SECURITIES AND
FUTURES COMMISSION
證券及期貨事務監察委員會

SFC
證監會

Risk-focused Industry Meeting Series:

G-SIFI Trends in Risk and Risk Mitigation

December 2013

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SECURITIES AND FUTURES COMMISSION
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The global financial crisis showed that it is important for regulators and market participants to have an active and open dialogue on the evolution of risk and risk mitigation to serve the common goal of promoting safer, fairer and more efficient markets.

From March to August 2013, the Risk and Strategy unit of the Chief Executive Officer's Office of the Securities and Futures Commission conducted a series of risk-focused industry meetings with a representative sample of global systemically important financial institutions. The meetings were held with senior officers of the business, risk management and compliance.

The objective of these meetings is for the Securities and Futures Commission to actively stay informed and to better understand the evolution of financial markets, market structure, product innovation and risk governance, as well as to identify new risks and emerging risk trends.

This report provides a summary of key risk and risk mitigation trends identified in these meetings. It also highlights aspects of best practices observed from the meetings.

The Risk and Strategy unit will continue the risk-focused industry meeting series, and extend the engagement to a wider range of market participants in the future.

With this first edition in a series of reports, we hope to contribute to the broader goal of continuous improvement in risk governance and risk culture.

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About This Report

Background

This report is the first publication by the Risk and Strategy unit (R&S) of the Chief Executive Officer's office of the Securities and Futures Commission (SFC).

R&S was established in 2012. As noted at the time of R&S' establishment, the SFC feels that "a centralized approach to risk will enable the SFC to more effectively coordinate its overall strategy and deal with a wide range of complex risks affecting market participants and investors".[1]

A further catalyst for the creation of R&S was the addition after the global financial crisis of two new principles by the International Organization of Securities Commissions (IOSCO): IOSCO Principle 6 which states that "The Regulator should have or contribute to a process to monitor, mitigate and manage systemic risk, appropriate to its mandate", and IOSCO Principle 7 which states that "The Regulator should have or contribute to a process to review the perimeter of regulation regularly." The same goals are also reflected in the objectives of the SFC as set out in Part II Section 4 of the Securities and Futures Ordinance (SFO).

The above developments reflect the realization that securities regulators have a significant role to play in ensuring systemic stability. Accordingly, an increasing number of global securities regulators have put in place dedicated functions and enhanced methodologies to identify emerging and systemic risks, including collaboration on the IOSCO Committee on Emerging Risks (CER), of which R&S is an active member. The IOSCO CER issued its first IOSCO Securities Markets Risk Outlook report on October 15, 2013.[2]

Risk-focused Industry Meetings

In January 2013, R&S launched a new initiative to establish a series of risk-focused industry meetings with a wide range of financial institutions and market participants. The objective of these meetings is for the SFC to actively stay informed and to better understand the evolution of financial markets, market structure, product innovation and risk governance, as well as to identify new risks and emerging risk trends.

For the first series of risk-focused industry meetings, R&S selected a representative sample of global systemically important financial institutions (G-SIFIs).[3] The meetings with the participating G-SIFIs took place from March to August 2013 and involved senior officers from the business, risk management and compliance.[4]

This report provides a summary of outcomes of these meetings, as further supplemented by independent research and trend analysis based on public sources. The purpose of this report is to help the financial industry embed enhanced risk governance at all levels in the organization and to this end, we include herein practical insight and aspects of best practice.

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1 See the announcement of the establishment of R&S (March 2012) http://www.sfc.hk/edistributionWeb/gateway/EN/news-and-announcements/news/doc?refNo=12PR22. For more information on R&S, see also Complinet News (September 2013) http://www.complinet.com/global/news/news/article.html?ref=166869.

2 See IOSCO "Securities Market Risk Outlook 2013 – 2014" (October 2013) http://www.iosco.org/library/pubdocs/pdf/IOSCOPD426.pdf.

3 See Financial Stability Board (FSB) "Update of group of global systemically important banks" (November 2012) http://www.financialstabilityboard.org/publications/r_12ten31ac.pdf.

4 The risk-focused industry meetings with the G-SIFIs were non-supervisory in nature. The identification and description of themes and trends contained in this report and the views expressed are based on the judgement of the authors. R&S will from time to time refresh the discussions.

Perspectives on Risk

In complex organizations with global presence such as G-SIFIs, there is a wide range of risk functions and specializations. To obtain a representative and integrated overview of risk and risk mitigation, it is important to take into account different perspectives on risk.

For the purpose of this report we focused on three main viewpoints: business leadership, the Chief Risk Officer or equivalent (CRO) and the Chief Compliance Officer or equivalent (CCO).[5] As a result, the report is organized into three principal sections:

Chapter 1: Business Perspective on Risk and Risk Mitigation[6]

Chapter 2: CRO Perspective on Risk and Risk Mitigation[7]

Chapter 3: CCO Perspective on Risk and Risk Mitigation[8]

Definitions

The terms corporate governance, risk governance, risk culture, and risk management are often used interchangeably.

For the purpose of this report, we have used the term "risk governance" to refer to processes of risk identification and risk mitigation embedded at <u>all levels</u> of the organization, including but not limited to processes to identify and mitigate financial, reputational, regulatory, compliance, conduct and operational risks. Risk governance concerns risk identification and mitigation frameworks, systems and controls that permeate all levels of the organization and is verifiable by looking at the strength of these processes and controls.

We have used the term "risk culture" to refer to the degree to which risk governance is accepted at <u>all levels</u> of the organization. While risk governance can be measured by observing frameworks, systems and controls, risk culture is much harder to measure as it involves soft factors, beliefs and perceptions. Notwithstanding this, risk culture can be observed through, among others, actions of senior management emphasizing the importance of honesty, integrity and effective risk governance to the long term viability of the organization (referred to as "tone from the top" and "tone from above"). Furthermore, since risk culture closely relates to beliefs and behaviors, it is intrinsically linked to incentives, including positive rewards for doing the right thing and penalties for doing the wrong thing (referred to in this report as "consequence management").

Other risk related terms used in this report have the meanings set out in the Financial Stability Board (FSB) Thematic Review on Risk Governance.[9]

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5 From the risk-focused industry meetings, the regional CRO or equivalent typically is responsible for market risk, position liquidity risk, counterparty risk, credit risk, capital modelling and stress testing. The regional CCO or equivalent typically is responsible for regulatory compliance risk, reputational risk, Chinese Walls and anti-money laundering, sanctions and anti-corruption related risks. Based on our meetings, it appears that the operational risk function is a rapidly evolving area for which the reporting lines differ among the various G-SIFIs. It is understood that in addition to these risk functions, there are a number of other risk functions that R&S hopes to establish a dialogue with in due course. We welcome those functions to reach out to us pro-actively to initiate discussions.

6 From the risk-focused industry meetings, G-SIFIs typically consider business supervisors to be part of the first line of defence. Pursuant to several high profile rogue trading incidents, there is a clear trend of further defining supervisory management controls.

7 From the risk-focused industry meetings, G-SIFIs typically consider the financial risk management functions to be part of the second line of defence.

8 From the risk-focused industry meetings, G-SIFIs typically consider the compliance functions to be part of the third line of defence.

9 See FSB "Thematic Review on Risk Governance Peer Review Report" (February 2013) http://www.financialstabilityboard.org/publications/r_130212.pdf. The FSB review concentrated on the evolving role of the board and the CRO. This report adds focus on other risk functions, including those who play an important role in managing conduct risk. The following terms used in this report have the same meaning as in the FSB report: board, executive director, non-executive director, risk appetite, risk appetite statement (RAS), risk committee and risk limits. See also FSB "Principles for an Effective Risk Appetite Framework" (November 2013) http://www.financialstabilityboard.org/publications/r_131118.htm.

Guiding Principles

Since a purpose of the report is to provide practical insight, the risk-focused industry meetings were based on the following guiding principles:

- ***Businesses are continuously evolving:*** To compete successfully, businesses, products and services must evolve. An objective of the risk-focused industry meetings is to enable the SFC to stay informed of this evolution.
- ***Risk is a business reality:*** As businesses, services and products continuously evolve, so too do risks. The question is not whether risk exists, but rather where it is and how it is being identified and mitigated. A further objective of the risk-focused industry meetings is to enable the SFC to stay informed of risk and risk mitigation.
- ***Beauty in simplicity:*** To obtain practical insight into the evolution of risk and risk mitigation, the discussions were focused on the following simple question: *"What keeps you awake at night (risk) and what are you doing about it (risk mitigation)?"*.
- ***Tone from above matters:*** While much has been said about "tone from the top", we do not believe this principle to be just limited to "the top" but rather to anyone who is treated within the financial institution as being in a position of power or influence.[10]
- ***Follow the money:*** We chose a practical approach, focused on understanding the latest business trends[11] and incentives.[12]
- ***Focus on the positive:*** While much has been written on flaws in risk governance frameworks, the meetings sought to identify progress that has been and continues to be made in risk identification and mitigation, with a view towards providing practical insight and aspects of best practices.

Acknowledgement

We wish to express our thanks to the CEOs, COOs, CFOs, CROs, CCOs, Country Heads and other senior officers from the business, risk management, and compliance of the participating G-SIFIs for their valuable time and input.

Comments

We welcome comments on this report. Since risk governance and risk culture best practices continue to evolve, we encourage continuous communication with the industry.

Any comments to this report should be sent to riskandstrategy@sfc.hk or to any of the SFC Risk and Strategy staff listed below:

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[10] See also Thomson Reuters "Risk Culture and Conduct Control: Time For A More Enlightened Approach" (July 2013) http://accelus.thomsonreuters.com/sites/default/files/GRC00369.pdf.

[11] A review of historical large regulatory penalties reveals that such regulatory penalties often concern highly profitable or loss-making business lines or trading books.

[12] The body of literature on behavioural psychology shows a clear correlation between behaviour and incentives (including rewards and penalties).

Executive Summary

Based on the risk-focused industry meetings, we identified a series of "overarching trends" and forward-looking themes which we summarize as follows:

1. ***Secular Trends***
2. ***Business Trends***
3. ***Risk Function Trends***
4. ***Forward-looking Themes***

For the purposes of this Executive Summary, the term "risk function" is used to refer jointly to the functions of the CRO and CCO, as both seek to identify and mitigate risk.

1. Secular Trends

We observed the following secular trends relevant to the business and risk functions from our meetings:

- ***Regulation dominates:*** Implementing new regulations continues to dominate the agendas of business and risk functions at G-SIFIs. It has led to substantial changes in the business model, including decisions on where to invest and divest. This process will continue until the post-crisis global regulatory agenda takes the form of final rules. Until such time, while G-SIFIs closely track the evolution of the rules (including the extra-territorial reach of certain global regulations), management noted that they may decide to defer significant changes in the business model and significant related expenses (for example IT investments) until the rules are final.[13] These decisions are in turn based on the business model of the particular G-SIFI, its competitive positioning and the priorities of its principal regulators.

- ***Measurement and data analytics:*** With growing costs, lower margins, higher capital charges, increasing regulatory and operational risks, and continued macro-economic uncertainty, the need to more accurately track and assess the profitability of business lines, services and products is paramount.[14] Management at many G-SIFIs noted that there is strong focus on measurement and data analytics to more swiftly compute profitability (referred to as the "big data and data analytics revolution"). As such, investment continues to be made in data analytics by business line, product and service. The trend also extends to customer profitability analysis, competitor profitability analysis and profitability analysis per market.

- ***Best-in-class IT:*** Throughout the risk-focused industry meetings, whether with executive management, business heads or the heads of risk functions, it is very clear that one of the key targets of many G-SIFIs is to implement best-in-class IT systems.[15] Without such systems, opportunities, costs and risks cannot be effectively priced and a full, real-time view of enterprise-wide risk cannot be produced. Also, economies of scale and fast delivery of service and distribution of products cannot be achieved. However, since IT investment raises cost while margins are squeezed, G-SIFIs acknowledged that IT projects are "staggered" by priority. In recent years, prioritization has been largely

[13] With the exception of the divestment of proprietary trading and highly capital intensive businesses for which the global regulatory direction is clear and not expected to change, G-SIFIs appear to have made diverging decisions as to which rules to adopt early and which rules to take a "wait and see" approach towards.

[14] Most G-SIFIs noted a clear shift from focus on revenue to focus on profitability on a per desk basis.

[15] See also Risk.net "The Importance of Risk Data" (October 2013) http://www.risk.net/operational-risk-and-regulation/opinion/2299035/the-importance-of-risk-data.

influenced by regulatory requirements such as implementing Basel III, capital modeling and implementing local regulatory filing requirements in multiple jurisdictions in which the G-SIFIs operate. Several members of G-SIFIs management noted that increasing regulatory de-globalization brings with it a risk that other critical projects, such as those to improve enterprise risk management (ERM) systems, may be delayed.

2. Business Trends

On a global level, the biggest G-SIFIs have grown even bigger since the global financial crisis.[16] This evolution is very closely linked to other secular trends in the business. Business heads highlighted in particular the following:

- ***Margin contraction:*** In view of higher fixed costs and changed revenue opportunities (e.g. less complex products), economies of scale matter. This in turn leads to a focus on flow and “annuity like” businesses, as well as on finding faster and cheaper ways to distribute products, including through internal cross-selling efforts.[17] Management noted that fragmented Asian markets present a special challenge because economies of scale are hard to achieve in a diverse region.
- ***Electronification:*** Closely connected with margin contraction and speed is the growing trend of electronification that impacts a series of business lines, including equities, FX, central clearing etc.[18] Certain G-SIFIs noted that only the top players who handle most of the business flow (referred to as “flow monsters”) have the ability to make the continuous IT investment that it takes to stay ahead of the electronification race. These circumstances have contributed to the consolidation of market positions.
- ***Central clearing is a game changer:*** The G-20 mandate to move standardized OTC products to central clearing counterparties (CCPs) is widely recognized to be a “game changer” with far-reaching implications in terms of the opportunities, costs and risk management needs for G-SIFIs, custodians, clients and CCPs.[19]

Management also noted the following topical trends as having been prevalent in 2012 – 2013:

- ***Fixed income trend:*** Different fixed income businesses including bond underwritings and sales, interest rate products, currency products and corporate lending did well up until the second quarter of 2013.[20] Equities businesses were challenged in 2012 due to low volumes. While volumes returned in the first half of 2013, as of the date of our meetings several business heads remained cautious in view of sudden reversals of liquidity witnessed in the past.[21] Investment banking businesses suffered from low IPO volumes in 2012.

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[16] See Morgan Stanley and Oliver Wyman “Global Banking Fractures: The Implications” (April 2013) http://ftalphaville.ft.com/files/2013/04/Morgan-Stanley-Research-Wholesale-Investment-Banking-Outlook-Global-Banking-Fractures-The-Implications.pdf.

[17] See “Forward-looking Themes” in the Executive Summary regarding the need to understand where money is made and lost and what the risk implications are.

[18] See Chapter 1, Section 2.1 and Chapter 3, Section 3.5 below regarding operational and regulatory risks related to electronification.

[19] See Chapter 1, Section 1.4 below regarding implications of Central Clearing of OTC derivatives. The IOSCO Securities Market Risk Outlook 2013 – 2014 (October 2013) contains a detailed trend analysis of collateral management and central clearing starting page 30 http://www.iosco.org/library/pubdocs/pdf/IOSCOPD426.pdf.

[20] The IOSCO Securities Market Risk Outlook 2013 – 2014 contains a detailed trend analysis of the bond markets starting page 43. Figure 3 shows the Asia corporate debt issuance volumes. The volumes from Asia are noteworthy.

[21] See Chapter 1, Section 1.1 below.

- ***All eyes on Japan:*** As can be observed from public market data, the focus of Asian trading and other investment banking activities partially shifted to Japan with the onset of Abenomics in the fourth quarter of 2012.[22]
- ***Search for yield continues:*** In the low interest rate environment, demand (including private banking client demand and retail demand) for yield products such as high yield bonds, high yield bond funds and cross-asset products was strong in the first half of 2013.[23]
- ***Vanilla products continue:*** Complexity remains shunned by clients. The move from investing in complex products to vanilla products continued into 2013. G-SIFIs also noted that exchange traded products (ETPs) have significantly grown in popularity and that this trend is unlikely to reverse in the foreseeable future.

In terms of business structure, we observed the following trends from the risk-focused industry meetings:

- ***Hong Kong hub:*** The equities businesses of G-SIFIs for the region are often hubbed in Hong Kong,[24] while commodities businesses are often hubbed in Singapore. Hong Kong also often serves as the regional hub for North Asia investment banking businesses and research.[25] The fixed income businesses for the region are often led from either Hong Kong or Singapore. However, irrespective of where the business is hubbed, collaboration between Asian sales and trading desks across the region is common.
- ***Offshore booking:*** Although this may change, most Asian trading books are booked offshore.[26] While the Asian risk functions of most G-SIFIs have up-to-date knowledge of the risk exposure managed by Hong Kong licensed staff, it appears that for certain G-SIFIs the risk exposure is monitored primarily by the risk managers located in the offshore booking centres.

3. Risk Function Trends

We observed the following noteworthy trends relevant to the risk functions from our meetings:

- ***Greater stature, authority, independence and executive engagement of the risk functions:*** The rapidly changing business and regulatory landscape has provided risk functions with an opportunity to demonstrate the strategic importance of their roles. Global CROs and CCOs typically are members of critical decision making bodies, including but not limited to the board, the executive committee, the risk committee and the global control committee. Most regional CROs and CCOs have independent reporting lines to their respective global heads. They usually have membership in important regional decision making bodies, including the management committee, the operating committee, the risk committees (including the reputational risk committee), the disciplinary committee, the new activity committee, and the remuneration committee. CROs, and in certain cases CCOs, also participate in other risk management committees, including the capital management committee, the capital commitment and underwriting committee and the asset and liability management committee.

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[22] Most G-SIFIs noted that private banking and retail clients did not capture the Japan opportunity as the equity market and currency moves were very rapid. Capturing the equity market opportunity required currency risk hedging which retail clients may not be familiar with. As such, the trading focus on Japan in the initial few months of Abenomics was mostly institutional in nature.

[23] See Chapter 1, Section 1.1 below regarding risk management implications surrounding cross-asset trades and Chapter 1, Section 3.3 below regarding cross-selling of bonds. The IOSCO Securities Market Risk Outlook 2013 – 2014 (October 2013) also contains a detailed trend analysis of the search for yield starting page 28 http://www.iosco.org/library/pubdocs/pdf/IOSCOPD426.pdf.

[24] For some G-SIFIs this includes Japan and Australia, while for others this excludes Japan and Australia.

[25] See Chapter 3, Section 3.3 below on cross-border compliance focus on licensing, compliance and tax implications.

[26] Offshore booking centres at present are primarily located in Europe and the United States. Asian booking centres are increasingly being considered.

- ***Closer proximity of risk functions to the business:*** Risk functions are currently more directly engaged with business-unit leaders and have grown their presence more broadly across the organization. Senior risk officers increasingly are located closer to the business rather than in remote locations. CROs and CCOs believe that this enables risk functions to better keep pace with evolving and emerging risks and to build constructive partnerships with the business through frequent and active communication.
- ***Increasing number of risk specializations:*** CROs and CCOs have hired specialized staff for new risk roles that have emerged since the global financial crisis due to changes in regulatory expectations, changes in market structure and new and evolving areas of risk.
- ***More extensive collaboration among the risk functions:*** Risk functions observed that to be effective, they cannot operate in silos. They acknowledged that in view of an increase in risk specializations, there is a need for greater interaction and data connectivity among the different risk functions. While achieving an enterprise risk management (ERM) framework remains a long term goal, most G-SIFIs acknowledge that they have yet to realize this. Consequently, collaboration is mostly achieved through committees and communication.
- ***Risk measurement matters:*** The utilization of risk metrics and indicators, both quantitative and qualitative, are deemed important to measure and assess risks across the organization.[27] The compilation of key risk metrics is also in part due to increased global regulatory risk reporting requirements, as well as due to the "big data and data analytics revolution" where management of many G-SIFIs view data analytics as a key to be able to successfully compete.[28]
- ***Risk assessments are a key tool:*** While improvement continues to be made in risk assessment processes, they have become a standard part of the toolkit used by risk functions. They serve to identify risks and are used by the risk functions for strategic planning.
- ***Adding monitoring and testing functions to the advisory risk functions:*** Since the global financial crisis, risk functions have increased headcount in monitoring and testing functions.[29] Moreover, there is now more active collaboration among the risk functions and internal audit, where the risk functions may request internal audit to test the effectiveness of certain processes.

4. Forward-looking Themes

We observed the following forward-looking themes from our meetings. These themes require the business and risk functions to closely collaborate to achieve continuous improvement in risk governance and risk culture:

- ***Continue to move enterprise risk management (ERM) from theory to reality:*** While much progress has been made to deepen expertise in the various risk functions, it appears that so far only very few, or possibly no, financial institutions have achieved truly integrated enterprise risk management. As a result, management reporting remains highly manual and based on a large number of individual inputs from a series of different front, middle and back office functions. These functions in turn are reliant on a large number of different systems or even spreadsheet based inputs. As long as this continues, senior management may not be able to establish a full, real-time picture of risk exposure. It

[27] See Chapter 2 Box 6 below for the contents of a typical CRO Risk Dashboard and Chapter 3 Box 7 below for the most common Compliance Key Risk Indicators. Where quantitative risk measurement is difficult, qualitative risk measurement and tracking of the evolution of risk is deemed important.
[28] See "Secular Trends" in the Executive Summary above.
[29] See Chapter 3, Section 5 below. Monitoring and testing functions are functions that test the effectiveness of policies, procedures, processes and controls.

suffices to recall what happened in the global financial crisis to understand that such is not optimal from a risk governance standpoint. [30] Therefore, moving enterprise risk management and associated management reporting from theory to reality must remain a priority. It requires "top down" strategic vision and prioritization driven by the board and the risk committee, as well as buy-in, execution and engagement that permeates all levels of the institution.

- ***Continue to strengthen risk culture via incentives:*** Risk culture is a "softer" concept than risk governance and requires a solid understanding of behaviors, which includes a proper balance of rewarding good behavior and punishing bad behavior.[31] As such, risk culture and incentives are intrinsically linked or, in the words of one G-SIFI, "incentives were at the heart of the problem and are at the heart of the solution." While most G-SIFIs are working on this in principle, not all have achieved a systematic approach that permeates all layers of the organization. For example, most G-SIFIs are still in the process of creating systems through which to track violations on an enterprise-wide basis. Without a systematic approach, bad behaviors may go unpunished and, in the worst case, a culture may develop where those who do not comply win. As evidenced by recent conduct related regulatory fines this creates significant long term operational, reputational and regulatory risks.

- ***Continue to strengthen risk culture via business and product selection:*** Risk culture is also closely interconnected with business and product selection. It takes a strong "tone from above" to decide not to pursue or proceed with certain businesses and activities which, in the short term may be highly lucrative, but in the long term may threaten the reputation of the financial institution. There is an encouraging trend of closer involvement of risk functions in the new activity review processes, as well as more systematic post-implementation review processes to verify whether the risk appetite limits set by the risk functions continue to be complied with by the business.

- ***Disentangle matrices to ensure proper local accountability:*** Complex matrix reporting lines can make it very hard for the senior management based in Hong Kong[32] to get an up-to-date picture of local activities and associated risks. As improvement continues to be made towards enterprise risk management and management reporting, it must include the ability to provide relevant information, for example by business line and by entity, to the senior management based in Hong Kong, so that management can act with the requisite authority and corresponding accountability. There should be no situations where important risk information is not available to, or being withheld from, the local senior management.[33]

- ***Expand "beyond the here and now" focus:*** Only few G-SIFIs we met with have an emerging risk committee. While risks which must be tracked under Basel III and other global rules are often quantifiable, emerging risks are usually not because of insufficient data on size and probability. There is room for further progress. Once identified, emerging risks can be fed into other risk management processes such as operational risk assessments and stress testing.[34]

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[30] See the paper by the Basel Committee on Banking Supervision entitled "Principles for effective risk data aggregation and risk reporting"(January 2013) http://www.bis.org/publ/bcbs239.pdf. Without proper risk calculation, risk can easily spread through the financial system as occurred in the global financial crisis. The collapse of Lehman Brothers is viewed to have resulted in large part from the lack of integrated risk management systems. As the BIS states: "One of the most significant lessons learned from the global financial crisis that began in 2007 was that banks' information technology (IT) and data architectures were inadequate to support the broad management of financial risks."

[31] See Chapter 3, Section 2 below as regards to "Notable Trends – Setting an Effective Risk Culture".

[32] This includes the Hong Kong Chief Executive Officer and other senior management based in Hong Kong such as the Country Head, Responsible Officers and Executive Officers.

[33] For example, no information should be withheld from local senior management on the basis of legal privilege.

[34] Reverse stress testing processes can be used to assess how an emerging or extreme risk could affect the G-SIFI.

We further note the following forward-looking themes that are relevant to the risk functions:

- ***Further increase authority and prominence of the risk functions:*** While the prominence of risk functions has notably improved since the global financial crisis, not all CROs and CCOs have a seat on critical decision-making bodies. We see room for further improvement in this regard, as it is in these bodies that the "tone from the top" on risk governance and risk culture is set.[35] Furthermore, it is important that risk functions are visible to the front office. This includes sitting in close proximity to the front office. Doing otherwise may create an "out of sight, out of mind" risk culture.

- ***Strengthen business connectivity and "follow the money":*** As noted above, risk functions need to be forward-looking and identify new and emerging risks.[36] To achieve this, risk functions should understand the evolution of the business, including "where money is made and lost". [37] This in turn requires risk functions to perform a strategic assessment of which business, product, service and client data they need to more systematically identify new and emerging risks.[38] Without this approach, new risks may emerge and client interests may not be protected.

- ***Marry a top-down global approach with a bottom-up regional approach:*** From our meetings, it appears that often the focus of the risk functions (including the focus of risk mitigation improvement projects) is globally driven. While a top-down approach is often beneficial for risk functions as they are heavily IT dependent and IT budgets are often globally determined in G-SIFIs, it must be supplemented with a local understanding of evolving risk.

- ***Target the right balance between adviser and challenger:*** In the words of one CRO "if you walk past a problem, you have just set the new standard." Therefore, striking the right balance between being an adviser and challenger is of the essence. To achieve this, CROs and CCOs must carefully select as their senior staff those individuals who have the maturity and experience to strike the proper balance. This requires a high level of confidence, knowledge and expertise, including the ability to say no, to identify the need for and impose new limits and restrictions, and to apply the proper judgment as to when to escalate matters. It also requires the ability to not only advise, but to be independent and to effectively monitor and review business activities. This also includes pro-actively engaging with monitoring and testing functions and audit staff and guiding them as to which new, evolving or emerging area of risk to focus on and through which means (e.g. email reviews, trade reviews, portfolio reviews, model reviews etc).

- ***Increase local risk oversight over books managed by Hong Kong licensed staff:*** *A*s noted above, many Asian trading activities are booked offshore. While the Asian risk functions of most G-SIFIs have up-to-date knowledge of the risk exposure managed by Hong Kong licensed personnel, it appears that for certain G-SIFIs the risk exposure is monitored primarily by the risk managers located in the offshore booking centres. G-SIFIs may want to consider whether books managed by Hong Kong licensed personnel require increased Hong Kong risk management oversight in addition to booking centre oversight.

[35] For a list of such critical decision making committees, see "Risk Function Trends" in the Executive Summary above.

[36] Each of the "Business Trends" in the Executive Summary has risk management implications. For example, it is suggested that risk functions should take note of cross-selling and other business trends and carefully evaluate whether there are any conflicts in the cross-selling process, which starts with product creation and ends with selling to investors via affiliated and non-affiliated entities. This includes but is not limited to potential conflicts caused by compensation processes and incentives. Furthermore, risk functions should carefully evaluate the implications of continued business evolution in terms of risk management. For example, cross-asset products and central clearing have financial and conduct risk management and mitigation implications.

[37] For example, throughout 2012 – 2013 one of the prevailing business trends was the increase in corporate and high yield debt offerings in Asia – see IOSCO Securities Market Risk Outlook 2013 – 2014 page 28. This was heavily covered in the media, yet in our discussions with risk functions only very few brought this business trend up pro-actively. This left us with an impression that the global top down approach must be further supplemented with a solid bottom-up Asian approach and perspective on risk. It also left us with the impression that the connectivity of risk functions with the business must be strengthened and paired with "following the money", i.e. a solid understanding by risk functions of where money is made and lost.

[38] Such metrics could, for example, include more regular/ granular revenue, profit and loss data, product sales trends including products most actively sold, service trends including services most actively used, most/ least profitable businesses, books, desks, clients etc.

In particular, if misconduct or financial distress occurs in Hong Kong managed books, Hong Kong based management and risk functions should be able to demonstrate proper independent risk oversight over such books.

- ***Continue to invest in risk management IT solutions:*** Across the risk functions, a prevalent theme is the need for continued investment in IT solutions. Aspects of best practices and G-SIFI IT investment focus are covered throughout this report.

Chapter 1: Business Perspective on Risk and Risk Mitigation

During the risk-focused industry meetings, regional management and the heads of the equities and fixed income businesses shared their perspectives on business trends and related risks and risk mitigation. Their insights are organized as follows:

1. Regional Management Perspective

2. Equities Management Perspective

3. Fixed Income Management Perspective

1. Regional Management Perspective

1.1. Market Risks

The most commonly cited market risks from our meetings were the following:[39]

(i) Market Risk - Capital Flow and Funding Liquidity

- ***Reversals of capital flow:*** Management noted sudden liquidity reversals of capital flows to be an area of risk. They cited as recent examples the Cyprus event, as well as volatility in the Japanese equity markets and Asian currencies.
- ***Regional macro-economic developments:*** Management cited a high degree of correlation between Hong Kong and China. Therefore, they closely track macro-economic developments in China, including GDP, shadow banking, and credit risk indicators. Furthermore, they closely track the evolution of Abenomics in Japan as well as macro-economic developments in other parts of the region such as Australia, India and Indonesia.
- ***Reversal of US quantitative easing:*** The impact on market liquidity and funding costs of tapering by the US Federal Reserve (Fed) is viewed by management as an area of risk.[40]

(ii) Market Risk - Position Liquidity

- ***Choppy volatility and correlation:*** Management cited that equity derivatives businesses favor a stable volatility and correlation environment as it allows dealers to more efficiently recycle risk positions inherited from client activities. Choppy volatility and correlation as seen in the first half of 2013 with various news events that moved the markets without long term impact makes it harder for dealers to manage risks in the equity derivatives business.[41]
- ***Crowded positions:*** Management also mentioned market concentration risk and liquidity risk resulting from a combination of similar trading strategies and a decreasing number of trading counterparties. The risk of crowded positions may materialize due to a triggering event which could be either a simultaneous unwinding or a re-hedging.

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[39] Market Risks are potential monetary losses in response to market movements.

[40] This applies not only from a market liquidity standpoint but also a future funding cost standpoint. Once interest rates rise, funding costs will rise. G-SIFIs believe they are well-prepared as they recall the 1994 fast rises in interest rates. Many G-SIFIs have 1994 like scenarios incorporated in their stress testing (see Chapter 2, Section 2.3 below). Nevertheless, certain parties caution that it remains to be seen whether the underlying assumptions on inflation will end up being correct. They note that at present the assumption remains that inflation is low. If this at any point changes, the Fed may need to intervene more rapidly than is anticipated in the current internal risk management models.

[41] A typical example of choppy volatility is the release of economic data or unexpected corporate earnings results that cause temporary fluctuation of the volatility level (1 or 2 days) where the market returns to steady state afterwards.

Certain executives of G-SIFIs cited as a concrete example the losses suffered in relation to Korean and Japanese “auto-callables”.[42]

- ***Gap risk and correlation risk:***[43] Other market risks cited by management included gap risk and correlation risk related to structured products sold to clients seeking yield enhancement.

Market risk factors are increasingly global and correlated and global spillover is more significant than before. This makes G-SIFIs increasingly sensitive to global news. For example, the Eurozone crisis had spillover effects into Asia and inversely, Chinese credit tightening and Japanese monetary easing affected the global markets. The G-SIFIs have reflected this in their stress testing frameworks.

Aside from the above, management also mentioned “tail of tail events” referring to a situation that is not anticipated in stress testing but has catastrophic and systemic impact to the market such as events like bankruptcy of a major G-SIFI, currency controls, war, or a default of sovereign debt. To mitigate such risk G-SIFIs noted they widen the universe of stress testing, diversify market and credit risks, and avoid concentration of extreme upside or downside risk positions.

1.2. Conduct, Fraud and Control Risks

Despite extensive training and multi-level controls, the risk of lapses in the integrity and judgment of staff remains a key concern of senior management.[44] Since employee behavior can never be fully controlled and consequently conduct risks can never be fully eliminated, senior management considers this to be a material risk. They also took note of the increasing reputational, regulatory and operational costs that result from conduct lapses.[45] One specific area of conduct risk that has gained much senior management attention is trading fraud. Other risks that have captured management attention are the conduct and ethical aspects of the LIBOR matter. G-SIFIs noted that they are focusing on the rectification of the submission process of benchmark data and also on the implications of the IOSCO Principles for Benchmarks.[46] On a more general level, management noted the need for a strong risk culture which includes a strong tone from the top permeating all levels of the organization, combined with effective first, second and third lines of defence to detect misconduct and lapses in judgment and controls.[47]

1.3. Regulatory Compliance

Management of most G-SIFIs cited regulatory compliance risks associated with global regulatory changes as a key issue that keeps them awake at night. They noted that the number and pace of new regulations, regulatory fragmentation, and extra-territorial reach of certain rules are creating a need for extensive focus on regulatory compliance.[48] They added that regulatory changes have led to changes in market structure and G-SIFI business models.

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[42] See Risk.net “Uridashi losses put at $500 million after Nikkei rebounds” (March 2013) http://www.risk.net/risk-magazine/feature/2249656/uridashi-losses-put-at-usd500-million-after-nikkei-rebounds.

[43] Gap risk refers to hedging inefficiencies when there is dislocation of securities prices in the market. Correlation risk refers to hedging inefficiencies when there is market-wide coherent movement of securities prices respectively.

[44] See also CFA Institute “Market Fraud, Mis-selling Concerns Cloud Asia-Pacific Outlook” (December 2012) http://blogs.cfainstitute.org/marketintegrity/2012/12/12/market-fraud-concerns-in-asia-pacific-top-financial-managers-must-act-as-agents-of-change/.

[45] See also Chapter 2, Section 3.2 below.

[46] See IOSCO “Principles for Financial Benchmarks - Final Report” (July 2013) http://www.iosco.org/library/pubdocs/pdf/IOSCOPD415.pdf.

[47] While most top business management did not bring up incentives and disciplinary processes, please note the paragraph entitled “Continue to strengthen risk culture via incentives” under “Forward-looking Themes” in the Executive Summary above as well as Chapter 3, Section 2.3 on consequence management.

[48] See GFMA “Extraterritoriality Issues in US and UK” (June 2013) http://www.gfma.org/correspondence/item.aspx?id=482.

1.4. Central Clearing of OTC Derivatives

Management of most G-SIFIs noted that the central clearing of OTC derivatives is a significant change.[49] Consequently, they have put in place cross-disciplinary working groups comprised of lawyers, risk managers and business personnel to work on the transition to central clearing. They added the following:

- ***Clearing house counterparty risk:*** Due to new regulations, a few global CCPs have evolved to become the principal global counterparties of certain G-SIFIs. Consequently, G-SIFIs are hiring risk management specialists who are familiar with counterparty risk management, CCP risk management frameworks and the CPSS–IOSCO Principles for Financial Market Infrastructures.[50] As part of counterparty risk management, these specialists are also tasked with assessing the robustness of the risk management frameworks of the CCPs.
- ***Client expectations:*** G-SIFIs noted that not only the G-SIFIs themselves but also clients want assurance that the CCP's risk management is robust. They added that clients increasingly require asset segregation and portability to further protect their interests.
- ***Clearing house fragmentation:*** G-SIFIs observed that in Asia there is a trend for exchanges to set up local clearing houses in their own jurisdictions and that they will carefully track the evolution of those CCPs from a risk management standpoint. They added that fragmentation also has regulatory compliance implications as it means that cross-border derivatives dealers (the sell-side) and their clients (the buy-side) may need to comply with different sets of rules.
- **Other implications:** G-SIFIs noted that the need to post margin increases the need for collateral.[51] Also, central clearing has capital, funding and operational cost implications for G-SIFIs.[52] They added that, depending on the regulatory landscape, this may contribute towards a trend of "futurization" of OTC products.

1.5. Technology Enhancements, System Compatibility and Data Quality

G-SIFIs noted that electronification (further discussed below), straight through processing[53] and risk reporting are important trends. They added that these trends have IT risk implications, for example, risks related to system upgrades, compatibility of systems and quality of data. Furthermore, manual processes that are required until automation is in place are acknowledged to be prone to operational risks due to human error.

2. Equities Management Perspective

2.1. Business Trend: Electronification

Related Risk: Operational Risk

G-SIFIs cited that electronification is a transformational trend. However, it also brings with it challenges such as the need to put in place adequate checkpoints and safeguards to ensure system reliability before deployment. This in turn requires G-SIFIs to have resources with deep programming experience and supervisors who are fully versed in supervising the risks

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[49] The IOSCO Securities Market Risk Outlook 2013 – 2014 (October 2013) also contains a trend analysis of central clearing starting page 30 http://www.iosco.org/library/pubdocs/pdf/IOSCOPD426.pdf.
[50] See CPSS–IOSCO "Principles for Financial Market Infrastructures" (April 2012) http://www.bis.org/publ/cpss101a.pdf.
[51] The IOSCO Securities Market Risk Outlook 2013 – 2014 (October 2013) also contains an analysis of collateral availability and collateral management opportunities starting page 30. See also GARP & Bloomberg "Evolution of the OTC Swaps Market" (July 2013) http://www.garp.org/media/1176231/otcswaps_bloomberg_072213.pdf.
[52] Certain G-SIFIs noted that because the costs are very high, G-SIFIs may need to pass certain of the costs on to clients in order for the clearing business to be sufficiently profitable in the long term.
[53] See also GARP "Straight-Through Processing in a Risk Management Framework" (January 2012) http://www.garp.org/risk-news-and-resources/2012/february/straight-through-processing-in-a-risk-management-framework.aspx?p=2.

(including new and emerging risks as well as operational risks) that eletronication presents. Operational risks can emerge from front office platforms such as trading system operation and connectivity, middle office platforms such as data capture and reconciliation, and back office platforms such as trade allocation and settlement. The operational risks that create concern for the supervisors go beyond typical glitches like fat finger errors or access control. In the view of G-SIFIs, the most difficult problems to tackle are hidden errors that impact the market, such as programming bugs and malfunction of connectivity. G-SIFIs noted that such errors are hard to fully eliminate, especially during implementation phases or system upgrades.

2.2. Business Trend: Increasing Demand for Macro Equity Products

Related Risk: Market Concentration

The correlation between market dynamics (capital flow) and monetary policies (quantitative easing) increased dramatically after the global financial crisis in 2008. Swift allocation of capital and quick responses to news events are viewed as an effective business and trading strategy, which increases the demand of macro equity products such as futures, index forwards, and stock basket swaps. These products allow market participants to allocate their capital or leverage their positions efficiently in the equities market. Availability of liquidity in equities was not a concern in the past due to the existence of a variety of lowly correlated investment strategies which diversified capital allocation in the market. However, the market dynamics that drive global capital into similar macro themes in the equities markets give rise to market concentration risks.

2.3. Business Trend: Customization for Yield and Income

Related Risk: Increasing Complexity of Dealers' Position

The low interest rate environment has fuelled demand for yield and income generating products. Since stock and index volatilities have been trending down since 2010, it is difficult for derivatives dealers to structure simple products with an attractive risk profile and yield for their clients. Consequently, exotic structured products with a basket of underlying assets (such as index basket correlation products) and "light exotic" products with barrier features (such as auto-callables) have become main stream. This product trend, however, raises specific risks concerning the dealers' ability to manage a portfolio with a large amount of complex exotic structured products during market stress.

2.4. Business Trend: Reduction of Commission

Related Risk: Shrinkage of Market Liquidity

Most G-SIFIs noted that the equities business has reduced commission charged to clients in recent years. Reduction of commission harms the profitability of the cash equities business and drives away financial institutions with less capital commitment, which results in fewer players and liquidity in the market. Reduction of commission also affects block and facilitation businesses, which further reduces the liquidity of the market.

2.5. Business Trend: Business Shrinkage in Equity Structured Products

Related Risk: Increase of Counterparty Risks

Increased regulatory capital requirements such as Basel III are driving financial institutions to exit capital intensive businesses. Some financial institutions consider equity structured products as a "service" to complement their business portfolio; others exited such business since the demand for these products, in particular more complex structured derivatives, shrunk substantially after the global financial crisis. As a result, there are fewer players in the market which thereby increases counterparty risks.

3. Fixed Income Management Perspective

3.1. Business Trend: Simplicity and Liquidity

Related Risk: Market Concentration and Segmentation

Many fixed income business managers indicated that clients prefer simple and liquid products for trading (to build and unwind positions) and for collateralization of assets (to use good quality fixed income securities as collateral). Fixed income dealers prefer the same products to run client flow business, to meet the tightened capital requirements, and to offer collateral transformation services. These market trends cluster both clients and the dealers in the same market segment, such as high quality bonds with short duration, which raises concerns about market concentration and segmentation in the fixed income market.[54]

3.2. Business Trend: Continuous Demand in Yield Products

Related Risk: Increasing Risk in Dealers' Business Flow and Inventory Management

Continuous demand for yield products increases the risk exposure of fixed income dealers. High yield bonds and interest rate structured products are by nature less liquid and more difficult to hedge. Depending on business flow and strategies to increase market share, fixed income dealers may need to increase the size of their inventory which implies taking more interest rate, liquidity, credit, and basis risks. High yield corporate bond issuance reached historic record highs in Asia through the first half of 2013.[55] Also, market competition led fixed income dealers to venture into riskier areas, such as ASEAN fixed income and more exotic structures which are challenging to risk manage.

3.3. Business Trend: Cross-selling of Bonds

Related Risk: Concentration of Clients' Portfolios

Cross-selling of bonds to private banks has been a success in the low interest rate environment. However, G-SIFIs agreed that it is important to ensure that bond investors are made aware of the risks inherent in such investments, including interest rate and credit risks, and that they may suffer losses if there is a market wide re-pricing of bonds due to a shift in interest rate expectations or a change in the credit profile of the issuers in their portfolio.[56] Such losses may be exacerbated if bonds were bought with margin financing or if client portfolios are concentrated in such bonds.

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[54] See also Bloomberg "A Shortage of Bonds to Back Derivatives Bets" (September 2012) http://www.businessweek.com/articles/2012-09-20/a-shortage-of-bonds-to-back-derivatives-bets.

[55] See IOSCO Securities Market Risk Outlook 20132014 (October 2013) http://www.iosco.org/library/pubdocs/pdf/IOSCOPD426.pdf.

[56] See SFC "Circular to Licensed Corporations and Registered Institutions - Selling of Fixed Income Products" (November 2013) http://www.sfc.hk/edistributionWeb/gateway/EN/circular/doc?refNo=12EC12.

3.4. Business Trend: Capital Flow driven by Central Bank Policies

Related Risk: Increasing Exposure to Policy Risk

Central banks are actively using monetary policies to stimulate economic growth. Monetary policy drives significant capital flows into different markets and asset classes. G-SIFIs noted that this has business and risk management implications. G-SIFIs added that central bank policy risk is difficult to mitigate and that changes in central bank policy may create both short term market impact as well as long term impact on asset valuation. Financial institutions are trying to mitigate central bank policy risk by remaining flexible in the business mix and being liquid in their positions.

3.5. Business Trend: RMB related Business Opportunities

Related Risk: New Business Opportunities bring with it New Needs for Risk Mitigation

All G-SIFIs agree that the progressive liberalization of the RMB is a secular change and will create significant new business opportunities.[57] In addition to offshore RMB opportunities, certain G-SIFIs noted that there will also be opportunities in relation to onshore RMB. G-SIFIs recognize that new opportunities bring with it new risks and, by implication, new aspects to focus on in terms of risk mitigation.

[57] See Reuters "China's yuan surpasses euro as 2nd most-used currency in trade finance - SWIFT" (December 2013) http://uk.reuters.com/article/2013/12/03/markets-offshore-yuan-idUKL4N0JI0LI20131203?feedType=RSS&feedName=rbssFinancialServicesAndRealEstateNews.

Chapter 2: CRO Perspective on Risk and Risk Mitigation

During the risk-focused industry meetings, CROs and senior risk heads shared their perspectives on risk and risk mitigation. After the meetings, the CROs participated in a further survey to provide supplemental information. Their insights are organized under the following topics:

1. Risk Management Structure

2. Notable Trends

3. Key Risks

4. Projects

5. Headcount Trends

6. Risk Management Dashboard

In keeping with the mandate of the SFC as a securities regulator, we have included risk management trends and developments that are relevant to the securities business of the G-SIFIs. We have not included risk management trends and developments that are solely relevant to the banking business.

1. Risk Management Structure

1.1. Increasing Prominence of the CRO

Since the global financial crisis, the financial industry has entered into a "new era of risk management" with increased regulatory requirements and clear business justification for embedding effective risk management strategies across the entire enterprise. This has resulted in increased awareness of the strategic importance of the CRO as well as a regulatory trend in various jurisdictions for the CRO to be a licensed position.

Nearly all the G-SIFIs we met with have created a regional CRO role and do not combine the CRO role with other roles. The regional CRO usually reports into the global CRO, who in turn reports into the CEO, the board and the risk committee.

The regional CRO typically is responsible for market risk, position liquidity risk, counterparty risk, credit risk, capital modelling and stress testing. Due to regulatory changes, all G-SIFIs noted that a series of new risk specializations have emerged (especially in the context of central clearing and the derivatives reform).[58]

CROs acknowledged that because the risk management function is still evolving in multiple ways, the following aspects are critical: a clear definition of scope, authority and corresponding accountability of the CRO, extensive collaboration across risk functions and increasing investment in IT data connectivity across the enterprise (enterprise risk management or ERM).[59]

All CROs emphasized the importance of a clearly formulated risk appetite statement (RAS). As one CRO explained, it is a method to "create empowerment for the risk functions by constraining the operational legs of the organization." Yet, to achieve a risk appetite statement that is broad enough to cover enterprise-wide risk, this CRO noted the need for increasing collaboration with other risk functions and disciplines such as compliance (in

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[58] For certain G-SIFIs, CROs may also manage funding liquidity risk, although this usually sits under the finance and treasury function. It is not uncommon to see regional business desk CROs, regional product CROs, regional country CROs, regional functional CROs and country heads of risk. Certain CROs have organized their personnel by "risk type".

[59] See also Risk.net "CROs role must be clearly defined" (October 2013) http://www.risk.net/operational-risk-and-regulation/news/2297757/cro-s-role-must-be-more-clearly-defined-conference-told.

relation to for example conduct and reputational risk), legal (in relation to for example litigation risk and risks related to contractual terms) and treasury (in relation to for example funding liquidity risk).

1.2. Evolution of CRO Skill Set

In terms of "What makes a good CRO?", G-SIFIs cited that the increase in the complexity and scope of the role means candidates need a strong cross-disciplinary risk background, with a solid understanding of the front and back office. They also noted that the role has evolved from emphasis on business facilitation to emphasis on the CRO being an independent control function. This in turn requires, in the words of some CROs, "a huge amount of resilience, the ability to say no and a thick skin." Moreover, several CROs noted that since the global financial crisis, the ability to design approaches, processes and controls that allow the financial institution to keep pace with risk on an enterprise-wide basis, as well as to capture evolving or emerging risks, is growing in importance.

1.3. Importance of Global Board Reporting

Most CROs cited that it is critical for the global CRO to have a reporting line to the board and the risk committee for two reasons: to ensure engagement by executive and non-executive directors in the risk management program and to secure the requisite level of resources and budgets (headcount and systems investment). Without such reporting hierarchy, they noted they would not be able to fulfill the independent control role expected by regulators.

Certain G-SIFIs added that to promote independence, the appointment and removal of the global CRO should be subject to the approval of the board. As a result of emphasis by the Financial Stability Board (FSB), this is now broadly accepted. [60]

Certain CROs also observed that regulators increasingly establish direct contact with board members, including with non-executive directors. Therefore it is important for the board members to be well-informed.

1.4. Continuing Evolution of the Operational Risk Function

From our meetings, it appears that the operational risk function is still evolving at most G-SIFIs, notwithstanding it being required under various global regulations, including Basel III.[61] This is visible in various ways, including relatively low staffing levels, an evolving mandate and non-standardized reporting lines among the G-SIFIs we met with.

Certain professional services firms noted that there is an opportunity for the operational risk function to gain greater prominence by taking a more expansive view of its role and by extending it from tracking operational losses and risk events to establishing a more pro-active approach towards operational risk. One G-SIFI noted that the operational risk function could seek to achieve this by partnering with senior management (e.g. the CEO and COO) to create a list of the most important operational processes (i.e. the processes which if they were to fail would cause severe damage to the financial institution). Based on this, the operational risk function could perform operational risk stress testing and deep dive analysis.[62] They believe that this would lead to a more predictive and preventative approach to operational risk.

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[60] See FSB "Thematic Review on Risk Governance Peer Review Report" (February 2013) http://www.financialstabilityboard.org/publications/r_130212.pdf. The report emphasizes that to achieve independence it is important to ensure that: "the CRO has unfettered access to the board and risk committee (including a direct reporting line to the board and/or risk committee), and expecting the CRO to meet periodically with directors without executive directors and management present."

[61] According to the BASEL framework, operational risk is the risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events.

[62] A deep dive analysis is a strategy of immersing a team of expertise rapidly into a business problem, to provide action plan or create mitigation. Deep dive analysis will focus on areas such as root-cause, process, organization, leadership and culture.

They acknowledged that to achieve this, the operational risk function must have the proper authority, staffing levels and qualifications. Many observed that to be most effective operational risk functions ideally are comprised of people with cross-disciplinary backgrounds in front, middle and back office risk management. Staff must also have experience in operational process management.

2. Notable Trends

2.1. Risk Culture as connected to the Risk Appetite Statement and Risk Limits

Most CROs emphasized not only the importance of risk governance but also of risk culture. Some noted that a bad risk culture can overtake good risk governance and can damage any organization, including those with the most advanced risk management frameworks.[63]

CROs noted that this means that every financial institution must have a risk appetite statement (RAS) that is made concrete, taken seriously and enforced on all levels of the organization, i.e. a risk appetite statement that is endorsed by the board and that is combined with specific regional, country and business level risk limits.[64] They noted the financial institution's risk management systems must be able to actively track and report compliance with these risk limits. These risk limits must be periodically tested, reviewed and controlled by the CRO division, as well as by internal and external auditors. Finally, so as to properly influence the risk culture and to ensure that the business staff takes risk limits seriously, breach of these risk limits must lead to impact on incentives (consequence management).[65]

2.2. Risk Measurement, IT and Data Analytics

There is a clear trend towards greater risk measurement and data analytics, especially in complex global organizations such as G-SIFIs. This is further motivated by the fact that G-SIFIs can reduce costs by optimizing risk-based regulatory capital and liquidity requirements.

Measurement of risk involves data (i.e. data identification, collection, cleansing, and storage) and process (i.e. modeling, rating, simulation, scenario analysis and statistical analysis). This in turn goes closely together with the need for increasingly sophisticated IT systems.

From our meetings, it appears that while each financial institution is trying to achieve an enterprise risk management (ERM) framework, most acknowledged this has not yet been fully achieved. Certain processes remain based on a series of individual inputs, which in turn are reliant on a large number of different systems, departments and individuals.[66]

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[63] Lehman Brothers was quoted as an example of a firm which allegedly had sophisticated risk models and highly qualified risk personnel, yet it failed due to the lack of an effective risk culture, combined with the lack of an integrated picture of risk. See also See the paper by the Basel Committee on Banking Supervision entitled "Principles for effective risk data aggregation and risk reporting" (January 2013) http://www.bis.org/publ/bcbs239.pdf.

[64] See also GARP "Risk Appetite: Setting and Institutionalizing Enterprise Risk Tolerance" (June 2010) http://www.garp.org/media/812577/ibmroundtable_riskappetite0710b.pdf, IIF "Governance for Strengthened Risk Management" (October 2012) http://www.iif.com/press/press+364.php , and Sungard Capital Markets "White Paper Key Risk Management Challenges for 2013/2014" (July 2013) http://www.sungard.com/Campaigns/FS/Banks/bankofthefuture/Forms/Risk-Institute/CM-ALM-BankingTrendsSurveyRESULTS-JUN13?PRcamp=FinancialSystems071613.

[65] See the paragraph entitled "Continue to strengthen risk culture via incentives" under "Forward-looking Themes" in the Executive Summary above as well as Chapter 3, Section 2.3 on consequence management.

[66] See the paper by the Basel Committee on Banking Supervision entitled "Principles for effective risk data aggregation and risk reporting" (January 2013) http://www.bis.org/publ/bcbs239.pdf. Without proper risk calculation, risk can easily spread through the financial system as occurred in the global financial crisis. The collapse of Lehman Brothers is viewed to have resulted in large part from the lack of integrated risk management systems. As the BIS states: "One of the most significant lessons learned from the global financial crisis that began in 2007 was that banks' information technology (IT) and data architectures were inadequate to support the broad management of financial risks."

Furthermore, while the Asian risk functions of most G-SIFIs have up-to-date knowledge of the risk exposure managed by Hong Kong licensed staff, it appears that for certain G-SIFIs the risk exposure is monitored primarily by the risk managers located in the offshore booking centres.

2.3. Continued Development of Stress Testing

Most CROs confirmed that they continue to work on improving stress testing based on regulatory guidelines, market evolution and increasing correlation of global risk factors.

Many CROs noted that increased regulatory requirements for stress testing is a trend that is here to stay and that stress testing is a useful method to better understand the organization. One CRO supplemented this by saying that “the smart bit is to know what to do with the data and to apply the brakes once you know there is a possibility of a car crash.” Furthermore, most CROs noted that it is essential to ensure that stress testing evolves from an annual exercise to it becoming a part of the operating routine.

The below is a non-exhaustive list of stress testing scenarios cited by CROs. In addition to these, CROs noted testing for wrong-way risk.[67] They also observed that increasingly additional types of risk are factored into stress testing, such as conduct and litigation risks. Other novel trends in stress testing which CROs cited include reverse stress testing and extreme stress testing. Both can be used to assess the impact of emerging or low probability risks.

a) Geopolitical Uncertainty

G-SIFIs continue to introduce new event driven scenarios in their stress testing framework, including geopolitical uncertainty.

Historic and current examples mentioned are Fed Tapering, Euro crisis, PIIGS default, Greek exit, Middle-Eastern crisis and Emerging Markets sell-off. “Extreme stress” market scenarios CROs mentioned included Emerging Market crisis and full Euro-zone breakup.

G-SIFIs also mentioned that they have established certain Asia focused stress testing scenarios, such as Japan earthquake, Asia capital flight, revaluation of Asian currencies, China economic hard-landing, Korean peninsula war and Indian counterparty default.

b) Market Shock

CROs cited that they have established market failure scenarios based on historical data, such as market failure (based on global Oct 2008 data), credit crisis (based on data from the 2008 Lehman bankruptcy), credit sell off/ bond market collapse/ unexpected central bank rate hike (based on 1994 data) and China credit squeeze (based on June 2013 data).

Other stress testing scenarios concern stock market collapse, spot and volatility spikes, commodities sell-offs and single name risks.

c) Parameters and Sensitivity

G-SIFIs cited parameter-driven stress testing scenarios with single or multiple economic factors and sensitivity tests.

[67] Wrong-way risk is defined by the International Swaps and Derivatives Association (ISDA) as the risk that occurs when "exposure to a counterparty is adversely correlated with the credit quality of that counterparty." It arises when default risk and credit exposure increase at the same time.

Box 1: Sensitivity Tests

As part of the post meeting survey, CROs mentioned the following sensitivity tests:

1) Global FX sell off (-30% value and +40% volatility)
2) Interest rate sell off (+200 bps to +600 bps)
3) Global asset mark down (CDS widening +500 bps, real estate -30%, debt -50%)
4) Global inflation (double-digits)
5) USD monetary crisis (-30% value)
6) Stress on the balance sheet (e.g. stimulated +30% volatility and -30% movement)
7) Equity sell off (e.g. -30% value and +40% volatility)
8) Single name CDS skew (+150 bps)

3. Key Risks

3.1. Liquidity Risk

Many CROs noted that one of their key concerns is liquidity risk. They observed that in periods of stress the market volume of certain Asian financial products decreased substantially (in certain cases by more than 50%). These changes in liquidity simultaneously affected a broad series of products and asset classes, triggering intra-day re-calculation of market risk exposures and impact on funding positions.

G-SIFIs cited that they have implemented more advanced liquidity risk monitoring frameworks, including liquidity risk indicators, risk limits of funding concentration, counterparty risk assessments and liquidity crisis teams.

Box 2: Liquidity Risk Indicators and Factors

As part of the post meeting survey, CROs mentioned the following categories of liquidity key risk indicators for business resilience testing:

1) Local event
2) Sovereign event
3) Natural disaster
4) Regulatory action

CROs also noted that intra-day funding liquidity stress testing factors should be aligned with local regulatory liquidity stress-testing and the calculation of the liquid asset buffer. They noted the following factors:

1) Entity specific (idiosyncratic[68]) liquidity stresses
2) Wholesale secured and unsecured funding position
3) Total net intra-day liquidity
4) Intra-group liquidity and intercompany exposures

[68] Idiosyncratic risk represents the effects of risks that are peculiar to individual firms. See BIS "Studies on credit risk concentration: an overview of the issues and a synopsis of the results from the Research Task Force project" (November 2006) http://www.bis.org/publ/bcbs_wp15.htm.

5) Off-balance sheet liquidity
6) RMB specific liquidity, including funding concentration of offshore RMB
7) Impact of global liquidity transfer pricing scheme[69]

3.2. Operational Risk

Operational risks concern the impact of operational process failures. Heads of the operational risk function mentioned that there is an increasing amount and frequency of "high severity events" referred to as "tail-risks".[70]

The key operational risks mentioned by G-SIFIs during our meetings were the following:

1) **Conduct Risk**: A clear theme from our meetings is conduct risk. G-SIFIs cited as examples of conduct risk various forms of fraud, market misconduct and mis-selling. They emphasized that trading fraud is a particular area of concern in view of high profile trading fraud cases in recent years that have carried high "operational tail-risk." As a result of the large regulatory fines and penalties imposed on conduct risk and control failures, the boards and risk committees are increasingly driving the conduct risk control framework "top down." The concern is further heightened by the fact that conduct risk is hard to fully eliminate as human behaviour cannot be fully anticipated or controlled. However, since conduct risk closely correlates to how strong the risk culture is, there is a trend of increasing "top down" focus on consequence management as a way to reduce conduct risk, i.e. putting in place better and more consistent methodologies to connect behaviours to incentives.[71]

2) **Risk of Regulatory Non-compliance**: High on the list of "the top down" focus is the risk of non-compliance with increasingly complex rules and regulations, including extra-territorial rules and regulations. Within this context, all G-SIFIs mentioned that this risk is even more significant in view of the growing large fines associated with regulatory non-compliance, as well as the fact that sanctions for regulatory non-compliance can lead to severe business, financial, operational and reputational impact, including via the suspension of business lines, suspension of staff, office closure and large financial fines.

3) **IT Risk**: All G-SIFIs noted that there is heightened awareness of IT-related risks and that this leads to increased focus on IT governance, IT change management and system access controls. They added that a specific area of emerging risk focus is electronification of the business, as this creates certain hard to control risks, such as hidden errors, programming bugs and malfunction of connectivity.[72]

4) **Cyber Threat**: All G-SIFIs noted cyber threat as an area of emerging risk and increased "top down" focus. Such threats fall into the following categories: distributed denial of service attack (the objective of which is to cause market disruption by preventing business transactions - e.g. impact clearance, settlement and similar core functions), attack against systems containing transaction records (the objective of which is to cause market disruption by deleting, modifying or corrupting books and records) and disclosure of restricted, confidential, material non-public information via compromise of internal systems

[69] LTP is a process that attributes the costs, benefits and risks of liquidity to respective business units within a financial institution. See BIS "FSI Occasional Paper No.10" (December 2011) http://www.bis.org/fsi/fsipapers10.pdf .
[70] See also Risk.net "Why the industry needs to rethink op risk tail events" (August 2013) http://www.risk.net/risk-magazine/opinion/2287399/fight-the-power-why-the-industry-needs-to-rethink-op-risk-tail-events .
[71] See the paragraph entitled "Continue to strengthen risk culture via incentives" under "Forward-looking Themes" in the Executive Summary above as well as Chapter 3, Section 2.3 on consequence management.
[72] See also Chapter 1, Section 2.1 and Chapter 3, Section 3.5 regarding operational and regulatory risks related to electronification.

(the objective of which is to cause loss of trust in the financial institution, insider trading and other forms of market manipulation).[73]

5) **Data Theft and Loss**: Nearly all G-SIFIs noted that rising data security breaches to be an area of emerging risk that exposes the financial institution to increasing costs and ramifications. Several added that the risk of data theft and loss by staff is higher where there is high staff turn-over.[74]

6) **Loss of Key Personnel**: Certain G-SIFIs noted that the loss of key personnel leads to potentially increased operational risk for the business line affected, especially if the function requires highly specialized knowledge and the position is difficult to replace. Certain G-SIFIs have put in place contingency plans for loss of key personnel.

7) **Outsourcing/ Off-shoring related Risks**: G-SIFIs noted that lower margins bring with it a need for even greater cost control. This in turn often leads to off-shoring and outsourcing, bringing with it new risks that need to be carefully tracked and periodically tested/ reviewed, including vendor risk and operational errors.

8) **Risks associated with Manual Processes**: Many G-SIFIs highlighted that while there is increased automation in front, middle and back office controls, some processes still remain manual. They noted that this creates the risk of human error or compliance risks not being identified. They noted that this risk is more difficult in areas where there is a high volume of spreadsheet-based data collection and verification, where there is a need for large volumes of manual adjustments or where there is a need for manual surveillance of large volumes of transactions/ data.

Heads of the operational risk function added that quantification of certain operational risks remains hard and sometimes impossible. They supplemented this by saying that where it is possible to quantify the risk, it is important to include in the calculation the "opportunity cost" that results from certain operational risks materializing (e.g. interruption of business, suspension of business or office closure).

Box 3: Details of specific Operational Risk Items

As part of the post meeting survey, CROs and heads of the operational risk function provided the following additional information on the operational risks mentioned above:

1) **Conduct Risk – Trading Fraud:** G-SIFIs cited they continue to analyze and implement risk mitigation improvements, including ex-ante fraud risk indicators (e.g. indicators to detect repetitive limit breaches and abnormal profit-and-loss trends), lessons on organizational set-up (e.g. elimination of the ability to simultaneously hold multiple roles, streamlining of complex matrix reporting structures and elimination of reporting silos) and other controls (e.g. risk/ compliance/ audit focus on traders with highest/ lowest relative compensation, system access controls upon transfer from front-to-back office and vice-versa, and monitoring of compliance with annual block leave policies).

[73] See DTCC "Beyond the Horizons" (August 2013) http://www.dtcc.com/~/media/Files/Downloads/WhitePapers/Beyond_the_Horizon_White_Paper_Systemic_Risk.ashx and IOSCO "Staff Working Paper: [SWP1/2013] - Cyber-crime, securities markets and systemic risk" (July 2013) http://www.iosco.org/research/pdf/swp/Cyber-Crime-Securities-Markets-and-Systemic-Risk.pdf.

[74] See also Chapter 3, Section 4.2 below under surveillance trends.

2) **Conduct Risk – Relationship Manager Fraud:** Certain G-SIFIs noted that they have introduced enhanced control measures to reduce the risk of fraud by relationship managers. They raised the following examples of controls: lower thresholds for independent call-back processes, computerized call-back processes, SMS and email confirmation processes prior to the release of cash or client assets and T+1 large transfer surveillance.

3) **IT Risk – Electronic Trading Systems (ETS):** Certain G-SIFIs noted that within this context, they are focusing on ensuring compliance with the new standards set out in the Consultation conclusions on the regulation of electronic trading.[75]

4) **IT Risk – System Capacity Issues:** Certain G-SIFIs noted that they have introduced system improvements to reduce the risk of system outages due to capacity overloading.

5) **Data Theft – Specific area of focus:** Certain G-SIFIs noted that they are focusing on security breaches caused by the misuse of USB devices and accordingly have either fully disabled or introduced controls, including surveillance, over the use of such devices. They also pointed out stringent authorization processes for "bring your own device".

6) **Manual Processes – Specific area of focus:** CROs and heads of the operational risk function noted that G-SIFIs are seeking to reduce manual adjustments in trade capture, daily marking and corporate actions.

They also mentioned the following additional areas of operational risk focus:

1) **Stamp Duties:** Certain G-SIFIs noted they have increased focus on stamp duty compliance, including in relation to transfer pricing agreements.

2) **Regional Fat-tail Events:** Certain G-SIFIs noted fat-tail events such as the interruption or failure of utility services (e.g. telecommunications, power and water), earthquake and mass pandemic outbreak.

3.3. Jump-to-Default Risk

During our meetings, some CROs mentioned "jump-to-default risk" as an area of focus in respect to bond holdings, corporate/ wholesale lending businesses and distressed debt trading businesses.[76] CROs mentioned that to mitigate this risk, they have migrated from low liquidity to medium-to-high liquidity assets. CROs added that they are paying extra attention to credit positions of counterparties in Asian economies that face a risk of economic slow-down or currency risk.

Some CROs also mentioned that they have increased focus on the top individual corporate exposures, top sub-investment grade exposures, top bond inventory positions and unsecured risk positions.

The CROs of G-SIFIs that have active distressed trading desks noted that they are focused on repayment risk, bad-debt collection and hedging strategies.

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[75] See SFC "Consultation conclusions on the regulation of electronic trading" (March 2013) http://www.sfc.hk/edistributionWeb/gateway/EN/consultation/conclusion?refNo=12CP3.

[76] Jump-to-default risk is the risk of an unforeseeable default of a borrower or bond issuer without any credit deterioration being observed.

3.4. People Risk

Several CROs observed that while the increased prominence of risk functions is a positive trend, it has led to significantly higher expectations of responsibility and accountability, including from regulators. These increased expectations, combined with cost-cutting, have led to “doing more with less” and has created a risk of exhaustion and attrition of risk management personnel. CROs noted that it is critical for financial institutions to retain the institutional knowledge which risk management personnel have gained from the global financial crisis.

4. Projects

4.1. Enforcement of the Group Risk Appetite Statement through Asian Risk Tolerance Matrix

CROs mentioned that they have put or are putting in place Asia risk tolerance matrixes to ensure that the Asian subsidiaries operate within the risk appetite set on the group level.

G-SIFIs noted that they continue improving this approach. In particular, they noted that more granular risk metrics are being developed to further improve cross-business comparability and consistency.

They also noted that they are further enhancing the risk tolerance matrixes to cover a broader range of risks across different risk specializations including market risk, credit risk, operational risk, liquidity risk, balance sheet risk, conduct risk and litigation risk.

Box 4: Example of Regional Funding & Liquidity Risk Management Report derived from the Global Risk Appetite Statement (RAS)

As part of the post meeting survey, CROs provided additional information. For illustrative purposes, we insert below an example of a funding liquidity risk management report that translates the global RAS into a regional risk tolerance matrix.

Regional Funding & Liquidity Risk Management Report					
Risk Tolerance and Limits **(Derived from the Global Risk Appetite Statement)**	**Metric**	**Current Position**	**Regulatory/ External Risk Tolerance Level**	**Internal Risk Tolerance Level**	**Breach?**
Liquidity Ratio Liquid Assets to Qualifying Liabilities	1. MTM Weighted Average 2. Daily	--% --%	--% --%	--% --%	Yes/No Yes/No
Maximum Limits per Business Line	**Local Currency**				
1. Business line 1	Overnight/1 week/1 month	--$--$--$	--$--$--$	--$--$--$	Yes/No
2. Business line 2	Overnight/1 week/1 month	--$--$--$	--$--$--$	--$--$--$	Yes/No
3. Business line 3	Overnight/1 week/1 month	--$--$--$	--$--$--$	--$--$--$	Yes/No
4. Business line 4	Overnight/1 week/1 month	--$--$--$	--$--$--$	--$--$--$	Yes/No
	Foreign Currency				
	Overnight/1 week/1 month	--$--$--$	--$--$--$	--$--$--$	Yes/No
	Overnight/1 week/1 month	--$--$--$	--$--$--$	--$--$--$	Yes/No
	Overnight/1 week/1 month	--$--$--$	--$--$--$	--$--$--$	Yes/No
	Overnight/1 week/1 month	--$--$--$	--$--$--$	--$--$--$	Yes/No
Stress Tests					
Scenario #1	Stress Factors: x, x, x	--%	--%	--%	Yes/No
Scenario #2	Stress Factors: x, x, x	--%	--%	--%	Yes/No
Scenario #3	Stress Factors: x, x, x	--%	--%	--%	Yes/No

4.2. Continued Development of Strategic Risk Architecture, including Data, Systems, Process and Infrastructure Enhancements

a) Replacement of Legacy Systems

Most G-SIFIs continue to make investments in strategic risk architecture. This includes the replacement of legacy systems.

In certain G-SIFIs the status of projects is tracked in the form of a web-based centralized risk portal. The centralized risk portal allows enhanced visibility of all risk IT initiatives, including both strategic and tactical efforts. As such it serves to provide complete, accurate and timely information to business and risk management.

b) Increased Focus on Enterprise-wide Risk Data Aggregation and Data Analytics

While replacing legacy systems, CROs noted that a key target is to implement more standardized and stream-lined real-time risk reporting. Furthermore, the intention is to improve risk management processes and workflows front-to-back, so that the risk data is more integrated and more easily accessible for the business, the middle office and the risk functions. While working towards this goal, CROs are also taking into account the impact of trends towards subsidiarization and regulatory requirements for legal entity based reporting. Certain CROs also noted that it is important to improve the ability to do “trend reporting” by showing how ratios and metrics perform over longer periods of time and how they compare to each other, as this may provide an early indication of risk build-up.

Box 5: Examples of System Improvement Projects

As part of the post meeting survey, CROs provided some of the following examples of system improvement projects:

1. Globally driven risk data architecture projects to implement enterprise risk management (ERM) systems
2. Enhancement of credit risk, operational risk and liquidity market risk systems, targeted at improving risk calculation, aggregation and reporting
3. Regional projects to create a cross-divisional Asia Pacific data hub/ repository for credit and market risk
4. Portfolio level risk calculation tools utilizing historical simulation or random sampling (Monte Carlo) engines

c) Increased Cooperation between Risk and Finance

Several G-SIFIs noted that they are implementing regionally consistent accounting standards across all booking centres. Some G-SIFIs mentioned that they combine this effort with evaluating how accounting data can contribute to risk management processes. For example, some noted that a stronger connection between CFO and CRO allows for real-time P&L impact analysis, risk-adjusted pricing strategies, stress testing and balance sheet simulation.

While certain CROs noted that risk and finance are becoming closer, they added that there are still significant differences between the risk representation and the accounting representation of the same data.

4.3. Dedicated Workstream for Regulatory Compliance

All the G-SIFIs noted that they have established global regulatory compliance programs and steering committees to ensure swift and smooth implementation of the Basel III/ Capital Requirements Directive (CRD) IV requirements. This includes new capital requirements, the leverage ratio, capital buffers, risk coverage and liquidity rules. They noted that the impact of other upcoming regulatory changes is also methodologically tracked, analysed and reported to relevant internal risk governance forums.

Many CROs pointed out that it is very challenging to continuously enhance risk management IT infrastructure to cope with new regulations. They also noted that there is an increasing number of reporting requirements in the multiple jurisdictions in which they operate. These reporting requirements differ, which create the need for IT investment to ensure local regulatory compliance.[77] Certain CROs noted that increasing regulatory de-globalization brings with it a risk that other critical projects, such as those to improve enterprise risk management (ERM) systems, may be delayed.

4.4. Central Counterparty Clearing House and the Derivatives Regulatory Reform

G-SIFIs noted that they are very focused on capital and capital buffer requirements in relation to central counterparties (CCPs). They also noted that a limited number of CCPs have become their major counterparties, creating counterparty concentration risk.[78] They added that to mitigate counterparty concentration risk, risk officers are empowered to set and manage limits, assign ratings, measure current and potential risk exposure and monitor client allocated credit for all counterparties.

4.5. Operational Risk Lessons Learned Assessment Process

Some G-SIFIs have introduced an operational risk "lessons learned assessment process" that covers a broad range of operational risk incidents across clients, products and services (e.g. external fraud, internal fraud, business disruption, systems failure, execution failure, delivery and process breakdown, damage to physical assets, employment practices, workplace safety, etc). It involves assessment of the relevant operational risks to the G-SIFIs concerned as well as review of the mitigation processes and required enhancements.

5. Headcount Trends

Credit and market risk management functions rapidly expanded since the 2008 global financial crisis. More recently, with the reduction of risk appetite and higher capital requirements, certain CROs noted there has been some reduction in the resources, especially in market risk.

Certain G-SIFIs noted that in the wake of higher capital and funding liquidity risk,[79] dedicated liquidity manager roles have been created in the region, including in Hong Kong. These roles are supported by the country treasurer, the regional funding and liquidity team as well as the regional CFO function.

Globally, specialized risk roles related to CCPs and the derivatives reform, including the evaluation of the robustness of CCP risk management have been put in place. Furthermore, counterparty risk management has expanded.

Also, the operational risk function has seen some headcount increases at most G-SIFIs.

6. Risk Management Dashboard

CRO Risk Dashboards not only show the common risk indicators such as VaR, Greeks, capital consumed, risk exposures and margin breaches, but also customized indicators such as stress testing results, scenario analysis and net revenue variance analysis.

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[77] See also Morgan Stanley and Oliver Wyman "Global Banking Fractures: The Implications" (April 2013) http://ftalphaville.ft.com/files/2013/04/Morgan-Stanley-Research-Wholesale-Investment-Banking-Outlook-Global-Banking-Fractures-The-Implications.pdf.

[78] See Chapter 1, Section 1.4 above. See also the IOSCO Securities Market Risk Outlook 2013 – 2014 (October 2013) report starting page 47 http://www.iosco.org/library/pubdocs/pdf/IOSCOPD426.pdf.

[79] See also Chapter 1, Section 1.1 above for the business perspective of this risk.

Box 6: Example of Risk Management Dashboard

As part of the post meeting survey, CROs provided insight into the Risk Dashboards they have created as a basis for reporting to senior management. We summarize some of the key risk indicators that regional G-SIFI CROs use below.

1) **Business Irregularities**
   - Carry forward items, long outstanding items, exceptions, breaches
   - Control incidents, limit excesses, unauthorized limit breaches
   - Operational incidents that result in material financial losses exceeding internal thresholds (including clearly trivial matters)

2) **Equity Exposures**
   - Greeks (such as Delta, Vega, Theta, Rho, Gamma)

3) **FICC Exposures**
   - Dollar Duration (DV01), Basis Point Value (PV01), Convexity, Credit Spread (CS01), Currency Risk (FX) stressed figures and Emerging Market (EM) stressed figures

4) **Inventory** (Cash and CDS)
   - Mark-to-market (MTM) values in local currency, foreign currency and total
   - By country or sovereign and corporation level
   - By business line and asset class

5) **Derivative Exposures**
   - Legally enforceable netted MTM
   - Foreign currency MTM

6) **Aggregate High Co-correlation Short Positions**
   - Notional on CDS, bond options, cash out/ in on reverse repos/ repos, with highly correlated counterparties

7) **Watch List**
   - Top X stock positions

8) **Top Loan Exposures**
   - Exposures vs. limits per key business lines (including all primary facilities and derivatives facilities)

9) **Significant Transaction Pipeline** (Corporate Finance, Capital Market, Credit)
   - YTD (under discussion vs. prolonged discussion)
   - YTD (approved, withdrawn and declined)
   - Deal pipeline includes only those deals deemed significant

10) **Non Sovereign Inventory Turnover**
   - Current notional, current MTM, average maturity, 90-day turnover, beyond 90-day notional, beyond 90-day MTM
   - 90-day turnover % = sales in the past 90 days / starting notional (notional 90 days ago)
   - Beyond 90-day notional / MTM = notional / MTM of names that have not turned over in the last 90 days
   - Distressed and non-performing loan portfolios

11) Underwriting Risk Deal Size and Count
- Asia Pacific ECM, DCM and LCM deal pipeline
- Early stage, approved not committed, approved & committed, best effort deals, current underwriting, bridge deals, stale deals

12) Stress Test
- Wrong-way risk stresses
- Counterparty stresses
- Scenario and parameter driven stresses

13) Concentration Risk
- Concentrated portfolios
- Concentrated credit clients

Chapter 3: CCO Perspective on Risk and Risk Mitigation

During the risk-focused industry meetings, CCOs and senior compliance officers shared their perspectives on risk and risk mitigation. After the meetings, the CCOs participated in a further survey to provide supplemental information. Their insights are organized under the following topics:

1. ***Compliance Structure***
2. ***Notable Trends – Setting an Effective Risk Culture***
3. ***Key Risks***
4. ***Projects***
5. ***Headcount Trends***
6. ***Compliance Key Risk Indicators***

1. Compliance Structure

1.1. Increasing Prominence of the CCO

In view of increasing global regulatory fines, penalties and sanctions associated with conduct risk and regulatory focus on greater accountability, controls and compliance, there is heightened awareness among G-SIFIs of the strategic importance of the CCO as well as an emerging regulatory trend in various jurisdictions for the CCO to be a licensed position.

The CCO typically oversees the conduct compliance program including: regulatory compliance risk, reputational risk, Chinese Walls and AML/ sanctions/ anti-corruption related risks. All G-SIFIs we met with have a regional CCO/ Head of Compliance role that has been established for many years. The regional CCO's reporting lines are typically independent from the business into the global CCO.

We observed from our meetings that there are broadly three different types of compliance reporting structures at the global level: structures in which the global CCO reports into the General Counsel, structures in which the global CCO reports into the CRO, and structures in which the global CCO reports into the CEO/ COO and sits on the board or risk committee. Since the global financial crisis, several G-SIFIs have moved to the last model. Some G-SIFIs noted that this change is in part driven by regulatory expectations in certain key markets.

Similar to the CRO role, many CCOs noted the following key aspects to be critical: a clear definition of scope, authority and corresponding accountability of the CCO and extensive collaboration across risk functions. CCOs also acknowledged that they are working towards a better integrated picture of compliance risk across the enterprise to facilitate reporting to senior management.[80]

1.2. Evolution of the CCO Skill Set

In terms of "What makes a good CCO?" many G-SIFIs noted that long-standing experience in building effective compliance advisory and control programs is essential, as compliance has developed into a specialization of its own. They also mentioned the need to have an investigative mindset, including the ability to anticipate potential areas of risk by looking

[80] See also SIFMA "The Evolving Role of Compliance" (March 2013): http://www.sifma.org/issues/item.aspx?id=8589942363.

"beyond the horizon." Finally, most noted that increasing regulatory complexity means that it is important for CCOs to have solid regulatory compliance experience and constructive regulatory relationships.

1.3. Importance of Global Board Reporting

Most CCOs cited that it is critical for the global CCO to have a strong voice and to be respected and heard at the board level. Much similar to the view shared by the CROs, CCOs cited that this is important for two principal reasons: to ensure executive and non-executive directors are engaged in the conduct risk management program and to secure the requisite level of resources and budget (headcount and systems investment), both of which are needed to improve the risk culture of the organization.

Some G-SIFIs noted that to promote compliance independence, the appointment and removal of the global CCO should be subject to the approval of the board. Some G-SIFIs have moved to this model, but unlike in the case of CROs, this has not yet become standard market practice.

1.4. Reputational Risk Management

Due to certain regulatory requirements in key markets, most G-SIFIs have a reputational risk committee. In order to provide a solid cross-disciplinary representation, these committees are typically comprised of regional management, business leaders, the General Counsel, the CRO, the CCO and representatives from other divisions.

At many G-SIFIs, reputational risk committee decisions are made by voting. Some G-SIFIs noted that the ultimate decision is made by regional management, while other G-SIFIs noted that they have a veto process that can be escalated up to global management.

G-SIFIs noted that the matters that are escalated to the reputational risk committee are diverse in nature. For example, complex transactions, transactions that involve corporate insiders as well as large corporate derivative transactions are typically escalated to the reputational risk committee. Other matters that may be escalated to the reputational risk committee include approvals to onboard politically exposed persons (PEPs) or to engage in transactions involving such persons [81] and risks related to hiring staff with negative background records.

In addition to the foregoing categories, transactions that have potential negative environmental, sustainability or social impact are also escalated to the reputational risk committee. G-SIFIs observed that there is an emerging trend of increased reputational and financial risks associated with providing financial market access to corporations that create negative environmental, sustainability or social impact.[82]

2. Notable Trends – Setting an Effective Risk Culture

As discussed in preceding sections of this report, conduct risk is viewed by G-SIFIs to be a major area of risk. Senior officers of the business, risk management and compliance are in agreement that a bad risk culture can overtake good risk governance and can damage any organization, including those with the most advanced risk management frameworks.

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[81] PEPs also typically go through a separate PEP approval process.

[82] One G-SIFI noted that in recent years, there are several incidents in Asia where G-SIFIs who either acted as underwriters for, or provided financing to, corporations with a negative environmental footprint were subjected to negative media focus and reputational damage. This has led to enhanced sustainability due diligence.

Since there are only a limited number of public papers that document methods that can be used to establish an effective risk culture,[83] we focused our discussions with CCOs on this area. CCOs highlighted that their financial institutions seek to achieve an effective risk culture through a variety of methods, practices and approaches, including in-depth background checks, compliance training programs, consequence management, close involvement in new product and new business activities, and strong complaint-handling and whistle-blowing processes. Each of these is elaborated upon in further detail below. It should be noted that while we discussed this topic in detail with the CCOs, other divisions are also involved in the below processes, practices and approaches.

2.1. Background Checks

Many CCOs view that building a sound and effective risk culture starts with hiring the right people. Since one bad hire can make the difference between success and failure in an organization, an effective background check can help to mitigate the risk of hiring an employee with a previous history of wrongdoing.

Most G-SIFIs utilize third-party vendors to conduct or assist in the background check for prospective new hires to ensure that all criminal and public disciplinary records are obtained and reviewed. However, most G-SIFIs also acknowledged that the background checks may not always be effective in showing the full conduct record of the prospective employee. Most G-SIFIs indicated that they take a conservative approach to regulatory reporting of disciplinary actions that involve compliance violations and that they generally report such matters to the relevant regulators.

One G-SIFI noted that it has drafted language in a new hire employee self-disclosure document which requires the prospective employee to certify that the employee has not been subject to a disciplinary-related review or investigation at the employee's prior employer(s) (irrespective of whether it led to any internal disciplinary action). That said, this G-SIFI observed that even such additional self-disclosure cannot fully prevent a prospective employee with low integrity from misrepresenting his or her disciplinary record.

As an additional measure, some G-SIFIs indicated they informally contact the prior employer, especially for senior hires where there may be a reason to suspect wrongdoing or disciplinary activity. However, privacy rules may prevent the former employer from disclosing sensitive information to the new employer.

2.2. Training

Most CCOs view that a properly managed compliance training program is one of the most important tools to promote an effective risk culture. Accordingly, when new employees join, CCOs view it as "mission critical" for them to learn about the G-SIFI's risk governance and risk culture. This includes training on the internal business principles and guidelines of the organisation.

Many CCOs noted that the annual compliance training program is determined at a global level. In addition to regular training such as annual compliance refresher training and new hire training, there are also topical training sessions on evolving areas of compliance risk. CCOs noted that recent topical training topics have included: training on compliance and conduct risk lessons from rogue trading incidents, training on LIBOR/ benchmark manipulation, and training on AML/ sanctions violations and anti-corruption risks.

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[83] See FSB "Thematic Review on Risk Governance Peer Review Report" (February 2013) http://www.financialstabilityboard.org/publications/r_130212.pdf.

With effective use of technology, CCOs noted that compliance training has evolved from traditional in-classroom to web-based, online training (including e-learning courses and live interactive training through video, audio or web conferencing). They added that online training comes with a number of benefits, such as resource and cost effectiveness, tests that produce random questions so that the employee's knowledge is individually tested, and an automated audit trail of training completion statistics.

Notwithstanding the benefits of online training, many CCOs noted that to positively influence the risk culture and to set the right "tone from the top", they view it as critical for the new hire induction training and the annual desk-specific compliance refresher training to be conducted in person through the traditional classroom method. Some CCOs noted that they have adopted this as a practice globally because of regulatory requirements in certain key markets.

Some CCOs noted that another strategy to deliver a strong message is for business supervisors to deliver compliance case studies. To achieve this, compliance will partner with the business by assisting them in preparing case studies that are relevant to the business concerned and by being present during the training sessions.

CCOs added that another way to strengthen the "tone from above" is for supervisors to welcome compliance and other risk functions to be a member of their regular staff meetings. This allows compliance officers and other risk functions to update the business on relevant regulatory, risk and compliance developments.

With respect to training delinquencies, several G-SIFIs stated that an effective way to push staff to complete their training is escalation to senior business management or impact on incentives. At several G-SIFIs, the delinquent employee's name is escalated to the G-SIFI's Asia CEO or President, who then personally sends an email reminding the delinquent employee to complete the training. Furthermore, year-end compensation may be reduced or other penalties may apply such as, for example, suspension of personal account trading until the delinquent training is completed. Most CCOs observed that a combination of these supervisory and sanctioning measures has led to a very noticeable decrease in training delinquencies.

Certain CCOs also noted that since training often concerns policies of the organization, it is very important that the policies are readily retrievable. With the sheer volume of policies that an organization may have, this is sometimes a challenge. Consequently, in recent years CCOs have put in place dedicated compliance roles to ensure that policies are kept up to date and readily accessible.

2.3. Consequence Management: Compensation, Promotions & Disciplinary Actions

Most CCOs noted that one of the key elements to promoting an effective risk culture is the connection of behaviour to appropriate incentives and penalties. In the words of one CCO, "incentives were at the heart of the problem and are at the heart of the solution". As another CCO noted "consequence management is a systematic approach to hold staff accountable for their performance and behaviour".

Effective ways to implement consequence management would be to systematically record and measure staff behaviour, maintain efficient and centralized records that connect past behaviour to performance management, promotion and compensation processes.

We organize some of the key observations from CCOs into the following three themes: 1) a systematic approach to tracking behaviour; 2) a systematic approach to promotions and compensation; and 3) a well documented disciplinary process.

1) **A systematic approach to tracking behaviour**

Most CCOs believe that it is important to have a systematic process for tracking and capturing all compliance, risk and other violations on an enterprise-wide basis. While all G-SIFIs acknowledged they are working on this in principle, only a few G-SIFIs have achieved a fully automated process.

One G-SIFI established a fully centralized database in which policy and other breaches are recorded and assigned red, yellow and green risk ratings. Breaches become part of consequence management in which bad employee behaviour is escalated to senior management and has an impact on performance, promotion and compensation decisions. This G-SIFI further noted that the supervisor is also within scope of review if a reporting employee records three or more breaches.

Another G-SIFI established a "red flag" program which keeps track of an employee's violations and failure to complete mandatory tasks, in which a risk score is assigned to each breach or failure. The red flags are also escalated to senior management and have an impact on performance, promotion and compensation decisions.

Other G-SIFIs that do not yet have a centralized system to record breaches noted that they use other approaches, such as "score cards" or other manually intensive record-keeping tools (e.g. spreadsheets) to keep track of employee violations.

Aside from ensuring that bad behaviour gets penalized, some CCOs emphasized the importance of rewarding good behaviours, especially in the context of promotion and performance review processes.

2) **A systematic approach to promotions and compensation**

If a G-SIFI has an automated approach for tracking and capturing all compliance, risk and other violations on an enterprise-wide basis, it can also, in theory, achieve a systematic approach to review and assess staff conduct during performance, promotions and compensation reviews. However, as noted above, most G-SIFIs have not yet achieved this.

As a result of the increasing importance of building an effective risk culture as a method to control conduct and other risks, many G-SIFIs have a formal or informal year-end process whereby the human resources division seeks the input of all risk functions on prospective employees considered for promotion and confirms whether there were any instances of bad behaviour, including setting a bad "tone from above."

Furthermore, as a result of regulatory expectations in certain key markets related to material risk takers (MRT),[84] it has become prevalent among G-SIFIs to apply a review process for MRTs on a global basis. Certain G-SIFIs have expanded the list of MRTs to include country heads in Asia as they view such senior staff as having an important role in setting an effective risk culture.

3) **A well documented disciplinary process**

Most G-SIFIs view the CCO's role in the disciplinary process as essential. Many CCOs view as critical to have a formal disciplinary committee or panel with well-documented procedures on structure and process. They believe that this reduces the appearance of inconsistencies which is important in setting an effective risk culture. To further enhance

[84] See FSB Progress Report "Implementing the FSB Principles for Sound Compensation Practices and their Implementation Standards" (June 2013) http://www.financialstabilityboard.org/publications/r_120613.pdf.

effectiveness of these policies, CCOs noted that it is important that senior management communicates the policies to the staff. A limited number of G-SIFIs noted they have more informal panels or meetings to investigate and resolve disciplinary matters.

CCOs noted that the matters that are escalated to the disciplinary committee are diverse in nature. As part of our meetings, several CCOs pointed out the following as examples: personal account trading violations, misuse of emails such as sending firm proprietary information to third parties or to oneself and violations of gift and entertainment policies.

2.4. New Activities

CCOs noted that another important part of the control framework concerns involvement in new business initiatives. Several CCOs noted that their institution extended what used to be called the “new business committee” to now become a “new activity committee” that covers not only the establishment of new businesses/ desks/ branches/ offices, but also reviews of new products and new services.

The new activity committee is a cross-divisional forum, normally supported by an IT process flow, in which the head of the relevant business proposes the business initiative and involves each of the relevant risk functions to review and sign-off from their perspective before the new activity proceeds. Several CCOs noted that they have “new activity checklists” which comprise of steps that compliance staff have to do before providing sign-off on the new activity.

CCOs observed that “conditional sign-offs” (e.g. sign-off to go ahead subject to automation of controls by some date in the future) are less common than they used to be. They cited the following reasons for this change: the operational risks of automating controls in the future after the new activity is launched are higher than they were before; the P&L of the business may not be properly understood unless all necessary controls are accounted for; it is culturally more difficult to apply controls after the business activity has already commenced; and lastly, conditional approvals require extensive follow-up which requires dedicated staff, thus creating increased costs in resources.

Senior officers in charge of administering the new activity processes added that in the past the focus was on projected revenue, but now the focus is on projected P&L. The risk appetite for the activity is also part of the new activity process. Furthermore, post implementation reviews are more systematically conducted to verify whether the P&L targets are reached and also to ensure that all limits, including risk appetite limits, continue to be complied with.

Many CCOs noted that their institution now takes a more active approach to risk culture, thereby making it easier than it was in the past for risk functions to stop new activities that carry high operational, reputational or regulatory risk or where the rules and regulations are unclear.

2.5. Complaints

CCOs consider that client complaints are an important indicator of conduct risk, including whether G-SIFIs are treating customers fairly. All G-SIFIs noted that they have established well-documented policies on complaints. These policies define a complaint, how it must be escalated, maximum response time and requirements on internal investigation to validate or invalidate the complaint. This also includes identifying and remediating process weaknesses, if any.

Most CCOs noted that complaints are typically more common in retail and private wealth client businesses than with institutional clients. As such, they did not identify any specific client complaint patterns other than complaints related to retail-listed structured businesses and institutional clients raising execution errors. However, they continue to note patterns in private wealth client complaints in respect to mis-selling and noted that certain accumulator related complaints dating back to 2008 are still ongoing.

2.6. Whistle-blowing

In view of regulatory requirements in certain key markets, all G-SIFIs acknowledged that they have set up whistle-blowing hotlines in those jurisdictions and on a best practice basis have extended the reach of those hotlines globally, meaning anyone globally within the institution can call the hotline. The hotlines are often handled by outside firms to ensure independence. There is an option for the whistle-blower to request anonymity.

Notwithstanding this, most CCOs noted that so far they do not perceive whistle-blowing hotlines to be an effective means to identify breaches of law or regulation since there are few whistle-blowing events globally and the number of whistle-blowing events in Asia is even lower.[85] Also, to the extent complaints are made, they often pertain to human resources matters rather than to breaches of regulatory compliance violations.

That said, in the broader context of enterprise risk management (ERM), where the institution realizes that to have an effective risk culture it must adopt a holistic view, management considers such hotlines as important. In particular, management views these hotlines as part of the framework to ensure not only compliance with the "letter of the law", but to create a proper risk culture of "doing the right thing" across the institution. For example, aside from classic compliance issues and risks, this may include a broader range of issues that closely correlate to organizational culture such as, among others, ensuring discrimination laws are complied with, ensuring there is no harassment by staff in a position of power or authority, and ensuring that the institution complies with applicable sustainability laws and regulations.

In the current environment of high regulatory fines, and increased focus on conduct risk, there is an opportunity to make the whistle-blowing culture even more effective. For example, one professional service firm that operates such hotlines for several G-SIFIs noted there is an opportunity to achieve this by setting the "tone from the very top" i.e. by the CEO doing a regular awareness campaign where the CEO draws the attention of staff at all levels to the importance of feeling empowered to whistle-blow if they think "the right thing" is not being done. This firm commented that they see a clear connection between such action being taken and an increase in whistle-blowing volumes.

A further step that can be taken is to raise awareness of staff to the fact that if they take part in, or knowingly not report, bad behaviour that later comes to light, not only the people responsible but also the staff who did not escalate may be implicated in the investigation.

3. Key Risks

Following our discussions with CCOs, we set forth some of the key concerns that keeps compliance management "awake at night".

[85] CCOs noted there may be reluctance to speak up against those in a position of seniority or power.

3.1. Keeping pace with Regulatory Reforms

One of the top concerns for management is the ability to keep pace with local, regional and international regulatory reforms.[86] A single product or service may be subject to regulation by multiple regulators. Many G-SIFIs noted that they are meeting more often with regulators, are dealing with more regulatory requests and inspections than in the past, and are dealing with a very high volume of new regulations, some of which are contradictory due to extra-territorial effects, and facing many regulatory deadlines.

Consequently, many G-SIFIs noted that compliance resources have come under enormous strain with a greater need than ever before to hire more specialists.

3.2. AML, PEP, Tax, Sanctions and Anti-corruption Compliance Risks

Some of the highest fines in the past few years have been in the area of AML and sanctions compliance, demonstrating that such failures can lead to significant regulatory, financial and reputational risks for G-SIFIs. More recently, CCOs noted an increasing global and regional regulatory focus on tax and anti-corruption compliance.

Many G-SIFIs are implementing AML enhancements to try to improve client identification requirements. This includes: enhanced due diligence to identify politically exposed persons (PEPs); beneficial owners and the true source of funds; enhanced surveillance and monitoring capabilities; enhanced documentation of decisions and approvals; gap assessments of the current AML program; and assessments of the adequacy of resources and setting a strong tone from the top.

In respect to anti-corruption, many G-SIFIs noted that they mitigate risks by tracking the number and value of gifts and entertainment expenses made to government officials or entities, as well as by conducting due diligence of PEPs who are current or potential clients, employees or consultants of the G-SIFI.

In view of growing regulatory scrutiny in AML and anti-corruption, CCOs noted that they have been increasing their resources in hiring new staff. Several heads of AML Compliance added that this trend has created high attrition in what is a rather small market of AML talent in Hong Kong. Some G-SIFIs also noted that sophisticated AML risks may be difficult to identify or detect for AML staff with only limited experience. These combined factors in turn can potentially create regulatory and operational risks for financial institutions.

3.3. Cross-Border Travel Compliance Risks

Since Hong Kong is often the headquarters for the Asia-Pacific region for most G-SIFIs and a hub from which regional (including travel based) activities take place, several G-SIFIs noted the importance of solid cross-border risk controls.

Consequently, G-SIFIs noted that they have implemented cross-border projects that seek to ensure that the travelling personnel are in compliance with all applicable regulatory, licensing and tax requirements. These projects include: reviewing relevant regulatory requirements in destination markets, issuing new policies and procedures, as well as travel approval mechanisms.

[86] See also Chapter 1, Section 1.3 above for the business perspective on this.

3.4. Risks of Conflicts of Interest

Some CCOs noted that they continue to focus on conflicts of interest, which have been at the heart of many regulatory actions and fines over the past decade.

Furthermore, some CCOs noted that they have an annual or bi-annual process whereby, on a global level, compliance interviews the business lines to identify potential new conflicts of interest that may emerge as a result of new business activities or changes in the business model. The conflicts of interest review typically includes the product life cycle including product origination and sale processes and incentives along the path of distribution.

That said, most CCOs acknowledged that at present, they are lacking real-time data to identify sales trends and changes in incentives. They agreed that it would be helpful to have such data to enable the risk functions to more effectively identify potential new areas of conflict.[87]

3.5. Electronification related Risks

With the development and growing use of technology, most G-SIFIs noted that keeping pace with the electronification trend is one of their top priorities and concerns. Many G-SIFIs have increased their technology budget to invest in automation of systems and electronic trading. CCOs emphasized that they are focused on ensuring compliance with the SFC Consultation conclusions on the regulation of electronic trading.[88]

As technology evolves, several CCOs further noted that they have created specialized compliance positions. However, they added that it is a challenge to hire compliance professionals with an interest to specialize in technology and electronification risk and with the right skill set to work closely with the business, operations and IT divisions on compliance, operational and regulatory risk control. Sometimes current compliance staff are reassigned to work in this area.

In addition to having dedicated compliance staff, CCOs also manage the regulatory risks associated with electronification by ensuring that there are policies and procedures in place with clear thresholds on testing, IT change management, supervisory approvals, supervisory escalation of errors, etc.

4. Projects

Many CCOs noted that IT has been a key component in compliance risk control and surveillance for a number of years, and the trend will only continue. Therefore, CCOs and their compliance staff need to keep current with the latest IT developments with vendors and with internal IT systems. Continuous IT review and replacement of legacy systems are deemed to be critical.

G-SIFIs have also noted that technology helps to improve accuracy and efficiency of their compliance programs by automating labour-intensive and time-consuming manual processes and by the ability to provide transparency, measurement and clear audit trails. Furthermore, many G-SIFIs noted that some of their projects are driven by regulation.

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[87] See the paragraph entitled “Business Trends” in the Executive Summary as well as Chapter 1, Section 2.1 above.
[88] See SFC “Consultation conclusions on the regulation of electronic trading” (March 2013) http://www.sfc.hk/edistributionWeb/gateway/EN/consultation/conclusion?refNo=12CP3.

Set forth below are some of the current or proposed projects cited by G-SIFIs. Note that this is not an exhaustive list and does not include some of the potential projects discussed under Key Risks in Section 3 above.

4.1. Supervisory Reviews

Several G-SIFIs noted that while risk functions play a second or third line of defence role, it is critical that front office supervisors understand the rules and regulations applicable to their business and properly supervise compliance by their staff.

In order to enable supervisors to do this, CCOs of several G-SIFIs emphasized that they continue working with front office supervisors and their COOs to establish more methodological approaches such as supervisory checklists. Additionally, some CCOs also undertake the following actions to enhance supervision: implementation of supervisory policies and procedures, training on such policies and procedures, the establishment of clear supervisory reporting lines to ensure there is local accountability, and requirement of supervisors to certify to questionnaires on a quarterly or routine basis.

4.2. Surveillance

Most G-SIFIs noted that their Asia-based compliance functions have trading surveillance tools targeted at identifying breaches or misconduct by Hong Kong licensed staff, especially in the case of equities. Most also noted that fixed income surveillance is still evolving and is often conducted out of the G-SIFI's booking centres. Furthermore, most G-SIFIs acknowledged that they do not yet have advanced OTC trading surveillance tools, although they are in the process of developing them. Most G-SIFIs also noted that in relation to benchmark submissions and related activity, they are trying to build surveillance systems, but added that this currently needs to be supplemented by reliance on manual surveillance processes, including monitoring of emails and phone recordings.

With respect to communications surveillance, most G-SIFIs have established systems to monitor written communications of staff. However, most G-SIFIs added that one of the limitations is that surveillance can only take place if the written communication is connected to the G-SIFI's system. Therefore, many G-SIFIs highlighted the importance of conducting training to educate staff not to use external devices for business communications.

4.3. Client Suitability

Some G-SIFIs continued to improve systems targeted at enhancing client suitability checks, taking into account client knowledge, experience and complexity of products. Many CCOs noted that this is mostly implemented in conjunction with the front office as these systems are normally integrated into existing or new front office systems.

4.4. Gifts and Entertainment

In view of growing global and local regulatory focus on anti-corruption processes and controls, some G-SIFIs are developing centralized systems to better record, document, track and monitor gifts and entertainment requests and approvals.

4.5. Rule-mapping

Due to global regulatory complexity and regulatory requirements for rule-mapping in certain key markets, several G-SIFIs have launched global rule-mapping projects.[89] All G-SIFIs noted that this is a very labour-intensive process and that the challenge is to come up with a methodology that can be reasonably maintained. Some G-SIFIs have recently signed up to vendor systems to facilitate this process.

5. Headcount Trends

Most G-SIFIs have significantly increased their compliance headcount in the past few years following the global financial crisis.

The most significant compliance headcount growth at G-SIFIs is in the area of anti-money laundering, anti-bribery and counter terrorist financing due to increased global and regional regulatory focus, recent high profile regulatory actions taken against certain G-SIFIs and the extra-territorial nature of certain regulations.

Moreover, many G-SIFIs have increased headcount in surveillance and in monitoring and testing functions, alongside the growth of technology and automation.

Some G-SIFIs have also increased their headcount in the management of conflicts of interest, which includes the control room, investment banking and research divisions.

In the securities business, certain G-SIFIs have increased compliance headcount in the areas of equities, prime brokerage services and fixed income.

Furthermore, we note that some G-SIFIs have also increased compliance headcount in their private banking and wealth management businesses as a result of growth in Asia.

6. Compliance Key Risk Indicators

Most CCOs use both qualitative and quantitative key risk indicators to help identify, track and monitor compliance and regulatory risks with the objective to focus on areas that require attention, improvement, mitigation and control. Such metrics are also used by CCOs for management reporting.

[89] Rule-mapping is a process whereby the G-SIFIs create an inventory of applicable rules and regulations and performs a gap analysis of internal controls as compared to such rules and regulations.

Box 7: Compliance Key Risk Indicators

As part of the post meeting survey, CCOs provided some examples of the risk indicators they use as a basis for reporting to senior management.

Key Risk Indicators

1) Significant Compliance Issues and Events
2) Regulatory Reforms/ New Laws
3) Regulatory Visits, Audits and Inspections
4) Disciplinary Actions
5) Significant Legal Matters & Litigation
6) Training Statistics
7) Internal Audit Findings
8) Client Complaints
9) Employee Personal Account Trading Violations
10) Gifts & Entertainment
11) Wall-crossings
12) Information Barriers
13) Employee Licenses and Certifications
14) Anti-money Laundering (AML), Anti-corruption and Anti-bribery related Indicators

Conclusion

As noted at the beginning of this report, the risk-focused industry meetings sought to identify progress which G-SIFIs have made and continue to make in risk and risk mitigation, with a view towards providing practical insights. To achieve this, we have summarized throughout this report risk identification and mitigation practices, including aspects of best practices.

Many of our observations are encouraging. They reveal that there is high awareness among senior officers of G-SIFIs of the importance of improving risk governance and risk culture, including through setting a strong tone from the top, consequence management and investment in risk and compliance frameworks, resources, systems and controls.

Notwithstanding this, as can be observed from the forward-looking themes set out in the executive summary of this report, there is more work to be done. With that in mind, we hope this report may help financial institutions in their continuous improvement in risk governance and risk culture.

This report has a Chinese version. An online version is also available on the SFC website.

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