

Global Corporate & Investment Banking Practice

# Global Corporate and Investment Banking: An Agenda for Change





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## Foreword

Four years after the financial crisis, the agenda for change within the global corporate and investment banking (CIB) industry remains significant. In this compendium, we bring together five articles published over the past year that serve as a ready reckoner for the CIB agenda—not just for capital markets and banking, but also for critical components of the banking infrastructure that supports funding.

*Day of Reckoning* explores the impact of new regulation on capital markets businesses. After-tax return on equity for these businesses is likely to fall from 20 percent pre-regulation to 7 percent, absent any mitigating actions by banks. We suggest strategies that banks can pursue to manage the impact of regulation on their capital markets businesses and to maintain an acceptable level of profitability. We examine portfolio optimization, model and data quality improvements, financial efficiency and operational enhancements.

*In Europe: Beyond the Crisis, New Challenges and Opportunities*, we review the impact of new regulation on corporate banking businesses. Despite significant reductions in credit costs, profits remain well below 2007 peaks in these businesses. Many of the mitigation strategies for capital markets businesses are relevant to restoring profitability to corporate banking. In addition, banks should consider upgrading cross-selling, taking pricing to the next level and improving risk culture.

*Asia: The Future of Corporate and Investment Banking* provides a comprehensive overview of one of the key CIB growth markets. Asia is expected to account for a startling 43 percent of global CIB market growth between 2010 and 2015. Here, the agenda is focused on how to take advantage of three large business opportunities for banks: the rapidly growing mid-corporate segment, the growth of Asia's capital markets and the continued expansion of regional transaction banking.

In *Out of the Shadows: Central Clearing of Repurchase Agreements*, we examine an important initiative that would strengthen the bank funding infrastructure. The U.S. repo market is estimated to be \$12 trillion, equal in size to the total assets of the regulated banking sector. Here we lay out an agenda that would deliver clear benefits for all participants without being disruptive to the industry:

- Novation of bilateral transactions to reduce risk.
- Electronic communications networks (ECNs) to match cash supply and demand.
- Expansion and substitution of collateral to increase flexibility.

Lastly, *Winning in Flow: Scale Is Everything* highlights findings from the McKinsey Global Capital Markets Survey (focused on revenues) and the McKinsey Capital Markets Trade Processing Survey (focused on trade costs). These surveys provide clear evidence of the major increases in revenue and cost productivity that occur as scale increases. Both small and large players need to pursue agendas that will achieve actual or virtual scale, deliver or access required operations and electronic systems, and make the required organizational changes or tough strategic choices.

The agenda for change in the CIB industry is long, and the implementation challenges are many. We hope that this compendium provides helpful insights and stimulates valuable discussions, as banks adapt to a radically altered environment. As always, we welcome your comments and look forward to hearing your thoughts on these critical issues.

**Dominic Casserley**

Global Leader

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## Day of Reckoning? New Regulation and Its Impact on Capital Markets Businesses

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The financial crisis of 2008–2009 prompted a wave of banking reform. Massive new regulation has been agreed on in Europe and the United States, and regulators and bankers are now rolling up their sleeves to prepare for the next phase of compliance and implementation. Banking leaders are keen to understand the complexities of proposed reforms and their impact on different businesses. They are especially interested in knowing the effects on those businesses that are the subject of the stiffest reforms.

This article deals with these questions in relation to the capital markets business. McKinsey studied trading and services in foreign exchange, rates, credit and commodities, also known as fixed income, currencies and commodities (FICC); cash eq-

Exhibit 1

**Capital markets businesses analyzed**

<b>Business</b>	<b>Products and services</b>
<b>Foreign exchange (FX)</b>	Spot FX, forward FX, FX swaps, FX options, exotic FX derivatives, e.g., digitals, barriers, baskets, knock-ins, knock-outs
<b>Flow rates</b>	Short-term interest rate and money market, benchmark bonds, covered bonds, flow derivatives
<b>Structured rates</b>	Structured interest-rate swaps, correlation swaps, flow-inflation swaps, long-dated and structured FX, interest-rate hybrids
<b>Flow credit</b>	Corporate bonds, credit-default swaps, total-return swaps, credit-linked notes, corporate-bond futures and options, asset-backed securities, corporate and residential mortgage-backed securities, par loans, syndicated loans
<b>Structured credit</b>	Cash-collateralized debt obligations, synthetic collateralized debt obligations, baskets, tranche options, index tranches, correlation transactions
<b>Commodities</b>	Trading of flow commodities derivatives and swaps of structured products, trading of structured commodities derivatives, structuring of complex hedges, commodities origination, complex investment products, asset-backed trading
<b>Cash equities</b>	Full-service brokerage/secondary trading of single stocks, direct market access, portfolio trading
<b>Flow equity derivatives</b>	Delta 1 swaps, Delta 1 certificates, warrants
<b>Structured equity derivatives</b>	Structured swaps/options, certificates, hybrid derivatives, convertibles
<b>Prime services</b>	Security lending, security financing
<b>Proprietary trading</b>	Trading on institution's account rather than client business

Source: McKinsey Global Capital Markets Survey

urities and equity derivatives; prime services; and proprietary trading (Exhibit 1).<sup>1</sup> The data set is the capital markets businesses of the world's 13 largest investment banks and investment banking divisions of universal banks, as measured by revenue.<sup>2</sup>

The regulations considered include Basel II.5, Basel III, the Dodd-Frank Act, and other regional regulations. McKinsey measures impact in terms of post-tax return on equity (ROE). The analysis builds on earlier McKinsey research, namely assessments of the broad impact of Basel III and Dodd-Frank,<sup>3</sup> and McKinsey's annual

<sup>1</sup> Rates, credit and equity derivatives are further broken down into flow and structured businesses. Investment banking advisory services and primary businesses, such as equity capital markets and debt capital markets, are not within the scope of this article, as they represent only 20 percent of the broader capital markets and investment banking (CMIB) business, are not capital intensive, and are much less affected by regulatory reform. Similarly, corporate banking businesses, such as specialized finance, lending and transaction banking are not in scope.

<sup>2</sup> Bank of America/Merrill Lynch, Barclays Capital, BNP Paribas, Citibank, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, JPMorgan Chase, Morgan Stanley, RBS, Société Générale, and UBS.

<sup>3</sup> McKinsey Working Papers on Risk, No. 26: "Basel III and European banking: Its impact, how banks might respond, and the challenges of implementation," November 2010; McKinsey Working Papers on Risk, No. 25: "Assessing and addressing the implications of new financial regulations for the U.S. banking industry," March 2011, [www.McKinsey.com](http://www.McKinsey.com).



Global Capital Markets Survey and Global Banking Pools.<sup>4</sup> It also draws on the experience gained from several projects designed to implement the changes required by Basel III and Dodd-Frank at top investment banks and some next-tier banks, and on insights obtained from participating in industry discussions and regulatory debates.

The assessment measures the full impact of regulation, including new capital, liquidity and funding requirements; product-specific restrictions; and structural changes to markets, for example, in securitizations, over-the-counter (OTC) derivatives, and proprietary trading. Several of the new rules will be phased in over time through 2019, but for the sake of simplicity their impact is calculated as if they went into immediate effect.

The model includes those requirements that have material and broadly similar impact on capital markets businesses' profitability in all parts of the world. Excluded from the quantitative analysis is the impact of new rules that will have widely different effects on banks (such as capital deductions, whose impact depends heavily on the composition of the balance sheet, and changes to compensation, which vary considerably from bank to bank). Likewise, rules that pertain to specific regions, such as the Volcker rule in the U.S., and taxes and levies like those adopted in the UK and Germany, are not considered.

Further financial reform is in process or under discussion. For example, the Basel Committee on Banking Supervision launched its consultation process on capital surcharges for systemically important financial institutions (SIFIs) in July 2011. Moreover, the details of many new rules, especially those in the Dodd-Frank Act, have yet to be written. Because of the inherent uncertainty, the effects of any potential new regulation that could put further pressure on ROEs is not included.

To better understand the total impact of the new rules on capital markets, McKinsey's analysis distinguishes between first-, second-, and third-order effects:

- First-order effects are the direct impact of regulation on business due to increases in capital required and expected effects on revenues (that is, declines in margins for products that must shift to central clearing and increased liquidity and funding costs). These effects are expressed in terms of reduction in ROE.
- Second-order effects are banks' short-term responses: the impact on revenues, costs and capital resulting from banks' likely mitigation actions, which are mostly efficiency and effectiveness gains in current businesses. These are measured as increases in ROE.

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<sup>4</sup> <https://solutions.McKinsey.com/globalbankingpools/cms/>.

- Third-order effects are longer-term structural shifts, including changes in margins (repricing) and business models. The potential for repricing is estimated in each business, and other shifts are discussed in qualitative terms.

### General notes

McKinsey's assessment assumes that trading volumes vary in line with historical precedents. However, some industry observers expect unusual changes in trading volumes over the next few years as a third-order effect of new regulation. McKinsey's recent research<sup>5</sup> (focused on the developed European and U.S. sectors) suggests that trading volumes may increase or decrease by 20 to 30 percent from 2010 to 2013, depending on which of several scenarios prevails. Current market sentiment suggests stagnant growth or a slight decline. Specifically, McKinsey expects a decline in FICC, a secular shift that is already apparent in banks' second quarter 2011 results. This trend will be exacerbated by regulation, especially in structured credit and rates, where higher capital requirements will drive down trading volume. Indeed some markets, such as those for re-securitizations, collateralized debt obligations (CDOs), or credit default swap (CDS) indexes, may even cease to exist.

The effect of new regulation will differ significantly by region. U.S. banks, for example, will need to address Dodd-Frank, as well as Basel II.5 and III. Asian banks may not be directly affected for the next few years, depending on the timetable that Asian governments adopt for implementation of Basel III. National discretions, such as the higher capital requirements that Switzerland has already implemented and the UK is considering and the differences in timing and depth of implementation of Basel III among countries, will result in significantly differing impact. This may well create an unlevel playing field.

## The Impact of New Regulation

In assessing Basel III and its impact on European banking, McKinsey has estimated that universal banks will see a significant decline in ROE of four-to-five percentage points, which will take them from a historical average ROE of 15 percent to a level near their cost of equity.<sup>6</sup> Capital markets businesses are likely to be much more adversely affected than retail or corporate banking businesses.

<sup>5</sup> "New but not yet normal: Corporate and investment banking in transition," June 2010, [www.McKinsey.com](http://www.McKinsey.com).

<sup>6</sup> McKinsey Working Papers on Risk, No. 26: "Basel III and European banking: Its impact, how banks might respond, and the challenges of implementation," November 2010, McKinsey & Company.

## **ROE impact**

The first-order effects of the new regulation, as modeled by McKinsey, will be to lower ROE of global investment banks from the baseline level of 20 percent to about 7 percent. Most of this dramatic drop of about 65 percent is driven by the new requirement to more than double Tier 1 capital in today's capital markets businesses. To be sure, an industry ROE of 7 percent is a hypothetical figure. Banks have already begun to carry out mitigating actions to restore profitability and will continue to do more.

For the top 13 investment banks, this 65 percent drop in ROE is the result of a decline in profit after tax to \$30 billion from about \$40 billion (25 percent) and an increase in Tier 1 capital requirements to more than \$400 billion from \$200 billion. The decline in profit is driven mainly by the higher costs for liquidity and funding as a result of regulation.

## **Drivers of impact**

About 75 percent of the ROE impact across all capital markets businesses (10 points of the 13-percentage-point decrease) is driven by the new capital requirements for market and counterparty risk (Exhibit 2, page 8):

- New rules on market risk will lower ROEs by slightly more than seven percentage points.
- Counterparty-risk charges will fall heavily on OTC derivatives, driving ROEs down by about three percentage points. OTC derivatives will be impacted by two other effects: an increase in ROE as many OTC derivatives are shifted to central counterparties, all but eliminating counterparty risk, and a decline in ROE as spreads narrow on the shifted derivatives and trading revenues fall. The net first-order effect of all three derivatives rules is a loss of more than two percentage points of ROE.

The four new ratios (capital, liquidity, funding and leverage) account for the remaining impact of about three percentage points.

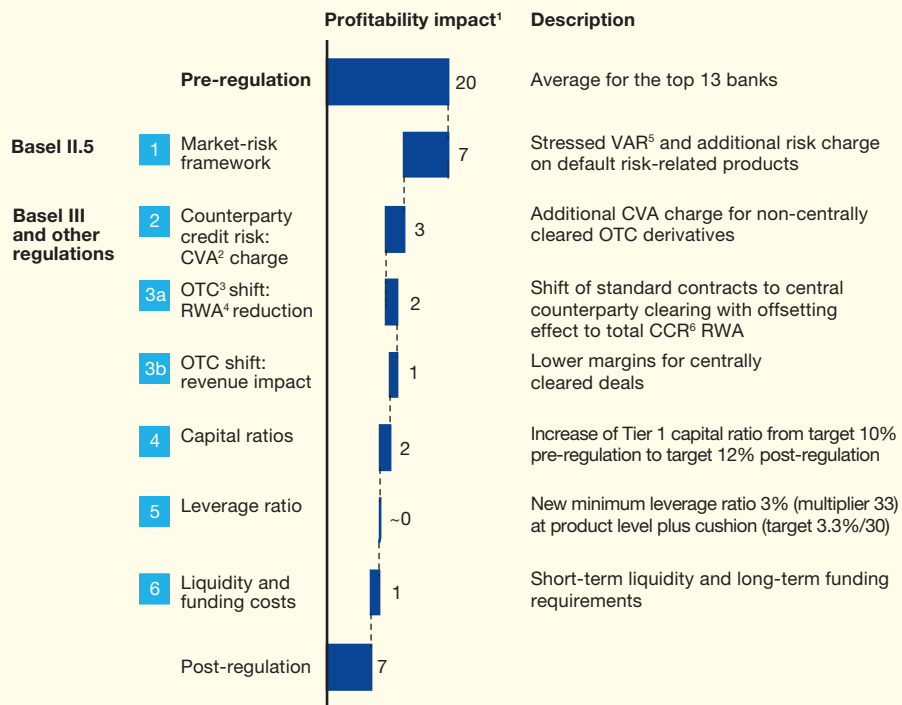
The regulations that will have by far the greatest impact on capital markets businesses are:

- The new **market-risk framework** will more than double the current capital requirement to support market-risk risk-weighted assets (RWAs) or RWA equivalents. The increase in RWAs comes from additional capital charges for stressed value-at-risk (VAR) for all products, as well as the incremental-risk charge (IRC), a new securitization charge, and the comprehensive-risk measure (CRM) for credit and rates products and proprietary trading. Some of these products, such as structured credit, may see as much as a six-fold increase in capital requirements.

Exhibit 2

## The decline in return on equity is driven by several new rules

Impact on return on equity across all capital markets businesses  
Percent



<sup>1</sup> The relative difference in the size of the effects is partly an artifact of the manner of representation (i.e., listing market risk first makes it appear larger).

<sup>2</sup> Credit-valuation adjustment

<sup>3</sup> Over-the-counter

<sup>4</sup> Risk-weighted assets

<sup>5</sup> Value-at-risk

<sup>6</sup> Counterparty credit risk

Source: McKinsey analysis

- The current **counterparty credit-risk (CCR) charge** will increase by a factor of about 2.5, driven by the additional credit-valuation adjustment (CVA) charge for OTC derivatives that are not centrally cleared, and an increase in asset-value-correlation multipliers for large financial counterparties. The CVA considers the extent of collateralization and the maturity and credit-worthiness of the counterparty, resulting in higher charges for long-term contracts and low-quality counterparties (as are often found in structured rates, credit and proprietary trading).
- The mandatory **shift of OTC derivatives to central counterparty (CCP) clearing** will have two major effects. On the one hand, the capital requirements for counterparty credit risk and the new CVA charge are “transferred”

to the CCP, increasing ROE. On the other hand, margins for centrally cleared products are generally about 40 to 50 percent lower. This will weaken revenues and reduce ROE. The net effect is slightly positive across capital markets businesses and higher for businesses, such as flow rates and commodities, whose products carry substantial counterparty risk and are likely to be included in the shift to central clearing. (Note, however, that with the CVA charge on non-centrally cleared products, the OTC derivatives business as a whole will see its ROE decline.)

- The target **capital ratios** will affect the entire bank and will have the most impact on risk-heavy businesses (such as credit, rates and proprietary trading). McKinsey assumed an increase in target Tier 1 capital ratio to 10-to-12 percent, reflecting a buffer above the minimum requirement typically held by most banks. (New SIFI regulations may drive the target Tier 1 ratio higher to 15-to-16 percent, and core Tier 1 to about 9-to-10 percent.)
- McKinsey is assuming a **leverage ratio** of 30:1 (that is, a capital requirement of 3.33 percent of assets)<sup>7</sup> across products. For capital-intensive products, the leverage ratio will be automatically fulfilled through the new target capital ratios. The leverage ratio is likely to have material effects only for prime services.
- The new **liquidity coverage ratio (LCR)** establishes requirements to ensure adequate short-term liquidity. The criteria for inclusion in the liquidity buffer exclude cash FX and cash-equities products. Only cash and government bonds are fully included. To a lesser extent, high-quality corporate and covered bonds are also eligible. On the other hand, some considerable net cash outflow is to be covered, especially for longer-term products. McKinsey assumed that banks will be prudent and exceed the requirements of the LCR by a small margin, assessing the impact of the LCR at a target level of 105 percent.
- Similarly, the new **net stable funding ratio (NSFR)** seeks to ensure adequate long-term funding. To comply with the NSFR, banks will need to shift from the current focus on short-term funding and raise more long-term funding. Short-term products, such as FX and cash equities, are much less affected by the NSFR than businesses with longer-term products, such as structured credit, structured rates and proprietary trading. Here, too, McKinsey assumed that banks will be prudent and exceed the minimum NSFR of 100 percent, granting themselves a cushion of 5 percent.

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<sup>7</sup> In the U.S., the Dodd-Frank Act may require an even tighter 15:1 debt-to-equity ratio—that is, approximately 6.67 percent capital per asset ratio, on top of ordinary capital requirements, for systemically risky bank holding companies with assets over \$50 billion and for designated non-bank financial companies.

## First-Order Effects on Businesses

Direct impact will vary widely across businesses. Some products implicated in the financial crisis, such as securitizations and re-securitizations, OTC derivatives, and sub-prime products, are the subject of specific regulation. Thus, businesses that deal in these products will be most affected.

- **FICC** will see a more significant decline in ROE than equities businesses. This is especially important, as FICC has historically accounted for as much as 70 percent of industry revenues.
- **Structured credit** and **structured rates** will be hardest hit, especially by the new market and counterparty-risk requirements. Before second- and third-order effects, ROEs will fall to the low single digits. In some cases, it is conceivable that some of these businesses will not continue in their current form.
- **FX** and **cash equities** will likely be least affected and remain quite profitable.

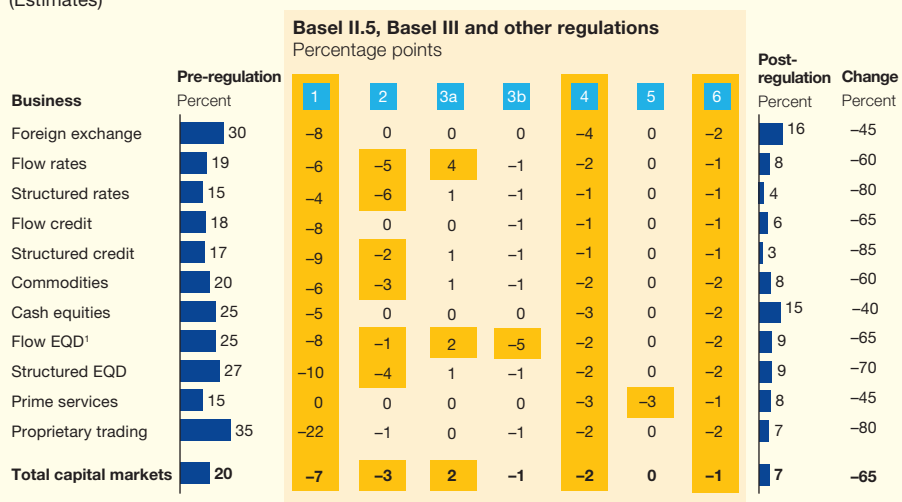
Exhibit 3 summarizes ROEs for each business before and after regulation. It should be noted that in almost every case, the first-order effects on ROE detailed here can be substantially remediated by banks.

- **FX** is one of the least affected businesses; McKinsey calculates a post-regulation ROE of about 16 percent, down from about 30 percent. To be sure, a decline of 14 percentage points is substantial, but represents only a 45 percent decline, lower than for most other businesses. FX is a capital-lite business characterized by quick turnaround and little overnight risk taking. However, it will still be affected by the market-risk framework and capital and liquidity ratios. It currently represents 15 percent of revenues (on average).
- **Rates products** are affected both by increased counterparty-risk charges as well as new market-risk charges.
  - **Flow rates** will be substantially affected by both market risk and CCR. McKinsey estimates that the ROE for flow rates will decline from 19 percent to 8 percent (a 60 percent decline). CCR charges will be modulated by a significant shift of OTC derivatives to central counterparties; an estimated 50 to 60 percent of OTC derivatives will move to CCP clearing houses. While severe, the impact on flow rates is less than on structured rates, as this business relies on higher-quality securities and simpler products with shorter maturities. The flow-rates business accounts for 20 percent of revenues, making it an important capital markets business.
  - The **structured rates** business is substantially affected by the CVA charge as well as the market-risk rules. Because structured rates products are rarely

Exhibit 3

### All businesses are affected, especially structured credit and rates

Return on equity before and after regulation  
(Estimates)



**Rules**

- 1 Market-risk framework    3a OTC shift: RWA<sup>2</sup> reduction    4 Capital ratio    6 Liquidity and funding costs
- 2 Counterparty credit risk    3b OTC shift: revenue impact    5 Leverage ratio    Most significant impact

<sup>1</sup> Equity derivatives

<sup>2</sup> Risk-weighted assets

Source: McKinsey analysis

standardized, few will shift to central clearing. In total, McKinsey estimates that ROE will decrease from about 15 percent to 4 percent (an 80 percent drop). Structured rates account for approximately 5 percent of industry revenues.

- **Credit products** are most critically affected by the new market-risk framework.
  - **Flow credit** is less affected than structured credit; flow businesses rely on more standardized products with shorter maturities than their structured equivalents. McKinsey estimates the ROE for flow credit will decline from 18 to 6 percent (a 65 percent decline). As flow credit accounts for approximately 20 percent of revenues, this decline is critical.
  - As noted above, **structured credit** is the most affected of all products. McKinsey estimates ROE will drop from 17 percent to 3 percent (an 85 percent fall). It will take the full blow of the new market-risk framework, including stressed VAR charges, the incremental-risk charge (IRC), the securitization charge, and new requirements for correlation trading. Although structured

credit only accounts for approximately 5 percent of revenues, material structural changes are expected in response to regulatory impact.

- ROEs in the highly volatile **commodities** businesses are expected to decline from 20 percent to about 8 percent (a 60 percent decrease on approximately 5 percent of revenues), again, mainly from new market-risk charges and counterparty credit risk.
- **Cash equities** is one of the least affected businesses; McKinsey estimates that its ROE will decline from 25 percent to about 15 percent (a 40 percent ROE decline on approximately 10 percent of revenues), driven mainly by its market risk.
- **Equity derivatives** businesses will be more significantly affected by regulation than is generally acknowledged. Like other derivatives businesses, they will be impacted by the new CVA charge.
  - **Flow equity derivatives** businesses can partially offset the CCR charges through the shift to central clearing. McKinsey estimates a net ROE decrease from 25 percent to about 9 percent (a 65 percent decline on 5 percent of revenues).
  - **Structured equity derivatives** contracts are usually customized and not eligible for central clearing; ROE is expected to decrease from 27 percent to about 9 percent (a 70 percent decline on 5 percent of revenues).
- **Prime services** will likely continue to provide stable profitability, though at a much-reduced level. Returns will fall from 15 percent to about 8 percent (a 45 percent ROE decrease on 5 percent of revenues). The business is not subject to market or major counterparty-risk charges, but will be affected by capital and leverage ratios.
- **Proprietary trading** enjoyed an average pre-regulation ROE of 35 percent. It will be severely affected by market-risk requirements. ROE is estimated to fall to 7 percent (an 80 percent ROE decrease on 5 percent of revenues).<sup>8</sup>

### Impact on next-tier firms

Our data set comprises the 13 largest capital markets firms in the world. These firms represent about 60 percent of the market (approximately \$165 billion of the total \$280 billion in 2010 industry revenues). Hundreds of next-tier firms make up the rest of the market, and they are a highly diverse group, ranging from small boutiques to full-service firms with multi-regional reach. While it is difficult to generalize

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<sup>8</sup> As mentioned before, this does not reflect the impact of the Volcker rule in the Dodd-Frank Act, which, in the final interpretation, might require banks to completely shut down their proprietary-trading businesses.



about such a group, the next-tier players typically have a lower baseline ROE of about 13 to 18 percent, mainly because of the absence of scale effects. In equities, for example, the top 13 firms are more profitable than next-tier firms. Higher volumes are one factor; a business mix that emphasizes cash over derivatives is another; and different geographies is a third. The first-order effects described above are likely to be roughly similar for these firms, though with much greater variation. Some of the next-tier firms, for example, will be less affected because of their more conservative portfolio mix. Such firms focus on capital-lite, highly standardized products, with less emphasis on structured products. (For example, the annual McKinsey Global Capital Markets Survey and global banking research estimate that smaller firms derive about 40 percent of revenues from FX and cash equities, as opposed to about 25 percent for global banks.) In contrast, some of the biggest next-tier firms will likely be more affected, because they do corporate business and more derivatives with second-tier financial institutions, driving high CCR charges. Some boutique firms may be much more adversely affected. A firm that specializes in structured credit might even be forced out of existence.

In equities, for example, the top 13 firms are more profitable than next-tier firms.

As a rough estimate, first-order effects for next-tier firms will lead to a decline in ROE of about six to eight percentage points—serious and substantial (a 45 to 50 percent decline), but not as bad as the 65 percent decline projected for the top 13 firms.

## The Response: Banks' Mitigating Actions

What must banks do to remain profitable? There are two imperatives: conserve capital and boost efficiency. All top players have already set up programs, both to ensure compliance with the new rules and—the second-order effect of regulation—to make tactical changes to adapt capital markets businesses to the new rules.

There are four categories of tactical responses leading banks have taken:

- Optimizing portfolios, including improved hedging, sale of capital-intensive portfolios, and restructuring or unwinding of positions.
- Improving risk and capital models and elevating data quality, including amendments to the VAR model to calculate stressed VAR and new modules to calculate the IRC, CRM, CVA and expected positive exposure (EPE), a counterparty-risk measurement required by Basel III.

- Improving financial efficiency, including balance sheet optimization and enhancements to current capital, liquidity and funding stocks.
- Boosting operational efficiency, including both traditional cost-efficiency measures (reducing head count, shrinking IT costs) and driving greater use of electronic trading.

The first two responses are direct remedies: they are highly specific to capital markets businesses and can be implemented quickly. Improving financial efficiency is less direct: it is clearly a bank-wide effort with both short- and medium-term levers. Operational enhancements are usually medium- to longer-term efforts and include both bank-wide improvements and measures specific to capital markets.

Considered as a whole, it is clear that developing a bank's response will require a joint effort across the bank, involving business, risk management, finance, treasury, IT and operations. These units are natural leaders of the four categories of mitigation actions. Both for this mitigation effort and for future stewardship in a more highly regulated industry, business strategy and risk strategy will need to be more closely connected. Banks whose organizational structures are heavily siloed will have difficulty with this mitigation agenda.

McKinsey estimates that implementing the full set of mitigation actions might restore four to five percentage points to ROE, to a profitable level of 11 to 12 percent:

- Portfolio optimization measures address capital efficiency and will potentially boost ROE by 1.5 to 2 percentage points, making these the best source of gains, but they will require significant changes in the bank's portfolio and processes.
- Model and data-quality improvements can help save capital and might add 1 to 1.5 percentage points, with data-quality measures having an especially material impact.
- Financial efficiency focuses on conserving capital, liquidity and funding. ROE increases of about 1 percentage point might be possible.
- Operational enhancements will reduce costs and potentially increase ROE by about half a percentage point (as cost-reduction measures are usually less direct and less effective than capital-reduction levers).

Not all mitigation actions are relevant or even applicable to all businesses. Model improvements and portfolio optimization are highly relevant to rates and credit businesses. Operational enhancements are broadly relevant, but will be less effective for businesses that have already been worked on extensively, such as cash equities and flow credit. Other cash and flow businesses that thrive on scale, such as FX and flow rates, can benefit from further electrification and improvements in processes.

Exhibit 4 shows McKinsey's calculation of the improvement in ROE that each business can expect from these mitigation actions. The joint impact of regulation and mitigation actions will likely bring the ROEs of most businesses closer together, around an average of 11 to 12 percent. FX and cash equities will have higher returns than average, and structured credit and rates will have lower.

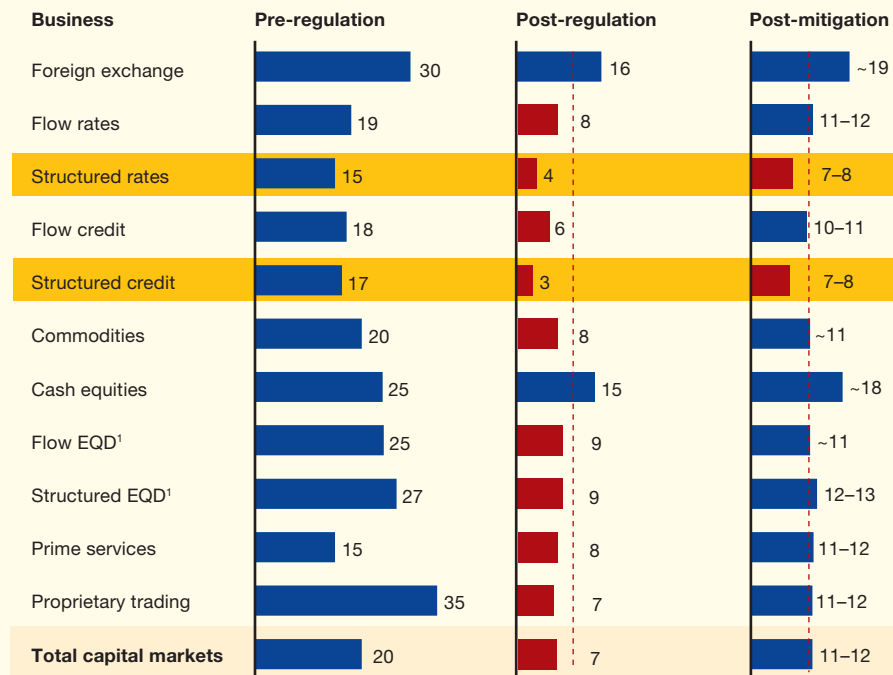
### Portfolio optimization

In general, this is the most effective measure for reducing capital wastage. The effort is usually jointly led by divisional risk management and the business and aligned with corporate strategy. Broadly speaking, businesses should consider the sale, restructuring, or rebooking of disadvantaged positions; some improvements to hedging; and administrative levers.

Exhibit 4

### The potential for mitigation is varied

Return on equity (ROE)  
Percent



Most affected businesses
  Cost of equity about 10.5%
  ROE level below or around cost of equity

<sup>1</sup> Equity derivatives  
Source: McKinsey analysis

One typical quick win is the **sale of capital-intensive positions**, especially in non-core assets. The bank may have to record a loss, depending on the market and the price it can achieve, but the capital savings may well make the sale worthwhile. Such savings can be achieved quickly, but selling assets may raise the more profound question of future trading focus. A discussion of the bank's business model and targeted portfolio mix is the natural next step to pursue this question.

**Restructuring or unwinding positions** is another option. For example, it may be more capital intensive to hold certain securitizations than it would be to unwind the securitization and place the underlying securities on the book. There are further options to restructure the securitization or underlying securities in a different way with similar economics and more beneficial regulatory treatment.

Under Basel II, the treatment of securitizations was more favorable when they were carried on the trading book rather than the banking book. Basel III reverses that. **Re-booking asset-backed securities (ABS) portfolios into the banking book** will avoid VAR and stressed VAR charges. Only the banking book equivalent of the market-risk standard approach (MRSA) will apply. Banks must be cautious, however. Accounting restrictions must be considered, and any rebooking must follow clearly defined criteria. Here, too, the decision on what to hold, and where to hold it, leads inevitably to a larger discussion of the business model.

At many banks, current hedging strategies reflect an economic and accounting perspective but do not consider the regulatory perspective on eligibility of hedges.

Another set of effective measures concerns the optimization of hedging:

- At many banks, current hedging strategies reflect an economic and accounting perspective but do not consider the regulatory perspective on **eligibility of hedges**. A book that the business views as risk neutral might still bear high capital charges. For example, long and short positions in derivatives of the same asset can be completely offset only if they share the same maturity and currency. Hedges must pass the liquidity test to be included in the CRM model. CDOs can be netted only if their structures (pool, maturity, currency and so on) are identical. Banks should revisit their hedging strategy, incorporating insights on key drivers and sensitivities from their capital models.
- Appropriate **timing of the hedge** is of increased importance, as a delay in executing a hedge will incur capital charges. Businesses should try to avoid holding unwanted open positions for too long (overnight for some short-term business).

- A **comprehensive approach to hedging** across the bank can help reduce capital charges. For example, some large banks are centralizing the function of monitoring the CVA books to ensure optimal hedging of counterparty credit risk. Centralized hedging usually leads to a certain level of “overhedging,” given the technical challenges in synchronizing the hedge and front-office books. Many banks are aware of the increased hedging costs and are mostly willing to pay them in light of the reduced capital charges. Similarly, market risk can be monitored centrally, and risk groups can provide guidance to businesses on further hedging opportunities.

Finally, banks should consider two administrative levers. Businesses can make a point of preferring counterparties with strong **collateral and netting agreements** for derivatives already in place. This will reduce the counterparty risk and CVA charge. And increased use of CCPs will likewise help to reduce counterparty credit risk. In addition to the mandatory shift of financial institutions derivatives to central clearing, banks can also decide to move some standardized derivatives contracts with corporations to CCPs. In extreme cases, some smaller banks are planning to clear their complete derivatives business via CCPs.

Portfolio optimization levers are widely seen as the most effective measures to reducing capital waste and are communicated as such. For instance, recently a large bank told investors it would reduce an anticipated 100 percent increase in market and CCR RWAs by 40 percent by 2013, mainly through sales, unwind and roll-off, and hedging. The bank expects further RWA relief from the exit and roll-off of other capital-intensive assets, which will mitigate another 30 percent of the anticipated increase over the next few years.

For these portfolio optimizations to be effective on a sustained basis, it is essential that they be derived from a strategic decision about the bank’s overall portfolio and supported by changes in business processes.

### **Model and data quality improvements**

Each of the new calculations of market and counterparty risk has several starting points for optimization.

For **stressed VAR**, for example, a systematic analysis of the historical drivers of VAR across inventories is crucial. Banks need to isolate the most important drivers, exclude outliers, and identify opportunities for hedging. Businesses may want to sell all or part of some positions to smooth their profile and eventually reduce stressed VAR. Increasing the transparency and granularity of VAR results and conducting analyses of the impact on individual positions can support that decision-making process. The optimization of VAR models has always been about improv-

ing capital measurement, but it is now even more focused on supporting trading decisions in order to reduce capital requirements.

The **IRC** is based on an internal model that calculates the default and rating-migration risk of portfolios. The IRC is driven by correlation and concentration effects in the portfolio. As correlations and concentrations increase, so does the IRC. Gaining transparency into potential diversification effects and the optimal portfolio composition can support the business in managing the portfolio in an IRC-conscious way. Developing a sensible level of detail at which to model each asset class is another optimization lever. Many banks may be hindered in this by the unavailability of data, especially in low-default portfolios such as sovereigns.

For securitizations, mitigation is achieved more by ensuring that the data required for input parameters are available, rather than by refining the methodology. The **MRSA** is applied, featuring standard formulae with clear input parameters. In the ratings-based approach, external ratings of the securitization are used to derive capital weights. If external ratings are not available, banks can instead use the supervisory formula approach, which requires risk assessment of all underlying securities. Data quality is critical for the MRSA. Most important, banks must ensure the availability and timeliness of external ratings for the securitization of the risk parameters of all the underlying securities. If the data cannot be obtained or are outdated, the securitization is treated with capital deduction, which is tantamount to a 100 percent capital weight.

A simple diagnostic of the bank's top 50 RWA consumers can reveal these gaps. For example, at one bank, several securitization positions were treated with capital deductions, as external ratings did not feed through from external data sources—even though they were publicly available. Applying the actual ratings (AA, which has about 1 percent capital weight) immediately saved €100 million (\$130 million) of capital.

The **CRM** can be applied to portfolios of correlation trading securitizations and “nth-to-default” baskets as well as their hedges, if they fulfill the eligibility criteria—especially with respect to liquidity. A systematic, automated liquidity test ensures timely and correct eligibility for CRM. Banks should also develop a comprehensive set of models to cover all products that can be treated under the CRM. This is critical: if a position is not CRM eligible or the bank has not yet developed an adequate model for the specific product class, it is treated with the MRSA, which might increase the capital charge as much as tenfold. Special focus should be given to hedges. The risk teams should identify the eligible hedges and communicate them to the business.

For the **CVA** charge, banks must choose the optimal calculation approach, advanced or standard, for their particular circumstances. The advanced approach usually leads to lower capital charges but requires banks to maintain internal mod-

els for both interest-rate market risk (measured in VAR) and counterparty credit risk exposure (measured in EPE). The advanced approach is suited to banks with a low or negative exposure. Moreover, it allows cross-product hedging. On the other hand, the standard CVA approach is less sensitive to some drivers. For example, market volatility is not considered, nor is the duration of the portfolio. In both approaches, collateral can be used to lower the charge.

In all these new modules, as well as in the ongoing calculation of other established requirements, risk and capital models should ideally encompass all the bank's positions. As noted, **data quality** is essential to realizing this vision. Models are usually fed by disparate front-office systems and must be able to cope with high volumes and frequent changes. Availability, quality and timeliness of parameters are essential to minimize capital charges, especially parameters such as unique product and instrument identifiers, links between trades and their hedges, current external ratings for securitizations, timely liquidity tests, and so on.

Banks will also have to become more diligent about the classification of trading products and applying the correct approach to each trade. For example, they need to correctly identify an asset as a securitization to apply the MRSA, rather than the IRC, which would be the wrong approach in this case. Meanwhile, other assets should be classified as eligible for CRM instead of the more capital-consuming MRSA. This will require the business to know and use the regulatory product categories, as well as changes to IT to reflect these categories. Current books of business must be cleaned and classified, and robust controls for future classification installed. Banks are well aware of the significance of data quality, and many have undertaken numerous initiatives to improve it.

Banks are well aware of the significance of data quality, and many have undertaken numerous initiatives to improve it.

### Financial efficiency

Basel III establishes strong links among capital, liquidity and funding. Banks will need to adjust their current capital planning process to account for the new capital ratios and to optimize the triangle of capital, liquidity and funding as much as possible. Banks should consider the following short- and medium-term levers:

- **Net offsetting positions.** Banks can optimize their netting to be more comprehensive and inclusive of all possible offsetting positions. This should include netting across geographies, products and currencies, where possible. Difficulties that arise from inconsistent data architecture or differences among systems, regions and legal entities in the calculation of capital should be addressed.

- **Optimize capital usage.** Capital management must be refined to account for the new requirements on capital deductions and quality. A review of the portfolio should reveal opportunities to minimize deductions and improve capital quality (for example, by reducing unconsolidated investments below the regulatory thresholds defined by the regulator or by buying out minority stakes).

Banks should also consider both the economic and accounting implications of some moves to steer capital, such as reclassifying financial instruments according to the new rules or switching the hedge accounting model from current value to

fair value. Finally, banks should replace current mezzanine capital instruments that might not be recognized in the future as Tier 1 capital with new and innovative securities that require a lower return, for example, contingent convertible securities or CoCos. Although the July 2011 consultation document of the Basel Committee on SIFIs suggests that CoCos may not be accepted as regulatory capital, they may continue to be relevant in certain jurisdictions, such as Switzerland.

Capital management must be refined to account for the new requirements on capital deductions and quality.

- **Use stock of liquid assets efficiently.** Assets eligible for the liquidity buffer, a core component of the LCR, include government bonds and high-quality corporate and covered bonds (AA- and above). Financial institution bonds, by contrast, are not eligible. Centralizing liquidity management is a key lever, and monitoring liquidity risk across the bank and coordinating access to the market will help to utilize liquidity more efficiently.
- **Use eligible funding efficiently.** Long-term debt and deposits of more than one year, as well as retail and small and medium enterprise (SME) deposits of less than one year, are counted as stable funding for purposes of the NSFR. Funding from financial institutions, however, does not count toward the NSFR. Best practice banks have centralized funding management, closely monitoring alternative funding plans and quickly reacting to changes and opportunities for saving costs.
- **Utilize excess capital.** Banks have raised considerable capital in the past two years, both in reaction to the crisis and in view of upcoming regulation. They are engaged in a delicate process of raising capital when they can, while also funding normal business growth. Banks should put to work any excess capital that they may have accumulated or that may be clogging up balance sheets in some subsidiaries, sometimes even as other entities are looking to add capital. All such moves should be made with an eye to ensuring that target capital ratios are achieved.



It is critical to understand the impact of any of these actions on the bank's capital, liquidity and funding positions and to identify the mix of levers that will optimize the bank's portfolio of these three vital elements.

### **Operational enhancements**

Banks should consider several improvements to processes and risk IT systems, for example:

- **Adjust front- and back-office head count.** Especially for businesses with crisis or regulation induced declines in volumes and revenues, banks can adjust resources in both front- and back-office functions. Weak markets have prompted a wave of job cuts in the banking industry, including at Credit Suisse, Goldman Sachs and UBS, which have announced plans to reduce their work forces by between 3 and 8 percent.
- **Improve efficiency in execution.** Especially in high-volume businesses, banks need to improve process execution and realize efficiencies to further reduce operational costs. This will be a key advantage for banks that are building scale in flow businesses. A bank can achieve even greater scale by processing other firms' business, such as by offering CCP services to smaller banks.
- **Revise compensation framework.** People are often the biggest cost in capital markets businesses. As regulators lay out new compensation rules, the time seems right to review the compensation framework generally. Risk-adjusted compensation sets the right incentives and compensates to some extent for increased capital costs. Retention of talent is the binding constraint for revisions to the framework.
- **Increase use of electronic trading.** Electronic trading, already dominant in some businesses, such as FX and cash equities, continues to spread. E-trading in FX is expected to grow from about 60 percent of total flows in 2010 to 80 percent by 2013. Similar growth is expected in government bonds and interest-rate swaps. Other businesses, such as CDS and many commodities, are only starting to adopt e-trading. E-trading changes the economics of products by increasing efficiency and price transparency. Spreads are narrowed by increased competition. As various businesses shift to e-trading, banks should invest in the appropriate infrastructure.
- **Improve risk systems.** To ensure data quality, as mentioned in the discussion of model improvements, robust risk systems must support an optimal capital calculation. Some steps that banks can consider include consolidating trading systems across front offices, geographies and legal entities; enhancing feeds from various source systems or external providers; establishing a consistent data taxonomy of trades, instruments and products. These steps and others will help capital markets businesses reduce or eliminate manual reconciliations, a sore

point with regulators. They will also allow the bank to generate faster internal RWA reports. These can help the bank to achieve timely, risk-sensitive steering and develop quick reactions to exogenous change. IT change programs at most banks are substantial affairs. For example, programs under way today include major front-office IT consolidation and the design and development of central clearing and collateral management platforms. In some areas, there is also a trend toward greater use of vendor solutions.

- **Optimize IT investments.** To address all IT infrastructure changes in the most capital-efficient way, banks should set up both a clear action plan and a schedule that prioritizes core businesses, enables flexibility in their business model, and articulates the impact on capital.

Having analyzed industry best practices across these topics, in June 2011, McKinsey published a report on the status and future of risk IT and operations with the Institute of International Finance.<sup>9</sup> Three main findings emerged from the survey of 44 banks around the world. First, after addressing the most serious shortcomings exposed by the crisis, firms now have a much more detailed understanding of the risks they incur and are better able to manage them. Second, firms agree that the job is far from done, and there are significant opportunities to improve risk IT/ops, which they are already investing in. Third, firms believe that risk IT/ops needs sustained organizational focus, including the active engagement of the chief risk officer, the chief information officer, and the board, as well as stronger capabilities.

### **Summary and a note on next-tier firms**

Exhibit 5 provides a summary of the potential moves banks can take to lessen the impact of regulation across each of the four dimensions discussed above.

Mitigation actions and their potential impact have to be considered in light of the potential for significantly reduced volumes (as is already happening in the most affected businesses). Sinking volumes and pressure on profitability will likely be the trigger for some consolidation of business, as some of the smaller players refocus their activities.

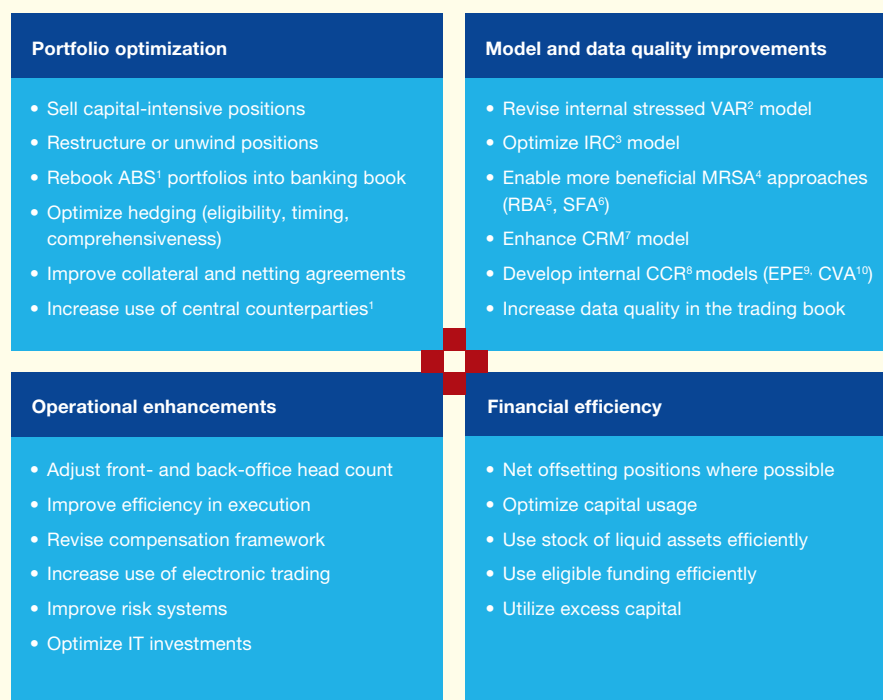
The options for next-tier firms, especially the smaller ones, are slightly more limited than the options for global banks. Smaller firms will have less flexibility to restructure the portfolio or to optimize the balance sheet. They cannot use scale effects and have limited capacity to invest in model development. McKinsey estimates that with immediate mitigation actions, next-tier firms might only be able to achieve ROE around the cost of equity (about 9 to 11 percent). Accordingly, these firms may be more dependent than their larger cousins on positive market developments to retain profitability, and they may be at risk of more severe changes to their business.

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<sup>9</sup> "Risk IT and operations: Strengthening capabilities," June 2011, Institute of International Finance and McKinsey & Company, [www.iif.com](http://www.iif.com).

Exhibit 5

### Four elements must come together for a comprehensive program to mitigate the impact of new regulation

<sup>1</sup> Asset-backed securities<sup>2</sup> Value at risk<sup>3</sup> Incremental-risk charge<sup>4</sup> Market-risk standard approach<sup>5</sup> Ratings-based approach<sup>6</sup> Supervisory-formula approach<sup>7</sup> Comprehensive-risk measure<sup>8</sup> Counterparty credit risk<sup>9</sup> Expected positive exposure<sup>10</sup> Credit-valuation adjustment

Source: McKinsey analysis

## Implications for Market Structure

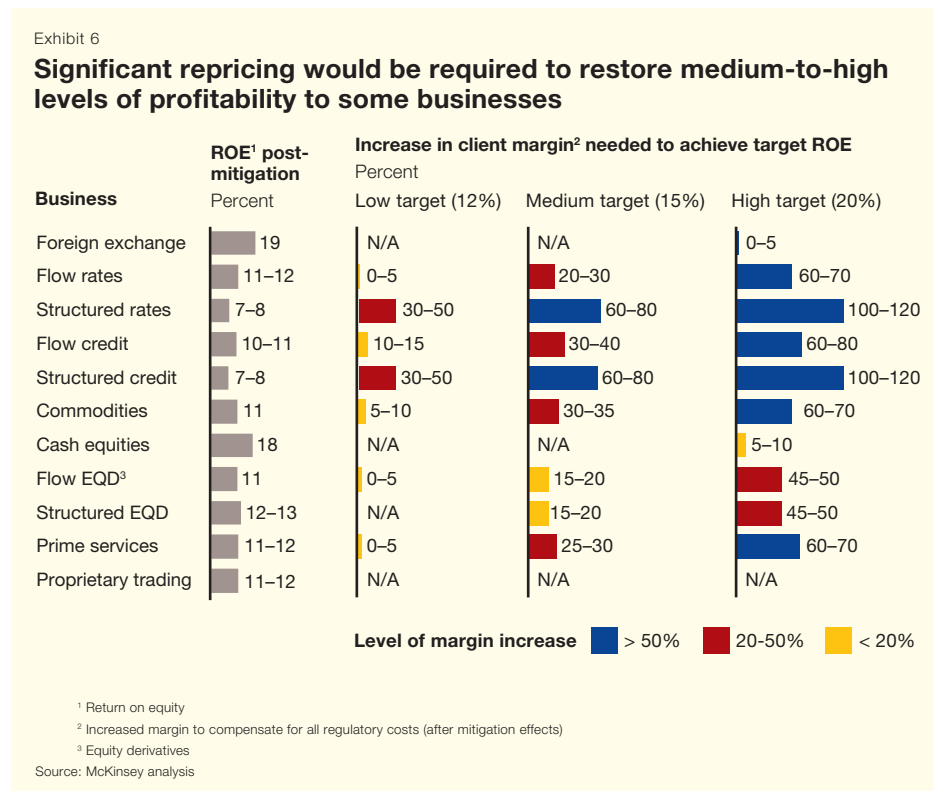
The mitigation actions discussed earlier can help most capital markets businesses maintain ROEs at a level above the cost of equity, but this will not be enough to save all businesses. Even after mitigation, structured credit and structured rates will likely have ROEs below the cost of equity. Several other businesses, notably flow credit, would appear to be only on the cusp of returning their cost of equity. Proprietary trading is also in jeopardy, but for slightly different reasons. In light of the Volcker rule, many U.S. banks have already made moves to shut down proprietary-trading units (Goldman Sachs) or spin them off as independent firms (Morgan Stanley). Some proprietary activity may also be drifting to client desks.

In businesses whose economics have been rendered marginal, banks will pursue additional, more material actions—the third-order effects of regulation. Two of these are of particular interest: the transfer of higher costs to banks’ customers via repricing and shifts in business models that will lower regulatory costs. How feasible and effective are these options, and how will they reshape the capital markets landscape?

### Repricing

On the face of it, pushing some of the regulatory burden onto the customer would be an easy step. But banks are unsure how much the customer is willing to take on and about the competitive dynamics that might result from a price hike. Therefore, repricing is a third-order effect and not an immediate mitigating action.

Exhibit 6 shows the potential impact of regulatory costs on current average price margins paid by the customer. These break-even rates are calculated as if the bank were to assume a target ROE, absorb and mitigate costs up to that threshold, and shift any excess regulatory costs to the customer. The analysis assumes no change in revenues. If revenues were to decline (which is likely in many cases), these break-even rates would move higher.



For structured credit and structured rates, the hardest-hit businesses, reaching a target profitability level of 12 percent ROE would mean a price increase of 30 to 50 percent. As the margins for these products are already wide and their pricing generally opaque, customers might be willing to accept these higher prices. On the other hand, for products with tight margins such as those sold in FX, cash equities and flow equity derivatives businesses, price rises would likely be rejected by customers. In these businesses, banks will need to carry the entire burden, making the thorough mitigation described earlier even more important.

Before raising prices, banks should seek to build a deeper understanding of customers and their price sensitivity. Banks should already have in place a customer strategy that distinguishes various segments and designs appropriate sales and support for each. That strategy should be reviewed in light of the findings of the pricing-sensitivity review. Banks may find, for example, that it might be more profitable to raise prices and lose some less essential customers than to keep prices flat and attempt to retain everyone.

When is the right time for banks to reprice? In view of the current fierce competition for customers and market share, banks are more likely to move once they feel the pinch of regulation, beginning in 2012 and 2013 with the introduction of market and counterparty risk charges. Even then, success in repricing will depend to some extent on an increase in demand or a decrease in supply (that is, some capacity leaving the industry), neither of which is observable in the current market. Accordingly repricing is likely to be only a partial success and will take several years to achieve.

### **Business model changes**

Besides tactical improvements and repricing, a further option for a bank to recover profitability is a change in business scope or business model. For some banks with franchises in the hardest hit businesses, such changes will be necessary. Others might not have to move from necessity, but will do so from choice, seeing an opportunity to increase profits. Already some moves along these lines, such as the proposed spinoff of proprietary-trading groups, are occurring.

There are several potential moves:

- **Transforming the front office** can be an effective step. Several banks are reviewing how their front-office activities can be optimized for increased productivity and agility in an environment of high uncertainty. Such projects require a detailed review of full front-to-back costs, as well as a qualitative assessment of how teams function. Sales and coverage teams are a particular focus for transformation. Typical improvements are inspired by those used in operational transformations and include enhancing performance-management tools, upgrading the

team manager's coaching skills, and working on team mind-set and behaviors. These measures are considered quite effective—some firms are targeting around 10 percentage points of improvement to the relevant cost-income ratio (C/I).<sup>10</sup>

- **Adjusting the product and service mix** to reflect new realities might include, for example, a senior management decision to shift toward more standardized flow products and higher-quality securitizations or stepping back from some parts of the business system, such as distribution, while committing to others, such as structuring. Transparency into the financial performance of businesses, products and client relationships is the basis for a focused portfolio strategy. The strategy should reflect the bank's core competencies. Such a strategy might include some "loss leading" products whose returns fall short of cost-of-equity but are useful as anchor products for cross-selling.

Transparency into the financial performance of businesses, products and client relationships is the basis for a focused portfolio strategy.

A transparent categorization of the portfolio into core and non-core assets can be combined with the customer strategy to help make choices. The customer strategy would be based on a comprehensive analysis of regulatory impact and profitability from a customer perspective across all products (including capital markets products, investment banking businesses such as debt issuance, and corporate banking products such as deposits and cash management). Banks should also develop mechanisms to enforce their choices, such as changes to business processes, lest businesses drift back into old habits.

Development of new substitution products is another option to address high capital charges on the current portfolio. For example, companies might now find it cheaper to hold more interest-rate risk rather than hedge the first loss piece with the banks, which will likely want to charge more to cover their new capital requirements. Another example would be the introduction of new deal structures, with economics similar to those for products most affected by regulation, but which are not captured by the regulatory definition.

- **Reviewing the geographic and legal structure** to understand any differences in the application of new regulation and to build advantageous partnerships:
  - *Geographic shifts*: The differences in national adoption of Basel III requirements and the additional country-specific regulations create an unlevel playing field. Multi-regional and global banks are currently exploring differences in capital, liquidity and funding requirements and might want to consider shifting

<sup>10</sup> McKinsey has launched a survey that aims to establish detailed cost benchmarks and other measures that firms can use to conduct a front-office excellence diagnostic and develop a qualitative assessment of teams.

business, assets and capital among their legal entities. However, the home-regulator principle, the Pillar II requirement to conduct an Internal Capital Adequacy Assessment Process for every local entity,<sup>11</sup> and the willingness of business leaders and staff to change location are limiting constraints.

An unlevel playing field seems to be a given in many cases, such as Europe, the U.S. and Asia, where Basel III will be implemented at different times and in different forms. Even within Europe, there are different national transpositions of EU legislation, with some countries going beyond the requirements of EU directives or global standards. Such “gold plating” can be seen in the UK, which is applying stricter capital and liquidity requirements to UK-domiciled banks. In another example, non-U.S. banks with U.S. businesses fall under their home country’s regulation, but are also subject to certain Dodd-Frank requirements, including, potentially, new requirements for systemically important institutions (enhanced supervision by the Federal Reserve and higher capital requirements) and the Volcker rule.

- *Shifts in legal structures:* Banks might also spin off activities into the “shadow” banking system (to asset managers, hedge funds and so on) to retain access to these profit pools while avoiding bank-specific regulation. Many firms are doubtful that repricing can make certain structured products profitable again and believe that clients might turn to the shadow banking system for solutions. Similarly, new rules on compensation might also drive more talent and client activity to hedge funds and the like. Capital markets banks will likely seek to develop partners from the shadow banking system with whom to coordinate a comprehensive client offering. For example, Morgan Stanley intends to spin off its vaunted Process Driven Trading unit as an independent advisory firm. The bank will be allowed to buy preferred shares in the spin-off so that it can continue to reap some earnings at greatly lowered risk.

Other shifts are also possible. For example, in recent months, two major banks altered their corporate structures by deregistering the bank holding companies through which they conduct much of their U.S. business. Regulators are likely to seek to close any loopholes left open in the recent phase of regulation through greater international alignment of banking rules.

- *Informal partnerships:* A third option is to develop informal business relationships with less regulated partners—that is, institutions in less regulated geographies or non-banks. Both sides of the partnership stand to gain from their joint business. To allow for flexibility, banks are aiming to put these informal partners at arm’s length rather than form a fixed alliance.

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<sup>11</sup> For more, see McKinsey Working Papers on Risk, No. 27: “Mastering ICAAP: Achieving excellence in the new world of scarce capital,” May 2011, [www.McKinsey.com](http://www.McKinsey.com).

- **Exiting a business completely**, through sale or a wind-down of all assets, is the most severe measure, but may be reasonable, if regulatory costs cannot be adequately mitigated or shared with customers, the business's market position is weak, or the business is not among the group's core competencies. For some smaller banks, structured credit businesses may meet these criteria. In the worst case, the whole market might dry up for a certain product, such as CDOs, CDO-squared or CDS indexes. In another example, several smaller banks are withdrawing from the cash equities business. Although it has not been hit too badly by new regulation, demand has fallen steeply. The global market for cash equities fell by 30 percent from 2007 to 2010. With its high C/I ratios of up to 90 percent, the business now appears unattractive to these smaller firms.

Naturally, each bank must develop its own specific business strategy, typically drawing from the various moves laid out above. Such a strategy must address some tricky questions. For example, can the bank still maintain the suite of products it needs to deliver on its customer value proposition, if it concludes that it must shrink the capital markets business and exit some businesses? How can it adjust the fixed part of the cost base to cope with both shrinking revenues and higher capital costs?

Not everyone will be heading for the exits. Some brave banks that believe strongly in a strategy based on scale and efficiency might even choose to invest heavily in some of their businesses. To do so requires a rapid build-up of market share and the confidence that few competitors will follow the same strategy. Otherwise, such a move will destroy margins and leave the bank with a large unprofitable business.

### **Developing a strategic agenda**

Banks will reprice and make changes to the models of their most affected businesses, depending on their core competencies and competitive advantages. After regulation, four major and more strongly differentiated business models are likely to dominate. Each model will follow a different strategic thrust, drawing from one of three sources of value creation (Exhibit 7). Those sources of value and the business models they drive are:

- **Scale.** Flow-driven universal banks with true scale and operational and technological strengths will exploit their advantage to provide high liquidity at low prices. These firms will continue to provide a broad offering with, most likely, an even greater focus on flow business and electronic trading. They may seek to adjust the product mix in some businesses even further toward capital-lite, short-term products. In 2010, the top 13 global banks already accounted for 50 percent of global flow-rates revenues, a degree of consolidation that is likely to rise. To achieve this, banks will continue to invest in technology while expanding their client franchises among top-tier institutional investors, in particular hedge



Exhibit 7

### Capital markets business models will likely move in one of three directions

Source of value	New business model	Initiatives
Scale	<b>Flow-driven universal bank</b>	<ul style="list-style-type: none"> <li>• Improve business economics through platform scale</li> <li>• Provide broad product offering for clients, with aspiration to a top position in flow products</li> <li>• Expand and leverage Tier 1 institutional client franchise</li> </ul>
Franchise	<b>Franchise bank</b>	<ul style="list-style-type: none"> <li>• Develop deep corporate and institutional (Tier 2/Tier 3) client franchise in large home or multi-local markets</li> <li>• Penetrate client franchise with standardized but comprehensive product set (with some white labeling)</li> <li>• Develop selected lighthouse product offering for Tier 1 institutional clients based on local expertise (e.g., local credit)</li> </ul>
	<b>New corporate bank</b>	<ul style="list-style-type: none"> <li>• Provide product offering based on corporate client needs</li> <li>• Increasingly leverage infrastructure provided by industry utilities or global banks</li> </ul>
Risk	<b>New investment bank</b>	<ul style="list-style-type: none"> <li>• Differentiate through risk-management capabilities and offer innovative, tailored solutions</li> <li>• Build leading-edge risk-management/product-structuring capabilities</li> <li>• Target top global institutional clients</li> </ul>

Source: McKinsey analysis

funds and asset managers. Integrated offerings of prime services, clearing and collateral management will help secure client flows. Banks such as these can also utilize their extensive structure of legal entities.

- **Franchise.** Banks with a more regional footprint will likely opt out of the race for scale and instead focus on deep customer relationships with a strong regional and sector competence. Franchise banks, with their wide geographic reach and prototypical franchise structure, will continue to offer a broad product range and full services and will likely leverage the depth and quality of those relationships to gain greater share of wallet. In addition, these banks will use their access to local products and their information advantage to position themselves among certain top-tier institutional investors.

Banks with a more local presence and a greater contribution from corporate client business (“new corporate banks”) will be even more selective about the breadth of

their capital markets offering. They will likely focus on products that meet the core needs of their clients (flow rates, FX, and so on). For these banks, there may be more disruptive changes along the value chain. For instance, many local banks are currently evaluating whether to build their own derivative clearing and collateral-management offering or to purchase one from a vendor or a global bank.

- **Risk.** Finally, a small number of banks with a strong risk-management profile and highly sophisticated product offering will continue to develop these strengths. Structured products, the core capability of the “new investment bank,” can be made profitable again through innovation to maximize their profitability within the new regulatory regimes and through repricing to push margins higher. To be successful in this model will require a strong appetite for market risk and superior access to institutional investors. Note, however, that while several firms can succeed with this model, a sizable part of this business will move off balance sheet to specialist, less regulated institutions.

This differentiation in strategy is not necessarily all-encompassing but rather business specific. A bank can act as a flow-driven universal in its flow businesses, while maintaining its sophistication as a risk-driven “new investment bank” in structured credit. However, to follow each of these major strategic thrusts, a comprehensive change in business model, operations and culture will be required.<sup>12</sup>

\* \* \*

Irrespective of which strategies banks pursue, a clear view of the core competencies and strategic options, a strong management action plan, and timely planning of mitigation and repricing will be key success factors. The industry is in a period of change and renewal. Business dynamics and developments in the next few months could very well define the market structure for years to come. Accordingly, for every potential move, banks must consider the implications for profitability under the new wave of regulation.

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<sup>12</sup> For more detailed discussion of the changes in business models, see “New but not yet normal: Corporate and investment banking in transition,” June 2010, [www.McKinsey.com](http://www.McKinsey.com).



## Europe: Beyond the Crisis, New Challenges and Opportunities

**Helmut  
Heidegger**  
**Nils Hoffmann**  
**Dirk Sojka**  
**Kai Stefani**

While corporate banks in Europe enjoyed stronger profits in 2010 and the first half of 2011, revenues were down slightly and some significant challenges re-emerged in the second half of 2011, especially in capital and funding. Moreover, a growing crisis in Southern Europe diminished investors' appetites. McKinsey estimates that the 2011 European corporate banking pool will be very similar to the previous year.

In September 2011, McKinsey interviewed corporate bankers who identified a number of challenges. New regulation, continued pressure on loan margins, concerns about risk costs, and difficulty placing loans in the secondary markets will all place further strain on corporate banks. Stress tests in 2011 did not give much comfort, and with the euro crisis worsening, corporate banks will be severely tested.

The outlook will be different for every bank. Only a few leading corporate banks can contemplate expanding. Some may have to consider consolidating. Most must find ways to extract more out of current businesses. To that end, McKinsey offers seven initiatives that can lift a bank to industry-leading performance.

*Originally published in January 2012*

## A mixed picture

In 2010, Europe's corporate banks enjoyed a mild rebound. Profits were up by 60 percent from 2009, reaching €54 billion (\$75 billion). But 2010 was only a qualified success. Profits were still well below the peak of 2007, and they were driven not by growth, but instead almost entirely by the drop in loan losses. Risk costs dropped to €87 billion (\$121 billion) in 2010, down 30 percent from 2009.<sup>1</sup> Even that bit of good news was not universal. Western Europe experienced most of the improvement in credit conditions, while Central and Eastern Europe continued to struggle.

As further evidence of the hollowness of these profits, consider that revenues in 2010 actually declined, falling to €244 billion (\$340 billion) from €258 billion (\$359 billion) the prior year. The declines were fairly universal across corporate banking businesses, with lending and cash management accounting for most of the drop. In straight loans, volumes were down only slightly, but margins shrank, especially in short-term loans. Leveraged lending (in particular acquisition finance) dragged down the lending business even further. Cash management suffered, as banks had to pay more for deposits and revenues from positive current account balances dropped by 20 percent, while all other products grew. Trade finance even saw an uptick of more than 15 percent. Apart from M&A, all capital markets and investment banking products experienced declines. Revenues stabilized in 2011, due to favorable conditions in the specialized finance and cash management businesses (Exhibit 1).

Overall, there is still a wide variance in asset productivity (that is, all revenues divided by lending volumes) across banks—a telling sign that not all banks are leveraging their loan exposure optimally through effective cross-selling.

## Looking forward

So much for 2010 and 2011. What about the future? To gauge the outlook, McKinsey convened a group of 30 corporate banking leaders. Five troubling trends emerged.

Sixty-three percent of the corporate banking leaders thought that **demand** for loans would grow by at least 3 percent annually through 2015. Since then, however, the sovereign crisis has escalated, and it is doubtful that corporate bankers would still be so optimistic. Add to this a funding squeeze and rapid deleveraging to meet the European Banking Authority stress-test targets, and growth in loan demand in 2012 seems very doubtful.

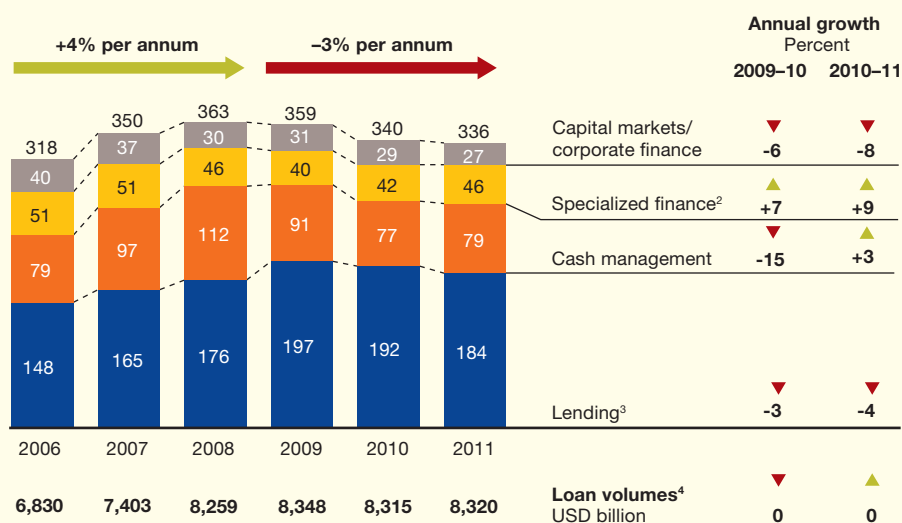
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<sup>1</sup> All figures are from McKinsey's annual Corporate Banking Survey and Global Banking Pools research. For more information, see <https://solutions.McKinsey.com/globalbankingpools/cms>. All figures at 2011 constant exchange rate.

Exhibit 1

### Cash management and specialized finance stabilized industry revenues in 2011

European corporate banking revenue pool<sup>1</sup>  
\$ billions (estimates)



<sup>1</sup> Net interest income after liquidity premium, before risk costs and fees

<sup>2</sup> Leasing, factoring, trade finance, letter of credit and guarantee

<sup>3</sup> Includes straight loans and structured finance

<sup>4</sup> Average stock for the year, including drawn loans and structured loans

Source: McKinsey Global Banking Profit Pools

One area of certainty is the effect that **new regulation**, both Basel III and some national measures, will have on corporate banking profits: they will be lower. McKinsey estimates a post-tax return-on-equity decline of about 4 to 5 percentage points before repricing and other countermeasures. The biggest effect will be increased requirements for capital, which will raise costs for straight loans and specialized finance. Of the bankers McKinsey spoke with, 43 percent expect capital and funding costs for long-term corporate loans to increase by 20 to 30 basis points (bp); another 48 percent expect costs to rise by more than 30 bp. Capital markets products will also be adversely affected, but given their lower contribution to the industry revenue pool, the net effect on profits will be small.

Third, **pressure on lending margins** is expected to continue. Margins for straight loans (after deducting a liquidity premium and risk costs) fell from 95 bp in 2007 to 47 bp in 2010, and bankers expect further compression, given higher liquidity and funding costs due to the ongoing debt crisis in Europe. Banks could respond by raising prices, but this is not always feasible.

A fourth challenge concerns **risk costs**, which improved in 2010, but almost all the improvement came in Western Europe, where risk costs fell to 104 bp in 2010 from 150 bp in 2009. Central and Eastern Europe (CEE), especially Russia and Ukraine, is still wrestling with severe credit problems. Across CEE, risk costs were about 401 bp in 2010, down only slightly from 415 bp in 2009. Moreover, the continued turmoil in Europe shows few signs of ending. It appears that volatility is the new normal, and this will inevitably affect banks in other ways. For example, with costs of capital and funding on the rise, banks in some countries may need to deleverage further.

Finally, finding **outlets for loans** remains challenging. Syndication and securitization markets were greatly weakened by the crisis. In time, new outlets may emerge, such as specialized funds that invest in project finance loans and direct placement with institutional investors.

Taking these five challenges together, the corporate bankers agreed the outlook is uncertain, with only a few seeing opportunities amid the challenges.

### **An agenda for the corporate bank**

McKinsey sees seven initiatives that every bank should consider to build profitability in an uncertain environment. These steps touch on every part of the value chain, beginning with the bank's corporate strategy. Some are no-regret moves, well-known to corporate banking leaders but not yet fully implemented; others are new actions to address emerging challenges in the new normal.

**1. Review the strategic business mix.** Many banks have already made an effort to focus the business on their profitable target clients, often by using sophisticated "wallet sizing" techniques. The challenging market environment and Basel III provide an occasion for banks to undertake a comprehensive review of their business focus and the related allocation of capital and funding. This requires a transparent, structured and, above all, strategic approach that considers the attractiveness of the business (for example, segment profitability and the intensity of capital and funding requirements) and internal criteria (for instance, the bank's commercial capabilities). The picture is continually changing. For example, in November 2011, the G20 announced new capital charges for large banks that will effectively boost the Tier 1 capital ratio to 9 percent. Some corporate banks may now find it difficult to compete in some areas, as the playing field is not level, given different return targets and other factors. Others will likely increase their focus on one or two businesses (like mid-size corporate clients) and reduce their focus on or even exit others (such as project finance). Apart from a broader capital-allocation review, banks should also consider focusing their business on the most attractive sectors and segments, leveraging specific sector insights.

**2. Get cross-selling right, at last.** Many banks have taken a couple of runs at improving cross-selling. However, McKinsey's analysis suggests that the variance between high and low performers is not narrowing. In the current environment, banks can try product-mix changes to emphasize deposits and cash management, for example. Leading banks have already found success with a value-chain approach, in which they analyze customers' business systems and offer attractive bundles of products and services to meet their needs at every step. Finally, because of the difficulty of attracting new business, most banks now need to establish "stock-x-selling" routines, in which they review their current business with a customer and identify opportunities to present additional products or change existing products (for example, foreign exchange and interest-rate hedges).

**3. Take pricing to the next level.** In recent years, many banks have become adept at tactical pricing. But Basel III has changed the equation. Many banks are thinking about raising loan prices—a natural first step on the staircase of pricing sophistication. As they do, they should carefully assess the feasibility of raising prices in their key business segments. Typically, it is competitive dynamics, intensity of capital and funding required, and the average return aspiration of banks that drive the ability to reprice. Many banks can take the next step, moving beyond repricing loans to more sophisticated measures, such as adopting risk-adjusted pricing more completely, enforcing pricing rules across the bank, raising prices selectively on non-loan products, and so on. Some banks with strong capabilities might be able to conduct a behavioral segmentation of customers and set prices according to factors such as customers' behaviors and their price elasticity. Leading banks can then go on to establish centers of competence for pricing to help teams with analytics, provide competitive intelligence, and offer advice.

**4. Embrace operational excellence.** One common challenge for many corporate banks is making the most of a scarce resource: top talent simply does not spend enough time with customers. Taking a systematic approach can help. Among other things, banks can push relationship managers (RMs) to embrace time and activity planning, especially with regard to meeting routines and client visits, and establish clear roles and focus in the RM team (for example, through continuous capability development, regular coaching and structured performance management). One bank did this, and its RMs now spend up to 40 percent more time with customers. Such efforts give banks the firepower to drive initiatives such as cross-selling or repricing.

One common challenge:  
top talent simply does not spend  
enough time with customers.

**5. Upgrade the capital management approach.** Many banks have been improving capital management since Basel II took effect. With Basel III, the pressure

to do so is even greater. Corporate banks should look first to reduce capital waste, particularly by improving calculation methods and models, processes, and data quality. Banks should also step up collateral collection and management. Second, and more important, corporate banks should consider ways to make their business models “capital-lite”. Banks can often switch to products that offer similar economics (for both the bank and the customer), but require less capital. For example, factoring could replace receivables financing.

**6. Hunt for funding and liquidity.** Corporate banks currently operate on widely different loan/deposit ratios. Some need little more than their deposit base, while others rely heavily on wholesale funds. Basel III’s new ratios and turmoil in the markets have put the ability to self-fund front and center. McKinsey has developed a proprietary suite of technical tools and business model changes that can help corporate banks improve their loan/deposit ratio and access additional funding sources. Most banks should consider two technical tools: improving the quality of data with respect to their funding sources and optimizing the treatment and booking of assets. Broader changes to the business model include process improvements to optimize the availability, management, funding costs and marketing of assets.

**7. Strive for risk excellence.** Shocked by the crisis, some banks are now hastening to build a risk culture—an environment in which risk is forthrightly considered and acted upon. Others are focused on strengthening weak spots that the crisis exposed. While excellence in risk may mean different things to different institutions, at several banks the work has centered on the credit underwriting process. Typically, banks begin with a redefinition of the risk appetite—a clear statement of how much and what kind of risk will be taken on. That risk appetite is then translated into specific limits for each region, sector and rating. Other steps might include supplementing the traditional historical analysis of credit risk with more forward-looking techniques.<sup>2</sup>

\* \* \*

Some banks will want to follow this seven-step agenda to secure access to capital and funding. Others might use it to generate growth. Most will find that these seven steps are best considered as a way to boost profitability. Taken together, they can increase return on equity by 5 to 7 percentage points.

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<sup>2</sup> McKinsey has published several papers on these and other topics in the “Working Papers on Risk” series, available at [www.McKinsey.com](http://www.McKinsey.com).





## Asia: The Future of Corporate and Investment Banking

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Vinayak HV

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For financial institutions that are refocusing their strategies post-crisis, there is widespread agreement that Asia now presents the world's most attractive corporate and investment banking (CIB) market. By 2010, surprisingly strong economic health meant that Asia's risk-adjusted CIB revenues had already reached nearly \$442 billion, just under a third of the global total. Notwithstanding recent market volatility, probable macroeconomic scenarios suggest that this revenue pool could rise to about \$770 billion by 2015. Asia therefore promises to account for a startling 43 percent of the global CIB market's growth in coming years.

Moreover, the region reveals an equally astonishing complexity due to differences in stages of economic development, regulatory practices and business models. The result is to limit the field of play—both for domestic institutions and especially for international competitors who are likely to remain all but locked out of some

opportunities. Yet because the growth ahead promises to be unparalleled, even small opportunities are likely to generate fierce battles. As Asia beckons, global and local banks, alike, will need to decide whether, where and how to make moves that will have enormous long-term impact.

To arrive at an answer, institutions will need a deep understanding of the growth forces, as well as the associated regulatory and competitive challenges, in Asia's expanding wholesale-banking market. Recent McKinsey studies—including detailed surveys of over 100 large and almost 200 mid-size wholesale-banking clients in Asia, as well as a poll of 45 of Asia's top banking executives—provide a foundation. Three large opportunities come to the fore: the rapidly growing mid-corporate segment, a potential inflection point in the growth of Asia's capital markets, and the continued expansion of regional transaction banking.

Each of these three opportunities represents a 2015 revenue pool in excess of \$130 billion. More importantly, all three are open to strategic moves, with neither domestic champions nor global giants holding an insurmountable advantage. Instead, each institution will need to build new skills to make a credible play. For example, local incumbents are likely to need new risk-management infrastructure, while the international players will need to tailor their existing risk practices more closely to local markets.

Success will therefore depend not on dramatic gestures but on a clear-eyed willingness to change in response to Asia's unique demands. Those institutions willing to do so will reap the greatest rewards from the world's most dynamic wholesale banking region (Exhibit 1).

## Geographic Opportunities: Dealing With Many Asias

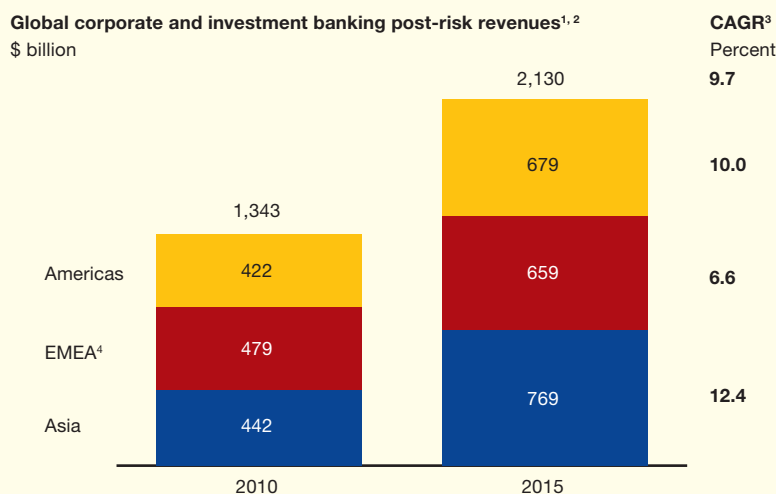
More resilient than the U.S. or Europe during the financial crisis, Asia emerged stronger during the worldwide market recovery in 2009 and 2010. While in the short term Asia remains vulnerable to volatility and economic uncertainty, the overall trend is strongly positive. Looking ahead over the next five years, the base case scenario of McKinsey's Global Banking Pools<sup>1</sup> assumes stable economic growth across the region, a progressive return to average historical interest rates, and a steady, if still disappointingly slow, path toward more open capital markets.

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<sup>1</sup> Global Banking Pools is a proprietary McKinsey research effort that uses extensive bottom-up data to determine yearly banking sector revenues and profits for 79 countries and 56 banking products. Forecasts are based on a number of econometric methodologies and are validated by drawing on the local insights of more than 100 McKinsey experts around the world.

Exhibit 1

### Asia is likely to become the fastest-growing corporate and investment banking market globally



<sup>1</sup> Includes corporate banking revenues and capital markets and investment banking revenues, but excludes securities-services revenues.

<sup>2</sup> Asia at constant 2010 exchange rates

<sup>3</sup> Compound annual growth rate

<sup>4</sup> Europe, the Middle East and Africa

Source: McKinsey Global Banking Profit Pools

If these assumptions hold true, by 2015, Asia's share of global corporate banking revenues would be almost 40 percent, and its share of global capital markets would reach 27 percent. Moreover, 70 percent of the increase will come from underlying economic growth, as the region continues to enjoy real annual GDP growth rates of over 5 percent despite uncertainty about economic conditions in the West.

That growth, however, will be uneven. With Australia and Japan growing only at rates comparable to other developed markets, the lion's share of Asia's new CIB revenues will come from the "growing giants," China and India. At 50 percent of Asia's CIB revenues, China is already the region's largest wholesale banking market and will only become more important. Even without adjusting for potential appreciation in the renminbi, McKinsey expects that China's new CIB revenues will become at least as large as those of the U.S. or Europe. Should China's real GDP keep rising by an average annual rate of 9 percent, as several economists predict, the resulting increase in loan volumes will account for over 55 percent of Asia's revenue growth. Likewise, increasing client demand for sophisticated products will drive capital markets expansion. Yet new policies to tighten credit will temper the surge in revenues experienced in 2009 and 2010.

Asia's other growing giant, India, will witness one of the fastest growth rates in CIB—15 to 17 percent annually over the next five years. While India's revenue pools today are still relatively small, this growth will dramatically increase India's relevance, with the country's wholesale banking revenues becoming as large as Australia's. Continued large-scale investment in infrastructure, a vibrant mid-market client base, and the growth of Indian multinational corporations (MNCs) are likely to be major revenue drivers.

The diverse financial markets of Southeast Asia will also grow faster than their economies on the back of substantial infrastructure investment and further regional integration. However, Vietnam and Indonesia should still punch below their potential, as their banking sectors remain overly fragmented and await deeper reforms.

At the opposite end of the development scale, the advanced infrastructure of the two pan-Asian financial hubs, Hong Kong and Singapore, means that they will be prime beneficiaries of global banks' focus shifting to Asia.

## Finding Room to Maneuver

Despite the sheer scope of Asia's corporate and investment banking business, market-specific regulatory and competitive dynamics continue to raise serious barriers to entry in most Asian markets, even for domestic institutions. The combination means that all institutions will need to make their moves with particular care.

### **Regulation: Opening only a little**

While we expect incremental increases in regulatory openness, dramatic shifts are unlikely over the next five years. Capital and liquidity controls will continue to make it difficult for institutions to allocate capital effectively across the region, leaving isolated pools of liquidity. Restrictions on credit markets will still limit innovation, with the effect of tilting the playing field to local players' advantage. In similar fashion, tight regulations on bank licensing and branch network expansion will constrain global players' competitiveness in corporate lending and transaction banking. Finally, recent anti-inflationary measures—such as price caps on lending and increases in reserve requirements—will deepen the advantages that large, domestic incumbents currently enjoy, particularly those that are current or former state-owned enterprises (SOEs).

To illustrate the cumulative effect of these restrictions, consider the largest revenue pool (corporate banking) in the region's largest market (China). Due to limited license availability, branch-banking restrictions, strict lending ratios, and strong networks among state-owned companies, foreign players today capture less than 2 percent of this \$210 billion market.

Indeed, outside of the financial hubs of Singapore and Hong Kong, domestic banks control most Asian corporate banking revenues. Those regional and global players that have invested significantly in their Asian branch networks still find it difficult to compete with the incumbents, especially when it comes to providing local balance-sheet support at competitive rates or offering transaction banking services. Even in the most developed economies, Australia and Japan, local institutions control over 90 percent of corporate deposits and 80 percent of corporate loans (Exhibit 2). While the recent McKinsey survey of over 100 large Asian corporations about their banking needs showed that two-thirds of global MNCs would prefer to use full-service banks wherever possible, in practice they usually still rely on local banks for domestic payment and collection services, particularly in emerging Asian markets such as China, India and Vietnam.

Exhibit 2

### Asian markets are largely dominated by local players

Share of local players 2010

Percent



<sup>1</sup> Capital markets and investment banking

<sup>2</sup> Fixed income, currency and commodities

<sup>3</sup> HSBC and Standard Chartered Hong Kong revenues included as local in Hong Kong and foreign elsewhere

Source: Dealogic; Bloomberg; central banks; McKinsey Global Banking Profit Pools; McKinsey analysis

By contrast, in capital markets and investment banking (CMIB), global players have been able to capture a larger share thanks to their superior product expertise, large-scale platforms, and better access to global investors. However, currently, the biggest and fastest-growing capital market—China—remains largely beyond reach. National banks and brokers control almost 97 percent of China's equities market and 85 percent of its trading in fixed-income, currency and commodities (FICC) products. Over the next five years, these markets will likely open up to foreign players, but only selectively.

### **Culture and competition**

Narrow market access is not the only complexity banks face, as rapidly blurring institutional and market boundaries reshape the industry. Leading Asian incumbents are further strengthening their expertise in products such as transaction banking, particularly in the large and comparatively sheltered domestic markets of China and India, but also elsewhere in the region where local scale can generate advantages. State Bank of India and Maybank are among the leading institutions pointing the way. Other local champions are expanding aggressively into neighboring markets. In Southeast Asia, institutions such as CIMB in Malaysia and DBS in Singapore have consolidated their positions across national boundaries and become true regional players. Similarly, for many years Chinatrust has been a leading provider of banking services for Taiwanese overseas corporations.

Asian corporate and investment banking is quickly becoming a crowded arena, even for a market whose development trajectory has been so strong.

Simultaneously, top global institutions whose Asia operations traditionally focused on CMIB, such as J.P. Morgan and Deutsche Bank, are now assembling new corporate banking franchises. These moves are starting to generate mirror responses from one-time corporate banking-focused players like HSBC and

Standard Chartered, which are now making forays into CMIB, particularly in debt capital markets (DCM) and FICC. Finally, the vast opportunities created during the financial crisis are attracting new entrants, such as Australia and New Zealand Bank.

The current market environment is both an obstacle and a trigger for these shifts in strategy. As a result, Asian corporate and investment banking is quickly becoming a crowded arena, even for a market whose development trajectory has been so strong.

## Three Large Opportunities Beckon

Three opportunities show great promise: the mid-corporate sector, CMIB and transaction banking. Together, these three will account for nearly 80 percent of CIB revenue growth in Asia through 2015.

### Mid-corporate

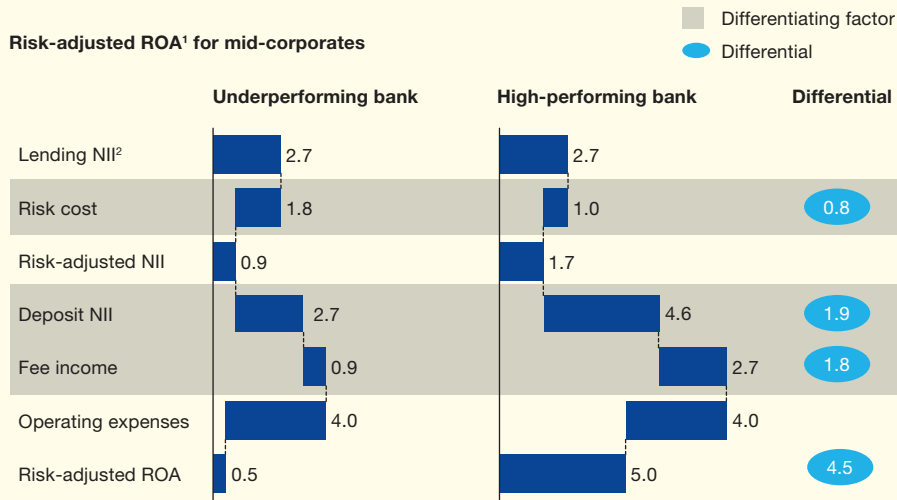
While large corporations with comparatively advanced product needs continue to be the largest CIB customer segment at \$326 billion in post-risk revenues, faster growth is found among mid-size corporations—defined as companies with revenues between \$50 million and \$125 million. McKinsey's research indicates that by 2015 revenues from Asia's mid-corporate segment will nearly double to \$308 billion, driven by the economic expansion of India and China and the growing importance of those two countries' medium-size companies. Even more promising, this growth is not merely in the number of potential clients. The segment's need for more sophisticated (and higher-margin) transaction-banking and trade-finance solutions is also likely to surge in response to increasing trade, especially within Asia and with other developing countries in the Middle East, Africa and Latin America. Industry participants agree that the opportunity is exceptional: in a recent McKinsey poll of over 45 top CIB executives in Asia, respondents listed the mid-corporate sector as the biggest growth opportunity for their institutions over the next three years. At the same time, most participants said they found the mid-corporate segment a particularly tough business.

Building a mid-corporate franchise that is profitable throughout the economic cycle has proven difficult, with only a few successes in Asia to date. For example, a review of India's mid-corporate segment showed return on assets (ROA) varying by as much as 450 basis points between low and high performers (Exhibit 3). This significant variance is due primarily to two factors: risk costs, given the vulnerability of these companies in an economic crisis, and the ability to cross-sell other products based on primary bank relationships.

- **Fear of customer failure.** The Asian mid-corporate segment experiences periodic waves of defaults, which recent stability may obscure but nevertheless pose substantial danger. From 2000 to 2009, Indonesia, Malaysia, Thailand and China experienced through-the-cycle risk costs of just over 2 percent of loan volumes. However, expanding the review by just three years to include the last recession to hit Asia hard—the financial crisis of 1997–98, mid-corporate non-performing loan ratios were a staggering 48 percent in Indonesia and 47 percent in Thailand. Those losses effectively wiped out any profits made in previous years. Conditions since 1999 have been sufficiently benign that a

Exhibit 3

**Significant variance in performance in mid-corporate business is due to two main levers: Risk costs and cross-selling**



<sup>1</sup> Return on assets

<sup>2</sup> Net interest income

Source: Expert interviews; McKinsey analysis

new crisis could significantly increase the current default rate and fundamentally change this segment’s through-the-cycle economics.

- Raising wallet share.** While the local incumbents that have traditionally led in the mid-corporate segment usually start with strong lending and transaction-banking relationships, too often they overlook chances to cross-sell highly profitable fee-based products. This omission is costly. In McKinsey’s survey of 200 mid-size Asian companies about their financial services requirements, nearly 90 percent said they believe that their banking needs will become more sophisticated, especially in the lucrative areas of trade finance and capital markets. Whereas today less than one-third of companies use relatively advanced products such as foreign-exchange or interest-rate hedges, commodities derivatives or investment banking services, a significant majority expects to do so in the future.

Customers are also becoming more demanding in their buying behavior. Although a good lending or cash management relationship sufficed in the past, quality of execution and fast turnaround times now top corporate criteria for selecting a bank for treasury products. Mid-size corporations’ longstanding “primary” banks, mainly local institutions, have already started to lose market share in higher-margin products



(and are far from capturing their fair share of fee business), because they lag on these dimensions. Banks need to be competitive on both product skills and coverage, if they want to reap the rewards from customers' increasing sophistication.

### **Capital markets and investment banking**

By 2015, CMIB in Asia will represent a \$135-billion opportunity, more than one-and-a-half times as large as today—a bright spot in a business whose outlook in developed markets has become decidedly gloomy.<sup>2</sup> Not surprisingly, the regional focus will naturally shift from developed Asia to China and India. While Southeast Asia's CMIB pool is dramatically smaller, it will deepen as well and potentially present more attractive margins.

The two giants will likely become major revenue pools, together contributing 40 percent of Asia's total by 2015. By the end of the period, China will be generating about \$53 billion in revenues and India about a quarter of that amount (despite faster growth). Each of these markets, however, is evolving along a different path from the region's more developed markets. China's regulatory controls mean that important capital market components, including a secondary market for corporate bonds and asset-backed securities, have barely caught on, leaving primarily equities and plain vanilla fixed-income products. Although most bankers and CFOs interviewed agree that growth will be explosive once the market takes off, the timing of such an occurrence remains highly uncertain. Meanwhile, despite similarities to China in fundamental economic growth, India is already seeing rapid advances in both product sophistication (for example, the dominance of listed derivatives) and accessibility of revenue pools. In equities, global players' share of the Indian market is nearly 75 percent, in marked contrast to China where they hold less than 1 percent. In both countries it is the regulators who will play the most critical role in the pace of market development. Latent demand continues to be high, but regulatory barriers are still in place.

From a business-line perspective, FICC will emerge as both the largest and fastest-growing opportunity, increasing at about 12 percent annually, with fixed income (rates and credit) complementing foreign exchange (FX) as attractive subsectors. Growth in FX will be driven by the globalization of large and mid-size Asian corporations and the continued surge in Asia-linked trade flows. Provided the right regulatory framework emerges, fixed income could expand rapidly from its current small base to become an important revenue stream, reflecting three overlapping trends: a rising stock of government and corporate debt securities, greater investor appetite, and a cautious opening to new products by regulators in important markets.

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<sup>2</sup> See also *Day of Reckoning? New Regulation and Its Impact on Capital Markets Businesses*, McKinsey Global Banking and Securities Practice, September 2011, and *The State of Global Banking – In Search of a Sustainable Model*, McKinsey Global Banking and Securities Practice, September 2011.

Meanwhile, the equities business will continue to grow steadily at 11 percent annually. While there is still a lot of momentum in the traditional cash-equities business (especially in China and India), domestic and foreign institutional investors will seek more sophisticated derivatives products—whether to boost their stakes in Asia’s macroeconomic health or to hedge their other bets. In addition, as hedge funds continue to shift their risk allocation to Asia, there should be a significant increase in demand for advanced execution and high-frequency trading platforms—predominantly in Asia’s hubs, which are rapidly upgrading their technology infrastructure (as shown by the Singapore Exchange’s introduction of the world’s fastest trading system). Overall, cash equities should represent about 55 percent of the secondary equities opportunity by 2015.

In terms of investment banking revenues, Asia’s developed markets should grow no faster than nominal GDP. Growth will again come mainly from China and India, where large corporations’ overseas expansion and domestic listings will spur growth in both M&A and equity capital markets.

### **Transaction banking**

Transaction banking—for both large and mid-size corporations—presents another sizeable opportunity in Asia, with revenues projected to almost double from \$168 billion in 2010 to almost \$300 billion by 2015. The opportunity encompasses traditional cash management services, such as collections and payments, as well as trade-finance activities such as the issuance of letters-of-credit or bank guarantees.

For all of Asia’s increasing sophistication, simple float income from deposits and payments will continue to be the biggest single source of transaction banking revenues. With the exception of China, nearly half of the growth in transaction banking will come just from a partial normalization of deposit margins that crashed during the crisis as interest rates fell. All in all, interest income from deposit float will account for almost 70 percent of transaction banking income in 2015, a substantially larger proportion than is typical in developed markets.

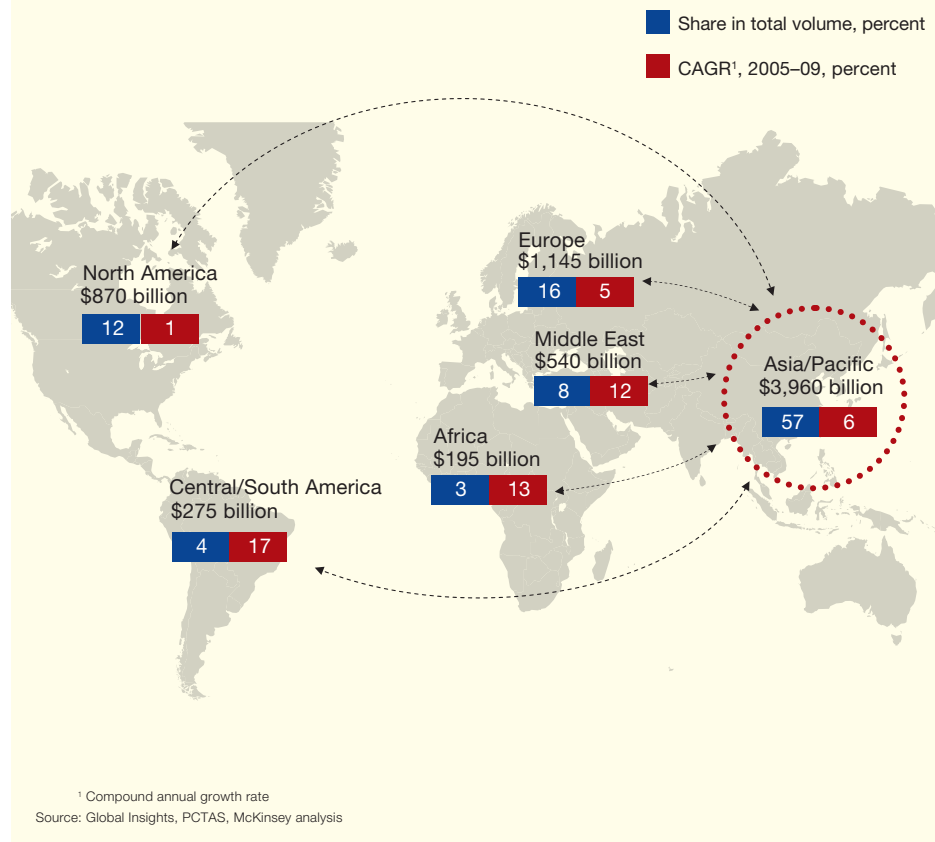
Revenues from trade finance will also pick up on the back of Asia’s still-expanding trade flows and increasingly convertible currencies. By 2009, intra-Asia trade already accounted for 57 percent of Asia’s total trade, or almost \$4 trillion—dwarfing trade with Europe or North America while continuing to grow at 6 percent per year (Exhibit 4).

But long experience in transaction banking at the local level will not guarantee regional success, which requires a very different skill set. In Asia’s domestic mar-

Exhibit 4

### Southern hemisphere and intra-Asia trade are large and growing opportunities

Intra-Asia trade accounts for 57% of total trade originating from Asia



kets, a large local branch network for collections, combined with tight integration to localized payment systems, will remain key despite increasing use of remote channels. Institutions will also need a deep understanding and appetite for meeting local risks, such as demand for “bid bonds” and “performance bonds” in emerging markets like Indonesia or India. By contrast, capturing regional flows will require a player to assemble a network that touches every relevant market and ensures adequate cross-border coverage. In addition, IT platforms must accommodate much greater complexity, such as advanced liquidity management solutions for notional pooling and sweeping services to move funds between customer accounts across countries and currencies.

## A Road Map for Asian Banks

Although local banks have traditionally enjoyed strong relationships with Asian corporations, McKinsey's research shows that this loyalty no longer translates into high income streams. For example, despite claims that global banks have suffered from their decisions to cut credit lines, they continue to capture more than 50 percent of high return-on-equity revenue streams such as local-market equity offerings. As competition intensifies, local incumbents face difficult choices regarding the clients to target, the capabilities to build, and the markets to play in. These translate into better risk-management and coverage models for mid-size corporations, stronger product and cross-selling skills in CMIB, and a new perspective on transaction banking that focuses on trade finance.

### **1. Strengthen risk management and product specialist coverage for mid-size corporations**

Given mid-size companies' cyclical volatility, superior risk management is critical. In McKinsey's experience, players have two major levers for optimizing their risk practices from underwriting through to collections. First, they can significantly improve loan quality at origination by pairing their traditional quantitative credit-risk scoring models with a qualitative factor-based approach. The second step is to set up a risk architecture that expands early-warning systems and enables better management of loans well before they become non-performing. Once a borrower is nearing default, only the first mover is likely to make a significant recovery. These types of changes allowed one leading Indian bank to identify problems several months ahead of its competitors, thereby increasing its recovery values substantially.

Similarly, a leading Thai bank stays ahead of credit defaults by employing a dedicated group of turnaround specialists. This bank systematically uses its industry and financial restructuring knowledge to help customers at an early stage, with team incentives tied closely to their success in returning the borrower to health. In the long run this approach deepens client relationships, as corporate clients remember who stood by them in their time of need.

Of course, banks must also extract more value from that loyalty. That will mean moving beyond the lending or transaction role and building specialist capabilities to support well-rounded suites of sophisticated products—especially those that generate high-margin fees. McKinsey's survey of 200 mid-size corporate borrowers in Asia found that for the majority, the primary bank's share-of-wallet eroded for more advanced offerings, underscoring the need for banks to fill important gaps in their line-ups. Because this segment is extremely price sensitive, banks will need to be disciplined in building both the products themselves and the coverage model

for product specialists. Judiciously designed incentives must ensure that mid-size companies receive specialist access that is sufficient to support sales, while also preserving the bank's profitability.

## **2. Maximize the franchise value and deepen presence with domestic customers in capital markets businesses**

The right strategy for national players depends ultimately both on the size of their home market and their own scale. At the most basic level, local players need to decide which customer segments to compete for and how and where to do so profitably.

A few large-scale Chinese and Indian champions that are bumping into growth limits at home can potentially look to expand their substantial local platforms to compete regionally. However, for most local banks, the most effective strategy is to focus on their home market and serve their traditionally strong franchises better. As local corporate clients and domestic institutional investors grow and innovate, their requirements will become more complex, creating opportunities for deeper relationships. One leading regional incumbent, for example, significantly increased cross-sales of its capital markets products to its existing corporate banking franchise. The bank revamped its sales approach and organizational structure to encourage greater cooperation between product specialists and relationship managers, resulting in a 50-to-60 percent annual uptick in fee-based business.

## **3. Focus on targeted trade corridors in transaction banking while upgrading the domestic platform**

In McKinsey's experience, local players can benefit most from expanding trade by concentrating on a few fast-growing trade corridors. The majority of senior bankers McKinsey surveyed share this view. One Taiwanese bank, for example, targets exporters in the important Taiwan/Hong Kong/China and Taiwan/Vietnam corridors, with cross-border business now accounting for more than 50 percent of the institution's CIB profits.

On the home front, local players should pay attention to their technology platforms, especially in cash management. McKinsey's Cash Management Survey showed that Asian domestic banks' IT investments are only one-sixth to one-tenth those of several global competitors. The same survey also revealed that customers increasingly base their buying decisions on banks' technological and operational capabilities. The good news for local players is that a number of technology vendors have been creating off-the-shelf cash management platforms that provide a large portion of the functionality

Customers increasingly base their buying decisions on banks' technological and operational capabilities.

needed for domestic cash management, at a small fraction of what global banks need to spend on their more complex multinational platforms.

Technology's rise—particularly in the form of electronic payments—is naturally reducing the importance of large branch networks in maintaining primary transaction banking relationships. While branches are likely to continue playing a role for intensely local businesses, the threat to traditional service models is already on the horizon. Most MNCs prefer using a global full-service provider, despite these institutions' much smaller branch networks. Branch-heavy local players must therefore find new ways to stay relevant. Offerings such as comprehensive, customized transaction solutions or data integration with the client's enterprise resource-planning system are increasingly important differentiators and indicate a need for further IT investment.

## Global Banks' Path to Becoming More Asian

In their Asia operations, most global banks have long followed a hub-and-spoke approach, selectively offering products in Asia to their existing global customers. Only a few players have invested heavily in building a deep Asia commitment. Looking ahead, however, Asian corporations are likely to start displacing global MNCs as the leading source of new CIB revenue. Global banks that want to capture some part of this massive opportunity must therefore determine how they can best use their capabilities to respond to a rapidly evolving environment.

### **1. Reach mid-size corporations with strong offerings and localized risk management**

While global banks with a meaningful Asia presence have traditionally preferred to serve more profitable large corporations, the mid-corporate segment is now too big to justify this predilection.

The question becomes what to offer. As it is difficult for global banks to compete directly given constraints on local currency balance sheets, they will need to find niches where they can take full advantage of their superior product capabilities. One global institution has been highly successful in scaling up its mid-corporate business in India by providing dedicated foreign-exchange desks, which substantially increased profitability on a per-customer basis.

One area where global players typically excel is in the sophistication of their risk models, affording them a considerable advantage in assembling a portfolio

that can remain profitable through the credit cycle. However, these institutions need to remember that Asian countries differ vastly, so applying a model that works in one market to another market that might superficially appear similar is unlikely to succeed. Deciding on the right level of customization will depend on unique institutional characteristics. For example, even in a developed market such as Hong Kong, applying a quantitative risk model designed for use in North America actually reduced the model's predictive power by 70 percent.

Asian countries differ vastly,  
so applying a model that works  
in one market to another market  
is unlikely to succeed.

## **2. Use global product capabilities and scale to deepen presence with institutional investors**

While there are multiple choices for winning in CMIB, global institutions will need to make intelligent adjustments in their geographic footprints, as several large opportunities in equities and FICC will likely remain closed to foreign players for the near future. As a result, a surprising two-thirds of the region's senior bankers polled by McKinsey believe that it is not possible for international players to succeed in domestic fixed-income, rates or credit products in Asia.

International banks can nevertheless build solid franchises based on excellence in foreign exchange, which relies on global transaction banking capabilities, and in commodities, where players have an opportunity to extend their global platforms to Asia. These institutions' distinctive IT offerings and operational skills will then inform their decisions about which segments to target. Foreign institutional investors are especially demanding in expecting at-scale electronic platforms, execution excellence, and a coverage model combining deep product expertise with distinctive research. Serving professional traders and leveraged investors will require a strong prime-brokerage franchise, as well as sufficient capability for complex risk management.

These same strengths will increasingly appeal to Asia's domestic institutional investors, whose growing sophistication will make them a natural target for global players. For example, there should be increased demand from institutions seeking additional ways to tap into Asia's growing wealth. This segment will represent 30 percent of investor-driven revenues by 2015—a potential too big to ignore. Global banks will need to move quickly as these opportunities arise, so they can build a profitable business model to wrest the institutions away from their current relationships with local champions—which are racing to improve their own offerings.

### 3. Capture the cross-border transaction banking opportunity through technological innovation and renewed client focus

Given their limited local presence, few global players will be able to compete head-on with local banks for domestic payments or collections—at least while physical locations remain critical for these business lines. But the growth in trade flows among emerging countries will create unique opportunities for global players that manage to provide cross-border cash management solutions across the relevant markets. These institutions will meet the needs of the many treasurers and CFOs who prefer to use a global cash management provider as their needs become more international. To succeed, players must excel in two areas: technological innovation and client focus.

Increasingly, cross-border platform scale is crucial, especially as it cannot easily be replicated by local banks. Global players must therefore ensure that their cash management and trading systems technologies continue to be cutting-edge, providing a consistent customer experience and fast turnaround times.

While technological innovation is already standard for sophisticated, product-driven organizations, reimagining how they work with their clients is proving much more difficult. Institutions will need to shift from selling products to providing complex and often integrated solutions to clients—a transformation involving organizational and cultural changes that are often hard to implement.

For example, global providers must adjust their coverage models. With corporate decision-makers spread over more locations, banks must limit organizational complexity even while covering these clients both in their home countries and offshore. One leading global player is supplementing its efficient multi-country transaction banking platform with a dual-level coverage model that simultaneously satisfies both local and regional cash management needs. An in-country cash management team covers daily operations, while other experts are located in regional hubs.

\* \* \*

Asia will become the largest and fastest-growing region in the wholesale banking universe by 2015, and the dynamics of the game will change. More players will enter the market, customers will become more knowledgeable and demanding, and cross-regional business will become more important. While there remain significant challenges to success, Asia's ongoing growth is too great for any institution to ignore. The choices described here will enable an institution to fulfill two critical requirements that all banks in Asia now face. The first, and most immediate, is to make the right investments from both a business-line and a geography perspective. The second is to build a business model in Asia that is both profitable and durable.

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### **Three additional opportunities to watch for in Asia: Infrastructure finance, commodities and financial institutions**

In addition to the major opportunities in the mid-corporate market, capital markets and investment banking, and transaction banking, three other areas offer potentially interesting business plays over the next few years: infrastructure finance, commodities and serving financial institutions.

#### **Infrastructure finance**

Despite massive investments over the past two decades, infrastructure in most emerging Asian economies is still insufficient to sustain economic growth. The Asian Development Bank estimates that over the next 10 years, an additional \$8 trillion will be needed for the region's roads, ports, power systems, telecom networks and the like. Financing all that concrete and cable will generate its own rewards. McKinsey research indicates that by 2015, financial services revenues from infrastructure financing in Asia could reach \$45-to-\$50 billion. Moreover, contrary to the belief that infrastructure financing is always a balance sheet-intensive business, almost 50 percent of this revenue potential will be in fee-income products, such as trade finance, cash management and advisory solutions. The research also suggests that over the lifetime of a project, banks can participate through eight different business models with very different return-on-equity profiles, ranging from traditional project financing to a fully-integrated structure including both debt and equity funding (see "Asia's \$1-trillion infrastructure opportunity," *McKinsey Quarterly*, March 2011, [www.McKinseyquarterly.com/Asias\\_1\\_trillion\\_infrastructure\\_opportunity\\_2765](http://www.McKinseyquarterly.com/Asias_1_trillion_infrastructure_opportunity_2765)).

Yet there are commensurate challenges to building a profitable infrastructure business. With bond markets still nascent throughout emerging Asia, a traditional balance sheet-intensive model is highly attractive for domestic institutions—indeed, nearly 60 percent of the region's senior bankers agreed that this strategy was the most promising for local infrastructure finance players. However, it is easy to underestimate the breadth of capabilities required, especially for effectively assessing greenfield risks. There is little historical market experience, and most infrastructure investments in emerging Asia will be new developments.

In addition, the margins that the traditional model produces would be relatively low, particularly in the absence of strong skills in cross-selling the fee products that are a crucial revenue source.

These conditions would seem to be especially helpful to global banks, which excel at pricing and cross-selling fee-based products and at structuring and distributing risk. Still, global participants will need to overcome their local balance sheet constraints, the factor favoring the local leaders. Given these complementary strengths, strategic alliances show great promise. The joint venture of State Bank of India with Macquarie and the International Finance Corporation is just one example where local champions partnered with foreign institutions to set up an infrastructure-investment fund.

### **Commodities**

While revenues from commodities trading currently constitute only about 3 percent of Asian CMIB revenues (compared with 4 percent globally), McKinsey expects the segment to be one of the region's fastest-growing opportunities, effectively quadrupling in size to nearly \$10 billion by 2015. On top of the strong basic macroeconomic forces driving commodities demand in Asia, there is a growing need for companies to hedge against commodity price volatility. Both institutional and retail investors have also discovered this asset class and its structurally attractive features, which historically have included low correlation with equities and a natural hedge against inflation.

Two factors that institutions must bear in mind are the fact that the over-the-counter (OTC) commodities market continues to be substantially bigger than its exchange-traded counterpart and that banks' participation is still relatively small, compared to non-traditional investors (for example, hedge funds) and resources players.

The skills required for building a successful commodities-linked business in Asia both dictate and depend on the degree of desired involvement. At one end of the spectrum, in order to cross-sell plain vanilla swaps or exchange-traded products, a strong customer franchise and competitive execution capabilities are crucial. In contrast, when offering OTC hedges and structured solutions, banks not only need deep product expertise but also the risk and distribution capabilities to finance and hedge large exposures.

Finally, participating in physical markets demands a completely different depth in product and risk-management capabilities, as well as ownership of resources and assets (for example, ships or warehouses). But this type of expertise can enhance an institution's access to several additional revenue pools, such as transaction banking and financing. Players interested in this space can create competitive advantage by covering the whole supply chain along certain commodity trade corridors, such as Australia/China or Indonesia/China.

### **Serving financial institutions**

With the rapid creation of wealth in Asia, one segment banks must not overlook is the financial services sector, itself, which includes banks and institutional investors such as insurance companies, asset managers, sovereign wealth funds and hedge funds. Overall, McKinsey expects financial services clients to contribute just over 45 percent of total CMIB revenues by 2015. As local banks' customers globalize, the banks, themselves, will need access to larger correspondent banking networks for cross-border trade financing, clearing, payments and custody services.

From the perspective of a global player, one growth opportunity is to offer select services to local banks, which can then white label them for their customers. Foreign institutional investors—the global institutions' bread-and-butter—will also continue to witness growth as they sharpen their focus on Asia. And at the most advanced end of the continuum, McKinsey expects increasing hedge-fund demand for prime brokerage in Asia, including for leverage-provision and securities-lending services.

The last looming battle is to serve Asia's domestic insurers and other institutional investors, whose assets under management are growing quickly. With nearly \$20 billion in CMIB revenues by 2015, this segment will emerge as a substantial opportunity in its own right, with new needs for investment, custodian and cash management support. At present, most local players still cannot provide the holistic coverage that would enable an asset manager client, for example, to coordinate its transaction banking and capital markets accounts. Nevertheless, domestic cash management services are a comparatively easy upsell for local institutions, providing an opportunity to cement relationships.



## Out of the Shadows: Central Clearing of Repurchase Agreements

**Jeff Penney**

Repurchase agreements (repos) are the largest part of the “shadow” banking system: a network of demand deposits that, despite its size, maturity and general stability, remains vulnerable to investor panic. Just as depositors can make a “run” on a bank, repo lenders can take their money out of the market, thereby denying the lifeblood of cash to broker-dealers (either stand-alone or owned by banks and bank holding companies) that rely on leverage to operate.

The entire shadow banking system has been demonized as a place where loans are hidden within derivatives among non-bank counterparties, rather than displayed on the balance sheets of traditional, regulated banks. In reality, the shadow banking system is a legitimate market for secured financing, in which cash is lent in exchange for collateral. Repos, in particular, have many positive attributes, includ-

*Originally published in June 2011*

ing disclosure on the balance sheet. Nevertheless, the financial crisis exposed several flaws in the secured financing markets in general and repos specifically, and the Federal Reserve System ultimately interceded with liquidity to prevent the further collapse of banks and broker-dealers.

While not categorized as a “derivative,” a repo is an over-the-counter (OTC) contract that shares many key characteristics with derivatives, including a reliance on counterparties to meet obligations over time. The inability of regulators to measure activity in OTC derivatives resulted in the passage of the Dodd-Frank legislation,<sup>1</sup> which requires that certain instruments be moved to a central counterparty clearing house (CCP). As the nexus of all trades, a CCP provides visibility to regulators and credit intermediation for all market participants.

The benefits of central clearing are directly applicable to the repo market and are crucial to the global money markets that are relied on as a safe, short-term investment for individuals and institutions alike. Central clearing is needed to provide lenders with guaranteed return of cash without sensitivity to collateral or credit. A CCP also lays the groundwork for lenders to interact directly with borrowers in a true exchange with transparent pricing.

Central clearing of repos can also provide capital efficiency and more stable funding for banks and broker-dealers. Ultimately, a CCP for repos can evolve into a hub of funding activity for many forms of liquid collateral, thereby bringing the majority of the shadow banking system into full view.

## Repo Fundamentals

A repo is most easily understood as a sale of securities accompanied by an agreement for the seller to buy back the securities (to “repurchase” them) from the buyer at a future date. A pair of “sale-repurchase” transactions becomes a repo when bound together by formal documentation. Taken as a package, the repo is recognized as a financing (borrowing) rather than as a disposal (sale) for tax purposes—the seller effectively borrows the cash proceeds until they are returned by repurchasing the securities.<sup>2</sup>

In a repo, the securities are referred to as collateral, and the entire transaction is essentially a collateralized loan. By convention, the party that borrows cash is said

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<sup>1</sup> Dodd-Frank Wall Street Reform and Consumer Protection Act (Pub.L. 111-203, H.R. 4173).

<sup>2</sup> From a tax and accounting standpoint, it may be fraudulent to account for the sale of securities with no repurchase agreement as a “financing” or to claim as “sold” any securities for which there is an agreement to repurchase.

to enter into a repo on its collateral and is referred to as the “seller.” The party that lends cash is said to enter into a “reverse repo” and is referred to as the “buyer.”<sup>3</sup>

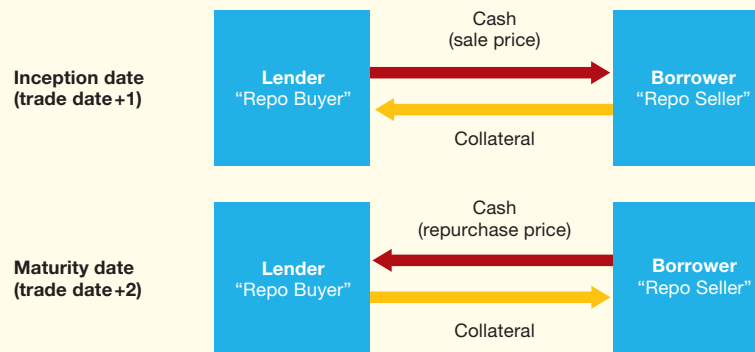
Once a repo transaction is agreed upon, cash is exchanged for collateral on two dates: settlement (inception), and again at maturity, when the loan must be repaid. The sale price for the securities establishes the amount of cash lent to the borrower, while the repurchase price reflects the loan amount plus interest charged by the lender. As a result, the repurchase price is equivalent to the sale price plus interest to maturity. Exhibit 1 illustrates these two exchanges in an “overnight” (one-day) repo that settles on the day after the trade date and matures on the day after settlement.

A repo transaction may be initiated either by a lender trying to invest a certain amount of cash or by a borrower seeking to raise cash from securities. The loan amount is equal to the market value of the collateral minus a haircut, a percentage calculated to protect the lender in the event of default by the borrower (a risk examined in greater detail below). In the event that the borrower defaults (fails to repay the loan), the lender may liquidate the securities, thereby recovering the loan.

Repos are contracted between broker-dealers and their customers, between broker-dealers and banks, inter-dealer and inter-bank. In addition to acting as principal lenders and borrowers in the repo market, certain banks may act as agent or custodian, holding cash and securities on behalf of other borrowers and lenders. It is also common to find a depository or central registry for repo transactions to facilitate the matching of settlement instructions.

Exhibit 1

### Overnight bilateral repo



Source: McKinsey analysis

<sup>3</sup> This article will use the term “lender” rather than “buyer” and “borrower” rather than “seller” to emphasize the banking nature of repos over the conventions of the market.

### Life cycle of a repo

As with all OTC products, the life cycle of a repo involves several standard processes: documentation, execution, clearing, settlement and custody. A repo is negotiated and executed privately between a borrower and a lender. As such, it is referred to as a bilateral agreement.

Clearing is the matching of trade notices generated by the two parties and the initiation of settlement instructions for the movement of cash and securities. Clearing takes place multiple times during the life cycle of a trade. Dealers match trades between themselves and their clients, and custodians and depositories match the resulting settlement instructions.<sup>4</sup>

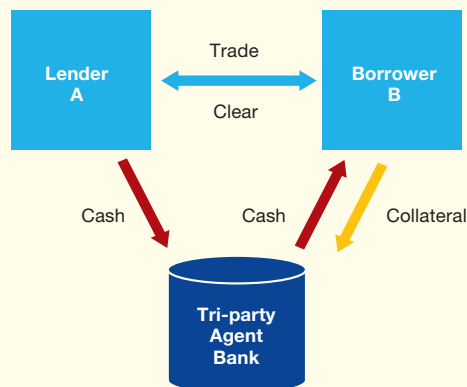
Settlement of a repo involves the physical delivery of cash and collateral. Custody of the cash and securities related to a repo involves the maintenance of two accounts—a cash account and a collateral account—for both the lender and the borrower. These accounts are held by broker-dealers themselves, by custody banks representing either party to the transaction, or by a single bank serving as custodian for both parties simultaneously.

### Tripartite repos

When both parties to a repo share a common custodian to hold collateral and to transfer cash, the arrangement is referred to as a tripartite or “tri-party” repo. The custodian is not a principal in the transaction, but acts as agent for both parties, holding cash and collateral accounts for the borrower and the lender. Exhibit 2 illustrates

Exhibit 2

#### A tripartite repo



Source: McKinsey analysis

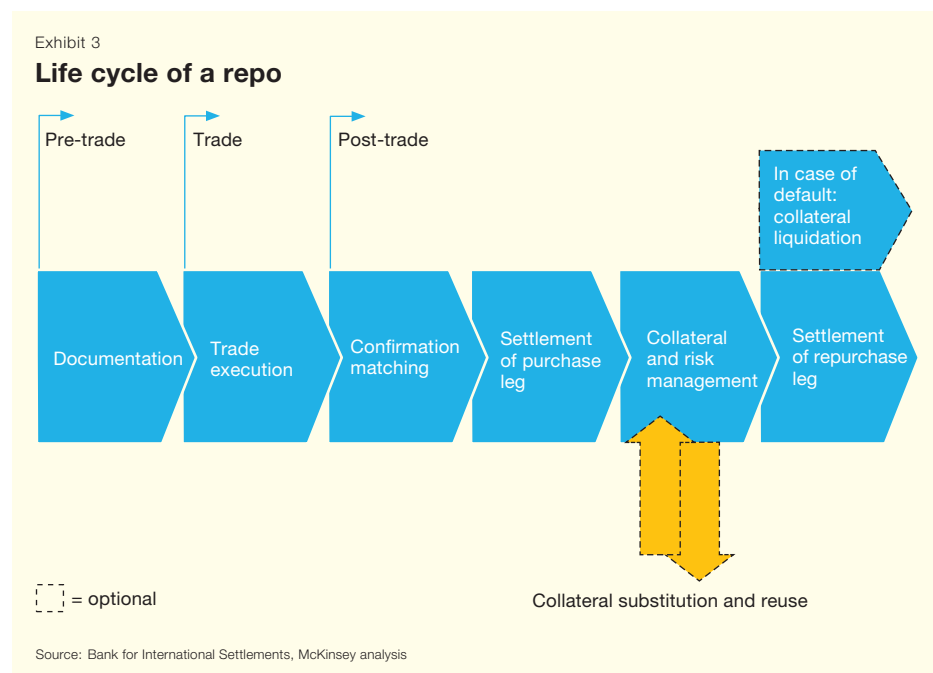
<sup>4</sup> See *Functional Definition of a Central Counterparty Clearing House (CCP)*, The European Commission, November 2004.

the role of a tri-party agent in holding the borrower's collateral and transferring the lender's cash.

The tri-party agent bank plays a key role in the risk management of repo transactions by providing valuation services to ensure that collateral is sufficient to meet the terms of the contract. The bank may also accommodate borrowers in the substitution of different collateral securities over the life of the repo. Beyond a single transaction, tri-party agent banks can support the optimal use of a borrower's collateral in simultaneous repo transactions among a network of lenders, a service that is critical to all broker-dealers in their quest to finance trading operations at the lowest possible cost. Exhibit 3 illustrates the life cycle of a repo.

## Repos for Borrowers: Secured Financing

Repos are the most prevalent, but by no means only, transactions that define the shadow banking system. Other secured financing transactions (in which cash is borrowed against securities) include secured loans, securities lending transactions, and derivatives such as total return swaps, forwards, and "delta-one" option combinations. While economically equivalent, each of these forms of secured financing is governed by different documentation, as well as tax, accounting and regulatory treatment.





Market participants use different forms of secured financing for many reasons, the most common of which is market convention surrounding the collateral. Repos are the vehicle of choice in fixed-income markets, while total return swaps, margin and stock lending are more common in equity markets. Most market participants select financing to comply with collateral conventions. Occasionally they may buck those conventions to take advantage of lower funding costs or haircuts or to comply with their own limiting statutes.

### **Borrower risks**

The primary risk to borrowers is that financing dries up. In a world awash with liquidity, many market participants assume that financing can be renewed when the current transaction expires. However, repo financing may not renew when lenders become concerned about the quality of collateral or the ability of a borrower to repay. With its contractual maturity date, a repo provides an abrupt termination mechanism. There is no assurance that the financing can remain in place, even with a modification to the loan amount, haircut or interest rate.

The majority of secured financing transactions, including repos, are of short duration, analogous to demand loans. When short-term funding is used to carry longer-dated assets, the borrower is exposed to losses if the funding is no longer available and the assets cannot be sold. In creating and granting the Financial Stability Oversight Council (FSOC) supervisory authority over banks and other institutions, Section 113 of the Dodd-Frank Act identifies maturity mismatch and reliance on short-term funding as indicators of financial instability. The Basel Committee on Banking Supervision has introduced the net stable funding ratio (NSFR) to promote longer-term funding of bank activities.<sup>5</sup>

The fragmentation of secured funding activities across repos, total return swaps, securities lending, and other structures is a risk management challenge for broker-dealers, not only in tracking funding sources, but also in tracking asymmetrical contract terms such as notice periods and cross-default provisions in repo and derivatives documentation. These asymmetries can have unintended, adverse consequences during times of stress, including increased collateral calls or termination.

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<sup>5</sup> The Basel Committee on Banking Supervision, *International Framework for Liquidity Risk Measurement, Standards and Monitoring*, December 2009.

## Repos for Lenders: Money Market Investing

Money markets supply the shadow banking system with cash through direct investments in a variety of short-term instruments, including certificates of deposit, commercial paper, Treasury bills, and mortgage- and asset-backed securities. In contrast, longer-term securities are financed indirectly via repos, with the securities used as collateral instead of purchased and held to maturity.

Money markets are where Main Street intersects Wall Street. When money market mutual funds enter into tripartite repos with broker-dealers, they directly participate in the shadow banking system by lending cash to broker-dealers. Money markets are also linked to the activities of large custody banks. Specifically, the securities lending market includes \$320 billion of U.S. equity securities, most of which is held by banks (Bank of New York Mellon, Citibank, JPMorgan Chase, Northern Trust and State Street Bank) that serve as custodian and agent lender to mutual funds.<sup>6</sup> A bank may arrange to lend the fund's equity securities to other banks and broker-dealers to facilitate the settlement of equity trades. The custodian requires cash while the securities are on loan. The cash is in turn invested in money market securities, most often repos that result in the cash being exchanged for Treasury securities. The recirculation (more technically, rehypothecation) of cash and securities effectively owned by retail investors is therefore considerable. This example also points to the connection between the repo and securities lending markets, in which two types of liquid collateral (U.S. Treasuries and equity securities) are financed within a larger system of connected, but largely unobservable, transactions.

### Lender risks

The primary risk to lenders in repos is a default by the borrower that requires the lender to sell the collateral. If the market value of the collateral has dropped and the haircut is too small, the lender loses money when liquidating to recover cash. A money market mutual fund in this situation “breaks the buck,” with its investors receiving less than one hundred cents per dollar invested.

The insertion of a tri-party agent into a repo transaction mitigates some risks by placing them on the agent bank, but does not eliminate them. As the Federal Reserve Bank of New York (FRBNY) identified in its white paper,<sup>7</sup> banks serving as tri-party agents take on considerable exposure in bilateral repo transactions when collateral is pending delivery. This intra-day credit exposure, also referred to as “daylight risk,” is what the FRBNY proposes to minimize, but not eliminate, through the imposition of timing standards on tripartite repos. A tripartite repo does not eliminate the lender's risk in liquidating collateral if and when the borrower defaults.

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<sup>6</sup> DataExplorers, *Securities Lending Yearbook, 2009-2010*.

<sup>7</sup> The Federal Reserve Bank of New York, *Tri-Party Repo Infrastructure Reform*, May 17, 2010.

## The State of Repos in the U.S.

Unlike regulated depositories, the shadow banking system has no ability to suspend withdrawals, provide collective guarantees, ensure sufficient risk management, or otherwise eliminate credit exposure and information-sensitivity to collateral. The repo market is currently self-regulated, despite the fact that its practitioners individually fall under the jurisdiction of various government regulators. There is currently no formal exchange or price discovery mechanism for repos. Trade parameters are not reported to a central database or market board. Electronic trading tools exist to facilitate communication and processing among active participants, but they do not constitute a formal electronic communication network (ECN) directly accessible to lenders.

The repo market in the U.S. currently lacks a centralized clearing capability for all participants, relying instead on the combination of a central securities depository (CSD) for certain transactions and dealers self-clearing with their customers for others. Advancements in the marketplace have thus far been limited to primary dealers approved to do business directly with the Federal Reserve.<sup>8</sup> The Fixed Income Clearing Corporation (FICC), a subsidiary of the Depository Trust & Clearing Corporation (DTCC), is the largest repo depository in the U.S. and provides clearing services. The largest tripartite custodians in the U.S. repo market are JPMorgan Chase and Bank of New York Mellon. This system serves only a subset of market participants and limited types of collateral, a fraction of the overall demand for cash.

The repo market in the U.S. currently lacks a centralized clearing capability for all participants.

### General collateral finance

General collateral finance (GCF) repos are a variant of tripartite repos that support borrowing and lending among dealers willing to accept a prescribed list of Treasury and other related securities as collateral. It was introduced in 1998 by FICC and the two largest clearing banks, JPMorgan Chase and Bank of New York Mellon, in an effort to reduce transaction costs and enhance liquidity in the repo market. GCF repos grew rapidly in popularity among dealers and were estimated to account for 54 percent of inter-dealer repo transactions on Treasury collateral by 2002.<sup>9</sup>

The GCF system has encouraged electronic connectivity among dealers and the development of a suite of services surrounding a list of securities set by the Government Securities Division of FICC (GSD Products).<sup>10</sup> Although limited in

<sup>9</sup> Michael J. Fleming and Kenneth D. Garbade, *The Repurchase Agreement Refined: GCF Repo*, Current Issues in Economics and Finance (New York: Federal Reserve Bank of New York), Volume 9, Number 6, June 2003.

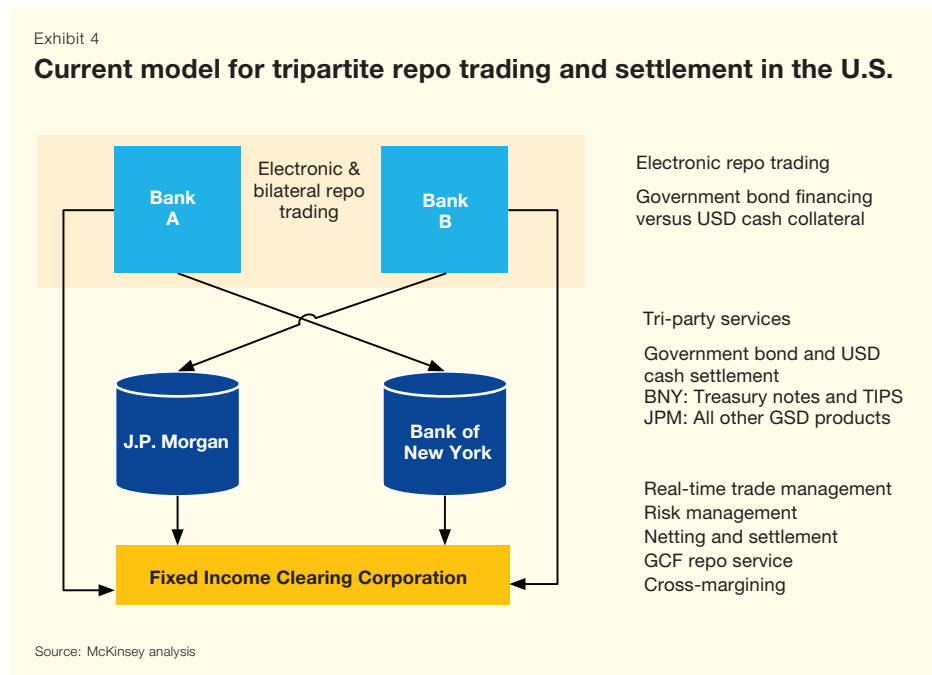
<sup>10</sup> [http://www.newyorkfed.org/markets/pridealers\\_current.html](http://www.newyorkfed.org/markets/pridealers_current.html)

terms of participants and acceptable collateral, GCF repos illustrate the benefits of improved trading standards, collateral substitution, and netting of obligations. Exhibit 4 depicts GCF repos as they are conducted in the U.S. today.

While a step in the right direction, neither the GCF system nor the larger tripartite system offers direct access for all potential lenders or broader pools of collateral for borrowers.

### Repo market principals

As repos are privately negotiated, there are no official figures for haircuts, interest rates, the overall size of the market, or the identities of participants.<sup>11</sup> Similarly, there are no official tallies for the securitization markets that create collateral or for the margin requirements associated with derivatives contracts. Estimates put the U.S. repo market at \$12 trillion (the size of the total assets in the regulated banking sector) in notional amount at its pre-crash peak, with \$2.8 trillion transacted in tripartite form among the primary dealer banks reporting to the Federal Reserve (Exhibit 5).<sup>12</sup>



<sup>10</sup> GSD products include: U.S. Treasury bills, notes, bonds, strips and book-entry non-mortgage-backed agency securities, certain mortgage-backed securities, and Treasury Inflation-Protected Securities (TIPS).

<sup>11</sup> Rates and volumes for the GCF segment of the repo market are reported by DTCC. See <http://www.dtcc.com/products/fi/gcfindex/index.php>

<sup>12</sup> Gary Gorton, *Questions and Answers about the Financial Crisis*—Prepared for the U.S. Financial Crisis Inquiry Commission, February 20, 2010.

### Broker-dealer funding practices

The management of a broker-dealer trading operation relies to a degree on “self-funding,” or the extent to which the sources of collateral (risk positions, long derivatives hedges, and securities pledged against margin loans) offset the uses of collateral (short hedges, stock lending), resulting from customer trading activity. Any residual securities that are not offset or internalized in this way must be financed externally. The importance of prime brokerage to a broker-dealer is that its customer financing activity increases the sources and uses of collateral, thereby increasing the potential for the broker to become self-funding. The need for coordination during the financial crisis led many firms to consolidate prime brokerage, securities lending and repos under common management.<sup>13</sup>

The capital structure of a broker-dealer is designed to provide stable sources of liquidity under a number of scenarios. Sources of liquidity span a wide range across structural and temporary capital. Repos and other secured funding transactions are a significant part of this capital structure, and continuous access to these markets is critical to the business model. If secured funding sources disappear, a broker-

Exhibit 5

#### Tri-party repo market participants

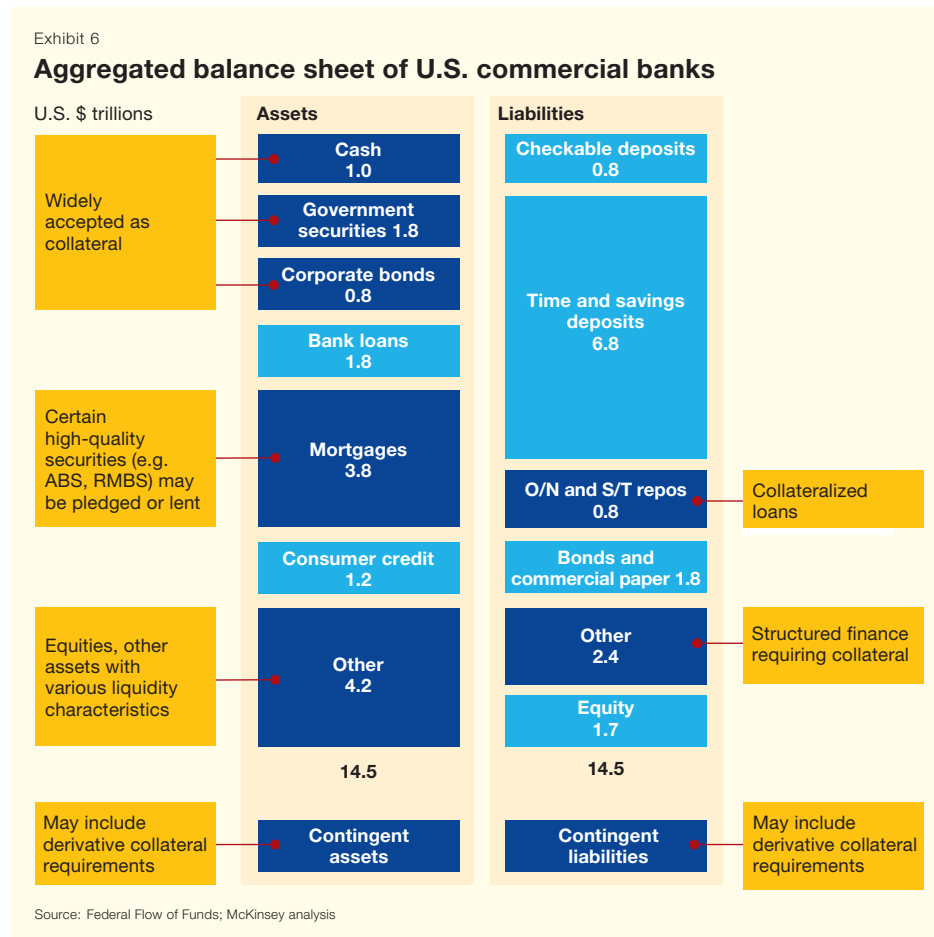
Largest borrowers via tripartite repos	Largest lenders via tripartite repos
<ul style="list-style-type: none"> <li>• Bank of America/Merrill Lynch</li> <li>• Barclays Capital Inc</li> <li>• Credit Suisse Securities (USA) LLC</li> <li>• Citigroup Global Markets Inc</li> <li>• Daiwa Capital Markets America Inc</li> <li>• Deutsche Bank</li> <li>• Goldman Sachs</li> <li>• HSBC Securities (USA) Inc</li> <li>• Jefferies &amp; Company Inc</li> <li>• J.P. Morgan Securities</li> <li>• Mizuho Securities Inc</li> <li>• Morgan Stanley &amp; Co Inc</li> <li>• Nomura Securities International Inc</li> <li>• RBC Capital Markets LLC</li> <li>• RBS Securities Inc</li> <li>• UBS Securities LLC</li> </ul>	<ul style="list-style-type: none"> <li>• BlackRock</li> <li>• Citibank (Agent Lender)</li> <li>• Deutsche Bank Advisors</li> <li>• Dreyfus</li> <li>• Federated</li> <li>• Fidelity</li> <li>• Goldman Sachs Asset Management</li> <li>• Invesco (AIM)</li> <li>• J.P. Morgan</li> <li>• Northern Trust (Agent Lender)</li> <li>• PIMCO</li> <li>• Schwab</li> <li>• State Street Global Advisors</li> <li>• UBS</li> <li>• Vanguard</li> <li>• Wells Fargo</li> <li>• Western Asset Management</li> </ul>

Source: McKinsey analysis

<sup>13</sup> See *The Future of Prime Brokerage: Lessons Learned from the Financial Crisis*, High Line Advisors LLC, April 2010.

dealer’s only recourse is to rely on expensive, unsecured funding such as commercial paper, longer-term debt or equity. Firms must exercise judgement regarding the durability of funding in crisis scenarios. Greater stability in the repo market would reduce the probability that structural capital would be needed in a crisis.

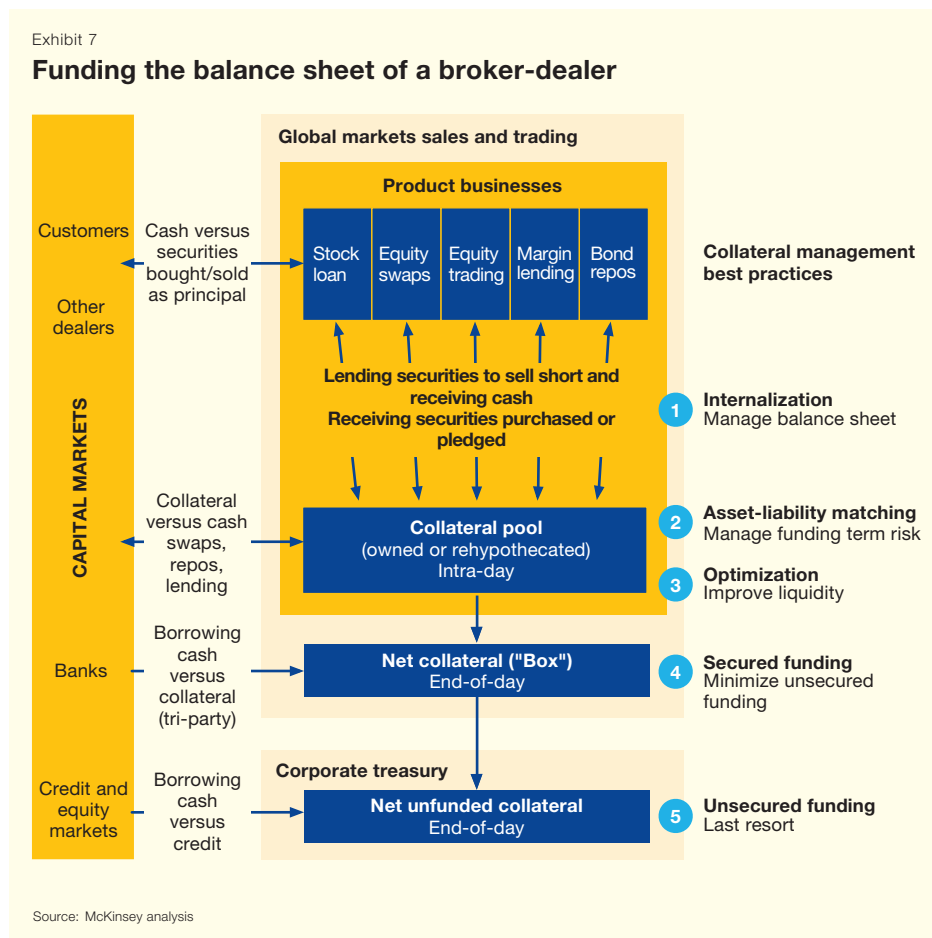
Exhibit 6 shows the aggregate balance sheet composition of U.S. banks. With regulatory limitations on the use of deposits to support trading activity, firms with a larger presence in the capital markets face greater dependence on the secured funding markets and a greater reliance on unsecured debt and equity for less liquid assets that cannot be used as collateral.<sup>14</sup>



<sup>14</sup> Asset-backed securities (ABS) include a wide range of instruments, a subset of which may be accepted as collateral in secured financing transactions at one time or another. Examples include securities backed by credit card or auto loan receivables, residential mortgage-backed securities (RMBS), and commercial mortgage-backed securities (CMBS).

Exhibit 7 highlights best practices for funding the balance sheet of the sales and trading operation of a broker-dealer. Principal trading and financing activities bring collateral onto the balance sheet. Ideally, sources and uses of collateral are met internally, sometimes across product areas. When collateral is not available internally, further trading is required to exchange what is available for what is needed. The remaining liquid securities held “in the box” must be financed at the end of each day, often through tripartite repos. Illiquid securities ultimately require structural capital such as equity or long-term debt.<sup>15</sup>

When lenders participate in tripartite repos, they are directly financing the operations of broker-dealers. Customers who trade derivatives and pledge collateral as margin provide indirect financing to broker-dealers who rehypothecate their collateral. Regu-



<sup>15</sup> See *Collateral Management: Best Practices for Broker-Dealers*, High Line Advisors LLC, March 2011.

latory requirements and the desire of customers to segregate their collateral with a third party will deny broker-dealers access to this source of funding. Clearly, credit sensitivity on the part of lenders persists, and the system remains under pressure.

## Repos During the Financial Crisis

The orderly functioning of the money markets is based on the lender/investor's belief that its cash will be returned. When this belief is shaken, the markets contract

Repos played a central role in each stage of the financial crisis.

in numerous ways, including higher haircuts, fewer acceptable collateral securities, curtailment of credit lines, and even complete withdrawal from lending, thereby punishing any

business that relies on short-term leverage. Repos played a central role in each stage of the financial crisis, from investor distress in early 2007 to the collapse of major financial institutions at the peak of the crisis in October 2008. Issues that require additional scrutiny include:

- **Inadequate risk management.** The financial crisis exposed the degree to which leverage was available on illiquid collateral, for broker-dealers and their clients alike. Investor defaults in the repo market as early as 2007 drew attention to lax risk management in the secured lending of cash by brokers to their clients. Haircuts for repos are set by negotiation or convention, yet should always be a function of the liquidity and the volatility of the collateral, thereby minimizing the probability that the value of the collateral will fall below the loan amount during the time it takes to sell the collateral. These guidelines were often disregarded, resulting in losses among broker-dealers financing hedge funds. (It is notable that similar defaults did not occur in margin lending practiced by prime brokers, which generally require much higher haircuts over more liquid assets.) Problems for brokers financing their clients quickly turned into problems for brokers financing themselves. Surviving firms now rely on permanent capital to finance illiquid positions.
- **Systemic relationships.** A repo lender's exposure to the borrower's credit-worthiness means that the transaction can be impacted by seemingly unrelated events, and even overnight repos on Treasury collateral are not immune to externalities. Although the recent financial crisis began with a shock to the subprime sector of the housing market, the negative impact spread to repos because the extent of exposure to subprime assets among participating banks was unknown. Some lenders turned away even Treasury collateral in an effort to reduce credit lines to some borrowers.



- **Connection to individual investors.** Money market funds dealing directly in certain types of collateral “broke the buck,” as the secured funding markets contracted. Losses on the reinvestment of cash owned by mutual fund investors as a result of securities lending transactions were absorbed by the banks acting as agent, but could have been passed back to the end investor.
- **Mismatch of liabilities to assets.** The presumption of continuously available financing and attractive positive carry led banks and broker-dealers to finance long-dated assets with short-term repos. When repo transactions ended and lenders withdrew from the market, borrowers were forced to take back securities and faced catastrophic cash shortfalls.
- **Dependence on leverage.** Pre-crisis balance sheets were comprised of approximately 10 percent equity and 40 percent debt, with the remaining 50 percent financed in the secured markets, across repos and other vehicles. It is easy to see how a crisis-induced increase of 20 percent in financing haircuts (equivalent to a corresponding withdrawal of cash from the system) could and did consume all of a broker-dealer’s equity. Further erosion resulted in insolvency unless additional capital was raised.<sup>16</sup>
- **Fragmentation of borrowing activity.** At the height of the crisis in late 2008, many broker-dealers lost control over their sources of funding, because there was neither consistency nor standardization in secured financing practices. Credit lines and customer assets previously available for rehypothecation were withdrawn. The Federal Reserve System became the repo counterparty (lender) to the entire U.S. market, accepting all manner of collateral from banks and bank holding companies.<sup>17</sup> Repo market contraction was the principal catalyst for the demise of the stand-alone broker-dealer model among the largest investment banking firms. Goldman Sachs and Morgan Stanley became bank holding companies so that they could raise cash against securities pledged to the Fed.

Loss of confidence in the interbank and money markets occurred quickly and with dramatic results. Once the market began to contract over credit concerns, a chain of events ensued. Lenders in the repo market withdrew their funds outright or via larger haircuts, and the interbank lending market collapsed. The shortfall in cash led dealers to raise capital, and once all capital sources were tapped, dealers delevered by selling assets, which in turn reduced the prices of the assets. Ultimately the crisis wiped out the equity of many participants, resulting in insolvency and government bailouts.

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<sup>16</sup> Gary B. Gorton, *Slapped by the Invisible Hand: The Panic of 2007* (Oxford University Press) 2010.

<sup>17</sup> Liquidity facilities introduced during the crisis include the Term Auction Facility (TAF), the Term Securities Lending Facility (TSLF) and the Primary Dealer Credit Facility (PDCF).

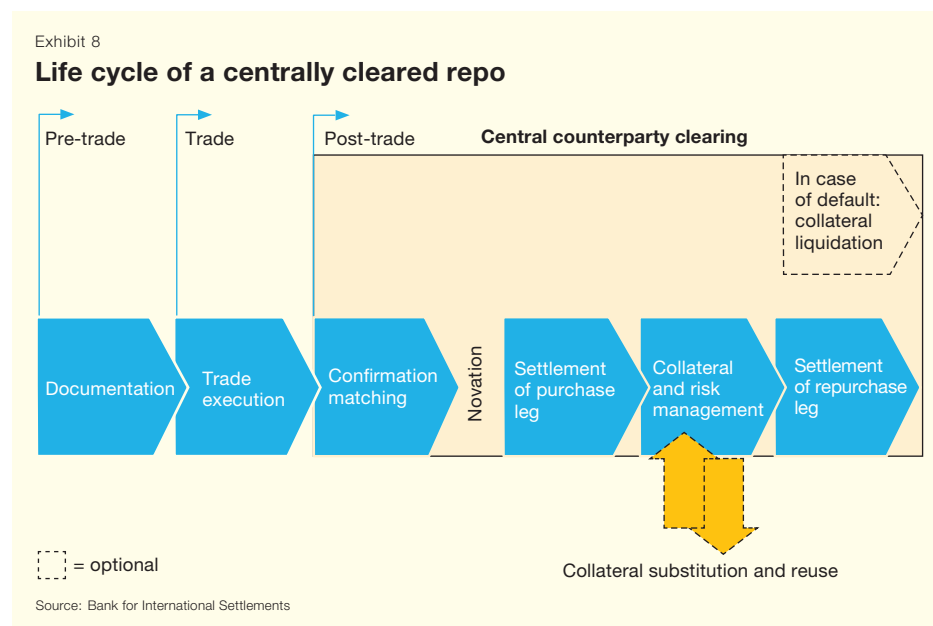
The challenge for the markets is to learn from this experience and to take steps to reduce vulnerability to another panic in the secured funding markets.

## The Case for Cleared Repos

A CCP acts as the seller to every buyer and the buyer to every seller. CCPs apply specifically to transactions that carry ongoing exposure beyond an initial transfer of ownership. As a result, derivatives exchanges operate as CCPs, while exchanges for cash products, such as equities, do not. Repos, like derivatives, require participants to perform obligations over time. Bilateral trades between two parties may be cleared (matched) without the use of a common or central counterparty. However, a CCP can neutralize credit exposure over the life of the contract.

Exhibit 8 enhances the life cycle of a repo to show how a CCP may be interposed to create a centrally cleared transaction. When a CCP is introduced into the life cycle of a repo, note that collateral, risk and liquidation (if necessary) are all managed by the CCP.

Without explicitly suggesting a CCP, the Fed white paper on tripartite repos made a case for central clearing that was soon highlighted in the financial press.<sup>18</sup> By



<sup>18</sup> Gillian Tett, *Repo Needs a Backstop to Avoid Future Crises* (London: The Financial Times), September 23, 2010.

reducing the likelihood of a run, a CCP for repos would perform a public service and potentially save taxpayer money.

Cleared repos will not replace all forms of secured lending. They will, however, establish the core of the market for standard terms and liquid collateral. Lenders who stay within the CCP can take comfort that their cash will be returned. Other lenders may still elect to venture outside of the CCP and take on counterparty exposure, collateral liquidation risk, or non-standard terms in exchange for increased reward. Over time, the CCP should demonstrate the capability to accommodate more types of collateral and flexible terms without increasing lender risk.

### Immediate and future benefits

Centralized clearing for repos not only addresses risks highlighted by the financial crisis, but also sets the stage for market evolution and considerable improvements for the benefit of borrowers and lenders alike. These improvements include:

- **Mutualization of risk.** The principal benefit of a clearing house mechanism is the mutual obligation of its members to meet the obligations of any single member. This shared liability encourages members to allow the clearing house to enforce risk guidelines such as membership and trading rules, collection of performance bonds, timing of events, collateral haircuts, and the maintenance of a dedicated clearing fund in excess of the margin on individual trades. As a result, rating agencies have bestowed a AAA-rating on such entities.<sup>19</sup>
- **Federal Reserve powers.** Title VIII of the Dodd-Frank Act introduced the term “financial market utility” (FMU) for systems that transfer, clear or settle payments, securities or other transactions among financial institutions.<sup>20</sup> The act permits “systemically important” FMUs, including CCPs, as determined by the Financial Stability Oversight Council, to have accounts at regional Reserve Banks and obtain access to Federal Reserve payment and settlement services. Under extraordinary circumstances, the act also permits the Board of Governors of the Federal Reserve System to extend credit to such FMUs.<sup>21</sup>
- **Risk management standards.** A CCP ensures that collateral is properly priced (marked-to-market) and readily sold. In order for a CCP for repos to function properly, it must have knowledge of the liquidity and price volatility of each individual security pledged as collateral. The CCP can then set appropriate haircuts without yielding to the competitive and commercial pressures that exist in a bilateral market.

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<sup>19</sup> Standard & Poor's Corporation, *Options Clearing Corp.* (New York: The McGraw-Hill Companies), March 12, 2010.

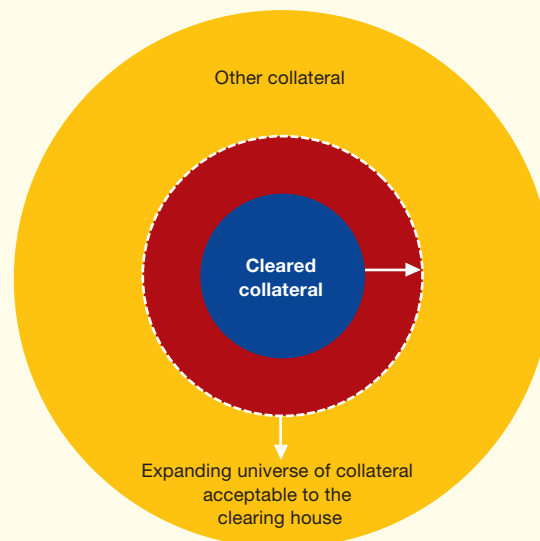
<sup>20</sup> Title VIII of the Dodd-Frank Act, P.L. 111-203, the Payment, Clearing, and Settlement Supervision Act of 2010.

<sup>21</sup> Anna L. Paulson and Kirstin E. Wells, *Enhancing Financial Stability: The Case of Financial Market Utilities* (Chicago: Federal Reserve Bank of Chicago) Chicago Fed Letter, October 2010.

- **Expansion of acceptable collateral.** A granular risk management framework for individual securities can accommodate an increasing variety of collateral. Each time a security is added to the system as acceptable collateral, borrower demand increases to the benefit of lenders, without additional risk. Borrowers may reduce their reliance on alternative, less stable sources of funding and consolidate their activity in the centrally cleared repo market. Exhibit 9 illustrates an increasing number of financing trades moved onto the CCP through collateral acceptance.
- **Observability of market size and pricing.** The various forms of secured financing practiced by banks and broker-dealers remain difficult for regulators to assess for bank stability or systemic risk. Consistency in the money markets and consolidation on a CCP would provide better visibility to regulators.
- **Exchange development.** Through standardization and risk management, a CCP essentially transforms any clearing member or client thereof into a homogeneous, highly rated borrower. This mutualization of credit is a precursor to anonymous trading through an electronic system that displays supply (offers) and demand (bids) for cash. With the development of a true repo ECN or exchange, price transparency and liquidity should increase for repo as they have for other instruments.

Exhibit 9

### Expansion of cleared collateral



Source: McKinsey analysis

- **Direct lender participation.** A CCP for repo may offer direct access to lenders seeking safe returns on their cash. A lender of cash presents no incremental credit risk to the CCP clearing membership. Large cash investors may have greater comfort lending into a CCP mechanism without sensitivity to collateral and with the added benefit of price discovery. As far as borrowers are concerned, the CCP is intended to make the existing banking system more robust. It should not disintermediate the role of prime brokers by offering leverage directly to investors who do not meet the capital requirement of the clearing house.
- **Development of a long-term repo market.** “Term” refers to the maturity of a repo contract, the time between trade settlement and maturity. Overnight repos are popular among lenders concerned about counterparty risk to the point of forgoing higher returns. Failure to solve the counterparty credit issue hampers the development of a long-term repo market, which would provide the more stable funding needed by broker-dealers and measured by regulators. Lenders and borrowers alike will embrace longer-term repos, if they are safe and cost-effective. A CCP structure for repos will allow borrowers to tap into long-dated funding sources at a rate established by supply and demand, without the cost of an additional credit spread or the risk of credit-linked early termination events.
- **Favorable accounting for participants.** Trading through a CCP offers balance sheet relief for broker-dealers. Long and short positions on the same instrument cleared with a CCP with rights of offset are generally eligible for netting in the calculation of assets and liabilities. Opposing trades in a bilateral context retain different credit exposures and are not recognized as offsetting under generally accepted accounting standards.<sup>22</sup>
- **Operational improvements through consolidation.** Knowledge of securities posted as collateral is the same expertise required to manage risk in derivatives based on the same securities. By this logic, repos, single stock futures and options, and securities lending transactions are all candidates for convergence on the same CCP platform, reducing operational complexity as well as risk.
- **Capital efficiency across one or more products.** Just as the netting of trades through a CCP reduces the size of a broker-dealer’s balance sheet, its margin requirements can be reduced as well. In calculating margin, a CCP may give credit for offsetting positions in the same product, as well as risk-reducing positions across different products. A CCP therefore offers a powerful counteraction to regulatory forces that would otherwise increase demands on capital.

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<sup>22</sup> Financial Accounting Standards Board of the Financial Accounting Foundation, *FIN 41: Offsetting of Amounts Related to Certain Repurchase and Reverse Repurchase Agreements*, December 1994.

## Capital efficiency

At a CCP that clears repos along with other derivatives, margin relief for dealers can be considerable. For example, if a dealer were to pledge two-year Treasury notes as collateral in a repo, the margin might be 0.41 percent, or 41 basis points (bp). If the dealer were to have a short position in two-year interest rate futures, the margin on the trade might be 45 bp. Although they are not a perfect hedge, if these two positions were held by the same dealer they are naturally offsetting. Rather than margining both positions separately for a total of 86 bp, the CCP might require margin of only 15 bp on the two positions combined, resulting in a 64 percent smaller collateral requirement.

Exhibit 10 shows this and three other examples of margin relief attributable to risk-reducing positions in repos and other derivatives. In each case, the capital saved by the dealer is considerable.

Exhibit 10

### Reduction in margin requirements attributed to offsetting risk positions

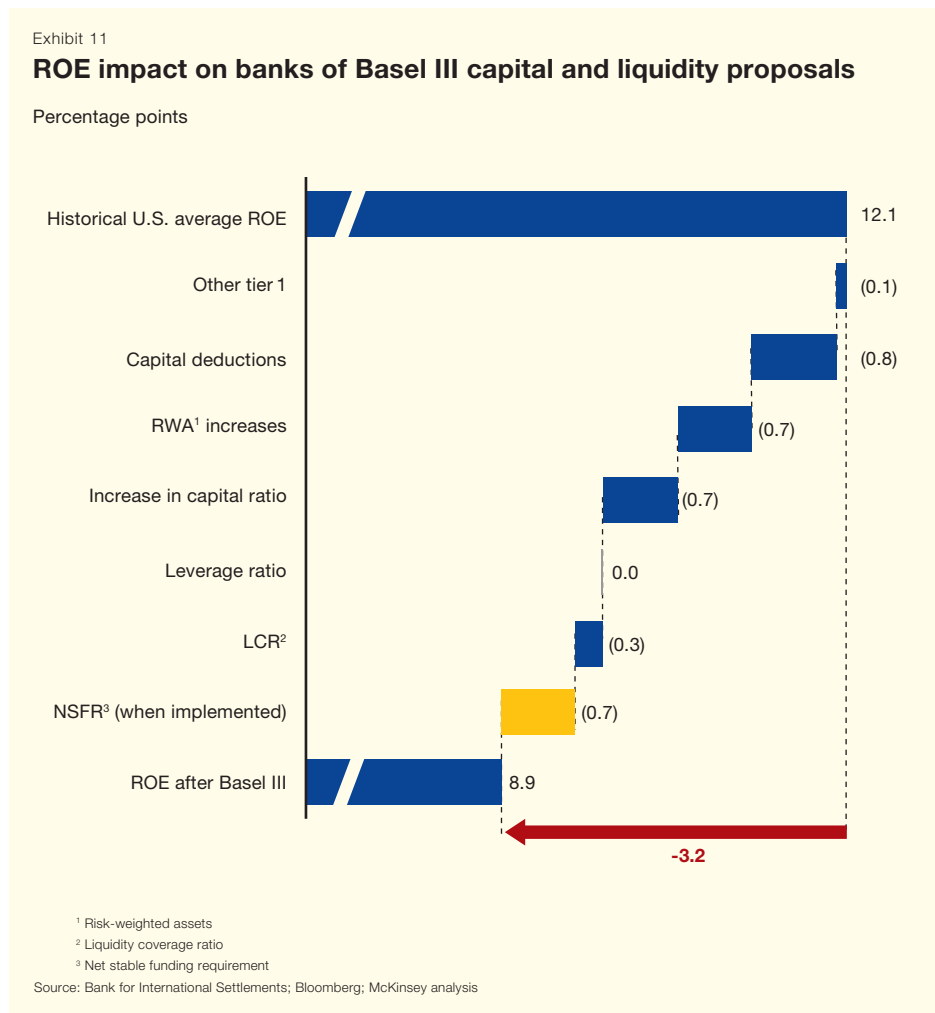
#### Examples

Portfolio Contents	Identifier	Expiration	Quantity	Notional	Margin	Rate
Short-Term (2-year) T-Note Future	ZTE	6/30/11	-1	\$ 200,000	(820)	0.41%
2-year U.S. T-Note	912828HV5	3/31/13	200,000	\$ 200,000	(890)	0.45%
Combined				\$ 400,000	(611)	0.15%
Savings					1,099	64%
Medium-Term (5-year) T-Note Future	ZTE	6/30/11	-1	100,000	(1,189)	1.19%
5-year U.S. T-Note	912828NV8	8/31/15	100,000	\$ 100,000	(1,099)	1.10%
Combined				\$ 200,000	(657)	0.33%
Savings					1,631	71%
Long-Term (10-year) T-Note Future	ZNE	6/21/11	-1	\$ 100,000	(2,089)	2.09%
10-year U.S. T-Note	912828HR4	2/15/18	100,000	\$ 100,000	(1,655)	1.66%
Combined				\$ 100,000	(1,146)	0.57%
Savings					2,598	69%
T-Bond Future (30-year)	ZBE	6/21/11	-1	\$ 100,000	(3,339)	-3.34%
30-year U.S. T-Bond	912810EX2	8/15/26	100,000	\$ 100,000	(3,354)	-3.35%
Combined				\$ 200,000	(1,701)	-0.85%
Savings					4,992	75%

Source: The Options Clearing Corporation

The significance of margin relief cannot be overstated. Regulation of bank activity through increased capital and liquidity requirements will place considerable pressure on broker-dealer operations. In the U.S., current capital and liquidity proposals (Basel III) could reduce return on equity (ROE) by 320 bp, if no compensating action is taken.<sup>23</sup>

Exhibit 11 illustrates the cumulative effect of these proposals. The capital efficiency that comes from dealing with a CCP rather than bilaterally represents a means of lessening this impact.



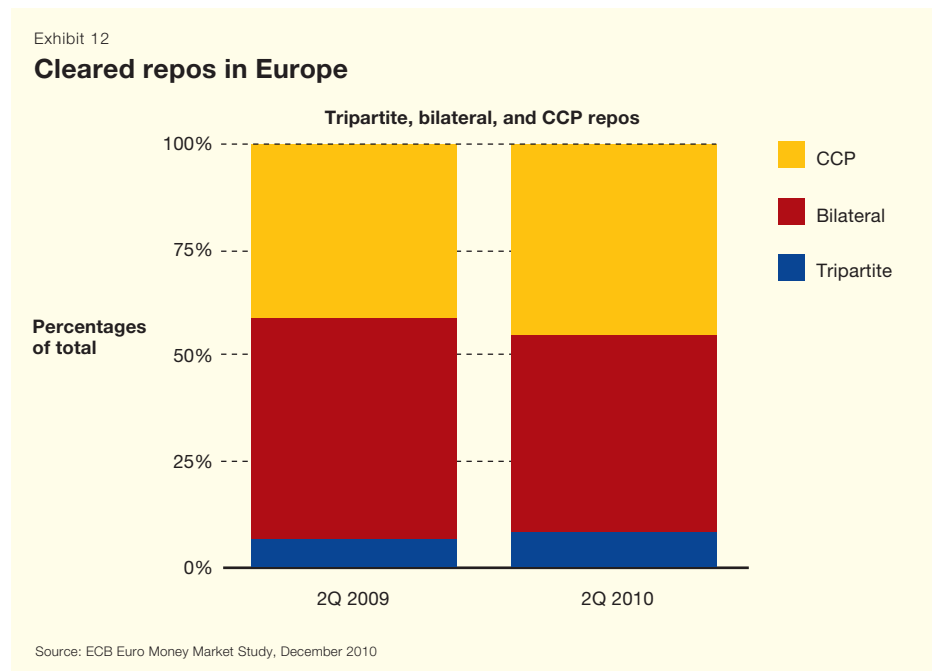
<sup>23</sup> The third of the Basel Accords (Basel III) is a set of global regulatory standards on bank capital adequacy and liquidity agreed upon by the members of the Basel Committee on Banking Supervision.

## Cleared repos in Europe

The U.S. trails Europe in the development of electronic trading and central clearing for repos. Nearly half of all European secured money market transactions were done on a CCP in 2010, a response to the need to limit credit exposures, market risks, and the impact of capital adequacy requirements (Exhibit 12).<sup>24</sup>

As early as 2005, Eurex Repo, Eurex Clearing and Clearstream Banking introduced GC Pooling, a system combining electronic trading of repos through a CCP with a real-time collateral management system. The average outstanding volume of GC Pooling reached €110.9 billion (\$148.2 billion) in December 2010, an increase of 31 percent compared to the prior year (€84.3 billion or \$121.4 billion) and a continuous annual growth rate of 78 percent since inception.<sup>25</sup> The initiative provides a useful precedent for evolution of the U.S. repo market, starting with GCF repos.<sup>26</sup>

Initiatives in France (Collateral Basket with Pledge, or CBWP) and Italy (Collateralized Interbank Market in Italy, or MIC) were launched in 2009. Both initiatives offer clearing and guaranty by novation, with netting, position-keeping, risk and default management, and reporting of repo activity among members.



<sup>24</sup> European Central Bank, *Euro Money Market Study*, December 2010.

<sup>25</sup> Eurex Repo, *Volume Development*, February 2011.

<sup>26</sup> Bank for International Settlements (BIS), *The Functioning and Resilience of Cross-Border Funding Markets*, March 2010.



## Proposed Evolution of the U.S. Repo Market

The introduction of central clearing of repos need not be a disruptive event, if managed in stages. Systemic improvements and benefits to market participants would be realized at the completion of each stage.

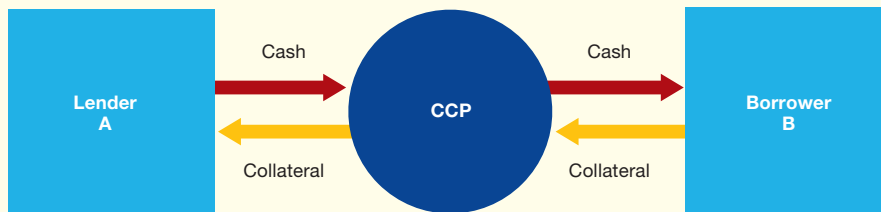
### Stage 1: Novation of bilateral transactions

The first stage in market evolution preserves the way repo transactions are currently conducted. After the trade is agreed, the CCP is introduced into the transaction by a process of novation, whereby the repo is divided into two separate and offsetting transactions with the CCP interposed as the counterparty facing each of the parties. While a CCP platform requires standardization of documentation, novation to the CCP has no impact on the initial negotiation of critical terms between the participants.

In the traditional, bilateral arrangement, the lender is exposed to the extent that the borrower's collateral is insufficient, while the borrower is exposed to the lender for the return of collateral. In the CCP arrangement, the CCP has no net market risk, and each participant is exposed only to the credit of the CCP for the return of cash or collateral. The figures show the flow of cash and collateral at the inception of the trade, leaving clearing, settlement and custody out of the diagram for the moment (Exhibit 13). At the maturity of the repo the flows are reversed, as cash is returned to the lender and collateral securities are released to the borrower. The figures are similar to any high-level representation of bilateral, OTC transactions.

Exhibit 13

#### Repo novated to a CCP



Source: McKinsey analysis

The appeal to a regulator seeking visibility over the system becomes more apparent as the number of participants in the marketplace goes up.

The CCP acts as the hub of a marketplace with a theoretically infinite number of spokes. Whereas the size of a purely bilateral market can only be estimated through accurate and timely reporting from individual participants, a CCP can at all times provide a clear picture of the number and amount of transactions novated to it (Exhibit 14).

Tripartite repos are an important segment of the market, and the introduction of a CCP neither replaces nor diminishes the role of the tri-party agent. The benefits of tripartite repos and the efficiencies observed in the GCF market argue for the use of an agent bank in all centrally cleared trades. The benefits of a tri-party agent are complimented by the CCP, whose enforcement of trading standards and risk management directly address the concerns expressed by the Federal Reserve.

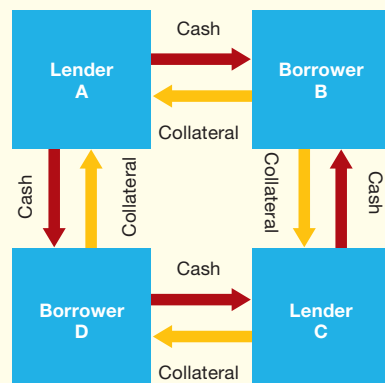
Exhibit 15 illustrates how the CCP becomes a fourth party to the transaction and the tri-party agent becomes a quad-party agent. At this point it becomes useful to introduce clearing and settlement functions into the figures. Note that the collateral is called for by the CCP and held by the agent bank rather than transferred to the account of a lender.

## Stage 2: Electronic communication of supply and demand for cash

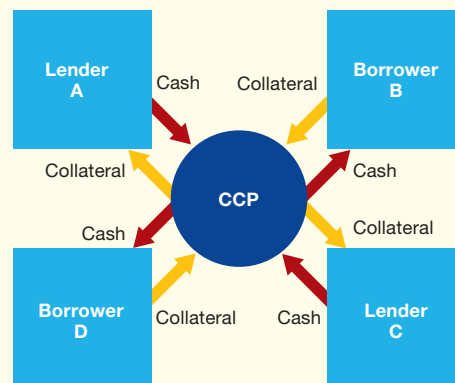
All exchanges need a clearing house, but not all cleared markets have visible exchanges. The next step in the evolution of a centrally cleared repo market is the creation of an ECN or formal exchange with direct connectivity among participants.

Exhibit 14

### Bilateral repos



### Repos novated to a CCP



Source: McKinsey analysis

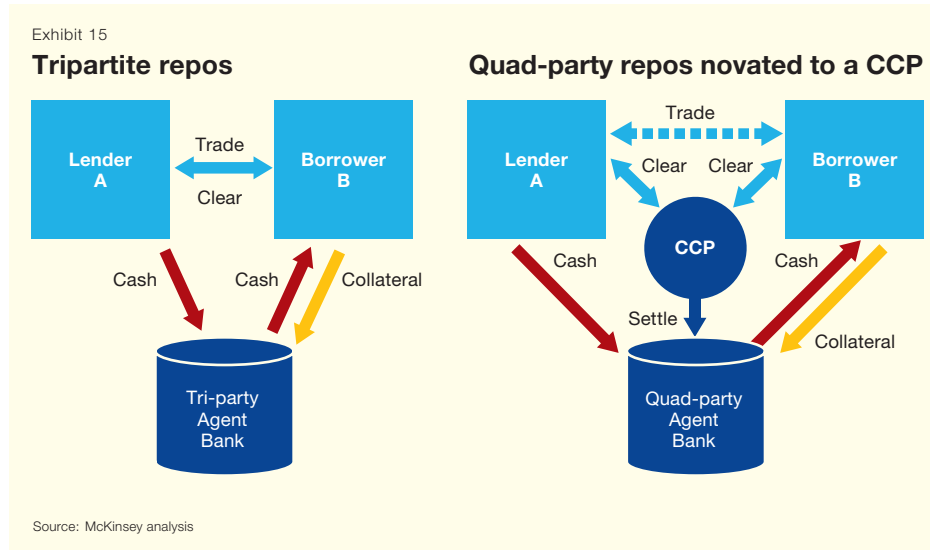
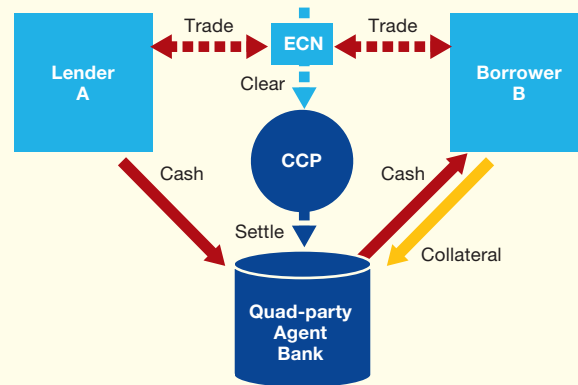


Exhibit 16 (page 80) illustrates the interaction of borrowers and lenders through an ECN, with the trade cleared through a CCP. The ECN allows lenders to offer their cash anonymously to potential borrowers, with the repo (loan) going to the highest bidder in the form of the highest rate. The presence of the CCP makes the lender indifferent to the identity of the borrower, with collateral management handled without risk or operational complexity. By eliminating counterparty credit risk, price can be set by supply and demand. A larger pool of eligible collateral will boost demand for cash, while the CCP ensures that the collateral poses no additional risk to the lenders.

### Stage 3: Expansion and substitution of collateral

Transition of repos to a CCP needs a starting point, and U.S. Treasuries are the logical collateral, because they comprise 34 percent of the known secured funding activity. Exhibit 17 (page 80) shows the composition of the \$1.6 trillion in securities pledged as collateral in the tripartite market as of January 2011. Ultimately, the benefit for borrowers comes from expansion of the types of collateral accepted by the CCP, with the ability to freely substitute collateral over the life of the transaction. As the system matures, collateral haircuts are established such that securities are deemed equivalent to Treasuries for use as collateral. For example, a U.S. Treasury security at a 2 percent haircut may be deemed equivalent to ABC common stock at a 5 percent haircut. In each case, the haircut is deemed adequate by the CCP for the recovery of cash in the system. Fungibility (free substitution) of collateral across U.S. Treasuries and equities, alone, would provide for \$631 billion of daily financing needs in the tripartite market.

Exhibit 16

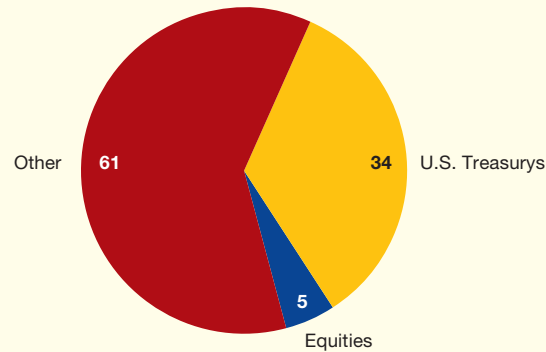
**Quad-party repo with electronic communications network (ECN)**

Source: McKinsey analysis

Exhibit 17

**Tripartite repo collateral, January 2011**

Percent



Source: Federal Reserve Bank of New York

Equities carry the additional complexity of corporate actions such as dividends, but clearing houses with experience in equity derivatives and/or stock loans should be able to provide the necessary collateral and risk management.

Fungibility of Treasury and equity collateral would make it possible for repos to integrate with the larger stock loan market onto a single financing platform. Convergence of stock loan and repo activities through a CCP would pave the way for broker-dealers to optimize capital usage to offset higher requirements pending under Dodd-Frank and Basel III.

Opponents of a CCP structure for repos will argue that the market for Treasury repos does not require credit intermediation or central clearing and that additional costs will result. The fact remains that counterparty credit in the repo market is a sensitivity that results in market contraction during times of stress. During the crisis of 2008, many counterparties saw their repo lines severely curtailed, even for Treasury collateral, and were turned away by their customary lenders. While alternative lenders were eventually found, timing and price for replacement financing was anxious and uncertain. Any additional cost should be considered insurance against future crises and may be offset in the future as trading through the CCP increases.

\* \* \*

The central clearing of repos provides many benefits for those participating in the shadow banking system, directly or indirectly, as well as for those responsible for monitoring it. Standardization and centralization are also the first steps toward automation and an exchange trading mechanism.

#### **Benefits for cash lenders**

- Ability to anonymously offer cash to all repo clearing members and their customers to obtain highest rates
- Guaranteed return of cash plus interest to the repo maturity date
- Collateral requirements set by CCP—no need to evaluate or liquidate collateral
- No necessity for or risk associated with collateral liquidation—CCP returns cash

#### **Benefits for cash borrowers**

- Collateral fungibility and rights of substitution
- Balance sheet optimization
- Ability to access liquid market for term repos as required by regulation or prudent risk management
- Capital efficiency through margin offset (netting) at CCP for certain offsetting transactions in repos and other products cleared at the same CCP

#### **Benefits for regulators and central banks**

- Transparency of the portion of the market cleared at the CCP
- Elimination of “daylight” risk in the tripartite system; rapid confirmation
- Focal point for action or assistance if needed

Central clearing with a CCP for repurchase agreements is a critical step in the maturation of the secured financing markets, a shadow banking system that is integral to the functioning of the capital markets as well as the investment of cash for individuals and institutions alike. Central clearing can neutralize the risk of creditor panic and subsequent bailout by providing stability to the money markets and bank balance sheets. The CCP guarantees the return of lender cash, provides a source of information for regulators, and a focal point for central bank assistance if required. The most sensible response to the recent banking crisis is to bring secured financing transactions out of the shadows and into clear view through a series of non-disruptive steps that can ultimately lead to exchange-based trading and price transparency for all participants.

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## Winning in Flow: Scale Is Everything

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**Tunde  
Olanrewaju**

**Peter Schloten**

**Paul Willmott**

**D**uring the boom years in capital markets, the attractiveness of the industry and the supernormal returns being generated created a rush to build out capital markets businesses. This rapidly created a fragmented industry landscape—with a small number of large players and a long tail of smaller participants. This was true both for structured products (including leveraged finance, asset finance and real estate finance) and for flow products, where smaller participants leveraged existing banking relationships.

With flow products contributing a growing share of overall revenue pools (84 percent in 2010 versus 81 percent in 2009), many smaller players began building out and investing in their flow product capabilities and platforms. More than half of the revenue pool in flow was captured by small players in 2010.

Given the market dynamics in flow products (e.g., the shift to electronic trading, regulation to increase transparency and fair pricing, and margin compression), as well as the results of the McKinsey Capital Markets Trade Processing Benchmarking Survey where the scale effects in flow products were clearly evident, this appeared to be a short-lived phenomenon (Exhibit 1).

Based on industries with similar dynamics (e.g., in the airline industry, the market share of the top three players increased from 40 percent to 70 percent from 1995 to 2010), market consolidation and the exit of smaller players seemed likely to occur. But even during the depths of the crisis, this did not happen.

### Why capital markets were different

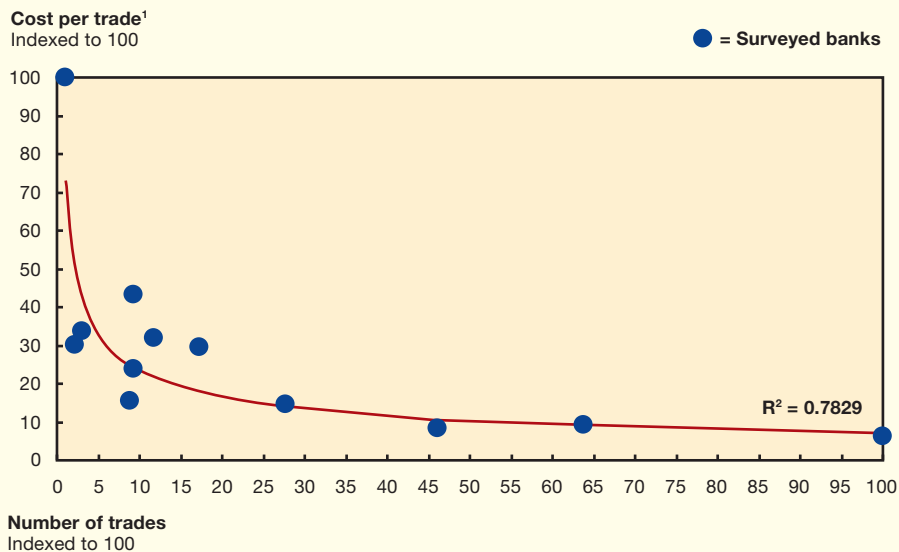
During the financial crisis and subsequent rebound, the expected consolidation in flow did not materialize for two principal reasons:

- The first was the presence of local market inefficiencies and the relationships that smaller firms have with their corporate banking franchise. This allowed smaller players to maintain a profitable niche with relatively high margins despite being sub-scale.

Exhibit 1

### Scale has a significant impact on back-office operations unit cost per trade

Cost per trade industry curve for FX (cash)



<sup>1</sup> Costs include middle office, back office, information technology and third-party costs.

Source: McKinsey Capital Markets Trade Processing Benchmarking Survey 2010



- The second was the artificially high front-office margins and business volumes during the immediate post-crisis rebound in 2009, which allowed even sub-scale players to cover significant inefficiencies due to scale differences.

The key question facing the industry in 2010 and 2011 was whether these factors would endure over the medium to long term and allow smaller players to successfully stay in the flow business.

### **The new normal**

New evidence suggests that this is not the case—creating a “new normal” for capital markets. In the current environment, market liquidity and industry revenue pools continue to be depressed; capital and funding requirements (primarily Basel III) are putting enormous pressure on returns in many structured products; and margins in flow products continue to be under pressure (Exhibit 2, page 86).

The pressure on flow products is particularly acute where over-capacity, electronic and standardization of products are making life difficult front-to-back. For example in 2010:

- FX volumes grew by 58 percent, but revenues fell by 9 percent.
- OTC equity (flow) volumes grew by 41 percent, but revenues fell by 12 percent.

In addition, the long anticipated market consolidation appears to be gaining momentum. There have been multiple instances in recent months where large players are examining their business portfolios and operating model for any sub-scale businesses. Some large players are dramatically reducing their investment banking franchises and exiting entire businesses (e.g., Credit Suisse in fixed-income, UBS across the investment bank). Small players are tightening their business focus and exiting non-core units (e.g., UniCredit and LBG announcing the exit of their equity businesses).

Given the current market outlook in general and for flow products specifically, this trend is likely to continue.

### **Why scale matters**

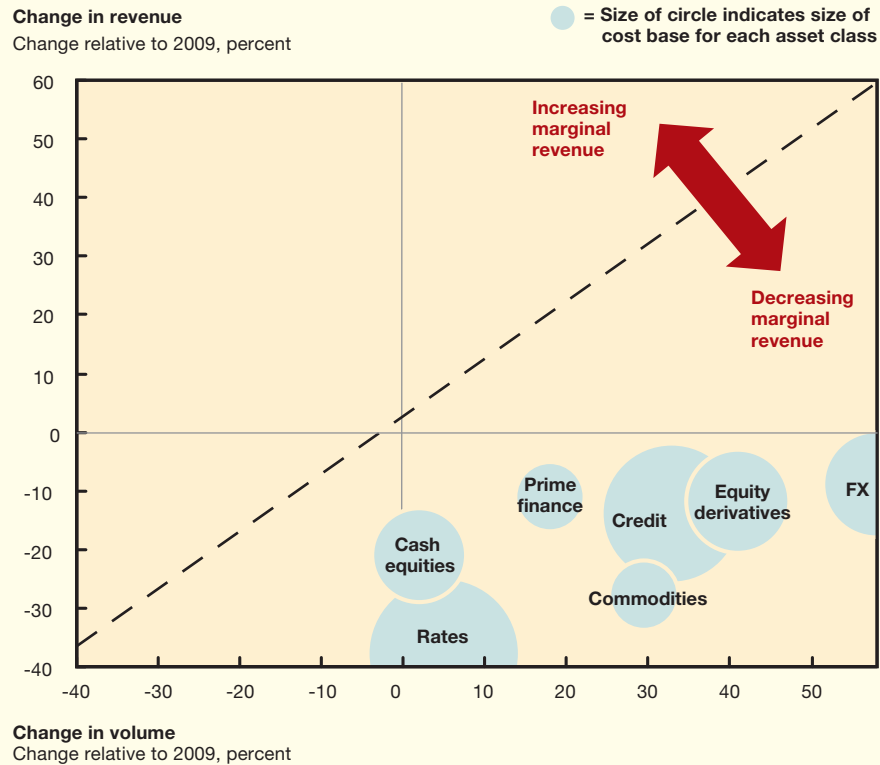
This is not to say that a profitable future in flow is not possible, but scale matters.

While the impact of scale (trade volumes) on efficiency (employee productivity) in back-office processing has been widely known, a deep dive into front-to-back efficiency data yields two crucial insights.

The first is that scale (measured either in revenues or trade volume) is highly correlated to front-office productivity (revenue per producer) across all asset classes and most strongly in flow (Exhibit 3, page 87). The relationship is strongest in global FX

Exhibit 2

### Margin compression appears to be a reality in flow products



#### Summary observations

- Across all flow products, volumes grow much faster than revenues.
- Variance appears to be largest in FX and equity derivatives.
- Huge drop in rates and commodities revenues despite strong volume increase.

Source: McKinsey Capital Markets Trade Processing Benchmarking Survey 2010

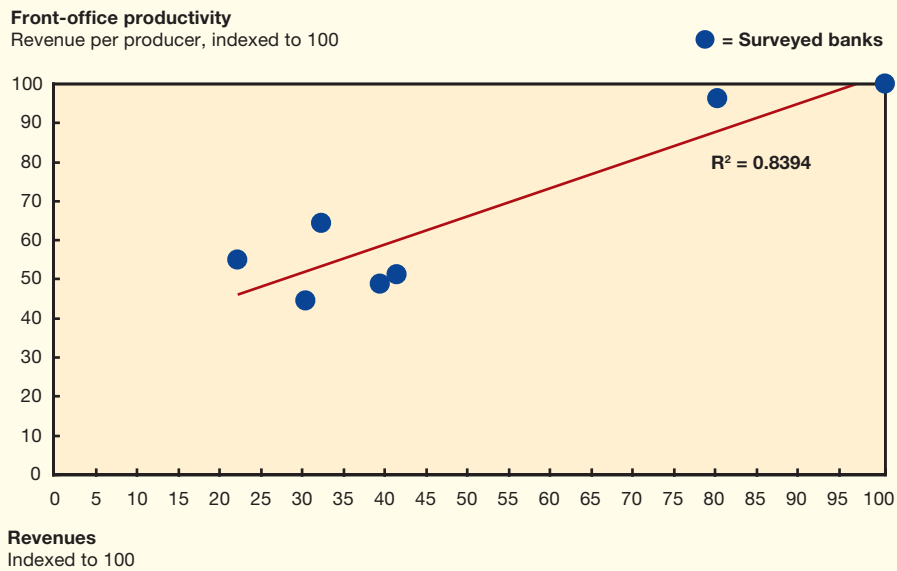
and U.S. cash, two of the most liquid flow asset classes. Differences in productivity across global investment banks are as large as four-fold:

- *Cash equities EMEA*: The productivity of the most efficient player is four times that of the player with the lowest productivity.
- *Cash equities Americas and FX (cash)*: The productivity of the most efficient player is 2.5 times that of the player with the lowest productivity.

Exhibit 3

**Scale is highly correlated to front-office productivity, particularly for flow**

Correlation between front-office productivity and scale for FX cash



Source: McKinsey Capital Markets Trade Processing Benchmarking Survey 2010; McKinsey analysis

The second insight is that there is a strong correlation between front-office productivity and back-office productivity in flow asset classes. Put another way: firms tend to have either high productivity front-to-back or low productivity front-to-back (Exhibit 4, page 88).

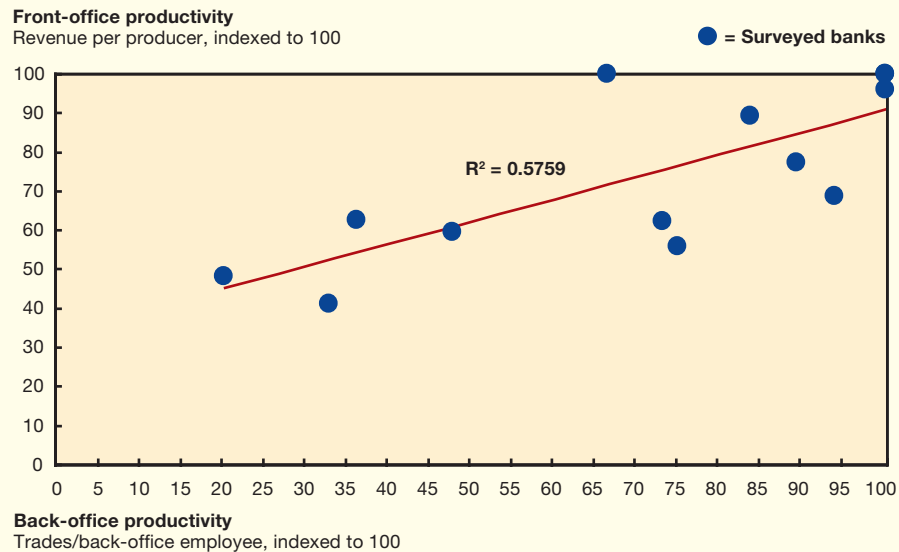
That being said, no firm was found to be highly productive in all asset classes (Exhibit 5, page 89), e.g., one firm has the highest productivity in EMEA cash equities, but is among the lowest in FX. The relationship between front-office productivity and back-office productivity holds in flow, but not in structured products where there appears to be little correlation.

Going forward, players will need to build scale in flow, partner to create virtual scale or exit the business.

**Implications**

The implications of this new normal and the need for scale are going to be felt by both large and small players, albeit in a different manner.

Exhibit 4

**Front-office productivity translates into back-office productivity**Correlation between front-office productivity and back-office productivity for flow products<sup>1</sup><sup>1</sup> Flow products include FX cash, cash equities (EMEA) and cash equities (Americas)

Source: McKinsey Capital Markets Trade Processing Benchmarking Survey 2010; McKinsey analysis

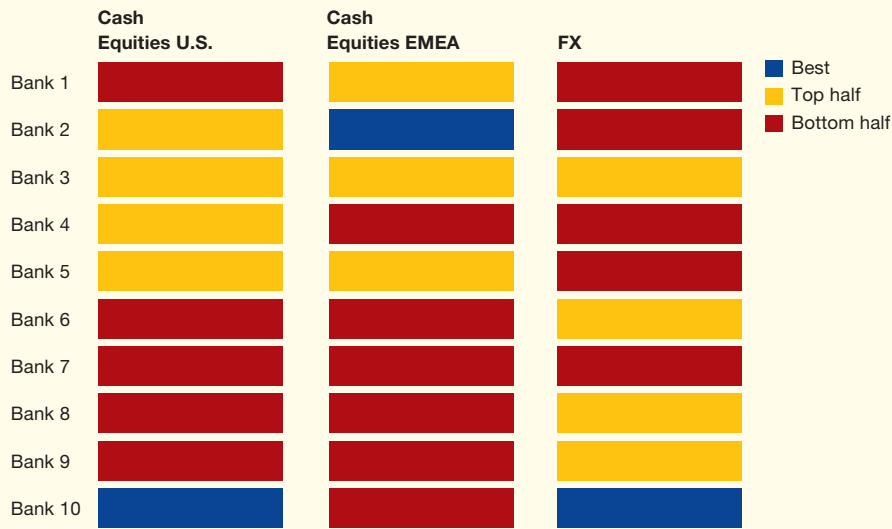
Small players will need to change their approach in three key areas. First, they need to create virtual scale—either by partnering with a third party or by creating utilities to leverage a wealth management and/or corporate banking platform. This requires highly flexible operations and technology to be able to “plug and play” with other parties or across the bank. Secondly, they need to re-evaluate the relevance of the flow business to their overall strategy by reviewing current business economics, and exit areas that will not be profitable in the long term. Thirdly, small players need to change the bank’s investment portfolios to align with this strategic agenda.

For large players, a three-pronged agenda is also critical, but a different set of actions is required. First, they need to industrialize their infrastructure, i.e., streamline front-to-back governance and processes, ensure they have a scalable straight-through processing (STP) platform with the right functionality and capabilities, and design to profit each activity conducted front-to-back. Secondly, they need to continue to invest in electronic capabilities in the front office to drive the front end of STP, but more importantly to capture liquidity and scale in flow products. Thirdly, they need to adjust compensation structures to ensure that staff are being compensated for the value being delivered incremental to the “seat value” of the franchise.

Exhibit 5

**Position of surveyed banks in flow asset classes**

League table for front-office productivity



Source: McKinsey Corporate & Investment Banking Practice

Early movers are already reaping the rewards of such actions. J.P. Morgan’s Strategic Re-engineering Program—a project that has been underway since 2009 and aims to spend \$500 million on consolidating the bank’s disparate trading systems—will eventually save \$300 million a year. Technology has allowed Goldman Sachs to reduce equities headcount by more than 50 percent from peak levels of nearly 5,000, while in FX, technological investments have contributed to margins, which have increased more than 150 percent since 2005.

Going forward, both small and large players need to establish an operating platform and capabilities to build scale in flow.

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