

GLOBAL CAPITAL MARKETS 2017

# MASTERING THE VALUE MIGRATION



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**GLOBAL CAPITAL MARKETS 2017**

# **MASTERING THE VALUE MIGRATION**

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# INTRODUCTION

THE CAPITAL MARKETS ECOSYSTEM turned in a decent performance in 2016 compared with the previous five years. Although investment banking revenues continued to decline, they did so at a lower rate, while other types of players—such as exchanges and venues, information providers, and buy-side institutions—realized revenue gains. The net result was year-over-year (YOY) growth of 5% in total industry revenues.

We refer to the shift of global revenue pools from banks to nonbanks as the value migration. (See *Global Capital Markets 2016: The Value Migration*, BCG report, May 2016.) This migration has continued along the following paths:

- From smaller investment banks to large universal banks
- From players without a specific niche to those with a concentrated focus, such as boutiques specializing in M&A
- From regulated to unregulated entities
- From firms with weaker digital capabilities to data- and tech-savvy firms
- From players without a distinct informational advantage to those with proprietary data and insights

Although a lessening of the effects of quantitative easing, along with impending deregulation, may dampen the impact of the value migration, institutions must still find ways to master it and make it work to their advantage. Several key forces will continue to shape the evolution of the market:

- **Evolving Regulatory Dynamics.** While some regulatory easing is expected in the US, it is not clear how deep or broad the changes might be. At this stage, the only certainty is continued uncertainty, which may make it increasingly difficult for banks to carry out strategic planning. Moreover, while banks may benefit from regulatory relief, the US financial regulatory framework will, overall, continue to provide advantages to nonbank competitors.

In Europe, regulatory trends are likely to follow suit. Initiatives such as the updated Markets in Financial Instruments Directive (MiFID II) and the Markets in Financial Instruments Regulation (MiFIR) will open the door to greater transparency, shift trading to

more centralized marketplaces, and develop more explicit pricing for trading and investing. As for final revisions to the Basel III framework, also known as Basel IV, the official sector is keen to retain the stringent capital, liquidity, and leverage requirements that were put in place after the 2007–2008 global financial crisis. These core banking regulatory standards may be subject to renegotiation, however, depending on the political winds. Ultimately, in both the US and Europe, high uncertainty makes it critical for all players in the capital markets ecosystem to participate in the regulatory discussion whenever possible, in order to help shape revisions and better anticipate what lies ahead.

- **The Rise of Data- and Technology-Driven Value.** It is no surprise that value creation is becoming more tightly linked to data and technology. To investigate this point further, BCG looked at total shareholder return for a sample of publicly traded firms in the industry. Our analysis determined that exchanges and venues, along with information providers, have led value creation in the post-crisis era, a finding consistent with the value migration trend. Moreover, we saw that top-performing firms come from every part of the ecosystem—pure-play investment banks, buy-side institutions, exchanges and venues, and information providers—and share a number of common traits. Crucial among these is a commitment to leveraging technology for more digitally innovative ways of doing business.

The implications of this trend vary by player type. For an investment bank, for example, a key challenge is to move beyond traditional ways of leveraging data to drive value. Greater emphasis should be placed on using cutting-edge technologies to provide a more holistic view of the client and facilitate a more customer-centric approach to client service. Similarly, banks must move beyond providing research and advisory services on the basis of a so-called soft-dollar commission model and toward developing platforms that can be monetized either directly or indirectly.

Exchanges and information providers are increasingly becoming data and technology players in their own right, and they must look to sustain and solidify this growth. Large players should therefore take advantage of fragmentation in the information services industry, using acquisition as a lever to enter into higher-growth subsegments and to generate greater economies of scale through consolidation. All players should identify novel sources of data and information that can provide insight to buy-side and sell-side players for valuation, market positioning, and forecasting.

- **Shifts in Market Structure.** One recent manifestation of technology-driven value migration and regulatory arbitrage is the rise of principal trading firms across electronically traded asset classes. These players are capturing significant share from traditional market participants in trading activities. They are also seeking to expand into new asset classes and to diversify beyond pure market making into areas such as customer business (with the support of prime brokers), risk management analytics, and liquidity outsourcing to

other intermediaries, all of which puts further pressure on the traditional “supermarket” model of banking.

- **The Push for Digital Transformation.** Given rapid market evolution, ecosystem players—especially banks—must continue to push for digital transformation of their businesses. Successful digital innovation requires a comprehensive reevaluation of people and incentives, organizational structure, processes, and operations. The road can be rocky, but if navigated skillfully, it can result in a leaner and more adaptive organization that is better able to seize the opportunities provided by continued market change.

# OVERVIEW

## KEY MARKET DEVELOPMENTS

THE CAPITAL MARKETS ECOSYSTEM, as a whole, continued to grow in 2016. Total industry revenues rose to \$656 billion, compared with \$624 billion in 2015, an increase of 5%. Global investment banking revenues fell for the fourth consecutive year, but the rate of decline was limited by an impressive fourth-quarter rebound in fixed income, currencies, and commodities (FICC), which largely offset losses in equities and primary market activities. Custodian bank revenues remained stable. Other ecosystem players also realized revenue gains, illustrating that the overall value migration trend continues to prevail. (See Exhibit 1.) The share of total industry revenues earned by banks, for both investment banking and custodian services, now stands at approximately 39%, a sharp decline from the 52% share held a decade ago.

### Investment Banks Fared Better in 2016

Global investment banking revenues decreased by 1% in 2016, a decline that was less severe than the 5% slide suffered in 2015. (See Exhibit 2.) This lower rate of decline was primarily the result of higher market volatility, rising interest rates, and a significant increase in FICC trading volumes following the US presidential election in the fourth quarter. Given that banks were on track for another year of 5% to 6% revenue declines through

the end of the third quarter, this strong finish was a key driver of banks' performance during the full fiscal year.

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The drop in global investment banking revenues in 2016 was less severe than in 2015.

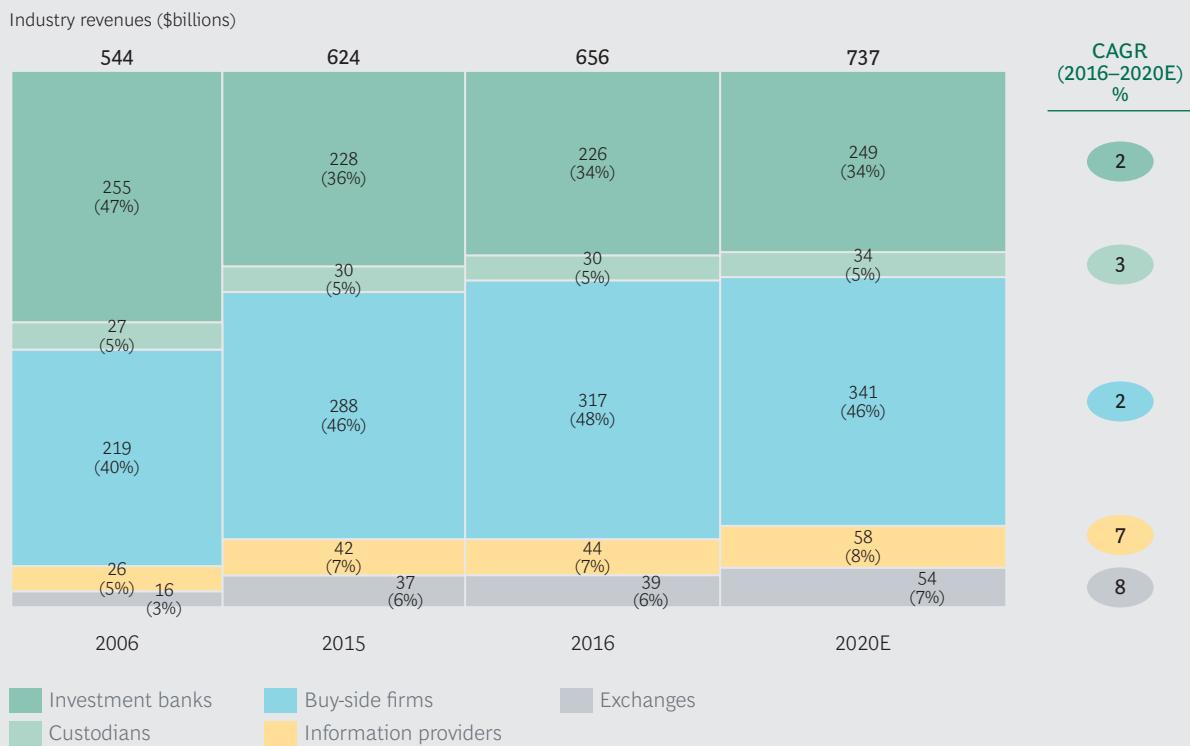
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Consistent with longer-term trends in the industry, US banks outperformed their European counterparts, and larger banks gained share from midsize and regional competitors. The top five US banks realized 1% revenue growth YOY, increasing their share of total investment banking revenues from 45% to 46%.

Global highlights for different asset classes were as follows.

**FICC was the standout performer of 2016, growing by 7%, to \$115 billion.** Rates and credit led the rebound in FICC, with both segments benefiting from rising trading volumes that were driven by higher volatility (resulting from both the UK vote to leave the European Union, known as Brexit, and the US presidential election), and by increasing economic growth and changes in monetary policy.

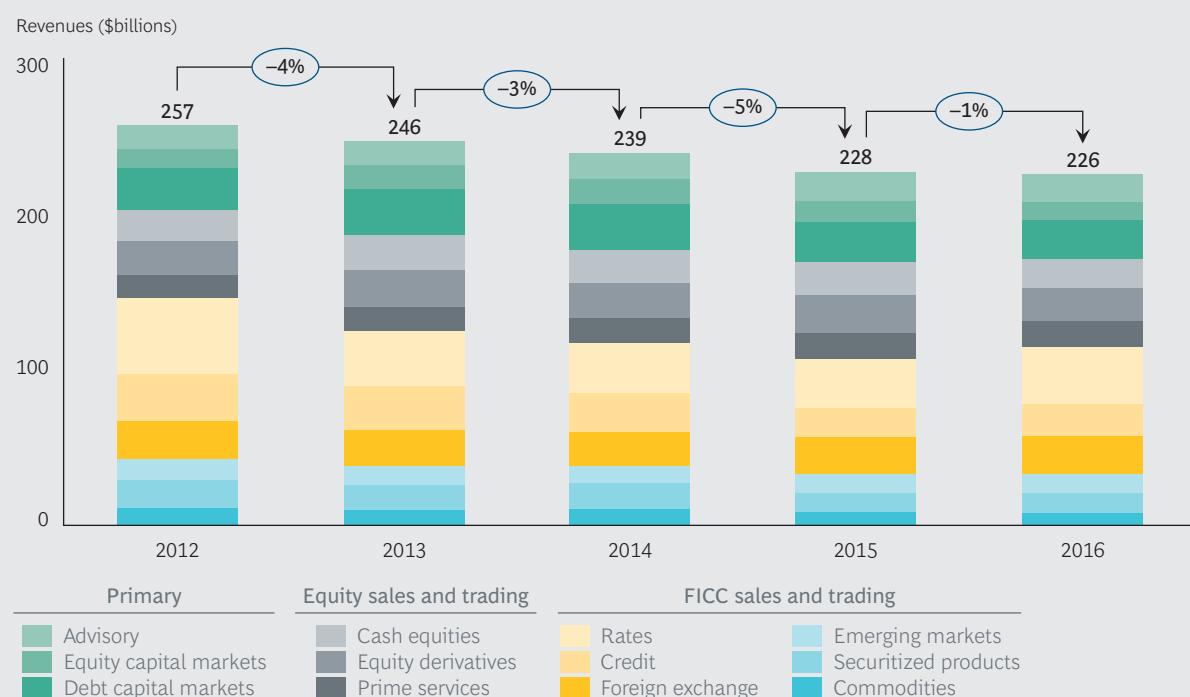
## EXHIBIT 1 | The Value Migration Continues to Prevail



**Sources:** Company financial statements; Expand research; BCG analysis.

**Note:** Activity-level view of the ecosystem. The “Information providers” category includes revenues from desktops, data and feeds, indices and benchmarks, ratings, and software and analytics. The “Exchanges” category includes revenues from listings, exchange and venue execution, market data, clearing, and post-trade services. Because of rounding, not all numbers add up to the totals shown.

## EXHIBIT 2 | Revenue Declines for Investment Banks Have Eased



**Sources:** Company financial statements; Expand Research; BCG analysis.

**Note:** Based on a sample of 35 banks.

The FICC rebound was generally good news for banks that have remained committed to this asset class. It is worth noting, however, that an increasing share of revenues from FICC—and a corresponding reduction in share of revenues from other products, especially primary market activities—has negative implications for overall bank return on equity (ROE) owing to the continued high cost of capital. Regulatory relaxation may help banks realize higher FICC profitability going forward, but they will need to continue their efforts to reduce costs through such means as technology platform rationalization and investment in electronic distribution. Banks may also choose to concentrate on trading products that are less likely to shift to electronified venues (such as corporate credit and relatively illiquid currency pairs) in order to capture wider spreads and improve margins for the category as a whole.

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## The FICC rebound was good news for banks that remain committed to this asset class.

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**Equities trading faced a difficult year, with revenues declining by 10%, to \$56 billion.** Global revenues from cash equities and equity derivatives trading fell, respectively, by 12% and 13%, with particular weakness in the Asia-Pacific region. Prime services revenues posted a 5% decline. Standardization and electronification continue to depress margins for banks in this category, a trend that is expected to continue.

**Primary-market revenues also fell, posting a 6% decrease, to \$55 billion.** After a second consecutive year of decline, primary-market revenues are now at a four-year low. All major banks suffered a significant drop (down 21% YOY) in equity capital markets (ECM) revenue because of a decrease in IPO volumes. M&A revenues fell by 4% overall, owing to a contraction in industry-wide transactions. Large banks lost share in this ever-important line of business to the boutique advisory shops, which, as a category,

were able to generate greater than 20% revenue growth from M&A in 2016.

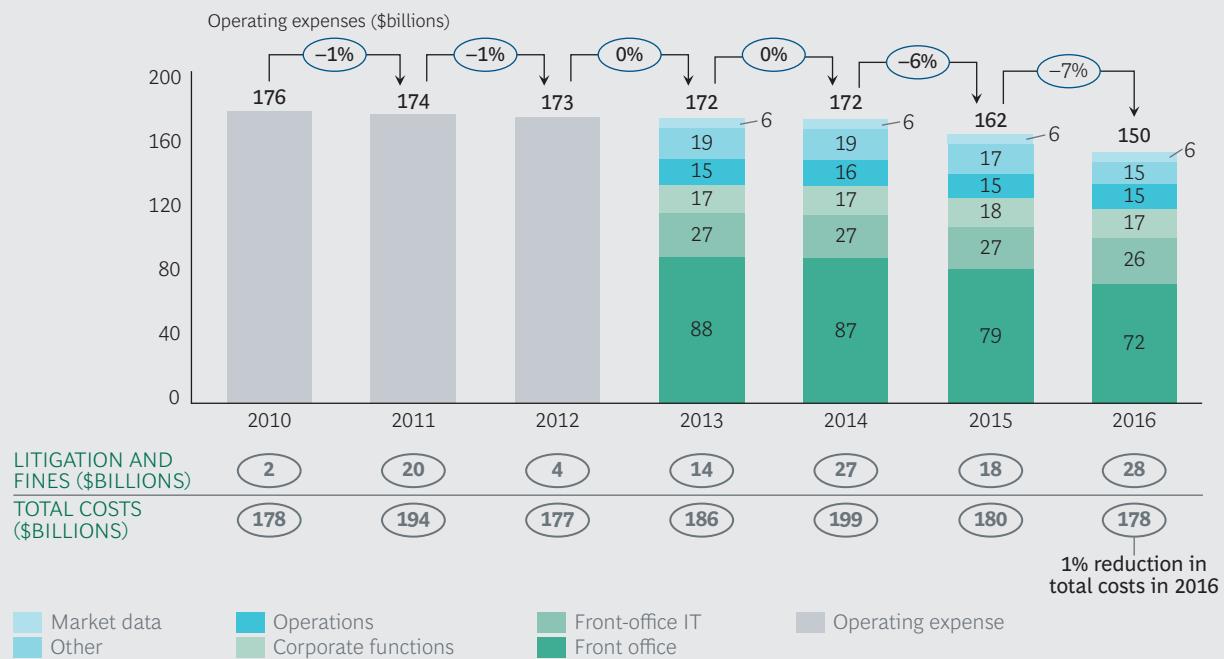
The only bright spot in the primary market was debt capital markets (DCM), where revenues rose by 2%, to \$26 billion, driven by higher volumes, in particular for investment-grade corporate debt. Similar to the FICC rebound, however, a higher share of total primary-market revenues generated by DCM (a lower-margin line of business than M&A and ECM) put downward pressure on primary-market profitability. Devising a strategy to fend off competition from boutiques and private equity firms in M&A and ECM will remain a key challenge for banks.

On the cost side, major investment banks continued to focus on cost reduction programs in 2016. (See Exhibit 3.) Operating expenses fell by 7%. Unfortunately, higher litigation and fines in 2016 canceled out most of the banks' efforts, which produced only 1% in cost reduction. Still, after many years of gradual efforts, the industry's cost-to-income ratio (CIR) reached a six-year low, decreasing by 5 percentage points in 2016 and reversing a general trend toward higher CIRs that began in 2012.

Operating-expense reductions in 2016 were driven primarily by reductions in staff and compensation (including cuts to bonuses) in the front office, particularly in FICC. On the whole, the industry reduced front-office costs by \$7 billion (10%), with most of the decline concentrated among a handful of European banks. While such measures benefit the bottom line, they can also place pressure on top-line revenues and thus may offer limited help in generating meaningful, sustained profit growth. However, truly transformative cost savings (including reductions in costs associated with technology and compliance) continue to be elusive for most players in the industry.

As a result of the FICC rebound and reductions in compensation-related expenses, the overall investment banking profit pool rose from \$66 billion in 2015 to \$76 billion in 2016. (See Exhibit 4.) Large increases in FICC and DCM profits offset declines from equities, ECM, and M&A. FICC profits rose from 46% (\$31 billion) of the total profit pool to

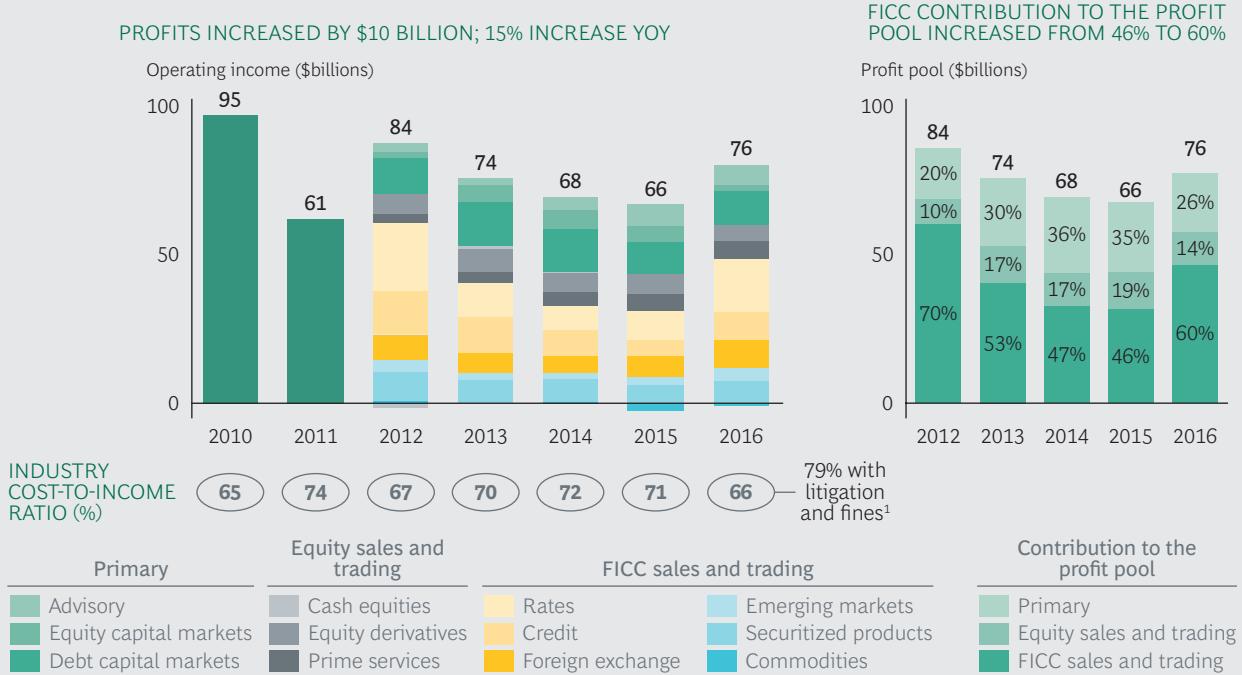
### EXHIBIT 3 | Front-Office Reductions in Operating Expenses Will Bear Fruit if Litigation and Fines Decrease



Sources: Expand Research; BCG analysis.

Note: Based on a sample of 35 banks. The “Other” category includes costs allocated to management, HR, communications and marketing, and corporate real estate. The “Front office” category includes brokerage commissions and exchanges. The 2015 figures were restated to remove goodwill impairments. Because of rounding, not all numbers add up to the totals shown.

### EXHIBIT 4 | Investment Banking Profits Rose in 2016, Lifted by the FICC Rebound and by Cost Reductions



Sources: Company financial statements; Expand Research; BCG analysis.

Note: Based on a sample of 35 banks.

<sup>1</sup>If litigation and fines are also factored in, cost-to-income ratios for the past five years would be as follows: 69% for 2012, 76% for 2013, 83% for 2014, 79% for 2015, and 79% for 2016.

60% (\$46 billion), reversing a steady decline that had persisted since 2012. ROE for investment banks was 8% in 2016, up from 6% in 2015. (See Exhibit 5.) As with revenues, the greatest gains in profits and ROE were realized by large US banks, which benefited more from secular trends, cost reduction, and balance sheet optimization than their European and Asian counterparts.

## Other Ecosystem Players Continued to Gain Revenue Share

In contrast to banks, other ecosystem players realized revenue gains in 2016, with the largest increases going to the buy side, primarily because of strong hedge fund performance in 2016. Exchanges, venues, clearing-houses, and information providers also fared well. (See Exhibit 6.)

### Exchanges, Venues, and Clearing-Houses.

These companies realized the second largest revenue gains of all ecosystem players in 2016, with 5% YOY growth.

In the primary market, exchanges posted 1% growth from listings and issuer services, well below the 10% YOY growth achieved in 2015.

Lower revenue expansion was primarily the result of lower IPO activity in 2016 compared with recent years.

By contrast, revenues from trade execution and clearing activities—such as venue execution, OTC clearing, and exchange trading and clearing—rose by 7% in 2016, driven by higher trading volumes across most asset classes. Exchanges particularly benefited from strong volume growth for FICC and equity derivatives, while cash equities were weak because of low volume growth and reductions in revenue capture per share. Revenue growth for OTC execution venues was 10% YOY, while clearing-houses continued to gain from the shift toward centralized clearing of derivatives contracts mandated by regulatory authorities.

As the emergence of new venues heightens competition for trading revenues, firms are diversifying their revenue base to data, technology, and other nontrading revenue streams. Organic growth from indices and benchmarks, data and feeds, and market data increased by 6% or more in 2016, stemming from continued strong demand for data from investors. Forward-looking firms in this category are going beyond providing data feeds to

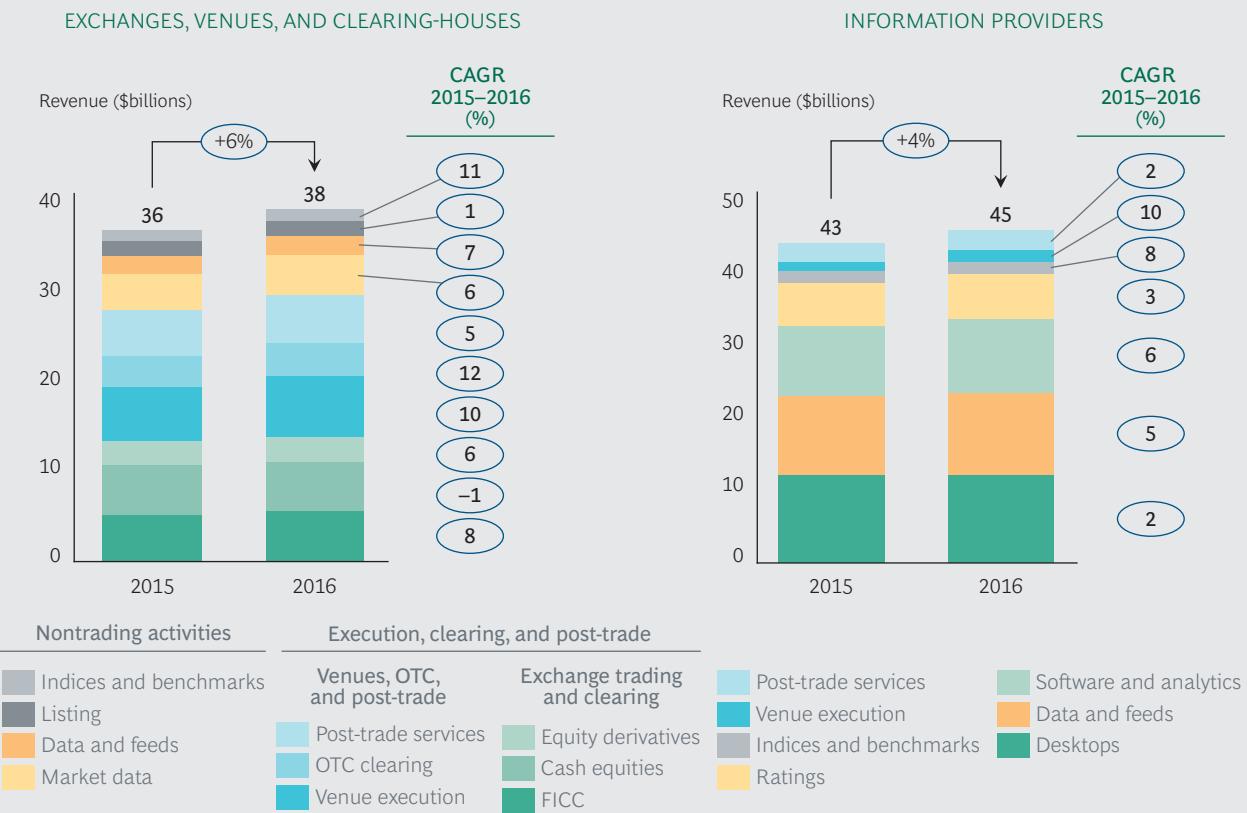
## EXHIBIT 5 | Investment Bank Return on Equity Increased to 8% in 2016, Reversing a Three-Year Trend



**Sources:** Company financial statements; BCG analysis.

**Note:** Based on a sample of 16 banks.

## EXHIBIT 6 | Nonbanks Continue to Realize Healthy Growth, Especially in Indices and Benchmarks and Post-Trade Services (Including OTC Clearing)



**Sources:** Company financial statements; BCG analysis.

**Note:** Player-type view of the ecosystem. Organic growth rates shown. “Exchange trading and clearing” category includes revenues for listed securities (cash equities, listed fixed income, and exchange-traded equity and FICC derivatives) as well as trading on exchange-owned venues. “Post-trade” includes all services except clearing (primarily settlement fees and post-trade processing).

identify novel data sources and to develop a full suite of services that customers can use to navigate and operate within the industry.

In another notable trend of 2016, several major exchanges announced acquisitions intended to expand and diversify into new locations and asset classes, to achieve cost synergies, or both. Key deals include:

- CBOE Holdings’ acquisition of Bats Global Markets for \$3.2 billion in March 2017
- Nasdaq’s acquisition of the International Securities Exchange from Deutsche Börse for \$1.1 billion in June 2016

At the same time, large players are also making deliberate choices to exit unprofitable lines of business. For example, Nasdaq decided to end its NLX interest rate futures business, and CME is exiting the European clearing business.

**Information Providers.** These players posted overall revenue growth of 4% in 2016 despite the sluggish performance of desktops. Indeed, industry dynamics—including aggressive cost-cutting measures and reductions in staff in many of the largest banks—have stymied revenue growth in desktops in recent years. In 2016, desktop revenues grew by less than 2%, with higher growth posted by smaller and newer entrants to the space. Revenues from data and feeds, which grew by 5% YOY, are now on track to surpass desktop revenues within the next three to four years—a powerful indication of how the information distribution model is evolving.

Information providers are also benefiting from a number of secular trends that are keeping demand for their products and services high. For example, reduced market liquidity and regulatory requirements are increasing the need for third-party data sources

to measure and document price discovery. Further demand for data is being fueled by the growing impetus for buy-side firms to provide third-party valuation for the securities in their portfolios. Revenue growth for software and analytics (which rose by 6%, to \$10 billion in 2016) is a direct outcome of the increased complexity of financial markets, which is leading investors to supplement in-house risk management capabilities with external tools.

Moreover, the shift to passive investing is enabling strong growth in revenues for indices and benchmarks, which increased by 8% YOY. The trend is attributable to higher growth in assets under management (AuM) for exchange-traded funds linked to indices, as well as to greater demand from buy-side investors for access to index information. Revenue from ratings (which rose 3%, to \$5.9 billion) is being driven by increases in debt issuance brought about by the current low-rate environment. Finally, post-trade service revenues increased by 2% organically (25% inorganically).

Although industry trends are largely working in this segment's favor, information providers are continually reassessing their competitive positioning and long-term strategies. In 2016, three of the largest information providers went through major corporate development changes: McGraw-Hill rebranded as S&P Global, Markit merged with IHS, and Thomson Reuters underwent a restructuring that

eliminated 2,000 positions, many of which were in its financial and risk units. Such moves indicate a growing consensus that agility and adaptability are critical to continued success in the space.

**Buy-Side Institutions.** Buy-side revenues grew by approximately 10% YOY in 2016, mostly because of strong hedge fund performance relative to a weaker year in 2015. Private equity continues to grow, with more dry powder than ever. Across the buy side, firms face continued pressure on fees from increasingly sophisticated and consolidated institutional investors, a challenge likely to grow in the coming years. (See "Hedge Funds: Down but Not Out," BCG article, February 2017.)

Two key buy-side trends continue to influence the ongoing value migration in the capital markets industry. First, the ongoing consolidation of buy-side firms is enabling the largest asset managers to exert more pricing pressure on service providers. Second, in the face of declining AuM growth and increased fee pressures—particularly for traditional asset managers—buy-side institutions are focusing on diversifying into both traditional sell-side activities, such as internalization and direct origination, and other parts of the value chain, including software and analytics, execution (such as through the promotion of all-to-all trading venues), and advisory solutions for clients (such as BlackRock Solutions for BlackRock).

# TRENDS OF THE TIMES

POLITICAL DYNAMICS CHANGED SUBSTANTIALLY in both Europe and the US in 2016, and the implications for financial regulations are significant. Both the UK vote in July to leave the European Union and the election of Donald Trump as the US president in November have signaled upcoming policy and regulatory changes that are likely to affect capital markets. The jury is still out, however, on exactly what the impact will be and when it will hit. Although financial markets initially regarded both events as disruptive, especially given expectations at the time, markets subsequently settled into a new equilibrium of higher-risk premiums and interest rates, as well as increased expectations for growth. In any event, a cloud of uncertainty is likely to hover over business planning for the foreseeable future.

## The Evolving Regulatory Climate

The regulatory climate continues to evolve, with sizable variation by region. Overall, the influence of regulation on capital markets players' plans for the future will remain significant.

### In the US, regulatory rollbacks are likely.

While regulatory easing is expected to occur in the US, it is not yet clear how broad and sweeping the changes to post-crisis regulations, such as the Dodd-Frank Act, will be. Sifting through numerous variables—such as

preelection rhetoric, legislative proposals by the US Congress, Senate confirmation testimony, and executive orders issued by the White House—clearly reveals a deregulatory theme. If that theme is in fact borne out, it will, ironically, be beneficial to banks that have been designated as large and systemically important financial institutions (SIFIs). Most notably, there is a distinct probability that proprietary trading by large banks may, once again, be permitted. In addition, a sizable rise in the asset threshold used to designate a bank as a SIFI would undoubtedly benefit regional and midsize banks that could avoid the SIFI label, as well as the associated costs and complexity of compliance. Such a development could also lead to further consolidation.

Still, a significant number of US post-crisis regulations are likely to remain largely intact or to receive only slight modifications. This is especially true for prudential measures applied to the largest banks. For example, the softening, alteration, or elimination of elevated capital and liquidity standards, regular stress testing, capital planning, and living wills in the event of a major bank failure do not appear to be under serious discussion. These stringent standards, along with the rising costs of capital, helped to accelerate the value migration years ago. Legacy-troubled assets and franchise liability risk have also contributed to the trend.

**In Europe, the focus is on capital requirements.** In Europe, regulators have been unable to agree on final revisions to the Basel III framework (also known as Basel IV). Though the revisions were originally intended to be finished by the end of 2016, it is now unclear when they will be completed and approved. The main point of contention concerns the proposed introduction of capital floors, which would set a lower boundary for capital requirements stemming from internal models. The introduction of capital floors would have a more significant impact on banks in Europe and Japan, since the US has already included them in its domestic rules. European banks are particularly concerned about the impact of capital floors on project and structured-finance profitability at a time of increased global infrastructure needs.

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## MiFID II and MiFIR will hasten the regulatory unbundling trend.

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Amid such delays in the Basel IV discussions, the European Central Bank is moving forward with the Targeted Review of Internal Models (TRIM), an exercise aimed at bringing greater consistency to banks' internal models. Along with the Fundamental Review of the Trading Book, scheduled to take effect in 2019, TRIM is likely to lead to increased capital requirements for many European banks, even if Basel IV is stalled indefinitely.

The other major regulatory initiatives on the horizon in Europe are MiFID II and MiFIR, which are scheduled to take effect in January 2018. These directives will have a broad impact on the industry that will include increasing transparency, shifting trading toward more centralized markets, improving execution, and developing more explicit prices for trading, investing, and research. They will also serve to hasten the regulatory unbundling trend that, until now, has been more pronounced in US markets. MiFID II and MiFIR will add to the complexity that Europe's financial markets already face as a result of the mandatory clearing of OTC derivatives,

an initiative that has itself come under further examination following the Brexit vote. In addition to ongoing speculation surrounding the clearing of euro-denominated products (which currently occurs within the UK and may now relocate), investment banks must also reconsider their own geographic footprints, especially with regard to operations support in clearing.

**Nonbanks maintain an advantage.** The promotion of so-called lit markets—which feature widely disseminated and reported pre-trade and post-trade pricing and volume information—has been a key element of post-crisis reform in the US and Europe and is expected to continue. Other lit market requirements, such as the mandatory clearing of swaps, have helped raise the revenue share of nonbanks such as exchanges, clearing-houses, principal trading firms (PTFs), information providers, and other entities in markets that were once largely bilateral and dominated by banks. In general, the movement toward more lit and transparent markets has accelerated the value migration from supermarket-style banks, particularly regional bank players—a trend that is likely to continue.

More broadly, nonbank institutions (including PTFs, hedge funds, and other specialized capital markets participants) are at a significant regulatory advantage compared with banks—an edge that they are likely to retain. Although some nonbank firms have faced greater official scrutiny in recent years and may be subject to some marginal increase in regulatory requirements, such measures are likely to be much less burdensome than those already borne by large banks.

## Creating Value from Data and Technology

Value creation in the world of 21st-century capital markets is becoming increasingly interwoven with data and technology. To explore this trend further, we examined total shareholder return for a sample of the largest publicly traded firms in the industry. TSR measures the combination of share price gains and dividend yield for a firm's stock over a given period and is the most

comprehensive metric for performance in shareholder value creation. Four categories of firms were represented in our analysis: pure-play investment banks, buy-side firms, exchanges and venues, and information providers.

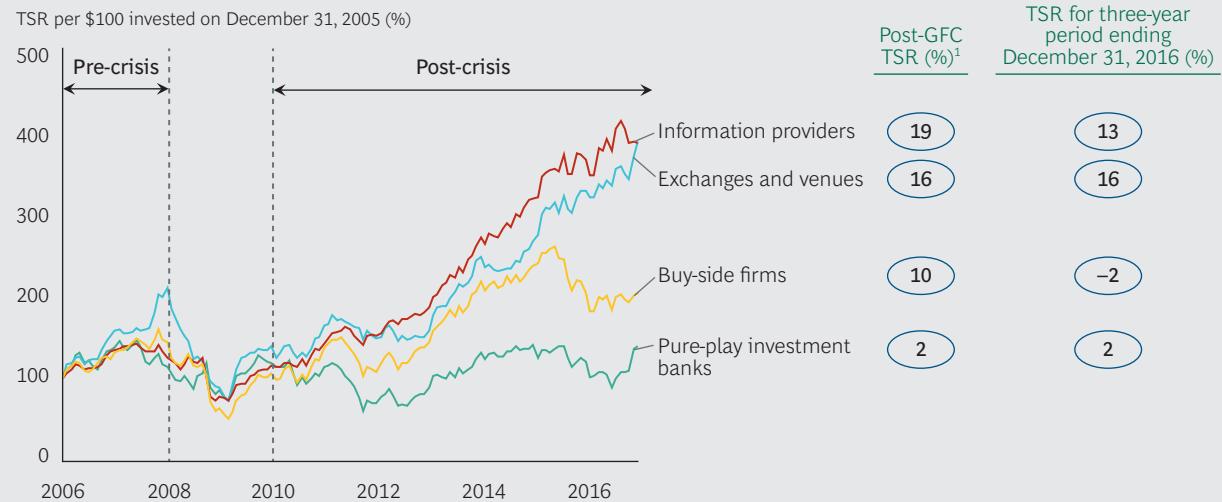
Since 2006, all of the player types we examined have generated positive shareholder returns. That said, information providers, as well as exchanges and venues, have delivered far greater value to shareholders than pure-play investment banks have. (See Exhibit 7.) The buy side has also delivered considerably more TSR than banks have, although overall performance for these players has fallen off somewhat in the past several years.

Superior value creation for information providers and for exchanges and venues is a persistent phenomenon in the post-crisis era. However, the story is more complex. Indeed, TSR varies widely *within* player types, with top-performing firms across all categories generating higher TSR than the majority of firms in the ecosystem.

Our evaluation revealed that top-performing firms share similar characteristics or have found a specialty that is in high demand. Leading performers include:

- **Firms That Lead the Market in Their Respective Business Segments.** These players provide superior value by leveraging scale as a source of competitive advantage.
- **Players Focused on a Particular Market Niche in Which They Excel.** Lacking the ability to leverage scale, such firms achieve success by developing and offering products superior to those of competitors that are less focused.
- **Institutions with Fewer Capital Constraints.** Firms that have been under less regulatory scrutiny, such as boutique investment banks and nonbank institutions, have realized higher TSR growth in the post-crisis era, while those with more onerous regulatory requirements are facing greater challenges.
- **Firms That Demonstrate a Commitment to the Deployment of Technology for More Digitally Innovative Ways of Doing Business.** These players are found in all categories. Many of them have invested heavily in developing technology platforms that leverage big data and analytics. Others have focused on diversifying into the information services layer

## EXHIBIT 7 | Exchanges and Information Providers Have Led Value Creation in the Post-Crisis Era



Sources: S&P Capital IQ; BCG analysis.

Note: The analysis includes the largest publicly traded players within each category; 11 information providers; 15 exchanges and venues; 24 buy-side firms (including hedge funds, private equity, and traditional asset managers); and 10 pure-play investment banks (large pure-play and boutiques). The indices were created by taking the median TSR value in each month for all players in the category.

<sup>1</sup>Post-GFC = the period after the global financial crisis (from December 31, 2009 to December 31, 2016).

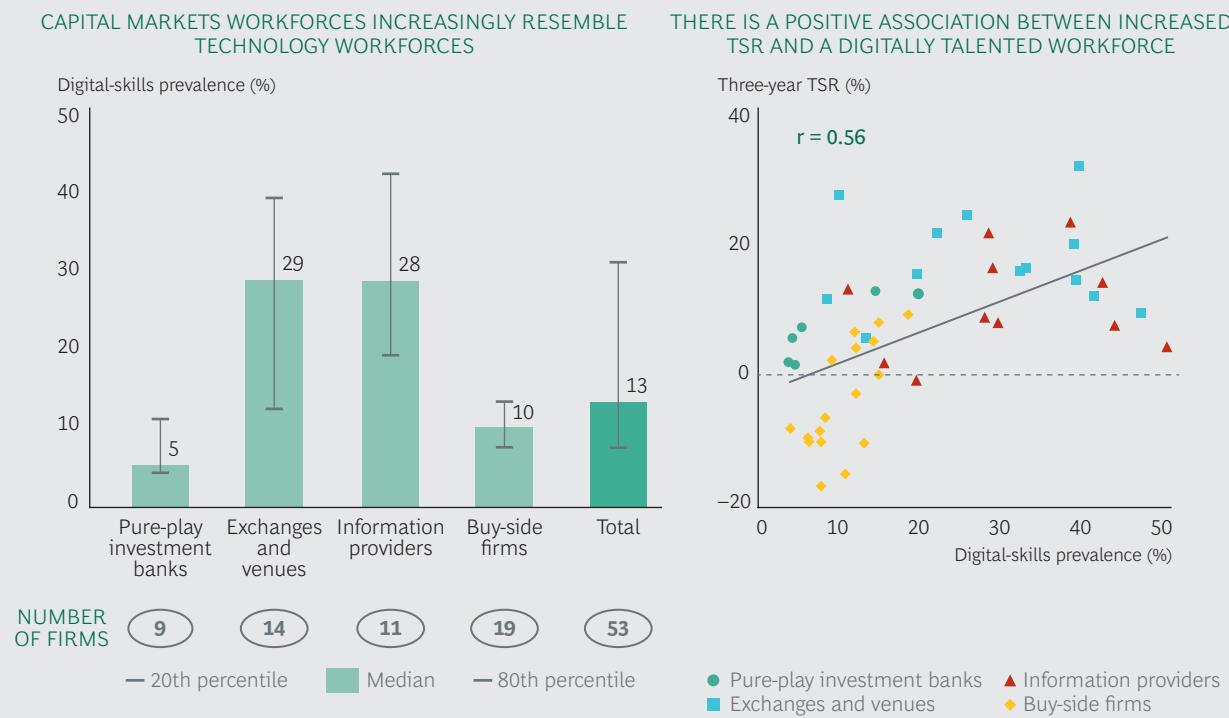
and are generating significant revenues by providing data and analytics to other ecosystem participants.

On the whole, industry participants are looking to attract and develop talent that can work on digital initiatives. As a result, capital markets workforces are increasingly beginning to resemble those of technology companies. (See Exhibit 8.) Indeed, up to 30% or more of the workforce of a typical capital markets player today may have capabilities that are relevant to the digital marketplace, such as data analytics and software development skills or experience with emerging-technology trends (such as robotics and automation, artificial intelligence, and blockchain). While exchanges and information providers undoubtedly have a higher percentage of tech-savvy employees, banks and buy-side players are also developing workforces with digital savoir faire. Moreover, there is a positive association between increased shareholder returns and employing a digitally talented workforce. What is less clear is whether the digital talent is enabling greater value cre-

ation, whether firms with increased TSR are better equipped to attract employees with digital skills, or whether a combination of both generates higher shareholder returns.

Our TSR analysis underscores a critical point: as value in the capital markets ecosystem becomes tightly linked with data and technology, firms that embrace this trend are likely to be the most successful in the long term. Yet different types of firms will take action in different ways. For example, information providers are likely to continue to expand into providing software and analytics, while exchanges and venues may shift toward creating full-service platforms for clients that provide a more holistic service offering (from pre-trade through execution and post-trade). Buy-side firms are moving from using data and analytics internally (for trade and investment decisions) toward providing analytical platforms for other ecosystem players. A key example is BlackRock's Solutions business, which, according to public financial records, generated nearly \$600 million in revenues in 2016, a 13% increase over 2015.

## EXHIBIT 8 | Value Creation Is Increasingly Linked to Having Differentiated Digital Capabilities



**Sources:** S&P Capital IQ; LinkedIn; BCG analysis.

**Note:** Digital-skills prevalence is the percentage of employees reporting at least one of 33 digital skills, according to the LinkedIn profiles of current employees at each firm (search conducted Q1 2017). The 33 skills fall into three broad categories: data analytics, software development, and emerging tech trends. The three-year TSR percentage was calculated for the period ending on December 31, 2016.

Historically, banks have focused on creating value from data and information largely in two ways: by using internal data and analytics tools to inform trading decisions, and by providing research and advisory services—typically through a bundled, soft-dollar commission model—to create customer stickiness and drive incremental business. Secular trends and regulatory changes promoting greater transparency, however, have challenged the traditional model and opened up new opportunities for generating value.

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## New technology lets banks diversify the ways they provide information to clients.

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Banks still use internal data to inform trading decisions, but now technology is facilitating the development of smarter customer relationship management tools and analytics. For example, predictive analytics and machine-learning techniques are enabling banks to gain a more complete understanding of the customer. Such methods allow for a more robust, customer-centric approach to client services that can drive higher retention, cross-selling, and upselling. Technology-savvy banks are already making considerable investments in this space.

Similarly, technology is enabling banks to diversify the ways in which they provide information and advice to clients. In addition to supplying research reports and guidance, banks are now capable of offering enriched data and software and analytics platforms, much like certain buy-side players. At least two major investment banks are doing this already: Goldman Sachs decided to open up its front-office risk system, SecuritiesDatabase (known as SecDB), to clients in 2015, and JP Morgan announced that it is considering following suit with Athena in 2018. In both instances, the platforms were originally developed for internal use but are now being opened up to external market participants. These developments are in many ways the next iteration of a longer-standing practice of banks identifying ways to monetize internal

data where possible. Previous examples of this phenomenon include RiskMetrics (spun out of JP Morgan Labs) and the MSCI indices, formerly part of Morgan Stanley. Advances in cloud technology and open APIs will enable banks to achieve economies of scale for themselves and their clients.

When evaluating the provision of data, information, and analytics to clients, banks looking to maximize value creation must carefully consider the pricing model and method of distribution employed.

From a pricing perspective, declining trading margins and volumes across many products is making the traditional model of soft-dollar commissions harder to rationalize. Moreover, MiFID II puts additional pressure on this model. Banks are significantly reducing their own research offerings, coincident with the rise of pure-play research boutiques charging clearly defined subscription fees to clients. Against this backdrop, banks should be actively re-evaluating whether to adopt more explicit pricing models for their research, data, and analytics services. A considered, value-based approach will, by necessity, involve customer segmentation and pricing for clients that is tiered on the basis of their value to the bank.

In addition, banks that choose to provide data to external ecosystem participants will need to determine the best distribution strategy. This includes choosing the right delivery channel (data download, platform, or bundled product) and deciding whether to offer products on their own or to partner with an existing information provider to gain broader reach. Banks should also look for opportunities to set standards for their particular data niche in order to establish and maintain a leadership position and thus drive value creation higher in the future.

## Shifts in Market Structure

Technology also serves as a key driver of value migration in the capital markets industry, particularly for secondary-market-making activities. While speed, informational advantage, efficient customer flow, and effective use of proprietary capital have always been essential aspects of a profitable market-making busi-

ness, the way these elements are implemented is changing dramatically. Improvements in technology have enhanced the ability of firms of all sizes to directly access institutional markets, analyze large swaths of public trading data, and use analytics underpinned by predictive algorithms to create arbitrage opportunities, often involving little or no risk to capital. Technological change, in conjunction with regulation, has also accelerated the electronification of secondary-market trading, which is both forcing investment banks to adapt their business models and bringing new types of competitors into the mix.

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## The growth of PTFs continues to put pressure on the supermarket model.

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It is worth noting that the shift to electronic trading is not happening at the same speed across all asset classes, or even across all types of trades in the same asset class. The most sweeping changes have occurred for highly liquid instruments and, within these asset classes, for smaller-ticket orders in particular. More illiquid instruments and larger orders continue to be traded by voice, so investment banks now face a bifurcated market with distinct operational models and economics.

Large banks navigating this new environment are being challenged to manage voice and electronic trading in parallel, and potentially to find opportunities to slow the transition to multilateral trading platforms (such as through the development of bilateral trading platforms in foreign exchange). Midsize and regional players are facing the greatest hurdles from the shift to electronic trading. These players, lacking in both large-block trade business and the scale to invest in electronic-trading infrastructure, are trading smaller lot sizes by voice, which, because of its manual nature, is better suited to higher-margin, OTC, or bespoke products, such as exotic derivatives or large-block trades.

Markets that have shifted to electronic trading (such as equities, spot foreign exchange,

and futures) are highly centralized, with standardized products, very tight margins, and public dissemination of trading sizes and prices. Because of the low-margin nature of the business, significant trading volumes and informational advantage are required to ensure profitability. High-speed order execution, access to customer order flow, tactical deployment of capital for risk positioning, and superior predictive algorithms are fundamental strategic advantages for players in these markets, which also lend themselves to agency or riskless-principal models.

Market electronification also has enabled the rise of principal trading firms as a new form of market maker in the industry. In contrast to traditional investment banks, PTFs are generally lightly capitalized and largely unregulated investment firms that use cutting-edge technology to make markets. They are highly specialized, operating only in select markets, and do not offer research, underwriting, or other traditional investment banking services. Such firms often have many more coders than traditional traders and make significant investments in technology infrastructure.

PTFs first started to engage in market making with stocks in the 1990s and early 2000s. As markets became more centralized and lit post-crisis, and as capital costs rose for banks, PTFs expanded their footprint into spot foreign exchange, interest rate swaps, and cash rates, among other asset classes. The combination of high revenue growth and lower CIR compared with banks has translated into greater profitability per employee for PTFs and is helping to fund their ability to potentially enter adjacent products.

Given their advanced technology and infrastructure, PTFs are also beginning to seek diversification of their business beyond the pure market maker model into areas such as risk management analytics, liquidity outsourcing to third parties, and other services. The growth of PTFs and their increased prominence—as witnessed by their increasing share of trading volumes in electronically traded asset classes—continue to put the supermarket model of investment banking and capital markets services under pressure.

# STAYING COMPETITIVE AMID ONGOING CHANGE

CYCLICAL FACTORS, SUCH AS higher volatility and an improved macroeconomic outlook, fueled stronger revenue growth for the capital markets industry as a whole in 2016. Investment banks benefited from a slowdown in revenue declines and increasingly positive investor sentiment due to the prospect for regulatory relief.

While favorable tailwinds seem possible in the short run, digital disruption remains a powerful secular force that will continue to shift value to firms that can exploit opportunities provided by the evolution toward more digitized markets. In our view, there are a number of critical actions required of all players—including information providers, exchanges and venues, buy-side firms, and investment banks—in order to remain competitive amid continued market change.

## Identify Where to Play

Market evolution is forcing firms to reinvent themselves, to move beyond their traditional lines of business in order to capture new pockets of value and to retreat from activities that are no longer profitable. To do this successfully, firms must identify the subsegments of the industry that have the highest growth potential and that align with their core competencies and established competitive advantages.

Reinvention will ultimately mean different things for different types of institutions. For many large banks, success will be driven by further optimization of the supermarket model of banking—aimed at both improving return on capital and reducing costs through emerging technologies, such as automation and robotics, while maintaining investments in voice-driven markets.

For large information providers, identifying new ways to distribute data beyond the traditional desktop model will become increasingly important as banks continue to reduce the workforce. Information providers should also continue to look for opportunities to capitalize on secular industry trends—for example, by expanding their proprietary index and benchmark offerings to capture benefits from the shift toward passive investing.

Major exchanges and clearing-houses, too, will need to diversify further into high-margin and high-growth segments of the value chain. With regard to execution, for example, exchanges should continue to place less emphasis on cash products and more on listed derivatives. Moving beyond providing market data to offering enriched data and software and analytics will also be crucial for sustained growth. Identifying novel sources of data and information that can inform decisions on both the buy side and the sell side will prove lucrative to firms that are able to

develop an offering that cannot be easily replicated by competitors.

For regional investment banks, as well as for boutiques and dealers, success will be determined by a willingness to eschew businesses with marginal impact and focus on core strengths, such as specific locations, product types, and market segments. Providing superior service to a targeted set of clients will be critical to staving off competition from powerhouse banks and technology upstarts.

## Develop an Information Strategy

Since its inception, informational advantage has played a critical role in value creation in the capital markets industry. Technology and digital evolution have expanded the universe of data and information available to the market, eroding the informational advantage traditionally held by investment banks. It has also opened up opportunities for players of all types to generate value not only for themselves but also for the industry as a whole.

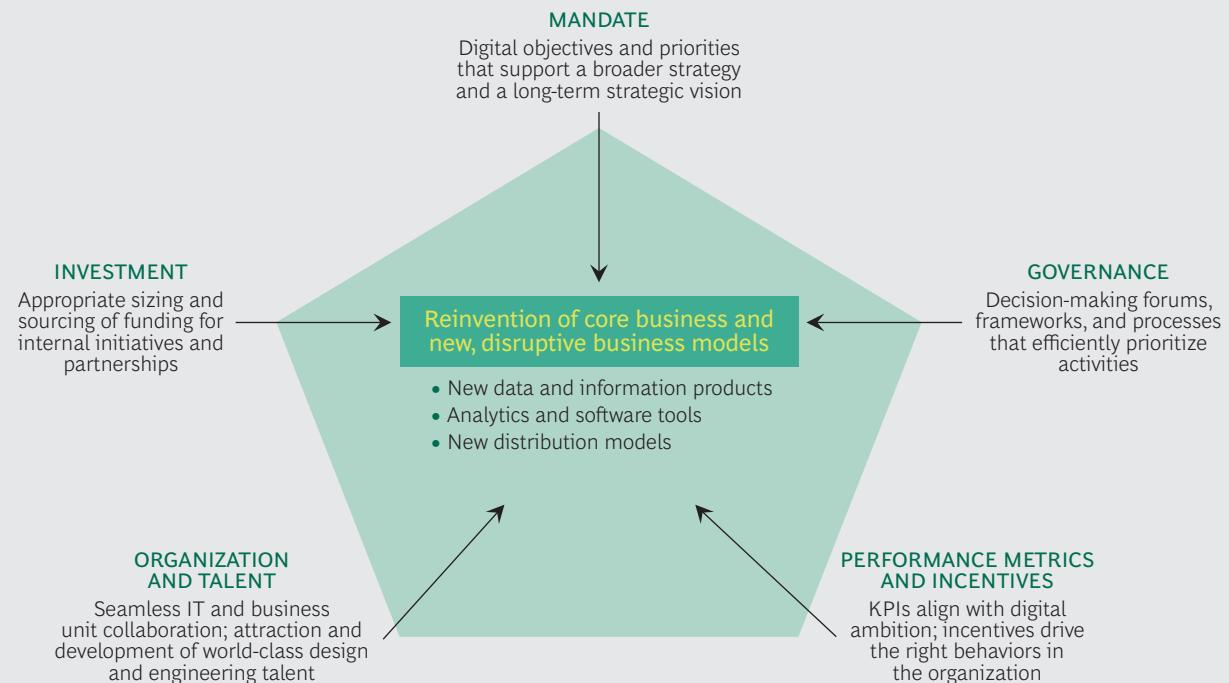
In order to remain competitive in today's environment, firms must have a digital vision

and a strategy that includes a clear articulation of the company's approach to data and information. The strategy should identify the ways in which the organization will derive revenue growth from these sources, both indirectly (through smarter methods of using data within the organization) and directly (through explicit monetization of new data and analytics products for external ecosystem participants). The information strategy should provide focus and inform the broader business strategy so that firms can generate synergies from information offerings coupled with their core advisory, trading, or execution products.

## Formulate a Digitally Oriented Operating Model

Regardless of where a firm chooses to focus or steer its broader strategic objectives, players of all stripes will need to ensure that their operating models are aligned with an increasingly electronic, data-driven, digital market in order to spur innovation. (See Exhibit 9.) Many nonbank firms started out as technology-based companies and then evolved to engage in financial services, and many banks have not been able to adapt as quickly.

### EXHIBIT 9 | Firms Must Adopt a Digitally Oriented Operating Model to Innovate and Unlock Growth



Source: BCG analysis.

In order to keep pace, banks must first place the highest priority on embracing a digital approach to their activities. It is also critical that banks develop a set of best practices regarding talent, organization, and ways of working in their processes and operations that will enable them to reinvent and create new and disruptive business models.

- **Digital.** Prioritizing digital is essential to ensure long-term success in the evolving marketplace. Regulatory pressures and unfavorable macroeconomic conditions have led many sell-side leadership teams to focus more on near-term challenges than on long-term innovation. Yet in order for digital transformation to succeed, it must be a top priority on the CEO's agenda, with appropriate levels of funding to support both internal initiatives and engagement with outside innovators. Governance processes and frameworks should be designed to ensure continuous reassessment of priorities in an environment of accelerating market change.
- **Talent.** A digitally aligned leadership team must be complemented by a workforce that has the right types of skills—such as machine learning, predictive analytics, cloud computing, robotics, and automation—to execute the digital strategy. Digital disruption is not unique to capital markets, of course. People with the right technology skills are in extremely high demand across most industries, and the skills required to stay competitive in the capital markets industry are constantly changing. In order to ensure that the right individuals are being identified and hired at the right time, institutions must take a proactive approach to developing their digital talent pipeline. Compensation must be compelling when compared with packages offered by competitors, and performance metrics and incentives must be designed to reward the right behaviors.
- **Organization.** Banks must follow the lead of nonbank, technology-first firms and adopt a model that enables seamless integration among business and IT functions. Embedding digital talent into

the business unit gives technologists a deeper understanding of existing business needs, which can help them drive value creation in a more targeted, effective manner. A tighter link between business and IT, bolstered by clear governance and decision rights, also facilitates a culture of collaboration and trust.

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## Prioritizing digital is essential to long-term success in the evolving marketplace.

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Encouraging innovation within the business unit is the most effective way to solve immediate business problems, but it may not be sufficient for fostering longer-term, blue-sky innovation at the cutting edge. For players that want to be first movers—or even fast followers—it is also important to identify the right organizational setup for the innovation group, such as being embedded entirely within the business units, formed as a separate lab, or installed as a hybrid of the two. Ultimately, this decision should take into account the organization's particular ambitions, culture, core talent, and legacy. Once established, the innovation group should develop a carefully considered plan of engagement with outside innovators (such as through M&A, venturing, and incubators) to help ensure that the organization stays atop technological developments.

Given the high degree of fragmentation in the data and software space, continued M&A activity may be the most efficient way to diversify into emerging areas of opportunity. By identifying fruitful consolidation opportunities early on, firms can realize revenue gains that enable greater reinvestment into data and technology. The result can be a virtuous cycle of growth that will reward firms that move quickly and strategically.

All capital markets players, but particularly investment banks, also need to broaden their perspective on how partnerships, joint ventures, and alliances can be leveraged to achieve strategic objectives. Partnerships are

not a new phenomenon in the industry, of course, as banks have been outsourcing middle- and back-office post-trade processes for years. However, partnerships are more than just a mechanism for cost mutualization. They can also allow organizations to capitalize on market evolution and to enter into new pockets of growth. Given the limited number of firms in the ecosystem, first movers gain a significant advantage by identifying new and innovative partnership models that generate synergies and give all parties involved a competitive edge.

Banks must also find new ways of working (in their processes and operations) to enable greater agility, rationalize costs, and foster innovation. As with organizational structure, banks looking to become more nimble should follow the lead of tech companies and embrace agile and continuous-development principles. Such principles encourage short development cycles and more frequent product releases to lower so-called delivery risk and allow benefits from product innovation

and change to be realized early on. Banks must also continue to be vigilant about simplifying legacy IT architecture and about adopting new technologies that can reduce operational expenses and create a leaner organization.

## Take a Proactive Approach to Regulatory Change

As regulators, particularly those in the US, re-evaluate post-crisis policies, firms will need to move proactively to become part of the discussions and to devise plans of action that can be implemented under various regulatory scenarios. Firms that have a seat at the table will be better able to shape regulatory change and to anticipate decisions that may impact future revenue growth. Proactively planning for regulatory change will also enable firms to seize opportunities and win market share from firms that adopt a more passive approach.

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