A Comparison and Analysis of Prudential Standards in the Securities Sector

THE BOARD

OF THE INTERNATIONAL ORGANIZATION OF SECURITIES COMMISSIONS

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Foreword

The Board of the International Organization of Securities Commissions (IOSCO Board) has published this Consultation Report, *A Comparison and Analysis of Prudential Standards in the Securities Sector*, prepared by the IOSCO Committee on the Regulation of Market Intermediaries (C3). The report seeks to highlight similarities, differences and gaps among the different frameworks for securities commissions. The objective is to update IOSCO's 1989 Report on Capital Adequacy Standards for Securities Firms, based on the issues identified in this consultation report. The IOSCO Board seeks the view of stakeholders on three questions associated with this prudential standards report:

How to Submit Comments

Comments may be submitted by one of the three following methods **on or before 10 June 2014**. To help us process and review your comments more efficiently, please use only one method.

Important: All comments will be made available publicly, unless anonymity is specifically requested. Comments will be converted to PDF format and posted on the IOSCO website. Personal identifying information will not be edited from submissions.

1. Email

Send comments to consultation-2014-02@iosco.org

- The subject line of your message must indicate *A Comparison and Analysis of Prudential Standards in the Securities Sector*.
- If you attach a document, indicate the software used (*e.g.*, WordPerfect, Microsoft WORD, ASCII text, etc.) to create the attachment.
- Do not submit attachments as HTML, PDF, GIFG, TIFF, PIF, ZIP or EXE files.

2. Facsimile Transmission

Send by facsimile transmission using the following fax number: + 34 (91) 555 93 68.

3. Paper

Send 3 copies of your paper comment letter to:

Mr. Mohamed Ben Salem
International Organization of Securities Commissions (IOSCO)
Calle Oquendo 12
28006 Madrid
Spain

Your comment letter should indicate prominently that it is a "*Public Comment on A Comparison and Analysis of Prudential Standards in the Securities Sector*."

IOSCO BOARD- COMMITTEE ON THE REGULATION OF MARKET INTERMEDIARIES (C3)

A Comparison and Analysis of Prudential Standards in the Securities Sector

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1. Executive Summary

1. The Joint Forum Report on the *'Review of the Differentiated Nature and Scope of Financial Regulation'*[1] raised concerns on the lack of a uniform global standard for capital adequacy within the securities sector and how this might contribute to *regulatory arbitrage, competitive inequalities across jurisdictions and a constrained ability to supervise cross-border groups*. In response, the IOSCO Board requested the IOSCO Committee on the Regulation of Market Intermediaries (C3) to examine the existing major capital frameworks currently in effect within the securities sector. The two aims of this report are:
    i. To undertake a high level comparative analysis of the key prudential/capital frameworks for securities firms for the purposes of highlighting similarities, differences and gaps; and
    ii. To conclude on the key themes and issues identified from the comparative analysis and use them to undertake a high-level conceptual framework analysis of IOSCO's 1989 Report entitled *Capital Adequacy Standards for Securities Firms* (1989 Capital Standards Report),[2] with a view to that document being updated in light of the issues identified in this report.[3]

   IOSCO welcomes responses from the public regarding the content of this prudential standards report. Page 3 of the report contains some consultation questions.

Comparative analysis of securities firms prudential frameworks

2. This report's analysis of the prudential frameworks to which securities firms are subject identifies the following key themes:

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1 *Review of the Differentiated Nature and Scope of Financial Regulation*, Report of the Joint Forum, January 2010, http://www.iosco.org/library/pubdocs/pdf/IOSCOPD315.pdf .

2 *Capital Adequacy Standards for Securities Firms*, Report of IOSCO, October 1989 http://www.iosco.org/library/pubdocs/pdf/IOSCOPD1.pdf.

3 Please note, however, that it is not the objective of this report to update the 1989 Capital Standards Report.

3. **Regulatory scope** – Regulatory scope is relevant to this report because what constitutes regulated business in a jurisdiction is the key driver for the regulatory and supervisory obligations that subsequently follow including the calibration of prudential requirements. Differences in regulatory scope across jurisdictions could impact where firm activity is conducted, thus potentially raising regulatory arbitrage opportunities because activities deemed out of scope in a jurisdiction will not be subject to prudential requirements there. The report illustrates that different jurisdictions have different rules as to what activities and instruments constitute regulated activities. The report explains that in practice there are challenges in identifying clear differences in regulatory scope between jurisdictions.
4. **Risk capture** – Irrespective of where securities firms are regulated, they are subject to minimum capital requirements based on the type of business they conduct. Over and above minimum capital requirements, supervisory authorities have risk-based capital requirements; and authorities generally recognise very similar risks in setting firms' prudential requirements (for example market risk and credit/counterparty risk, etc.). However, the approaches adopted to deal with and calibrate those risks may differ from jurisdiction to jurisdiction. With this in mind, it is particularly important that supervisory authorities take into account all material risks to regulated entities and have supervisory and/or prudential standards in place to deal with them. This report provides substantial detail on the types of risk captured by securities regulators worldwide in their prudential standards.
5. **Components of capital** – Irrespective of the prudential approach used in different jurisdictions, the components of what is allowable capital in most regulatory regimes are similar. Share capital and retained earnings (collectively referred to in some jurisdictions as "ownership equity"), or its equivalent for non-joint stock companies, form the primary sources of capital resources due to their permanence and ability to absorb losses followed by subordinated debt, with the latter commonly subject to restrictions on repayment and limits to use.
6. **Comparing prudential standards in different jurisdictions** – The report highlights the challenges in comparing, numerically, the overall package of prudential requirements in multiple jurisdictions. The difficulty is not purely due

to whether the supervisory authority uses a Basel-style approach or a Net Capital rule [NCR] approach. Even within approaches, securities supervisors in different jurisdictions may have discretion with regard to the application of prudential requirements, *e.g.*, through different calibration definitions/carve-outs. A thorough understanding of these discretions is required in order to be able to even to seek to assess whether one regime is "*more stringent*" than another. Furthermore, beyond standardised approaches, jurisdictions are increasingly permitting firms to use internal model approaches to determine capital requirements. This brings further challenges in comparing the approaches in different jurisdictions (see key issue "*use of internal models*" below).

7. The term "*market intermediaries*," as defined under the IOSCO methodology,[4] captures a multitude of different business activities. As a result, some jurisdictions have different prudential requirements to reflect the different prudential risks posed by firms that, for example, do not trade on their own account. The existence of these variations on the prudential requirements and their purpose is well founded, but they may foster the wider perception that prudential requirements for securities businesses are not uniform across jurisdictions.

8. **Use of internal Models** - Both Basel-based and NCR approaches allow the use of models for firms with the systems and capacities to use advanced risk management techniques. In order to calibrate prudential requirements from internal models, numerous model assumptions must be made, not to mention the diverse model choices. These cover, amongst other things, data assumptions, accounting and hedging techniques and data requirements. Additionally, in some jurisdictions, the supervisory authority may have the ability to scale prudential requirements based on weaknesses in systems and controls. Given the myriad of assumptions that can underlie models and how these assumptions interact with one another, it is extremely challenging to compare the capital standards of firms that are permitted to use models-based approaches in one jurisdiction or

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[4] It "*generally include[s] those who are in the business of managing individual portfolios, executing orders and dealing in, or distributing, securities. A jurisdiction may also choose to regulate as a market intermediary an entity that engages in any one or more of the following activities: Receiving and transmitting orders, Proprietary trading/dealing on own account, Providing advice regarding the value of securities or the advisability of investing in, purchasing or selling securities, Securities underwriting, or Placing of financial instruments without a firm commitment basis*. *See* http://www.iosco.org/library/pubdocs/pdf/IOSCOPD359.pdf (Sept. 2011), p. 179.

jurisdictions that apply similar approaches, never mind comparing firms across jurisdictions that have different prudential approaches.

9. The use of internal models presents challenges to compare meaningfully prudential standards in different jurisdictions. However, the use of models, and the similar mathematical foundations that underpin modeling approaches (*e.g.*, VaR-style techniques), may be leading to some convergence in the treatment of risks across different member jurisdictions, irrespective of whether they use a Basel or NCR approach.
10. **Risks posed by group entities** – The handling of intragroup risks varies considerably across jurisdictions. Some jurisdictions capture prudential risks on a group basis through consolidated capital requirements; but this has the potential to overlook some intragroup risks. In contrast, a majority of jurisdictions monitor the prudential position of the regulated entity on a solo basis; yet some of these have processes in place to identify and take account of risks to regulated entities that may materialise from group entities.
11. **Supervisory perspectives on the key issues** – The report highlights several key issues where regulatory authorities may consider whether their current supervisory practices are adequate to oversee and mitigate the risks posed by those issues. Particular issues signaled in this report are overseeing, monitoring and addressing risks posed by group entities,[5] whether they materialise in other regulated entities or not and that have the potential to spillover and affect the capital adequacy of the regulated entity. In other words, if one jurisdiction treats certain securities activities in a less rigorous manner, this could provide an incentive to move those securities activities to the lighter prudential regime.

What are the outcomes from the comparative analysis for the existing IOSCO Capital Adequacy Public Document?

12. Many of the key themes identified in this report are already reflected in the existing IOSCO capital adequacy public document, for example, having minimum

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[5] We note that for those firms in particular that are both large and internationally active, the Joint Forum's final report on "*Principles for the Supervision of Financial Conglomerates*" provides relevant guidance to address intragroup risks. *See* http://www.iosco.org/library/pubdocs/pdf/IOSCOPD390.pdf (Sept. 2012).

capital requirements that reflect the type of business being conducted by securities firms and having risk-based capital requirements.

13. The report highlights prudential regulatory and supervisory areas that might be considered in any update of the 1989 Capital Standards Report, e.g., (1) to identify opportunities for regulatory capital arbitrage that might (or actually have) materialised from differences in prudential regulations across jurisdictions;[6] and (2) to account for the increasing use of internal models and the commensurate increase in infrastructure, systems and controls that are necessary to help ensure that firms are not undercapitalised compared to the risks posed by their positions and activities.

Consultation Questions

14. IOSCO welcomes comments on the following questions associated with this prudential standards report:

    i. Does the report cover all of the key issues on prudential standards in the securities sector? If the answer is no, please explain what other issues should be covered.

    ii. A primary aim of this report was to undertake a comparative analysis of the key prudential/capital standards for securities firm. Does the report identify and analyse the main similarities, differences and gaps between different prudential frameworks?

    iii. In light of the findings in this report, which areas of the 1989 document, if any, do you believe should be updated and/or amended?

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[6] As explained in paragraph 3, regulatory arbitrage opportunities may arise from: 1) differences in regulatory scope between different jurisdictions; and/or 2) where prudential requirements differ for similar regulated activities.

2. Introduction

2.1 Background

15. The following recommendation was contained in the Joint Forum report on the *Review of the Differentiated Nature and Scope of Financial Regulation* (Joint Forum Report), published in January 2010:[7]

> "*International prudential frameworks for minimum capital adequacy should be in place within each sector to reduce regulatory arbitrage across countries and to facilitate the supervision of cross-border groups.*"

16. More specifically the Joint Forum stated:

> "*It is the Joint Forum's view that the lack of a uniform global standard for capital adequacy within each sector [banking, securities and insurance] can contribute to regulatory arbitrage, competitive inequalities across jurisdictions, and, in some cases, financial system instability. Striving for a single global standard, however, should not result in the lessening of existing prudential standards.*"

17. The IOSCO Board reviewed the Joint Forum Report and requested IOSCO Committee 3 (C3) to examine the existing major capital frameworks currently in effect within the securities sector to address this concern.

18. C3 established a project-working group to address the Joint Forum's request. The IOSCO Board approved, in December 2010, a related project specification drafted by C3.

2.2 Project Aims

19. In order to address the Joint Forum's request, the aims of the proposed project were:

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[7] *Review of the Differentiated Nature and Scope of Financial Regulation*, Joint Forum (Jan. 2010), available at http://www.iosco.org/library/pubdocs/pdf/IOSCOPD315.pdf.

- A high level comparative analysis of the key capital frameworks for securities firms for the purposes of highlighting similarities, differences and gaps.
- Overlay the key themes from the comparative analysis and use them to undertake a high-level conceptual framework analysis of IOSCO's 1989 Report entitled *Capital Adequacy Standards for Securities Firms* (1989 Capital Standards Report), and update that document in light of the issues identified in this report.

This project's report addresses the first project aim and identifies the key themes from the comparative analysis which could be used to update the 1989 Capital standards Report. This project has not updated the 1989 Report.

2.3 Report structure

20. Sections three to eight are a comparative analysis of the key capital adequacy frameworks that apply to securities firms in the major IOSCO jurisdictions; primarily focusing on the NCR and the Capital Requirements Directive (CRD)[8] (which is founded on the Basel approach), but also recognising relevant national variations. The aim was to highlight the similarities, differences and gaps (if any could be identified) between the key frameworks. Section three focuses on methodological similarities and differences to illustrate how the two regimes are structured in fundamentally different ways, and how they use very different concepts to determine the '*right*' amount of capital, but contain similar overarching objectives. The high-level analysis section also contextualises the subsequent, and more detailed, analytical sections of the report. Sections four and five examine the regulatory scope of the different frameworks. The aims of these sections are to examine whether similar activities are being treated differently across jurisdictions. Sections six and seven present a detailed comparative analysis on the constituents of regulatory capital and the key risks (for example, credit risk/counterparty risk and market risk) that are the basis for a securities firm's capital requirements and how such risks are treated by each regulatory framework. This section includes substantive numerical representations, where

[8] The Capital Requirements Directive is comprised of two pieces of legislation: A regulation and a directive (see footnote 11 for further details).

feasible, to enhance the comparative analysis and understanding of the issues relevant for determining a firm's regulatory capital. The pace of regulatory reform means that forthcoming legislative announcements will continue to update the outcomes of this study. Section eight signals some key impending reforms in member jurisdictions and their potential high-level impacts on the report's main findings.

21. Section nine of the report draws together the key themes identified from the analytical sections to provide conclusions on the similarities, differences and gaps between the key capital frameworks. Section ten uses the themes identified in section nine as a primary resource for overlaying the objectives and approaches to capital adequacy and how these align with IOSCO's 1989 Capital Standards Report; in particular to seek, to identify, if possible, gaps and/or other areas that should be reflected in an update of the Capital Adequacy Public Document.

2.4Report coverage (Scope and time)

22. As noted above, the comparative analysis focuses on the Net Capital approach (in particular the US approaches) and the CRD.

23. The CRD translates the Basel framework into EU legislation. However, the Basel Accord only applies to internationally active banks; it is not legally binding. In contrast, the CRD is legally binding, applies to all European Union credit institutions and most importantly, in the context of this report, includes investment firms. Furthermore, the CRD distinguishes between three different types of investment firms. This classification has implications for the capital adequacy approach that an investment firm is subject to.[9] For these two reasons, the CRD is used as the proxy for the Basel approach.

24. European legislators have recently finalised updates to European prudential regulations to incorporate the changes the Basel Committee incorporated in Basel III[10] after the financial crisis.[11] The body of this report has been prepared on the

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9 This is covered in greater detail in Sections 6 and 7 of the report.

10 See *Basel III: A global regulatory framework for more resilient banks and banking systems of December 2010, rev Jun 2011*

basis of the revisions to the CRD (colloquially known as CRD IV).[12] Although CRD IV will not come into force until 1st January 2014, CRD IV (as opposed to CRD III) has been used as the basis for the "*Basel approach*" because it implements Basel III, which is intended to introduce fundamental changes to both the quality and quantity of regulatory capital. As a result, basing the Basel approach on CRD III would almost immediately date this report's analysis.

25. From a Net Capital Rule perspective, the analysis is based on regulations up until summer 2011.

3. High-level objectives and approaches of different capital frameworks

26. Section three provides an overview of the different prudential frameworks for securities firms. In doing so, the section compares the key methodological concepts that the two capital frameworks apply in determining a securities firm's capital adequacy.

3.1 Capital Requirements Directive

27. The CRD is comprised of two components to establish the capital adequacy of a firm: Pillar I, which calculates the minimum capital requirements that each bank must hold to cover exposure to market, credit and operational risk; and Pillar II, where supervisory reviews of firms seek to ensure that capital is sufficient to cover the overall risks of the firm. Figure 1 illustrates the CRD approach to determine capital adequacy.

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11 From 2014 onwards, there will be a Capital Requirements Regulation (CRR) on prudential requirements for credit institutions and investment firms that will set minimum capital requirements in the form of an European single rule book, and a Capital Requirements Directive (CRD) on the access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, which will focus on supervision of such financial intermediaries in Europe. For the purposes of this report we will use the term Capital Requirements Directive to cover both the Regulation and the Directive.

12 See http://eur- lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:176:0001:01:EN:HTML for the Regulation and http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:176:0338:01:EN:HTML for the Directive.

28. Under Pillar I, firms have to calculate a risk assets capital ratio (RAR), based on the percentage of capital to assets ratio, where assets are weighted based on their riskiness (hence the term Risk-weighted assets or RWAs). This entails determining the amount of *capital resources* (the numerator in Figure 1) and the *capital requirement* (the denominator in Figure 1). Components of *Capital Resources* include Common Equity, Additional Tier 1 and Subordinated Debt (Tier 2). To calculate the denominator, positions are categorised by type of risk (credit risk, market risk and operational risk) with different rules applying to each type of risk. Firms are allowed to use internal models, subject to supervisory authority permission, to calculate the capital requirements under one or more of the three types of risk.[13] In order to use internal models, firms will have to satisfy the supervisory authorities that they have adequate systems and controls, and robust models in place. The CRD calculation is seen as being a "*balance sheet*" based approach, because it analyses balance sheet risks and because it determines the solvency of a firm.

29. Firms have base capital requirements that differ depending on whether they take proprietary positions or not and whether the firm holds client assets or not. The minimums range from €50,000 to €730,000. Under the current CRD, firms must have a RAR of at least 8%. Under CRD IV, this will rise to at least 10.5% including an additional capital conservation buffer requirement of 2.5% of RWAs which may be drawn down in times of stress. Furthermore, under CRD IV an investment firm may also be subject to a countercyclical buffer, a systemic risk buffer and firm-specific systemic buffer requirements.

30. In addition, to Pillar I requirements investment firms must hold sufficient capital resources to meet Pillar II capital requirements. Pillar II is the supervisory review process where supervisors evaluate how well firms are assessing their capital needs relative to their risks and may intervene, where appropriate. There are three main areas that are particularly suited to treatment under Pillar 2:

    - risks considered under Pillar 1 that are not fully captured by the Pillar 1 process (e.g. credit concentration risk);

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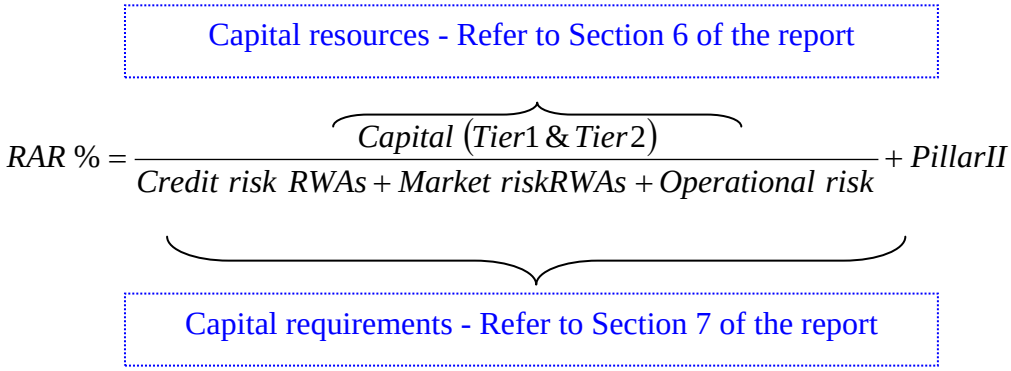
13 Refer to Section 7 of this report for more detail.

- those factors not taken into account by the Pillar 1 process (e.g. interest rate risk in the banking book, business and strategic risk); and
- factors external to the institution (e.g. business cycle effects).

Figure 1: Capital adequacy calculation under CRD



3.2Net Capital Approaches

31. Net capital approaches aim to ensure that broker-dealers and futures commission merchants maintain specified minimum levels of *net liquid assets*, or "*net capital*," sufficient to enable an intermediary firm that falls below its minimum requirement to liquidate in an orderly fashion without causing mutualised losses to customers resulting from the intermediary's failure.

32. Net capital approaches are structured such that the majority of the capital requirement is generally 'absorbed' into the calculation of net capital itself.[14] For example, the SEC NCR starts with a capital amount that is not dissimilar to the sum of equity and subordinated debt under the Basel approach. In calculating this capital amount the NCR marks-to-market financial instruments owned by the firm, such as stocks and bonds. To determine the *Net Capital*, a range of deductions for illiquid assets (including loans unsecured or secured with illiquid assets), and "*haircuts*" to reflect market risk positions are made. The Net Capital is then compared to a regulatory capital requirement, *Required Net Capital*, to establish whether the firm has sufficient capital.

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[14] The amount will depend on how the balance sheet is structured.

33. Under net capital approaches, by the time the *Net Capital* calculation has been performed, the bulk of the capital requirement (using the Basel meaning of the term) has already been implemented by way of deductions from capital (as opposed to being included as an explicit capital requirement amount).

3.2.1 U.S. SEC

34. In the SEC NCR approach, there are two methods for computing Required Net capital. The "*basic method*" compares net capital to most of the firm's unsecured (aggregate) indebtedness. The "*alternative method*" measures the liquid assets against obligations owed by customers to the broker-dealer.

35. The amount of Required Net Capital a broker-dealer must maintain in order legally to operate a securities business is, for most broker-dealers, the *greater* of a fixed-dollar (or base capital amount (which ranges from $5000 - $250,000) and the amount computed using one of two financial ratio methods explained above.[15] The specific requirements based on the type of regulated entity are explained in more detail in section 6.1 of the report.[16]

36. Under the SEC NCR, a broker-dealer may be permitted to use internal mathematical models to compute its market risk and OTC derivative-related credit risk charges provided that it meets enhanced net capital, early warning, recordkeeping, reporting, and certain other requirements, and must implement and document an internal risk management system. These firms are referred to as alternative net capital (or "ANC") broker-dealers if capital is computed under Appendix E of the NCR or OTC derivatives dealers ("BD-Lites") if capital is computed under Appendix F of the NCR.[17] The minimum fixed-dollar amount of

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[15] The fixed-dollar amounts are based on the type of securities business the broker-dealer engages in. For example, a broker-dealer that carries customer accounts has a fixed-dollar requirement of $250,000; a broker-dealer that does not carry customer accounts but engages in proprietary securities trading (defined as more than ten trades a year) has a fixed-dollar amount of $100,000; and a broker-dealer that does not carry accounts for customers or otherwise receive or hold securities and cash for customers, and does not engage in proprietary trading activities, has a fixed-dollar amount of $5,000.

[16] For example, a broker-dealer shall not permit its net capital to be less than 2% of *aggregate customer debit items* [paragraph 115].

[17] *OTC Derivatives Dealers*, Exchange Act Release No. 40594 (October 23, 1998). These broker-dealers must limit their business activities solely to dealing in OTC derivatives. The computation does not include a financial ratio component. Thus, the fixed-dollar amounts of

regulatory capital for an ANC broker-dealer is $1 billion in tentative net capital and $500 million in net capital (plus a $5 billion tentative net capital early warning requirement)[18] and for a BD-Lite are $100 million in tentative net capital and $20 million in net capital.[19]

37. The SEC Net Capital Approach is represented pictorially in figure 2 below:

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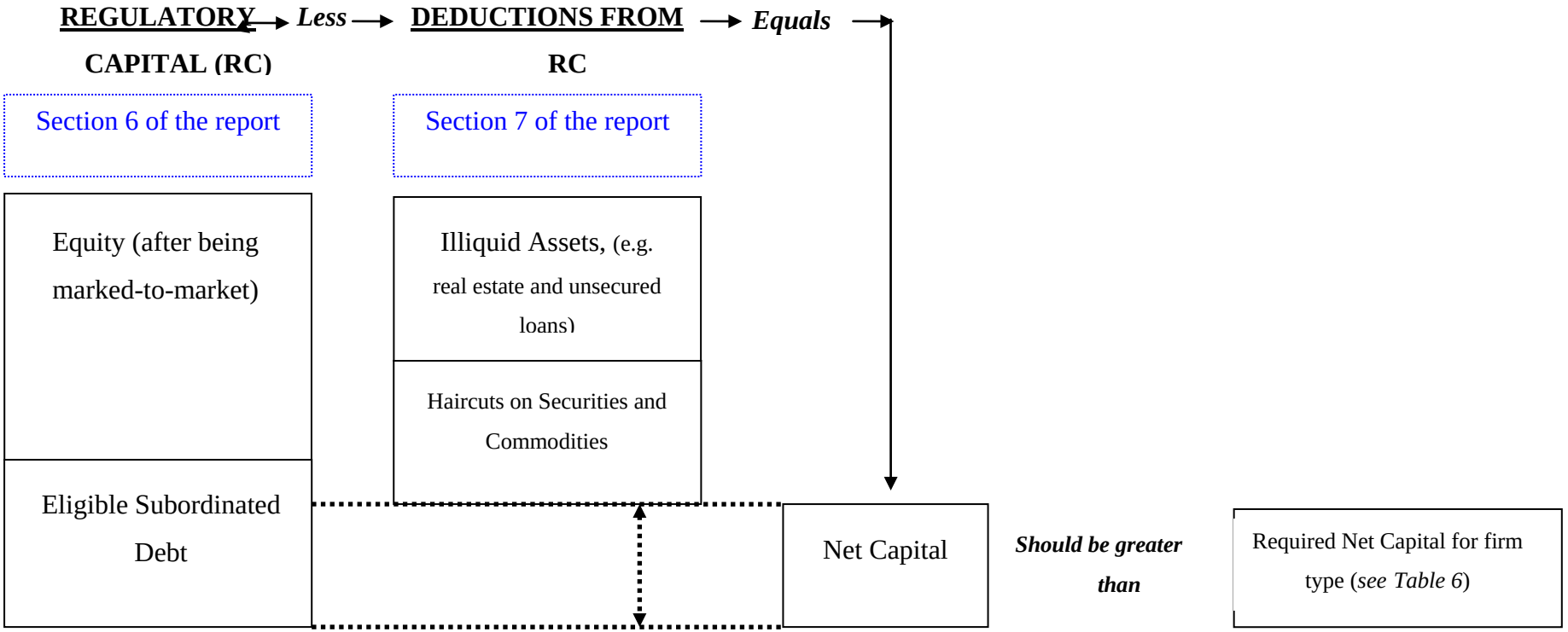
tentative net capital and net capital are the required minimums in all cases. There are currently four broker-dealers registered as BD-Lites. *See* http://www.sec.gov/divisions/marketreg/bdriskoffice.htm#otcderivatives.

18 *Alternative Net Capital Requirements for Broker-Dealers that are part of Consolidated Supervised Entities*, Exchange Act Release No. 49830 (June 21, 2004).

19 17 CFR 240.15c3-1(a)(5). The term tentative net capital refers to the net capital of a broker-dealer prior to applying securities haircuts. *See* 17 CFR 240.15c3-1(c)(15).

Figure 2: Capital adequacy calculation under the SEC's Net Capital Rule[20]



[20] Adapted from diagrams in SEC, Appendix 11: SEC Financial Responsibility Rules , Figure lht, SEC Net Capital Formulation (Page 132), Available at: http://www.sec.gov/about/offices/oia/oia_market/key_rules.pdf, and Dale, R. (1996), *Risk and Regulation in Global Securities Markets*, John Wiley & Sons, p.76.

3.2.2 Canada

38. Investment dealers that are members of the Investment Industry Regulatory Organisation of Canada (IIROC) must meet a very similar risk-adjusted capital framework to the SEC. In other words, establishing the amount of assets on the balance sheet that can be classified as "*liquid*" assets, and deducting balance sheet liabilities, margins and the capital requirement commensurate with the firm type. The key difference compared to the SEC calculation is that in calculating the risk adjusted capital amount the actual capital requirement is also deducted. This means that investment dealers have to maintain a risk-adjusted capital amount that is greater than zero (as opposed to having capital resources that are greater than the capital requirement).

3.2.3 U.S. CFTC

39. The CFTC's NCR approach is very similar to the U.S. SEC's approach, and the two U.S. regulators have established a goal of uniformity in the calculation of what comprises regulatory net capital for the benefit of their many respective dual registrants. The CFTC's regulated entity which accepts customer funds and is permitted to intermediate exchange-traded and cleared futures and other derivatives is called a futures commission merchant ("FCM"). The CFTC also applies the NCR approach to other types of intermediaries including introducing brokers and retail foreign exchange dealers;[21] however those entities are not permitted to accept customer funds for on-exchange futures transactions or guarantee clearing for customers. FCMs can act as intermediaries for customers and guarantee transactions for clearing for U.S. exchange-traded futures and options on futures contracts (e.g. Agriculture, Energy, Equity, Foreign Currency, Interest Rate, Metals, Real Estate, Weather, and Financial). While the calculation of what constitutes regulatory capital is uniform with the SEC's calculation for broker-dealers, including, upon application and approval, the alternative method

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[21] While the primary focus of the CFTC's NCR approach is on FCMs, retail foreign exchange dealers must also be registered with the CFTC and together with FCMs engaging in retail forex transactions must maintain adjusted net capital equal to or greater than the highest of $20,000,000 plus 5% of the entity's obligation to customers for retail foreign exchange transactions in excess of $10,000,000 or any other requirement applicable to the entity by virtue of required membership in a self-regulatory organisation or otherwise.

(which permits the use of mathematical models for certain dual registrants), the CFTC's minimum requirement is based on its own calculation, which is the greater of a minimum dollar floor of $1,000,000 (the floor is substantially higher if the FCM also is dealing in retail foreign exchange as noted in footnote 21) and a calculated requirement based on 8% of the total risk margin for positions carried in customer and non-customer (non-customer may be related parties to the FCM) accounts. The CFTC also incorporates by reference any higher thresholds which may be applicable to the entity by a self-regulatory organisation (SRO) or by the SEC, and permits compliance with SRO requirements in lieu of CFTC requirements, provided those requirements are as stringent and have been submitted to and approved by the CFTC.

3.2.4 Hong Kong SFC

40. The SFC's Securities and Futures (Financial Resources) Rules (FRR) aim to ensure that a licensed corporation has sufficient readily realisable assets to meet all liabilities plus a cushion to buffer it against emergencies in order to permit an orderly wind-down if it fails.

41. The FRR imposes two capital requirements for licensed corporations:

- A minimum paid-up share capital requirement; and
- A liquid capital requirement.

42. In general, a licensed corporation is required to maintain paid-up share capital of not less than the amount specified in the FRR for the type of regulated activity for which it is licensed (from HK$5 million to HK$30 million). Where a licensed corporation conducts more than one type of regulated activity, the applicable paid-up share capital requirement is the higher or highest of the respective paid-up share capital requirements that apply to those regulated activities. Licensed corporations fulfilling certain conditions or falling within specific categories are exempt from the paid-up share capital requirement.

43. A licensed corporation is required to maintain liquid capital of not less than its liquid capital requirement. The liquid capital of a licensed corporation is the balance that remains after deducting the total amount of its ranking liabilities from the total amount of its liquid assets.

Liquid capital = Total liquid assets – Total ranking liabilities

Subordinated loans and redeemable shares approved by the SFC for FRR purposes can be treated as part of liquid capital.[22] In general, the amount of the prescribed assets that can be counted as liquid assets in the calculation of liquid capital is determined according to the risk attributes of the assets such as their liquidity, market or credit risk. Risk adjustments are made through haircuts on (or deductions from) the book value or market value of the asset (such as haircut on the market value of house investments, haircut on under-collateralised margin loans etc.). In other words, such haircuts and deductions serve as a capital charge for the liquidity, market or credit etc. risks of those assets. In general, "*ranking liabilities*" of a licensed corporation is the sum of risk adjustments prescribed in the FRR and all its on-balance sheet liabilities except subordinated loans approved by the SFC and the non-current portion of mortgage loans that is secured by beneficially owned office premises (capped at the net realisable value of that property) used for conducting the regulated activities for which the licensed corporation is licensed. The risk adjustments to be included in ranking liabilities serve to cover market, credit and other risks. Some examples of risk adjustments are set out below:

- capital charges for market risks on short positions, FX, interest rate and derivative positions;
- capital charges for counterparty risks arising from client's failure to timely settle short positions or margin requirements on FX, futures/options etc.;
- capital charges on potential exposures arising from contingent liabilities and other off-balance sheet exposures / financial commitments etc.

44. The liquid capital requirement is the higher of:

- a fixed amount (*floor requirement*), which is determined by the type of regulated activity for which the entity is licensed and whether the firm holds client assets; and

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[22] These amounts are in effect counted as liquid capital by not including them in ranking liabilities.

- A *variable required liquid capital* requirement.

45. Similar to other jurisdictions, firms must notify the supervisory authorities if liquid capital levels fall below certain required liquid capital thresholds or the amount of liquid capital falls by a considerable amount between reporting dates. Such requirements can ensure that firms maintain considerable capital buffers above the risk-based capital requirements.

3.2.5 Australia

46. Australia is an example where firms licensed with ASIC may be subject to ASIC's net capital style approach (*Surplus Liquid funds* (*SLF*) or *adjusted surplus liquid funds (ASLF)*) or another form of prescribed minimum net capital[23] or a Basel-style approach (*Risk-based capital requirement*).

47. The net capital approaches are similar to the SFC's in that they compare adjusted assets to adjusted liabilities. These are then compared to capital requirement amounts to determine if the firm is adequately capitalised. The ASLF calculation includes standard deduction percentages based on the riskiness of certain assets and liabilities. Firms are allowed to use different discount percentages where they can satisfy the regulatory authority that they have an appropriate risk calculation system. Firms will be subject to SLF or ASLF depending on their permitted activities.

48. If the firm is a participant in the ASX, Chi-X or ASX 24 market then ASIC rules permit the firm to meet a different set of capital adequacy requirements. ASX 24 has a minimum net tangible assets requirement. ASX and Chi-X's capital adequacy requirements are more akin to Basel-style rules. There are two prudential calculations that must be satisfied: first a *Core capital* requirement of at least $100,000; and second, *liquid capital* resources must be greater than the firms *Total Risk Requirement*. Elements that make up liquid capital include Core Capital, subordinated debt less excluded assets and liabilities. Elements that make up the total risk requirement include: position risk, operational risk, counterparty risk and large exposures.

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[23] ASIC requires market intermediaries who are retail OTC derivative providers to hold net tangible assets of at least $1 million or 10% of revenue (whichever is larger) in a liquid form.

3.3Conclusion on capital adequacy approaches by jurisdiction

49. This section highlights that the two key approaches have methodological similarities and differences (for example, NCR is primarily directed towards ensuring that securities firm have sufficient liquid balance sheet assets, whereas CRD is primarily about solvency of the firm), but that both approaches contain the same objective.

50. The overriding objective of both the CRD and the NCR is to ensure that a securities firm holds sufficient capital to protect customers and creditors from losses and delays if it were to fail. This means the securities firm must hold enough capital to absorb any losses on liquidating its positions or from closing customer's defaulting positions that are guaranteed to clearing organisations. Both regimes are supplemented by other mechanisms to protect investors, including segregation of client assets, client money, and 'government-sponsored' investor insurance schemes, but schemes' characteristics may vary from jurisdiction to jurisdiction. Table 1 presents a summary on which capital adequacy regime, Basel of NCR, applies in selected IOSCO member jurisdictions.

Table 1: Capital adequacy frameworks in selected countries

Member	NCR or equivalent approach	Basel or equivalent approach	Minimum or base capital requirement stipulated
Australia			
Australian Financial Services Licence holder	✓[1]		✓
Financial market participant		✓	✓
Canada			
Investment dealers (IIROC members)	✓		✓
Mutual Fund Dealers (MFDA members and Quebec mutual fund dealers)	✓		✓
Other registrants	✓		✓
China	✓		✓
France			
Investment firms [Investment Services Providers]		✓[1]	✓[3]
Germany			
Investment firms/securities trading banks		✓[1]	✓[3]
Hong Kong			
Licensed corporation	✓[4]		✓[2 3 5]
India	✓		✓
Japan			

Tier 1 Financial Instruments Business Operator:		✓	✓
Korea	✓		✓
Singapore Capital markets services licensee: If member of an Approved Exchange or Designated Clearing House Not member of an Approved Exchange or Designated Clearing House	 ✓[6]	 ✓ 	 ✓ ✓
Spain Investment firms		✓	✓
Switzerland		✓	✓
United Kingdom Investment firms		✓[1]	✓[3]
United States – CFTC	✓		✓[3]
United States – SEC	✓		✓[3]

[1] Different calculation requirements apply depending on the activities of the firm, for example, if firm holds client money or transacts with clients as principal or is a retail OTC derivative provider.

[2] Minimum paid-up share capital requirement.

[3] Different values depending on the activities of the firm, e.g. whether the firm deals in securities or advises on securities, and/or whether the firm holds client money or not.

[4] Higher of variable amount and floor requirement. Floor requirement differs depending on the activity of the firm.

[5] Certain activities are exempt from the paid up share capital requirement.

[6] In April 2013, MAS introduced revisions to the regulatory capital framework for holders of CMS licences. Under the revised framework, the Risk-based Capital requirement will be applied to all CMS licensees and the Adjusted Net Capital requirement will be removed. MAS had conducted a public consultation on the

proposed changes in April 2012. The new requirements are set out in the revised Securities and Futures (Financial and Margin Requirements for Holders of Capital Markets Services Licences) Regulation and MAS Notice SFA 04-N13 on Risk Based Capital Adequacy Requirements for holders of Capital Market Service licences.

51. The two approaches are structured in fundamentally different ways, and use very different concepts to determine an appropriate amount of capital. For example, under the net capital approach, there is little or no credit risk because all extensions of credit must be fully collateralised; and that collateral must be marked-to-market on a daily basis, or margin must be collected and posted or capital charges taken to reflect unsecured credit risk, quickly. This is not always a feature under the Basel approach because not all assets under the CRD are marked-to-market and there can be many unsecured extensions of credit.

52. Nevertheless, despite differences in the structure of the approaches, many of their features share common purposes. For example, both regimes endeavour to ensure the securities firm holds sufficient capital to cover reasonably foreseeable losses arising from market and credit risk plus a cushion to cover risks that are not measurable.

53. The different structural approaches to the two prudential approaches nonetheless make numerical comparative analysis extremely difficult. For example, it is not possible to ascertain whether an 8% RAR under the CRD approach is comparable with the SEC's net capital requirement of *2% of aggregate customer debit items*. For example, it seems that the 8% RAR is itself a capital requirement for market, credit and operational risks whereas the 2% aggregate customer debit items is a minimum requirement (minimum net capital requirement) for net capital, which represents the surplus amount of capital after the deductions required by the NCR and haircuts for market, operational and credit risk in the calculation of net capital. The two do not seem to be similar in nature and hence may not be suitable for making a comparison. Equally, it could be argued that it is not readily possible to compare some of the net capital approaches with one another to ascertain if one approach is more capital conservative than another. For example, is the SFC's *variable required liquid capital* formula more or less demanding than the SEC's 6.67% aggregate indebtedness ratio? The only manner in which some numerical comparative analysis is feasible is to break down the different approaches to capital adequacy calculations into their common component parts, *capital resources* and *capital requirements*, and compare these. The components of the capital adequacy calculations are examined in section 6 (capital resources) and section 7 (capital requirements) of the report.

4. Regulatory scope of different capital frameworks

54. This section presents the regulatory scope of the different frameworks. In other words, it highlights the activities that both the CRD and NCR cover. The aim of the section is to outline whether similar activities are being captured or not across jurisdictions, and thus whether we can clearly identify "*differences*" between different frameworks or "*gaps*" in either the CRD or NCR approaches that could present arbitrage opportunities.

4.1Scope of application

4.1.1 Capital Requirements Directive

55. The general approach in the EU has been to apply capital rules to banks and investment firms on equal terms, thus establishing a fairer competitive environment for these firms. The capital rules for banking transactions (the "*banking book*") were in the Banking Consolidation Directive (BCD) and were based on the original 1988 Basel Accord, and which has subsequently been updated through Basel II and Basel III. The Capital Adequacy Directive (CAD) was introduced in 1996 to extend the capital rules to the "*trading book*"; it was also designed to ensure that the same definition of capital rules apply to banks and investment firms.[24] In 2006, the CRD became the overarching term for the EU legislation covering both the BCD and the CAD. This report's focus on securities firms and securities activities means that the CAD and investment firms form the important comparative aspects of European legislation. With the introduction of Basel III in the EU through CRD IV, BCD and CAD provisions related to risk based capital requirements are being transposed into the new CRD legislation structure (a Capital Requirements Regulation and a Capital Requirements Directive).

56. Investment firms are defined in the CRD legislation by reference to the Markets in Financial Instruments Directive (MIFID). As a result, if a firm is caught by MIFID, then its prudential requirements are determined by the CRD. MIFID

[24] The CAD is consistent with the principles laid down in the 1996 amendment to the Basel Accord on market risk, which has subsequently been amended through Basel II.5.

defines an investment firm as: "*any legal person whose regular occupation or business is the provision of one or more investment services to third parties and/or the performance of one or more investment activities on a professional basis*."[25]

57. The list of Investment services and activities and the financial instruments to which they attach are defined in MIFID. They are reproduced below:

Table 2 – List of Investment services and activities in MIFID

MIFID: Investment services and activities
(1) Reception and transmission of orders in relation to one or more financial instruments.
(2) Execution of orders on behalf of clients.
(3) Dealing on own account.
(4) Portfolio management.
(5) Investment advice.
(6) Underwriting of financial instruments and/or placing of financial instruments on a firm commitment basis.
(7) Placing of financial instruments without a firm commitment basis.
(8) Operation of Multilateral Trading Facilities.

MIFID: Financial Instruments
(1) Transferable securities;
(2) Money-market instruments;
(3) Units in collective investment undertakings;
(4) Options, futures, swaps, forward rate agreements and any other derivative contracts relating to securities, currencies, interest rates or yields, or other derivatives instruments, financial indices or financial measures which may be settled physically or in cash;
(5) Options, futures, swaps, forward rate agreements and any other derivative contracts relating to commodities that must be settled in cash or may be settled in cash at the option of one of the parties (otherwise than by reason of a default or

[25] See Article 4 (1) 1 of MIFID

other termination event);
(6) Options, futures, swaps, and any other derivative contract relating to commodities that can be physically settled provided that they are traded on a regulated market and/or an MTF;
(7) Options, futures, swaps, forwards and any other derivative contracts relating to commodities, that can be physically settled not otherwise mentioned in C.6 and not being for commercial purposes, which have the characteristics of other derivative financial instruments, having regard to whether, inter alia, they are cleared and settled through recognised clearing houses or are subject to regular margin calls;
(8) Derivative instruments for the transfer of credit risk;
(9) Financial contracts for differences;
(10) Options, futures, swaps, forward rate agreements and any other derivative contracts relating to climatic variables, freight rates, emission allowances or inflation rates or other official economic statistics that must be settled in cash or may be settled in cash at the option of one of the parties (otherwise than by reason of a default or other termination event), as well as any other derivative contracts relating to assets, rights, obligations, indices and measures not otherwise mentioned in this Section, which have the characteristics of other derivative financial instruments, having regard to whether, inter alia, they are traded on a regulated market or an MTF, are cleared and settled through recognised clearing houses or are subject to regular margin calls.

58. The level of capital an investment firm subject to MIFID is required to hold is determined by the type of investment services and activities it provides and performs. For example, a key point to note with MIFID is that there is a distinction between the activity of dealing on own account (activity (3)) and the activity of executing orders on behalf of others (activity (2)). This can have an impact on the initial capital that an investment firm must hold and the ongoing capital requirements that an investment firm is subject to. By way of an example, Article 95 of CRD IV (i.e. the forthcoming Regulation) explains that an investment firm that is not authorised to trade on own account (activity (3) in the table above) and/or underwrite financial instruments and/or place financial

instruments on a firm commitment basis (activity (6) in the table above), has a different base capital requirement (€50,000 or €125,000 as opposed to €730,000) and an alternative capital adequacy calculation that is:

Figure 3: Capital adequacy calculation for an investment firm that does not deal on own account and/or underwrite and/or place financial instruments

$$RAR\ \% = \frac{Capital\ (Tier1\ \&\ Tier2)}{Higher\ of\ [Fixed\ \ Overheards\ \text{Re}\ quirement\ x\ 12.5]\ and\ [Credit\ \ risk\ \ RWAs + Market\ risk\ \ RWAs]} + PillarII$$

59. Firms that do not deal on their own account pose lower balance sheet risk. The inclusion of the fixed overhead requirement in the capital calculation is to tie a firm's prudential requirements to a proportion (three months) of its annual fixed expenditure (i.e. excluding those items of expenditure which it could quickly reduce or eliminate if necessary[26]). In this way, the capital calculation aims to capture the costs of winding-down the firm within three months.

60. Regulatory scope may present firms with regulatory arbitrage opportunities where there are activities not caught by MIFID or there are exemptions from CRD prudential requirements. For example, there are special provisions for certain types of commodities derivatives firms as well as firms whose MIFID investment services are limited to giving advice or receiving and transmitting client orders or both and who are not permitted to hold client money or securities. EU competent authorities have discretion to set rules that capture activities beyond those mandated by EU directives. This provides further opportunities for different prudential requirements for certain financial activities.

4.1.2 Net Capital Approaches

U.S. SEC

61. All entities that are brokers or dealers and that are subject to U.S. jurisdiction must be registered with the Commission and are generally subject to the same rules. "*Broker*" is broadly defined as, "*any person engaged in the business of effecting transactions in securities for the account of others*..." The term "*person*" includes

[26] For example in the UK staff bonuses

entities as well as individuals. Unlike a broker who acts as agent, a dealer acts as principal. Dealers are generally defined as, "*any person engaged in the business of buying and selling securities for his own account, through a broker or otherwise*" The definition of "*dealer*" does not, however, include a "*trader*," that is, a person who buys and sells securities for his or her own account, either individually or in a fiduciary capacity, but not as part of a regular business. Individuals who buy and sell securities for themselves generally are considered traders and not dealers.

62. Generally all securities business must be conducted through a broker-dealer. Thus, the issue in determining whether a particular transaction must be conducted through a broker-dealer is whether the transaction involves a security. Transactions that do not involve securities may be conducted outside the broker-dealer (in an unregistered affiliate). For example, entities often conduct swap transactions, such as currency or interest rate swaps, outside of the broker-dealer. If a swap were conducted through a broker-dealer, the transaction would be subject to capital charges. The broker-dealer would be subject to a haircut on its short position in the swap equal to the haircut on the security underlying the short position. Furthermore, the broker-dealer's receivable in the swap would be subject to a 100% capital charge if the receivable were unsecured.[27]

63. In light of the above, U.S. registered broker-dealers often choose to conduct such non-securities activities through foreign affiliates of the common holding company that are subject to less stringent capital requirements. In particular, pressure from clients of the broker-dealer to deal with a regulated entity, a well-capitalised entity, and/or an entity domiciled in its jurisdiction has impacted where business is booked. Generally, U.S. firms may conduct over-the-counter derivatives business outside of the main U.S. broker-dealer. [28] Unsecured lending also tends to be booked into U.S.-domiciled unregistered affiliates.

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[27] An exception to this rule exists for ANCE broker-dealers and BD-Lites. Generally, those types of firms would take a credit risk charge equal to the current exposure plus the maximum potential exposure adjusted by the creditworthiness of the counterparty.

[28] Yet under regulatory reforms imposed by Dodd-Frank, derivatives business will no longer be able to be in an unregulated entity (or an overseas regulated entity doing business in the US without regard to registration requirements in the US). It will now need to be registered as a swap dealer or a securities based swap dealer. As proposed, these firms will now generally be subject to the same capital and margin treatments as broker-dealers.

64. Equally, the net capital rule applies to all activities conducted in the broker-dealer. Thus, if a broker-dealer had a division that engaged in activities not related to securities, the entire broker-dealer, including the non-securities division, would be subject to the net capital rule.

U.S. CFTC

65. The primary entities captured by the CFTC's minimum net capital requirements are futures commission merchants ("FCMs") and introducing brokers ("IBs"). Retail Foreign Exchange Dealers ("RFEDs") represent a smaller category of entities that must meet minimum net capital requirements.

66. Pursuant to the Commodity Exchange Act of the United States, no one may solicit or accept orders for the purchase or sale of any commodity for future delivery on or subject to the rules of any contract market unless registered as an FCM or IB. IBs, however, may not hold customer funds and may not guarantee trades for clearing. RFEDs (and FCMs which comply with all aspects of rules otherwise applicable to RFEDs) may engage in off-exchange foreign currency transactions with retail participants, but RFEDs may not intermediate any exchange-traded futures business.

67. Similar to the SEC, the NCR approach of the CFTC applies to all activities of the legal entity which is registered as an FCM (or IB, or RFED). Therefore, historically unregulated derivative transactions have not been undertaken in the registered FCM due to the high capital requirement applicable to those transactions (generally, all accrued gains are unsecured receivables which do not qualify as "*current assets*" in computing regulatory net capital, while all accrued losses must be fully recognised and subtracted from net capital. In addition, derivative positions must be marked to market with any resulting gains or losses reflected in the entity's net capital).

68. Various categories of CFTC registrants do not have prudential net capital requirements, including floor brokers, floor traders, associated persons, commodity trading advisors or commodity pool operators. The CFTC's regulation of such registrants is activity specific or disclosure based but not prudential.

Hong Kong SFC

69. Any person who carries on a business in a regulated activity in Hong Kong or holds himself out as carrying on such business is required to be licensed by or registered with (in the case of regulated banks in Hong Kong) the SFC. Only licensed corporations are subject to the FRR's regulation. There are ten types of regulated activities:

    - Dealing in Securities;
    - Dealing in Futures Contracts;
    - Leveraged Foreign Exchange Trading;
    - Advising on Securities;
    - Advising on Futures Contracts;
    - Advising on Corporate Finance;
    - Providing Automated Trading Services;
    - Securities Margin Financing; and
    - Asset Management
    - Providing Credit Rating Services

70. Licensed corporations seldom use regulated entities to handle non-regulated business, and instead channel the business through unregulated affiliates.

Singapore

71. Under the Singapore Securities and Futures Act, a person carrying on business in a regulated activity is required to hold a CMS licence. The regulated activities under the Act are:

    - dealing in securities;
    - trading in futures contracts;
    - leveraged foreign exchange trading;
    - advising on corporate finance;
    - fund management;
    - real estate investment trust management;
    - securities financing;
    - providing custodial services for securities; and

- providing credit rating services.

72. Exemptions from the requirement to hold a CMS licence for the different regulated activities apply.

4.2 Conclusion on regulatory scope

73. Regulatory scope describes which activities and underlying instruments regulators license and oversee. What constitutes regulated business in a jurisdiction or competent authority is the key driver for the regulatory and supervisory obligations that subsequently follow including the calibration of prudential requirements. Differences in regulatory scope between jurisdictions could impact where firm activity is conducted, thus potentially raising regulatory arbitrage opportunities because activities deemed out of scope in a jurisdiction will not be subject to prudential requirements there.[29] The preceding section illustrates that jurisdictions have differences in describing which activities and instruments constitute regulated activities.

74. In practice it has proven to be extremely difficult to identify clear differences in regulatory scope. The causes for the difficulties in identifying the differences are:

    - Understanding different authorities' regulated business/investment services definitions even if they are in fact for the same activity;
    - Identifying whether regulatory scope is restricted to certain financial instrument types for some supervisory authorities;
    - Identifying what instrument types may have been excluded from the supervisory authority's coverage; and
    - Identifying those activities that may have been exempted from any prudential requirements.

    On the basis of the information gathered in this report, it has not been possible to conclusively determine whether or not there are differences with regard to regulatory scope.

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[29] Regulatory arbitrage may also arise where jurisdictions have different prudential requirements for comparable regulated activities. Where such differences exist, firms may use this opportunity to identify jurisdictions where different prudential requirements prevail for similar securities business.

75. The section also illustrates the wide spectrum of activities that constitute securities business. Later sections explain how prudential requirement calculations and minimum capital requirements can differ depending on the type of regulated activity being undertaken. Quite valid risk-based arguments support variations in the prudential requirements depending on the activities and business models of securities firms. This can, however, foster a wider misunderstanding as to why securities prudential requirements are not uniform.

5. Regulatory scope, prudential frameworks and risks posed by group entities

76. This section builds on the previous section to understand similarities and differences between the CRD and NCR with regard to dealing with risks posed by group entities to regulated intermediaries**;** in so doing it will incorporate discussions concerning consolidated capital requirements. To provide some context on the complex issue of regulatory scope and risks posed by group entities, a case study has been prepared which aims to document how different supervisory authorities deal with financial groups for regulatory purposes.

5.1Intra-group assets and liabilities

77. Section 4 illustrates that certain types of activity could be housed in an unregulated entity and/or certain types of risk could be backed out to unregulated entities. In the EU, consolidated capital requirements apply and these entities would be caught by the consolidated capital requirements that would apply from the highest European Economic Area (EEA) holding company downward. Any notional benefit of booking business to an unregulated entity would therefore be offset by a consolidated capital requirement at the holding company level.

78. The rules implemented by the SEC and the CFTC could have an impact on the way in which broker-dealers or FCMs structure their activities. In particular, it is rare for broker-dealers or FCMs to book certain types of derivative business into the main regulated entity because of the high amounts of capital that would be required under the NCR. Some members have observed that this business was therefore moved outside of the registered broker-dealer into non-U.S. jurisdictions with a less rigorous capital standard. This raises the question as to whether certain non-NCR jurisdictions should consider imposing a more stringent capital standard in order to diminish the potential arbitrage opportunity.

5.2 Dealing with group risks

5.2.1 Consolidation under the Capital Requirements Directive

79. The Basel approach encompasses the concept of consolidated financial groups, with capital requirements calculated on a consolidated basis. All financial activities (both regulated and unregulated) conducted within a group should be captured through consolidation. Thus, majority-owned or –controlled banking entities, securities entities (where subject to broadly similar regulation or where securities activities are deemed banking activities) and other financial entities should generally be fully consolidated. Consequently, the requirements are applied on a fully consolidated basis. Furthermore, some supervisory authorities extend the consolidation requirement to affiliated ancillary service undertakings or apply the requirements at every tier within the group on a sub-consolidated basis which generally only is the case in cross border relatedness to third countries or where within a wider group context a banking group is located in another Member State than the parent undertaking.

80. The competent authorities may also require consolidation where an institution exercises a significant influence over one or more institutions or financial institutions, but without holding a participation or other capital ties in these institutions.

81. The Basel approach as spelled out by the CRD is primarily focused on the fulfillment of the requirements on a stand-alone (i.e. solo) basis and so institutions (including investment firms) in the European Union generally have to comply with the requirements on an individual as well as on a consolidated basis.

82. The competent authorities may, however, waive the requirements on an individual basis to any subsidiary of an institution, where both the subsidiary and the institution are subject to authorisation and supervision by the Member State concerned, and the subsidiary is included in the supervision on a consolidated basis of the institution which is the parent undertaking, and certain conditions are all satisfied, in order to ensure that own funds are distributed adequately among the parent undertaking and the subsidiaries. An example is where, in the view of the responsible supervisor, there is no current or foreseen material practical or

legal impediment to the prompt transfer of own funds or repayment of liabilities by its parent undertaking.

83. Where any majority-owned securities and other financial subsidiaries are not consolidated for capital purposes, all equity and other regulatory capital investments in those entities attributable to the group are deducted, and the assets and liabilities, as well as third-party capital investments in the subsidiary will be removed from the bank's balance sheet. Supervisors have to ensure that the entity that is not consolidated, and for which the capital investment is deducted, itself meets regulatory capital requirements. Supervisors will monitor actions taken by the subsidiary to correct any capital shortfall and, if it is not corrected in a timely manner, the shortfall will also be deducted from the parent bank's capital.

84. Significant minority investments in banking, securities and other financial entities, where control does not exist, will be excluded from the banking group's capital by deduction of the equity and other regulatory investments. Alternatively, such investments might be, under certain conditions, consolidated on a pro rata basis.[30]

85. An exemption for non-material subsidiaries exists whereby a subsidiary institution, financial institution or ancillary services undertaking need not to be included in the consolidation where the total amount of assets and off-balance sheet items of the undertaking concerned is less than the smaller of the following two amounts:

- (a) EUR 10 million;
- (b) 1 % of the total amount of assets and off-balance sheet items of the parent undertaking or the undertaking that holds the participation.

[30] For example, pro rata consolidation may be appropriate for joint ventures or where the supervisor is satisfied that the parent is legally or de facto expected to support the entity on a proportionate basis only and the other significant shareholders have the means and the willingness to proportionately support it. The threshold above which minority investments will be deemed significant and thus be either deducted or consolidated on a pro-rata basis is determined by national accounting and/or regulatory practices. The relevant threshold for pro-rata inclusion in the European Union is defined as equity interests between 20% and 50%.

5.2.2 Net capital approaches

86. In contrast to the Basel consolidation approach, the aim of the NCR is to ensure that the stand-alone entity can be unwound (self-liquidate) in an orderly fashion, should it be failing, without any losses by customers and creditors, and without the need to seek capital from its holding company (which may have already failed), other affiliates or the government. In some NCR jurisdictions, the supervisor of the intermediary does not supervise the holding/parent company. Under such circumstances, there is generally no waiver of the capital requirements imposed on the broker-dealer subsidiary.

87. With this in mind, net capital approaches adopt a different approach to oversee the risks to regulated entities within groups. In addition to imposing capital requirements on the regulated entity, net capital approaches take different steps to identify and address the risks in unregulated or overseas affiliates which likely to have a material impact on the regulated entities, such as operating a risk assessment programme to collect information on material affiliates, increasing the net capital requirement of regulated entities and requiring regulated entity to capitalise the net liabilities of its subsidiary.

U.S. SEC

88. The SEC does not regulate or impose capital requirements on the holding company of any registered broker-dealer. However, most of the largest U.S. broker-dealers are subsidiaries of U.S. *bank* holding companies, and such domestic holding companies are subject to capital requirements and consolidated supervision of the Federal Reserve Board or non-domestic banking regulators. Other large broker-dealers in the U.S. are part of non-U.S. based holding companies, which are subject to consolidated supervision by the home jurisdiction.

89. In addition, the SEC operates two programs that monitor risks in broker-dealer affiliates: the ANC broker-dealer program and the risk assessment program. Under both programs, the SEC monitors risks in unregulated or overseas affiliates. As a condition to participating in the ANC program, the broker-dealer's holding company must agree to provide the SEC with information regarding the activities

of the broker-dealer's affiliates. Currently, there are six ANC broker-dealers and 300 broker-dealers in the risk assessment program.

90. Under the risk assessment program, the SEC monitors the financial and securities activities of each affiliate of a registered broker-dealer whose business activities are reasonably likely to have a material impact on the financial and operational condition of the registered broker-dealer. Such affiliates are known as "*Material Associated Persons*" (MAP).

91. Under the ANC and the risk assessment programs firms are required to provide, periodically, certain information to the SEC, including an organisational chart, descriptions of their financing, capital adequacy, risk management and other policies, procedures or systems maintained by the broker-dealer, a description of any material pending legal or arbitration proceeding, quarterly consolidated and consolidating financial statements of the broker-dealer and its ultimate holding company, and quarterly aggregate on and off-balance sheet securities and financial instrument positions and other information.

92. If the Commission concludes that it has concerns regarding the financial or operational condition of a broker-dealer as a result of adverse market conditions or based on the reports provided to the Commission, the Commission may require the broker-dealer to provide additional information and will take action to mitigate these risks if they are likely to impact the financial health of the registered broker-dealer. For example, the SEC may require the broker-dealer to take steps that lead to an increase in its net capital.

U.S. CFTC

93. The CFTC's authority extends only to the regulated entity, the FCM. However, under the CFTC's NCR approach, FCMs must consolidate the assets and liabilities of any subsidiary or affiliate, for which it guarantees, endorses or assumes directly or indirectly obligations or liabilities. No capital benefit may result from such consolidation to meet the FCM's minimum capital requirement, and a capital benefit to increase the FCM's stated excess capital may only be recognised under limited circumstances. In addition, the CFTC has a risk assessment rule similar to the SEC's, and FCMs are required to identify material

affiliates (MAPs) which could present risk to the FCM despite not being directly or indirectly guaranteed. CFTC rules also require registered FCMs to maintain certain records concerning the financial activities of such material affiliates, to file certain information with the Commission on an annual and quarterly basis and to provide additional information to the Commission upon the occurrence of specified events.

94. Whether an affiliate of an FCM is a MAP involves consideration of all aspects of the relationship between the entities, specifically including its legal relationship with the FCM, its financial and operational interdependence, its level of market or credit risk, and its access and authority to cause a withdrawal of capital from the FCM.

Hong Kong SFC

95. The prudential requirements apply to licenced corporations on an individual basis only and do not apply to the holding company or subsidiary of a licensed corporation unless it is also a licensed corporation itself. Although there is no consolidated prudential requirement, a licensed corporation is required to include in its ranking liabilities any amount by which the subsidiary has a total net liabilities balance sheet position and deduct from its liquid capital any amount of receivables from group companies. In this way, the SFC's prudential requirement is quantifying and incorporating in the licensed entity's capital requirement the possible impact of group entities.

96. Apart from the above, the SFC also supervises the associated company of the licensed corporation which receives and holds, in Hong Kong, client assets of a licensed corporation. Such associated entities are subject to relevant regulations, such as on the treatment of client assets, and required to submit to the SFC information on their financials and analysis of client assets held.

Canada

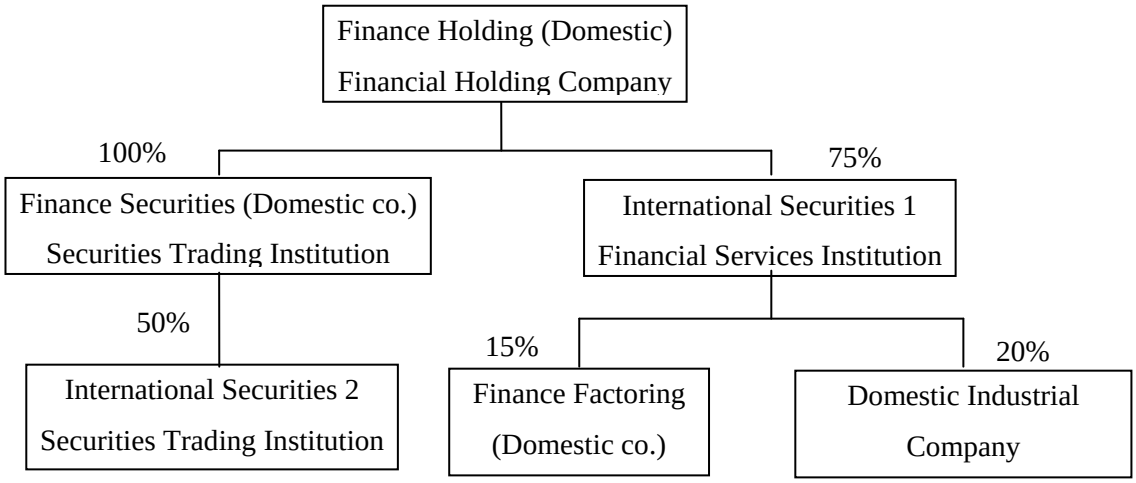
97. Canadian authorities permit dealers who are members of the Investment Industry Regulatory Organization of Canada (IIROC) to produce a consolidated capital requirement, but only under very specific conditions. The financial position of a dealer member may, with prior approval, be consolidated with another IIROC

related company provided that each dealer member has guaranteed the obligations of the other dealer member and that a cross-guarantee agreement between the related companies was signed and obtained. IIROC defines a related company as an entity having at least a 20% common ownership with another IIROC dealer member. Dealer members are not authorised to consolidate any other entity that is not considered to be a related company and which would not be an IIROC dealer member. In terms of capital requirements, in computing the Risk Adjusted Capital, only one deduction for the minimum capital of $250,000 will be deducted for the consolidated group of dealer members.

5.3 Financial group case study

98. This section presents a worked numerical example to illustrate how different jurisdictions' prudential frameworks treat corporate groups and the capital adequacy implications thereof. The example is based on the following stylised financial group. Detailed balance sheets for all group entities are in appendix 1.

Figure 4: Stylised financial group for the group case study



99. In relation to the stylised group, IOSCO Committee 3 members were asked to answer the following 4 questions. The aim was to produce some comparative quantitative and qualitative information on the treatment of groups across numerous jurisdictions. The findings and comparative assessment form the remainder of this section.

1) Explain which entities you would regulate/supervise in the stylised group;
2) Explain which entities are included, and which entities are excluded for regulatory consolidation purposes;
3) For each supervised entity calculate the capital requirements and capital ratios on a solo basis; and
4) Calculate the capital adequacy for the group.

5.3.1 Question 1: Which entities are regulated/supervised in the stylised group?

100. *Table 3* illustrates how selected IOSCO member jurisdictions regulate and supervise the entities in the stylised group. This highlights that securities regulators do not generally supervise beyond those entities that undertake securities trading or financial instrument type activities (see section 4.1 for a fuller description of the scope of activities in selected jurisdictions)

101. *Table 3* also highlights that securities regulators generally do not conduct consolidated supervision beyond the licensed/registered entities. The contrast here is between the "*Basel"* approach, where capital requirements are determined on a "*consolidated basis*," and the Net Capital approaches where capital requirements are only applicable to the registered entity, and not to any of its subsidiaries or affiliates. Thus, the assets and liabilities of broker-dealer subsidiaries and affiliates are generally not consolidated for net capital purposes with those of the broker-dealer. There are exceptions, for example, the SEC/CFTC will require a broker-dealer or FCM that guarantees, endorses or assumes (directly or indirectly) the obligations or liabilities of any subsidiary or affiliate to consolidate in a single computation the assets and liabilities of such subsidiary or affiliate when calculating its net capital.

5.3.2 Question 2: Which entities are included, and which entities are excluded for regulatory consolidation purposes?

102. *Table 4* below illustrates, for the two jurisdictions that require consolidated capital adequacy calculations, which legal entities are included in the consolidation. As both jurisdictions' consolidated approaches are based on the Basel approach, the same entities are included and excluded. Those two

jurisdictions would include the "*Finance Factoring*" company in the consolidation, except for the fact that, in the example, the equity holding is less than 20%.

103. In spite of the majority of securities regulators not requiring consolidated capital adequacy calculations, securities regulators may require additional information to obtain a more complete understanding of the impact that other group entities have on the licensed/registered entity. For example, in the stylised financial group, two entities would be considered registered broker dealers in the United States, *i.e.*, Finance Securities (domestic co.) (BD-1) and International Securities 2 (BD-2), because both are "*securities trading institutions*" and are therefore presumed to be registered broker-dealers. Under the SEC regime, any of the other entities in the diagram could be considered MAPs of BD-1 and BD-2. This would depend on how material a financial risk they potentially pose to the broker-dealers and decided on a case-by-case basis.

5.3.3 Question 3: For each supervised entity calculate the capital requirements and capital ratios on a solo basis

104. This proved particularly challenging; and the exercise in itself illustrates how varied the underlying components, assumptions and calculation methodologies are in each jurisdiction, and how difficult it is, therefore, to try and compare the approaches using a simple, but still comprehensive stylised example. The key challenge was that Committee 3 members needed to make important assumptions in order to arrive at their final numbers; and it was not possible to verify that all members applied the same assumptions. Examples of assumptions that had to be made include: whether the cash is held in a "*recognised bank*," whether the sovereign bonds are U.S. or non-U.S., and the term of those bonds. In some instances, there was insufficient information to derive a calculation.

Table 3 – Treatment of group entities in different member jurisdictions

	Group entity	Finance Holding (Domestic)	Finance Securities (Domestic co.)	International Securities 1	International Securities 2	Finance Factoring (Domestic co.)	Domestic Industrial Company	Consolidated capital adequacy undertaken?
Country/Jurisdiction								
Australia		×	✓ NCR or Basel	✓[2] NCR or Basel	✓[2] NCR or Basel	×	×	No
Canada		×	✓ NCR	✓[2] NCR	✓[2] NCR	×	×	No
China		×	✓ NCR	×[1]	×[1]	×	×	No
EU		×	✓ Basel	✓[2]Basel	✓[2]Basel	×	×	Yes
Hong Kong		×	✓ NCR	✓[2]NCR	✓[2]NCR	×	×	No
India		×	✓ NCR	×[1]	×[1]	×	×	No
Japan		✓ Basel	✓ NCR	✓[2]Basel	✓[2]Basel	✓[3]	×	Yes
Korea		✓ Basel	✓ NCR	✓ Basel	✓ NCR	✓ Basel	×	No
Mexico		×	✓ NCR	✓[2]NCR	✓[2]NCR	×	×	No
Singapore		×	✓ NCR or Basel[4]	×[5]	×[5]	×	×	No
US - CFTC		×	✓ NCR	✓[2]NCR	✓[2]NCR	×	×	No
US - SEC		×	✓ NCR	✓[2]NCR	✓[2]NCR	×	×	No

✓ Entity regulated and supervised by securities regulator

× Entity not regulated and supervised by securities regulator

NCR Net Capital Rule style approach applied in calculating capital adequacy

Basel Basel style approach applied in calculating capital adequacy

1 Only domestic entities can be licensed to trade in the domestic jurisdiction.

2 Entity must be licensed with the domestic regulator and can then trade in domestic jurisdiction –then the entity will be subject to the prudential requirements in that jurisdiction. For example, In the United States, most "*brokers*" and "*dealers*" must register with the SEC and join a "*self-regulatory organisation*," or SRO. Brokers are generally defined as "*any person engaged in the business of effecting transactions in securities for the account of others*," while a "*dealer*" is generally defined as "*any person engaged in the business of buying and selling securities for his own account, through a broker or otherwise*." Such brokers or dealers must comply, as appropriate, with the NCR.

3 Supervised by alternative supervisory authority in member jurisdiction.

4 Depending on whether the entity was a member of an approved exchange or Designated Clearing House in Singapore, or not a member. As mentioned in footnote 6 to Table 1, in April 2013, MAS introduced revisions to the regulatory capital framework for holders of CMS licences. Under the revised framework, the Risk-based Capital requirement will be applied to all CMS licensees and the Adjusted Net Capital requirement will be removed. The new requirements are set out in the revised Securities and Futures (Financial and Margin Requirements for Holders of Capital Markets Services Licences) Regulation and MAS Notice SFA 04-N13 on Risk Based Capital Adequacy Requirements for holders of Capital Market Service licences.

5 Assuming that International Securities 1 and International Securities 2 do not have physical presence in Singapore and do not target or solicit business from customers in Singapore.

Table 4: Which entities are included, and which entities are excluded for regulatory consolidation purposes?

	Group entity	Finance Holding (Domestic)	Finance Securities (Domestic co.	International Securities 1	International Securities 2	Finance Factoring (Domestic co.)	Domestic Industrial Company
Country/jurisdiction							
EU		✓	✓	✓	✓	×[1]	×
Japan		✓	✓	✓	✓	×[1]	×

✓ Included in consolidation capital adequacy calculation

× Excluded from consolidation capital adequacy calculation

[1] Excluded because shareholding quota is less than 20%

5.3.4 Question 4: Calculate the capital adequacy for the group.

105. Table 5 illustrates the capital adequacy for the consolidated entity for those jurisdictions that supplied this information. Even though all three countries listed calculate consolidated requirements using the CRD, the resulting values vary. The most compelling argument why is most likely to be due to the application of national discretions.

Table 5: Consolidated capital adequacy ratio for the group[31]

France	25.3%
Germany	25.2%
UK	18.6%

5.4Conclusion on dealing with risks posed by group entities

106. It is important to take account of the risks to regulated entities within groups that are posed by group entities, to help ensure that the prudential risks of the regulated entity are suitably capitalised.

107. In general, supervisory authorities under both the CRD and the NCR supervise securities firms at the highest regulated entity level that is covered by the supervisory authority's regulatory scope. Approaches differ, however, with respect to the regulation and supervision more generally of all intermediaries in a group. The Basel approach requires consolidated and solo capital adequacy calculations for firms, although there are exemptions from consolidation for immaterial group entities. In contrast, net capital approaches do not consolidate for prudential purposes.[32] Net capital approaches include, however, oversight programmes whereby broker-dealers must collect information on affiliates that pose material risks to the regulated entity. Adjustments may be made to a broker-dealer's net capital if there are considerable concerns that financial problems of a material affiliate may spillover to the broker-dealer.

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31 Please note that these calculations are based on CRD III legislation.

32 With the exception of a very specific scenario in Canada

6. Constituents of Regulatory capital

108. This section discusses what constitutes regulatory capital resources and the issues that are relevant for determining a firm's regulatory capital resources. The section will, therefore, compare common principles in determining regulatory capital and analyse in detail aspects of the capital framework such as restrictions on the amount of allowable subordinated debt. The section headings have been chosen so as to structure the section in the most appropriate manner for a comparative analysis. This section includes numerical representations, where feasible, to enhance the comparative analysis.

6.1Capital Adequacy Ratios

6.1.1 Capital Requirements Directive

109. Under CRD IV there are three tiers of regulatory capital:

- Common Equity Tier 1 Capital (CET 1), which must be the predominant form of capital
- Tier 1 capital (including hybrid instruments);
- Tier 2 (perpetual and longer-dated subordinated debt instruments, revaluation reserves)

110. CRD IV is going to strengthen the *quantity* and *quality* of the capital base compared to the previous directive.

111. CRD IV tightens the *quality* of capital resources required to meet capital requirements throughout the capital structure. For example, forms of capital eligible for the highest tier of capital (referred to as "*Common Equity Tier 1*") are now restricted to Common Equity and retained earnings. Furthermore, CRD IV will remove the possibility to use shorter-term subordinated debt to meet capital requirements. Figure 5 illustrates the CRR definition of capital resources that underpins a firm's capital adequacy calculation.

112. The *quantity* of capital is enhanced through greater amounts of top quality capital (that is, Common Equity Tier 1 capital) being necessary to meet capital requirements. This Common Equity Tier 1 capital must comprise at least 57%

of total capital (excluding the Capital Conservation Buffer)[33] [34] and 67% of total capital when the Capital Conservation Buffer is included.[35] In addition, the total amount of capital that must be held rises from 8% in Basel II to at least 10.5% in Basel III, rising even higher (potentially considerably so) depending on whether a firm is subject to further new capital buffers.[36] Beside the capital conservation buffer, other buffers that CRDIV introduces and firms may be subject to include a Countercyclical Capital Buffer, a systemic risk buffer, a buffer for global systemically institutions (G-SIIs) and a buffer for other systemically important institutions (O-SIIs) (this category covering institutions that are systemic at domestic or regional level).

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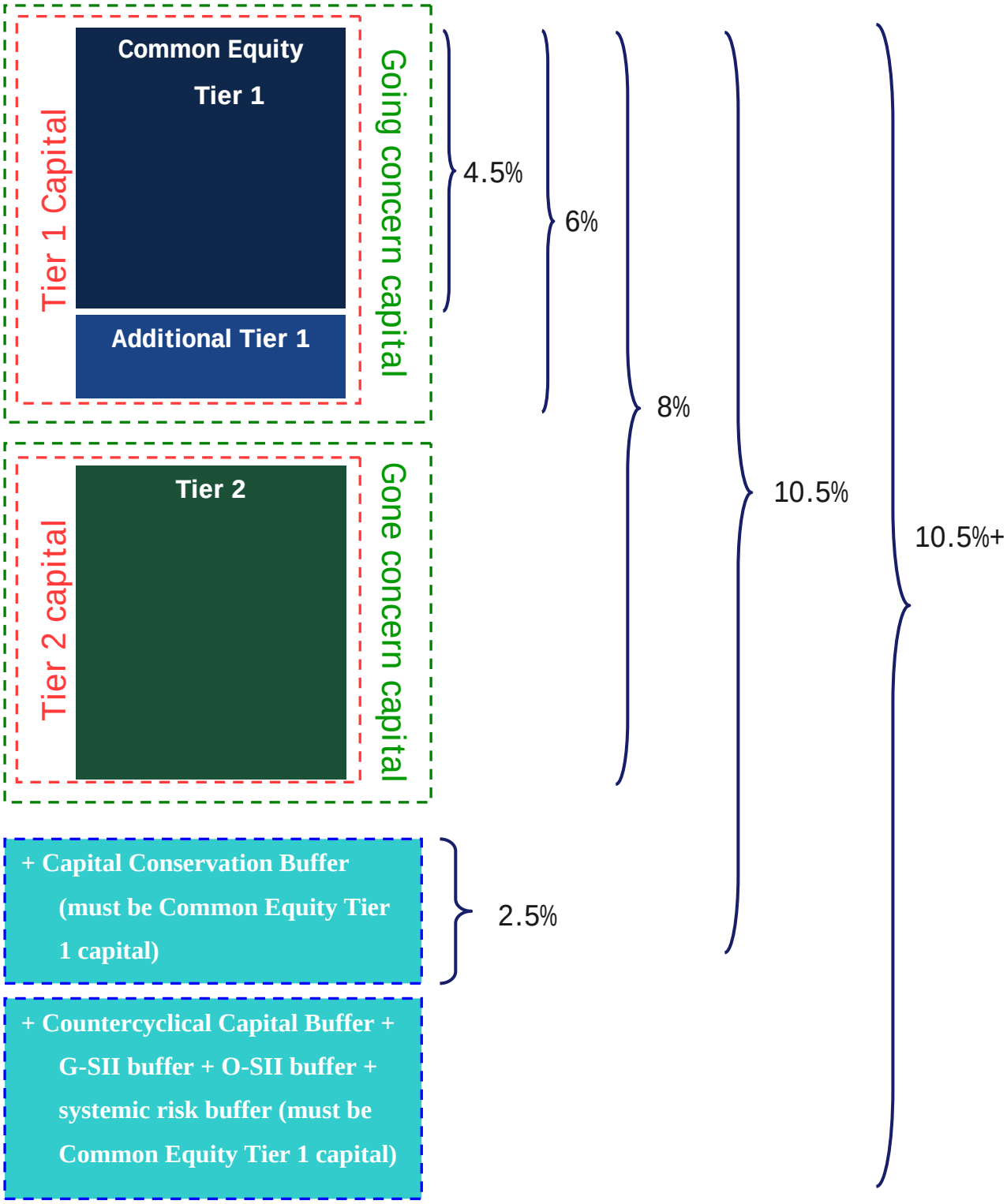
33 Calculated as 4.5% (Common Equity Tier 1 capital) divided by 8% (Total capital).

34 The Turner Review (March 2009) explains how under Basel II firms could hold as little as 25% of total capital in the form of Common Equity to meet capital requirements. *See* http://www.fsa.gov.uk/pubs/other/turner_review.pdf

35 Calculated as 7% (Common Equity Tier 1 capital + Capital Conservation Buffer) divided by 10.5% (Total capital + Capital Conservation Buffer).

36 See Chapter 4 of the CRD on Capital Buffers. Note, not all investment firms types are subject to these buffer requirements.

Figure 5: Capital adequacy ratios under CRD IV (% of capital to risk-weighted assets ratios)



6.1.2 Net Capital Approaches

SEC

113. Section 3.2 outlines that the capital requirement for a broker-dealer is based on one of two methods, the "*basic*" or the "*alternative*" method.

114. The "*basic method*" compares net capital to most of its unsecured (aggregate) indebtedness. The first ratio provides that a broker-dealer shall not permit its *aggregate indebtedness* to all other persons to exceed 1500% of its net capital (*i.e.*, a 15-to-1 aggregate indebtedness to net capital requirement).[37] This results in a "*cushion*" to help ensure repayment of all debt.

115. The "*alternative method*" instead measures the liquid assets against obligations owed by customers to the broker-dealer. This second financial ratio provides that a broker-dealer shall not permit its net capital to be less than *2% of aggregate customer debit items* (*i.e.*, customer or related customer obligations to the broker-dealer).[38] The higher amount – fixed-dollar or ratio – is the broker-dealer's required minimum.

116. For most broker-dealers, the Required Net Capital is the *greater* of a fixed-dollar amount (ranging from $5000 - $250,000) or an amount computed using one of two financial ratio methods explained above.[39]

117. Each of the six ANC broker-dealers uses the *aggregate customer debit item* method of computing minimum net capital.[40] In addition, ANC broker-dealers

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37 Put another way, the broker-dealer must maintain, at a minimum, an amount of net capital equal to 1/15th (or 6.67%) of its aggregate indebtedness. Smaller broker-dealers that do not carry customer accounts use this financial ratio.

38 Customer debit items – computed pursuant to Rule 15c3-3 – primarily consist of margin loans to customers and securities borrowed by the broker-dealer to effectuate deliveries of securities sold short by customers. *See* 17 CFR 240.15c3-3 and 17 CFR 240.15c3-3a. Larger broker-dealers that maintain custody of customer securities and cash use this ratio.

39 The fixed-dollar amounts are based on the type of securities business the broker-dealer engages in. For example, a broker-dealer that carries customer accounts has a fixed-dollar requirement of $250,000; a broker-dealer that does not carry customer accounts but engages in proprietary securities trading (defined as more than ten trades a year) has a fixed-dollar amount of $100,000; and a broker-dealer that does not carry accounts for customers or otherwise receive or hold securities and cash for customers, and does not engage in proprietary trading activities, has a fixed-dollar amount of $5,000.

are required to maintain minimum fixed-dollar amounts of regulatory capital equal to $1 billion in tentative net capital and $500 million in net capital.[41] Consequently, their minimum net capital requirement is the greater of $500 million or the amount equaling 2% of customer debits items. As indicated above regarding "*early warning*" notification requirements, ANC broker-dealers must in particular provide notice when their tentative net capital falls below $5 billion (the minimum requirement is $1 billion). These "*early warning*" thresholds act as *de facto* minimum requirements since broker-dealers seek to maintain sufficient levels of regulatory capital to avoid the necessity of providing these notices and the consequences of falling below the early warning levels.

118. Required Net Capital (RNC) can be expressed formulaically as shown in Table 6 below:

Table 6: Required Net Capital for different firm types

RNC for <u>non-carrying</u> firms[42] is the greater of:	RNC for non-ANC <u>carrying</u> firms is the greater of:	RNC for ANC firms is where:
• 0.0667AI, or: • $5000 (introducing brokers); or • $25,000; [43] or • $50,000; [44] or	• 250,000[46] or, at the election of the firm, either: o 0.0667AI; or	• NC is the greater of: o $500,000,000: o or 0.02ADI; or o TNC of $1

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40 *See* http://www.sec.gov/divisions/marketreg/bdriskoffice.htm#anc. Currently the six broker-dealers authorised to compute net capital under the ANC method include Barclays Capital Inc., Citigroup Global Markets, Inc., Goldman, Sachs & Co., J.P. Morgan Securities Inc., Merrill Lynch, Pierce, Fenner & Smith Incorporated, and Morgan Stanley & Co., Inc.

41 This is because these broker-dealers (unlike the BD-Lites) are allowed to operate as full-service broker-dealers engaging in all aspects of the securities markets and holding funds and securities for customers.

42 Such firms do not "*carry*" any customer accounts. In other words, the firm does not carry customer or broker or dealer accounts and receive or hold funds or securities for those persons. *See* Section 240.15c3-1(a)(2)(i).

43 If the firm acts as a broker or dealer with respect to the purchase, sale and redemption of redeemable shares of registered investment companies or of interests or participations in an insurance company separate account directly from or to the issuer on other than a subscription way basis. *See* Section 240.15c3-1(a)(2)(v).

44 If the broker or dealer introduces transactions and accounts of customers or other brokers or dealers to another registered broker or dealer that carries such accounts on a fully disclosed

• $100,000 (non-carrying dealers).[45]	o 0.02ADI.	billion [but TNC of $5 billion "*early warning threshold*" is the functional minimum]

Definitions:

RC = Regulatory Capital

NC = Net Capital = RC (allowable ownership equity + subordinated liabilities) **–** deductions (*e.g.*, illiquid assets, haircuts, unsecured receivables and operational charges).

TNC = Tentative Net Capital = NC + haircuts + certain unsecured receivables.

RNC = Required NC, *i.e.*, the capital requirements are met where the properly calculated NC amount is greater than the stipulated comparable measures.

ADI = Aggregate Debit Items = customer or related customer obligations to the broker-dealer.[47]

AI = Aggregate Indebtedness = (*i.e.*, liabilities + drafts for immediate credit + market value of securities borrowed or which no equivalent is paid or credited – adjustment based on deposits in Special Reserve Bank Accounts).

6.2Comparing the definition of capital

119. Table 7 summarises some of the forms of capital that are eligible capital resources for a number of jurisdictions. Generally, the definition of capital constitutes owners' equity (share capital, or the equivalent for non-joint stock companies, retained earnings and other reserves), types of preference shares, plus subordinated debt/loans.

120. It was not easy to ascertain from survey responses whether certain components of owners' capital are included in core capital, for example unaudited year-to-date profits and losses, and what types of reserves are allowed or not. The

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basis, and if the broker or dealer receives but does not hold customer or other broker or dealer securities. *See* Section 240.15c3-1(a)(2)(IV).

46 Except for ANC and "*BD lite*" (OTC Derivatives) firms.

45 For the purposes of this section, the term "*dealer*" includes: (A) Any broker or dealer that endorses or writes options otherwise than on a registered national securities exchange or a facility of a registered national securities association; and(B) Any broker or dealer that effects more than ten transactions in any one calendar year for its own investment account. *See* Section 240.15c3-1(a)(2)(iii).

47 Customer debit items – computed pursuant to Rule 15c3-3 – primarily consist of margin loans to customers and securities borrowed by the broker-dealer to effectuate deliveries of securities sold short by customers. *See* 17 CFR 240.15c3-3 and 17 CFR 240.15c3-3a. Larger broker-dealers that maintain custody of customer securities and cash use this ratio.

amounts of core capital could vary across jurisdictions depending on the approaches adopted for issues such as these.

121. A tiered structure reflecting the quality of different forms of capital is common across jurisdictions, with owners' capital viewed as the best form of capital to absorb losses.

6.2.1 Restrictions on allowable capital

122. Subordinated debt is commonly accepted as lower quality regulatory capital with instrument features such as the debt must be subordinated to all other debt claims being necessary to qualify. Most jurisdictions currently place restrictions on the amount of subordinated debt that qualifies as capital. These restrictions can take two forms:

- The features of the subordinated debt instrument (for example, initial maturity)
- The amount of subordinated debt calculated as a percentage of the amount of higher forms of capital

123. It is these restrictions on what constitutes allowable subordinated debt that can vary considerably from jurisdiction to jurisdiction.

Maturity of subordinated debt

124. The removal of Tier 3 subordinated debt under CRD IV means that subordinated debt will have to have an original maturity of at least 5 years to be allowable capital resources. The amount of allowable subordinated debt gradually reduces in the last five years to maturity. In contrast, the SEC's NCR specifies a requirement of one year; the CFTC requires allowable subordinate debt to have an initial maturity of at least three years and the remaining term cannot be less than 12 months. The SFC requires allowable subordinated loans to have an initial maturity of at least 2 years.

Ratio of subordinated debt to other forms of capital

125. The SEC's key restriction on allowable capital is that subordinated debt cannot exceed 70% of its debt-equity total (which equals subordinated debt plus

capital).[48] Similarly, the CFTC requires that a FCM has at least 30% of its total capital as equity capital. The current CRD text permits subordinated debt to be 100% of the total of Tier 1 capital. Once CRD IV has been introduced the percentage of allowable subordinated debt will disappear because, under the new framework, firms must comply with explicit minimum requirements for CET 1, Tier 1 and Total Capital, which implicitly ensures that the capital structure of a firm cannot unduly rely on lower quality capital. Moreover, by looking at all three ratios together, the capital structure is transparent to external stakeholders. A limiting percentage of allowable subordinated debt will only be applied for the determination of the limits of large exposures and investments outside the financial sector; the so-called "*eligible capital*" may comprise Tier 2 capital up to 33% of Tier 1 capital. The SFC requires that subordinated debt cannot exceed 100% of equity capital. It appears to be the case that Canadian authorities have no restrictions on the amount of subordinated debt to equity capital, whilst the regulation in Australia permits approved subordinated debt to be a maximum of 50% of core capital.

[48] See Rule 15c3-1(d).

Table 7: Components of capital under CRD IV and selected net capital approaches[49]

CRD IV	SEC and CFTC	FRR (SFC)	Australia
Common Equity Tier 1 For example, instruments ranking as the highest form of capital, such as: **ordinary shares or equivalent for non-joint stock companies**; **share premium accounts**; **retained earnings**; **other reserves**; **Additional Tier 1** Examples are: **preference shares (including related share premium);** and **hybrid instruments**. **Tier 2** Examples are: **Perpetual and longer-dated (at least five years to maturity) sub debt**	**Common stock** **Certain preferred stock** **Retained earnings** **LLC interests** **Subordinated debt**	Paid-up share capital Retained earnings and reserves Approved subordinated loans and approved redeemable shares which have not yet been redeemed	*Core capital* includes: **owner's capital** and **non-cumulative preference shares.** *Liquid capital* includes: **core capital**; **cumulative preference shares;** and **approved subordinated debt**.

[49] This is prior to any deductions from capital, which are discussed in section 7.2 of the report.

6.3Double gearing (aka "double leverage" or "cross holdings of capital")

126. "*Double gearing*" (known in the U.S. as "*double leverage*" or in the UK as "*cross holdings of capital*") usually refers to a situation where a holding company raises debt and down-streams it as equity capital, or subordinated debt, to a subsidiary, *i.e.*, it is the use of debt by both the parent company and the subsidiary, in combination with the company's equity capital, to finance the assets of the subsidiary. Double gearing, if its potential effects were not mitigated (e.g., as described below) could pose a threat to the financial position of regulated entities due to the potential for the rapid transmission of problems from one institution to another.

127. Both net capital approaches and the CRD include rules that are designed to prevent double gearing.

128. In the CRD, the main obstacles to double-gearing are:

- Mandatory deduction at 100% of capital instruments (debt or equity) issued by other financial institutions where the investment firm's holding exceeds 10% of the other financial institution's CET 1 instruments (significant holding).
- Mandatory deduction of the overshooting amount of non-significant holdings of capital instruments (debt or equity) issued by other financial institutions where the sum of the investment firm's holding exceeds 10% of its CET 1 own funds[50] (non-significant holdings).

[50] The deduction of material holdings in financial institutions is the general rule. The CRD includes some discretion for this rule to be waived, the main exception being for material holdings that are in the trading book. In some limited circumstances, therefore, a firm might be able to hold 10% of another firm's capital (or have an investment in that other firm equal to 10% of its own capital base), which need not be deducted if it is held in the trading book. This would then be subject to a position risk requirement, and may also generate a large exposure requirement.

- The non-significant holdings of capital instruments issued by other financial institutions that are not held in the trading book and are below the 10% threshold are risk-weighted – usually 1.6%[51].
- Within groups, consolidated supervision to the level of the highest EEA parent.

129. In the U.S., the issue of double gearing is generally not a concern in the securities sector. In particular, although the net capital rule does not apply to non-registered affiliates of broker--dealers (including the parents), the effects of any double leverage are minimised because the net capital rule requires, among other things, that (i) a broker-dealer, which makes an unsecured loan to, or an investment in, its holding company parent, affiliates, or subsidiaries, deduct the full amount of the loan or investment when computing net capital (100% haircut); (ii) a broker-dealer notify the SEC of large capital withdrawals made to benefit affiliates, subsidiaries and other persons related to the broker-dealer; and the SEC has the authority to halt certain capital withdrawals on a temporary basis in certain situations; and (iii) a broker-dealer consolidate, in its net capital computation, the assets and liabilities of any subsidiary or affiliate for which the broker-dealer guarantees, endorses, or assumes liabilities.[52]. However, dually registered securities broker-dealers and FCMs may use the same capital to meet each of their respective SEC and CFTC minimum capital requirements. If such entities were legally separate, they would have to each hold the minimum requirement applicable to each respective regulated business (securities brokerage and futures intermediation).

130. Other examples of jurisdictions tackling double-gearing are:

- the SFC does not allow firms to include in their liquid assets, receivables, debts and loans owed by group companies, which do not arise in the course of the regulated business conducted by the firm. Equally, investments in unlisted shares in another licensed corporation cannot be

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51 Calculated as 8% of the investment multiplied by a counterparty risk weighting. Banks and investment firms attract a counterparty risk weight of 20%. Any holding in any other type of financial company (e.g. insurance), or an unregulated holding company of a banking group or securities group, would be 100% counterparty risk weighted.

52 *See also* Exchange Act Rule 15c3-1c (Appendix C).

included in the liquid assets of the firm. This has the same effect of deducting these items from the capital of the firm for the purpose of calculating its liquid capital; and

- In Australia and Canada cross-holding/shared capital are excluded in the calculation of capital.

Conclusions on definition of capital

131. Irrespective of the prudential approach used in different jurisdictions very similar principles are applied in recognising capital resources. Paid-in owners' capital (share capital and equivalent for non-joint stock companies) and retained earnings form the primary source of capital resources due to their permanence and ability to absorb losses followed by subordinated debt, with the latter currently subject to regulatory capital limits and restrictions on the type of subordinated debt that is allowable capital. For example, longer-term subordinated debt is preferred, because it has permanence qualities similar to equity capital.

132. The CRD and net capital approaches do differ in their recognition of what qualifies as allowable subordinated debt. Shorter-term subordinated debt enables securities firms (as opposed to credit institutions) to meet their fluctuating capital requirements because subordinated debt/loans permits securities firms capital flexibility. As mentioned previously, CRD IV/CRR will remove the possibility to use shorter-term subordinated debt.

133. Jurisdictions in general have approaches to deal with the possibility of cross-holdings of capital between different financial institutions.

7. Capital requirements

134. This section examines the key risks that capital adequacy frameworks cover, such as credit risk, market risk and counterparty risk, when determining securities firms' capital requirements and how those frameworks calculate the capital requirements attached to those risks. This section includes numerical representations, where feasible, to enhance the comparative analysis.

135. This section could be presented on a type of risk basis or type of position basis; it is believed that a type of position basis is a more meaningful approach, because it allows an appropriate comparative analysis.

7.1Minimum or Base Capital Requirement

136. All jurisdictions have a floor to the amount of capital that a market intermediary must hold, *i.e.*, a base capital requirement. The levels can vary considerably from jurisdiction to jurisdiction, and even within jurisdictions. The reasons for base capital requirements varying, even within jurisdictions are, for example:

- Whether the firm holds client assets or not;
- Whether it is an introducer or not; and
- The type of securities business the entity undertakes, for example, whether the firm trades on their own account or not;

137. There may be a legitimate question as to whether variations in the size of minimum capital requirements across jurisdictions create regulatory arbitrage opportunities. Further work would have to be undertaken to compare the size of minimum capital requirements for comparable activities across jurisdictions.

138. It appears generally to be the case that, across jurisdictions, primarily owners' paid-up capital, retained earnings and other reserves qualify as base capital.

7.2Non-Securities Assets (Deductions from capital)

7.2.1 Capital Requirements Directive

139. As part of the drive to enhance the quality of the capital base, the proposed Capital Requirements Directive will generally apply deductions from capital at

the level of common equity or its equivalent in the case of non-joint stock companies.[53] The different types of deductions are:

- Goodwill and other intangible assets;
- Material holdings/significant investments in other financial institutions and non-significant investments, direct, indirect and synthetic (see section 6.3 on double gearing);
- Deferred tax assets that rely on future profitability;
- Losses of the current financial year; and
- Illiquid assets (including tangible fixed assets, holdings of securities which are not readily realisable, deposits which are not repayable within 90 days, loans or other amounts owed that are due to be repaid after 90 days, and physical stocks).[54]

140. In transitioning to CRD IV and the drive to apply deductions at the level of Common Equity Tier I, there will be, in line with Basel, transitional arrangements in place so that there is not a cliff-effect when CRD IV comes into force.

7.2.2 Net Capital approaches

141. Under the SEC approach, all illiquid assets not readily convertible to cash are generally not counted as part of net capital, and are, therefore, excluded from the net capital calculation (see Figure 2 on Page 15) This includes, among other things:

Fixed Assets and Prepaid Items, such as:

- Real estate;
- Furniture and fixtures;
- Exchange memberships;
- Prepaid rent;
- Insurance expenses;
- Goodwill;

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53 Prior to the introduction of CRD IV deductions are stipulated for each of the different tiers of capital.

54 Depending on the firm it will have to deduct both illiquid assets and material holdings, or one of material holdings or illiquid assets.

- Deferred tax assets; and
- Organisation expenses.

Certain Unsecured and Partly Secured Receivables, such as:

- Most unsecured advances and loans, including:
    - Deficits in customers' and non-customers' unsecured and partly secured notes; and
    - Most commissions receivable from other brokers or dealers.

142. SFC: Through prescribing what assets can be included in liquid assets, the FRR effectively require deductions of all the excluded assets, such as non-liquid assets or fixed assets, from a firm's capital in the calculation of its liquid capital. Examples of assets excluded are:

- Fixed assets;
- bank deposits which have a remaining maturity longer than 6 months;
- unlisted shares (including unlisted shares in any subsidiary or affiliates of the licensed corporation);
- suspended stocks;
- non-marketable or illiquid bonds;
- unrated bonds;
- receivables, debts or loans which do not arise in the course of the regulated business conducted by the licensed corporation;
- deposits or other surety maintained outside Hong Kong in order to obtain or maintain a licence, registration etc. of an overseas branch to carry on an activity which, if carried on in Hong Kong, would constitute a regulated activity, etc.

7.3Financing Transactions

143. All jurisdictions impose capital requirements to address risk related to financing transactions (i.e. credit/counterparty risk). Under CRD, the capital requirements are 8% of the counterparty risk-weighted amount. Under the standardised approach, the counterparty risk weight amount is derived by multiplying the exposure amount by a risk weight (which is based on the nature of the counterparty (government, financial institution etc.) and the external rating of

the counterparty. Risk weights vary from 0% for sovereigns to 150% for poor quality counterparties.

144. The SFC impose capital charges for credit /counterparty risks of securities financing transactions (such as overdue unsettled securities dealing transactions, securities margin financing, stock borrowing and lending/repos) and client margin shortfall in relation to dealing in futures, options and leveraged FX contracts. For securities financing transactions, the capital charge generally equals the net exposures to the counterparty after taking into account the market value of the underlying securities or collateral available for mitigating the credit risk (after applying a haircut in the case of collateral). For futures, options and leveraged FX contracts, the capital charge for client credit risk equals the margin shortfall amount. For OTC derivative contracts entered into by a licensed corporation, all positive mark-to-market value of the contract is subject to 100% capital charge.

145. The SFC also impose capital charge for concentration risk of client margin loans when the total margin loans due from a client or a group of related clients exceed 10% of the aggregate of all client margin loans.

146. The SEC imposes capital requirements to address risk related to financing transactions, which could take the form of stock loan or customer transactions, or repurchase agreements; it imposes a capital requirement based upon customer-related transactions via the "*aggregate debit items test*." Under this rule, firms must hold net capital equal to 2% of aggregate debit items. The main drivers of this number include collateralised (margin) lending to clients, and securities borrowed to support customer shorts. In particular, the charge depends on the degree to which the transaction is collateralised, the type of collateral and the amount of margin required. To the extent a receivable is under collateralised (or under margined), there will generally be a charge. In addition, most unsecured loans are subject to a 100% haircut.

7.4Position risk

7.4.1 Capital Requirements Directive

147. The CRD requires firms to calculate a market risk capital requirement (the position risk requirement (PRR)). This is made up of five additive components:

- Equity position risk requirement;
- Interest rate position risk requirement;
- Foreign exchange position risk requirement;
- Commodities position risk requirement; and
- Option position risk requirement.

148. The approach is roughly consistent in each component. For each relevant financial instrument, the firm must derive an exposure value (after appropriate netting) and multiply this by a risk-based percentage.[55] To calculate equity and interest rate position risk requirements, firms must calculate and sum together general market risk and specific market risk components. Following the financial crisis, CRD III firms are required to calculate interest rate risk for securitisation products using credit risk weights from the banking book.[56]

149. The risk-based percentages will vary from market risk type to market risk type and the external credit quality of the name underlying the instrument For example under specific interest rate risk the risk-based percentages vary from 0% for sovereign bonds with the highest external credit rating to 12% for sovereign bonds that have very poor external ratings. Under general market risk, additional factors such as the instrument coupon and maturity of the instrument are included.

7.4.2 NCR approaches

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55 For example, the specific risk risk-based percentages for interest rate risk products are in Article 336 of the CRR, and the general risk-based percentages for interest rate products are in Articles 339 and 340 of the CRR.

56 Previously, subject to supervisory approval, firms could calculate interest rate risk PRR for securitisation products using internal models.

U.S. SEC

150. The primary mechanism for setting capital requirements for market risk is a range of "*haircuts*" percentages on securities positions, which varies depending on the type of security. Generally, equities are subject to a haircut of 15% of market value. The haircut on debt securities varies by the type of debt instruments and the time to maturity (see Table 8 below). The haircuts, however, are between 0% and 9%. Securities that are not readily marketable are subject to a 100% haircut.

Table 8: Haircut percentages on securities positions under the NCR

Asset	**Deduction**
Government Securities	0-6%[57]
Municipals	0-7%[58]
Certificates of Deposit, Commercial Paper and Bankers Acceptances	0-1%[59]
Corporate Debt Obligations	2-9%[60]
All Other Securities	15-25%[61]

SFC

151. The FRR imposes capital charge for market risks of positions in securities, bonds and commodities through imposing a haircut to the amount which is determined with reference to the market value of the position. For shares the

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57 The final haircut will depend on the time to maturity, for example: 0% if less than 3 months, 3% if between 3-5 years, 6% if 25 years or greater.

58 The final haircut will depend on the time to maturity, for example: 0% if less than 30 days, 3% if between 2-3½ years, 7% if 20 years or greater.

59 This percentage applies to a time period of less than one year. The final haircut will depend on the time to maturity, for example: 0% if less than 30 days, ¼ of 1% if between 181-271 days; ½ of 1% if between 271 days and 1 year. If one year or greater to maturity, the deduction shall be on the higher of the long or short position and shall employ the percentages used for calculating Government Securities haircuts.

60 This percentage applies to nonconvertible debt securities with fixed interest and maturity dates. The final haircut will depend on the time to maturity, for example: 2% if less than 1 year, 6% if between 3-5 years, 9% if 25 years or greater.

61 The deduction will be 15% of the market value of the greater of the long or short positions. To the extent that the market value of the lesser of the long or short positions exceeds 25% of the market value of the greater of the long or short positions, the percentage deduction shall be 15% of the market value of the excess amount.

haircut percentage differs depending on where the shares are listed. For debt instruments the haircut percentages vary based on the nature of the issue, credit quality of the issuer/guarantor and term to maturity. The haircut is deducted from the market value of the liquid assets in case of long positions and is added to ranking liabilities in case of short positions).

152. The approach for foreign currency positions is the same as other jurisdictions; the capital charge equals a percentage of the net position in each foreign currency. Long and short positions in the same currency may be netted in calculating the net position

153. In respect of any OTC option written by a licensed corporation, it shall include in its ranking liabilities 200% of the highest of the following amounts:

- the market value of the option;
- in-the-money amount of the option;
- the amount of margin required by its counterparty.

154. Long positions in OTC options cannot be included in liquid assets. This has the same effect as applying a 100% haircut on the value of such options.

7.5Other capital requirements

7.5.1 Large exposures/concentration risk

155. Irrespective of which capital approach is being considered it is common to have some form of large exposure/concentration risk requirement.

156. It is extremely difficult to compare the reference values used by different jurisdictions as to when concentration ratios will apply, because they are founded on unique reference criteria. For example, under the SFC approach, when the net market value (*i.e.*, after netting) of any line of securities or investments in the house position of a licensed corporation equals 25% or more of its required liquid capital, it shall include in its ranking liabilities a capital charge which equals a percentage of such net market value determined in accordance with the degree of concentration. In contrast, the SEC imposes additive haircuts for concentrated security positions. For example, if the broker-dealer holds a position in equity securities of a single class or series that

together have a market value that exceeds more than 10% of its tentative net capital. If that is the case, the firm must take an additional 15% haircut (or a total haircut of 30%) on the amount of the securities that exceed the 10% threshold.

7.5.2 Operational risk

157. Operational risk is defined as the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. The CRD contains two standardised approaches and one internal model based approach to calculate the capital requirement. Other jurisdictions that specifically incorporate operational risk in their prudential requirements are Australia, Canada and Singapore.[62] Operational risk appears to be a risk that is not specifically captured by all securities regulators.

158. In the U.S., under the NCR, specific charges are incorporated into the required calculation of net capital to account for operational risks, such as inefficiency and errors, including fails to deliver, or non-balancing items between entities (e.g., suspense accounts). Operational risk has also been indirectly "*built into*" additional NCR rules. In Canada, similar to the U.S., specific charges are included in the capital calculation for operational risks such as errors, fails, and unresolved differences.

7.6Use of internal models to determine capital requirements

7.6.1 Capital Requirements Directive

159. Firms can use internal model approaches to calculate each of the three key risk types (see Table 9 – the internal model approaches are in italic type). Before firms can use internal models for regulatory capital calculation purposes, supervisors must assess whether firms have suitably robust systems and controls and that the firm has embedded an appropriate risk management culture and framework.

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62 On the other hand, at the SFC, the minimum liquid capital requirement is intended to be a catch-all risk capital covering all residual risks including operational risk.

Table 9: approaches available to calculate Pillar I capital requirements under CRD

Credit Risk	**Market Risk**	**Operational Risk**
(1) Standardised approach	(1) Standardised approach	(1) Basic Indicator approach
(2) *Foundation IRB approach*	(2) *Internal model (VaR and IRC)*	(2) Standardised approach
(3) *Advanced IRB approach*		(3) *Advanced measurement approach (AMA)*

160. Concentrating on the regulatory risk type where internal models are most prevalent, market risk; firms can apply to use internal models for all types of market risk; Firms will then use the output from their models to calibrate their capital requirement as a substitute for the standardised approach risk weights. The predictive quality of firms' models is tested through the number of back testing exceptions that are generated. The higher the number of back testing exceptions, the larger the scalar that is applied in the market risk capital requirements formula (see Figure 6)). Depending on the quality of a firm's model and surrounding controls and systems processes, the supervisory authorities may restrict the use of the model to certain product types, *e.g.*, linear products. As a result, firms use internal models to calculate some components of the position risk requirement calculation and standardised approaches for other parts of the calculation.

Figure 6 – Position Risk Requirement based on the VaR

$$PRR = \text{Max}\left(\left|VaR_{t-1}\right|, MMF * \frac{1}{60}\sum_{i=1}^{60}\left|VaR_{t-i}\right|\right)$$

Where:

PRR = Position Risk Requirement

VaR = Regulatory VaR amount

MMF = Minimum Multiplication Factor. Minimum of 3 but could be more due to Back testing exceptions experienced plus weakness in systems & controls.

7.6.2 Net capital approaches

SFC

161. Licensed corporations seeking to use internal models to calculate market risks for liquid capital calculation purposes may apply to the SFC for a modification of the FRR on an individual firm basis. The SFC adopts a similar approval approach to that recommended by the Basel Accord.

U.S. SEC

162. U.S. registered broker-dealers may apply to use internal statistical based methods to compute net capital. Internal models can be used for both the market risk and credit risk deductions. The rules are broadly consistent with the Federal Reserve Board's interpretation of Basel II.

163. In order to use internal models to compute net capital, the broker-dealer must apply to the SEC for approval to use their models for regulatory purposes. After approval, the broker-dealers are required to file regular reports with the SEC and are subject to ongoing monitoring and examination.

164. Broker-dealers must compute market risk charges for allowable positions using a 10-day, 99% Value-at-Risk (VaR) model multiplied by a factor determined in part by the number of the broker-dealer's back testing exceptions. Certain positions require a deduction for specific risk. In addition, certain positions are not allowable in VaR and require the application of SEC standard charges.

7.7. Conclusion to comparison of capital requirements

165. Jurisdictions are generally consistent in considering the liquidity of assets in order to determine what capital should count towards satisfying minimum capital requirements Therefore, jurisdictions deduct upfront many items from even being considered components of capital including, among other things, illiquid assets (such as property and furnishings), material holdings in other financial institutions and intangible assets such as goodwill. After these initial deductions (which are akin to 100% haircuts), with regard to the remaining "*liquid*" assets, haircuts are applied depending on the degree of liquidity or

volatility. There can be differences between jurisdictions as to what is deducted from capital and what is subject to a haircut, and there can also be differences between jurisdictions as to the size of haircut.

166. Due to the challenges highlighted in the stylised balance sheet comparison, it has not been possible for the purposes of this project to determine whether these different approaches have the same overall capital impact.

167. Minimum capital requirements exist in all jurisdictions. They vary substantially from jurisdiction to jurisdiction and do not appear, on the face of it, to have any consistency for similar activities. Minimum capital requirements are risk-based within jurisdictions in that activities that are perceived to have a greater risk attached to them, such as principal trading, typically have a higher base capital requirement.

168. All jurisdictions apply risk-based capital requirements related to securities positions risk (market risk). Under the SEC NCR, the primary mechanism for setting capital requirements for market risk is a range of ‘haircuts’ on securities positions. In contrast, the CRD market risk capital requirement has five components, based on the underlying risk types. Other risks that are commonly captured by jurisdictions are large exposure/concentration risk, counterparty risk and in some instances operational risk, i.e., CRD, Australia and Singapore. The manner in which these risk-based capital requirements are formulated varies considerably from jurisdiction to jurisdiction, for example, the building block approach adopted in the EU to calculate the market risk capital requirement, compared to the single risk-weighted haircut approach in the United States. This makes capital comparisons across jurisdictions extremely challenging.

169. Both Basel-based and net capital rule approaches allow the use of models for firms with the systems and capacities to use advanced risk management techniques. In order to calibrate prudential requirements from internal models numerous model assumptions have to be made and numerous model choices are available. These cover amongst other things: data assumptions; valuation, accounting and hedging techniques; stress testing scenarios; and data requirements. On top of this in some jurisdictions the supervisory authority may have the ability to scale prudential requirements based on systems and controls

weaknesses. Given the myriad of assumptions that can underlie models and how these assumptions interact with one another, it is extremely challenging to compare the capital standards of firms that are permitted to use models-based approaches in one jurisdiction or jurisdictions that apply similar approaches; never mind comparing firms across jurisdictions that have different prudential approaches.

170. It should be recognised, however, that irrespective of the calibration of risk-based capital requirements in each jurisdiction, there are likely to be significant differences in the amounts of capital that firms hold over and above the regulatory requirement. This can be driven by supervisory requirements (for example, Pillar II of the CRD, and firm-specific early-warning trigger capital levels) and/or market expectations, and can vary depending on say, a firm's business model and size.

8. Recent and forthcoming regulatory developments

171. We note that the current prudential requirements are in a state of evolution and that this report does not examine some of the most cutting edge regulatory developments that may have an impact on the capital requirements/prudential standards imposed on financial firms. Three such examples are provided in this section.

Liquidity risk

172. Although several jurisdictions already embed the concept of liquidity within the philosophy of the prudential regime (in fact the net capital approach is a liquidity type approach), other jurisdictions are beginning to treat liquidity as an additional risk factor to be met by the firm. For example, Basel III introduces two liquidity concepts; a short-term liquidity requirement (the liquidity coverage ratio) (LCR) and a longer-term liquidity requirement (the Net Stable Funding Ratio) (NSFR). Both are ratio-style requirements that aim to ensure that the firm has adequate liquidity to remain in business. Both policy initiatives are currently under discussion in the CRD, with anticipated timelines for the introduction of the LCR being 2015, and for the NSFR, 2018. Prior to their introduction a period of monitoring is in place to facilitate appropriate ratio calibration. Importantly, given that the CRD covers both credit institutions and investment firms (securities businesses), the CRD IV text provides the EU Commission with the ability to review the appropriateness of the proposed liquidity regime for investment firms.[63] The introduction of liquidity ratios in those prudential regimes where solvency has primarily been the focus will raise the prominence of ensuring securities firms have adequate liquidity.

Swap dealers in the US

Under regulatory reforms imposed by Dodd-Frank, derivatives dealing business can no longer be conducted in an unregulated entity (or in a regulated overseas entity doing business in the US, without regard to registration requirements in the US). These entities will now, subject to de minimis business size limitations,

63 See CRR Article 508(2).

need to be registered as a swap dealer or securities business swap dealer. As proposed by the SEC, securities business swap dealers will now generally be subject to the same capital and margin treatments as broker-dealers. The CFTC has proposed to require swap dealers that are registered as FCMs to meet the traditional NCR capital approach for FCMs. In addition, under the CFTC proposal, swap dealers that are non-bank subsidiaries of U.S. bank holding companies would compute their regulatory capital requirement applying the capital regulations of the Federal Reserve Board as if the swap dealers were bank holding companies. Lastly, if a swap dealer is not an FCM or a non-bank subsidiary of a U.S. bank holding company, the swap dealer would compute its regulatory capital based upon a tangible net equity requirement along with Basel-based standard market and credit risk capital charge requirements. In addition, the United States (FSOC) is also considering higher capital charges on systemically important domestic financial firms.

Recent Changes to the SEC's NCR

173. On July 31, 2013, the SEC adopted amendments to its *Financial Responsibility Rules* for broker-dealers. In particular, key amendments to the SEC's NCR include:

- Requiring a broker-dealer to adjust its net worth when calculating net capital by including any liabilities that are assumed by a third party if the broker-dealer cannot demonstrate that the third party has the resources – independent of the broker-dealer's income and assets – to pay the liabilities.
- Requiring a broker-dealer to treat as a liability any capital that is contributed under an agreement giving the investor the option to withdraw it. The rule also requires a broker-dealer to treat as a liability any capital contribution that is withdrawn within a year of its contribution unless the broker-dealer receives permission for the withdrawal in writing from its designated examining authority (DEA).
- Requiring broker-dealers to deduct from net capital (with regard to fidelity bonding requirements prescribed by a broker-dealer's SRO) the excess of any deductible amount over the amount permitted by SRO rules.

- Clarifying that any broker-dealer that becomes "*insolvent*" as that term is now defined in Rule 15c3-1 is required to cease conducting a securities business. The companion amendment to Rule 17a-11 requires insolvent broker-dealers to provide notice to regulatory authorities.

Macroprudential/Systemic Risk issues

174. The focus of this report is on comparing microprudential rules in different jurisdictions. However, it is worth noting international efforts arising from the 2008 financial crisis to determine whether securities businesses could be systemically important and thus possibly subject to additional macroprudential capital requirements.

175. There has been considerable work by the FSB, IOSCO and Basel on identifying systemically important institutions. The FSB is in the process of developing a methodology to identify systemically important non-bank affiliated intermediaries discussed above, which could eventually lead to higher capital charges for G-SIFIs. Furthermore, the G20 declaration of November 2011 requests the FSB in consultation with IOSCO to prepare methodologies to identify systemically important non-bank financial entities. That work is currently in progress.

9. Conclusions from the comparative analysis

9.1 Key objectives of prudential standards

176. As stated in the 1989 IOSCO Capital Adequacy Report,[64] "*[c]apital adequacy standards foster confidence in the financial markets and should be designed to achieve an environment in which a securities firm could wind down its business without losses to its customers or the customers of other broker-dealers and without disrupting the orderly functioning of the financial markets. Capital standards should be designed to provide supervisory authorities with time to intervene to accomplish this objective. They should allow a firm to absorb losses. They also should provide a reasonable, yet finite, limitation on excessive*

[64] P. 10.

expansion by securities firms to minimise the possibility of customer losses and disruption of the markets."

177. This report highlights that the two key approaches to prudential requirements have methodological similarities and differences. First, the NCR is primarily directed towards ensuring that securities firm have sufficient liquid balance sheet assets so that they can be wound-down within a short time should they fail, whereas CRD is primarily about solvency of the firm; and second, that both approaches, however, share at least one common objective: that being to ensure that a securities firm holds sufficient capital to protect customers and creditors from losses if it were to fail.

178. The two approaches are structured in fundamentally different ways, and use very different concepts to determine an appropriate amount of capital. Nevertheless, despite differences in the structure of the approaches, many of their features share common purposes.

179. The prudential approaches adopted to deal with and calibrate the risks faced by securities firms may differ from jurisdiction to jurisdiction, but are primarily risk-based prudential requirements. With this in mind, it is particularly important that supervisory authorities recognise all material risks that may affect the prudential position of regulated entities and have prudential standards in place to deal with them. This report provides substantial detail on the types of risk captured by securities regulators worldwide, enabling jurisdictions to examine their approach alongside the risks highlighted in this report.

9.2Similarities, differences and gaps between the frameworks

180. **General Similarities and Differences -** Our comparison of the CRD and the NCR shows that they share certain similarities. For example, among other things, their components of capital are similar; and they "*haircut*" certain assets to help ensure that the firm has sufficient capital in accordance with its risk profile. But there are also important differences: the NCR is, at its core, a liquidity test, allowing a firm to fail but to unwind in an orderly fashion in a

short time frame, whereas the Basel-based CRD approach is more solvency based.[65]

181. **Comparing prudential standards in different jurisdictions** - A particular challenge is that, although we can "*compare"* the two approaches, it is not possible to do the capital requirement calculations in a meaningful and accurate way that would permit us to conclude whether a particular intermediary, at the end of the day, would need to hold more or less capital under the NCR or CRD approaches.

182. The difficulty in numerically comparing the overall package of prudential requirements in multiple jurisdictions is not purely due to whether the supervisory authority uses a Basel-style approach or a net Capital rule approach. Even within approaches, different jurisdictions may have national discretions which may be applied, transitional arrangements and different calibration definitions/carve-outs; all of which need to be reflected in assessing whether one regime is more stringent than another. Furthermore, beyond standardised approaches, jurisdictions are increasingly permitting firms to use internal model approaches to determine capital requirements. This brings further challenges in comparing the approaches in different jurisdictions (see key issue "*use of internal models*" below).

183. Market intermediaries, as defined under the IOSCO methodology, capture a multitude of different securities business activities. As a result, jurisdictions may have different capital adequacy calculations and calibrations depending on a firm's activities, e.g., whether the firm trades for its own account or not and therefore whether the firm poses balance sheet risk or not. The existence of these variations in prudential requirements may have a defensible basis, depending on the nature of the risks that these entities pose to consumers and markets; but the existence of more than one prudential approach may promote the perception that non-uniform prudential requirements for securities businesses across jurisdictions are problematic when, in fact, they may not be.

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65 Although the intention to introduce liquidity prudential requirements in the CRD will narrow, or possibly mitigate this distinction between the CRD and NCR.

184. In addition, some jurisdictions have secondary capital-style prudential requirements (such as Pillar II under the Basel approach). This enables supervisory authorities to assess whether additional firm-specific risks that may affect the prudential position of securities firms should be included in required capital resources.

185. Therefore, it has not been possible for us to come to firm conclusions as to the "*comparability*" of the Basel and NCR approaches. We believe, however, that our report compares and contrasts the two approaches in a way that is useful to the reader and will facilitate his or her understanding of the two approaches.

186. **Minimum capital requirements and risk-based capital requirements** - Irrespective of where securities firms are regulated, securities firms are subject to minimum capital requirements based on the type of business being conducted by the firm. Over and above minimum capital requirements, supervisory authorities have risk-based capital requirements; and authorities generally recognise very similar risks in setting firms' prudential requirements. The key risks being recognised are market risk and credit/counterparty risk. It should be recognised, however, that irrespective of the calibration of risk-based capital requirements in each jurisdiction, there are likely to be significant differences in the amounts of capital that firms hold over the regulatory requirement. This can be driven by supervisory requirements (for example, firm-specific early warning trigger capital amounts) and/or market expectations, and can vary depending on say, a firm's business model and size.

187. **Components of capital** – Irrespective of the prudential approach used in different jurisdictions, very similar components are recognised as capital resources. Paid-in share capital, or its equivalent for non-joint stock companies, retained earnings and other reserves form the primary source of capital resources due to their permanence and ability to absorb losses followed by subordinated debt, with the latter commonly subject to regulatory capital limits. In deriving the capital resources necessary to meet capital requirements it is very common for jurisdictions to make deductions from capital for illiquid

assets and material holdings in other financial institutions. Jurisdictions can differ, however, on what is included in deductions.[66]

188. **Regulatory scope** – Regulatory scope is relevant to this report because what constitutes regulated business in a jurisdiction is the key driver for the regulatory and supervisory obligations that subsequently follow including the calibration of prudential requirements. Differences in regulatory scope across jurisdictions could impact where firm activity is conducted, thus potentially raising regulatory arbitrage opportunities because activities deemed out of scope in a jurisdiction will not be subject to prudential requirements there. The report illustrates that different jurisdictions have different rules as to what activities and instruments constitute regulated activities. The report explains that in practice there are challenges in identifying clear differences in regulatory scope between jurisdictions.

189. **Risks posed by group entities** – The handling of intragroup risks vary considerably across jurisdictions. Some jurisdictions capture prudential risks on a group basis through consolidated capital requirements; but this has the potential to overlook some intragroup risks. In contrast, a majority of jurisdictions monitor the prudential position of the regulated entity on a solo basis; yet some of these have processes in place to identify and take account of risks to regulated entities that may materialise from group entities. Moreover, some jurisdictions (*e.g.*, those using the NCR), do not permit an "*unsecured*" relationship between group members, thus minimising intragroup risk.

190. **Use of internal Models** - Both Basel-based and net capital rule approaches allow the use of models for firms with the systems and capacities to use advanced risk management techniques. In order to calibrate prudential requirements from internal models numerous model assumptions must be made; and numerous model choices are available. These cover amongst other things: data assumptions; valuation, accounting and hedging techniques; stress testing scenarios; and data requirements. Additionally, in some jurisdictions, the supervisory authority may have the ability to scale prudential requirements based on observed weaknesses in systems and controls. Given the myriad of

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66 See discussion in sections 7.2 and 7.7, above

assumptions that can underlie models and how these assumptions interact with one another, it is extremely challenging to compare the capital standards of firms that are permitted to use model-based approaches in one jurisdiction or jurisdictions that apply similar approaches; never mind comparing firms across jurisdictions that have different prudential approaches. Furthermore, enabling internal models for regulatory purposes requires supervisors to be able to assess whether firms have suitably robust systems and controls and that the firm has embedded an appropriate risk management culture and framework. The detailed supervisory processes underpinning these assessments could vary considerably from jurisdiction to jurisdiction.

191. Although permitting firms to use internal models weakens the ability to compare prudential standards in different jurisdictions, conversely the use of models, the similar mathematical foundations that underpin modeling approaches (e.g. VaR-style techniques), and the aim of using models to align capital requirements closer to actual economic risks may be leading to some convergence in the treatment of risks across different member jurisdictions irrespective of whether they use they use a Basel or NCR approach.

192. **Macroprudential effects** – The focus of the report is on comparing microprudential rules in different jurisdictions; however, the recent financial crisis has highlighted the importance of considering interdependencies in securities businesses. Regulatory policy initiatives are currently in train to identify those firm features that may suggest a firm is potentially systemic and reflect those features in macroprudential policies. For example, IOSCO is currently preparing methodologies to identify systemically important non-bank financial entities.

193. **Supervisory perspectives on the key issues** - The report highlights several key issues where regulatory authorities may consider whether their current supervisory practices are adequate to oversee and mitigate the risks posed by those issues. Particular issues signalled in this report include: (1) overseeing, monitoring and addressing risks posed to regulated intermediaries by group

entities,[67] whether they materialise in other regulated entities or not and that have the potential to spillover and affect the capital adequacy of the regulated entity; and (2) potential disparate capital treatment of similar intermediary activities in different jurisdictions. In other words, if one jurisdiction treats certain securities activities in a less rigorous manner, this could provide an incentive to move those securities activity to the lighter prudential regime.

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[67] We note that for those firms in particular that are both large and internationally active, the Joint Forum's final report on "*Principles for the Supervision of Financial Conglomerates*" provides relevant guidance to address intragroup risks. *See* http://www.iosco.org/library/pubdocs/pdf/IOSCOPD390.pdf (Sept. 2012).

10. What are the outcomes from the comparative analysis for the existing IOSCO Capital Adequacy Public Document?

194. Several of the key themes identified in this report are already reflected in the existing 1989 Capital Standards Report, e.g., the need for minimum capital requirements that reflect the type of business being conducted by securities firms, including risk-based capital requirements.

195. This report highlights prudential regulatory and supervisory areas that may wish to be included and/or strengthened in any update of the 1989 Capital Standards Report, e.g., (1) to identify opportunities for regulatory capital arbitrage that might (or actually have) materialised from differences in prudential regulations between jurisdictions and possible improvements in prudential regulations more generally; and (2) to account for the increasing use of internal models and the commensurate increase in infrastructure, systems and controls that are necessary to help ensure that firms are not undercapitalised compared to the risks posed by their positions and activities.

Appendix1: Detailed balance sheets for the group entities exercise in Section 5.3

Finance Holding (Domestic company) (non supervised entity):

Assets		Liabilities	
Cash	227	Paid in Capital	300
Inter group Credit	350	Reserves	592
- Finance Bank	200	Liabilities	500
- Finance Securities	150		1,392
Group Shareholdings	765		
- Finance Bank	750		
- Finance Securities	15		
Property	50		
	1,392		

Finance Securities (Domestic company) (supervised entity)

Assets		Liabilities	
Cash	750	Paid in Capital	250
Securities	500	Reserves	500
- Sovereign bonds AAA	500	Tier II capital	845
Inter group credits	800	Liabilities	9,955
- International Bank	800		11,550
Interbank credits AAA	3,600		
Other credits	5,000		
Qualified minority interest	100		
- International Bank	100		
Property	800		
	11,550		

Additional Information: No trading book assets,	
Off-balance sheet items, risk weighted assets:	800
Amount for market risk positions:	120

International Securities 1 (supervised entity):

Assets		Liabilities	
Cash	20	Paid in Capital	5
Securities	150	Reserves	15
- Industry AG (A)	20	Tier II capital	20
Other (non financial sector; RW 100%)	130	Liabilities	205
Interbank credits AAA	25		245
Credit to industrial companies (AAA)	30		
Property	5		
	245		

Additional Information: No trading book assets,	
Off-balance sheet items, risk weighted assets:	10
Amount for market risk positions:	5

International Securities 2 (supervised entity):

Assets		Liabilities	
Cash	60	Paid in Capital	40
Securities	800	Reserves	160
- Sovereign Bonds (AAA)	400	Tier II capital	16
- Bank bonds (AAA)	400	Liabilities	2,086
Intergroup credits	60		2,312
- Finance Bank	40		
- Finance Securities	20		
Interbank credits (AAA)	620		
Sovereign credit (AAA)	420		
Credit to industrial companies (AAA)	330		
Property	12		
	2,312		

Additional Information: No trading book assets,	
Off-balance sheet items, risk weighted assets:	84
Amount for market risk positions:	12

Finance Factoring (Domestic company) (non-supervised entity)

Assets		Liabilities	
Cash	20	Paid in Capital	75
credits	226	Reserves	25
Shareholdings (non-financial sector)	20	Liabilities	220
Property	54		320
	320		