of the skill-set. We also estimate that up to 40% of the workforce will require fundamental re-training. This will be most significant in portfolio management and asset administration roles where the use of better data and analytics will transform roles. As a result, compensation structures will shift. Investment management will continue to demand the lion's share of compensation spend. Technology and Data Management's share of compensation will grow fourfold whereas relative spend on automated back office functions will decrease. The share of Distribution will remain largely flat but we expect this role to shift most fundamentally as data and technology will be increasingly important at the interface to customers.

Exhibit 15:

We expect the asset management workforce to shift significantly to technology & data skill-sets.

Compensation spend by role, 2017 and future state, %



1. Future represents 5-10 year time horizon

Source: Oliver Wyman analysis

Overseeing this transition should be a CEO role. The depth and speed of change required far exceeds the traditional change management process handled by HR departments. We believe that the workforce of the future is a CEO topic, requiring strong top-down guidance and a clear understanding of how the organizational setup and glue will have to change. However, we view this as a 5-7 year journey requiring many boards to also adjust incentives for the C-suite.

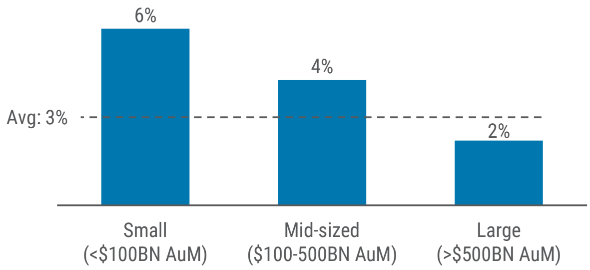
3. The power of scale and scope

The biggest Asset Managers are still best positioned. Large managers have traditionally benefited from scale advantages in their cost structures. They are also proving more resilient in terms of outflows in active management. Firms with less than $100 billion in AuM experienced outflows on their active funds of ~6% per annum, compared to 2% for their larger counterparts in the last three years, despite comparable overall performance results. In our view, this reflects growing economies of scale in distribution. In retail, we observe a culling of some Asset Managers from platforms and a more institutional-style selection process. The dynamics are similar in the institutional space as more asset owners look for strategic partnerships.

Exhibit 16:

We estimate outflows for small active Asset Managers have been 3 times higher than for large peers.

CAGR outflows, all asset classes, 2015-17, %



% of funds with outperformance	~25%	~10%	~20%

Note: Outperforming funds identified as having overall 2015-17 returns above those of their stated benchmark

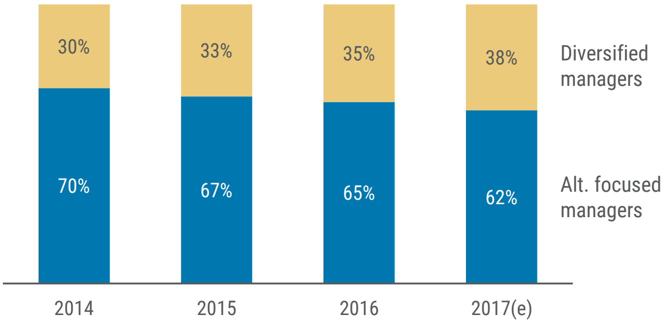
Source: Morningstar, Oliver Wyman analysis

Larger players have recently been more effective in shifting their business models to Alternatives. Alternatives currently account for ~10% of industry AuM and 30% of industry revenues. We believe the revenue share could grow to ~40% by 2025, making the ability to compete effectively in this space ever more important. We find that over the period of 2012 to 2017, diversified Asset Managers have seen stronger flows than their stand-alone Alternatives peers. We also observe that larger firms originally missed this trend but recent attention has increased, with ground often recovered through M&A.

Exhibit 17:

Diversified Asset Managers have increased share of Alternative AuM in the past 3 years.

Alternatives AuM distribution by manager type, 2014-17(e), % of total share



Note: Alternative focused managers have more than 50% of their portfolio in alternative strategies

Source: Towers Watson, Oliver Wyman analysis

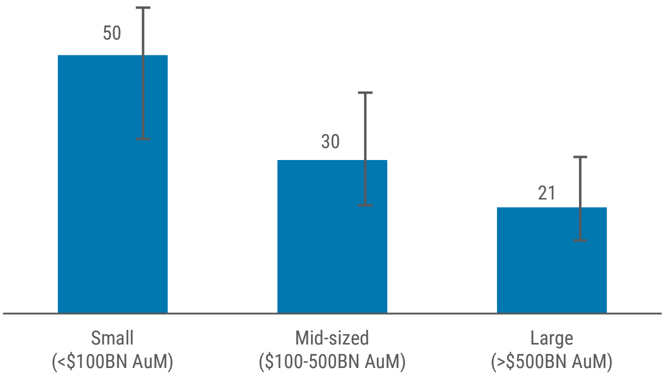
Uncertainty on the future of distribution will also benefit scale players. Large players that can diversify their bets will be better placed. As regulators look to bring down total costs for end investors, the end state is unclear. In particular, the full impact of MiFID II is not yet known. We see evidence that, in contrast to expectations of more openness, more integrated models are gaining traction and third-party funds are being cut off from distribution platforms. Leaders are already able to diversify their bets by launching direct distribution in test markets, or acquiring IFA/RIA advisor platforms that can ultimately be turned into direct-to-customer propositions.

This importance of scale will force clearer choices on business models. Asset Managers with over $0.5 trillion in AuM are on average 2x more efficient than smaller peers in terms of cost as a proportion of AuM. Complexity of business model is a major driver of bloated costs. For example, we estimate multi-jurisdictional European managers' costs are 10-20% higher than equivalent US-only peers. Yet even among groups of similar-size Asset Managers we see a high dispersion in costs. This is particularly acute among smaller firms where leaders are able to drastically outperform peers through a combination of focused business models and strong cost discipline. We believe that clearer choices will be required on where and how to compete, including significant clean-up of the international footprint for many. MiFID II may accelerate this journey as absorbing research costs may impact the profitability of smaller firms to a much larger extent.

Exhibit 18:

Economies of scale are significant for large Asset Managers, though we observe big skews.

Average manager cost/ AuM ratio, bps



Source: Oliver Wyman analysis

Cost-driven M&A fades in attractiveness. Traditional M&A tends to exacerbate the challenge of layered and knotted infrastructure. Technology developments are now moving at such speed that multi-year programs to overhaul infrastructure will be outdated by the time of launch. As a result, savings targets can be hard to meet and, critically, management bandwidth is focused inwardly and on existing processes, rather than outwardly and on future approaches. We expect M&A to be increasingly focused on skills, particularly in the areas of quantitative and systematic investing, and on access to distribution channels

It is not only a scale game: forces of scale differ significantly across the value chain. We see five business models emerging (**Exhibit 19**). These are non-mutually exclusive and come with distinct success factors and varied forces of scale.

Asset managers traditionally occupy the role of 'product providers'. Many have aimed to expand their offering by also providing Solutions, such as OCIO, yet the skill set is a very different one and few have figured out how to play effectively across both dimensions. Clarity on where and how to compete will also be critical for strengthening brand propositions, which remain fairly weak for most.

In addition, many firms, particularly in Europe, manage in-house distribution and fund adminstration platforms, typically out of their back office. With the recent growth of independent platforms and the associated interest of private equity firms in this business, managers will be forced to make strategic choices: opening up to third parties or selling to private equity firms or a consolidator.

Likewise, a growing number of firms are looking to replicate the success of some Asset Managers by offering in-house infrastructure to third parties. Again, the skill set to succeed is markedly different from managers' traditional core competencies. Moreover, scale benefits are evident: we are likely to see industry consolidation after an initial period of fragmentation.

Finally, we see a growing role for capital providers to bridge customers' cash flow needs. Guaranteeing certain outcomes, even if they come at the expense of capping upside, is in growing demand, particularly in the affluent and mass market. This creates a role for capital providers beyond the traditional offering of life insurance products.

Exhibit 19:

We believe there will be a shift away from 'Product Provider' business models towards models which address the wider value chain.

Future Asset Manager business models

Business model	Description	Success factors	Expected industry structure
Product providers	• Traditional 'AM habitat' • Increasingly split across alpha and beta provision	• Scale, particularly in Passive • Product innovation and management • Distribution access	• Beta to remain highly concentrated • Further consolidation expected in alpha space, primarily due to regulation and economies of scale in distribution
Solutions providers	• OCIO / fiduciary managers in the Institutional space • Robo and other advisors in the Retail space as well as hybrid models • Vertically integrated players (WM and AM) in markets like the UK	• Client access • Ability to customize advisory outcomes	• Further fragmentation expected • Consolidation mainly seen at the top end (both Institutional and UHNW) although growth of Family Offices as an opposing trend
Platform providers	• Effective / no frills product distribution platforms (with different levels of integrated advice proposition) • Particularly in Asia frequently combined with other Fin. Services propositions	• Technology / data management Scale • Distribution reach	• Significant consolidation expected, particularly in EMEA as various banks are looking to monetize their in-house solutions
Infrastructure / data providers	• Traditional and alternative data / market information firms • Traditional OMS / PMS system providers • Custodians / fund admin / MBO outsourcing providers	• New technology / infrastructure Scale • Ability to create an ecosystem based on open API setup	• High likelihood of new solutions emerging given vast majority of current offerings based on legacy infrastructure • Likely fragmentation in the short term, followed by fast consolidation as standards emerge
Capital providers	• Insurance companies (e.g. for pension protection products or longevity) • Structured notes out of IBs • Some alternative capital involved	• Risk and capital management expertise • Regulatory status	• Likely to remain fragmented due to risk concentration reasons

Source: Oliver Wyman analysis

We expect a significant value shift over 5 years. Today value is highly concentrated in the product provider bucket. In the medium-term we expect significant shifts across and, importantly, within these buckets – the most meaningful being:

- As outsourcing accelerates, infrastructure / data providers will accrue value but also release costs in the bucket of the product providers.
- Proprietary data providers will take a larger share of the available pie, for example by demanding a share of the alpha achieved.
- As distribution models further polarize towards high-touch solutions and low-frill platform approaches, providers in these buckets will benefit to the detriment of traditional distribution channels and product providers who will have to concede on fees in order to get access and ultimately distribution success in a more transparent world.
- The biggest shift is likely to happen between the product providers where those with cheap beta or capacity-constrained alpha products will win to the detriment of those losing out based on scale or capability.

These value shifts may appear radical at first glance, but we already see pockets of evidence for them. Strong management action is required to be among the winners.

Messages from Our Proprietary Survey

Key takeaways from our meetings with senior executives of Asset Managers with ~$11 trillion of combined assets under management.

Various levels of urgency.

- The need to restructure is widely accepted but some firms do not yet feel the urgency: if they are delivering excellent returns, then they are still making good money even if their back/middle offices are inefficient, making this less of a focus for them.

Leveraging tech to reshape the model is critical, but tough to execute.

- A few firms noted that IT transformation is quite difficult and requires intense focus from management, while others seemed confident about their IT positioning.
- Data's transformation of the investment function is a never-ending race. Asset managers want more data to keep an edge on quant investing – once a signal is understood by the market, it loses its utility. This creates a never-ending quest for data and analytics to create insights from the data.
- Most firms do not feel threatened by Big Tech. They point out that Silicon Valley is not used to the money business or the heavy regulations that come along with it. Among those Asset Managers concerned, the expected threat is bigger on the distribution than on the manufacturing side.
- Culture matters. Data scientists have a fundamentally different skill set, so firms must have a culture that trusts data scientists in order to foster effective innovation and experimentation.

Outsourcing could gather pace.

- Most firms had positive views on outsourcing, especially in the middle office and in investment tools. Giving up control to a third party is not much of a concern as long as it is clear who owns the data.
- A few Asset Managers were more skeptical of outsourcing – if you use one provider you become stuck with what they offer, and if you use multiple providers it becomes too complicated.

Artificial Intelligence is on the horizon.

- There is a lot of discussion around AI. However, executives said that it takes time to implement, with various pilots and testing needed before it can actually be deployed. A key challenge they cited is always being ready to explain 'what the machine does.'
- The biggest immediate value the Asset Managers see in automation comes from removing cost from the middle office, where there is the most low-hanging fruit. Some firms have already capitalized on this, others have not.
- Benefits from blockchain/distributed ledgers are distant, but could drive lower costs, better data management and cleaner data recording. Some firms expect blockchain to impact the industry significantly within 3 years, but most think it will take longer.

Executives are starting to understand the ramifications of pricing pressure.

- Most firms we talked to indicated that continued fee pressure is a risk. Many executives said the increased transparency from MiFID II makes it hard for them to argue that prices will not go down.
- New pricing models have come forward, but none has been clearly successful yet. Large Asset Managers are keeping their eye out, and selectively experimenting with new structures, but they expect change to be gradual.
- Some commentary in the industry predicts fees could go down by as much as 40%.

We would like to thank the firms and individuals who took the time to meet with us.

Wholesale Banks

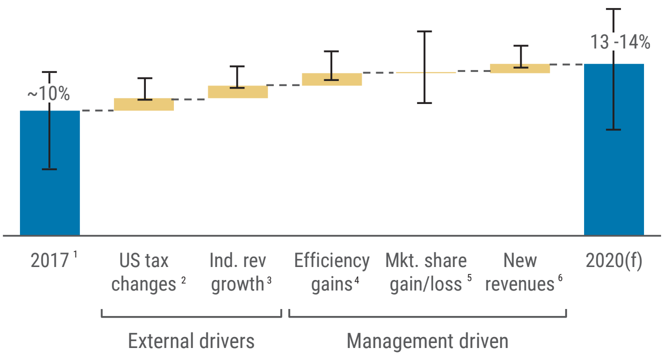
1. Hunt for earnings advantage

The prospect of recovering fee pools and the easing of capital pressures is attracting a new focus on growth, and building new competitive advantages. As the industry emerges from 10 years of post-crisis restructuring, incumbents and challengers are now focused on driving earnings advantage. Revenues in 2018 look set to recover from a poor 2017, but, over a longer term, offer more muted growth. Structural changes in the client base and the adoption of new technologies by the industry will weigh on fee pools, as well as shift the basis for competition. Winners will be able to deploy both capital and talent to capture near-term growth opportunities as well as invest in the technologies and capabilities that will build new competitive advantages over the medium term.

Exhibit 20:

We estimate industry RoE could reach 13 - 14% by 2020.

RoE drivers, 2017-20(f), %



1. Range represents top 3/bottom 3 peer averages
2. Assumes tax rate shift dependent upon US exposure (~6% average industry effective tax rate decline)
3. Range linked to expected cohort revenue growth rates
4. Assumes achieved industry cost-base decline of ~5%
5. Market share movements have no industry impact on RoE
6. Represents 15-20bn of additional market revenues outside current perimeter

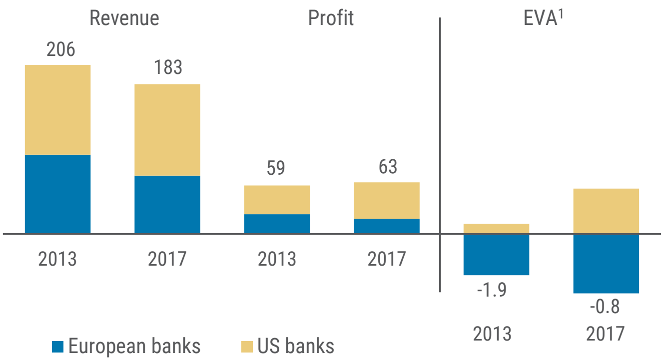
Source: Oliver Wyman analysis

Winning battle for market share will be a key determinant of RoE outperformance. The top quartile of banks achieved returns ~2x the bottom quartile in 2017. Underlying this is a stark divergence between US banks and European banks. Since 2013 large US banks as a group have gained 8ppt of market share in revenue terms, while the Europeans have lost share. Critically, this has driven an 11ppt divergence in profit generation, giving them deeper pockets to invest in the franchise and build new capabilities. In Economic Value Added (EVA) terms, after the cost of capital, US banks have grown four-fold while European banks have slid further into negative territory. Management-driven levers around efficiency gains and, crucially, market share will be critical to individual results.

Exhibit 21:

US banks have accelerated outperformance vs. their European peers.

Economics evolution for US and European banks, 2013-17, US$ bn



1. Economic Value Added, calculated by deducting cost of capital from operating profit

Source: Oliver Wyman analysis

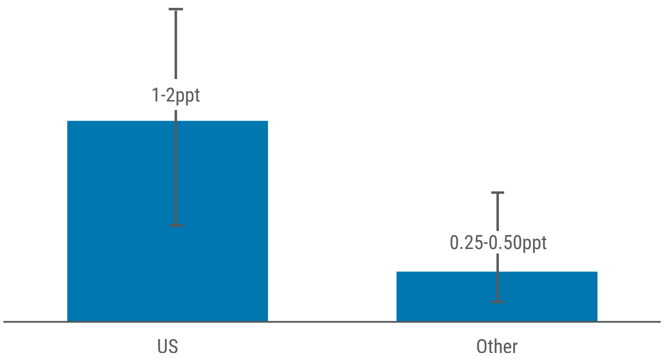
Capital pressures are easing across the board, but US tax reforms look set to underscore the advantage of US banks. Our estimates based on bank disclosures to date suggest that the US tax reforms can generate around ~200bp of additional RoE uplift for US banks' wholesale divisions starting this year. The spoils of this will be split among shareholder returns, business investment, hiring and philanthropy. US banks will also benefit from regulatory easing now anticipated in 2018 for leverage, stress testing and liquidity, which will free up financial resources and increase balance sheet velocity.

European and Asian Banks have less to gain from US tax and regulatory reform – we estimate 25-50bp. Furthermore, there is a risk that the Base Erosion and Anti-Abuse Tax (BEAT), which taxes some payments between US and international affiliates, could have a negative impact. More broadly, however, most European banks now indicate that they are in a much stronger capital position, and expect this to improve further. With returns in retail banking still relatively low, many will look to redeploy towards wholesale banking. Asian banks and a range of strategic investors and challengers are also looking to deploy more capital to the industry.

Exhibit 22:

The potential RoE uplift from US tax changes is significantly greater for US banks.

US and other banks' RoE upside from tax reductions, 2018, ppt impact



Source: Oliver Wyman analysis

We expect industry revenues to recover by ~5% in 2018. Our base case is for broad-based economic growth accompanied by rising rates and the gradual unwinding of quantitative easing, driving more client activity in the sales and trading business compared to a subdued 2017, and continued healthy deal-making in investment banking. Our analysis of historical periods of rate rises suggests they deliver growth at the industry level, though the extent of the impact on the equity and advisory businesses is variable.

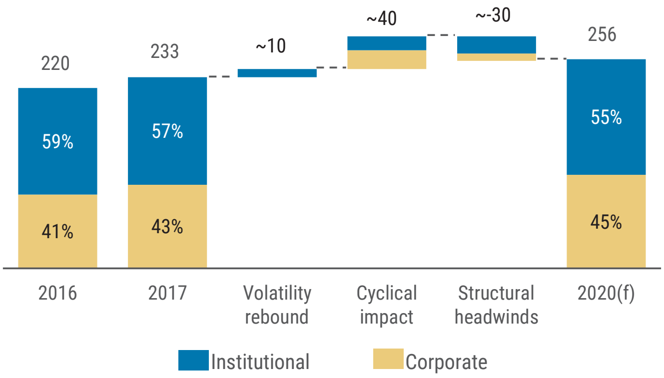
Yet, we remain cautious on the medium-term revenue outlook. Underlying this is a material shift in the revenue pool away from institutional clients, and we expect a slowing in fee pool growth from 2018 onwards to ~2% CAGR. This results from three structural drivers weighing on institutional wallets, together a 15-25% drag on revenues in this segment:

- further shifts to passive trading and data- and quant-driven trading strategies;
- consolidation among mid-size Asset Managers and Banks; and
- market structure shifts – including continued electronification in fixed income and the unbundling of execution and research commissions in equities.

Exhibit 23:

Structural headwinds will offset cyclical recovery in the institutional wallet, shifting the client mix by 2ppt to corporates.

Revenue split by institutional vs corporate, 2016-20(f), US$ bn



Source: Oliver Wyman analysis

Exhibit 24:

Interest rate shifts in recent cycles have driven significant increases in wholesale banking revenue pools.

Revenue impact from historical rate rises, 1994-2006

		Observed annualized revenue impact					
Period	Rate shift[1]	Macro	Credit	Equity	M&A / ECM	DCM	Commentary
1994-95	3% to 6% 2% per year	5%	-5%	-10%	-15%	-10%	Unexpected rate rises triggering losses in EM and credit
1999-00	4.6% to 6.5% 1.3% per year	0-15%	5-30%	30%	10-40%	-1%	Equity bull market driving strong growth in equities advisory, weaker growth in fixed income
2004-06	1% to 5% 2% per year	10-15%	20-35%	15-35%	30%	10-50%	Broad growth across products supported by growing leverage

Strong growth   Modest growth   Modest pressure   Strong pressure

Note: All figures are approximate

1. Rate shift represents change in US federal funds rate

Source: Oliver Wyman analysis

Exhibit 25:

Looking out to the end of the decade we have mapped out three scenarios for industry revenues, driven by macro-economic conditions

Scenarios and their expected revenue impact, US$ bn

Bear	Base	Bull
• Growing inflationary pressures drive central banks to proceed with faster than expected pace of tightening and withdrawal of QE • Sharp price corrections across asset classes, driven by surprise data and/or political trigger event • Higher rates dampen growth and push up corporate defaults • Institutional investors reallocate towards safe-haven assets, putting pressure on EM and credit markets	• Broad-based (but moderate) economic growth as the real economy catches up with financial market valuations • Gradual rate rises and some isolated asset price corrections as QE unwinds, though volatility remains range-bound • Modest steepening of yield curve as expectations of sustained inflation rise • Rising G10 rates lessen the relative attractiveness of EM yield, causing modest outflows but no major dislocation of economic growth	• Sustained uptick in economic growth, supporting asset prices • Rates increase and yield curves steepen at a faster rate without negative transmission into the real economy • Re-emergence of active investing and a strong new-issue pipeline within ECM/DCM pushes volatility back into markets • Corporate activity, increases due to strong fundamentals and continued disruption to incumbents from new technologies • Emerging markets bare the challenges of rising growth in G10 economies, supported by rising trades and consumer investment

Expected revenue impact	Bear	Base	Bull
FICC	↘	↑	↑
Equities	↓	↗	↑
IBD	↓	↗	↑
Total Revenue	**$201BN**	**$256BN**	**$269BN**

Source: Oliver Wyman analysis

Corporate & Investment Banks (CIB) with broader business portfolios will benefit from rising rates and the ability to offer Active Client Solutions. Higher rates can benefit the net interest income associated with the deposit taking activities of wholesale transaction banking and securities services business lines. We estimate these adjacent activities could deliver incremental revenue growth of ~5% and ~4%, respectively. These businesses are relatively stable and are characterized by 'sticky' client relationships built around embedded operational activities. In addition to cyclically driven upside, these businesses offer scope for collaboration across divisions and the development of Active Client Solutions that can enhance client acquisition and retention.

Risks are skewed to the downside, but a bull scenario would add another 1ppt to RoE. Our bull case is anchored in sustained asset price increases, more favorable conditions for active investing and strong corporate finance activity, with broad-based revenue growth across products. This is reinforced by lower US corporate taxes. Our bear case assumes rising rates trigger corporate defaults, and sharp asset price corrections. Revenues in investment banking, equities, credit and EM fall rapidly, while macro trading revenues perform well.

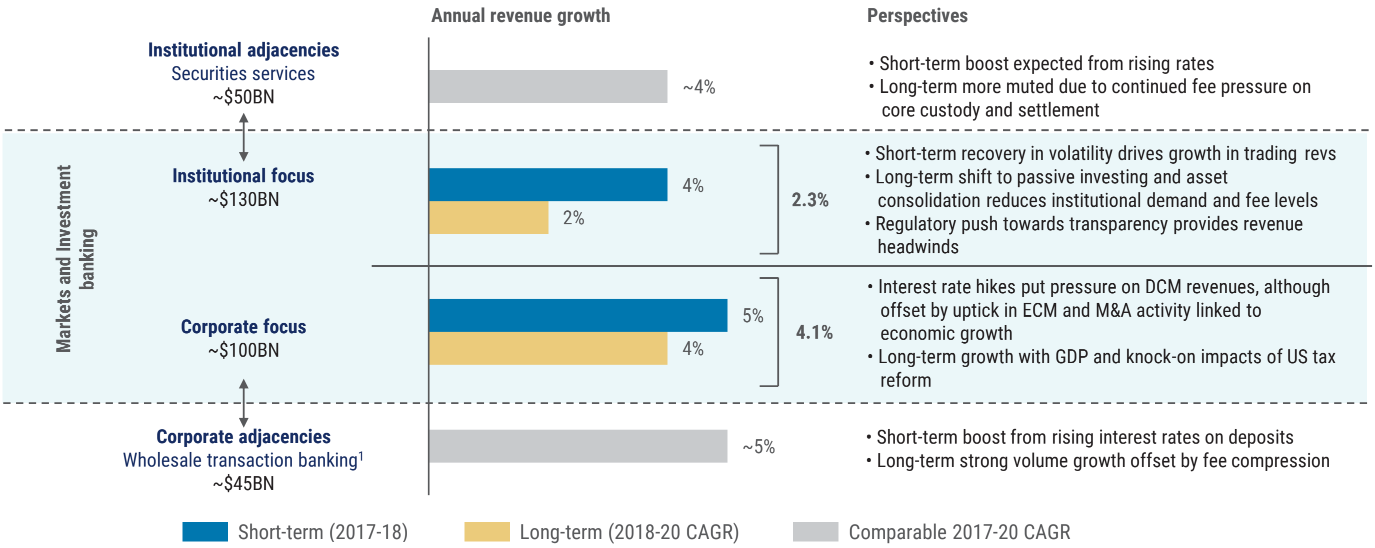
Structural changes and technology are pressuring the traditional value drivers for the industry. Sell-side value propositions have been based around Connectivity, Content or Capital (the '3 Cs'). All of these are pressured today, threatening $20-40 billion in revenues:

- Connectivity – enabling access and proprietary networks – is threatened by increasing electronification and transparency around client interactions. 'Modular' operating models also break down linkages to other banking products, shifting revenue to FinTechs and infrastructures.
- Content – competition is intensifying from specialists such as boutiques in investment banking and trading firms using advanced analytics. Meanwhile, banks are struggling to develop a standalone commercial model for the development and distribution of Content such as research or indices.
- Capital – clearly remains a strong competitive advantage for banks, though we see risks of over-competition pressuring margins as banks crowd into areas like repo and prime, as well as cyclical risks. Adoption of alternative sources of capital such as debt funds and peer-to-peer networks is also growing.

Exhibit 26:

We estimate institutional revenues will grow more slowly than corporate revenues, with adjacent products driving higher growth in both segments

Projected institutional and corporate focused revenue growth, 2017-20(f), CAGR



1. Wholesale Transaction Banking defined as Global Transaction Banking including PCM and Trade finance revenues from large corporate, MNC, FIG and Public clients captured by major Wholesale Banks. Total transaction banking ~$270 billion, with slightly lower growth rate

Source: Oliver Wyman analysis

We estimate new "Active Solutions" for wholesale banking clients could unlock $15-20 billion in future growth potential. But this will be fought over by tech firms, banks, funds and market infrastructure players. Active Solutions address unmet client needs, combining Connectivity, Content and Capital through the integration of previously separate activities, underpinned by analytics. Such offerings are geared to avoiding the commoditization of individual activities and enhancing client retention. Active Solutions currently drive <15% of revenues, but significant new revenue opportunities can be unlocked as wholesale banking learns from Big Tech and expands offerings to meet client needs previously not typically addressed by banks (see Lessons from Big Tech). Near-term examples of Active Solutions include:

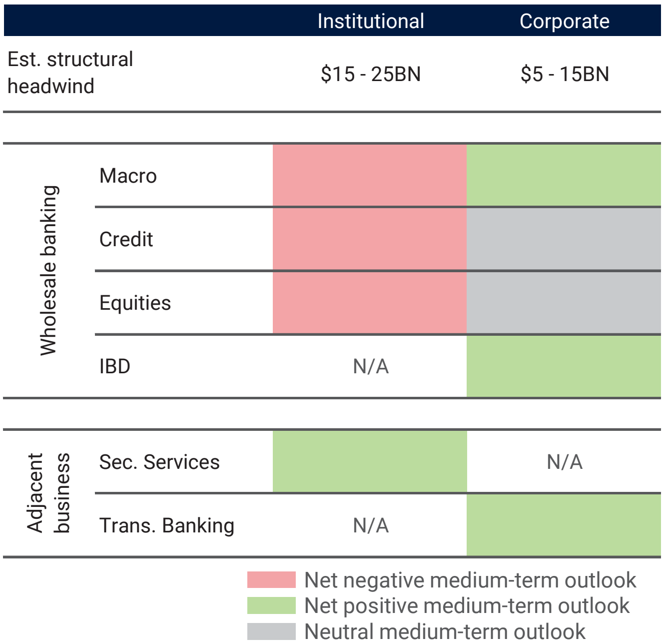
- Helping institutional clients meet regulatory obligations and reduce their operating expenses with new services and broader insourcing propositions; and
- Helping corporate clients deliver more efficient, transparent and integrated management of treasury operations, linking working capital management with other core activities such as procurement, invoicing and supply chain management.

Many Active Solutions will need to bridge organizational divides: across securities services and markets, or across transaction banking and the rest of the corporate franchise.

Exhibit 27:

The institutional wallet faces greater structural headwinds than the corporate wallet.

Outlook for client fee pools, 2017-20



Source: Oliver Wyman analysis

Lessons from Big Tech – broadening of the sell-side approach to client needs

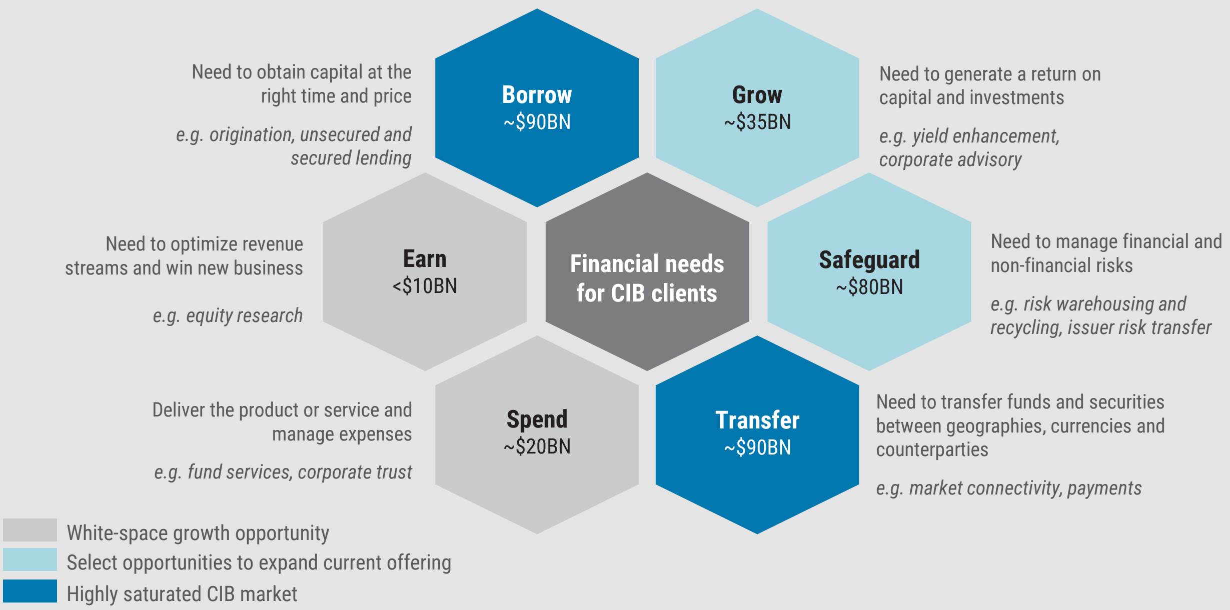
Banks' success in using technology to win new business has been mixed. Electronic execution and single-dealer platforms have fundamentally reshaped the industry, but other initiatives have been less successful. For example, custodians have to date struggled to get commercial traction with products based on analysis of static custody data. Efforts by exchanges and trading venues to sell data have also seen limited success, with most value being captured by the distributors who own the standardization and enrichment processes, and real-time distribution networks.

Looking to Big Tech, the process to win new business starts with a customer's problem and seeks to use data and technology to meet these needs. It binds function ("this is useful") with user experience ("this is satisfying to use"). Big Tech actively seeks to link its products into a range of data sources and other providers. Propositions get built over time with a "flywheel" effect: initial client participation drives improvements, which drives more insightful data, which drives better improvements and so on. Solutions are "active" in the sense that users provide data while using the product, which is then used to improve the proposition for all users. This increases both the stickiness of the relationship and value generation for the provider.

Underpinning this is a broad view of customers and the problems a provider can solve. In the 'Financial Needs Hexagon for Wholesale Banking' (Exhibit 28), we identify six distinct areas in which clients could expect to be served. Wholesale banks have traditionally focused on a subset of their clients' needs: "Borrow," "Transfer", "Safeguard" and "Grow." Competition for incumbents is growing, particularly in "Transfer", where a range of alternative providers is pushing down margins (e.g. payments, trading venues), and in "Borrow", where disruptive models of raising capital may emerge (e.g. peer-to-peer financing). The scope of wholesale offerings can also be broadened into two other categories of client needs: "Earn", optimizing revenue streams from core business activities (e.g. through research or analytics), and "Spend", delivering a product or service via outsourcing or enabling optimization of spend (e.g. through fund services or procurement solutions). Active Solutions in development now address some of these "Earn" and "Spend" categories, while also integrating previously separate activities across the hexagon. Some banks and third-party providers are even beginning to expand solutions to incorporate service elements from well outside of financial services.

Exhibit **28:**

We see six core financial needs for CIB clients. Share of CIB revenues, 2017



Note: Includes Wholesale, Wholesale Transaction banking and Securities services revenues

Source: Oliver Wyman analysis

2. Institutional clients: structural pressure

Pressure on institutional clients is challenging traditional value drivers for Wholesale Banks, but also opening up new growth potential. By 2020 we expect the balance of the wholesale wallet to shift away from institutions (from ~57% to ~55% of wallet) to corporates. This will be driven by the continued shift to passive trading, consolidation for mid-size Asset Managers and banks, and increased transparency across asset classes. Firms are responding to these challenges as well as the propositions being offered by new entrants and FinTechs by coalescing around four archetypal business models. Each plays to different traditional advantages and has a distinct growth outlook.

Own the liquidity graph. The most attractive economics in market making are possible where a bank is able to establish a dominant position at the centre of price formation in a market, rather than simply connecting a client to a venue. The source of competitive advantage is essentially information that can form the basis of a proprietary data set – the best view of market liquidity at any given point in time. We estimate banks today generate $40-45 billion of revenues in this way, primarily in flow OTC fixed income and equity derivative trading.

Banks are investing in tools to better codify, analyze and use data captured through both "voice" and electronic channels, and maximize the value of their own client network. But this is a scale game, and there are strong network effects. Larger client networks drive richer datasets on demand, enabling better pricing and liquidity, and in turn attract more clients.

Regulatory obligations to publish pre- and post-trade prices are challenging this model, as data advantages are eroded. These effects have largely played out in the US, but are likely to accelerate in Europe with the introduction of MiFID II in January this year. This is likely to accentuate scale effects, as smaller players find it harder to manage and warehouse risk.

At the same time, FinTech players, exchanges and other third parties will look to challenge the bank's central role in price formation by connecting disparate buyers and sellers, for example with new electronic trading venues. We see revenues associated with this business model declining, with returns highly skewed towards the largest players in any given market.

Exhibit 29:

Future business models

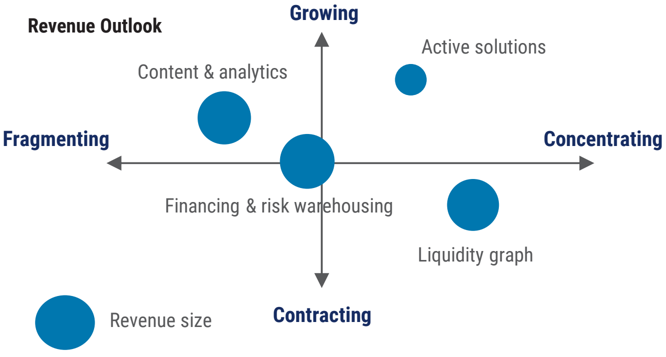
Business model	Examples	Competitive levers	Earnings profile	Fee pool
Own the liquidity graph	• Corporate bonds • Flow derivatives • Securities lending	• Dominant network • Data ownership • Direct client relationships	• Sticky revenues • Mixed sensitivity to market activity • High margin, medium capital	$40-45bn
Lead with content and analytics	• Liquid market-making • Research	• Analytical expertise / talent • Big data and machine learning • Streamlined operations	• Short half-life on innovations • Sensitive to market activity • High margin, low capital	$40-45bn
Provide financing and risk warehousing	• Structured derivatives • Repo	• Financial expertise / talent • Balance sheet capacity • Risk appetite	• Mixed sensitivity to market activity • Mixed margin, high capital	~$45-50bn
Build Active Solutions for clients	• Outsourced trading solutions • Fund services	• Modular front-end • 3rd party vendor integration • Scalable operations	• Annuity-like revenues • Insensitive to market activity • Low margin, low capital	~$15bn

Note: Fee pool excludes custody, settlement and issuer services
Source: Oliver Wyman analysis

Exhibit 30:

We expect Active Solutions to be the fastest growing institutional model in revenue terms.

Business model overview, wholesale banking revenue pools, 2017



Source: Oliver Wyman analysis

Exhibit 31:

MiFID II will fundamentally reshape the Research business model.

Research consumer trends

Absorbing costs	• Many investment firms have decided to absorb research costs – forcing others to follow suit
Global adoption	• Many of the larger investment firms are using this opportunity to reduce spend across other regions; we expect this to continue over the next 12-18 months
Sizeable reduction in spend	• Most investment firms have significantly reduced spend on content, we observe by 30-50% in some cases
2018 volatility	• 2018 will see a continued proliferation of research payment models as the industry settles into a steady-state
Capacity withdrawal	• We do not expect sizeable withdrawal of sell-side research or execution capacity given the importance to other parts of the business (e.g. primary business and wealth); however, independents and smaller firms with lower differentiation will struggle

Source: Oliver Wyman analysis

Lead with content and analytics. Competitive advantage in this model is driven not by owning proprietary data and client networks, but rather by the insightful analysis of primarily public data sources. As an ideas business, talent is the key. We expect content to remain an important potential source of value, but expect to see a shift away from traditional content and towards data-driven analytics, and for banks to face heightened competition from boutiques and specialists. Regulation can accelerate this shift – we estimate MiFID II research unbundling will knock around $2 billion off cash equities revenue pools (10% off global cash equity pool of ~$20 billion), as the commissions paid for research through "high touch" pools are compressed.

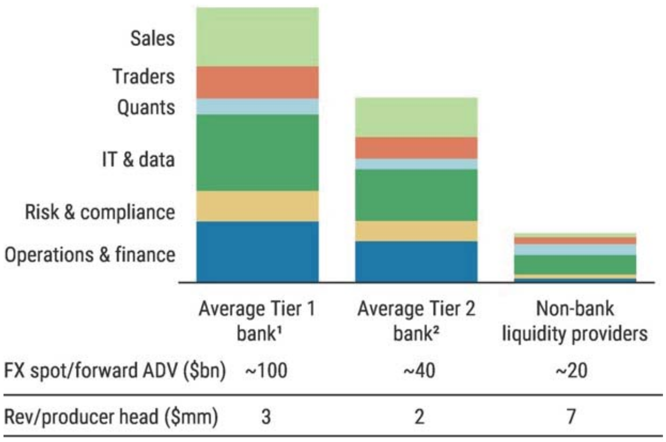
More fundamentally, the continued growth of passive investing, and the broadening adoption of advanced analytics to inform investing strategies on the buy-side, are likely to further depress demand for traditional research and some aspects of high touch sales activity across asset classes. These changes are likely to favour the largest players who can offer "all you can eat" contracts that provide wide coverage across sectors and regions, and the best boutiques who can offer independence and specialist expertise in a chosen area. Those in the middle will be squeezed further.

At the same time, superior analysis of public data-sets is being used to find an edge in trading, especially market-making in liquid markets. Competitive advantage is based on talent: the best data scientists, programmers and technologists. Non-bank liquidity providers are finding success by offering a differentiated employee value proposition. Their operating model is also in stark contrast to banks'. Fit-for-purpose technology and use of algorithmic trading allow trading volumes that are comparable to banks', but at a significantly higher productivity per head. The cost structure is also notably different, with "front office" costs skewed towards technologists and quants rather than sales and traders, and with far lighter operations and finance costs. This throws down the gauntlet to banks to change from within to compete on these terms or to seek partnership or greenfield build options.

Exhibit 32:

We observe non-banks trading comparable volumes to banks but with streamlined, technology-skewed cost bases.

FX spot/forward peer average cost base (excl. execution costs), 2017



1. Tier 1 bank: defined as >5% estimated volume share

2. Tier 2 bank: defined as 1-5% estimated volume share

Source: Euromoney, BIS, Oliver Wyman analysis

Provide financing and risk warehousing. This has been and continues to be an important source of growth for Wholesale Banks. Intrinsic capital and funding advantages, coupled with risk management and structuring capabilities, remain core advantages for Wholesale Banks. The improving economic environment and rising rates of our base case should provide further opportunities for banks to provide financing and structuring solutions to institutional clients.

The danger is that as other sources of value come under pressure, banks swarm around the same opportunities in more capital intensive areas. We already see signs of margin pressure in some areas such as prime brokerage, as banks look to deploy marginal capital and balance sheet in the hunt for growth. At the same time there are growing concerns around the risk of a turn in the credit cycle, which could catch out risk warehousing activities in businesses such as EM and credit.

Build Active Solutions for clients. This means finding new customer problems and developing products and services to meet their needs. Institutional clients have pressing strategic needs in the 'Spend' category: reducing operational costs, meeting regulatory obligations and improving their own workflow. Where prior business models have tended towards process insourcing, with relatively poor economics as a result, the next generation is aiming to build more scalable technology-driven propositions. Emerging offerings include:

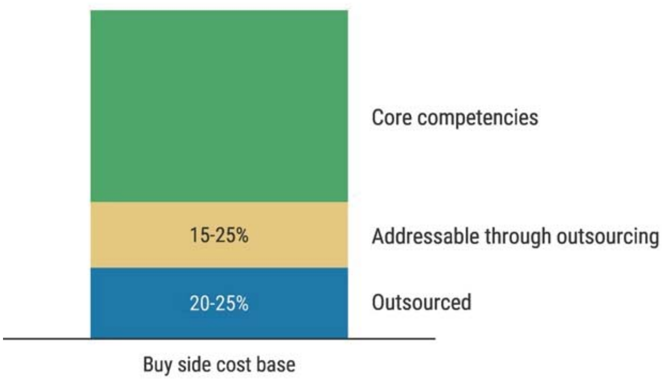
- best execution agency trading models that allow the complete insourcing of buy-side desks for FX and Fixed Income;
- offering proprietary tools such as risk analytics engines; and
- building broader operational insourcing platforms for the buy-side.

Asset Managers today have a total cost base of ~$210 billion, of which 20-25% is currently outsourced, and a further 15-25% could potentially be moved to that model. Many banks are already active in this market through their fund services activities, currently worth ~$10 billion. A range of exchanges, technology firms, trust banks, fund managers, hedge funds and broker-dealers are building propositions here – the race is on to own the critical parts of this ecosystem and to position themselves as platform providers.

Exhibit 33:

We estimate a further 15-25% of the Asset Manager cost base can be addressed with outsourcing solutions.

Buy side cost base composition, 2017, %



Source: Oliver Wyman analysis

3. Corporate clients: tailwinds, despite some longer term challenges

Cyclical tailwinds are set to drive revenue growth in the corporate segment, but with very different dynamics between "CFO-down" and "CFO-up" relationships. We expect revenues to grow 4% annually through 2020 across the corporate segment. The CFO-down set of activities, encompassing products and services delivered mainly to CFO and Treasury functions, are more stable in nature but look set to benefit from rising interest rates. The risks to this business are more long term in nature, and would be driven by technology disruption. The CFO-up set of activities, those encompassing advice and products delivered directly to the C-suite by high touch coverage, are highly cyclically geared and look set to continue to grow strongly in our base case. Risks to the business come from the rise of boutiques, and a potential tail-off in leveraged finance activity as rates rise, although not from technology disruption. Most major Wholesale Banks operate a blend of CFO-up and CFO-down business models.

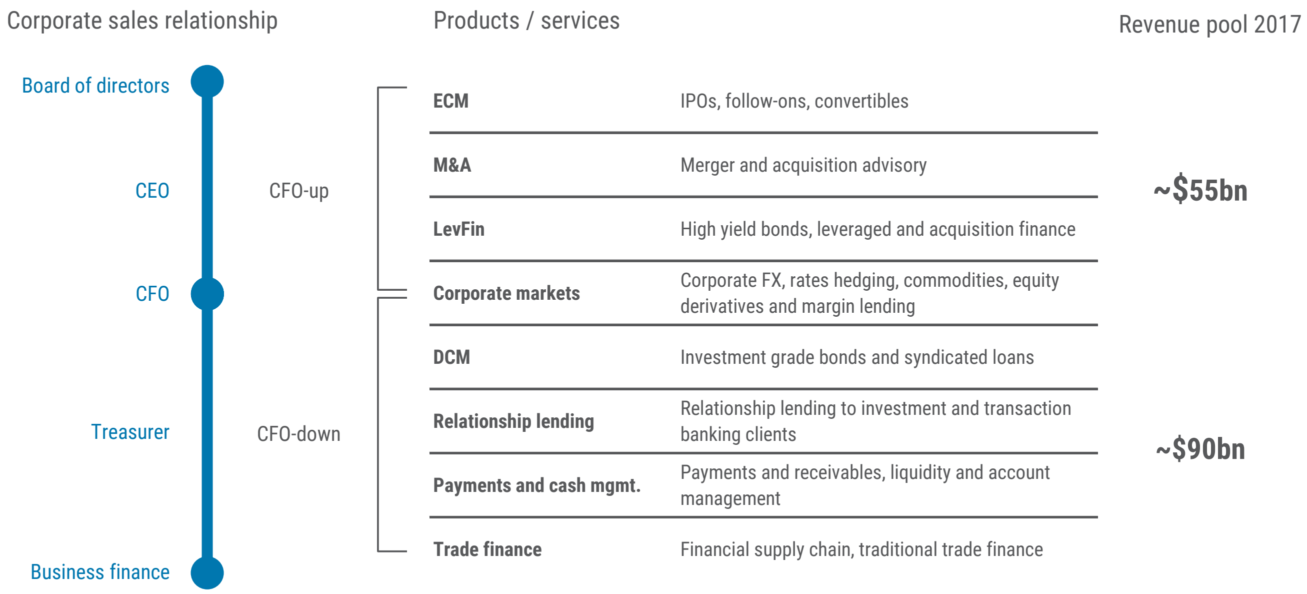
In our view, growth through 2020 will be driven by:

- Rate rises feeding buoyant net interest income (NII) growth in the deposit-taking activities of wholesale transaction banking and higher NII on lending activities;
- Some offset from fee compression that continues apace across payments, cash management and trade finance;
- Robust corporate activity will benefit M&A and ECM (+7% CAGR);
- DCM and leveraged finance revenues roughly flat as financing costs are set to rise;
- Corporate FX will increase with volatility in 2018, and other markets activity will correlate to issuance and acquisitions; and
- Lower taxes can reinforce economic growth with accompanying higher loan growth, supported by lower loan losses as corporate cash flows improve.

Exhibit 34:

We observe two corporate sales models based on distinct buying points: 'CFO-up' and 'CFO-down'.

Corporate revenues, 2017, US$ bn



Note: Includes revenues from large corporate, MNC, FIG, and Public clients; excludes securitization, project/structured finance, and other specialty lending

Source: Oliver Wyman analysis

However, returns from large corporate clients are currently below the cost of capital for the industry as a whole. There are heavy fixed costs associated with the product capabilities and maintaining the client relationships that drive the business. These break down as:

- 75-80% in product costs, including investment banking execution teams and the infrastructure required to deliver transactional banking services; and
- 20-25% in relationship costs, including the cost of capital associated with relationship lending and the cost of coverage teams.

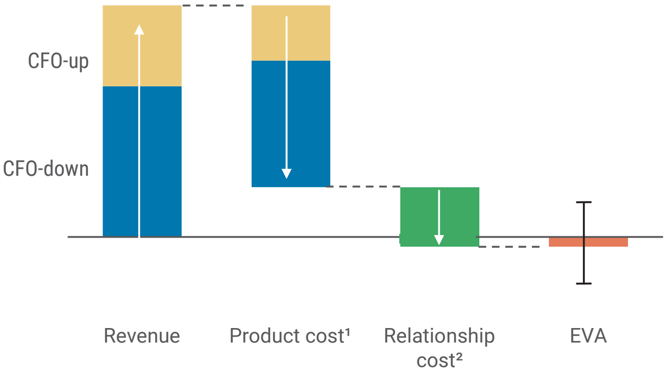
Many banks struggle to generate sufficient revenues relative to the cost of the platform they maintain, placing a premium on clear strategic selection, scale, cross-sell and disciplined tactical resource allocation. There is a high variation on EVA for the corporate franchise based on these factors.

In contrast, the economics of the commercial banking segment are typically much better, with superior economics for lending as well as higher margins in some cross-sold products. Banks with businesses in this segment are looking to better integrate with the large corporate franchise.

Exhibit 35:

We estimate corporate franchises on average generate negative EVA, though with wide skews across banks.

Average corporate franchise EVA, 2016-17, US$ bn



1. Includes direct/indirect costs, taxes and capital costs directly related to IBD/GTB products

2. Includes coverage team costs and relationship lending book shortfall/cost of capital

Source: Oliver Wyman analysis

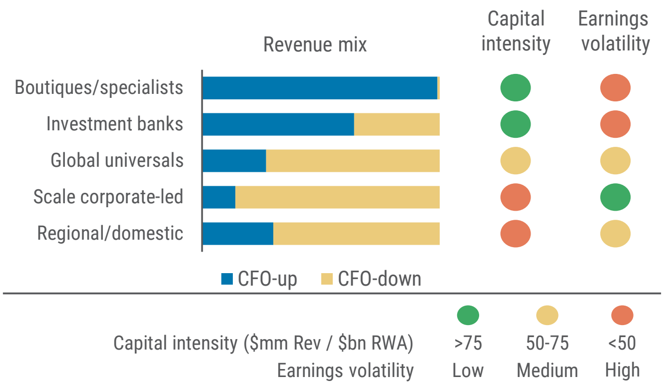
CFO-down outlook

CFO-down returns are lower but more resilient in the medium-term. While the transaction banking product-set itself is capital light and highly profitable, the balance sheet commitments that underpin DCM as well as the wholesale transaction banking business can be significant, and the coverage and sales structures can be multi-layered and costly. Nevertheless, this business is typically relatively stable through the cycle and provides an anchor for other client business. In this cycle, the segment will be positively impacted by rate rises and be more resilient even in our bear case. Global banks are increasing their focus on this business given these factors.

Exhibit 36:

CFO-down focused banks have higher capital intensity but more stable earnings.

Average corporate economics by cohort



Note: Earnings volatility and capital intensity figures above are for the corporate franchise only. Investment banks are typically more capital light in their corporate business due to a smaller 'CFO-down' business

Source: Oliver Wyman analysis

CFO-down models facing longer term disruption, an opportunity for leaders. Up to a third of CFO-down revenues could be challenged by market structure and buying behaviour changes over the next decade. We see pressure but also opportunities in five areas:

- Fee compression in payments as alternative providers proliferate and transparency increases. This is happening now in the SME segment but over time can encroach on the large corporate segment as well. In FX trading, volumes more than quadrupled after the emergence of electronic platforms, with margins ticking down 10% CAGR in the ensuing decade;
- Bank net interest income associated with deposit-taking activities becoming vulnerable as corporate cash-flow management becomes more efficient and fewer excess deposits are held with banks. Down the line, there is also the potential for traditional lending to be disrupted by working capital solutions provided by new firms within supply chains
- Open banking (e.g. PSD2 in Europe) enabling multi-bank account overviews, third party client interfaces and tools is unlikely to threaten large corporate space, largely a function of product sophistication/complexity and geographical reach. Although we will be watching commercial banking disruption for signs of emergence of credible competition.
- Elements of the investment grade issuance process being automated, as well as potential peer-to-peer offerings that enable direct corporate to investor distribution, although now confined to smaller issues, and
- The transformation of core market infrastructure, with the need to incorporate real-time payments in dozens of geographies, and potentially disruptive new platforms. This is a longer term threat, as for now, the lack of national harmonization has erected barriers to entry still in favor of existing, global platforms.

In response, leading CFO-down firms are investing heavily for the future. Most firms are already increasing automation and preparing for a lower fee environment. Payments hubs, either in the form of orchestration layers or full re-platforming, are being rolled out by many global banks. And initiatives including market-specific connectivity, consortium participation, and internal distributed ledger technology solutions are emerging to build connectivity into new payments systems worldwide. Cost take-out opportunities from these activities could have a significant impact on CFO-down returns – and provide opportunities to pass lower fees on to clients.

CFO-up outlook

Returns for CFO-up focused players will be higher but more volatile. Pure CFO-up models, as adopted by specialist advisory boutiques, are very capital light but carry a higher cost structure, driven by more expensive specialist staff. Returns are high but volatile – both across firms and through the cycle. Investment banking and universal banking models tend to drive higher returns on average, but with wider dispersion particularly for more CFO-up focused investment banks. Low returning players tend to carry the costs of a broad franchise without sufficient penetration and market share to deliver attractive economics.

Boutiques are likely to take further share from the major Wholesale Banks, with second order impacts on the franchise. Within M&A top tier investment banks have consolidated share, gaining 5-6ppt of market share globally since the crisis. At the same time advisory-focused boutiques have gained 7ppt of share, partly benefiting from shifts in industry volumes and deal sizes. Boutiques may be challenged in a bear scenario, but in our base case we expect three factors to support further growth in share:

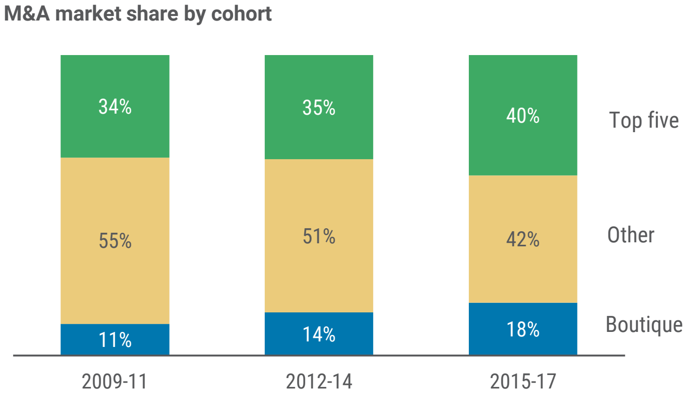
- Autonomy: clients are attracted by their clear statement of independence and confidentiality.
- Talent migration: strong growth tends to support migration of talent into boutiques, and we continue to see that playing out today.
- Research unbundling: some banks are paring back their equity research propositions as a response to reduced secondary market commissions, eroding one of their competitive assets.

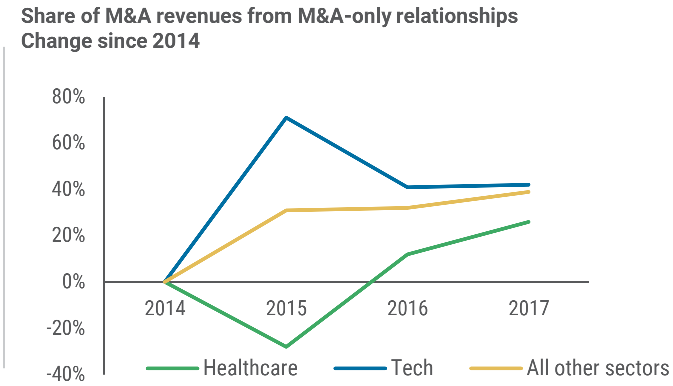
More corporates are now seeking one-off support from boutiques, with revenues from M&A mandates won by advisors with no corporate deal history over a prior five year period up ~40% since 2014 to 45% of M&A revenues. When an investment bank loses all or part of an M&A mandate to a boutique, it can be harder to win attractive roles in the financing and derivatives aspects of a deal, pushing them into a “product provider” role in competition with a wider range of CFO-down-focused financing banks.

Exhibit 37:

We observe corporate M&A shifting away from relationship banks towards boutiques.

M&A market share, 2009-17, %





Source: Oliver Wyman analysis, Dealogic

The pressure is particularly acute on mid-tier investment and universal banks. Middle-tier players in the CFO-up business have already seen their aggregate market share decline from 55% in 2010 to ~40% in 2017, and are likely to be squeezed further by the rise of the boutiques. With a weaker content and advisory platform, leveraged finance has become a core offering, representing ~35% of investment banking revenues for mid-tier banks, versus ~20% of the total market. Rising rates are likely to lead to a tapering of the leveraged finance origination boom that would disproportionately impact this group – not only impacting origination fees but also associated cross-sell.

A new business model built around Active Solutions can put 15%+ market share in play, defending against disruption while driving consolidation. A new CFO-down model is emerging, analogous to the client solution model with institutional clients. As banks contemplate the range of structural transformation from new competition in cash management in particular (described overleaf), enhanced client stickiness becomes a key goal. Active Solutions are essential to achieve this. Front-footed firms are building end-to-end corporate ecosystems with best-in-class channels, B2C capabilities to link to end clients, open API platforms offering an array of value-adding products, and straight-through processing to updated infrastructure. Such initiatives can defend bank fees and protect revenues over the longer term. We think that winners can consolidate a 15%+ increase in market share over the longer term from investing across the value chain now, whereas banks that do not contemplate these changes now will likely lose out in the battle for the client interface and struggle to drive the scale needed to remain profitable.

New Battlegrounds in Cash Management

Disruption from multiple quarters demands a long view. Wholesale cash management includes payments, liquidity management and corporate cards, with revenues from transaction fees as well as net interest income associated with client balances. A transformation is at play driven by changes in local and regional regulations, technology and client expectations, and new entrants. These forces will play out over the longer term but with potentially seismic impacts. Banks must have a game plan across all of these forces to chart a course forward. Those who take a long-term view on market structure change now are investing to create the building blocks of future winning models.

Spread of national and regulator action is wide. In some markets, governments are driving the innovation agenda. Real time payments are now live or planned in dozens of countries; early adopters (such as Mexico and the UK) have seen volume rapidly increase whereas others (like the US) are now following suit, introducing the first upgrades to payments infrastructure in decades. Some (e.g. Hong Kong) are also experimenting with central bank digital currencies to further streamline payments. And the Payments Systems Directive 2 (PSD2) in the Eurozone mandates that banks allow third-party providers to have access to payments data, opening the door for new aggregators of client flow. While this initially impacts the SME segment primarily, the introduction of new entrants at the client interface can lead to disruption and opportunity in the large corporate segment too. A lack of national harmonization presents challenges, as well as opportunities for banks to address client cost and service issues.

New technologies transform the potential. On the front end, the digitalization of retail payments with alternative networks (like Alipay and Venmo) and mobile wallets is beginning to inform corporate user expectations for digitalized channels. APIs enable open platforms that integrate external data and analytics and value-added services. On the back end, streamlining through re-platforming or middleware layers can bring efficiency to what can be hundreds of distinct payments rails inside global banks. Further out, distributed ledger technology has the potential to transform market structure in cross-border payments, providing transparency, security and instantaneous settlement, and disrupting the incumbent correspondent banking network

Clients expect lower costs and more and better services. User experience, real time visualization and security concerns are key for corporate clients. Increasingly, treasurers also expect integrated workflow management solutions that link payments to accounting, procurement, liquidity management and other activities. Lower costs are essential as some markets mandate greater transparency.

The competitive field is fragmenting. Banks must increasingly compete not only against each other, but also against new entrants and technology players who potentially offer better client interface, aggregation of bank services, peer-to-peer solutions and analytics. National payments initiatives, and domestic and global consortia can be co-opted or potentially disruptive to the banks' role in ‘plumbing’. And other financial services providers (like Cards) and Big Tech with established merchant networks and the wherewithal to drive a revolution in infrastructure are also on the radar as potential future threats.

4. Winning in the new world

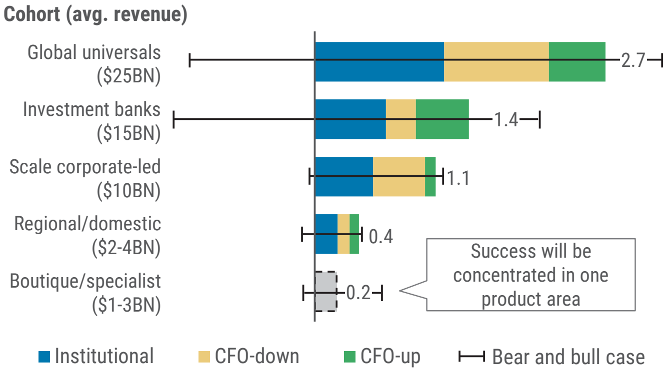
Structural advantages remain entrenched – with universals best positioned for growth. The largest universals, already among the most profitable, are likely to see returns improve as they benefit from cyclical factors in securities services and wholesale transaction banking with these deposit-taking activities making up to 20% of their revenues. Some consolidation of share for the largest banks is also possible in these adjacent areas as they pick up share from mid-tier players who lack resources to fund infrastructure streamlining and innovation in these businesses. In our base case, the largest universals pick up an additional $2.5 billion in revenue in 2020. Investment banks will be more challenged as a group given exposure to the institutional fee pool and boutiques and specialists continuing to pick up share. Regionals will benefit from increased rates and have the potential to outperform, but still see a relatively low RoE overall, reflecting a heavier skew to capital intensive, lower volatility CFO-down business.

Broader franchises are also more resilient in a bear scenario. There are downside risks to the sector from lower GDP growth, and global non-financial corporate debt growing 15ppt in the past 6 years accentuates the default risk in any significant downturn. Losses associated with relationship lending in a down market can flow through to the bottom line. Yet even in our bear case we anticipate that rate increases will drive net interest income sufficiently to offset some of these pressures. Investment banking and corporate markets activities contract 7% in our bear case whereas the full corporate perimeter including wholesale transaction banking contracts only 5%. A bull scenario would favour investment banks and universal banks.

Exhibit 38:

We estimate global universals have the greatest upside revenue opportunity.

Average annual wholesale banking revenue (incl. GTB) delta by player, 2017-20, US$ bn

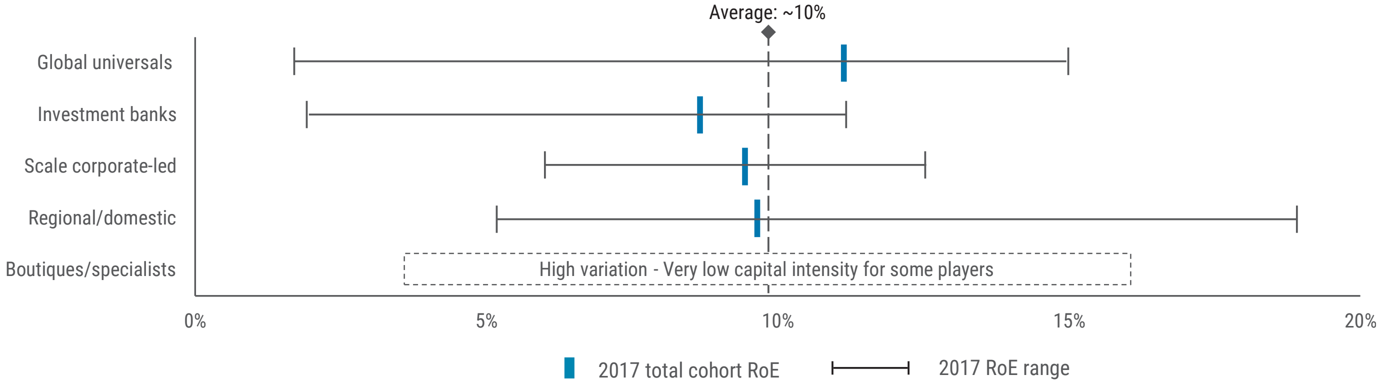


Source: Oliver Wyman analysis

Yet returns skews within models are likely to remain high. Despite entrenched advantages for some models, firms within each model can still deliver good returns. Wide skews remain among the investment banks and global universals, and under-performers in these segments face a steep hill to climb given significantly lower returns in recent years, with challenges particularly keen for European banks. Revenue growth is likely to be insufficient to plug the gap in the base case and many will struggle to get returns above 10%. Without large-scale M&A we see limited catalysts pressuring these firms and low likelihood of a big competitive shakeout. Regional banks have the largest returns skew. The top performers here delivered the highest RoE among the peer set in 2017, driven by niche offerings by some standout regional banks that are becoming more highly competed by both global banks and new entrants. But firms at the lower end are well below hurdle rates, and with fewer resources to deploy for reinvestment and innovation, they may struggle to remain competitive.

Exhibit 39:

We observe high skews in returns across different cohorts of banks; global universals are strongest performing.
Wholesale RoE dispersion by cohort, 2017, %

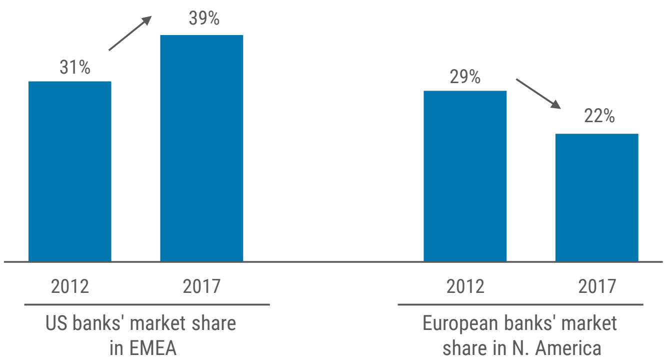


Global universals: Large scale presence across products and regions
Investment banks: Global presence but focused on investment banking and markets
Scale corporate-led: International presence but skewed towards CFO down corporate product set
Regional/domestic: Similar to scale corporate-led but with a stronger regional/local skew, or at smaller scale
Boutiques/specialists: Specialist market makers and boutique investment banks
Source: Oliver Wyman analysis

The future competitive structure in Europe is a key strategic question mark. US banks in Europe have gained 8ppt in share over 2012-17, picking up share across the board, but particularly in investment banking and in fixed income as EU players have restructured. Conversely, European banks in the US have faced tough new regulations and struggled to crack the lucrative domestic market, losing 7ppt of market share over the same period. Europe faces the prospect of having no truly global wholesale banking players who can compete on an equal footing with the US banks.

Exhibit 40:

European banks' have been losing market share in N. America while US banks gain share in EMEA.
US and European banks' market share evolution, 2012-17, %



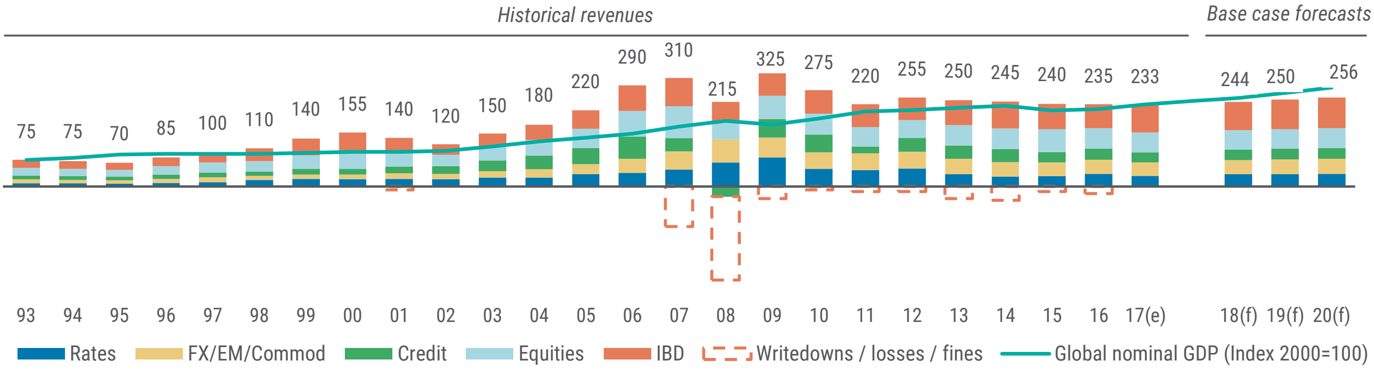
Source: Oliver Wyman analysis

Yet the prospects for the European economy are improving, and Brexit could provide an opportunity for EU policymakers to redress the balance vs the US banks. For now, Brexit is pushing banks to put a relatively small share of their activity into EU locations. Over time that is likely to ramp up, as regulators may demand more onshore presence. Depending on the exact nature of the regulatory regime, this could introduce capital and funding inefficiencies for international banks, making the economics of serving some EU clients more expensive. This could benefit the local EU players, especially regional and corporate-focused banks.

There is also growing debate about the prospects for inorganic consolidation in EMEA. In our view, while there is a strategic logic, at present the conditions are not in place to support major cross-border M&A. However, this could change over the medium term, should policymakers put in place closer regulatory alignment. The thorniest issues are consumer protection, such as deposit insurance, and financial resource requirements, such as the calculation of G-SIB buffers. These present a material legislative task.

Exhibit 41:

Historical and forecast wholesale revenues and global GDP, 1993-2020(f), US$ bn

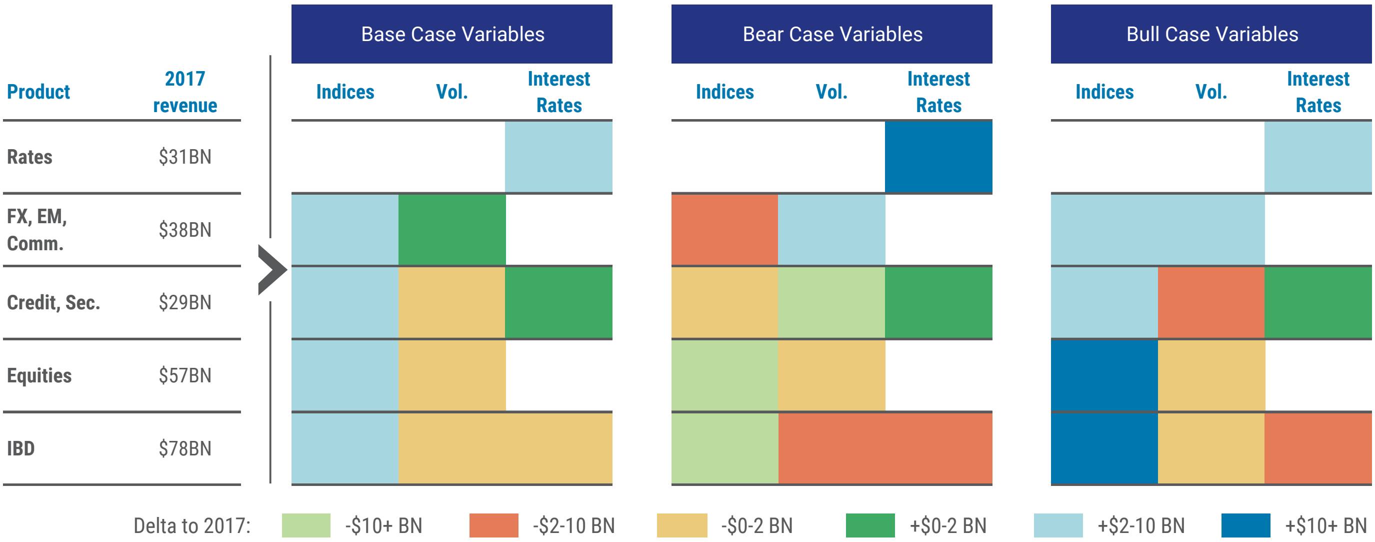


Source: Oliver Wyman analysis

Exhibit 42:

We estimate our 2020 scenarios based on the sensitivity of revenues to a range of external market factors.

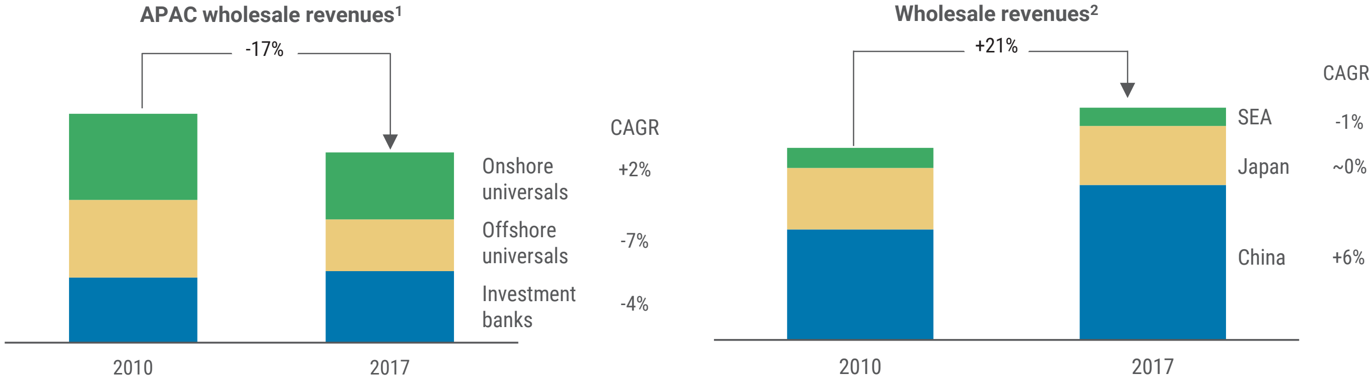
Changes in revenues, 2017-20, US$ bn



Source: Oliver Wyman analysis

Exhibit 43:

We observe Asian banks picking up share while global banks fall behind in Asia. Wholesale revenues, 2010-17, %



1. Top 12 global banks; 2. Top 10 Asian banks – top 3-4 banks in China, Japan, Southeast Asia (SEA)

Source: Oliver Wyman analysis

Asia is growing rapidly but locals are dominating – their next horizon will be international markets. Local Asian banks have picked up the vast majority of recent market growth and are consolidating share while foreign banks have seen a decline of 17% since 2010. Lower RoEs due to competition, FDI loss and lower NII are discouraging global firms from expanding. The market remains corporate driven, and exposed to a high degree of innovation and disruption as payment systems and supply chains are digitalized. Liberalization of local markets, coupled with rapid growth and financial deepening, is creating significant revenue opportunities. Local banks are investing heavily and could gain advantages through the better use of data, the emergence of innovative open API platforms, and participation in trade and supply chain ecosystems. Chinese banks could look to make more aggressive moves into global markets. Large global banks committed to the region will need to sustain investment in their global platforms to succeed against this backdrop.

Funds available for innovation set to embed mid-term competitive advantages. Major differences have emerged in investment levels on change and innovation. We estimate Wholesale Banks are spending 6-12% of revenues, allocated from three sources: IT budgets (with around half channeled into "change the bank" initiatives), investment budgets within the business line and back office functions, and dedicated funding for innovation labs, units, and accelerators. Many banks are still playing catch-up, dedicating much of their investment budget on regulatory response, remediation and systems rationalization. Group budgets have also typically prioritized spend on retail. Leaders are focused now on improving digital interfaces, value-adding tools for clients, data analytics, process digitalization, and investment in frontier technologies. As a result the change spend allocated to real innovation varies even more widely. The larger and more profitable banks will inevitably have deeper pockets to fund innovation and US banks likely have more room given the benefit from lower taxes. We estimate mid-tier institutions are potentially being outspent ~3 to 1 by the largest players, while still competing across a similar waterfront of businesses.

Exhibit 44:

We estimate Wholesale Banks are spending 6-12% of revenues on innovation.

Estimated Wholesale banking investment and innovation spend

Innovation spend	Estimated total budget (% of revenue)	Perspectives
'Change the Bank' IT spend	5 – 7%	• IT support for upgrades required to deliver business and functional priorities
Business led programmes	1 – 3%	• Project costs incurred by the business and functions for new products, services, and processes, paid out of earnings
Innovation hubs	0.5 – 1%	• Ring-fenced budgets for technology labs, fintech incubators, accelerators (often cross-Group)
External acquisitions	Varies	• Acquisitions predominantly in fintechs
Total of which innovation	**6–12%** <1-5%	

Source: Oliver Wyman analysis

Spend will not solely determine the winners. Even with much smaller overall budgets, banks can make big, bold plays in specific areas if these are well targeted and there is a good discipline around spend. Most banks have a proliferation of initiatives across various hubs, innovation centers, FinTech partnerships as well as within the business lines and functions. Yet the return on this investment to date is unclear. The banks that will succeed will encourage a culture of innovation, but also adopt a disciplined approach to manage the portfolio of initiatives, applying a test-and-learn mindset to direct spend towards the most impactful areas.

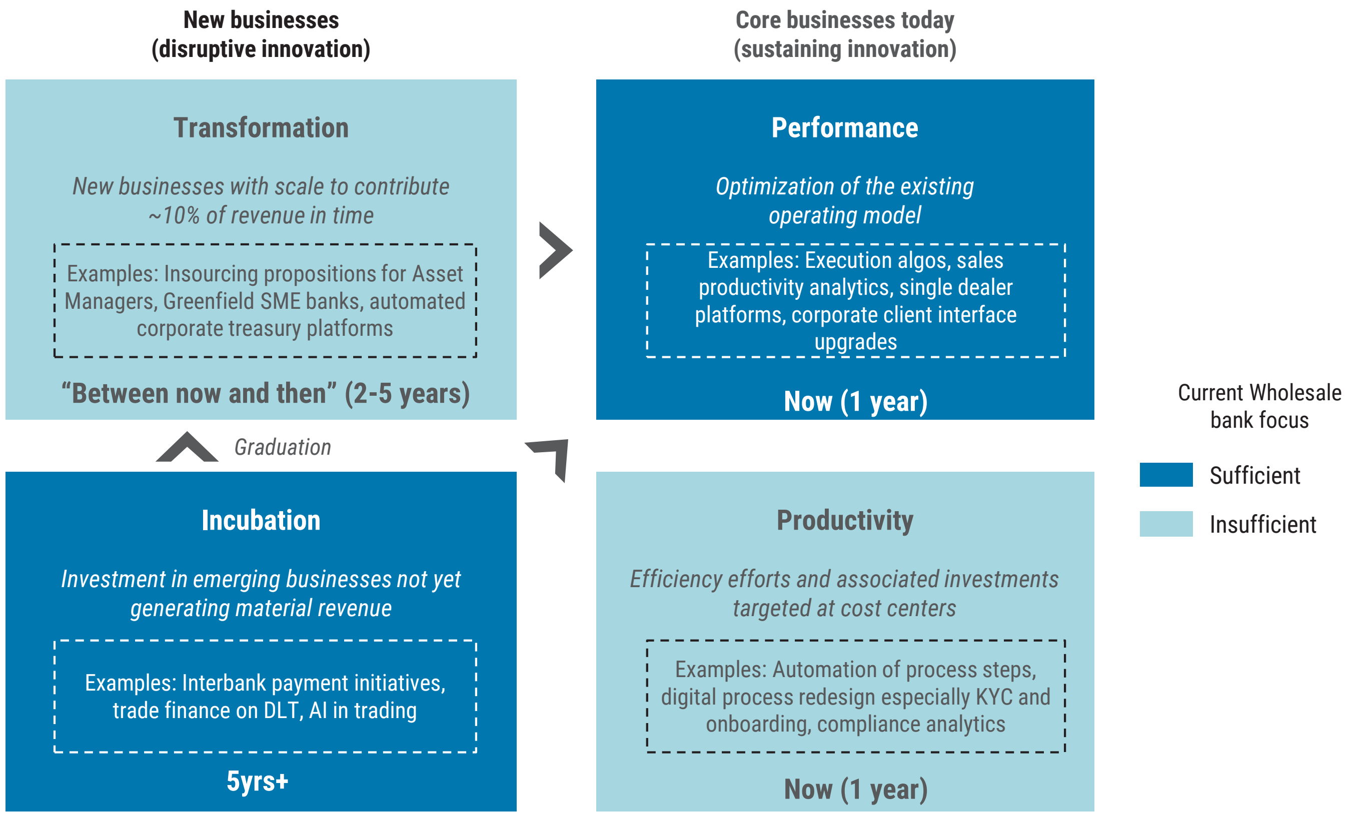
The most successful will focus spend and effort on scaling potentially transformative initiatives. Looking across our four "zones" of innovation, we observe some common challenges in effectively prioritizing and managing the portfolio of initiatives:

- Incubation – most banks have considerable spend and time allocated to frontier initiatives in the "incubation" zone, for instance experimentation with blockchain, or various FinTech partnerships. But this is often too disparate with many initiatives that consume management bandwidth and investment dollars. More aggressive pruning is required to focus on the big initiatives that can move the dial.
- Performance – a natural focus area for management teams to make incremental improvements (e.g. upgrading trading systems and client portals) – much of it vital, but can lead to "me too" activity with limited benefits for competitive outperformance.
- Productivity – huge potential for cost release and efficiency across front, middle and back office, but requires a genuinely cross-functional approach to unlock the biggest prizes with executive sponsorship and collegiate working across the bank.
- Transformation – not enough ideas are scaling up to be truly transformative for Wholesale Banks today; we see leaders taking a top-down portfolio view, picking areas of high strategic importance and applying a test and learn mentality to filter down and funnel effort and investment into the most promising areas.

Exhibit 45:

We believe Wholesale Banks are insufficiently focused on innovation that drives business transformation and productivity.

Wholesale Bank focus across innovation 'zones'



Source: Original framework inspired by Geoffrey A. Moore, "Zone to Win" and Rick Chavez of Oliver Wyman

Getting more from the $30 billion banks spend on technology will be key. Technology has grown to become 15-20% of the wholesale banking cost base. While technology supports all core business functions and support areas, most banks have limited flexibility working across fragmented legacy infrastructure and governed by rigid project management. To rapidly meet client needs with new products, tools and services, two major transitions are needed:

- a shift to modular platform architecture, using APIs, cloud based data, ability to easily integrate third-party technology; and
- a shift to agile delivery models, using smaller multidisciplinary teams with closer integration with functional, business and client users, with a mandate to challenge and work across organizational boundaries.

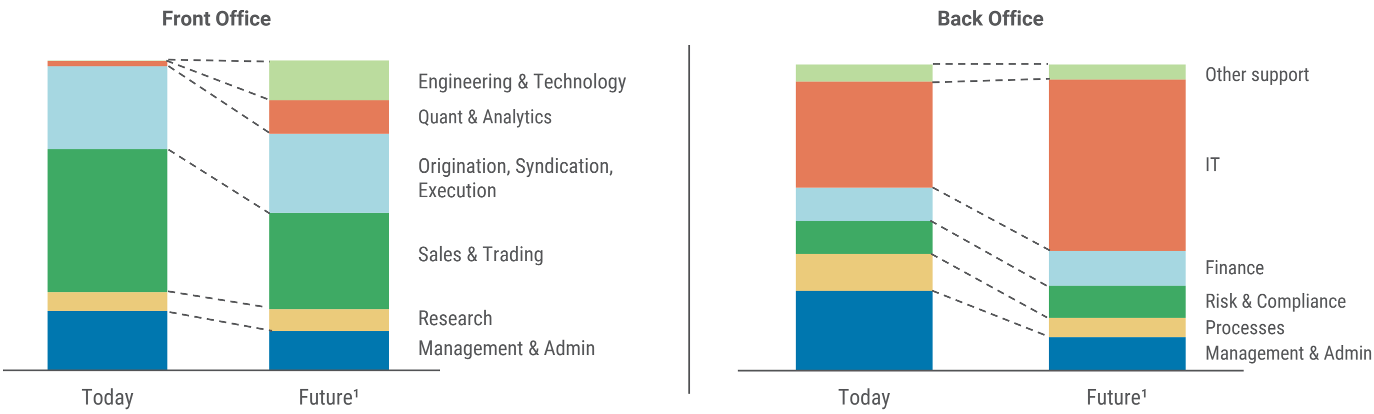
The wholesale banking workforce of the future will look very different. As banks adopt new technologies and build new businesses, the talent model will need to shift profoundly. In the front office, demand for quants will increase significantly, while technology experts such as user experience (UX) specialists will need to be aligned with business teams to enable agile proposition development. We estimate these two roles will grow to represent 25% of compensation from <5% today. In the back office, IT will make up ~60% of future compensation, driven by higher salaries for more specialized, in-demand technology skill-sets such as user interface (UI) developers.

Winners will step up their fight for talent. Employee value propositions offered by non-banks are compelling, either around compensation or working style. Wholesale banks will need to evolve their talent models to compete, with culture the most important dimension. For banks with low returns, compensation will remain a difficult battleground. It will be hard to both invest in the talent required to drive near-term market share capture and earnings growth, while also investing to build the capabilities needed to win in the future. The battle for talent will be as important as the battle for clients in determining the winners.

Exhibit 46:

In the front office, we expect a significant shift of the workforce and corresponding compensation towards quant and engineering talent.

Compensation spend by role, 2017 and future state, %



1. Future represents 5 - 10 year time horizon

Source: Oliver Wyman analysis

Product-level market outlooks

Exhibit 47:

Revenue evolution commentary.

FICC revenue evolution, 2017-18

	2017 market dynamics	2017 vs. 2016	2018 outlook	2018 vs. 2017
Rates	• Increases in activity in January as momentum from Q4 2016 sustained, but tailed off thereafter as volatility remained at record lows • Central bank actions remained incremental and relatively well expected by the market, so limited activity around these set piece events	$31bn ↓15%	• Sustained macro-economic growth, coupled with uncertainty over inflation and the pace of rate rises across Europe and the US a significant tailwind • Volatility moving away from historic lows with occasional spikes helping to boost activity, particularly from institutional clients	$35bn ↑~15%
FX	• Volatility down vs. 2016, playing through into tighter spreads and subdued volumes • Base effects of Brexit playing out and making tough year on year comparisons in European markets	$12bn ↓15%	• Diverging interest rate environments and macro-economic volatility boosting FX from recent lows • Brexit talks set to give some period of volatility of GBP and EUR, with potential for one-off gains	$13bn ↑~10%
EM	• Mixed performance outside of LatAm, which saw growth in a number of countries after a poor 2016 • EM FX beginning to suffer from the emergence of non-banks, with certain currency pairs beginning to see the same effects as have played out in G10	$20bn Flat	• Expectation is that rising interest rates won't play through as they did in 2013 with the taper tantrum, which would cause significant disruption to EM • However some rebalancing could come through, particularly if there are bumps in economic growth	$21bn ↑0-5%
Credit and Securitized	• Spreads remain tight across the spectrum despite pockets of nervousness through the year • Strong primary flow in Lev Fin providing some gains in secondary markets, particularly in HY • Mixed results in securitization with limited industry wide trends playing out	$29bn ↓5%	• Strong economic growth and sustained corporate activity giving momentum to client activity, even if rising interest rates pose modest headwinds • Volatility both at the market level and for individual companies presenting trading opportunities	$30bn ↑0-5%
Commodities	• One off trading losses in H1 weighing down on industry revenues, particularly in oil & P&G • Regional players were more resilient and rising commodity prices in Q4 providing some reprieve	$6bn ↓20%	• Rebound with favorable Q1 comparison for a number of banks providing tailwind for the year • Sustained rises in some commodity prices on the back of deepening GDP growth is also a boost	$7bn ↑20-25%
FICC		**$98bn** **↓10%**		**$105-107bn** **↑8%**

Source: Oliver Wyman analysis

Exhibit 48:

Revenue evolution commentary.

Equities revenue evolution, 2017-18

	2017 market dynamics	2017 vs. 2016	2018 outlook	2018 vs. 2017
Cash equities	• Some tailwinds from US index rally and healthier ECM pipeline, however low-vol environment driving subdued volumes • Margin pressure remains as rotation into swaps continues • Unbundling starting to impact EMEA with uncertainty around dark pools emerging	$21bn ↓0-5%	• MiFID II with sizeable declines in EMEA, as both research unbundling and double-cap rules hamper volumes and client flow • Increasing rates possibly pushing real money towards fixed income products • A return of (some) volatility however providing some upside at the global level	$19bn ↓5-10%
Derivatives	• Record-low volatility have punished flow products, with no major macro events driving hedging needs • Steinhoff losses in Q4 driving poor end to the year, although not all booked in EQ • Some respite from event-driven products and Asia	$17bn ↓0-5%	• Improving trading environment as moderate volatility returning to market, however trading losses possible • Some tightening of private-side risk appetite following Q4 events • Changing interest rates environment benefitting retail products and notes	$18bn ↑0-5%
Prime and synthetics	• Stabilization in Hedge Fund AuM and continued rotation into swaps driving flat revenues, however off a poor 2016 • Smart-beta and other alternative strategies have instigated reviews of fee structures and product offering	$19bn Flat	• Moderate improvements from rate increases, somewhat offset by increasing competition putting pressure on margins (especially from non-banks) • Renewed focus on resource consumption and funding allocation possibly impacting available balance sheet	$19bn ↑0-5%
Equities		**$57bn** **↓2-4%**		**$55-57bn** **↓0-5%**

Source: Oliver Wyman analysis

Exhibit 49:

Revenue evolution commentary.

IBD revenue evolution, 2017-18

	2017 market dynamics	2017 vs. 2016	2018 outlook	2018 vs. 2017
DCM and Lev Fin	• Strong LevFin activity in both Europe and the US driven by a combination of strong M&A activity and CLO demand • Investment grade issuance held pace despite rate increases	$39bn ↑15%	• DCM volumes dependent on timing of rate hikes and central bank activity, buoyed by refi demand • Low default rates, strong CLO demand and healthy M&A activity continue to drive LevFin	$40bn ↑0-5%
ECM	• Rebound in IPO volumes after anemic 2016, particularly in the US; fully marketed follow-ons growing 50%	$17bn ↑30%	• IPO volume recovery likely to continue, though pressure from lower-fee products and private capital will likely persist	$18bn ↑~5%
M&A	• Stabilization after a strong 2016 and an increase in the number of withdrawn deals pulling down revenues slightly	$22bn Flat	• Strong pipeline of pending deals will contribute to a healthy Q1 • Positive impacts from US tax reform and record levels of dry powder to drive healthy activity despite high equity valuations	$24bn ↑5-10%
IBD		**$78bn** **↑15%**		**$80-82bn** **↑4-6%**

Source: Oliver Wyman analysis

Exhibit 50:

Revenue evolution commentary.

Transaction banking revenue evolution, 2017-18

	2017 market dynamics	2017 vs. 2016	2018 outlook	2018 vs. 2017
Payments and cash mgmt.	• Corporate cash balances continued to grow through 2017, despite some monetary tightening and payments volumes continue to perform solidly • Low interest rate environment continuing to pressure NII, but limited margin hikes in US, UK starting to feed through to revenues	$220bn ↑~5%	• Payment volumes expected to grow broadly in line with GDP • Continued fee margin pressure from overcapacity in the sector, and growing scale of new entrants • NII outlook more positive for the US, Asia, however Europe to remain weak for the medium term	$225-230bn ↑3-5%
Trade finance	• Trade Finance revenue pools expected to show strong growth following years of decline • Trade volumes expected to be up ~4% for the year, driven by stronger economic growth in China and the US, spurring increased international trade, as well as a partial recovery in commodity prices • Some improvement in margins following rate hikes in the US, UK • Strong investment by Globals on growing Supply Chain Finance business	$50bn ↑2-3%	• Trade volumes to continue in their growth trajectory, albeit at a less aggressive pace • Continued movement of revenue from traditional trade finance to supply chain finance • Margin improvement to continue off the back of rate hikes in US and Asia	$51bn ↑2-3%
Transaction banking		**$270bn** ($45 BN in-scope[1]) ↑3-5%		**$275-280bn** ($47 BN in-scope[1]) ↑2-4%

Source: 1. Includes revenues from large corporates, MNCs and FIG clients captured by major banks

Source: Oliver Wyman analysis

Exhibit 51:

Revenue evolution commentary

Securities services revenue evolution, 2017-18

	2017 market dynamics	2017 vs. 2016	2018 outlook	2018 vs. 2017
Securities services	• Solid growth in AuC across large players, driven by combination of new mandates and asset values • US banks in particular benefitting from rising US interest rates, driving up NII, and FX dynamics • Some softening in fee pressure, partly driven by upgrades and expansions to AM services feeding into new mandate negotiations • Weaker securities lending and custody-linked FX revenues driven by poor market conditions, particularly vs. 2016	$53bn ↑~4%	• Positive outlook with market conditions and new revenues outweighing ongoing pressure on fees • Further interest rate upticks and improved market conditions benefitting interest and trading linked income • Improved monetization of new services, particularly in financial resource management and client analytics • Fee pressure on core custody & settlement continuing; but unlikely to radically change	$56bn ↑~4%

Source: Oliver Wyman analysis

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Total	3,149		764			1427	

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