A Survey of Securities Market Risk Trends 2015

Methodology and detailed results

December 2015

Staff Working Paper of the IOSCO Research Department

Author: Shane Worner [1]

For further information please contact: research@iosco.org

[1] The author is a Senior Economist within IOSCO's Research Department. The author would like to thank all survey participants that took the time to complete the survey.

About this Document

The IOSCO Research Department produces research and analysis on a range of securities markets issues, risks and developments. To support these efforts, the IOSCO Research Department undertakes a number of annual information gathering exercises including, but not limited to, gathering market intelligence and data from major financial centres and analysis through independent surveys.

One such information gathering exercise undertaken by the Research Department on an annual basis is a risk survey; an in-depth survey formulated to collect views of financial market regulators and experts globally on those risk areas, particularly securities markets, which may be of concern. This edition of the survey was conducted in March 2015 and is the fourth time such an exercise has been undertaken by the department. Unlike previous editions, this year's exercise has an expanded scope. Not only did it consider risks to financial stability, it also considered risks to IOSCO's two other objectives, namely investor protection and fair and efficient markets

The main purpose of the survey is to gather views on emerging risks to/within securities markets and help identify/highlight pockets of risk that may not be captured by normal statistical analysis or desk research. It is not an attempt to rank risks through a survey. The survey should be seen as one way to gather global views and opinions and an important supplement to the market intelligence and other data research exercises undertaken by the research function of IOSCO. The results of this survey constitute an important input into the annual production of the IOSCO Securities Market Risk Outlook, the next edition being due for publication in January 2016.

The IOSCO Research Department would like to thank all IOSCO members and market participants who contributed to the survey.

Executive Summary

This report presents the results of an in-depth survey of the IOSCO Research Department's "Expert Network" and IOSCO's regulatory members on their views on risks to/within the global securities markets. The purpose of the survey is to gather expert views on current concerns regarding financial markets. This is the fourth year this particular exercise has been undertaken. In the previous three editions of this survey, respondents were asked their views on issues impacting financial stability/systemic risk. For this year's survey, the scope has been expanded to cover the two additional areas of IOSCO's mandate, namely issues with investor protection and issues that could impair fair, efficient and transparent markets. The body of the report offers a synthesis of expert opinions with the main areas of concern summarised under the following points:

Financial Stability issues

- With regards to financial stability, cyber-security threats in financial markets are now considered a prominent risk by respondents. Previous work by IOSCO has highlighted the point that a successful cyber-security event could have systemic consequences.
- Banking vulnerabilities, exit strategies, housing markets and capital inflow, still rate as major sources of risk for respondents. While these risk areas are not generally within the remit of securities regulators, there are spillover impacts on securities markets.
- Given recent experiences with governance scandals such as LIBOR and FX fixings, conduct issues around corporate governance and other harmful conduct rate as sources of significant risk.
- Micro-prudential risks flagged by respondents cluster around the areas of corporate governance, financial risk disclosure, shadow-banking activities, harmful conduct especially, regulatory policy.
- Responses differ by organisational type; with regulators showing more concern for corporate governance issues while market participants responses show clear focus on changes in market regulation impacting the financial system. Both cyber security issues and concerns around search for yield rate highly among market participants and regulators alike. Relatively speaking, market participants still view issues around securities financing and collateralised transactions as a potential area of risk, consequently, this is a risk that will be further analysed in the Risk Outlook 2015.
- When split by economy types, capital flows feature prominently in responses from emerging markets. This appears to be a distinguishing factor in the identification of risk sources between advanced and emerging economy. However, when viewed through the impacts of advanced economy monetary policy, the search for yield phenomenon reported by advanced economies is one of the causes of the wide scale emerging markets capital flows.
- Most respondents see financial stability risks to the system either being transmitted or amplified by securities markets. In other words, very few "risks" are reported as originating or being sourced from securities markets themselves;
- When asked about the impact on the economy of these risks, respondents note that banking vulnerabilities and capital flow volatility would have considerable impact. Concerns around risks emanating from the housing market also continue to increase.
- Given that this is the fourth iteration of the survey, a cluster of risk issues that have consistently being flagged over the last few years can be discerned. For example, regulatory uncertainty;

banking vulnerabilities; housing markets and capital flows/search for yield have all rated consistently high over time.

Investor Protection Issues

- In the area of investor protection, harmful conduct was the top response from survey participants, who reported that harmful behaviour by capital market participants damages the proper function of the capital market, inflicts harm on the investing public and decreases the public's confidence in capital markets.
- Disclosure and suitability issues also ranked high amongst respondent's answers, especially in the area of retail products. Technological advances in financial product distribution also received mention from respondents. Issues such as crowdfunding, cryptocurrencies, retail FX trading platforms and funds platforms were mentioned

Market Efficiency

- Market liquidity was considered, by far, the greatest challenge to fair and efficient markets, an interesting finding given that much of the recent global commentary has been about the systemic implications (not market efficient implications) of such a risk.

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Introduction

The IOSCO Research Function[2] produces annually the *IOSCO Securities Market Risk Outlook (The Outlook).* The Outlook is the product of a number of informational inputs that help to identify emerging and potentially systemic risks to and within securities markets. These exercises include data gathering and analysis, construction of quantitative systemic risk indicators, extensive market intelligence interviews in major financial centres, risk roundtables with prominent members of industry and regulators, risk reports and presentations by experts to the Committee on Emerging Risks, and, the focus of this note, a survey on emerging risk to the market and regulatory community.

To canvas the numerous and varied opinions within the financial industry, the IOSCO Research Department developed an online survey that was emailed to industry, academia, regulators and self-regulating entities. The survey provides an easy, cost-effective and confidential means by which to collect and collate expert views, while helping to identify the major risk areas that could impact securities markets. The survey also has a number of additional advantages including:

1. obtaining a wide range of opinions from around the globe;
2. quantifying the nature and importance of the pre-determined risk topics, according to expert responses;
3. collecting information on their likely impact on the economy;
4. highlighting any significant risks not included in the initial selection of risks to the securities markets that featured the survey;
5. providing a continued time series of how responses have changed; and
6. further insights into risk areas that may impact on IOSCO's two other mandated objectives, namely enhancing investor protection and maintaining fair, efficient and transparent markets

This staff working paper provides an analysis of that risk survey. Following is a discussion on the underlying methodology used to collect the data, as well as a breakdown of responses and comments.

Purpose of this Report

As part of IOSCO's mission and objectives,[3] member regulators agree to monitor, regulate and develop securities markets, while:

1. Protecting investors;[4]
2. Ensuring markets are fair, efficient and transparent; and
3. Reducing systemic risk.[5]

[2] The IOSCO research function comprises of the Research Department at the general secretariat and the Committee on Emerging Risks
[3] IOSCO Objectives and Principles of Securities Regulation [see http://www.iosco.org/library/pubdocs/pdf/IOSCOPD154.pdf
[4] IOSCO has set up a new Committee on Retail Investors issues. Also see IOSCO's recent report, 'Investor Education: Initiatives Relating to Investment Services', February 2013.
[5] See IOSCO, 'Securities Markets Risk Outlook 2013-2014', October 2013

The report, for the first time, addresses all of these objectives. Previous editions have solely focused on the systemic risk aspect of IOSCO's mandated work. This edition included expanded analysis on risks to fair, efficient and transparent markets and investor protection.

Structure

This staff working paper is structured as follows: **Chapter 1** outlines the initial steps and survey design along with a discussion on the methodology used to compile and analyse the available data, questions and the list of risks presented to respondents is also included. Additionally, the chapter outlines the long list of risks considered for the survey and how these were consolidated into a short list for input into the Risk Outlook proper. **Chapter 2** identifies some of the detailed statistics on each respondent's organisational type, geographic region and economy. **Chapter 3** provides a snapshot of the major trends related to risk as seen by market practitioners. Additionally, a discussion on how those views have changed over time is also presented. **Chapter 4** concludes**.**

1. Methodology

1.1. An outline of the survey design

Compared to the 2014 version of the survey, the scope of the 2015 iteration was expanded to consider risk beyond systemic risk/financial stability. Namely the 2015 iteration of the survey included questions pertaining to investor protection and fair, efficient and transparent markets issues. Consequently, the survey was consistent with IOSCO´s three principle objectives. .

Participants in the survey can be separated into two broad categories: 1) IOSCO members (Ordinary, Associate and Affiliate) and members of the External Experts Network. [6] The survey was sent to approximately 1000 participants in total in March 2015, with responses requested by the end of April 2015. Respondents were encouraged to identify areas of concern, as they saw them, to global securities markets, even if they were outside the control of the securities markets. It was made clear that all individual-level responses would be kept confidential to allow for impartial and frank views.

The survey was structured around six questions that were designed to capture the following information from participants:

1. at a high level, the five most important areas of concern that could impact on the financial system, efficient operation of securities markets and threats to investors;
2. at a more granular level, the trends, risk or activities within those three broad categories that were of particular concern to respondents;
3. capturing potential spill-over effects by collecting information on the likely impacts on the economy;
4. the means of identifying/mitigating those risks;
5. the categorisation of those risks (that is, are the risks transmitted through the securities markets (*transmission*), is the risk amplified by the securities markets (*amplification*), or sourced from within the securities markets (*source*) and other); and
6. obtain additional information and data sources on the risks.

In order to ascertain which risks are important to regulators and industry, the first substantive question asked participants to "***identify from the list, five areas that you see as most important to explore for your jurisdiction when it comes to maintaining financial stability."*** To guide participants, the final version of the survey included a pre-determined list of risks. Based on desk research and market intelligence, the list identified a number of areas where risks could be building up. The final list of potential risk areas included in the online survey is presented in Table 1 below.

The list aims to be as comprehensive as possible, covering a range of issues within securities markets outlined by many commentators. The lists covers market microstructure changes, product innovation, behavioural spill-over effects and macro-prudential shocks beyond the control of securities market regulators. Finally, to capture any issues that survey participants think are important but do not fit into one of the pre-determined categories, an "Other (Please specify)" option was included. This option is a free-comment field allowing respondents to outline risk areas not captured by the predetermined list of options.

[6] The IOSCO Research Department's external expert network comprises individuals and organisations from the financial markets and academia. A list of those external respondents who agreed to be mentioned is listed in a separate section of the appendix.

Table 1: **List of "Emerging risk" areas presented in the survey**

Options presented in survey participants
Banking vulnerabilities
Benchmarks
Capital flows
CCPs
Collateral management
Corporate governance
Cyber security
Exit strategies
Financial risks disclosure
Fragmentation
High frequency and algo trading
Housing market
Illegal conduct
Leverage
Over the counter derivatives
Recovery and resolution plans
Regulation
Repo funding and securities lending
Retail financial products & services
Search for yield
Securitisation
Shadow banking
Structured products
Technology
Other

Source: IOSCO Research Department

Additionally, survey recipients were asked to provide further detail as to why the areas chosen were of a concern for them. Survey participants were asked "…***for each area, please specify in a few words the particular activity, behaviour, development or situation that you see as contributing to risk build-up."***

Furthermore, survey recipients were asked to indicate whether the areas of concern were transmitted through securities markets, amplified by the securities markets, or sourced within the securities markets. Specifically, ***"…specify, for each of these five risks, whether you see them as being transmitted through securities markets, amplified by securities markets or sourced from securities markets themselves.***"

The second substantive question asked the first of the new questions added to the 2015 edition of the survey. Namely it identified a number of areas where there could be investor protection issues and asked participants to "***identify from the list, five areas in your jurisdiction where investor's maybe vulnerable to undue risk***". The final list of options is presented in Table 2.

Table 2: **List of investor protection issues presented in the survey**

Options presented in survey participants
Automated Advice
Corporate Governance
Crowdfunding
Crypto-currencies (eg. Bitcoin)
Cyber security
Financial Risks Disclosure
Fund platforms
Harmful Conduct
High Frequency and Algo Trading
Investment funds
Leverage
Regulation
Retail Financial products and services
Retail FX trading platforms
Search for Yield
Structured Products
Other (Please specify)

Source: IOSCO Research Department

Table 3: **List of issues to fair and efficient markets presented in the survey**

Options presented in survey participants
Accounting Standards
Audit quality
Benchmarks
CCPs
Collateral management
Corporate Governance
Cyber security
Exit strategies
Financial Risks Disclosure
Fragmentation
Harmful Conduct
High Frequency and Algo Trading
Investment funds
Market Liquidity
Over the Counter Derivatives
Regulation
Repo Funding and Securities Lending
Search for Yield
Securitisation
Shadow Banking
Technology
Other (please specify)

Source: IOSCO Research Department

The third and final substantive question was aimed at market efficiency issues, and constituted the second addition to the 2015 survey. The question was focused on market inefficiencies that could have substantial impact on the operation of markets and inhibit fair and efficient markets. The pre-determined list is presented in Table 3.

The final feature of the online survey is that it asked respondents to assess which risk would have the greatest impact on the economy if it materialised. In other words, respondents were asked which risks were more likely to become of systemic concern: "**In the event of a significant shock, of the risks you selected, what would most likely have the greatest impact on the real economy?"**

Additional ancillary questions were asked in support of the main questions (geographical, organisational type, economy).

1.2. Caveats

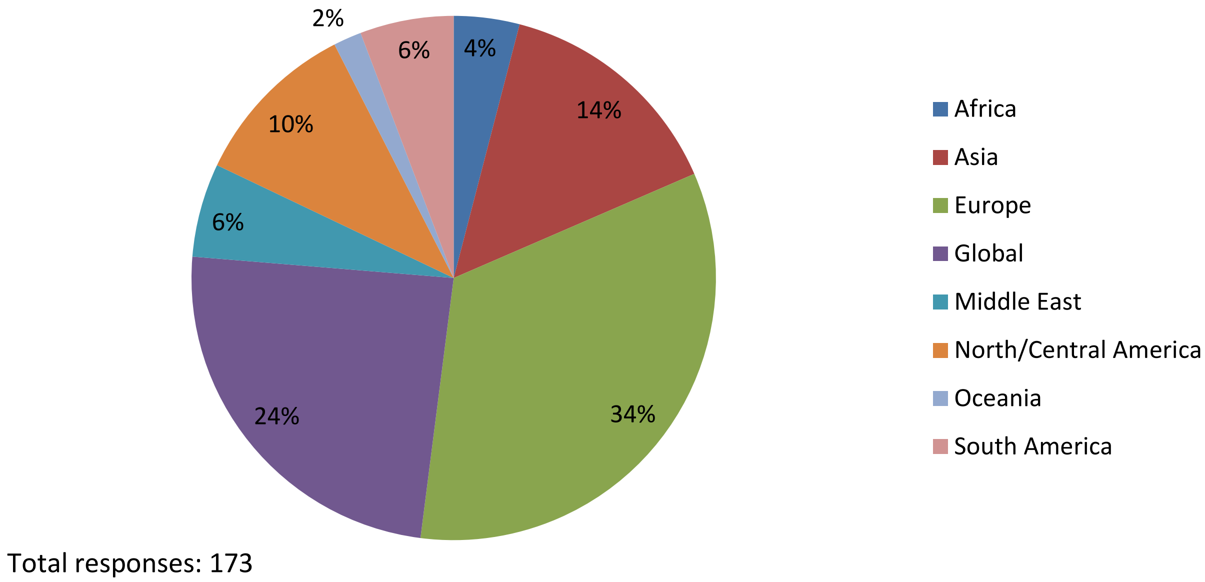
The data and the results presented are based on the un-weighted responses to the survey. No attempt has been made to filter and weight the data based on organisational type, especially where an organisational view has been provided rather than an individual view. Regional balances of the data are skewed towards Europe and North America and developed market responses. However, given the predominance of these areas within global capital markets, this is an expected outcome of the survey design.

Finally, the figures, tables and opinions expressed in this report are only a synthesis of the responses received from survey respondents. Any and all views expressed in this report are interpreted from individual responses and do not necessarily reflect the views of IOSCO and its members.

2. Summary statistics of the respondents

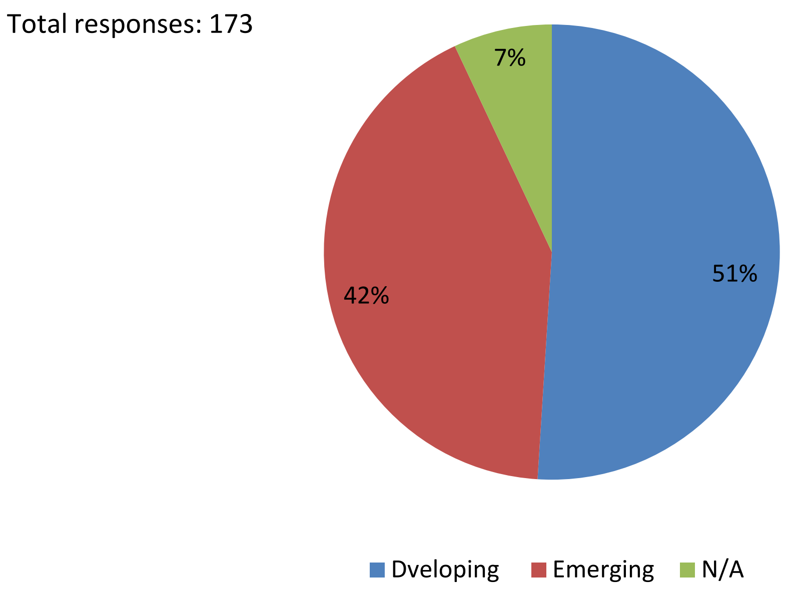
Following below are some descriptive statistics highlighting the "distribution" of respondents (Figure 1, Figure 2 and Figure 3). The survey was sent out to 1000 external recipients. Of these, 173 participants completed the survey. The survey response rate was 17.3 per cent.

Figure 1: Geographic distribution of survey respondents



Source: IOSCO Research Department

Figure 2: Distribution of survey respondents by economic classification

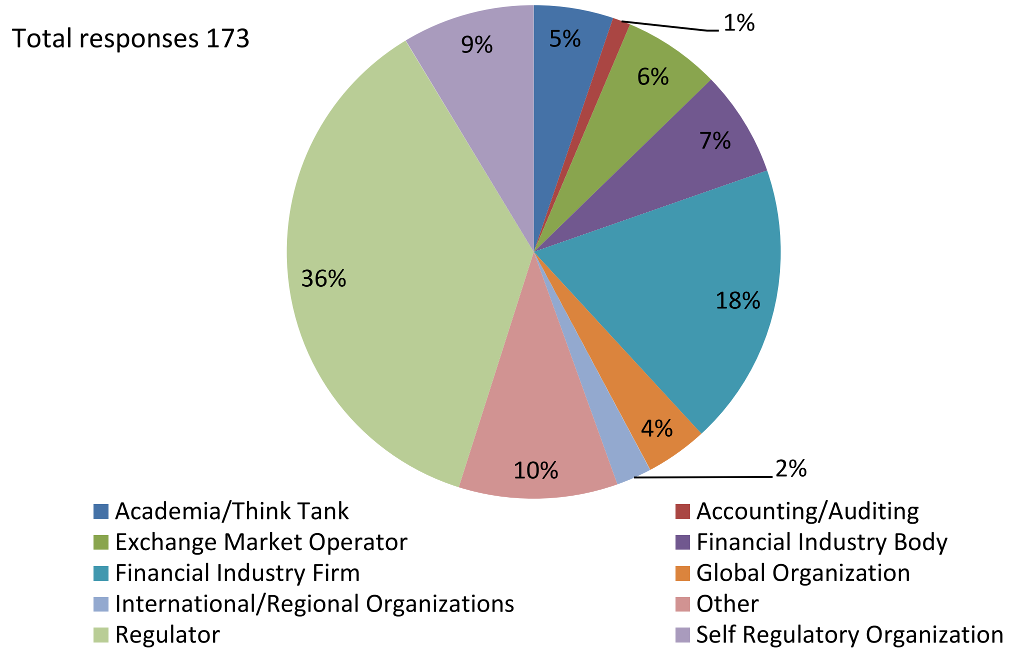


Source: IOSCO Research Department
Note: N/A no response to the question was recorded

Figure one shows that the largest response rates came from Europe (34% of respondents), followed by institutions who described their activities as global (24%), Asia (14%) and North and Central America (10%).

Figure 2 shows the distribution of the respondents according to their economic classification. 60% of the respondents defined themselves as operating predominantly in developed markets, 33% in emerging markets and 8% did not classify, meaning that they operate equally in both markets.

Figure 3: Distribution of survey respondents by organisational type



Source: IOSCO Research Department

Figure 3 highlights the organisational breakdown of respondents. 36% of the respondents are regulators, mainly securities market regulators that are members of IOSCO. Another 9% of the respondents are self-regulatory organisations. Collectively these two regulatory categories account for 45% of responses. The remained can be broadly categorised in the "non-regulatory" group of respondents. The non-regulatory group of respondents has a wide range of institutions. Of the responses, 18% come from experts within financial firms, followed by financial industry body (7%) exchange market operators (6%), academia (5%), global organisations (4%) and international and regional organisations with 2%.

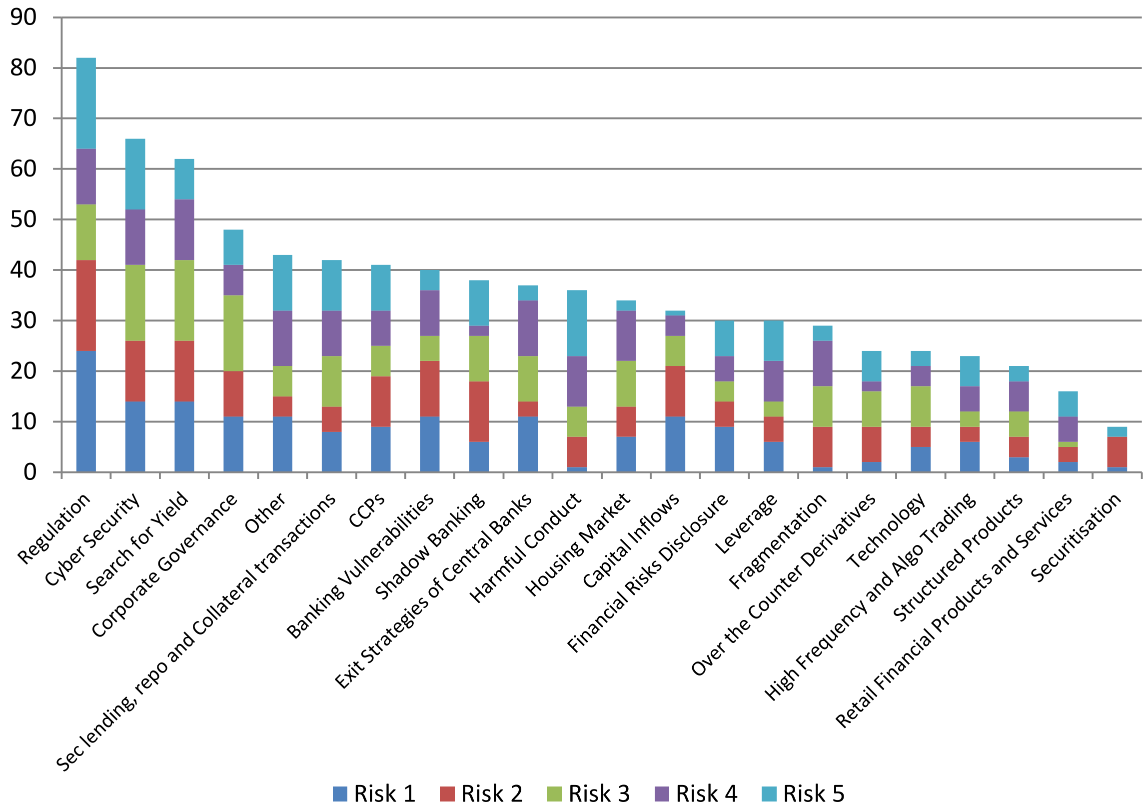
3. Main results from the risk survey

What follows is a general discussion on the breakdown of responses to the risk survey. Final results are calculated from an un-weighted sample and are categorised as per the survey questions. The chapter is separated into three parts. First the results from financial stability risk questions are presented followed by an analysis of the responses to investor protection issues. The third section synthesises the information collected from questions on market inefficiencies which could have substantial impact on the operation of markets. Finally, given that this is the fourth iteration of this data gathering exercise, the chapter combines all the past results to provide a time series of how risk opinions have changed over time.

3.1. Responses to Systemic risk/Financial Stability questions

3.1.1. Responses to *"five areas that you see as most important to explore for your jurisdiction when it comes to maintaining financial stability."*

Figure 4: Frequency of responses to areas of risk/concern to financial stability



Source: IOSCO Research Department

Note: 1) "Other" includes: Market Liquidity in fixed income products, commodity prices, prime brokerage credit, Sovereign Debt, Deleveraging and Personal debt level; 2) The total frequency is the un-weighted summation of the 5 risk areas reported by respondents.

Figure 4 presents the frequency of responses to the question of the "*…five areas that you see as most important to explore for your jurisdiction when it comes to maintaining financial stability".* The figure shows two important stories:

- Cyber security concerns to financial markets are now considered a major risk by respondents. Previous work by IOSCO has highlighted the point that a successful cyber-security event could have systemic consequences.[7] However, it is not something unique to securities markets, with the effects of such an event on being transmitted through securities markets (See Figure 5);
- The issues considered "macro-prudential" in nature are broadly in the middle of responses. Concerns around banking vulnerabilities, exit strategies housing markets and capital inflow, still rate as major sources of risk for respondents. However, these are not generally within the remit of securities regulators, but do impact on securities markets. For example the repercussions of a bank failure can be transmitted through securities markets (See Figure 5) and volatile capital flows can and do affect securities markets.[8] While the last crisis highlighted that problems in housing markets can be quickly transmitted to and through securities markets and into the real economy;
- Conduct issues, such as corporate governance and harmful conduct rate as sources of risk. Given past experiences with governance scandals such as LIBOR and FX fixings, issues around corporate governance and harmful conduct have the potential to dent the public's trust in financial markets; and
- If the macro prudential risks emanating outside securities markets are excluded, the following issues raise the most concerns: corporate governance (54), Securities lending/Repo and collateralised transactions, shadow banking, Harmful conduct, financial risk disclosure (48) and, especially, regulatory uncertainty (81).[9]

Focusing on the top categories, below is a brief synopsis of the detailed responses from respondents on selected issues.

a. Securities lending, repo and collateralised transactions

Regulation will force more use of collateral. To find and post this collateral, many participants will use the repo markets. Regulation, like CSDR, has the potential to make these markets less liquid. Also, in stressed markets supply might dry up, potentially leading clearing participants to sell assets, making markets even more stressed. Consequently, credit risk is transformed to liquidity risk. Given all the demands for collateral, collateral management needs to be understood better and promoted in a sound way.

Additionally respondents reported that:

- **Procyclicality** (demand for good quality collateral is need in times of stress, just when it is not available) and negative externalities of **securities financing are still apparent** and have not be dealt with, to date, in the global regulatory reforms. However, the procyclicality of collateral is now exacerbated by the fact that market liquidity has been impacted by changes to macro-prudential regulation and monetary policy.

[7] Tendulkar,R (2013): "*Cyber-Crime, Securities Markets and Systemic Risk*", Joint Staff Working Paper of the IOSCO Research Department and World Federation of Exchanges, July 2013, IOSCO SWP2

[8] For a detailed discussion on the impact to securities markets from volatile capital markets flow (especially from an emerging markets perspective), please consult: IOSCO 2013-14 Securities Market Risk Outlook and IOSCO 2015 Securities Market Risk Outlook [http://www.iosco.org/library/pubdocs/pdf/IOSCOPD426.pdf]

[9] A detailed breakdown of responses to "Regulation" can be found later in the chapter.

- **Increasing shortage of high quality collateral to meet heightened regulatory requirements**. Respondents reported a declining availability of appropriate collateral. Collateral is increasingly being locked-up (because of regulations) and may cause more stress when scarcity will become evident.

- **Innovations in collateral use through collateral transformation re-use of collateral and rehypothecation**. Regulatory requirements (as such bank's leverage ratio and risk weighted asset considerations) have fostered innovation to make more "efficient" use of collateral, but this efficient cross margining could be simply making contagion channels larger for another crisis.

b. Cyber security

Respondents to the survey reported that cyber security is a major vulnerability on which firms and regulators have a common interest. Overall, respondents considered any breaches in cyber security to be a serious and constant threat to the market eco-system. Additionally, cyber-security issues are emerging on a frequent basis, as such, the industry is vulnerable to a new type of risk that can often be hard to mitigate and contain.

The ever increasing reliance of the securities markets, in particular, and the broader financial system, in general, on computerised systems and interconnections with the internet gives rise to increased concerns that a cyber-security event could have systemic repercussions. The risk increases: 1) in line with greater demand and use of technology and interconnectivity in capital market chain of transactions and activities; and 2) threat actors continue to expand their toolkit of methods to attack financial firms. The imbalances between the costs associated with launching an attack versus defending against attacks are quite large. Ultimately, it affects the scope of the regulatory environment, meaning regulators have to be more technologically savvy in order to effectively and efficiently monitor these areas. Consequently, there is a need for better cross-border coordinated strategies to identify, manage and react to potential cyber security issues.

c. Regulation

In general, respondents recognised that capital markets require significant and effective regulation. However, they also reported that such regulation should consider the inherent costs it places on the subjects of regulation, as such, adhering to principles such as proportionality and balance.

Respondents also indicated that domestic and international policy changes have had different effects on different regulated entities, some of which are negative. Compliance with the regulation is expensive for many companies, and requires learning and understanding of the implementation process. Furthermore, there is a need for monitoring "level playing field" issues raised by new financial regulation (should they distort competition between jurisdictions, industries, or individual firms), taking into account the cross-effects of prudential and market regulation, and minimising arbitrage or avoidance issues.

At a more granular level, respondent's opinions in the survey can be classified into the following categories:

- Unintended consequences of layering requirement over requirements;

The series of G20-led regulatory reforms being implemented both as prudential requirements and as measures to strengthen market framework benefits to increase resiliency of banking sector as well as financial system as a whole. However, these regulatory reforms impact on and constrain various market activities due to heightened costs and complexities of rules without sufficient international harmonisation. In addition, due to such costs and complexities, it is concerned that certain market participants may avoid hedging transactions resulting in more potential risks being built into the wider financial system. Overall, impact assessments have never been done. More comprehensive, cumulative impact studies are required.

- Lack of understanding of sppillovers, interconnections and incentives created;

There needs to be more attention devoted to the effects of numerous regulations that are sensible on their own terms on overall market stability and volatility. There have been a large number of very detailed regulations for all aspects of financial markets implemented over the past number of years. Uncertainty, complexity and increased cost of regulation create incentives to move risks towards less regulated markets and products.

The risk of establishing laws/ norms/ rules without the necessary understanding of their market impact or the incentives created can produce a negative cost-effectiveness when implemented. As such, a cost- benefit evaluation before any regulation is implemented can be a key factor for the development and effectiveness of markets.

- Globally inconsistent in content and application;

Some respondents feel regulation is masking (not addressing) systemic contagion elements. Regulation is highly complex, onerous, and subject in some jurisdictions to political changes. Consequently, fragmented regulation between jurisdictions and regulatory silos (capital, leverage, clearing mandates) promotes the potential development of variable regulatory regimes (partly due to timing; partly sovereign interests) and may create regulatory arbitrage and fragmentation of market/risk related information.

Additionally, there is a clear lack of identification of the links between prudential and securities regulation, and even within each of them. This can trigger unintended consequences and make it more difficult to regulate systemic risk.

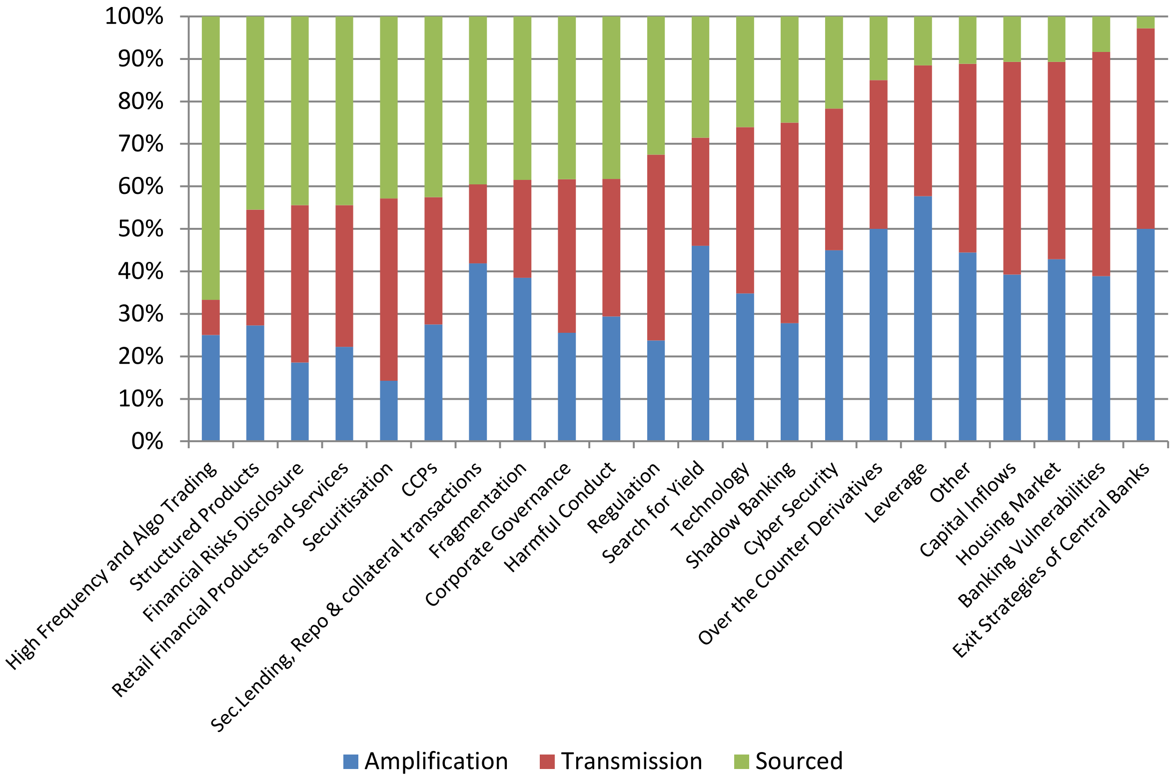
3.1.2. Responses to "*whether the risks were being seen as transmitted through securities markets, amplified by securities markets or sourced from securities markets themselves.*"

Figure 5 provides a picture on how respondents saw risks being transmitted by securities markets. Taking a 60 percent threshold, most respondents saw risks to the financial system either being transmitted or amplified by securities markets. Very few "risks" were thought to be originated or sourced from securities markets themselves. Those risks reportedly sourced within securities markets include:

- High Frequency and algorithmic trading (*66% of respondents surveyed*)
- Structured Products (*45%*)
- Financial Risk disclosure (*44%*)

- Retail Financial products (*44%*)
- Securitisation (*43%*)
- CCPs (*42%*)
- Securities lending, Repo and collateralised transactions (40%)

Figure 5: Risk categories and whether they are transmitted through securities markets, amplified by securities markets or sourced from securities markets themselves



Source: IOSCO Research Department

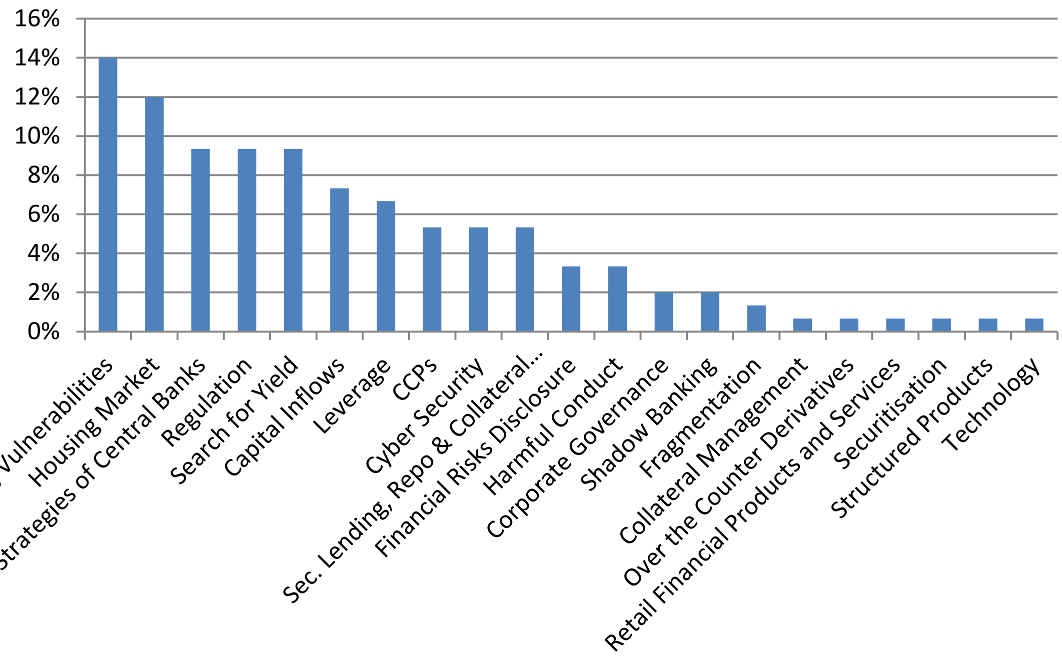
3.1.3. Responses to impacts on the economy

Survey participants were also asked "*in the event of a risk materialising, which would most likely have the greatest impact on the real economy*" Figure 6 indicates the frequency of responses to the question.

Based on the number of responses, the figure shows three clear issues, banking related issues are thought to have the greatest impact on the real economy if a risk were to materialise. Banking vulnerabilities (14%), housing markets (12%) and exit strategies of central banks (9%) received by far the greatest number of responses.

From a securities market perspective, these risks are not within the scope of market regulators. Figure 5 points out that even though risks are not sourced in securities markets, they may act as significant conduits for transmission or amplification of such risks. Consequently, securities markets are an important factor in the ultimate impact of macro-prudential/banking risks.

Figure 6: Impact on the real economy – What risk would have the greatest impact if it materialised?



Source: IOSCO Research Department

Note: 1) "Other" includes: Market Liquidity in fixed income products, commodity prices, prime brokerage credit, Sovereign Debt, Deleveraging and Personal debt level; 2) The total frequency is the un-weighted summation of the 5 risk areas reported by respondents.

3.1.4. Changes in responses over time

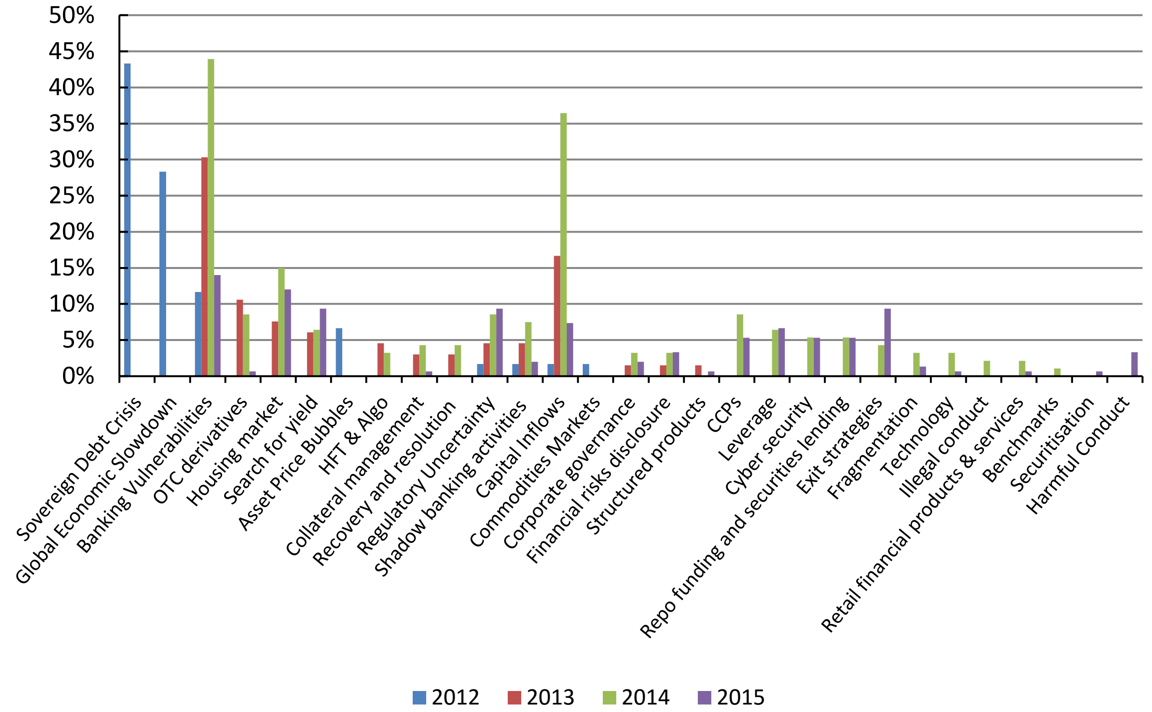
This is the fourth exercise of its kind to gather the views and opinions of markets participants and regulators. As such, the exercise has developed into a rich source of time series information, providing an opportunity to investigate how views and opinions have changed over the past four years. Figure 7 below shows the changes in responses over time 2012-2015.

The figures highlight some interesting trends. Generally, there are some clusters of risk issues that respondents have been concerned about for a number for years. For example, regulatory uncertainty; banking vulnerabilities; housing markets and capital flows/search for yield have all rated consistently high in survey responses.

Other noteworthy trends include an increase in the recognition of the threat of cybercrime or cyber -related issues to systemic stability; an issue first highlighted by IOSCO research staff in 2013.[10] Additionally, exit strategies are gaining more recognition over time as the previously global coordinated efforts of monetary policy intervention begin to follow different paths. Table 4 summarises the major trends in responses.

[10] Please consult R. Tendulkar, "Cybercrime, securities markets and systemic risk", *Staff Working Paper*, July 2013 for a further discussion on the systemic implications of cybercrime [http://www.iosco.org/research/pdf/swp/Cyber-Crime-Securities-Markets-and-Systemic-Risk.pdf]

Figure 7: Changes in responses over time - *five areas that you see as most important to explore for your jurisdiction when it comes to maintaining financial stability*.



Source: IOSCO Research Department

Table 4: Changes in frequency of responses over time 2012-15

Risk area	Trend in frequency of responses over time
Banking Vulnerabilities	↑
Benchmarks	→
Capital Flows	↑
CCPs	↓
Collateral management	→
Corporate Governance	↑
Cyber security	↑
Exit strategies	↑
Financial risks disclosure	↑
Fragmentation	↓
Harmful conduct	↑
High frequency and algorithmic trading	↓
Housing market	→
Leverage	↑
Over the counter derivatives	↓
Recovery and resolution plans	↑
Regulatory Uncertainty	↑
Repo Funding and Securities Lending	→

Risk area	Trend in frequency of responses over time
Retail financial products & services	↓
Search for yield	↑
Securitisation	↓
Shadow banking activities	→
Structured Product Innovation	↓
Technology	→

Source: IOSCO Research Department

Notes: the direction of arrows indicates the general direction of the trend in responses over the three years: ↑ increase in the number of responses overtime; ↓ decrease in responses over time; → number of responses unchanged.

3.1.5. How responses differed by organisational type

Responses delineated by organisational type, namely market participants and regulators, are presented below. Different organisations see different risks to the system based on their expertise and experience. As such, the importance of specific risk differs by institution or jurisdiction. For example, one would expect differing views between regulators and market participants and therefore differing degrees of importance given to them to the impact of regulation. Table 5 presents the top responses from market participants and regulators that responded to the survey.

A few note worth points appear to exist between financial market participants and regulators in the types of areas that are considered important from a risk perspective.

- Regulators are more concerned with corporate governance issues while market participants are clearly focused on changes in market regulation impacting the system.
- Both Cyber Security issues and concerns around search for yield rate highly among market participants and regulators alike.
- Relatively speaking, market participants still view issues around securities financing and collateralised transactions as a potential area of risk

Table 5: Top responses, by frequency, from financial market participants and regulators

Issues highlighted by financial market participants	Percentage of responses	Issues highlighted by regulators	Percentage of responses
Regulation	13%	Corporate Governance	10%
Cyber Security	9%	Search for Yield	9%
Search for Yield	7%	Regulation	8%
Sec Lending, Repo and Collateral Management	7%	Cyber Security	8%
Exit Strategies of Central Banks	7%	Banking Vulnerabilities	7%

Source: IOSCO Research Department

Notes: based on the aggregated responses across the five risk reported by individual respondents. For market participants, the total aggregated number of responses = 457; For the Regulatory community total aggregated responses = 329

3.1.6. How responses differed by type of economy

Table 6 highlights the distinction between risks reported by respondents from developed markets compared with those from emerging markets. Not surprisingly, capital flows features highly in responses from emerging markets. At first glance, this one to the large differences between advanced and emerging economy responses. However, when viewed through the impacts of advanced economy monetary policy a clear corollary exists. The search for yield phenomena reported by advanced economies is one of the causes of capital flows, mainly seen in emerging markets, a risk highlighted by emerging market responses. Consequently, emerging markets responses reported the following in regards to capital flows: Respondents argued that in an interconnected world, financial markets were dependant largely on capital from sources external to one's national boundaries. As such, large, sharp swings in the movement of these capital sources can have financial stability consequences for local jurisdictions. An example given was pre-emptive movements in anticipation of interest rate normalisation in the US and parts of Europe may increase the risks to EM securities markets. With relatively small capital markets (when compared to advanced economies), inflow and outflows of capital can cause large spikes in volatility in securities markets.

Uncertainty around regulation is common among both groups of respondents, ranking around the top of responses for both. Also of note is that emerging market economies are more concerned with areas of market conduct than those in advanced economies. Specifically, for emerging markets, issues around corporate governance, financial risk disclosure and harmful conduct rank in the top 5 responses by frequency. Additionally, cyber security is an issue of less concern for emerging markets.

Table 6: Top responses, by frequency, from developed and emerging market respondents

Issues highlighted by developed economy participants	Percentage of responses	Issues highlighted by emerging economy participants	Percentage of responses
Search for Yield	9%	Regulation	11%
Regulation	9%	Corporate Governance	11%
Cyber Security	9%	Capital Inflows	10%
Exit Strategies of Central Banks	6%	Financial Risks Disclosure	7%
CCPs	5%	Harmful Conduct	6%

Source: IOSCO Research Department

Notes: based on the aggregated responses across the five risk reported by individual respondents. For market participants, the total aggregated number of responses = 457; For the Regulatory community total aggregated responses = 329

3.2. Responses to investor protection issues

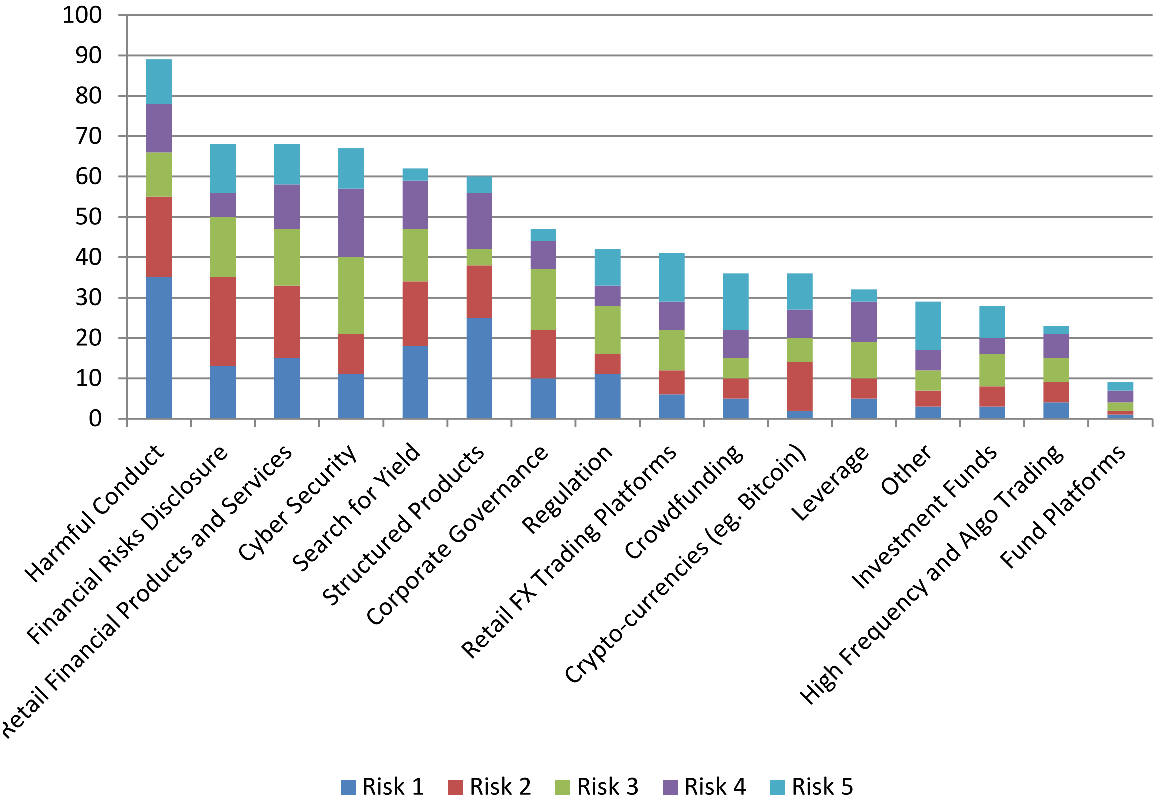
3.2.1. Responses to "five areas in your jurisdiction where investor's maybe vulnerable to undue risk."

Figure 8 presents the frequency of responses to the question of the "*...five areas in your jurisdiction where investor's maybe vulnerable to undue risk*". The figure shows three important stories:

- Harmful conduct was the top response from survey participants. A further breakdown of the responses is included below, since the category is broad.
- Disclosure and suitability issues also ranked high amongst respondent's answers, especially in the area of retail productions.
- Technological advances in financial product distribution also received mention from respondents. Issues such Crowdfunding, cryptocurrencies, retail FX trading platforms and funds platforms all were mentioned. However, in terms of frequency, they remain quite low, but worth noting for future editions of the survey to see how the perceived risk changes in the future.

Following on is a summary of the top three risk by frequency.

Figure 8: Frequency of responses - *five areas that you see as most important to explore for your jurisdiction when it comes to investor protection*.



Source: IOSCO Research Department

a. Harmful Conduct

Respondents, by and large, reported that harmful behaviour by capital market participants damages the proper function of the capital market. Examples of such violations in the capital market include insider actions, violation of the duty of care and trust, engagement in acts prohibited for a license holder, etc. All those different activities inflict harm on the investing public and decrease the public's confidence in capital markets.

Harmful conduct can affect any product, platform or service and be detrimental to the investor. For example, there is a risk of investors being taken advantage of by investment schemes promising high returns and low risk, particularly in markets with limited opportunity for resale. Further, respondents reported that they saw the culture and ethos of certain firms too focused on profitability, with many losing sight of customer requirements.

Recognising that harmful conduct encompasses many activities to the detriment of investors and markets, respondents reported that harmful conduct was handled well in the main jurisdictions. However, regulation cannot prevent harmful conduct in its entirety. Sophisticated internal regulations do not ensure protection of a client's rights (e.g. client assessment and categorisation). Consequently, respondents thought this is an issue which regulators should be continuously reviewing. The increasingly transactional nature of the capital market requires greater focus on regulating the client-intermediary agency relationship to minimise conflicts of interest, provide oversight of client suitability and appropriateness in sales practices. In some cases, a smaller number of clear and of easy application rules could facilitate intermediaries to be compliant, so better safeguarding their client interests.

b. Financial Risk Disclosure

An overwhelming majority of respondents reported that inadequate disclosure of financial risks puts investors at risk of buying products or services that are much riskier than individual investors may be comfortable with. As such, there could be a mis-match between the risk appropriate of the investor and the risk embedded in the product. However, it was acknowledge that a lack of clear and detailed information from the issuers was compounded by a lack of education on the investors' behalf coupled with the complexity of disclosures meaning that product disclosure statements are very seldom read. Ultimately, if the disclosure of important information is incomplete or inaccurate, investors lose confidence in the financial industry.

It was also pointed out that with growing concern about limited liquidity in some markets, there is the concern that investment products may not, in times of stress, perform as investors expect. Illiquidity in the product itself can lead to performance issues, but there are also broader concerns that investors may not be able to redeem when they want to. Investment funds that use more exotic indices can make it harder for the investor and adviser to understand the product. Respondents also said that this also raises questions about whether some products can become too complex for investors and their advisers to understand.

c. Retail financial products and services

Many of the responses under retail financial products and services overlapped with the previous topics. Respondents felt that issues around mis-selling of overly complex/opaque products to investors. Many financial products and services are designed to be relevant at the point of sale, rather than being designed to work with retail investor long term financial planning. This increases the likelihood that products may fail to meet investors' needs over time. Many respondents believed that a close focus on issues such as suitability, product governance, service provision and cost disclosures could help to minimise these risks.

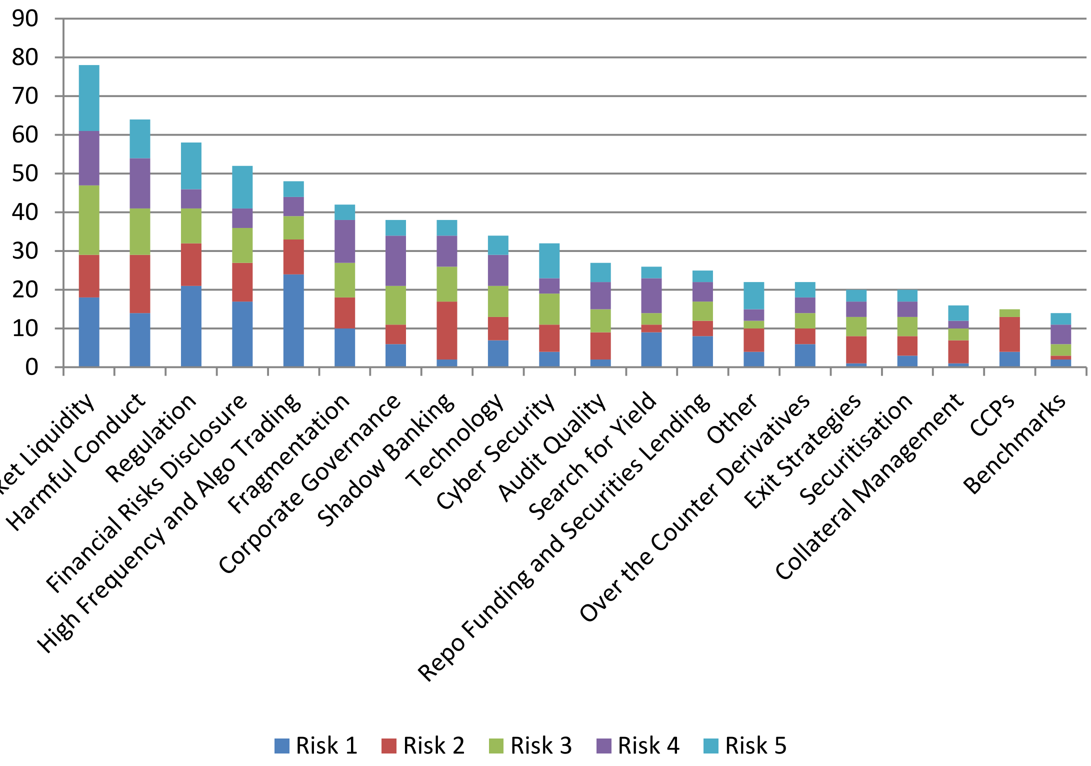
Also, there was concern over potential mis-selling of financial products to retail investors based on compensation practices. Investors are potentially at risk if compensation structures create incentives for advisers to provide unsuitable investment advice, or manufacturers to offer product choices that benefit intermediaries over investors. A lack of transparency in products, financial literacy and product awareness may lead to loss of investments on the part of investors.

3.3. Responses to issues towards fair, efficient and transparent markets

3.3.1. Responses to "five areas in your jurisdiction that could inhibit fair and efficient markets."

Figure 9 highlights the top response in terms of frequency to issues in fair and efficient markets

Figure 9: Frequency of responses - *five areas* that could inhibit fair and efficient markets.



Source: IOSCO Research Department

a. Market Liquidity

Respondents reported in the detailed survey responses that prudential regulators seem to intend that the banks will no longer be the market-makers and shock-absorbers of financial markets. As such, many banks and market intermediaries are withdrawing from market-maker activities. New rules have led to a decline in dealer inventories, ability and appetite to warehouse risk and a decline in the liquidity of high quality assets and their associated financing markets.

This is especially felt in the bond markets. Respondents reported that a stable, well-functioning bond market is a critical part of financial market infrastructure, providing capital for issuers and investment opportunities for a broad array of savers and investors. Respondents felt that it is concerning that the low interest rate, low volatility environment, coupled with the impact of quantitative easing on the credit markets, mask the amount of change that has occurred in the corporate bond market, as decreased liquidity and the shift from a principal market to an agency market takes hold. A less-friendly market environment will expose the underlying structure as compromised, with the potential for even lower liquidity and the potential for sharp, discontinuous price deterioration. Lack of liquidity for corporate bonds harms issuers and investors alike, with attendant consequences for dealers and trading venues.

Additionally, respondents mentioned that recent inflows into the managed funds industry may have provided an illusion of liquidity and improved market stability; however several structural changes in the industry may actually exacerbate uncertainties and liquidity risk in periods of market volatility. Respondents also felt that market intermediaries are playing a smaller role in providing liquidity in fixed income markets. In the event of a market seizure, this could see sudden redemptions from high-yield bond funds, leading to a sell-off and "fire-sales". The lack of liquidity and ability to intermediate could lead to greater volatility of asset prices in a crisis and potential spill-over effects to other asset classes.

3.4. Input into the Risk Outlook

Ultimately, the purpose of such an exercise is to inform the research function of IOSCO to help to help identify possible thematic chapters for its annual publication, the Securities Market Risk Outlook. In previous survey exercises, risks were grouped by common themes. For the 2012, 2013 and 2014 editions, [11] risks were grouped into the following categories:

Table 7: Results of combined risk categories from the 2012 survey

Combined Risk Areas (2012)	Responses
Regulatory Uncertainty	36
CCP's and OTC markets	31
Shadow banking activities	23
HFT & Algorithmic trading	22
Information gaps between Markets and Regulators	15

Source: IOSCO Research Department

Table 8: Results of combined risk categories from the 2013 survey

Combined Risk Areas (2013)	Responses
Shadow banking (collateral and repo)	39
CCPs (+OTC reform and Resolution and resolvability)	31
Regulatory Uncertainty	26
Search for yield	22
Capital Flows	21

Source: IOSCO Research Department

Table 9: Results of combined risks categories from the 2014 survey

Combined Risk Areas (2014)	Responses
Shadow banking (collateral and repo)	78
Search for yield	72
Capital Flows	68
CCPs (+OTC reforms)	65
Corporate Governance	54

Source: IOSCO Research Department

For this edition, responses of survey participants were combined with the responses from IOSCO's Committee on Emerging Risk. Areas were ranked based on the frequency of responses from both CER membership and external survey responses. That is, the same risk areas were placed into two columns representing responses from the CER and responses to the risk outlook survey. Those

[11] The Securities Market Risk Outlook 2012 was an internal publication of IOSCO only.

columes were then ranked with the risk with the highest responses placed at the top, and those with the least responses at the bottom. From this, an equally weighted, average rank of risk areas was constructed. This formed the basis of the "long list" of risks. This was done for each category, namely financial stability, investor protection and market efficiency.

The purpose of constructing a long list of risks serves several purposes. One, the list provides an easy reference to the main risks concerning market participants and IOSCO CER risk experts in aggregate. The long list also allows for easy analysis of the risks to cluster them into natural bands based on the aggregated results. This particular point is clearly represented by the colour coding in Figure 8. The coding represents natural clusters based on the frequency of results and should not be interpreted as severity of the risk to the financial system or wider economy. Second, it allows for an easy construction of a short list for the uptake for further analysis into the Risk Outlook publication.

Below, are the long lists of risk across the three categories of financial stability, investor protection and fair, transparent and efficient markets.

Table 10: "Long list" of risks for financial stability, investor protection and market efficiency

Financial Stability	Investor Protection	Market Efficiency
Cyber Security	Retail Financial Products and Services	Market Liquidity
Search for Yield	Financial Risks Disclosure	High Frequency and Algo Trading
Corporate Governance	Search for Yield	Regulation
Regulation	Harmful Conduct	Corporate Governance
Sec lending, repo and Collateral transactions	Cyber Security	Harmful Conduct
CCPs	Corporate Governance	Fragmentation
Capital Inflows	Regulation	Cyber Security
Exit Strategies of Central Banks	Financial literacy	Shadow Banking
Shadow Banking	Structured Products	CCPs
Harmful Conduct	Retail FX Trading Platforms	Sec lending, Repo & Collateral transactions
Financial Risks Disclosure	Crowdfunding	Benchmarks
Leverage	Crypto-currencies (eg. Bitcoin)	Financial Risks Disclosure
Over the Counter Derivatives	Leverage	Technology
Fragmentation	Technology	Audit Quality
Technology	High Frequency and Algo Trading	Securitisation
High Frequency and Algo Trading		Search for Yield
Structured Products		Over the Counter Derivatives
Retail Financial Products and Services		Exit Strategies
Securitisation		

Source: IOSCO Research Department

As highlighted in the figure, the list of risks were colour coded based on a cluster analysis, that is where there were natural breaks in the rank series. The colours are a measure only of the overall average ranking risks received and should not be interpreted as the severity of impact of such a risk if it were to materialise. Consequently, risks marked red in Table 10 received the most combined responses, while green, comparatively, received few responses. Through this clustering of risk categories, the topics for further investigation within the outlook were obtained. Consequently, the following topics were chosen for further investigation in the 2015 Securities Market Risk Outlook:

- Cyber security
- Search-for yield
- Market Liquidity Retail financial products and services (viewed through the prism of Harmful conduct)

Additionally, based on market intelligence missions, desk research and discussions within the CER, the decision was taken to include for further investigate the topic of risk transfer in collateralised transactions. Although it did not rank as high as other risks, the OTC nature of the activity coupled with a lack of data means that little is known about possible risk transfer and risk pooling due to the activity.

3.5. Next steps

The fourth edition of the risk survey already has improvements in the survey design, questioning and information gathered planned, especially on those risk in the areas of investor protection and fair and efficient markets. The questions will be further refined with the addition of new risks based on information obtained from market intelligence and desk research. Recognising that risks have a different impact on the real and financial economies, in future editions, survey participants will be asked to indicate which risks will have the greatest impact on the financial economy. The spread of institutions participating will be enhanced by the expansion of the expert network into under-represented geographical areas. Finally, to coordinate with other such exercises from other regulators, questions will be added to ask respondents about the severity of impact along with probability of materialisation.

Conclusion

The fourth edition of the risk outlook survey project has provided a cost effective and streamlined way for the IOSCO research function to gather varied views on those areas of concern to market participants and experts who are at the forefront of thinking on areas relating to securities markets. Additionally, it was the first time that the scope of the exercise had been expanded to encompass risk in other areas beyond financial stability; investor protection and fair, efficient and transparent markets. Consequently, the information capture by this edition brings the analytical focus of risks in line with the three main objectives of IOSCO.

The results of the survey indicate that risks such as corporate governance and banking vulnerabilities continue to be prominent in the minds of survey respondents. Other noteworthy trends include an increase in the recognition of the threat of cybercrime or cyber -related issues to systemic stability; an issue first highlighted by IOSCO research staff in 2013. Additionally, exit strategies are gaining more recognition over time as the previously globally-coordinated efforts of monetary policy intervention begin to follow different paths. Other potential risks such as the search for yield and cross border capital flows also continue to rate highly. However, unlike in previous editions, no clear delineation between macro-prudential and securities markets risk exists.

Based on the frequency of responses, concerns around banking vulnerabilities, exit strategies housing markets and capital inflow, are seen by respondents as posing a strong systemic risk concern to the global financial system and real economy. Many of the areas that received the most responses were outside the remit of securities market regulators. At the same time, securities markets were flagged as playing a role in assisting these risks to materialise by either transmitting or amplifying the initial systemic shock.

Since the survey was the fourth iteration, the report also highlighted how respondents' opinions on risk areas have changed over time. There have been clear "clusters of risk" that have preoccupied respondents over time. Regulatory uncertainty; banking vulnerabilities; housing markets and capital flows/search for yield have all rated consistently high over time.

Finally, no matter what the delineation of the data, the broad consensus from the responses indicates that the international regulatory reform agenda is creating uncertainty. Although respondents acknowledged that capital markets require significant and effective regulation for sound and resilient markets, responses also noted the lack of international coordination and understanding of how the layering of multiple regulations might interact with market micro-structure. In the area of investor protection, activities that were considered harmful to investor outcomes, including, product suitability, mis-selling and risk matching, require closer scrutiny. Market Liquidity was considered, by far, the greatest challenge to fair and efficient markets, an interesting finding given that much of the recent global commentary has centred on the systemic implications (not market efficient implications) of such a risk.

Annex A – List of Figures and tables