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SHADOW BANKING IN SINGAPORE

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Shadow banking is a phenomenon of global concern because it entails risks for financial stability that need to be adequately addressed by regulation. Easier said than done, one could object, because it is a tricky task for regulators to respond appropriately. Singapore, one of the largest financial centres in Asia and the world, is a hub for financial intermediaries that are considered shadow banks. Data transmitted by Singapore to the Financial Stability Board provides the basis for this analysis of the relevance of shadow banks and risk-containing regulation applicable to them—the first of its kind for Singapore. In line with global efforts to curb risks for financial stability while avoiding excessive limitations on useful financial services, the article points out areas in which particular vigilance is indicated and suggests changes to existing regulation.

I. THE SHADOW BANKING PHENOMENON: A RISK-BASED DEFINITION

Competition between banks and non-bank intermediaries is no new phenomenon. What is new is the volume of financial intermediation outside of the banking sector that has dramatically increased since the outbreak of the global financial crisis (“GFC”). For different reasons, such growth in volume has occurred in developed and developing markets alike. In developing economies, on the one hand, banking sectors tend to be underdeveloped and therefore may not be able to cover the full range of requested financial services, prompting them to focus their lending activities on borrowers with higher creditworthiness and leaving gaps in subprime lending. In developed nations, on the other hand, banks have been focusing on their recovery from the financial crisis and compliance with tightened regulatory standards. The results are cut-backs on lending activities and consequently a demand for a financial sector outside the banking system.[1] At the same time, liquidity is omnipresent as

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[1] Compare International Monetary Fund, *Global Financial Stability Report: Risk Taking, Liquidity, and Shadow Banking—Curbing Excess while Promoting Growth* (Washington, DC: International Monetary Fund, October 2014) at 66, online: IMF <http://www.imf.org/external/pubs/ft/gfsr/2014/02/pdf/text.pdf> [IMF, *Global Financial Stability Report*].

central banks around the globe have been expanding money supply aggressively for years, prompting investors to consider less traditional store of value options, thereby providing a further boost for the non-bank financial sector.[2] Since these factors are unlikely to change in the foreseeable future, the shadow banking phenomenon is here to stay.[3]

This article discusses the shadow banking phenomenon in general terms, especially its risk for financial stability (Part I) before turning to the financial sector and the volume of shadow banking activities in Singapore (Part II). The following parts assess existing regulation applicable to the most systemically important shadow banking activities in Singapore (Part III) and propose corrections in line with new regulatory approaches pursued elsewhere (Part IV). The last part summarises and concludes (Part V). The numerous abbreviations used in this piece are consolidated in Appendix 1.

A. *Non-bank Financial Intermediation*

The term 'shadow banking' implies something dubious and sinister. It is therefore important to emphasise right from the start that shadow banks are financial intermediaries and that there is nothing illegal or even dubious about their business. To avoid any negative connotation, regulators and authors have recently started to look for different terminologies such as 'non-bank financial intermediaries' or 'other financial institutions' ("OFIs"). However, whereas all shadow banks are such intermediaries or institutions, the rule does not apply vice versa. Only non-bank financial intermediaries or OFIs that copy to some extent the business model of banks are considered shadow banks, and in fact even this definition is still too broad as will be explained further below (Parts I.B & I.C).

With an increased volume of non-bank intermediation comes higher risks. The business model of banks is intrinsically risky, not just for the institutions themselves but, because of negative externalities, for the entire financial sector and beyond. Non-bank intermediaries engaging in the business model of banks copy not just the activities of banks but cause similar risks, even risks of systemic importance—depending on the volume and their interconnectedness with the banking sector and other financial intermediaries. Tightened regulatory requirements for the banking sector and the search by investors for more lucrative ways to place their money are leading to a double regime in which risks move from the highly regulated to a less regulated and increasingly under-regulated sector, as volume and risks of systemic importance grow.[4]

The important question that follows from these developments is: if more and more financial intermediaries become banks not in form but in function, then are different regulatory approaches for banks and non-banks leading to regulatory arbitrage

[2] See *ibid* at 65 for the reasons for the success of shadow banking, and at 67 for stronger reasons for tightened banking regulation.

[3] *Ibid* at 67.

[4] Klaus Peter Follak, "The Basel Committee and EU Banking Regulation in the Aftermath of the Credit Crisis", in Mario Giovanoli & Diego Devos, eds, *International Monetary and Financial Law: The Global Crisis* (New York: Oxford University Press, 2010) 177 at para 8.43.

resulting in shifts of systemic risk from a highly regulated to an inadequately regulated sector?[5] The answers to this question will vary since national differences arise from different financial and economic prerequisites. Highly developed financial markets usually have regulatory mechanisms in place for their entire financial sector, requiring them (only) to step up regulation for the non-bank sector as risks increase. Developing nations, on the other hand, may face the need for regulation in entirely unregulated areas as such sectors grow and with them (systemic) risks.

China is a good example of the latter group of countries. Strict limitations that apply to the lending activities of banks have caused non-bank financing to flourish. Crowdfunding, peer-to-peer ("P2P") lending and other services of wealth management and intermediation between investors and borrowers or issuers of securities are either entirely unregulated or regulated to an extent far below the regulation in place for banks. The Chinese example illustrates the most critical danger of such double regimes. Highly regulated financial companies, especially banks, collaborate heavily with unregulated intermediaries to escape strict regulation.[6]

In the aftermath of the GFC, world leaders agreed on action plans to provide solutions for systemic risks stemming from the 'shadow banking' sector. Providers of financial services that were not licensed banks were found to have contributed to the core factors that triggered the financial crisis. Central banks widened the scope of their emergency lending activities (lending of last resort) to include non-bank institutions to reduce the spread of contagion in the financial sector.[7] As a result, these intermediaries found themselves suddenly in the spotlight of regulatory attention.

Since the impetus for shadow banking seems similar around the globe, although sometimes differently accentuated, there is agreement on the need for a globally aligned framework for responses to shadow banking risks.[8] The G20 decided on an

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[5] Regulatory arbitrage results from credit intermediation offered in an environment where prudential regulatory standards and supervisory oversight are not applied or applied to a materially lesser or different degree than in the case of regular banks or other financial intermediaries engaged in similar activities, see Financial Stability Board, *Shadow Banking: Scoping the Issues* (Basel: FSB, 12 April 2011) at 3, online: FSB <http://www.fsb.org/wp-content/uploads/r_110412a.pdf>; see also Victor Fleischer, "Regulatory Arbitrage" (2010-2011) 89 Tex L Rev 227 at 243 who defines regulatory regime inconsistency as different regulatory treatment for the same transaction under different regulatory regimes.

[6] Robin Hui Huang, "The Regulation of Shadow Banking in China: International and Comparative Perspectives" (2015) 30 BFLR 481 at 484.

[7] Mainly in the United States ("US"), see Dietrich Domanski, Richhild Moessner & William Nelson, *Central banks as lender of last resort: experiences during the 2007-2010 crisis and lessons for the future*, Federal Reserve Board, Finance and Economics Discussion Series Working Paper 2014-110 (June 2014) at 7; José Gabilondo, "Central banks, systemic lending and collateral markets" in Matthias Haentjens & Bob Wessels, eds, *Research Handbook on Crisis Management in the Banking Sector* (Cheltenham: Edward Elgar Publishing, 2015) 24 at 31 *et seq* [Gabilondo, "Central banks" for the article]; Mark Carlson, Burcu Duygan-Bump & William Nelson, *Why Do We Need Both Liquidity Regulations and a Lender of Last Resort? A Perspective from Federal Reserve Lending during the 2007-09 U.S. Financial Crisis*, Federal Reserve Board, Finance and Economics Discussion Series Working Paper 2015-011 (February 2015) at 14-20; Kathryn Judge, "The First Year: The Role of a Modern Lender of Last Resort" (2016) 116:3 Colum L Rev 843 at 873-911; Mark A Carlson & David C Wheelock, *The Lender of Last Resort: Lessons from the Fed's First 100 Years*, Federal Reserve Bank of St. Louis Working Paper 2012-056B (February 2013) at 32-36; Andrew Campbell & Rosa Lastra, "Revisiting the Lender of Last Resort" (2009) 24 BFLR 453 at 493.

[8] IMF, *Global Financial Stability Report*, *supra* note 1 at 86.

action plan in Cannes in 2011.[9] Since then, the Financial Stability Board ("FSB") has taken the lead in monitoring shadow banking activities and proposing regulatory responses to build-ups of systemic risk in the non-bank financial sector.[10] The proposed solutions focus on a few key points: licensing requirements for all financial intermediaries, strict duties of disclosure, leveraging constraints and the powers of intervention of regulators.[11]

B. *Defining Shadow Banking*

1. *The "institutional" and "functional" approach*

Definitions of shadow banking distinguish banks from other financial intermediaries. Under what can be called the 'institutional approach', shadow banks are defined as financial intermediaries that conduct maturity, credit and liquidity transformation outside of the conventional banking system,[12] which are less regulated than traditional banks and lack the formal safety nets applicable to banks.[13]

More recently, a 'functional approach' has been added to better reflect the objective of mitigating the sector-wide contagion risk from shadow banking by including financial transactions between the banking and non-banking sector. Shadow banking is thus defined as financing of banks and non-bank financial intermediaries by non-core liabilities.[14] This wider focus helps to address the concern that the traditional simple process of deposit-funded, hold-to-maturity lending conducted by banks has widely been replaced by a more complex, whole-sale funded, securitisation-based lending process.[15]

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[9] The main resolutions of the 2011 summit were to mitigate the spill-over effects between the regular banking system and the shadow banking system, reduce susceptibility of MMFs to runs, assess and align incentives associated with securitisation, dampen financial stability risks and pro-cyclical incentives associated with securities financing transactions such as repos and securities lending that may exacerbate funding strains in times of market stress, and assess and mitigate systemic risks posed by other shadow banking entities and activities, see FSB, *Strengthening Oversight and Regulation of Shadow Banking: An Overview of Policy Recommendations* (Basel: FSB, 29 August 2013) at i-iii, online: FSB <http://www.fsb.org/wp-content/uploads/r_130829a.pdf> [FSB, *Strengthening Oversight*].

[10] The FSB has continuously pursued the objective of aligning standards for the monitoring of shadow banking activities to track build-ups of systemic risk and enable corrective action where necessary: *ibid* at 1.

[11] Follak, *supra* note 4 at para 8.49 *et seq*.

[12] IMF, *Global Financial Stability Report*, *supra* note 1 at 66 ("credit intermediation"); Emilios Avgouleas, *Governance of Global Financial Markets: The Law, the Economics, the Politics* (New York: Cambridge University Press, 2012) at 51 *et seq*.

[13] Avgouleas, *ibid*; see similarly Stijn Claessens & Lev Ratnovski, *What is Shadow Banking?*, IMF Working Paper WP/14/25 (February 2014) at 3 *et seq*, but different in their reference to "backstop reliance" at 4 *et seq*.

[14] IMF, *Global Financial Stability Report*, *supra* note 1, ch 2 at 68.

[15] Avgouleas, *supra* note 12 at 53. In parts of the world, *eg* in North America and Europe, non-bank financial intermediaries have become a substantial provider of bank debt and by such wholesale funding have greatly affected the liquidity of the banking system, see Follak, *supra* note 4 at para 8.41. On interbank lending see also Jan H Dalhuisen, *Dalhuisen on Transnational Comparative, Commercial, Financial and Trade Law: Volume 3*, 6th ed (Portland: Hart Publishing, 2016) at 477; Judge, *supra* note 7 at 853.

Approached from a risk-based perspective, the starting point for any definition of shadow banking must be the business model of banks and its inherent risks. Some aspects of the banking business are unique. Only banks take deposits; banks are counterparties to the monetary policy operations of central banks and as such cover part of their liquidity needs by way of transactions with central banks. Banks are also involved in the expansion of the money supply through their lending operations (a process often referred to as the 'creation of money' by banks).[16]

These privileges come with the strictest regulatory regime in the financial industry, which is justified by the fragile business model of banks. Banks are financial intermediaries whose business model is inherently prone to substantial risks. They engage in maturity and liquidity transformation and operate on the basis of probabilities that allow them in normal times to prepare for withdrawals from depositors and other creditors with fractional liquidity reserves.[17] If withdrawals exceed worst-case scenario expectations, liquidity shortages may require banks to fire-sell assets. In addition, their unique business model of intermediation exposes them to the full scale of credit-risk from their borrowers, while subjecting them to unconditional liability to creditors, especially depositors. The resulting insolvency risk is substantial and adds a further element of inherent instability to the business model of banks.

Bank regulation responds to these risks with requirements for adequate capitalisation, liquidity reserves, and leveraging restrictions. These internationally aligned standards stem from the 'Core Principles for Effective Banking Supervision' of the Basel Committee on Bank Supervision ("BCBS").[18] All requirements are permanently monitored by bank supervisors and non-compliance is penalised immediately; the most drastic example being the revocation of the banking license. To reduce the balance-sheet insolvency risk, leveraging is restricted as banks must at all times hold capital of no less than 8% of the total value of their risk-weighted assets.[19] In addition, the 'Leverage Ratio Framework' provides a backstop mechanism responding to potential failures in (internal) risk assessments and requires that banks hold capital amounting to a yet-to-be-determined percentage of non-risk-weighted assets.[20]

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[16] See Bank of England, "Money creation in the modern economy" by Michael Mcleay, Amar Radia & Ryland Thomas, in *Quarterly Bulletin*, 2014 Q1 vol 54 no 1 at 14-27 (London: Bank of England, 2014), online: Bank of England <http://www.bankofengland.co.uk/publications/Documents/quarterlybulletin/2014/qb14q102.pdf>; Marcel Bluhm, Co-Pierre Georg & Jan-Pieter Krahnen, *Interbank Intermediation*, Deutsche Bundesbank Discussion Paper No 16/2016 at 18 (29 March 2016), online: Deutsche Bundesbank <https://www.bundesbank.de/Redaktion/EN/Downloads/Publications/Discussion_Paper_1/2016/2016_06_07_dkp_16.pdf?__blob=publicationFile>.

[17] On some of these aspects see Gabilondo, "Central banks", *supra* note 7 at 26; Paul Davies, "Liquidity Safety Nets for Banks" (2013) 13:2 Journal of Corporate Law Studies 287 at 293 *et seq*.

[18] Basel Committee on Banking Supervision, *Core Principles for Effective Banking Supervision* (Basel: Bank for International Settlements, September 2012), online: BIS <http://www.bis.org/publ/bcbs230.pdf>.

[19] With reference to Common Equity Tier 1, Additional Tier 1 and Tier 2 capital, see Basel Committee on Banking Supervision, *Basel III: A global regulatory framework for more resilient banks and banking systems* (Basel: Bank for International Settlements, December 2010, revised June 2011) at 12-19, online: BIS <http://www.bis.org/publ/bcbs189.pdf>.

[20] See Basel Committee on Banking Supervision, *Basel III leverage ratio framework and disclosure requirements* (Basel: Bank for International Settlements, January 2014), online: BIS <http://www.bis.org/publ/bcbs270.pdf>; Basel Committee on Banking Supervision, "Revisions to the Basel III leverage ratio framework: Issued for comment by 6 July 2016", Consultative Document (April 2016), online: BIS <http://www.bis.org/bcbs/publ/d365.pdf>.

Depending on a range of factors, in particular their systemic importance, banks must also comply with higher capital requirements stemming from the recent introduction of capital buffers.[21]

Risks from liquidity shortages are addressed by liquidity requirements, especially the 'Liquidity Coverage Ratio' ("LCR") requirements. Banks must hold sufficient amounts of High-Quality Liquid Assets ("HQLA") that can be converted into cash easily and without much loss to book value.[22] Risks of liquidity shortages are also reduced when debt financing is longer-term. The 'Net Stable Funding Ratio' looks at the banks' assets and assesses their liquidity. Depending on the results, banks are required to secure larger or smaller amounts of longer-term debt financing.[23]

No other provider of financial services mimics the banking model entirely and consequently no other financial institution is ever exposed to risks in the same extreme way that banks are. But every type of financial intermediation results in some risk exposure, and adequate regulation is the unavoidable response. This reflects the first approach, referred to here as the 'institutional approach', which compares other financial institutions to banks with the intention to subject them to similar regulation where their intermediation is interchangeable. In addition to and stemming from the above-described extreme form of risk exposure typical of the banking model, banks are at the core of regulatory concern. Links between banks and non-bank financial intermediaries are caught by the 'functional approach' (as further explained in the following Part).

2. *The risks of financial intermediation*

Financial intermediation alone is an insufficient criterion for assigning institutions to the shadow banking category. Instead, it depends on the resulting risks. The risk of liquidity shortages is a defining element of the banking business and the most common risk in non-bank financial intermediation.[24] While they do not accept deposits, understood as the business of accepting money from the public, redeemable in full upon demand or at any date agreed upon,[25] non-bank financial institutions

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[21] For a detailed discussion on these buffers and the requirements in Singapore, see Christian Hofmann, "Bank Regulation in Singapore" (2015) 1:2 Journal of Financial Regulation 306 at 314.

[22] See Basel Committee on Banking Supervision, *Basel III: The Liquidity Coverage Ratio and liquidity risk monitoring tools* (Basel: Bank for International Settlements, January 2013) at para 69, online: BIS <http://www.bis.org/publ/bcbs238.pdf>. See also *ibid* at paras 45-53 for details on HQLA categorisations.

[23] For details see Basel Committee on Banking Supervision, *Basel III: the net stable funding ratio* (Basel: Bank of International Settlement, October 2014), online: BIS <http://www.bis.org/bcbs/publ/d295.pdf>.

[24] For a definition of liquidity risks, see *eg*, MAS, *Guidelines on Risk Management Practices—Liquidity Risk*, (Singapore: MAS, March 2013) at para 2.1, online: MAS <http://www.mas.gov.sg/~/media/MAS/Regulations%20and%20Financial%20Stability/Regulatory%20and%20Supervisory%20Framework/Risk%20Management/Liquidity%20Risk.pdf> [MAS, *Liquidity Risk*]:

> Liquidity risk refers to the risk of an institution being unable to meet its financial obligations as they fall due without incurring unacceptable costs or losses through fund raising and assets liquidation. It could be a result of the inability of the financial institutions to manage unplanned decreases or changes in funding sources and the failure to recognise or address changes in market conditions that affect the institution's ability to liquidate assets quickly and with minimal loss in value.

[25] For a detailed discussion on the deposit-taking business of banks, see Dalhuisen, *supra* note 15 at 465, 468.

do something similar as they receive monies from the public, pool this influx and provide equity or debt to a wide range of business entities.

To make investments more attractive, many of these intermediaries commit to a contractual promise to redeem them upon demand. Investors have a contractual right to withdraw their investments for redemption at the *pro rata* 'Net Asset Value' ("NAV"). Potential liquidity shortfalls depend on the investment strategies of the intermediary. Engagements in short-term lending and purchases of highly liquid assets reduce exposure; the lack thereof increases it.

The risk of balance-sheet insolvency is far less common for shadow banks than banks, but not entirely avoided. If the entire financial intake stems from investments that participate *pro rata* in held assets, then balance-sheet insolvency is impossible and business continues until all investments have been withdrawn. However, if assets are partially leveraged, then resulting liabilities are independent of asset price developments and asset depreciation can result in balance-sheet insolvency.

Regulatory risk categorisation for the financial industry distinguishes between risks for individual investors and systemic risk. While in the past, policy considerations for investor protection drove the regulatory debate, the present shadow banking debate focuses on potential chain reactions of systemic importance. As explained, shadow banks are commonly exposed to the risk of liquidity shortages and, in some cases, balance-sheet insolvency due to asset write-downs if their investments are financed by debt.

When shadow banks fire-sell their assets in reaction to unexpected withdrawals from investors exercising their contractual redemption rights, they increase price pressure on these assets. Runs on investments typically occur in times of market turmoil when all or some groups of assets have already experienced declines in market value. When financial institutions are forced to sell because of liquidity needs, they further fuel downward spirals.[26]

Sale-induced asset price declines incite further investors to sell which, when taken to extremes, culminates in a contagious spread that affects the entire financial sector and puts double pressure on highly-leveraged institutions such as banks that face liquidity shortages and the threat of balance-sheet insolvency due to massive asset write-downs. Such difficulties in the banking sector bring lending to a halt and thereby affect the rest of the economy.[27] Non-bank financial intermediaries are usually too small to trigger systemic risk on an individual basis, but the entire sector is relevant in terms of macro-systemic risk.[28]

C. *Focus on Adequate Regulation*

Financial stability risks are most dangerous when they stem from unregulated institutions, but licensing requirements for practically all financial intermediaries eliminate concerns about entirely unregulated market forces in developed nations. Regulatory arbitrage, however, remains possible. Limiting financial intermediation to licensed institutions subjects them to some regulatory oversight, but does not automatically

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[26] Compare Follak, *supra* note 4 at para 8.41.

[27] Compare Judge, *supra* note 7 at 853.

[28] See, for macro- and micro-systemic risk in general, Follak, *supra* note 4 at para 8.48.

guarantee that risks are adequately addressed. Within a few years, the systemic relevance of non-bank financial intermediaries surged after traditional bank lending was replaced with alternative forms of credit intermediation and (retail) depositors transitioned into (consumer) investors. Such changes in systemic relevance come with regulatory challenges.

For this reason, shadow banks are defined as financial intermediaries whose systemic relevance stems from their imitation of the *risk model* typical of the banking business. Shadow banking is defined more broadly as it comprises the activities of such shadow banks and additionally the non-core liabilities of banks (as described above).

Singapore shares this globally preferred approach. The financial regulator, the Monetary Authority of Singapore ("MAS"), defines shadow banking risks as risks from maturity transformation, liquidity transformation, leverage and credit-risk transfers.[29] A financial intermediary is a shadow bank if such risks trigger concerns of systemic relevance and are not adequately addressed by regulation.[30] Therefore the focus in this piece will be on financial intermediaries whose asset or transaction volumes can lead to systemic relevance if the inherent risks materialise.

II. Financial Intermediation in Singapore

A. *Banks and OFIs in Singapore*

For a better understanding of the shadow banking issue in Singapore and its financial landscape in general, one must start with the role of the banks. Banks are the key financial institutions and are placed at the top of the financial sector hierarchy in Singapore. Their prominent role results from two factors.

First, banks are the most strictly regulated financial institutions, and Singapore complies with (and selectively surpasses) the latest Basel standards.[31] These strict regulatory requirements for banks result in the benefit that a banking license replaces the need for other financial licenses.[32] For example, s 99(1) of the *Securities and*

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[29] MAS Macroeconomic Surveillance Department, *Financial Stability Review* (Singapore: MAS, December 2013) at 69 [MAS, *2013 Review*]. MAS defines maturity transformation as "use of short-term liabilities to finance the purchase of medium to long-term assets", liquidity transformation as "the issuance of liabilities that are easily redeemable to finance assets that may not be easily liquidated" and credit risk transfer as "actions taken by credit originators or intermediaries to transfer their credit risk to others". MAS emphasises at 69, including at note 43, that in such attempts to transfer credit risk, transferors may take on other risks or may not fully transfer risks. Credit risk is defined as "the risk arising from the uncertainty of an obligor's ability to perform its contractual obligations", see MAS, *Guidelines on Risk Management Practices—Credit Risk* (Singapore: MAS, March 2013), online: MAS <http://www.mas.gov.sg/Regulations-and-Financial-Stability/Regulatory-and-Supervisory-Framework/Risk-Management/Credit-Risk.aspx>.

[30] Definition of shadow banks by the MAS as echoed in Financial Stability Board Regional Consultative Group for Asia, *Report on Shadow Banking in Asia* (Basel: FSB Regional Consultative Group, 22 August 2014) at para 105, online: FSB <http://www.fsb.org/2014/08/r_140822c/> [FSBRCG, *Shadow Banking*].

[31] Hofmann, *supra* note 21 at 315 for capital requirements and 315-317 for liquidity requirements.

[32] Hans Tjio, *Principles and Practice of Securities Regulation in Singapore*, 2d ed (Singapore: LexisNexis, 2011) at 132.

Futures Act[33] provides that banks licensed under the *Banking Act*[34] do not need a Capital Markets Services licence.[35] Once licensed as banks,[36] these institutions are permitted to engage in the full range of financial services including the typical activities of deposit-taking, lending and payment services that generally define a bank. Additionally, banks are permitted to manage their customers' wealth, offer typical investment activities and insurance brokerage.[37]

Secondly, banks hold by far the largest share of assets of all financial institutions in Singapore.[38] 165 banks own assets in the amount of US$1677 billion. Concentration is another feature of the Singaporean banking market. The three largest banks hold 30%, and the five largest banks 41%, of all bank assets in Singapore.[39]

Regardless of these dominant banks, other financial intermediaries are well represented in Singapore, a fact that distinguishes Singapore and Hong Kong from other Southeast Asian financial markets. This contributes to their status as leading financial centres regionally and globally.[40] The list of such OFIs active in Singapore includes Money Market Funds ("MMFs"), Hedge and Private Equity Funds, Exchange Traded Funds, Other Investment Funds ("OIFs"), Broker-Dealers and Structured Financial Vehicles ("SFVs"). In addition, insurance companies and finance companies are active in the Singapore market with substantial volumes.

Asset volume held by Singapore's OFI sector grew strongly before the GFC, then declined and have since been growing steadily. Singapore has thereby experienced "growth patterns... consistent with the global trend".[41] According to the FSB's findings in 2014, "the OFI sectors in Hong Kong and Singapore are the largest relative to the size of their economies (in terms of GDP)" of all countries included in the shadow banking report on Asia.[42] The FSB therefore categorises Singapore as an exception in Asia because its OFI sector is large compared to the overall

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33 Cap 289, 2006 Rev Ed Sing [*SFA*].

34 Cap 19, 2008 Rev Ed Sing.

35 The same applies to merchant banks regulated under the *Monetary Authority of Singapore Act* (Cap 186, 1999 Rev Ed Sing) [*MASA*], finance companies regulated under the *Finance Companies Act* (Cap 108, 2011 Rev Ed Sing) [*FCA*], and entities licensed under the *Insurance Act* (Cap 142, 2002 Rev Ed Sing). However, MAS' regulations require that certain provisions of the *SFA* apply to banks (and other exempted entities) to ensure that these institutions adhere to all of the core requirements of the *SFA*: in detail see *Tjio*, *supra* note 32 at 471 *et seq*.

36 Under s 4(1) of the *Banking Act*, *supra* note 34.

37 *Ibid*, s 30 entails the full list of permissible activities. The regulatory framework distinguishes three types of banks of which full banks are licensed to provide the widest range of services, see MAS, "Commercial Banks", online: MAS <http://www.mas.gov.sg/singapore-financial-centre/types-of-institutions/commercial-banks.aspx>.

38 See FSBRCG, *Shadow Banking*, *supra* note 30 at para 50. See also exhibit 6 in Financial Stability Board, *Global Shadow Banking Monitoring Report 2015* (Basel: FSB, 12 November 2015) at 12, online: FSB <http://www.fsb.org/2015/11/global-shadow-banking-monitoring-report-2015/> [FSB, *Monitoring Report 2015*].

39 See FSBRCG, *Shadow Banking*, *ibid* at para 51.

40 Singapore, Hong Kong and Japan stand out in Asia. Their non-bank financial sectors are large relative to the size of their economy (measured by GDP), especially in Singapore and Hong Kong, see *ibid* at para 81. The entire financial sector in Singapore contributed 11.9% to its GDP in 2014, see *ibid* at para 48.

41 *Ibid* at para 84.

42 *Ibid* at para 6.

financial sector (including banks) and this puts it in the same category as its European counterparts such as Switzerland, the Netherlands and the UK.[43]

B. *Systemic Importance: Volume of Shadow Banking Activities in Singapore*

Like all regulators in financial centres, MAS assesses the size of the shadow banking sector and its systemic importance by collecting data about financial activities. The data used for the assessment here stem from the MAS Financial Stability Review of December 2013 which is based on detailed quantitative findings from 2012 and is currently still the most recent publication from MAS which addresses shadow banking in detail.[44] In addition, MAS annually reports quantitative findings to the FSB that find their way into the FSB Shadow Banking reports. This analysis is based on the 2014 Report on Shadow Banking in Asia and the 2015 Global Shadow Banking Monitoring Report.[45]

1. *Figures in general*

The 2014 figures show that the banks' assets amounted to slightly over 600% of Singapore's GDP; assets of OFIs were slightly under 100%; and the shadow banking sector, as defined by MAS (see above at Part I.C), remained at under 10% of GDP.[46] The 2012 numbers are more insightful because they are broken down into the different types of OFIs operating in Singapore. The total volume of assets held by OFIs amounted to $923.7 billion[47] compared to $3.5 trillion in the entire financial sector. In comparison, the 2012 volume of global shadow banking assets was $86.8 trillion.[48]

OFIs included in these numbers are MMFs ($1.6 billion), Hedge and Private Equity Funds ($111.4 billion), Exchange Traded Funds ($2.2 billion), OIFs ($768.6 billion), Broker-Dealers ($34.5 billion)[49] and SFVs ($5.4 billion).[50] Insurance companies held $165.6 billion in assets and finance companies $15.0 billion, neither of which is considered by MAS to be a shadow bank.[51]

MAS concluded from these numbers that the potential shadow banking sector is small in Singapore "relative to Singapore's overall financial system assets and to the global shadow banking system".[52] Yet 26% of total assets in Singapore's financial sector that are held by shadow banks seem far from insignificant. The numbers show the strong growth potential for the shadow banking sector in Singapore and the need for continuous assessment of potential regulatory arbitrage.

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43 *Ibid* at para 81.
44 MAS, *2013 Review*, *supra* note 29.
45 FSBRCG, *Shadow Banking*, *supra* note 30; FSB, *Monitoring Report 2015*, *supra* note 38.
46 FSB, *Monitoring Report 2015*, *ibid*.
47 Dollar-denominated amounts without further reference are in Singapore Dollars.
48 MAS, *2013 Review*, *supra* note 29 at 69.
49 The changes since 2014 were not dramatic. In 2014, the FSB reported 80 brokerage companies handling assets of US$28.2b, see FSBRCG, *Shadow Banking*, *supra* note 30 at para 78.
50 As compared to US$4.5 billion in 2014, see *ibid*.
51 Reaffirmed by MAS in its reporting of numbers to the FSB, see *ibid* at paras 128, 130.
52 MAS, *2013 Review*, *supra* note 29 at 69 *et seq*.

2. *Other Investment Funds*

In terms of asset holdings, OIFs stand out because their assets amount to 80% of total assets held by OFIs. In the MAS report, OIFs are understood as Collective Investment Schemes ("CIS") without credit intermediation, managed (but not necessarily domiciled) in Singapore and predominantly invested in long-term equity.[53] Their counterparty risk seems low, and MAS arrives at similar conclusions for liquidity risk. These OIFs could liquidate about 80% of their assets within a week while about 70% of their NAV is redeemable by investors within the same time window.[54] Regarding risks from leveraging, MAS concludes that they are also very low. In 2012, debt to asset ratios of OIFs stood at 1.5% (on leverage restrictions applicable to all CIS, see below at Part III.B.1.a).

3. *Securitisation*

In terms of securitisation,[55] assets held by SFVs in Singapore are minimal in comparison to other Asian countries (and globally).[56] They amount to "0.6% of outstanding non-bank loans granted by banks in Singapore".[57] This number indicates that banks in Singapore hardly engage in the practice of moving credit risk off their balance sheets. Numbers are also stable—the FSB reports assets held by SFVs as totalling US$4.5 billion in 2014.[58] For this reason, securitisation is not further analysed in this article.

4. *Money Market Funds*

MMFs, considered a typical and significant source of non-bank intermediation in many markets, seem of much less relevance in Singapore than in other parts of the world. As stated above, the 2012 numbers were $1.6 billion, amounting to a 0.2% share in assets held by OFIs.[59] Also, in 2012, MMFs only contributed 0.1% to bank financing.

In 2014, Singapore reported a total number of ten MMFs to the FSB.[60] The exact volume of assets held by these MMFs is not disclosed in the report, but one of the graphs in the report shows constantly low numbers for Singapore.[61]

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53 *Ibid* at 70. Long-only funds pursue the strategy of investing in equity and to hold them until they benefit from an increase in prices.

54 *Ibid*.

55 Securitisation here is understood as a process by which "portfolios of cash-flow-producing, illiquid financial instruments", usually loans, are transferred from banks to "special purpose vehicles funded by issuing securities", see IMF, *Global Financial Stability Report*, *supra* note 1 at 93; in more detail see Avgouleas, *supra* note 12 at 53; Richard S Carnell, Jonathan R Macey & Geoffrey P Miller, *The Law of Financial Institutions*, 5th ed (New York: Wolters Kluwer Law & Business, 2013) at 533. On the underlying technicalities and resulting financial exposures, see Tobias Adrian, *Dodd-Frank One Year On: Implications for Shadow Banking*, *Federal Reserve Bank of New York Staff Report no 533* (New York: Federal Reserve Bank of New York, December 2011) at 3, online: Federal Reserve Bank of New York <https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr533.pdf>.

56 See exhibit 21 in FSBRCG, *Shadow Banking*, *supra* note 30 at para 94.

57 MAS, *2013 Review*, *supra* note 29 (especially chart J4 at 71 *et seq*).

58 FSBRCG, *Shadow Banking*, *supra* note 30 at para 78. This is also expressed at para 87, exhibit 18.

59 See MAS, *2013 Review*, *supra* note 29 (0.2% of non-bank financial intermediary assets, Table J1 at 71).

60 FSBRCG, *Shadow Banking*, *supra* note 30 at para 68.

61 See *ibid* at para 93, exhibit 20.

MAS takes a narrow view of the shadow banking activities of MMFs. It considers MMFs shadow banks only to the extent that they intermediate credit (understood as placing assets backed by liabilities or pooled equity into credit instruments) and are subject to little or no prudential regulatory standards and supervisory oversight.[62] However, because MMFs come with substantial liquidity risks that can translate into severe asset price drops,[63] they should arguably be considered shadow banks regardless of credit intermediation. Consequently, the regulatory framework that applies to MMFs will be discussed in more detail below (at Part III.B.2).

5. *Lending transactions between banks and OFIs*

Singapore banks' risk exposures from their linkages with OFIs seem low since the extent of their funding by non-core liabilities is low. The majority of their obligations are to 'ultimate creditors'.[64] Ultimate creditors are depositors that are not themselves categorised as financial intermediaries—*ie* resident households, non-financial corporations and state and local governments. It is debatable whether other financial intermediaries such as insurance corporations, pension funds, and possibly non-MMF investment funds that are generally not categorised as shadow banks are also part of this group.[65] But this discussion is of little relevance here since even a narrower definition of core liabilities leads to low numbers of non-core liabilities in Singapore.

The 2012 numbers are: 2.5% of total non-bank deposits come from OFIs, namely OIFs (1.3%); hedge and private equity funds (0.2%); MMFs (0.1%); and broker-dealers (0.9%). In the other direction, the exposures of banks are lower: 1.7% of total non-bank loans extended by banks were granted to the shadow banking sector consisting of OIFs (0.6%) and broker-dealers (1.1%). Derivative exposures, defined as a share of total value of derivative transactions by banks, were 1.2%, consisting of exposures to OIFs (0.3%); and broker-dealers (0.9%). The amounts guaranteed by banks to these OFIs are labelled as "insignificant" by MAS.[66]

Such findings are very important because the mitigation of spill-over effects between the regular banking system and the shadow banking system is one of the five key elements in the G20 action plan of 2011 decided in Cannes,[67] and non-core liabilities of banks form part of the shadow banking discussion and concerns (as explained in Part I.B.1 above).

While nervous retail depositors is the standard textbook example for bank runs, events in the US and Europe in 2007-2009 have illustrated that short-term wholesale creditors are more likely to terminate their commitments to banks in times of financial turmoil.[68] The reasons are obvious. Such creditors are financial intermediaries that are themselves exposed to the risk of runs and as such are forced to increase their

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62 *Ibid* at para 131.

63 For such risks compare IMF, *Global Financial Stability Report*, *supra* note 1 at 93.

64 Compare MAS Macroprudential Surveillance Department, *Financial Stability Review* (Singapore: MAS, November 2015) at 6.

65 For the discussion about the exact definition of ultimate creditors and core liabilities, see IMF, *Global Financial Stability Report*, *supra* note 1 at 68, 92.

66 See MAS, *2013 Review*, *supra* note 29 (Table J2 at 72).

67 FSB, *Strengthening Oversight*, *supra* note 9 at i-iii.

68 IMF, *Global Financial Stability Report*, *supra* note 1 at 66.

own liquidity reserves immediately, *ie* by calling back all terminable commitments to other financial institutions.

No data can be found in the 2014 FSB report that would shed light on the issue of bank-OFI interconnectedness in Singapore.[69] Awareness of any developments is key, but the resulting issues can be dealt with by the standard tools of bank regulation. Risk exposures from non-core liabilities must be properly reflected in Liquidity Coverage Ratios and Net Stable Funding Ratios.[70] It bears repeating: Singapore fully complies with the global standards set by the Basel Accord and generally strives to secure the stability of its banking system.[71]

6. *Repos and collateral swaps*

Repurchase agreements ("repos") and collateral swaps account for small portions of the banks' activities in Singapore.[72] Non-bank financial intermediaries hardly participate in such transactions. Hedge funds are an exception, but even they do so only to a very limited extent.[73]

C. *Systemic Importance: Risks from OFIs Active in Singapore*

Since OFIs are relevant for the shadow banking discussion when their activities entail typical bank-like risks, such risks of OFIs active in Singapore mandate closer examination.

1. *Investment funds*

Investment funds, comprising MMFs, hedge and private equity funds, exchange traded funds and OIFs, invest in a range of assets on behalf of clients who bear the risk of loss. Generally speaking, investment funds are not very leveraged, are open-ended and their shareholders have a right to redeem their units at the funds' NAV.[74] As such, the counterparty risk from these funds' activities is fully borne by investors. The particular systemic risks of such investment funds consist in the potential of massive liquidity shortages. The loss of confidence in the situation and strategy of

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[69] There is no data listed for Singapore in exhibit 22 of FSBRCG, *Shadow Banking*, *supra* note 30 at para 96.

[70] Basel Committee on Banking Supervision, *Basel III: A global regulatory framework for more resilient banks and banking systems*, *supra* note 19 (on capital requirements in general at 12 *et seq*, on the leverage ratio at 60-63 and on off-balance sheet items at 63). Also see Basel Committee on Banking Supervision, "Revised Basel III leverage ratio framework and disclosure requirements: Issued for comment by 20 September 2013", Consultative Document (June 2013) at paras 34-39 (for the leverage ratio), online: BIS <http://www.bis.org/publ/bcbs251.pdf>.

[71] Hofmann, *supra* note 21.

[72] In general terms on repos and entailed risks in securities lending see *Dalhuisen*, *supra* note 15 at paras 4.2.1, 4.2.2; compare Carnell, Macey & Miller, *supra* note 55 at 533. Generally on repos and collateral swaps, see FSB, *Securities Lending and Repos: Market Overview and Financial Stability Issues, Interim Report of the FSB Workstream on Securities Lending and Repos* (Basel: FSB, 27 April 2012) at 9, online: FSB <http://www.fsb.org/wp-content/uploads/r_120427.pdf> [FSB, *Market Overview*].

[73] MAS, *2013 Review*, *supra* note 29 at 72.

[74] IMF, *Global Financial Stability Report*, *supra* note 1 at 93.

an investment fund can result in a multitude of redemption claims requiring fire sales of portfolio assets. Such loss of confidence spreads easily to other funds with similar investment profiles. Other sectors of the financial industry, and ultimately the real economy, are affected by high-volume asset sales of investment funds in reaction to the mass withdrawals from funds by investors.[75]

2. *Broker-dealers*

Brokers engage in the acquisition of assets on account of others, dealers on their own account (henceforth referred to as broker-dealers). Risks are not involved as long as transactions are simply executed on the principal's account and purchases are not leveraged. Broker-dealers, however, commonly borrow money to finance their deals in securities, typically by way of short-term repos. They also lend securities to cover borrowers' (*eg* investment funds) short positions in return for collateral, usually again in the form of repo and reverse repo transactions. The outcome may be a chain of repo transactions, resulting in increased interconnectivity and hence exposure of multiple financial intermediaries to the risk of price drops affecting the underlying collateral.[76]

Repos are overall low risk for the lender-buyer because the underlying financial transaction is (adequately) collateralised. Furthermore, securities are easily marketable and as such highly liquid. In times of market turmoil, however, securities are among the assets most affected by asset write-downs and their tradability suffers. Borrowers default on their repurchase obligations, triggering lenders to put the securities up for sale which prompts asset prices to come under further pressure. A "repo-run" is triggered which causes prices to drop quickly and massively.[77] As a part of repo chains, broker-dealers can therefore trigger and exacerbate systemic risk.

However, data suggests that OFIs hardly engage in repo transactions and collateral swaps in Singapore (above at Part II.B.6). Such findings indicate that non-bank broker-dealers' activities currently are of low systemic importance. Broker-dealers are nevertheless discussed further because the volume of broker-dealer transactions is high, making them potential shadow banking candidates should they ever leverage their activities more strongly.

3. *Finance companies*

Finance companies in Singapore are special financial intermediaries that lend small amounts and for short periods. Only three of them currently operate in Singapore, but together they hold assets amounting to US$12.247 billion (in 2014).[78] Finance

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[75] The history of finance is full of such examples, *eg* the need for the suspension of redemption of Australian property funds in the late 1980s and of UK property funds currently after the Brexit vote.

[76] FSBRCG, *Shadow Banking*, *supra* note 30 at 68.

[77] The Pan-Electric Crisis of 1985-1986 provides a good illustration of such risks in Singapore: see MAS, *Case Study on Pan-Electric Crisis*, MAS Staff Paper No 32 (Singapore: MAS, June 2004), online: MAS <http://www.mas.gov.sg/~/media/resource/publications/staff_papers/MAS_Staff_Paper_No32_Jul_2004.pdf> in detail for the report and analysis of MAS on the crisis.

[78] FSBRCG, *Shadow Banking*, *supra* note 30 at para 72. See also MAS, "Number of Financial Institutions and Relevant Organisations in Singapore", online: MAS < https://masnetsvc.mas.gov.sg/FID.html>.

companies are typical non-bank financial institutions that pursue a bank-like business model and as such are exposed to similar risks. They are licensed to engage in bank-like liquidity and maturity transformation and are exposed to credit risk. Finance companies may accept deposits without checking facilities from the general public[79] and lend to the general public, but are limited to an amount that must not exceed $5000 per borrower.[80] The strict regulatory principles that apply to them in Singapore, however, make them an unlikely source of underestimated systemic risk. They are subject to minimum capital[81] and liquidity requirements,[82] and are also required to establish reserve funds from their profits.[83] This last requirement somewhat mimics the capital buffer requirements for banks under Basel III.[84] While not subject to permanent prudential supervision, finance companies are monitored by MAS, which is authorised to inspect their books, accounts and transactions at any time.[85] For these reasons, finance companies do not feature in the remainder of this discussion.

4. *Financial advisers* et al

Financial advisers and money-changing and remittance businesses are subject to regulation mainly for consumer protection and anti-money laundering reasons; they do not generate bank-like risks. Payment and settlement systems are subject to strict regulation that addresses their unique function in settling payment streams, but there is no liquidity, credit and maturity transformation. For their lack of bank-like intermediation and risks, these intermediaries are also excluded from any further discussion.

5. *Insurance companies*

The insurance sector engages heavily in maturity and liquidity transformation, but the resulting risks are mitigated in a way entirely atypical of banks. Generally speaking, beneficiaries are locked in until claims mature or, in exceptional cases, until termination periods take effect, so run-like immediate withdrawals cannot occur. Consequently, the balance sheets of insurance companies look entirely different from those of banks. Temporary liquidity shortages can theoretically result from high numbers of large insurance claims over short periods, or losses of customers because of perceived reputational issues.[86] However, the regulatory framework that applies to the insurance sector is tailored to reduce and deal with such risks.[87] For these reasons, insurance companies are generally not part of shadow banking discussions.[88]

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[79] See *FCA*, *supra* note 35, at ss 22, 23(1) for restrictions that apply to such deposit-taking activities.

[80] See *ibid*, s 23(1)(a) and s 23(1)(f) for the ban on checking facilities and for the limit of $5000 respectively.

[81] *Ibid*, s 7.

[82] *Ibid*, s 32.

[83] *Ibid*, s 18.

[84] See above at Part I.B.1.

[85] *FCA*, *supra* note 35, s 33.

[86] MAS, *Liquidity Risk*, *supra* note 24 at para 2.2.

[87] Insurance companies and pension funds in Singapore (and generally in Asia) are not considered shadow banks: FSBRCG, *Shadow Banking*, *supra* note 30 at paras 61, 109.

[88] IMF, *Global Financial Stability Report*, *supra* note 1 at 92.

6. *The focus of the remaining discussion*

The quantitative findings above are strong indicators for risks of systemic importance and therefore shadow banking activities. The subsequent discussion of currently applicable regulatory principles (at Part III) and suggestions for improvements (at Part IV) will focus on investment funds in general, and in particular on MMFs and hedge funds. Securitisation, repo transactions and collateral swaps will not be discussed further because of their extremely low volumes in Singapore. Brokers and dealers will be discussed because the size of their transactions make them systemically relevant players. An emerging trend in the shadow banking landscape of Singapore will also be discussed: crowdfunding and P2P lending which entail shadow banking risks.

III. Regulating Shadow Banks in Singapore

Singapore pursues a stringent regulatory approach for the financial sector. The core provision in this respect is section 82(1) of the *SFA*. It provides that "no person shall, whether as principal or agent, carry on business in any regulated activity or hold himself out as carrying on such business unless he is the holder of a capital markets services licence for that regulated activity".[89] Licenses are granted by MAS on the basis of standard criteria such as relevant training, expertise and good standing and are subject to revocation if the license holder no longer meets all required criteria.

The key term in section 82(1) *SFA* is "regulated activity". Depending on the definition of such activity, the regulatory web can be spun more widely or narrowly, thereby exempting some financial activities from the licensing requirement. Singapore has spun the web tightly. The list of regulated activities stems from the Second Schedule of the *SFA*, and the comprehensive list includes all typical financial intermediaries, thereby leaving little room for regulatory arbitrage in terms of the need for licensing.[90]

The following discusses the licensing and further regulatory requirements for financial intermediaries in Singapore that have (above at Part II) been found relevant for the shadow banking discussion.

A. *Moneylending and Crowdfunding*

1. *Business and risks of lending*

Moneylending is a core financial service that comes with a number of risks, some of which are typical financial stability risks. Lending always leads to liquidity transformation and exposure of the lender to credit risk. If lending is executed by a bank-like

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[89] Similar prohibitions exist for more specific financial services such as the banking business, see s 4(1) of the *Banking Act*, *supra* note 34.

[90] The Second Schedule of the *SFA*, *supra* note 33, contains the comprehensive list of regulated activities consisting of (a) dealing in securities; (b) trading in futures contracts; (c) leveraged foreign exchange trading; (d) advising on corporate finance; (e) fund management; (ea) real estate investment trust management; (f) securities financing; (fa) providing credit rating services; and (g) providing custodial services for securities.

intermediary, liquidity transformation leads to the risk of liquidity shortages on the intermediary's part and exposes it to the full amount of capital loss. If, on the other hand, the intermediary merely takes on the role of an agent, the liquidity and credit risk is spread to a large group of investors, with potentially substantial negative repercussions if default risks materialise or investors need liquidity and are required to fire-sell their claims against borrowers.

In Singapore, as much as in other parts of the world, ever increasing amounts of lending have recently been offered by the non-bank financial industry. Crowdlending as one subgroup of crowdfunding (the other being crowd equity investing) is proving more and more popular especially to business entities with little or no access to traditional bank financing. MAS has communicated its general support of crowdfunding activities by pointing to the fact that start-ups and Small and Medium-sized Enterprises ("SMEs") create about 70% of all jobs in Singapore, and that securities-based crowdfunding offers a new source of financing to such companies. Such funding complements, or substitutes, lending from commercial banks, government-sponsored financing schemes and (traditional forms of) market financing.[91]

2. *Regulation applicable to crowdfunding and P2P lending*

Crowdlending and other forms of direct P2P lending are subject to licensing and other regulatory requirements.[92] Anybody engaged in the business of moneylending is subject to prior authorisation by a license from the Registrar of Moneylenders in Singapore.[93] Relevant exceptions to this licensing requirement apply to 'excluded moneylenders' comprising, *inter alia*, lending solely to business entities or to accredited investors.[94]

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[91] MAS, "Facilitating Securities-Based Crowdfunding", Consultation Paper P005—2015 (February 2015) at para 1.2 *et seq*, online: MAS <http://www.mas.gov.sg/~/media/MAS/News%20and%20Publications/Consultation%20Papers/Facilitating%20Securities%20Based%20Crowdfunding.pdf>. On revealing for Singapore (as well as other Southeast Asian countries) the high obstacles for SMEs to obtain bank lending or market financing, see also Deloitte, "Digital banking for small and medium-sized enterprises: Improving access to finance for the underserved", Report, online: Deloitte <https://www2.deloitte.com/content/dam/Deloitte/sg/Documents/financial-services/sea-fsi-digital-banking-small-medium-enterprises-noexp.pdf>. On the practical relevance of crowdfunding, see Steven Bradford, "Crowdfunding and the Federal Securities Laws" [2012] Colum Bus L Rev 1 at 100-104.

[92] See MAS, "Frequently Asked Questions (FAQs) on Lending-Based Crowdfunding" at para 1, online: MAS <http://www.mas.gov.sg/~/media/MAS/Regulations%20and%20Financial%20Stability/Regulations%20Guidance%20and%20Licensing/Securities%20Futures%20and%20Fund%20Management/Regulations%20Guidance%20and%20Licensing/FAQs/FAQs%20on%20Lending%20based%20Crowdfunding.pdf> [MAS, "FAQs"] which defines it as follows:

> Lending-based crowdfunding by businesses, also commonly referred to as peer-to-peer lending to businesses ("P2P lending"), generally refers to a fundraising model where many persons lend sums of money to a company and in return receive the company's legally-binding commitment to repay the loan at pre-determined time intervals and interest rates. The lending is typically conducted through an online platform. Lending-based crowdfunding, or P2P lending, is one of two financial return crowdfunding models (the other being equity-based crowdfunding).

[93] See *Moneylenders Act* (Cap 188, 2010 Rev Ed Sing), ss 4, 5. Also see in detail Sandra Booysen, "The New Moneylenders Act 2008—A Lost Opportunity?" (2009) 21 Sing Ac LJ 394.

[94] *Moneylenders Act*, *ibid*, ss 2(e)(ii), (iii). For the definition of accredited investors, the *Moneylenders Act*, *ibid*, refers to s 4A(1)(a) of the *SFA*, *supra* note 33. Such investors are designated by their wealth: in

Direct P2P lending where the intermediary only provides the contact between borrowers and lenders is prohibited without a moneylender's license unless the lender is an 'excluded moneylender'.[95] For example, a platform provided by some Singaporean business students for direct student-to-student lending requires a license under the *Moneylenders Act*. Evidently, such a license is unlikely to be granted since it requires a deposit of $20,000[96] and more importantly a qualified and experienced person who is responsible for managing the moneylending business.[97]

The more common and sophisticated securities-based crowdlending typically provides lending exclusively to business entities and as such is not subject to the licensing requirement under the *Moneylenders Act*. Instead, the *SFA* applies. The *SFA* is at the core of regulatory legislation in Singapore. It intends to regulate all financial intermediaries in one Act by providing a single licensing regime that covers all regulated activities of such intermediaries.[98] MAS specifies which regulated activities are covered by the licence (section 86(2) of the *SFA*) and imposes restrictions or conditions as it sees fit.[99] Consequently, the *SFA* is complemented by MAS regulations. MAS has general authority to issue regulations under section 341 of the *SFA* and specific powers under several further provisions of the *SFA*.[100]

Crowdlending requires a Capital Markets Services licence because securities are offered to investors.[101] The Second Schedule of the *SFA* contains a comprehensive list of financial activities which include "dealing in securities" and "advising on corporate finance".[102] Operators of crowdfunding platforms fall under both categories since they facilitate the offer of debentures in the case of crowdlending[103] and other types of securities, *eg* shares, in the case of equity crowdfunding. In practice, these operators obtain a Capital Markets Services license under the *SFA* and apply for an exemption from the *Financial Advisors Act*.[104]

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order to qualify as accredited investors, individuals must own net personal assets exceeding $2 million or have had an income of no less than $300,000 within the preceding 12 months: s 4A(1)(a)(i) of the *SFA*, *ibid*, and corporations own net assets exceeding $10 million, see s 4A(1)(a)(i) of the *SFA*, *ibid*. MAS can require different numbers for individuals and corporations, set requirements for trustees and widen the scope of application by naming further eligible persons: ss 4A(1)(a)(i)-(iv), *SFA, ibid*. In more detail see Booysen, *ibid*.

[95] *Moneylenders Act*, *supra* note 93, s 5 and s 2 "excluded moneylender".

[96] *Ibid*, s 5(5)(c).

[97] *Ibid*, s 7(e).

[98] See MAS, "Consultation Paper on the Review of Licensing Regime under the Securities Industry Act and Futures Trading Act" (18 August 2000), online: MAS <http://www.mas.gov.sg/~/media/resource/publications/consult_papers/2000/Consultation%20Paper%20On%20The%20Review%20Of%20Licensing%20Regime%20Under%20The%20SI%20Act%20And%20FT%20Act.pdf>.

[99] See Tjio, *supra* note 32 at 456.

[100] See *ibid* at 136.

[101] In addition to the licence under *SFA*, *supra* note 33, s 82, the *Financial Advisors Act* (Cap 110, 2007 Rev Ed Sing) [*FAA*] requires a licence for "advising on corporate finance" according to s 6. For more details on providing financial advisory service, see Tjio, *supra* note 32 at 524-527.

[102] Dealing in securities" is defined in the Second Schedule of the *SFA*, *ibid* as:

> (whether as principal or agent) making or offering to make with any person, or inducing or attempting to induce any person to enter into or to offer to enter into any agreement for or with a view to acquiring, disposing of, subscribing for, or underwriting securities.

[103] Explicitly stated by MAS in MAS, "FAQs", *supra* note 92 at para 4. For details about advising on corporate financing, see Tjio, *supra* note 32 at 466 *et seq*.

[104] Generally for intermediaries that fall into both categories, see *ibid* at 463.

Additionally, prospectus requirements apply. Any invitation to lend money to an entity is deemed to be an offer of debentures and requires the offeror to register a prospectus with MAS.[105] A prospectus is also required when funds are raised from the public through the use of shares and units of shares.[106]

The financial industry has voiced concerns about the high entry standards for crowdfunding activities and MAS has reacted by easing licensing requirements for securities-based crowdfunding intermediaries. MAS has lowered the base capital requirements and removed the security deposit requirement, both of which are otherwise general minimum requirements for a Capital Markets Services license.[107] It has also clarified that no prospectus is needed when crowdfunding is sought solely from wealthy ("accredited") and institutional investors because the *SFA* exempts offers of securities to such investors.[108]

In contrast, prospectus requirements apply when retail investors are targeted[109] unless the securitised crowdlending falls under the 'small offers exception'. No prospectus is required when companies personally offer securities for up to $5 million within a 12-month period to pre-identified individuals or entities,[110] and offers of securities made to no more than 50 persons within a 12-month period are exempted.[111]

However, the most practically relevant exception refers to promissory notes issued by one borrower to a single lender with face values of not less than $100,000 and having a maturity period of not more than 12 months. Such promissory notes are not considered debentures.[112] The consequence is that crowdfunding intermediation relying on such promissory notes is not based on an issuance of securities and therefore not subject to the prospectus requirement.[113] This broad exception is, however, under review and MAS expects Parliament to remove it in the near future.[114]

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105 According to s 239(3) of the *SFA*, *supra* note 33. The requirements for the prospectus follow from Division 1 Subdivision 2 of Part XIII of the *SFA*, *ibid*.

106 *Ibid*, s 240. See in detail Tjio, *supra* note 32 at 341. See s 243 of the *SFA*, *ibid*, and the additionally applicable Sixth Schedule to the *Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005* (S 611/2005 Sing) for offers of unlisted shares or units in such shares list the information that the issuers of securities must provide in the prospectus. The regulations were made by MAS in exercise of its powers conferred by ss 240, 240A, 243, 249, 251, 262, 272A, 272B, 277, 280, 318, 337, 339, 341 and 343 of the *SFA, ibid*. On all of the above, see also Hu Ying, "Regulation of Equity Crowdfunding in Singapore" [2015] Sing JLS 46 at 65.

107 Relying on its authority under ss 239A, 247, 273(5), 284A and 306 of the *SFA*, *ibid*. On these provisions authorising MAS to provide exemptions to prospectus requirements under the *SFA* see Tjio, *ibid* at 137.

108 Sections 274 and 275 of the *SFA*, *ibid*, apply. On all aspects described above, see MAS, "Response to Feedback Received—Facilitating Securities-Based Crowdfunding" (8 June 2016) at para 2.8 *et seq*, online: MAS <http://www.mas.gov.sg/~/media/MAS/News%20and%20Publications/Consultation%20Papers/Crowdfunding/Response%20to%20Feedback%20Received%20%20Facilitating%20Securitiesbased%20Crowdfunding.pdf> [MAS, "Response"]. On the capital requirements for holders of capital markets licenses, see generally Tjio, *ibid* at 501-504.

109 See MAS, "Response", *ibid* at para 3.1.

110 *SFA*, *supra* note 33, s 272A.

111 *Ibid*, s 272B.

112 *Ibid,* s 239(1).

113 See also MAS, "FAQs", *supra* note 92 at paras 6-8, 12.

114 *Ibid* at 12.

B. *Investment Funds*

The *SFA* also provides the regulatory framework for the activities of investment funds, especially the chapters applying to 'Holders of Capital Markets Services Licenses and Representatives',[115] 'Collective Investment Schemes'[116] and 'Business Trusts'.[117] In addition, MAS has issued[118] the "*Guidelines on Licensing, Registration and Conduct of Business for Fund Management Companies*"[119] and the "*Code on Collective Investment Schemes*" ("*Code*").[120]

Codes in Singapore "set out a system of rules governing the conduct of certain specified activities". They are "non-statutory and do not have the force of law". Breaches of their rules may, however, "attract certain non-statutory sanctions like private reprimand or public censure".[121] More importantly, any party to civil or criminal proceedings may rely on the failure to comply with the *Code* to establish or negative any liability, and MAS may revoke or suspend any license or take other actions as it thinks fit in case of such non-compliance.[122]

1. *Licensing requirement and operative restrictions for CIS*

Every CIS constituted in Singapore and offered to the public must be authorised by MAS.[123] Real Estate Investment Trusts ("REITs") are covered under the definition of CIS and as such require authorisation unless they choose to register as business trusts instead.[124]

(a) *Mitigation of investment risk*: The *Code* prohibits certain transactions, an approach that corresponds with typical restrictions applied to investment fund activities around the globe.[125] CISs are not supposed to directly lend monies, grant guarantees, underwrite or short-sell.[126] Instead, their investments are limited to transferable securities, money market instruments, eligible deposits, units in other

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[115] *SFA*, *supra* note 33, ss 82-101D.
[116] *Ibid*, ss 283-308.
[117] *Ibid*, ss 282A-282ZF.
[118] Based on authority given by s 321 of the *SFA*, *ibid*.
[119] MAS, *Guidelines on Licensing, Registration and Conduct of Business for Fund Management Companies*, *Guideline No SFA 04-G05* (Singapore: MAS, 7 August 2012), online: MAS <http://www.mas.gov.sg/∼/media/MAS/Regulations%20and%20Financial%20Stability/Regulations%20Guidance%20and%20Licensing/Securities%20Futures%20and%20Fund%20Management/IID%20Guidelines/SFA04G05GuidelinesOnFMCLicensingAndRegistration17Jun2016%20v2.pdf>.
[120] MAS, *Code on Collective Investment Schemes* (Singapore: MAS, 14 July 2015), online: MAS <http://www.mas.gov.sg/∼/media/MAS/News%20and%20Publications/Consultation%20Papers/Code%20on%20CIS%20_%20To%20Be%20Effective%20on%201%20January%202016.pdf> [MAS, *Code*]. See also s 2 of the *SFA*, *supra* note 33, for a legislative definition of a CIS.
[121] See MAS, "Regulatory Instruments Issued by MAS", online: MAS<http://www.mas.gov.sg/Regulations-and-Financial-Stability/Regulatory-and-SupervisoryFramework/Regulatory-Instruments-Issued-by-MAS.aspx>.
[122] See Tjio, *supra* note 32 at 140.
[123] *SFA*, *supra* note 33, s 286.
[124] See Tjio, *supra* note 32 at 170. See there also on the different treatments in terms of taxation.
[125] For examples from the EU (based on the Undertakings for Collective Investment in Transferable Securities ("UCITS") directive) and the US, see FSB, *Market Overview*, *supra* note 72 at 12.
[126] MAS, *Code*, *supra* note 120 at 4.2.

schemes, financial derivatives, and shares or securities equivalent to shares that are not listed for quotation or quoted and have not been approved for listing for quotation or quotation on an organised exchange.[127] In addition, schemes are subject to concentration limits to spread risk exposures more broadly.[128] These restrictions limit the activities of collective investment schemes to equity investments, some forms of deposits and the acquisition of derivatives, while banning them from engaging in bank-like lending intermediation or activities typical of investment banking.

Borrowing by CIS is strictly limited. Schemes may only borrow to service redemption requests and receive bridge funding, and then only from banks, merchant banks, finance companies (all licensed under the relevant acts in Singapore) or foreign deposit-taking institutions licensed under equivalent requirements. Bridging becomes necessary when cash flows from investors' commitments arrive later than needed for the fund's investment strategies or if redemption from sales arrive late. The *Code* provides that such borrowing should be limited to a period of not more than a month and an amount not exceeding 10% of the scheme's NAV.[129] This limitation factually eliminates the risk that CIS will face obligations other than investors' redemption claims.

Property funds are subject to a different set of rules.[130] Property funds are permitted to borrow for investment or redemption purposes, and the funds may mortgage their assets to provide security to the lender.[131] Borrowings and deferred payments may amount to up to 45% of the funds' deposited property.[132]

(b) *Mitigation of liquidity risk*: Liquidity deficit is the systemic risk that results from scenarios in which losses occur and investors lose confidence in the management of the scheme. In closed-end funds, units are non-redeemable at the investors' choice.[133] In contrast, investors of open-end funds expect their units to be redeemable, and in such instances redemption is executed *pro rata* of the fund's NAV.[134]

Large-scale redemption can result in serious liquidity shortages. The obvious solution is a temporary suspension which, according to the *Code*, is admissible by management "in the best interest of participants".[135] The *Code* further provides guidance that "difficulties in realising scheme assets or temporary shortfalls in liquidity may not, on their own, be sufficient justification for suspension". The suspension must cease when the exceptional circumstances are terminated and no later than 21 days after its commencement unless management convinces the trustee (*ie* the representative of the collective investors' interests) that an extension is in the best interests of the participants.[136] MAS must immediately be informed about the suspension and

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[127] *Ibid*, Appendix 1 at 1.1. Eligible deposits and securities are further defined at *ibid*, 1.2(b), 1.3.
[128] *Ibid*, Appendix 1 at 2.
[129] *Ibid*, Appendix 1 at 7.
[130] *Ibid*, Appendix 6.
[131] *Ibid*, Appendix 6 at 9.1.
[132] *Ibid*, Appendix 6 at 9.2.
[133] *SFA*, *supra* note 33, s 2.
[134] MAS, *Code*, *supra* note 120 at 6.4.
[135] *Ibid* at 6.2.
[136] *Ibid*.

the underlying reasons (for further discussion of these principles, see below at Part IV.A).

Property funds are champions in terms of liquidity risks as their property assets are the most illiquid and fire sales will lead to substantial losses. Redemption rules are therefore of highest significance. The solution of the *Code* is a mix of investor protection standards and systemic risk avoidance mechanisms. It requires the management of unlisted property funds to make a redemption offer to investors at least once a year. The fund may limit the volume of the offer in order to avoid being forced to liquidate its entire or substantial amounts of assets. Management must, however, offer to use at least 10% of the fund's deposited property for redemption purposes and may pay on a *pro rata* basis if redemption requests exceed this amount. It is required to name the assets or borrowings it intends to use to service the redemption requests and estimate the proceeds expected from sales of these assets.[137]

2. *Specific principles applied to MMFs*

MMFs are globally considered the most systemically relevant non-bank financial intermediaries. They accept investments from the public, and units are redeemable upon demand. MMFs aim to generate low but consistent income, and investors perceive MMF holdings as an alternative to short-term deposits and rely on the low-risk nature of the MMF business model. Especially in the US, but increasingly around the globe, MMFs are highly sought after financial products and seen as an alternative to demand deposits.[138]

MMFs engage in credit intermediation as well as maturity and liquidity transformation, but their investment portfolio is restricted to short-term debt securities, such as government securities, commercial paper, certificates of deposit, repos, short-term bonds and other MMFs, so that liquidity issues can be resolved relatively easily. The main systemic risk concern is rooted in the contagion spread that can originate from MMFs. They play a substantial role in short-term funding, especially for other financial institutions. When their investors run or see reason to run, MMFs are forced to end their substantial investments in the financial industry, thereby triggering a chain reaction of liquidity shortages in the entire sector.[139]

Singapore addresses some of these concerns in the *Code*.[140] The focus is on the mitigation of risks resulting from liquidity shortages and counterparty defaults. It thereby pursues the standard approach of limiting investment activities of MMFs in order to reduce default risks. Investments of MMFs are restricted to[141] bonds and other high quality securitised debt instruments[142] (including government bonds, corporate bonds, floating rate notes and asset-backed securities), high quality money market instruments, so-called "non-deposit investments" (including bank certificates of deposit, banker's acceptances, commercial paper and trade bills), eligible deposits placed with eligible financial institutions, and financial derivatives with the exception

[137] *Ibid*, Appendix 6 at 10.2.
[138] See Carnell, Macey & Miller, *supra* note 55 at 532.
[139] For some of these aspects, compare IMF, *Global Financial Stability Report*, *supra* note 1 at 93.
[140] See MAS, *Code*, *supra* note 120, Appendix 2.
[141] For the following list, see *ibid* at 3.1. For a full list of restrictions, see Appendix 2 generally.
[142] *Ibid*, Appendix 2 at 3.2.

of debt security or money market instruments which embed financial derivatives. As a further restriction, investments in financial derivatives are only permitted for the purpose of hedging existing positions in the portfolio.[143]

MMFs are also limited in their exposure to individual borrowers. MMFs may not invest or generally expose themselves with more than 10% of their NAV to a single entity or a group of entities defined as an entity, its subsidiaries, fellow subsidiaries and its holding company.[144] If the debtor is a Singaporean bank, the (group) limit may be raised to 20% of its NAV[145] and even 30% if the bank's short-term liabilities meet high rating requirements.[146] The higher cap of 30% also applies to highly-rated liabilities of the Singaporean government or liabilities guaranteed by the government.[147]

As elsewhere, MMFs must avoid commitments of long duration. The *Code* permits investments in non-deposit liabilities of remaining terms to maturity of not more than two years, and MMFs' average portfolio maturity must not exceed 12 months.[148]

It was explained above (at Part II.B.4) that for MAS, MMFs are considered shadow banks only if they intermediate credit (understood as placing assets backed by liabilities or pooled equity into credit instruments) and are subject to little or no prudential regulatory standards and supervisory oversight.[149] While the former requirement narrows down the number of MMFs that qualify as shadow banks, the latter eliminates them entirely since there is no indication that MAS considers MMFs in Singapore insufficiently regulated or supervised. Reservations are voiced above (also at Part II.B.4) and proposals for tighter regulation are proposed below (at Part IV.C).

3. *Specific principles applied to hedge funds*

Hedge funds are regarded as CISs using high(er) risk investment strategies. Such funds typically invest in financial instruments of low(er) liquidity and derivatives, leverage their investments, short-sell positions and do not shy away from risk concentration.[150]

The list of prescribed requirements for hedge funds contained in the *Code* reflects the traditional *laissez-faire* approach of regulators worldwide which has, however, been under attack especially after the GFC. For good reasons (which will be further explained below at Part IV.D), regulation has remained minimal in Singapore (as mostly elsewhere). Existing regulation focuses predominantly on restricting hedge fund investments to the wealthy and sophisticated, and securing good standing of management.[151]

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143 *Ibid*, Appendix 2 at 6.1.
144 *Ibid*, Appendix 2 at 4.2.
145 *Ibid*, Appendix 2 at 4.3.
146 *Ibid*, Appendix 2 at 4.4.
147 *Ibid*, Appendix 2 at 4.6.
148 *Ibid*, Appendix 2 at 5.1 *et seq*.
149 FSBRCG, *Shadow Banking*, *supra* note 30 at para 131.
150 For the definition of hedge funds by the MAS, see MAS, *Code*, *supra* note 120, Appendix 3 at 1.1. From a similar general perspective see Dalhuisen, *supra* note 15 at para 2.7.3.
151 From a global perspective see Dalhuisen, *ibid*, at para 2.7.4.

The *Code* resembles to some extent the regulatory approaches found elsewhere, *eg* in the EU Alternative Investment Fund Managers ("AIFM") directive, by calling for minimum requirements for the qualification[152] and conduct[153] of hedge fund managers. In addition, and again in line with global efforts, the *Code* moves in the direction of limiting the circle of eligible investors, but proceeds carefully by only excluding typical consumer investors. Hedge funds in Singapore may target only the wealthy, but numbers are comparatively low. The minimum initial subscription must amount to at least $100,000 per participant and $20,000 per participant for funds investing in hedge funds.[154]

The main investor protection mechanism consists in the prospectus requirements applying to hedge funds. As hedge funds are CISs, a prospectus is required when its units are offered to the public.[155]

The *Code* clarifies the details resulting from the application of the relevant provisions in the *SFA* to hedge funds and fund-of-hedge-funds ("FOHFs"). It requires that the main differences between hedge funds and other types of CISs are clearly stated in the prospectus. In particular, and amongst other points, clear warnings that little information about the management of the fund is available, that it holds limited liquidity, that hedge funds are subject to few regulatory requirements and that the assets of the fund are difficult to valuate if some of its investments are not actively traded are required.[156] In addition, continuous reporting obligations apply.[157]

More substantially in terms of systemic risk mitigation are restrictions that apply to the activities of hedge funds but here the *Code* treads cautiously. Leveraging is not restricted but only subject to requirements on disclosure in the prospectus.[158] Diversification requirements exist for FOHFs, but not for stand-alone hedge funds.[159] FOHFs may invest in leveraged hedge funds, here again subject to the requirement of disclosure in the prospectus, but are themselves only permitted to borrow money to meet redemptions and bridging requirements.[160] This restriction deserves full support as risks from double-layer leveraging must be considered intolerably high risk if—as is the case in Singapore—the circle of eligible investors is widely drawn and risk accumulation by exposure of lenders to funds and their umbrella funds would otherwise become possible.[161]

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152 See MAS, *Code*, *supra* note 120, Appendix 3 at 3.1 (requiring prudential supervision of the prime broker of the hedge fund), 4.2 (requiring relevant expertise of management) and 4.3 (listing specific aspects such as the professional experience and qualifications, the types of assets under management and performance history).

153 *Ibid*, Appendix 3 at 4.6 (requiring proper risk management and monitoring procedures and internal controls).

154 *Ibid*, Appendix 3 at 4.1 ($100,000 per participant) and 5.1 ($20,000 per participant).

155 *SFA*, *supra* note 33, s 296. Compare for CIS in general see Tjio, *supra* note 32 at 341.

156 MAS, *Code*, *supra* note 120, Appendix 3 at 7.2.

157 *Ibid*, Appendix 3 at 7.3, 7.4 (annual audited accounts and reports, semi-annual accounts and reports and quarterly reports to be prepared by managers and provided to the investors via the trustee unless exceptions apply).

158 *Ibid*, Appendix 3 at 4.8.

159 For FOHFs see *ibid*, Appendix 3 at 5.3.

160 See *ibid*, Appendix 3 at 5.9 (leveraging of the underlying fund), 5.10 (borrowing of the FOHF).

161 See on the issue of double-layered leveraging: Dalhuisen, *supra* note 15 at para 2.7.3.

Redemption options for investments are recommended by the *Code*, and redemption should be based on at least one regular dealing day per month, while payment should be executed within 90 days from the dealing day.[162]

C. *Broker-dealers*

Brokers and dealers are required to hold a licence under the *SFA* because they engage in regulated activities, in particular dealing in securities and trading in futures contracts.[163] Specific regulations[164] set out the requirements under which such a licence is granted and obligations for the conduct of such licensed brokers and dealers. They are obliged to keep and update an easily accessible register that contains their interests in securities and particulars about them, and keep books with details about all financial transactions.[165] Further, rules regulate the handling of customers' moneys by the broker and seek to ensure effective protection of customers from embezzlement.[166]

The most relevant provision in terms of mitigation of systemic risks resulting from brokerage and dealing is the requirement that every holder of a Capital Markets Services licence who borrows securities has to provide collateral in return and to require collateral for any lending of securities.[167] The collateral must fully cover the market value of the securities.[168] An exception applies when the securities are borrowed from an accredited investor.[169] The latter shows the limited *ratio legis* of the provision that focuses (too narrowly) on investor protection.

In addition, the general guidelines for prudent liquidity management apply. These MAS liquidity recommendations apply to all financial intermediaries in Singapore,[170] but are particularly relevant for intermediaries such as brokers that are not subject to a wide range of rules, especially in terms of systemic risk mitigation. In these recommendations, MAS encourages all institutions to pursue policies that limit liquidity risks and have strategies in place that help if shortages should occur. The principles are as follows:

1. Institutions should be aware of potential sources for negative impacts on the liquidity situation and prepare for them. They should regularly assess their capability to sell assets and, consequently, maintain sufficient reserves of HQLAs that can easily and without much loss be converted into cash in times of stress.

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[162] MAS, *Code*, *supra* note 120, Appendix 3 at 4.9.

[163] *SFA*, *supra* note 33, s 82. See Tjio, *supra* note 32 at 481. For the list of regulated activities in the Second Schedule of the *SFA*, see *supra* note 90.

[164] See *Securities and Futures (Licensing and Conduct of Business) Regulations* (Cap 289, Reg 10, 2004 Rev Ed Sing) [*SF(LCB)R*].

[165] *Ibid*, regs 4(1)(a), 39.

[166] *Ibid*, reg 16 *et seq*.

[167] *Ibid*, reg 45(1).

[168] *Ibid*, reg 45(3). See also reg 45(9) for the list of eligible collateral.

[169] *Ibid*, reg 45(2).

[170] See MAS, *Liquidity Risk*, *supra* note 24.

2. Institutions should further diversify their funding sources in terms of counterparties, financial instruments, currencies and markets and prepare for situations when tapping into alternative funding sources becomes inevitable, *ie* to know of such sources and be familiar with their funding conditions.[171]
3. Contingency funding plans must exist that "set out the institution's strategy for addressing liquidity shortfalls in a range of stress environments without placing reliance on lender of last resort support".[172]

These general recommendations address all institutions, and as a result not all of them apply to all financial intermediaries in the same way.[173] They are arguably too general and vague to provide substantial guidance for specific groups of financial intermediaries, such as brokers and dealers whose activities may entail significant risk from liquidity and credit transformation. More significantly, they are no more than recommendations. With growing numbers of assets handled by brokers and dealers in Singapore, MAS might consider moving from this soft law approach to a compulsory approach, especially since MAS concluded in its report to the FSB that Singapore's brokers must be defined as shadow banks since they intermediate credit with little or no prudential and supervisory oversight.[174]

However, the actual degree of financial stability risks resulting from such regulatory gaps depends on the volume of transactions executed by companies that specialise in brokerage.[175] From the above-explained (at Part II.A) dominance of the banking sector in the Singapore financial landscape, it can be assumed that the vast majority of brokerage services are executed by banks. Singapore follows the concept of universal banking and allows its commercial banks to combine commercial and investment banking in one entity,[176] and merchant banks are licensed to execute typical investment banking activities.[177] If the vast majority of brokerage services are executed by these strictly regulated and prudentially supervised banks, brokerage may be of no greater concern in terms of systemic risk than any other activity effected by these banks and addressed by principles of bank regulation.

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[171] This summarises the MAS *Guidelines on Liquidity Risk*, *ibid* at para 3.4.

[172] *Ibid* at para 3.5.

[173] See MAS, *Guidelines on Risk Management Practices—Objectives and Scope* (Singapore: MAS, March 2013) at para 4, online: MAS <http://www.mas.gov.sg/~/media/MAS/Regulations%20and%20Financial%20Stability/Regulatory%20and%20Supervisory%20Framework/Risk%20Management/Objectives%20and%20Scope.pdf>, which expresses this by saying that the guidelines are:

> [N]ot intended to prescribe a uniform set of risk management requirements for all institutions. The sophistication of processes, systems and internal controls for risk management is expected to vary according to the nature, size and complexity of the business activities of an institution. Nevertheless, these guidelines should have broad applicability as there is a high degree of commonality in the risk management challenges faced by financial institutions operating in an environment of global interdependencies.

[174] FSBRCG, *Shadow Banking*, *supra* note 30 at para 122.

[175] These brokers hold nothing but a licence under s 82 of the *SFA*, *supra* note 33.

[176] See s 30 of the *Banking Act*, *supra* note 34 in combination with the definition of "banking business" and for a list of activities intermediaries licensed as full banks are permitted to execute. See also Hofmann, *supra* note 21 at 310.

[177] Merchant banks as licensed by MAS under s 28 of the *MASA*, *supra* note 35.

IV. Assessment and Proposals

MAS' findings discussed above (at Parts II.B and II.C) suggest that systemic risk emanating from OFIs for the financial sector in Singapore is currently low. However, the volume of activities of OFIs is increasing, and with them the likelihood that typical shadow banking risks may materialise. In one respect, however, growth is less likely in Singapore than in other parts of the world, especially in Europe. This is because banks in Singapore were less affected by the GFC than in the US and Europe and did not need to take drastic recovery actions such as reduced lending in order to comply with capital requirements. However, Singapore has nevertheless implemented globally aligned post-crisis bank regulation reforms,[178] and compliance with tightened regulatory standards is as likely a challenge for banks in Singapore as elsewhere and might lead to cutbacks on lending. Such would create more demand for a financial sector outside the banking system.[179] As a result, there is a role for regulation in Singapore to anticipate and deal with issues of potential systemic risk.

A. *Crowdfunding and P2P lending: Jurisdiction of MAS and Redemption of Investments*

The question that arises from the regulatory framework applicable to crowdfunding and P2P lending in Singapore is whether it focuses too narrowly on the more traditional concern of adequate protection of consumer investors instead of addressing systemic risk concerns.

However, crowdfunding does not present the same risks for financial stability as other forms of financial intermediation—as long as crowdfunding platforms simply provide the contact between borrowers and lenders or issuers of securities. Such intermediaries are not exposed to credit risks on the one hand and redeemable liabilities on the other that could result in liquidity shortages. Transformation occurs directly between borrower and lender: investments are redeemed upon maturity and never before, exposing the individual investor to typical investment risks. Systemic risk is unlikely and only conceivable if mass failures of recipients of funding occur and result in such substantial losses of large numbers of investors that default on other obligations is triggered, especially in cases of leveraged investments.

Numbers in Singapore are currently too low to consider such systemic risks even remotely possible. However, in the interest of the absolute avoidance of negative developments, all crowdfunding and P2P lending activities should be subject to licensing and supervision by MAS regardless of their initial size and significance. The jurisdiction of MAS over all these financial services, *ie* even in cases in which no securities are traded and activities are not caught by the *SFA*, will enable MAS to recognise build-ups of financial risk at an early stage. In addition, mechanisms of intervention should be predefined to enable MAS to react quickly and adequately. Similar to the following proposals for CISs, authorisation for such intervention would best be located in the *MASA*.

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[178] Hofmann, *supra* note 21 at 313-325.

[179] Compare IMF, *Global Financial Stability Report*, *supra* note 1 at 66.

B. *Collective Investment Schemes*

The regulatory safeguards that apply to the activities of CISs focus on investor protection. Prospectus requirements are the conventional response to risks arising from information asymmetries between financial intermediaries and investors, and the risk that poorly informed and experienced investors are disadvantaged. Yet, the current wave of regulation around the globe that seeks to address the phenomenon of shadow banking focuses strongly on financial stability concerns. Singapore is of the view that such systemic risks are unlikely because assets held by CISs are moderate in relation to overall financial volumes.

However, the avoidance or at least reduction of all potential systemic risks entails a combination of measures that includes but also goes beyond vigilance in terms of volumes and thresholds of systemic risk. The G20 decided on an action plan at their 2011 summit in Cannes to align "standards for the monitoring of shadow banking activities to track build-ups of systemic risk and enable corrective action where necessary".[180] Such standards can best be achieved in three steps. Step one is authorisation for preventive risk control, step two is macroprudential supervision. Step three consists of a ready regime applicable when systemic risk is likely to crystallise. This regime must set mechanisms on the micro- and macro-level in motion that contain the negative results of such systemic risk.

Mechanisms of intervention should be predefined to enable MAS to react quickly and adequately. The most relevant risk arises from the ability of investors to withdraw their funding by returning their securities in exchange for payment of their *pro rata* NAV. Such redemption rights must be limited if they lead to liquidity dry-ups.

In situations of general economic downswings and cross-sector financial difficulties, the marketability and consequently the market price of assets held by CISs drops, depending on the magnitude of the economic and financial cool-offs. Such difficulties in selling assets must be reflected in the redemption options of investors. Redemption rights must be intrinsically limited, *ie* subject to suspension options. As a general rule, the suspension of redemption rights can usually be decided by the management of the financial intermediary. In the interest of investors, supervisors should, however, be authorised to interfere with such management decisions if managers hesitate for too long, thereby allowing dangerously high liquidity drainage or fire-sales of assets, or if managers invoke suspensions too lightly or retain them longer than required in the interests of investors in their entirety.

More importantly, if suspension of redemption rights is required in the interest of financial stability, the decision-making power should not lie with management but with the macroprudential regulator. Liquidity shortages of CISs and resulting fire sales of assets are likely trigger-scenarios for macro-level systemic risk if volumes of sales are high. In such systemically relevant instances, it cannot be permitted that unrestricted redemption of investors further deteriorates asset (market) values and thereby increases pressure on assets, their debtors and holders.

MAS should have clearly worded authority to intervene, and the soft law *Code* is not the ideal location for the implementation of such powers. Since a general

[180] See FSB, *Strengthening Oversight*, *supra* note 9 at "Introduction".

authority of MAS to intervene in all situations of systemically relevant redemption requests is suggested here, it should be implemented through the *MASA*.

C. *Money Market Funds*

MMFs are at the core of regulatory shadow banking concerns as explained above (at Part III.B.3). Existing regulation limits the activities of MMFs and the concentration of risks by requiring them to diversify and to invest in short-term high-security investments. Management is held to high standards of vigilance in order to foresee and hedge against hazardous developments. These include duties to internally assess the credit quality of all engagements, to know the expectations and anticipate the reactions of investors, and to prepare for expected or possible redemption requests of investors primarily by building up cash buffers. Singapore complies with this traditional approach as it limits investments of MMFs in two common ways: exposures to debtors must be of short duration and debtors' credit ratings must be high.

From a global perspective, however, further regulatory steps have been initiated to mitigate systemic risk resulting from liquidity pressures in accordance with the 2011 action plan of the G20 aimed at reducing susceptibility of MMFs to runs.[181] Pending EU regulation will respond to substantial volumes of assets held by MMFs and volumes of short-term funding by MMFs provided to banks in EU member states.[182] MMFs are currently subject to licence requirements and prudential supervision under the rules implementing the UCITS or AIFM directive, and the proposed regulation for MMFs will result in additionally applicable requirements.[183]

Some of the restrictions are not new but reflect global standards and regulation already in place in some EU member states, especially the restrictions on investment activities,[184] diversification requirements and concentration limitations.[185] Others, however, promise to create an unprecedented standard for MMF regulation. In overview:

1. The proposal for an MMF EU regulation introduces NAV buffers.[186] These cash buffers of no less than 3% of total assets enhance the liquidity of such MMFs that maintain a constant value NAV per unit or share (called "constant Net Assets Value ("CNAV") MMFs").[187] Such MMFs signal to investors a particularly low risk of losses and are particularly vulnerable to panic runs if the NAV per unit drops below the indicated

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181 See *ibid* at i-iii.

182 According to the European Commission, MMFs held 22% of the short-term debt securities issued by governments or corporations and hold 38% of bank-issued short-term debt, see EC, Commission, *Proposal for a Regulation of the European Parliament and of the Council on Money Market Funds*, COM (2013) 615 final, 2013/0306 (COD) (Brussels: European Commission, 4 September 2013) at 2, online: European Commission <http://ec.europa.eu/internal_market/investment/docs/money-market-funds/130904_mmfs-regulation_en.pdf> [EC, *Proposal*].

183 *Ibid* at recitals 12, 19.

184 See *ibid*, arts 8-13.

185 See *ibid*, art 14 *et seq*.

186 See *ibid*, art 30. On the idea for such liquidity buffers, and in more general terms on such buffers, see Avgouleas, *supra* note 12 at 54.

187 Defined in EC, *Proposal*, *ibid*, art 2(12).

benchmark.[188] The buffer seeks to avoid such drops—when units are redeemed and the NAV per unit has fallen below its denominated constant NAV, the difference will be made up by the cash reserve. Reciprocally, if the actual NAV is higher than the constant NAV, the difference is not redeemable by investors but will be credited to the NAV buffer.[189] MMFs that fail to satisfy the NAV buffers for a month cease to be CNAV MMFs and must immediately inform investors thereof.[190]

2. The proposal introduces a clear distinction between two types of MMFs with different investment horizons, one standard and the other short-term. The portfolio of short-term MMFs has a weighted average life (defined as the average length of time to legal maturity)[191] of no more than 120 days in comparison to that of a standard MMF of no more than 12 months.[192]
3. All MMFs must be registered in a central public register with a supranational financial authority—the European Securities and Markets Authority ("ESMA").[193] Once established, such a register can be used for better macroeconomic monitoring of MMF activities, and not just by one national regulator, but EU- and even world-wide.
4. Stress testing, known from bank regulation, will be introduced for MMFs.[194] ESMA-guided stress tests simulate severe plausible scenarios and assess the reaction of the MMFs to them. The results must lead to internal governance reactions and will be submitted to supervisors and ESMA.[195]
5. External financial assistance to MMFs is strictly limited in order to contain contagion effects. No third party is allowed to provide MMFs with cash, buy their assets at an inflated price, buy their units or shares for the purpose of providing liquidity to the fund, provide a guarantee, warranty or letter of support for the benefit of the MMFs or, generally, any other action that aims to keep the MMFs liquid and to maintain their NAV per unit or share.[196] Instead, CNAV MMFs are supposed to rely on their liquidity buffers,[197] while other MMFs that are not required to build up such buffers may, for reasons of systemic stability, be permitted by supervisors to receive external financial support. In the latter case, the MMF must be financially sound and the financial institution providing the assistance must not expose itself to inadequate risk.[198]

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[188] In more general terms, see the detailed definition of such MMFs in Carnell, Macey & Miller, *supra* note 55 at 532.
[189] EC, *Proposal*, *supra* note 182, art 31.
[190] *Ibid*, art 33.
[191] *Ibid*, art 2(19).
[192] See *ibid*, art 21 for short-term MMFs as compared to art 22 for standard MMFs.
[193] *Ibid*, art 3(7).
[194] *Ibid*, art 25.
[195] *Ibid*.
[196] *Ibid*, art 35(3).
[197] *Ibid*, "Explanatory Memorandum" at para 3.4.6.
[198] *Ibid*, art 36.

The Proposal makes no mention of concrete scenarios, but a likely instance in which this exception could be triggered is when central bank lending of last resort becomes unavoidable. Such lending of last resort has traditionally been reserved for banks, but recent experience during the financial crisis in the US has shown that jurisdictions with systemically important OFIs cannot afford to ignore their liquidity shortages that may trigger negative market effects such as further price deterioration for typical financial sector held assets.[199] Such developments show that responsibilities go hand in hand with privileges. Aligning regulatory standards applicable to OFIs with principles of bank regulation gradually eliminates the exceptional status of banks, and opens privileges such as central bank lending of last resort to the non-bank sector. If this is not intended, only one viable option remains: regulation must contain the growth of the non-bank financial sector to avoid systemic relevance, consequently leading to further and stricter regulation—an option evidently not chosen in the EU.

Some US academics go further in their proposals than the EU Commission and wish to subject MMFs to factually the same regulatory requirements as banks, *eg* to require them to join deposit guarantee schemes.[200] Such a requirement would come with substantial costs for MMFs. MMFs are a (slightly) more lucrative but also riskier alternative to deposits. Regulatory upgrades of 'investments' in MMFs to 'deposits', with all the attendant costs, jeopardises the business model of MMFs which operate on very small profit margins. Such a course of action may be justified in the US to mitigate enormous risks from disproportionately large MMFs which provide checking facilities, unlike in most other parts of the world including Singapore. For markets like Singapore, where the size of assets held by MMFs is far from alarming, the option of such highly intrusive intervention is an unlikely backstop in case MAS fears an uncontrollable expansion of risks from MMFs. In terms of MMF volumes and design, the US seems to be an outlier and standards for its MMFs may not be applicable to MMFs in other jurisdictions.

D. *Hedge Funds*

Hedge funds have globally been regulated cautiously for good reasons. Managers of hedge funds decide about investment strategies on an ad hoc basis which distinguishes them from other types of investment funds that pursue clear predefined strategies.[201] This particular need for flexibility makes regulatory restrictions, in terms of permitted and prohibited activities, difficult; it might even eliminate the business model of such funds entirely. Such elimination, however, would hardly serve the interests of the financial sector since hedge funds are important risk-takers. Not only does the non-financial industry depend on their risk-friendlier business model, but increasingly so do banks trying to place debt instruments that are subject to contractually agreed

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[199] For references about lending of last resort during the GFC, see *supra* note 7.

[200] Morgan Ricks, *Shadow Banking and Financial Regulation*, Columbia Law and Economics Working Paper No 370 (Columbia: Columbia Law School, August 2010) at 35-43, online: SSRN <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1571290>; Morgan Ricks, "Money and (Shadow) Banking: A Thought Experiment" (2011-2012) 31:2 Rev Banking & Fin L 731; Morgan Ricks, "The Case for Regulating the Shadow Banking System" (Paper delivered at the Brookings - Nomura - Wharton Research Conference, 14 October 2011) [unpublished].

[201] Dalhuisen, *supra* note 15 at para 2.7.3.

bail-ins (hybrid debt instruments). Consequently, regulation needs to approach risk mitigation cautiously to avoid eliminating a business model that serves important roles in financial markets and economies.

The regulatory framework that generally applies to hedge funds seeks to ensure that well-informed investors intentionally engage in investments that entail a higher risk of loss than more conventional investment schemes. It does not address systemic risk, especially since it is uncommon to set limits to leveraging. However, by ensuring that only experienced and well-informed investors risk their money, systemic risk is automatically partially mitigated. In addition, redemption of money invested in hedge funds is usually strictly limited and as such liquidity shortages seldom result from (sudden and unexpected) withdrawals.

Although risky investment strategies and leveraging entail the potential of serious losses, as long as hedge funds do not default on their commitments and losses are borne by ultimate investors who can afford them, risk will not spread. Even if such defaults occur, but only affect financially sound lenders, such events are not triggers for systemic risk. The regulatory focus must therefore be on leverage containment and exclusion, not only of consumer investors, but also restrictions on investments of financial institutions in hedge funds, especially banks and other intermediaries subject to the risk of runs. In the interest of financial stability, losses from hedge fund activities should only be allowed to affect ultimate creditors or financial intermediaries up to levels that do not endanger these intermediaries' overall financial sustainability.[202]

Such restrictions must be strictly monitored by macroprudential regulators. In this respect, hedge funds may even be required to reveal their investment strategies or commit to certain investment objectives, *ie* commit to disclosure well above currently enforced transparency in prospectuses. Whereas such commitments are undoubtedly not in the interest of hedge funds,[203] such a regulatory restriction is nevertheless justified because it gives hedge funds a choice: avoid leveraging, especially by means of borrowing from run-sensitive financial institutions, and retain high levels of independence; or engage in high risk leveraging and become subject to tighter regulatory scrutiny and transparency. In all these respects, the regulatory framework in place in Singapore could be tightened by complementing the disclosure-focused prospectus rules with stringent leveraging oversight.

V. Conclusions

Authors have said that the shadow banking sector in Asia is rising, but that the difference, when compared with American and European shadow banking, is more about unregulated or poorly regulated banks than about "long, complex, opaque chains of intermediation".[204] Such a statement does not, however, describe Singapore. Asia

[202] See Dalhuisen, *ibid* at para 2.7.4, who argues strongly for the containment of banks' exposures to hedge funds, but not for general leverage restraints.

[203] Similarly, this point is strongly emphasised by Dalhuisen, *ibid*.

[204] Robert Engle, Fariborz Moshirian & Christopher Wong, *Global Systemic Risk: What's Driving the Shadow Banking System?*, UNSW Institute of Global Finance Research Paper No 1 (New South Wales: UNSW, July 2015) at 6, online: SSRN <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2692076> (referring to Steven L Schwarcz, *Shadow Banking, Financial Risk,*

cannot be generalised and contrasted with America and Europe since, in terms of regulation of banks and non-bank intermediaries, jurisdictions like Singapore are much more comparable to Western countries than to China or many other Southeast Asian nations.

Generally speaking, Singapore has one important factual advantage over the US and, particularly, the EU where the implementation of EU legislation in national law takes time and the regulation and supervision of banks and OFIs is undertaken by a range of different institutions.[205] Whereas Singapore is one of the biggest financial markets globally, it is still a micro-state with a tiny territory and rather small population. These facts are reflected in the structure of its authorities. MAS is tasked with practically all aspects of financial supervision,[206] and Parliament has delegated authority over regulatory details in most areas of financial regulation to MAS. As such, MAS can react without delay from consultation or approval procedures and issue subsidiary regulation if shadow banking activities increase and macroeconomic risks are building up. It can thereby turn its general guidelines on risk management into concrete action. It bundles all information from all parts of the financial sector and can easily process them. As a result, it can rapidly require more information if it sees the potential for the build-up of systemic risk.[207]

Singapore could, nevertheless, consider a few proposals to make it more resilient against any threats to financial stability from potential shadow banks. In light of MAS' authoritative position over a market which is high in volume, but small in geographic size, a toolbox for swift reaction to build-ups of financial stability risks seems sufficient and preferable to general pre-emptive safeguards that could impede useful financial intermediation. All of the suggestions below have to be read in light of MAS' general regulatory powers that authorise MAS to restrict licenses and license holders.[208] For this reason, explicit intervention powers are arguably redundant. However, explicit intervention powers have merit in terms of raising awareness among shadow banks about key aspects of macroprudential risk management.

The most likely risk for financial stability from shadow banking activities in Singapore is the threat of liquidity shortages for all types of investment funds whose units are redeemable, and in particular for MMFs. The suggestion here is that MAS should be explicitly authorised to intervene and halt redemption based on systemic risk concerns. Further, that such authority of MAS should not be implemented in the *Code*, whose legal nature and binding effect on the financial industry is not unequivocal. Such authority should be implemented in the *MASA*. Recent amendments of the *MASA* show that rules in the *MASA* are not limited to general provisions about

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and Regulation in China and Other Developing Countries, Global Economic Governance Working Paper 2013/83 (July 2013), online: GEG <http://www.geg.ox.ac.uk/sites/geg/files/Schwarcz_GEG%20WP%202013_83.pdf>.

[205] For the highly fragmented US regime, see Judge, *supra* note 7 at 866, 868; Carnell, Macey & Miller, *supra* note 55 at 60-65.

[206] An aspect that Singapore shares with only a few other jurisdictions, see Charles AE Goodhart & Dimitri P Tsomocos, "Analysis of Financial Stability", in Pierre L Siklos, Martin T Bohl & Mark E Wohar, eds, *Challenges in Central Banking: The Current Institutional Environment and Forces Affecting Monetary Policy* (New York: Cambridge University Press, 2010) 121 at 130.

[207] This positive aspect is emphasised by the Securities and Futures Commission of Hong Kong in the "Case Study on CIS by Hong Kong" in Annex A, FSBRCG, *Shadow Banking*, *supra* note 30 at 66, and the same applies to the MAS.

[208] Tjio, *supra* note 32 at 456.

objectives and tasks of Singapore's central bank but include very specific powers in relation to regulated and supervised intermediaries.[209]

Regulation should continue to permit hedge funds to leverage their investments, but MAS needs to be informed about their volumes and lenders. Lending from the banking sector is adequately limited and monitored as a result of stringent bank regulation, but when OFIs lend to hedge funds, systemic risk in the non-bank financial sector can build up and result in stability risks.

A widely worded provision in the *MASA* complementing or replacing the existing regime and authorising MAS to obtain data about leveraging from all financial intermediaries, and to set limits to such leveraging in the interest of financial stability, could adequately address such concerns. Such a provision would also enable MAS to react immediately should broker-dealers in Singapore engage in repos and security lending to a larger extent. If crowdfunding and P2P lending platforms are subject to supervision by MAS, and therefore are required to report data about lenders and investors to MAS, the same provision would serve the purpose of permitting early intervention if systemic risk should build up in this area as a result of significant OFI engagement in this sector.

It is notable that MMFs are presently coming under stricter regulation in other financial centres. In Singapore, the volume of MMF transactions is still low and their role in wholesale financing of banks is insignificant. However, now is the time to think about regulatory responses should it increase. Such responses would include stress tests, liquidity buffers calculated on the basis of NAV and limitations to investments of OFIs in MMFs and vice versa.

Overall, positive conclusions can be drawn for the shadow banking phenomenon in Singapore. The discussion has shown that shadow banking in Singapore has not reached the proportions that it has in the US and Europe; that MAS is keenly aware of its potential to grow, and has numerous tools at its disposal to limit the risk which the shadow banking sector poses to financial stability.

Appendix – Abbreviations

- AIFM Directive: Alternative Investment Fund Managers Directive
- BCBS: Basel Committee on Bank Supervision
- CIS: Collective Investment Schemes
- ESMA: European Securities and Markets Authority
- FOHF: Fund of Hedge Funds
- FSB: Financial Stability Board
- HQLA: High-Quality Liquid Assets
- IMF: International Monetary Fund
- LCR: Liquidity Coverage Ratio
- MASA: *Monetary Authority of Singapore Act*
- MMFs. Money Market Funds
- NAV: Net Asset Value
- OFIs: Other Financial Institutions
- OIFs: Other Investment Funds

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[209] See Parts IVA, IVB of the *MASA*, *supra* note 35.

- P2P lending: Peer-to-peer lending
- REITs: Real Estate Investment Trusts
- Repos: Repurchase agreements
- SFA: *Securities and Futures Act*
- SFVs: Special Financial Vehicles