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Three Major Financial Crises: What Have We Learned?

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Introduction

Few experts predicted the Asian Financial Crisis of 1997-1998, or the Global Financial Crisis of 2008 and its close companion the Eurozone Debt Crisis of 2010, and we certainly do not pretend to be able to predict the next one. Yet history teaches there will be another crisis and probably sooner rather than later, and, of course, in the decade since the start of the Global Financial Crisis, the Eurozone crisis has been ongoing in many of its dimensions. Fragility that periodically erupts into a full blown financial crisis appears to be an integral feature of market-based financial systems in spite of the advent of sophisticated risk management tools and regulatory systems. If anything the increased frequency of modern crises since the collapse of the Bretton Woods international monetary system and the period of financial internationalization and globalization which has followed, underscores how difficult it is to prevent and deal with systemic risk. We thus seek to compare and contrast these three major crises both to distill the lessons to be learned, and to identify what more can be done to strengthen our financial systems. The following sections will provide an overview of each crisis in turn, considering in particular (i) its causes; (ii) the effectiveness of policy responses; and (iii) the lessons. In the conclusion we seek to draw some common themes from these experiences going forward.

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I THE ASIAN FINANCIAL CRISIS

In 1997-98, Asia experienced its worst financial crisis of the 20th century. It started with Thailand. Over a period of years, foreign money flooded into the Thai economy fueling that contributed to a massive current-account deficit combined with large scale overborrowing from international markets and massive overlending particularly to the property sector.[1] Thailand was forced to allow its currency to float in July 1997 as a result of foreign currency outflows resulting from loss of confidence; but the value of the Baht plummeted as a result, highlighting huge mismatches between foreign currency borrowing and domestic currency sources of repayment.[2] Thailand's crisis raised questions vis-à-vis the health of other emerging markets with similar features (in particular large foreign currency borrowing to fund domestic lending), and contagion soon spread to the debt, currencies, and banking sector of Malaysia, the Philippines, Indonesia, South Korea, and eventually Russia, Brazil. But it was not contained there. The shockwaves passed all the way to the US via the near collapse of one of the world's then largest hedge funds, Long Term Capital Management (LTCM).[3]

A An Overview of the Asian Crisis

The AFC was not a conventional sovereign debt crisis. The troublesome indebtedness was that of the private, not the public or quasi-public, sector and it occurred within "a benign international environment with low interest rates and solid growth in output and exports".[4] Initially this was a series of currency crises that developed into more generalized financial and economic crises, at least for Indonesia, Thailand and South Korea, the three most severely affected countries, as currency devaluation made foreign currency debt repayments funded from domestic lending unmanageable resulting in nationalisation of financial sector liabilities

[1] See Martin Feldstein, *A Self-Help Guide for Emerging Markets*, (New York: Council on Foreign Relations, 1999), online: < https://www.foreignaffairs.com/articles/1999-03-01/self-help-guide-emerging-markets>. See also Peter Passell, "Economic Scene; For a new generation of Asian tigers, a harsh currency lesson", *The New York Times* (24 July 1997) D-2, col. 1.

[2] Ruse Arensman, "Economy stall in Thailand has a familiar look", *The Denver Post* (2 November 1997) L-01.

[3] Paul Blustein, "Investors Reconsider Big Emerging-Markets Bets", *The Washington Post* (20 July 1997) H-01. See also "IMF happy with Malaysia, but says there is room for improvement", *The Australian* (29 April 1998) 32, col. 2.

[4] The World Bank, *Global Development Finance vol 1* (Washington, D.C.: World Bank, 1998), 30, online: < http://documents.worldbank.org/curated/en/917631468138290229/pdf/multi-page.pdf>

in order to stem the resulting systemic financial crisis. As a result of such nationalisations, affected countries found themselves facing unsustainable sovereign debt levels, which in turn required international assistance from the International Monetary Fund (IMF) and others. These sovereign debt crises – combined with IMF prescriptions for closure of much of the domestic financial system – in turn resulted in serious economic crises, with contagious impact across all markets with similar features.

B *Causes of the Asian Financial Crisis*

The four principal causes of the AFC were: (i) the type and extent of indebtedness; (ii) financial sector weaknesses; (iii) fixed local exchange rates; and (iv) a region-wide loss of confidence, which eventually spread to emerging market economies world-wide.

1 Type and Extent of Indebtedness

(a) Type of Indebtedness

Short-term indebtedness increased significantly in 1995-96 across the region.[5] The ratio of short-term to total debt in the countries of the region in mid-1997 ranged between 67% in Korea, 46% in Thailand and 19% in the Philippines.[6]

The primary problem with foreign investment in the short-term debt of emerging markets is the fluidity of the investment.[7] Outflows may foment a collapse in investor confidence. Volatility heightens if the short-term debt is denominated in local currency because a substantial devaluation will decimate a local currency portfolio.

(b) Extent of Indebtedness

The extent of indebtedness in East Asia was the product in part of excess liquidity in the developed world in the two years prior to June 1997. East Asian stocks and bonds were acquired by US and European investors who had grown scornful of the low interest rates on

[5] The World Bank, *Global Development Finance vol 1* (Washington, D.C.: World Bank, 1997) , 16, online: < http://documents.worldbank.org/curated/en/978911468163455868/pdf/multi-page.pdf>.

[6] *Ibid* at 35.

[7] See Alain Soulard, "The Role of Multilateral Financial Institutions in Bringing Developing Companies to U.S. Markets" (1994) 17 Fordham International Law Journal 145 at 147.

offer in their home countries and fearful that the US stock market had reached unsustainable heights.[8]

2 Financial Sector Weaknesses

(a) Failure to Intermediate Capital Flows Effectively

Capital inflows often ended up in speculative property and stock market investments that could not generate the foreign currency reserves needed to repay foreign currency debt.[9]

Local banks borrowed short and lent long, and mostly without hedging their foreign exchange exposures and on a scale for which hedging instruments were not available. Regulatory standards were inadequate.[10] Local banks were often controlled by people with strong connections to the ruling political party, and their choices influenced by the prospect of a bail-out. Indiscriminate international borrowing and domestic lending meant that when the bubble burst, domestic banks, particularly in Indonesia, South Korea and Thailand, were in crisis.[11]

(b) Premature Liberalisation of Domestic Financial Markets

Foreign money had flooded into Thailand: (i) directly as institutional investors invested in stocks and bonds, particularly short-term local market bonds and (ii) indirectly as Thai banks borrowed heavily from their foreign counterparts.[12] Thailand, Indonesia and South Korea opened their financial systems to international capital flows without reinforcing the stability of their domestic financial sectors.[13]

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[8] Paul Blustein, "Investors Reconsider Big Emerging-Markets Bets", *The Washington Post* (20 July 1997) H-01.

[9] Shigemitsu Sugisaki, *Economic Crises in Asia – Address* (Boston: Harvard Business School, 1998), online: < https://www.imf.org/en/News/Articles/2015/09/28/04/53/sp013098>.

[10] *The World Bank*, *supra* note 4 at 4.

[11] Rudi Dornbusch, "A Bail-out Won't Do the Trick in Korea", *Business Week* (8 December 1997) 26; Robert Garran, "Korea Crisis", *The Australian* (19 November 1997) 36, col 1.

[12] H. Chow, "Crawling from the wreckage" (1997) 4 Emerging Markets Investor 15.

[13] International Monetary Fund, *World Economic Outlook 9* (Washington, D.C.: IMF, 1998) 6, online: < http://www.imf.org/en/Publications/WEO/Issues/2016/12/31/Financial-Crises-Causes-and-Indicators>.

3. Fixed Exchange Rates

Prior to the Asian Financial Crisis, fixed exchange rates very often appealed to developing countries because they appeared to offer lower costs of credit,[14] lower rates of inflation, and discipline against government monetary or fiscal excesses.[15] However, when an economy with a fixed exchange rate is performing less strongly than that of the economy to whose currency its currency is fixed, adjustment is required. Otherwise, the fixed currency will become overvalued, as occurred in Mexico in 1993-94 (resulting in the Mexican Peso Crisis of 1994-1995), in Thailand and Indonesia in 1996-97, in Russia in 1997-98, and in Argentina in 2000-2001.[16]

The other problem with fixed exchange rates is that they encourage excessive borrowing in foreign currency, which is highly risky and masks the real cost of borrowing in a foreign currency. One of the overwhelming policy lessons of the Asian Financial Crisis is thus that flexible exchange rates provide a real measure of protection against currency crises and accompanying economic problems.[17]

4. Region-wide Loss of Confidence Triggers Contagion

The Asian crisis saw the distinct economic troubles of five countries become a regional crisis[18] due to a region-wide loss of confidence that in turn saw contagion flowing to other emerging markets.[19] It led to an outflow of capital which triggered currency depreciation, and the massive, unhedged foreign exchange exposures severely damaged the balance sheets of local corporations.[20]

C Accumulation of Non-Performing Loans (NPLs) and Policy Responses

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[14] I Viscio, *The recent experience with capital flows to emerging market economies* (Paris: OECD, 1998) 177; Pablo Bustelo, "Global and Domestic Factors of Financial Crises in Emerging Economies: Lessons from the East Asian Episodes" (Madrid: Instituto Complutense De Estudios Internacionales (1999).

[15] *Feldstein*, *supra* note 1; Barry Eichengreen & Ricardo Hausmann, *Exchange Rates and Financial Fragility* (Cambridge: National Bureau of Economic Research, 1999), online: <www.nber.org/papers/w7418>.

[16] See Alan S. Blinder, *Eight Steps to a New Financial Order* (New York: Council on Foreign Relations, 1999) 50.

[17] L. H. Meyer, *Lessons from the Asian Crisis: A Central Banker's Perspective* (New York: Levy Economics Institute, 1999).

[18] *The World Bank*, *supra* note 4 at 30.

[19] *Ibid* at 40.

[20] *Ibid* at 5.

1. Overview

The AFC teaches some specific lessons about the multiplication of NPLs and how NPLs should be managed. Pre-crisis weaknesses in loan underwriting and bank governance caused a surge in NPLs which combined with inadequate capital ratios triggered insolvencies necessitating banking sector restructurings.[21]

The two countries most deeply affected by the crisis, Thailand[22] and Indonesia[23], had NPL ratios averaging over 13% leading into the crisis. The high incidence of NPLs was indicative of inadequate prudential regulation and poor credit standards. Loans collateralized by property were a common theme.[24] These were particularly vulnerable to falling values during the downward phase of the credit cycle. This can cause a sudden and sharp spike in banking sector NPLs, destabilising balance sheets and therefore capital adequacy ratios that in extreme cases can lead to bank insolvency.

The capital adequacy ratios of the countries most affected by the crisis (while consistent with the Basel capital standards at the time) were insufficient at 8% to 10% to absorb the high level of NPLs.[25]

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[21] See Ross Buckley & Douglas Arner, "From Crisis to Crisis: The Global Financial System and Regulatory Failure" (2011) Kluwer Law International.

[22] See Narisa Laplamwanit, *A Good Look at the Thai Financial Crisis in 1997-98* (New York: Columbia University, 1999), online: <http://www.columbia.edu/cu/thai/html/financial97_98.html>.; also see Craig C. Julian, "The Impact of the Asian economic crisis in Thailand" (2000) 26 Managerial Finance, 46, online: < https://epubs.scu.edu.au/cgi/viewcontent.cgi?article=1341&context=comm_pubs>.

[23] Kenichi Takayasu & Yosie Yokoe, *Non-performing Loan Issue Crucial to Asia's Economic Resurgence* (Singapore: The Japan Research Institute, 2000), online: <https://www.jri.co.jp/english/periodical/rim/1999/RIMe199903npl/>.

[24] David Richardson, *Asian Financial Crisis* (Canberra: The Parliament of Australia, 2017), online: < http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/Publications_Archive/CIB/CIB9798/98cib23>; also see Abdelhak S Senhadji & Charles Collyns, *Lending Booms, Real Estate Bubbles and the Asian Crisis* (Washington, D.C.: International Monetary Fund, 2002).

[25] See Masahiro Kawai, "Bank and Corporate Restructuring in Crisis-Affected East Asia: from Systemic Collapse to Reconstruction," in Gordon de Brouwer, ed, *Financial Markets and Policies in East Asia*, ed. (London: Routledge, 2003) 82.

South Korea[26] and Malaysia[27] fared better than Thailand[28] and Indonesia[29] by proactively implementing comprehensive, structured resolution plans focusing on recapitalising banks and managing NPLs through asset management companies (AMCs).[30]

2. Analysis of Policy Responses

As confidence evaporated, there was a pro-cyclical effect in jurisdictions characterised by a high level of simultaneous bank closures. Paradoxically, these mass bank closures, which intensified instead of stemming panic, were a condition of the IMF's support programmes.[31]

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[26] Korea Asset Management Corporation (KAMCO) created a NPL resolution fund to facilitate purchases of NPLs. See Kim Kihwan, *The 1997-98 Korean Financial Crisis: Causes, Policy Response, and Lessons - speech at the High Level Seminar on Crisis Prevention in Emerging Markets* (Singapore: International Monetary Fund and Government of Singapore, 2006), online: <

https://www.imf.org/external/np/seminars/eng/2006/cpem/pdf/kihwan.pdf>.

[27] Fumitaka Furuoka et al., "Economic Crisis and Response: Case Study of Malaysia's Response to Asian Financial Crisis" (2012) 11:1 Journal of Contemporary Eastern Asia 49.

[28] *Laplamwanit*, *supra* note 31; Kuejai Jungjaturapit, *Has Thailand Learned from the Asian Crisis of 1997?* (Cedar Falls: University of Northern Iowa, 2008), online: <https://business.uni.edu/web/pages/departments/PDFs/Jungjaturapit.pdf>. For Thailand's slow pace in pursuing structural reforms, see Andrew Berg, *The Asian Crisis: Causes, Policy Responses, and Outcomes* (Washington, D.C.: International Monetary Fund, 1999).

[29] Stephen Sherlock, *Crisis in Indonesia: Economy, Society and Politics* (Canberra: The Parliament of Australia, 1988), online: <http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/Publications_Archive/CIB/CIB9798/98cib13>. For the Indonesian government's lack of commitment and actual strategy to implement reforms, see Paula Ranta, *Malaysia's and Indonesia's Recovery from the Asian Financial Crisis – Comparison and Causes behind the Recovery* (Helsinki: Helsinki Metropolie University of Applied Sciences, 2017).

[30] See Douglas Arner, Emilios Avgouleas, Ewan Gibson, "Overstating Moral Hazard: Lessons from Two Decades of Banking Crises University of Hong Kong Faculty of Law Research Paper No. 2017/003, 17 March 2017, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2929574

[31] See IMF Staff, *Recovery from the Asian Crisis and the Role of the IMF* (Washington, D.C.: International Monetary Fund, 2000), online: <https://www.imf.org/external/np/exr/ib/2000/062300.htm>. Also see Stanley Fischer, *The Asian Crisis: A View from the IMF - speech at the Midwinter Conference of the Banker's Association of Foreign Trade* (Washington, D.C.: International Monetary Fund, 1988), online: <https://www.imf.org/en/News/Articles/2015/09/28/04/53/sp012298>.

Thailand[32] and Indonesia[33] had the highest level of closures, the deepest and longest disruptions of financial stability, and the most excessive use of public funds to bailout their banking sectors. NPL ratios and bank closures peaked simultaneously in those jurisdictions.[34]

To manage the large volumes of NPLs, AMCs were created in Thailand, Indonesia, and Malaysia. (South Korea already had an existing AMC which was put to use.) These AMCs were largely effective in cleansing bank balance sheets of NPLs, strengthening capital ratios in the longer-term, stabilising banking sectors, and aiding the recovery of the region's economies.[35]

D Lessons Learned from the Asian Financial Crisis

There are at least five enduring lessons from the Asian Financial Crisis:

1. Contagion: Loss of confidence can act as a channel for the cross-border propagation of financial stability risks exacerbating the vulnerabilities of domestic financial systems.

2. Fixed exchange rates are a high-risk strategy and some form of floating exchange rate system is generally much to be preferred.

3. The denomination of most of an economy's foreign debt in foreign currency is risky, particularly in the absence of markets for hedging – what is now termed "original sin".

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[32] As a part of the IMF support programme, the Thai government closed 56 bankrupt finance companies in 1997, see Masahiro Kawai, *Bank and Corporate Restructuring in Crisis-affected East Asia: From Systemic Collapse to Reconstruction* (Canberra: Australia-Japan Research Centre, 2001). In comparison, Korea only saw the closure of 14 banks, see R.Y.C. Chang et al., *Asian Financial Crisis: Causes and Development* (Hong Kong: Hong Kong Institute of Economics and Business Strategy, 2011).

[33] As a part of the IMF support programme, the Indonesian government closed 16 banks in 1997 alone. See *IMF Staff*, *supra* note 42.

[34] At the end of 1997, Thailand's NPL/total loans ratio was 22.6% and Indonesia's NPL/total loans ratio was 7.2%. See *Kawai*, *supra* note 43. Also see Ma. Socorro Gochoco-Bautista et al., "In the Eye of the Asian Financial Maelstrom: Banking Sector Reforms in the Asia-Pacific Region" in Asian Development Bank ed, *Rising to the Challenge in Asia: A Study of Financial Markets* (Manilla: Asian Development Bank, 2000).

[35] The Financial Restructuring Authority in Thailand, the Indonesian Bank Restructuring Agency, and Danaharta in Malaysia. See Noerlina & Sylvia Cinthya Dewi, "Asian Financial Crisis: Overview of Asian Crisis and Recovery Progress" (2000) 4:1 The Winners 13-17.

4. Much of the debt needs of emerging markets should be funded with long-term local currency denominated instruments, complemented by equity markets featuring strong regulatory and disclosure frameworks, in order to reduce currency risks.

5. The infrastructure and regulation of local capital markets – both equity and debt – need to be developed extensively in order to provide alternatives to bank lending: so called "spare tyres".

6. Capital tends to flow recklessly to emerging markets in times of surplus liquidity in the developed world.

1 Cross-border contagion

The best protective measure against cross-border contagion, apart from restrictions on short-term capital flows, are well-regulated financial systems with adequately capitalised financial institutions and adequate levels of foreign currency reserves as a form of self-insurance against volatility. As a result of the crisis, East Asia has bolstered its regional resilience through the Chiang Mai Initiative,[36] its Multilateralisation (CMIM)[37] and the associated ASEAN+3 Macroeconomic Research Office (AMRO).[38] In addition, emerging markets around the world – particularly East Asia – have focused significant efforts on improving financial regulation (serving them well in the context of the 2008 Global Financial Crisis) and also building up substantial foreign exchange reserves as a means of self-insurance, arguably though to levels which had a role in the excess liquidity underlying the buildup of excesses prior to 2007.

2 The Benefits of Floating Exchange Rates

Fixed exchange rates are often politically difficult to correct through a devaluation when they become overvalued. This leads to burgeoning current account deficits, capital flight and

[36] The Chiang Mai Initiative was set up in 2000. See Barry Eichengreen, "What to Do with the Chiang Mai Initiative" (2003) 2:1 Asian Economic Papers 1-49.

[37] In March 2014, the Chiang Mai Initiative developed into the Chiang Mai Initiative Multilateralization Agreement, a multilateral currency swap agreement among ASEAN+3 countries. ASEAN+3 Macroeconomic Research Office, *ASEAN+3 Regional Economic Outlook 2017 – ASEAN+3 Region: 20 Years after the Asian Financial Crisis* (Singapore: AMRO, 2007), online: <http://www.amro-asia.org/wp-content/uploads/2017/04/AREO2017_Full-Text.pdf>.

[38] In May 2011, the ASEAN+3 Macroeconomic Research Office (AMRO) was found as the regional surveillance unit of ASEAN+3, directly responsible for regional economic surveillance and overseeing the CMIM. See Pradumna Bickram Rana, Wai-Mun Chia, and Yothin Jinjarak, "Monetary Integration in ASEAN+3: A Perception Survey of Opinion Leaders" (2012) 23:1 Journal of Asian Economics 1-12.

currency crises.[39] Given the volumes of global currency flows,[40] floating exchange rates, coupled to strong foreign exchange reserves and liquidity arrangements, better enable nations to weather periodic international volatility. Across Asia, with the exception of China, countries have adopted floating exchange rates, a trend that can also be seen worldwide among emerging markets.

3 The High Risks of Foreign Currency Borrowing

At the time of the Asian Financial Crisis, large scale hedging of foreign was extremely expensive and rarely done.[41] If the currency risk is with the borrower due to the denomination of the debt, in times of trouble it is transferred to the lender by the incapacity of the borrower to service the debt. There is thus the clear need to develop local currency denominated financing channels and markets for hedging foreign currency exposures in order to address the problem of "original sin". Much effort has been expended with significant success across East Asia in developing local currency bond markets, as well as regional debt markets, to the extent that such debt has now become a significant asset class for international investors. Likewise, hedging markets and tools have developed for many of the more significant currencies, though these still tend to underdeveloped.

4 The Need for Long-Term Local Currency Capital

The principal source of local currency capital has been short-term, unstable local market bonds.[42] Long-term local currency capital markets allow emerging market debtors to raise

[39] For a discussion of the difficult in devaluing fixed exchange rates due to competing government objectives, see Maurice Obstfeld & Kenneth Rogoff, "The Mirage of Fixed Exchange Rates" (1995) 9:4 Journal of Economic Perspectives 79-81. For an analysis of government credibility and devaluation through the Latin America example, see John H. Welch & Darryl McLeod, "The Costs and Benefits of Fixed Dollar Exchange Rates in Latin America" (1993) 3 Quarterly Review of Economics and Finance 101-114.

[40] Bank for International Settlements, *Triennial Central Bank Survey of Foreign Exchange and OTC Derivative Markets in 2016* (Basel: BIS, 2016), online: <http://www.bis.org/publ/rpfx16.htm>.

[41] For an analysis of an unprecedented increase in short term foreign liabilities at the onset of the Asian Financial Crisis, see Roberto Chang & Andrés Velasco, *The 1997-98 Financial Crisis: Why in Asia? Why Not in Latin America?* (Atlanta: Federal Reserve Bank of Atlanta, 1998), online: < http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.468.5775&rep=rep1&type=pdf>. Also see Herman Schwartz, "The Long(term) and Short(term) of the Asian Financial Crises," in Roy Starrs ed, *Nations Under Siege: Globalization and Nationalism in Asia* (London: Macmillan, 2002) 103.

[42] For a breakdown of debt structure in the ASEAN+3 countries in facing the Asian Financial Crisis, see Weiping Liu, "Short-Term Foreign Funds, a Comparative Study between China and Victim Countries of 1997 Asian Financial Crisis" (2007) 1:1 Global Journal of Finance and Banking Issues, online: < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1536133>. Also see Glenn Stevens, *The Asian Crisis: A Retrospective - speech at the Anika Foundation Luncheon Supported by the Australian Business Economists and*

capital with the currency risk on the investors and with a repayment profile well adapted to avert crises.

South Korea, Indonesia and China have, with regional support through the ASEAN+3 Bond Market Initiative (ABMI),[43] done well in the past two decades in developing their local currency sovereign bond markets.

5 The Need to Develop Local Capital Markets

In emerging markets economies, banks are often subject to pressure to make finance available to certain debtors for non-commercial reasons.[44] Crony capitalism was a major cause of the Asian Financial Crisis.[45] This has been a focus for both individual economies in the region and ASEAN,[46] particularly through the ABMI and the ASEAN Capital Markets Forum[47] and its Implementation Plan.[48]

Macquarie Bank (Sydney: Reserve Bank of Australia, 2007), online: <http://www.rba.gov.au/speeches/2007/sp-gov-180707.html>.

[43] Launched by ASEAN+3 in 2003, the Asian Bond Markets Initiative (ABMI) created a regional bond guarantee system, and established regional settlement and clearance infrastructure. Mangal Goswami and Sunil Sharma, *The Development of Local Debt Markets in Asia* (Washington, D.C.: International Monetary Fund, 2011).

[44] Alison Harwood, Michael Pomerleano & Robert E Litan, *The Crisis in Emerging Financial Markets: A World Bank-Brookings Conference Report* (Washington, D.C.: Brookings, 1999), online: <http://www.brookings.edu/research/the-crisis-in-emerging-financial-markets-a-world-bank-group-brookings-conference-report/>.

[45] Eddy Lee, "The Debate on the Causes of the Asian Crisis: Crony Capitalism Versus International System Failure" (1999) 2 Internationale Politik und Gesellschaft 162-167.; Ajit Singh and Ann Zammit, "Corporate Governance, Crony Capitalism and Economics: Should the US Business Model Replace the Asian Way of 'Doing Business?'" (2006) 14:4 Corporate Governance: An International Review 220-233. 14 no. 4 (2006); Raghuram G. Rajan & Luigi Zingales, "Which Capitalism? Lessons from the East Asian Crisis," (1998) 11:3 Journal of Applied Corporate Finance 40-48.

[46] See Reserve Bank of Australia, *Bond Market Development in East Asia Reserve Bank of Australia Bulletin* (Sydney: Reserve Bank of Australia, 2003), online: <http://www.rba.gov.au/publications/bulletin/2003/dec/1.html>; See Bank for International Settlements, *Weathering Financial Crises: Bond Markets in Asia and the Pacific paper presented at the BOJ-BIS High Level Seminar on "The Development on Regional Capital Markets"* (Basel: BIS, 2011), online: <http://www.bis.org/publ/bppdf/bispap63.pdf>. Also see Cyn-Young Park, "Developing Local Currency Bond Markets in Asia" (Manilla: Asian Development Bank, 2016) 4.

[47] The Asian Bond Market Forum was launched in 2010 as a common platform to support harmonization of regulation concerning cross-border bond transactions and the standardization of market practices. *Goswami and Sharma*, *supra* note 61 at 11.

[48] Launched in 2015, the "Implementation Plan to Promote the Development of an Integrated Capital Market to achieve the objectives of the AEC Blueprint 2015" ("Implementation Plan") focused on adopting international standards, progressive liberalization, and sequencing regional initiatives. See Thirachai Phuvanatnaranubala, *Implementation Plan for ASEAN Capital Markets Integration - speech at the 2nd OECD Southeast Asian*

Every developing country financial crisis from 1828 to 1998 when it involved foreign overborrowing was preceded by a period of high liquidity in the developed world that funded large capital flows to developing countries that eventually experienced crises. The primary task of local and international bank regulators – to maintain the safety and soundness of their domestic financial systems – requires vigilance and control over the amount being lent to an invested in emerging markets economies. Given the manner, in which global trade has developed over the past decade in particular, trade imbalances generating financial flows from the developing world are now a concern for developed economies and were a major element underlying the Global Financial Crisis.[49]

II THE GLOBAL FINANCIAL CRISIS

The Global Financial Crisis began as a domestic mortgage crisis in the United States which rapidly spread throughout the world after the failure of Lehman Brothers and AIG. Financial institutions lost confidence in dealing with one another and funding markets froze. This section will provide an overview of the crisis and consider: (i) the causes; (ii) an analysis of policy responses; and (iii) the lessons learnt from the Crisis.

A Causes of the Global Financial Crisis

The five principal causes of the GFC were: (i) excessive leverage; (ii) poorly functioning credit markets; (iii) a disconnect between regulatory structures and the financial system; (iv) misaligned incentives, and (v) interconnectedness that facilitated the global transmission of systemic risk.[50] Each of these in turn was underpinned by an excessive reliance on quantitative risk management mechanisms.

Regional Forum (Bangkok: SEC, 2009), online: <http://www.sec.or.th/TH/Documents/Information/speeches/speech270452.pdf>.

[49] See Ricardo J. Caballero & Arvind Krishnamurthy, *Global Imbalances and Financial Fragility* (Cambridge: National Bureau of Economic Research, 2009); Ben Bernanke, *The Global Savings Glut and the U.S. Current Account Deficit Sandridge Lecture* (Richmond: Virginia Association of Economists, 2005).

[50] See Emilios Avgouleas, *Governance of Global Financial Markets* (Cambridge: Cambridge University Press, 2012) ch. 2, where flawed financial innovations coupled with erroneous science are added as another cause of the GFC.

1 Excessive Leverage

Excessive leverage was a destabilizing factor manifesting as defaults and debt overhang,[51] and showing the importance of the leverage cycle in causing financial instability.[52]

(a) US Sub-prime Mortgage Market

Excessive lending was particularly concentrated in real estate markets catering to US consumer borrowers of lesser credit quality.[53] The false perception that credit risk could be perfectly hedged on a portfolio basis allowed banks to accelerate consumer lending regardless of risk.[54] When subprime mortgagors began defaulting in large numbers, US government-sponsored enterprises Fannie Mae and Freddie Mac were unable to honour their guarantees and faced bankruptcy.[55] The re-nationalisation of these institutions averted their default and a systemic crisis, yet eroded confidence in markets.[56]

(b) Other Asset Classes

Excessive lending and leverage was not limited to real estate. Arrangers and advisors such as credit ratings agencies (CRAs) were more than willing participants in their quest to earn fees,[57] and investors followed their advice either due to heuristics or rational herding.[58]

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[51] For a restatement and a summary of the 'financial instability hypothesis': Hyman P. Minsky, *The Financial Instability Hypothesis*, (New York: Levy Economics Institute, 1992).

[52] John Geanakoplos, "Solving the Present Crisis and Managing the Leverage Cycle" (2010) FRBNY Economic Policy Review 101-131.

[53] Douglas W. Arner, "The Global Credit Crisis of 2008: Causes, Consequences and Implications for International Finance" (2009) 43 The International Lawyer 19.

[54] *Ibid*.

[55] *Ibid* at 27.

[56] *Ibid* at 28.

[57] *Ibid* at 19.

[58] Emilios Avgouleas, "The Global Financial Crisis, Behavioural Finance and Financial Regulation: In Search of a New Orthodoxy", (2009) 9 Journal of Corporate Law Studies 23-59.

2 Malfunctioning Credit Markets

One of the key causes of the GFC was the excessive use of short-term funding markets.[59] A liquidity crunch meant that large volumes of short-term funding could not be rolled over.[60] Another manifestation of malfunctioning credit markets was the market for asset-backed securities, whereby assets (e.g. mortgages) could be repackaged and sold to investors, with the proceeds funding the origination of further assets to repeat the distribution cycle.[61]

Misaligned incentives led to excessive risk taking and socially damaging outcomes.[62] Securitisation markets lacked transparency obscuring the underlying risks.[63] Poor loan origination practices and unregulated non-banks were at the heart of the subprime mortgage crisis.[64]

(a) OTC Derivatives

Over-the-counter (OTC) derivatives were designed as a hedge or insurance to reduce the risk of the underlying asset (e.g. subprime mortgages). The Basel II framework incentivised the increased use of credit derivatives to mitigate risks which resulted in heightened counterparty risk among financial institutions (e.g. banks) and major dealers (e.g. Lehman Brothers, Bear Stearns, Merrill Lynch, UBS, RBS, Citigroup, AIG).[65]

Prior to the GFC, OTC derivatives markets were generally regulated by the private sector through the paradigmatic example of private ordering via ISDA. Derivatives markets lacked transparency as seen when regulators failed to identify Bear Stearns' or AIG's massive

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59 Gary B. Gorton & Andrew Metrick, *Securitized Banking and the Run on Repo* (Cambridge: National Bureau of Economic Research, 2009).

60 On the importance of this parameter see Markus K. Brunnermeier, "Deciphering the Liquidity and Credit Crunch 2007–2008" (2009) 23 Journal of Economic Perspectives 77 and Markus K. Brunnermeier, Lasse J. Pedersen, "Market Liquidity and Funding Liquidity" (2009) 22 Review of Financial Studies 2201-2238.

61 *Arner*, *supra* note 53 at 16; Steven L. Schwarcz, "Understanding the 'Subprime' Financial Crisis" (2009) 60:3 South Carolina Law Review 549.

62 Avgouleas, *supra note* 50, chs 2 & 3; Steven Schwarcz, "Conflicts and Financial Collapse: The Problem of Secondary-Management Agency Costs" (2009) 26:2 Yale Journal on Regulation 457.

63 Steven Schwarcz, "Disclosure's Failure in the Subprime Mortgage Crisis" (2008) Utah Law Review 1109.

64 Miguel Segoviano et al., *Securitization: Lessons Learned and the Road Ahead* (Washington, D.C.: International Monetary Fund, 2013) 15.

65 Arner, *supra* note 53 at 24 and 25.

unhedged bets against a collapse in the subprime mortgage market.[66] When AIG—the largest issuer of credit default swaps—was unable to honour its commitments, securitisation structures unwound rapidly and reconcentrated credit risk into the extremely vulnerable financial system.[67] Moreover, the invisible ties of risk interconnectedness that have been built through these instruments across the different nodes of the financial system intensified the uncertainty about the extent of the crisis and the solvency of major players in the western financial system.

(b) Credit Rating Agencies

CRAs supported the securitisation structure by rating the securities which were sold to investors based on a tranche of mortgages' cash flows and risk profile. Since the client paying the fee for the security's rating was the issuer, "ratings shopping" may have resulted in upwardly biased ratings.[68] Prior to the GFC CRAs were unregulated, subject only to general terms of the IOSCO Code of Conduct.[69]

3 A Disconnect between Regulatory Structures and the Financial System

Regulatory gaps and arbitrage played a central role in the Global Financial Crisis.[70] Financial regulatory structures did not reflect the structure of the financial system. This was most evident through macroprudential supervisory failure, blurred financial demarcations and the procyclical nature of certain regulations.[71]

(a) Macroprudential Supervisory Failure

Before the GFC, regulators ensured the safety of a financial system by ensuring the safety of financial institutions in the system (microprudential regulation). This neglected potential

[66] Frederic S. Mishkin, "Over the Cliff: From The Subprime to the Global Financial Crisis" (Cambridge: National Bureau of Economic Research, 2010) 6.

[67] *Avgouleas*, *supra* note 50, ch.2.

[68] Sergio Masciantonio & Andrea Tiseno, *The Rise and Fall of Universal Banking: Ups and Downs of a Sample of Large and Complex Financial Institutions Since the Late '90S* (Montreal: International Atlantic Economic Conference, 2012) 14 (Figure 6).

[69] *Arner*, *supra* note 53 at 21.

[70] Douglas W. Arner, "Adaptation and Resilience in Global Financial Regulation" (2011) 102 North Carolina Law Review 89 136.

[71] See Rolf Weber et al., "Addressing Systemic Risk: Financial Regulatory Design", (2014) 49 Texas International Law Journal 149, 149-200.

interactions between those institutions[72] (so-called endogenous risk), between the financial system and the macroeconomic cycle and between credit supply and asset bubbles. Guarding against risks arising in this context came to be known as macroprudential regulation.[73] If asset bubbles and other forms of macroeconomic volatility can be identified sufficiently early then corrective measures may be taken.[74]

The neglect of macro-prudential linkages can be seen in the regulators' decision to allow Lehman Brothers to fail in the flawed belief that the investment bank did not pose a systemic risk.

(b) Blurred Financial Demarcations

In the US, commercial and investment banks had been legislatively separated since the 1930s. Deregulation in the late 1990s fueled the rise of universal banking (e.g. Citigroup).[75] When the Crisis unfolded, universal banks had large exposures to a range of toxic assets, notably through securitisation. When coupled with dysfunctional interbank markets, a liquidity crunch and insufficient capital buffers, this led to many institutions requiring government recapitalisations (e.g. Citigroup, UBS, RBS),[76] reinforcing the Too-Big-To-Fail impact.[77] Securitisation created linkages with non-bank financial institutions, namely investment banks (e.g. Lehman Brothers, Merrill Lynch, Bear Stearns) and insurance companies (e.g. AIG). The regulatory structure was

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[72] Markus Brunnermeier & Charles Goodhart, *The Fundamental Principles of Financial Regulation* (Geneva: Graduateinstutute, 2011), online: <http://graduateinstitute.ch/files/live/sites/iheid/files/sites/international_economics/shared/international_economics/prof_websites/wyplosz/Geneva%20Reports/Geneva%2011.pdf>.

[73] Samuel G. Hanson, Anil K Kashyap & Jeremy C. Stein, "A Macroprudential Approach to Financial Regulation" (2011) 25 The Journal of Economic Perspectives 3-28; Xavier Freixas, Luc Laeven, and Jose-Luis Peydró (2015), *Systemic Risk Crises, and Macroprudential Regulation* (Boston: MIT Press, 2015).

[74] Ross Cranston, Emilios Avgouleas et al., *Principles of Banking Law* (Oxford: Oxford University Press, 2018), ch. 2.

[75] Emilios Avgouleas, "Large Systemic Banks and Fractional Reserve Banking" in Ross Buckley, Emilios. Avgouleas and Douglas Arner eds, *Reconceptualising Global Finance and its Regulation* (Cambridge: Cambridge University Press, 2016), ch. 14.

[76] *Sergio Masciantonio & Andrea Tiseno*, *supra* note 68 at 3-4.

[77] Emilios Avgouleas, *The Reform of 'Too-Big-To-Fail' Bank: A New Regulatory Model for the Institutional Separation of 'Casino' from 'Utility' Banking* (Amsterdam: University of Amsterdam, 2010).

not designed for these risks. When securitisation structures unwound, this resulted in the widespread failure of bank and non-bank financial institutions.

(c) Procyclical Regulation

Basel II's adoption of quantitative risk modeling for risk management (i.e. capital held against market risk) proved inadequate when subjected to circumstances of extreme market stress (so-called "black swan" events). Reliance on credit ratings in determining required levels of bank capital enhanced the procyclicality of capital regulation because aggressive downgrading of credit ratings led to higher capital requirements.[78]

Market-to-market accounting standards during the GFC had a procyclical effect as financial institutions had to continually revalue assets downwards as more institutions deleveraged, thereby creating ever greater and more solvency-threatening losses.[79]

4 Global Transmission of Systemic Risk

(a) Too Big to Fail and Risk Interconnectedness

The decision to allow Lehman Brothers to fail was presumed to not pose a systemic risk. This proved disastrously incorrect. Unwinding the firm's positions in equity, debt and derivatives markets around the world dramatically increased uncertainty, which shattered already weak confidence among financial market participants.

Derivatives were instrumental in the near collapse of AIG which triggered the systemic phase of the crisis.[80] If AIG had been allowed to default on its derivatives exposures, the resultant systemic risk would probably have caused the insolvency of many of the world's largest financial institutions.[81] Nonetheless, the uncertainty, loss of confidence, and losses resulting from the demise of Lehman Brothers, did cause a breakdown of the global financial system.[82]

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[78] Arner, *supra* note 70 at 24.

[79] Arner, *supra* note 70 at 125; "Mark It and Weep: Mark-to-Market Accounting Hurts, But there is No Better Way, *The Economist* (6 March 2008) 14.; Office of the Chief Accountant, *Report and Recommendations Pursuant to Section 133 of the Emergency Economic Stabilization Act of 2008: Study on Mark-to-Market Accounting* (New York: SEC, 2008).

[80] *Arner*, *supra* note 70 at 123.

[81] *Arner*, *supra* note 53 at 29.

[82] *Ibid* at 125.

(b) A Domestic Regulatory Approach in a Global Financial System

The nature of the crisis required international coordination. Information gaps in relation to cross-border institutions and their supervision were exposed since the soft-law bodies setting the standards for the global financial systems lacked any supervisory capacity and other cross-border crisis management systems were non-existent.[83] International and domestic regulatory structures lacked appropriate arrangements to manage the failure of large complex global financial conglomerates (such as Lehman Brothers and AIG).[84]

(c) Financial Funding Market Failures

Reliance on short-term interbank, money market and capital market funding caused severe financial system liquidity strains when these markets became dysfunctional. Northern Rock in the United Kingdom and Bear Stearns in the United States had been unable to fund their business models, eventually requiring resolution through government intervention. Following the collapse of Lehman Brothers, financial funding market illiquidity became central to the systemic phase of the crisis.[85]

B An Analysis of Policy Responses

Despite central bank actions to bolster short-term liquidity markets to avoid a collapse of the financial system, initial regulatory approaches were calibrated far too narrowly and were not very effective,[86] since they pursued two prima facie conflicting objectives: to both stabilise the system and punish reckless (or worse) bankers. Delays in calibrating the appropriate liquidity mechanisms were partially responsible for the credit crisis becoming a systemic crisis.[87]

Approaches differed between jurisdictions but the underlying premise was to strengthen balance sheets and stabilise financial systems. The use of AMCs and/or guarantees was

[83] Douglas W Arner & Ross P Buckley, "Redesigning the Architecture of the Global Financial System" (2010) 11:2 Melbourne Journal of International Law 185; Avgouleas, *supra* note 50, chs. 4-5.

[84] *Arner*, *supra* note 70 at 144.

[85] *Ibid* at 142.

[86] *Ibid* at 30.

[87] *Ibid* at 31.

preferred. No bailout approach proved superior, as the choice depended on market factors, the financial position of the government involved, and the ability to reinforce confidence.

From 2008 onwards, the G-20 assumed the leading role in coordinating post-GFC responses and financial regulatory reforms, substituting for the G-7 which had taken on this role after AFC. These post-GFC reforms have resulted mainly from domestic implementation of internationally agreed approaches, albeit with a focus on developed economies and global financial markets.[88] International cooperation and coordination, setting financial standards, and monitoring implementation was assigned to the Financial Stability Board (FSB).[89]

Following a number of summits, the G-20 and FSB established the core elements of the new regulatory framework: (1) building high quality capital and liquidity standards and mitigating procyclicality; (2) addressing systemically important financial institutions (SIFIs) through, inter alia, structural reform and new resolution regimes; (3) improving OTC derivatives markets through centralisation of trading and clearing and a new regulatory framework dealing with risk management; (4) strengthening accounting standards, especially vis-à-vis calculation of capital and risk and forward looking provisions for new lending by means of adoption of IFRS 9; (5) strengthening adherence to international supervisory and regulatory standards through regular peer reviews; (6) reforming management compensation practices to redress perverse incentives and support financial stability; (7) developing macroprudential frameworks and tools; and (8) expanding and refining the regulatory perimeter.[90]

C Lessons Learned from the Global Financial Crisis

Setting aside highly significant systemic and microprudential concerns relating to bankers' incentives and financial sector culture, which are outside the scope of this chapter, five main lessons can be drawn from the Global Financial Crisis:

1. Securitisation cannot mitigate market risks in the absence of regulation correcting incentive mismatches.

[88] *Arner*, *supra* note 70 at 108.

[89] *Ibid* at 113.

[90] *Ibid* at 117.

2. Comprehensive regulation of the financial system is needed to augment its resilience though that may come at the expense of clarity as financial stability regulation has become overly complex.

3. Regulations should guard against moral hazard, especially with regards to TBTF institutions and should not be procyclical, a charge that was launched against Basel II capital standards (and credit ratings).

4. Systemic risks need to be detected and mitigated but, as this may be exceedingly difficult, a prophylactic approach that leads to ex ante building of adequate capital and liquidity buffers is probably the best regulatory strategy.

5. A flexible, speedy and comprehensive framework is needed to resolve financial institutions with special attention given to systemically important financial institutions.

1. Securitisation Regulation Should Mitigate Market Risks

Prior to the GFC, securitisation was abused and its inherent risks obscured. Securitisation should lead to simple and transparent structures that promote disclosure; and CRAs should be regulated to avoid or at least mitigate conflicts of interest when assigning ratings to securitization-related financial instruments.[91] While much attention initially focused on reducing securitization, in many cases today the focus is on rebuilding securitization in order to support broader financial and economic objectives but done in a more transparent and simpler manner, avoiding the highly complex structures (e.g. CDOs) common before 2007.

2. Comprehensive Regulation of the Financial System is Needed

Regulatory gaps, overlaps and divisions in a number of jurisdictions, especially the United States, presented opportunities for regulatory avoidance and arbitrage. Regulatory structures were flawed in terms of scope and coverage.[92] Regulatory arbitrage should be discouraged. Regulation and supervision must be suitably flexible to recognise and address any financial activity emanating from any institution. This is a particular challenge in the context of the impact of technology on finance (i.e. FinTech) in avoiding regulatory arbitrage, ensuring a

[91] *Arner, supra* note 53 at 22.

[92] *Arner, supra* note 70 at 131.

level playing field and protecting against risks from new directions and participants. Many jurisdictions – particularly the USA, the UK and the EU – have undertaken major programmes of reform financial regulatory structure, often focusing on twin peaks regulatory systems as well as designing clear structures for addressing systemic risks, especially from the macroprudential standpoint.

3. *Designing Regulations which are not Procyclical in Crisis Conditions*

Certain Basel II regulations and "mark to market" accounting standards proved to be procyclical under crisis conditions. Procyclicality was further enhanced when assets and credit ratings were devalued and downgraded. To strengthen balance sheets in crisis conditions the robustness of capital, liquidity and leverage requirements should be tested ex ante and risk management must be improved to insulate institutions against asset devaluations in the event of economic downturns or when an asset bubble bursts. Adopting forward-looking accounting standards on top of these prudential requirements will further mitigate procyclicality.[93] Countercyclical requirements and capital requirements calibrated for systemically important financial institutions should be built over a period to buttress balance sheets with an additional buffer against credit rating downgrades or outright asset value write offs. Basel III has addressed some of these issues in the banking system although concerns remain.

4. *Effective Detection and Mitigation of Systemic Risk*

(a) Regulation of Market Infrastructure

Supervisors must have the capacity to identify and regulate systemically important financial institutions (SIFIs). Financial instruments which have the propensity to become systemic risk conduits, for example OTC derivatives, require regulation which facilitates transparency and disclosure, and financial market infrastructure which can interrupt the transmission of systemic risk (e.g. central counterparty clearinghouses). This has been one of the major areas of focus post Crisis, with the mandatory centralization of clearing and settlement of OTC derivatives markets, complementing existing systems for securities and payments.[94] These have been

[93] Alicia Novoa, Jodi Scarlata, & Juan Sole, "Procyclicality and Fair Value Accounting" (Washington, D.C.: IMF, 2009).

[94] E.g., Title VII and Title VIII of the Dodd-Franck Act (Wall Street Reform and Consumer Protection Act (Pub.L. 111–203, H.R. 4173) and the EU Market Infrastructure Regulation (EMIR), Regulation (EU) No 648/2012 on OTC derivatives, central counterparties and trade repositories OJ 2012 L 201/1-59.

combined in significant efforts from the FSB (in the context of the IOSCO-BIS Committee on Payment and Market Infrastructures) and its members in developing appropriate regulatory systems for systemically important infrastructures. Central counterparties maintain a member's guaranty fund, mandatory margins on open positions, which are varied on a mark-to-market basis and other funded and unfunded commitments by the CCP members and owners. The existence of precommitted resources acts as a countercyclical, macroprudential buffer for the absorption the risk of counterparty default in OTC markets. Yet centralisation of OTC clearing and settlement has also brought its own set of risks given the massive concentration of counterparty risk within Central counterparties. The failure of one of the big CCPs, an unlikely but not impossible event, could easily turn into a systemic event in itself.

(b) Macroprudential Supervision

Effective macroprudential supervision is critical. Supervisors need to be equipped with the tools and mechanisms to assess and manage risks across the financial system and which aggregate over time,[95] and, in this context, a number of new measures like leverage ratios, countercyclical capital requirements, and lending controls (like Loan-to-Value and Loan-to-Income ratios) have both a micro- (institutional stability) and macroprudential (systemic stability) effect.[96] Related reporting requirements for financial institutions and the resultant new datasets available to regulators offer important opportunities for new RegTech analytical approaches including Big Data and artificial intelligence. This has been one of the most active areas of regulatory reform around the world, with almost 100 jurisdictions having made regulatory changes in order to put in place clear systems for addressing systemic risk.

5. *A Framework for Resolving Systemically Important Financial Institutions*

(a) Domestic Arrangements and Powers

The absence of an effective SIFI resolution mechanism was key to the systemic phase of the Global Financial Crisis (e.g. Lehman Brothers and AIG). The G-20 recognised that one of the greatest failures of international and domestic regulation was the lack of appropriate

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[95] For a detailed discussion, see: Michael W. Taylor, Douglas W. Arner, & Evan C. Gibson, "Central Banks' New Financial Stability Consensus," in *Oxford Handbook on Central Banking* (Oxford: Oxford University Press, forthcoming).

[96] *Emilios Avgouleas et al.*, *supra* note 50 at ch. 2

arrangements to deal with the failure of large complex financial conglomerates.[97] This involves assessing the risks posed from interactions and interconnections. The primary lesson from the GFC is to have arrangements in place to either prevent or manage a failure. To prevent or manage a failure requires a supervisor (including a designated resolution supervisor) being equipped with a range of resolution powers.[98] This is broadly the approach now adopted by the FSB and the respective US and EU legal frameworks.[99] While the FSB approach focuses primarily on globally systemically important financial institutions (G-SIFIs), both the GFC and the AFC highlight the necessity of individual jurisdictions putting in place appropriate contingency plans and resolution systems particularly for domestic systemically important financial institutions (D-SIFIs). In addition, discussions are also necessary at the regional level in addressing cross-border concerns (particularly for regionally systemically important financial institutions – R-SIFIs), a major issue in the Eurozone Crisis discussed in the following section and also an important area of focus of ASEAN in the context of the ASEAN Banking Integration Framework. This is an area where progress is taking place more slowly than in many other areas, particularly at the level of international failures.

(b) Reinforcing International Cooperation

Reinforcing international cooperation is particularly pertinent in the context of financial crisis management involving the resolution of SIFs which operate across borders. Resolution arrangements should focus on the underlying objective of preventing serious financial instability which would have an adverse effect on a country's real economy.[100] Problematically, financial crisis management is biased towards domestic concerns. The best approach is to formulate a pre-determined contingency plan which accounts for cross-border risks and is constantly being revised to keep up-to-date with ongoing market developments, often referred to as "living wills",[101] and constant supervisory monitoring.[102] This approach has been

[97] *Arner*, *supra* note 70 at 144.

[98] *Key Attributes of Effective Resolution Regimes for Financial Institutions* (Basel: Financial Stability Board, 2011) 7 and 8.

[99] Title of the Dodd-Franck Act, Directive 2014/59/EU establishing a framework for the recovery and resolution of credit institutions and investment firms OJ 2014 L 173/190–348 (BRRD).

[100] Arner, *supra* note 70 at 145; referring to *Financial Stability Forum Issues Recommendations and Principles to Strengthen Financial Systems* (Basel: Financial Stability Forum 2009) 1..

[101] Emilios Avgouleas, Charles Goodhart & Dirk Schoenmacker, "Bank Resolution Plans as a catalyst for global financial reform" (2013) 9 Journal of Financial Stability 210-218.

[102] Arner, *supra* note 70 at 146 and 147.

endorsed by the G-20, IMF, the BCBS (CBRG), IAIS, and IOSCO.[103] Similar approaches have also been developed in the EU, and need to be a major focus as Asia increasingly seeks to liberalise cross-border financial institution operations in the context of the ASEAN Banking Integration Framework.

III THE EUROZONE CRISIS

Despite decades of effort to build a Single Financial Market, almost all EU member states lacked proper crisis resolution mechanisms at the time of the GFC. This led to a threat of widespread bank failures in EU countries and near collapse of their financial systems. The banking crisis eventually morphed into a sovereign debt crisis as the markets declined to roll over Greek debt, necessitating placing the country under an IMF and EU rescue programme. Since then, the EU has had to decide between closer integration of financial policies to follow recent centralisation of bank supervision and resolution in the European Banking Union (EBU), or a gradual return to controlled forms of protectionism in the pursuit of narrow national interest with risks to the single market.[104] This section will traverse: (i) how the crisis should be conceptualised; (ii) its primary causes; and (iii) the lessons it teaches about the need for centralised supervision in financially integrated markets.

1. Conceptualising the Crisis

The Eurozone crisis should be seen as a sequence of four interlocking crises resulting from imbalanced monetary integration. As recycled surpluses were invested in the bonds of deficit countries (Greece, Italy) and the banking systems of the Eurozone periphery (Ireland, Spain) they financed massive real estate bubbles, and led to accumulation of unsustainable levels of public and private debt.[105]

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[103] *Reducing the moral hazard posed by systemically important financial institutions* (Basel: Financial Stability Forum, 2010).

[104] See Emilios Avgouleas & Douglas Arner, "Eurozone Debt Crisis and the European Banking Union: 'Hard choices', 'intolerable dilemmas', and the question of sovereignty'" (2017) 50:1 The International Lawyer 29-67.

[105] Emilios Avgouleas, *Eurozone Crisis and Sovereign Debt Restructuring: Intellectual Fallacies and New Lines of Research* (Singapore: Centre for International Law and Faculty of Law National University of Singapore, 2012).

The Eurozone crisis would have been less severe if Eurozone members could have found a way to break the link between bank debt and sovereign indebtedness. The fact that many EU banks had invested in EU member state bonds and were also adversely affected by the continuous recession only made things worse. Since its establishment the European Economic and Monetary Union (EMU) lacked crucial supporting institutions,[106] such as institutions that could absorb liquidity shocks, and cross-border supervisory and resolution structures to deal with cross-border spillover effects of a bank collapse.

A *Causes of the Eurozone Crisis*

1 *Inadequacy of Regulatory Architecture*

The so-called financial stability trilemma holds[107] that the three objectives of financial stability, financial integration, and national financial policies cannot be pursued successfully in a simultaneous manner; one of these objectives has to give way to safeguard the other two.[108] The trilemma was central in understanding the dynamics of the Asian Financial Crisis. In spite of assertions to the contrary,[109] the Eurozone crisis has proven a common currency area or worse a currency union is not viable without building transnational supervisory structures in the fields of fiscal monitoring and responsibility and bank supervision and resolution. This lesson has been well learnt in Asia, where calls for a single regional currency have abated since the onset of the Eurozone Crisis in 2010.

Institutional design is very important for the prevention and resolution of major financial crises. Prevention is dealt with through a framework of systemic risk controls and robust prudential regulations. Crisis management and resolution, on the other hand, require the establishment of

[106] C Fred Bergsten & Jacob Funk Kirkegaard, *The Coming Resolution of the European Crisis* (New York: Columbia International Affairs, 2012) <http://www.ciaonet.org/pbei/iie/0024277/f_0024277_19801.pdf>.

[107] See Dirk Schoenmaker, *The Financial Trilemma* (Amsterdam: Tinbergen Institute, 2011). See also Niels Thygesen, “Comments on The Political Economy of Financial Harmonisation in Europe” in J Kremer, D Schoenmaker and P Wierts eds, *Financial Supervision in Europe* (Edward Elgar, 2003).

[108] Cf Lastra and Louis who describe the same trade off as an ‘inconsistent quartet’ of policy objectives: Rosa M Lastra & Jean-Victor Louis, “European Economic and Monetary Union: History, Trends and Prospects” (2013) Yearbook of European Law.

[109] See Tommaso Padoa-Schioppa, *The Road to Monetary Union in Europe: The Emperor, the Kings and the Genies* (Oxford: Oxford University Press, 2000).

supervisory and resolution structures, which in an integrated market, must have a cross-border remit, in order to override the principle of home country control.[110]

Important design features of the EU single financial market and EMU necessary to support financial stability were either not in place or proved to be insufficiently robust, particularly in relation to supervision and resolution of cross-border financial institutions, deposit guarantee arrangements, and fiscal arrangements.

The political economy of most other regions (certainly including Asia) makes institutional centralisation of the sort now pursued in the EU not feasible, but because of the Eurozone Crisis, the issues that arise during the design phase of an integrated regional financial market are at least now much clearer.

2 *Home-Country Control and Minimum Harmonization*

The premise of home-country control and the principle of minimum harmonisation left the EU with an incomplete regulatory framework, since, in many cases, it merely augmented rather than replaced pre-existing national laws.[111]

The Eurozone crisis has shown that financial integration leads financial institutions operating in the single market to develop very tight linkages of interconnectedness. This allows shocks in one market area to be transmitted widely and quickly across other parts, such as the failure of Icelandic banks, the threat of collapse of the financial systems of Ireland and Spain, and the possibility of a sovereign default (e.g. Greece).

In the EU, the diversity of member state economies and issues arising out of inherent contradictions between national policy priorities meant a relatively low degree of responsiveness to crisis. Lack of common deposit insurance in a well-integrated banking market at a time of cross-border crisis led to several conflicting policy choices and responses in an effort by the states to protect their own citizens, which may not have been in conformity

[110] Luis Garicano & Rosa M Lastra, "Towards a New Architecture for Financial Stability: Seven Principles" (2010) 13:3 Journal of International Economic Law 597.

[111] See Emilios Avgouleas, "The Harmonisation of Rules of Conduct in EU Financial Markets: Economic Analysis, Subsidiarity and Investor Protection" (2000) 6 European Law Journal 72.

with single market policies, with the Icelandic banking crisis and the fracture of Fortis being the leading examples.[112]

From the standpoint of other regions, with their even greater disparity in economic, political, social and cultural contexts, such risks must be considered at the onset of any regional financial process to minimise the chances of crisis, maximise economic benefits, and manage the potentially severe political consequences.

B *Regulatory Responses to the Eurozone Crisis*

It was not until the 2008 GFC and the outbreak of the Eurozone Crisis in 2010, that the need to revisit existing models of financial market integration with a view to enriching them with institutions and structures that underpin financial stability as well as economic growth came to the forefront of EU policy-makers' attention.

When the GFC broke out with force European financial stability was hampered by colossal levels ofpre-crisis public and private debt, a flawed macroeconomic framework, and an absence of institutions to handle a cross-border banking crisis. The Eurozone's framework assumed that any macroeconomic or banking system stability shocks could be dealt with at the national level, due to the no bailout clause in the EMU Treaty (Art. 123). The outbreak of the sovereign debt crisis meant the EU had to enter the most transformative phase of its history.

The EU has had to devise mechanisms, in the midst of crisis, firstly, to prevent an immediate meltdown of its banking sector and the chain of sovereign bankruptcies that would have ensued, and, secondly, to reform its flawed institutions, in order to prevent the Eurozone architecture from collapsing. Eurozone members, in other words, had to build both a crisis-fighting capacity and bailout funding mechanisms. This led to the establishment of the European Financial Stability Facility (EFSF), now superseded by the European Stability Mechanism (ESM).

Since 2011 the EU embarked on a number of initiatives to build an integrated surveillance framework with respect to: (1) the implementation of fiscal policies under the Stability and Growth Pact to strengthen economic governance and to ensure budgetary discipline, and (2)

[112] See Emilios Avgouleas, Douglas, Arner & Uzma Ashraff, "Regional Financial Arrangements Lessons from the Eurozone Crisis for East Asia" in Iwan J. Azis & H. S. Shin eds., *Global Shock, Asian Vulnerability and Financial Reform* (Edward Elgar, 2014) 377-415.

the implementation of structural reforms. In addition, the European Parliament and the Council adopted a "six-pack" set of new legislative acts, aimed at strengthening the Eurozone's economic governance by reduction of deficits through tighter control of national finances.[113] These reforms are the most comprehensive reinforcement of economic governance in the EU and the Eurozone since the launch of the EMU almost 20 years ago. This legislative package aims at concrete and decisive steps towards ensuring fiscal discipline to stabilize the EU economy and to avert new crises in future. Further, the implementation of mandatory bail-ins aims to contain the impact of the banking crisis on sovereigns, though the restraining impact that the threat of a bail-in has on regulators and bank management can also lead to forebearance unless the regulators deal with a bank failure that is due to idiosyncratic causes.[114] EU members need to complete the adjustment of internal and external imbalances, to repair financial sectors, and to achieve sustainable public finances.[115] Piling up debt in their effort to bail out Europe's ailing banks only makes things worse by raising the cost of borrowing for Eurozone members to unsustainable levels, necessitating complex bailouts to keep the EMU from breaking up. Such sovereign bailouts are both highly unpopular with the citizens of lender countries[116] and with the polities of the borrowing member states which tend to resent the austerity measures imposed on them as part of the "rescue programmes".

From the standpoint of other regional arrangements, perhaps the central feature for consideration is how to avoid entanglement of domestic fiscal and financial arrangements in the context of a potential future crisis, whether regional or in the context of individual economies.

From the many EU regulatory reforms, four initiatives stand out. First, under the Single Supervisory Mechanism (SSM) Regulation of October 2013,[117] the ECB is vested with the

[113] The legislative 'six-pack' set of European economic governance architecture reforms comprised five regulations and one directive, proposed by the European Commission to come into force on 13 December 2011.

[114] Emilios Avgouleas, Charles Goodhart, "An Anatomy of Bank Bail-ins – Why the Eurozone Needs a Fiscal Backstop for the Banking Sector", (20016) 2 European Economy, available at http://european-economy.eu/2016-2/an-anatomy-of-bank-bail-ins-why-the-eurozone-needs-a-fiscal-backstop-for-the-banking-sector/

[115] European Union, *European Economic Forecast (Vol. European Economy: 1/2012)* (Brussels: European Commission Directorate-General for Economic and Financial Affairs, 2012) online: <http://ec.europa.eu/economy_finance/publications/european_economy/2012/pdf/ee-2012-1_en.pdf>.

[116] *Ibid.*

[117] Regulation (EU) 1024/2013 conferring specific tasks on the European Central Bank concerning policies relating to the prudential supervision of credit institutions OJ 2013 L 287/63.

necessary investigatory and supervisory powers. Second, EU plans for the harmonisation of member state resolution laws and introduction of integrated resolution structures are in the process of implementation. The Single Resolution Mechanism (SRM) established by Regulation (EU) No 806/2014 ("SRM Regulation") is aimed at safeguarding the continuity of essential banking operations, protecting depositors, client assets and public funds, and minimising risks to financial stability. Third, the development of common EU rulebooks for the single market by the European Supervisory Authorities is a laudatory development that has now been concluded. And fourth the establishment of the European Stability Mechanism a leveraged Eurozone crisis management fund that can alleviate member states liquidity problems through low cost lending subject to a strict macroeconomic conditionality.[118]

While from the standpoint of other regional arrangements – even the most developed – the level of centralisation being pursued in the EU is not politically feasible, three important considerations that emerge are: (i) harmonisation of domestic regulatory systems, (ii) supervision of cross-border financial institutions, and (iii) arrangements to address cross-border financial institution failures.

C *Lessons Learned from the Eurozone Crisis*

The EU crisis response has emphasised the need to improve international and regional coordination on fiscal, monetary and financial policies affecting other states.

Financial stability risks are magnified within integrated cross-border markets. The cascading effects of the Eurozone crisis are a vivid reminder of the contagion risk in a highly integrated system.[119] Thus, it should not be controversial, that financial integration – in contrast to the general consensus regarding trade integration – is not always beneficial. Despite the increased importance of enhanced regionalism and integration, policy formulation must take a balanced view. The European crisis provides a deep insight into the risks of integration and identifies mistakes that should not be repeated in the adoption of regional integration plans elsewhere.

[118] See Treaty Establishing the ESM, signed on 2 February 2012 and ESM site at https://www.esm.europa.eu/legal-documents

[119] *Asian Economic Integration Monitor* (Mandaluyong: Asian Development Bank, 2012), online: <http://www.aric.adb.org/pdf/aeim/AEIM_2012July_FullReport.pdf>.

Moreover, the European experience has demonstrated that centralisation of bank supervision and resolution within a single currency zone is an essential condition for a functional monetary union (although it is no panacea). The soundness and credibility of domestic policies are not substitutes for regional commitments. The integration framework should facilitate and encourage the growth of regional economies while allowing the market to work freely.

The EU faces a number of hard choices including the intractable trade-off between national sovereignty and collective financial stability. The establishment of the EBU within the boundaries of the Eurozone has clearly tilted the balance towards further centralisation and pooling of sovereignty. Post Brexit discussions of regional securities and insurance supervisory arrangements highlight the level of sovereignty concessions necessary to support an effective single market, particularly when the single market is underpinned by common currency arrangements. In that case, a fiscal union to smooth out trade imbalances and to contain shocks in the financial sector seems essential.[120]

This level of (political and economic) sovereignty sacrifice required though may well be beyond the capacity of most national polities, including the UK, as has been clearly demonstrated by the Brexit vote and the current troubles the EU is facing with the new Italian government.

V. LOOKING FORWARD

The differences between the three crises may be greater than their similarities, which suggests that our next crisis (and history teaches there will be another crisis), will be different in its causes and consequences than any of these three. Nevertheless, three important lessons from the three crises standout.

First, in an increasingly globalised world, formal international cooperation in the field of financial stability and cross-border bank supervision and resolution, might be a necessary

[120] Agnes Benassy-Querre, Xavier Ragot & Guntram Wolff, *Which fiscal union for the euro area?* (Brussels: Bruegel, 2016), online: <http://bruegel.org/2016/02/which-fiscal-union-for-the-euro-area/>.

ingredient of national prosperity whenever national financial markets are closely integrated.[121] However, tensions regarding sovereignty make this unlikely outside of the EU (following the exit of the UK) prior to the next crisis.

While regional blocs are unlikely to be willing to accept the level of sovereignty sacrifice necessary for the creation of a true single regional financial market based on a regional currency – comparable with the EU single market or the European Economic and Monetary Union – economic and financial cooperation and coordination in the context of regional financial integration and development initiatives remains essential. Such efforts are reflected, for example, in the context of ASEAN and EMEAP, certainly as a result of the experience of the Asian Financial Crisis. As integration continues at the regional level and also at the global level, it is essential for parallel discussions to take place regarding both liberalisation and crisis preparation, through further development of the various regional fora of the international standard setting bodies, such as the FSB Asia Regional Consultative Group, as well as in the context of the international financial architecture.

Secondly, the only working assumption about which any regulator can be confident is that there will be another financial crisis in the future – and its precise nature and timing will be exceptionally difficult to predict. Building a robust crisis management, early intervention and resolution framework should be seen as the paramount responsibility of regulators and public policy planners both in the developing and the developed world. Individual countries need to design their own mechanisms for national and cross-border liquidity relief to cope with the next crisis. Liquidity is fleeting, whether in the form of foreign money inflows or financial system funding, and can easily disappear when the economy is exposed to short-term shocks or emerging structural weaknesses, or when the financial system suffers a run due to a confidence crisis. In the same context, even for stable economies, financial system regulators should remain watchful of interconnectedness risks and the possibility of contagion from the shadow banking sector that may quickly undermine the stability of the regulated sector.

While Asia focused on improving regulation in the aftermath of the AFC with very good results during the GFC, it has made relatively less progress in the context of resolution mechanisms. This is something that we have likewise often seen in the aftermath of the GFC. As such,

[121] For an example of such a model for the governance of global financial markets (albeit one that requires an enormous amount of trust on behalf of international regulatory community) see *Avgouleas*, *supra* note 50 at ch. 9.

continued emphasis on improving regulation and financial safety nets including resolution frameworks needs to continue. This is especially the case in the region's developing members. At the same time, as China's financial system continues to become more integrated internationally and regionally, this raises new risks for China as well as regional and global markets. At both the international and the regional level, as integration efforts continue, there is a consequent necessity to build a framework to deal with potential crises of the major forms identified: currency, banking / financial, current account / competitiveness, and sovereign debt.

The best approaches to crisis prevention vary in each context. For currency crises, a flexible exchange rate backed by a reasonably large foreign exchange reserves is probably the best starting point, supplemented by bilateral and regional mutual support arrangements. For banking and financial crises, the starting point is regulation, with a focus on participation in international standard setting processes, development of regional implementations and a focus on domestic arrangements. For current account / competitiveness crises, at the regional level, AMRO offers a macroeconomic monitoring arrangement to supplement the international monitoring of the IMF but at the end of the day this – as once again shown in the EU – is a domestic focus in the first instance. In addition, development of domestic and regional financial systems in order to support local currency financing and risk management is important.

Third, if a full blown financial crisis develops, the speed of the policy response and the decisiveness of public institutions, especially as regards the use of the Central Bank liquidity tools to alleviate immediate refinancing pressures, matters greatly for the restoration of confidence. Tested remedies, like the use of AMCs, which provide a radical solution to overstretched bank balance sheets, ought not to be discarded on grounds of moral hazard and bailout subsidies. Affected countries should instead try to build a transparent framework which distributes losses equitably and prudently targets rapid restoration of confidence.

The great expansion of regulation in the aftermath of the GFC has been well adapted to prevent another GFC. But loopholes remain, especially as regards the regulatory perimeter and shadow banks. If anything, these issues are in fact greater across most of Asia than in the G-20. As FinTech continues to transform Asian financial systems at an increasing rate, issues relating to appropriate treatment of new technologies and participants beyond traditional financial institutions becomes even more important in Asia than in the developed markets of Europe or North America. Improving the abilities of regulators through RegTech must be a major focus.

Financial innovation and liberalisation are often central to the next financial crisis and FinTech is likely to be no exception.

Today we have a globalised financial system is far different than what was designed, by Keynes and White in the mid 1940s, which was envisaged to be a series of lightly interconnected national systems. Ever since the system began to globalise in the 1980s, we have been building new regulatory settings for the profoundly different reality of a globalised financial system, but while we have made much progress, we have a long way to go. Geopolitics and economics – particularly the rise of China and state capitalism and investment infrastructure capital, such as the Belt and Road Initiative, to rival the more short-term vision of neoliberal markets– highlights that the nature of the globalisation is changing, with consequently significant implications for crisis prevention and management. Based on the lessons of the AFC, individual countries and regions must take steps to secure their own successes and to protect themselves from financial crises, from whatever source they derive. Yet deeper integration may not be expected in the absence of substantial political will, which normally only arises in the aftermath of a major disaster, such as the three crises considered in this paper or a seismic event such as Brexit. In fact, it was the AFC which largely triggered much of the East Asian financial development and integration activity which has taken place over the past twenty years. Likewise, the AFC caused the strong focus on financial stability and step-by-step integration across the region in the context of domestic, regional and international initiatives, including the regional preference for foreign exchange reserve accumulation. Those efforts served the region very well in the context of the GFC, with many of the Asian post-AFC measures being adopted globally post-GFC.

While the new crisis is expected to brew around emerging market currencies and debt, following also current turbulence in Turkey, the most likely source of a major transformative event in our view will be how such turbulence will impact on Asia's large economies: China and India. The evolution of these two major economies and powers will pose huge challenges to the region, particularly for smaller economies which are likely to be impacted by potential economic, financial or political spillovers and likely contagion. Most Asian currencies are already more directly impacted by the yuan than the dollar given increasing trade relations with China. This means that in some ways a regional currency is emerging. RMB internationalisation for the region is already a significant reality. Likewise, as China's financial system and capital account is gradually liberalised and Chinese financial institutions expand

across the region (in the same way that UK, US and European financial institutions followed their national enterprises across the world), China, in particular, will assume an ever increasing financial role as a regional economic hegemon.

The outsize dominance of many developing country and emerging market financial systems by foreign institutions will require careful consideration and step-by-step processes to manage integration with China, and eventually India, and manage the consequential reactions in markets around the world. Arguably, China's rise serves the same sort of incentive to regional integration which the rise of the US in the post-war period played in the evolution of the EU.

The first step in any crisis management approach is prevention but this should also be combined with management and resolution. Cooperation in cross-border and cross-sectoral systemic risk monitoring through supervisory colleges should be strengthened by establishing a coherent structure for cooperation between microprudential supervisors. This should be followed with a crisis management structure, and knowledgeable regulators with a role in standard setting. Crisis management arrangements need to focus on liquidity at the regional, international and bilateral levels – as at the end of the day liquidity in major currencies in only available in unlimited volumes from the central bank responsible for the specific currency. Such arrangements – as in the context of liquidity provider of last resort structures – must also be partnered with macroeconomic monitoring arrangements, particularly at the regional and international levels (through the IMF).

In addition to liquidity and macroeconomic surveillance, the GFC and the eurozone crises have highlighted the importance of financial stability arrangements, particularly from the macroprudential/countercyclical standpoint. Since the GFC, new or reformed financial stability / macroprudential arrangements have been implemented including the FSB at the international level and the European Systemic Risk Board (ESRB) in the EU.

In addition to domestic arrangements, regions should consider the possibility of having a regional systemic risk council supported by country central banks in the mode of the ESRB. The latter is backed by the ECB and it operates on the basis of an EU statute, although it is a soft law body (i.e. it has no standing under EU law). The responsibilities of "regional SRBs" would fit very well in regional frameworks for systemic risk detection, including serving warning and signaling functions, but will require regional central banks to participate and share data. Initially this would be an arrangement which would not entail any loss of sovereignty but

instead only the sharing of confidential information and the issuance of confidential warnings to members.

Such an regional systemic risk bodies would be particularly timely given the challenge of the rise of FinTech around the world, both from the standpoint of cybersecurity and potential digital identity and electronic know-your-customer (eKYC) utilities to the rapid expansion particularly of US and Chinese ecommerce and social media firms such as Amazon, Alibaba, Facebook and Tencent into finance around the world (the so-called "TechFins")[122]. At the same time, these firms bring not only opportunities but also risks. This has been most clearly demonstrated by the rise of cybersecurity concerns across the region, most pointedly in the context of the Bangladesh central bank cyber-heist and related international concerns with the result of restricting access of regional financial institutions to international networks via historical correspondent banking relationships.[123]

Furthermore, given shadow banking's importance and cross-border links (including via FinTechs and TechFins), future regional systemic risk bodies would have a valuable role as a systemic risk data consolidator and impartial monitor. Such bodies could also serve as a secretariat for regional colleges of supervisors. When a crisis hits, regional bodies for systemic risk monitoring can prove very valuable, especially when it comes to offering authoritative guidance on coordinated bank rescues or resolutions on a subsidiary by subsidiary basis. Naturally, it will not involve any form of burden sharing but it could evolve as a trusted venue for information sharing and rescue/resolution cooperation. A regional body could become the principal forum for consultation and coordination of policy responses to Basel and the FSB of regional considerations.

In terms of domestic implementation of international and regional financial regulatory standards, international and regional development banks would be the lead – as is largely already the case today and has been since the AFC – in supporting domestic and regional reform processes. Further, the MDBs in cooperation with the IMF must become a major agents of

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[122] Dirk A. Zetzsche et al., "From FinTech to TechFin: The Regulatory Challenges of Data-Driven Finance" New York University Journal of Law & Business, online: <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2959925>.

[123] Kim Zetter, "That Insane $81M Bangladesh Bank Heist? Here's What We Know", Wired.com 17May 2016, available at https://www.wired.com/2016/05/insane-81m-bangladesh-bank-heist-heres-know/

change in bank corporate governance cultures around the world, augmenting bank management accountability.

As regards resolution, TBTF avoidance of bail-ins on a systemic basis breeds moral hazard. If, however, circumstances dictate such an approach this does not mean that creditors (with the exception of depositors) should escape lightly. Individual jurisdictions around the globe desperately need to upgrade bank resolution regimes and not rely overly on bailouts before the next crisis happens.

Finally, a culture of transparency, openness, and cooperation ought to be pursued in all future integration international and regional initiatives. Since the risks are increasingly regional and global, purely country-based responses may prove largely obsolete when a cross-border crisis hits. Recognising that financial stability on a regional or even global level can easily fall victim to so-called "tragedy of the commons" behaviour is an important first step. Like trade and environmental protection, regional financial stability binds closely together the prosperity of individual nations. Therefore, it offers a very fertile ground to augment interaction between national regulatory authorities, central banks, and governments internationally and regionally, giving rise to a wider economic cooperation impetus for the benefit of all.