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Tower of Contrarian Thinking: How the BIS helped reframe understandings of financial stability

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Introduction

Central banks' responsibility for financial stability was limited in the lead up to the financial crisis of 2007-08. In developed countries it was largely believed that a dual approach: central bank inflation targeting combined with robust risk management by market institutions, would be sufficient to guard against widescale financial instability and crisis (Borio, 2011)[1]. One of the most important developments since the crisis, is that an intellectual framing and terminology, that BIS staff played a prominent role in developing over several decades, now directly informs the design of national and international policy frameworks. The approach identifies long run financial cycles and the build-up of systemic financial risks as a primary cause of financial crisis. It is widely known as the 'macroprudential' perspective and was endorsed by G20 summits in 2009. It has since involved the development of a range of prudential policy instruments, that seek to constrain system wide financial risks.

To some extent, the rise of macroprudential frameworks has ushered in a new departure and era in central banking. Central banks increasingly have financial stability mandates and powers reflecting macroprudential conceptual frameworks to varying degrees. This chapter examines the role the BIS played in a process in which macro-financial stability frameworks as a mode of conceptual understanding rose to prominence[2]. It also reflects on the financial stability regime building that has resulted, including ways in which it remains incomplete, as well as current BIS thinking on these issues.

The chapter explains the emergence of this conceptual framing as an example of a primary contribution the BIS makes to contemporary global financial governance by practising a form of 'measured contrarianism.' 'Measured contrarianism' involves standing outside of and being prepared to challenge intellectual, policy and market consensus. It involves taking a sceptical and questioning approach to apparent market stability, acting as an early warning mechanism for potential financial instability, through the presentation of careful and rigorous analysis of prevailing data patterns. In acting as a dogged and persistent voice developing and promoting a macroprudential conceptual framing, BIS staff effectively practised a form of 'measured contrarianism' by encouraging central banks to think more systematically about macro-financial instability. At the same time, the macroprudential perspective's contemporary salience potentially puts the BIS capacity to perform 'measured contrarianism' on a firmer intellectual and institutional footing.

The first section of the chapter notes how relevant international organizations require niche specialisms (a form of comparative advantage) to remain relevant. It moves onto present the

[1] In BIS conceptual work financial instability and crises were distinguished from simple financial distress. The former took more systemic forms effecting entire markets evident in system fragility, with the latter relating to idiosyncratic difficulties encountered by individual institutions (Borio and Drehmann, 2009, p. 2).

[2] This chapter draws on a number of confidential interviews with BIS staff, macroeconomists conducting policy work and national central bankers. It also draws on access to some confidential archive material facilitated by the BIS for the purpose of this chapter. This material is not directly referenced in the chapter on an individual basis, but at many points the material is drawn directly from interviews or archive material.

macroprudential perspective as a significant conceptual shift, covering the origins of the term. The deepening of the BIS research programme between 2000 and 2008 is also described. In this period, significant elements of the macroprudential conceptual framework were not accepted in key technical regulatory committees, or by some national supervisors, especially in the United States. A third section, examines how prior BIS work and related academic contributions, found their way into the G20' programme of reform through G20 working groups. The perspective and prior BIS work subsequently informed the Basel III process in the Basel Committee on Banking Supervision (BCBS) and the agenda of the Financial Stability Board (FSB) as an umbrella body, following the crisis of 07-08. The final section considers how the Basel III process has induced a programme of national regime building, including why other institutions, most notably the International Monetary Fund (IMF), the Financial Stability Board (FSB) and the Committee on the Global Financial System (CGFS) have become sites of analysis and research on macroprudential policy. Finally, BIS positions relating to strengths, weaknesses as well as gaps in the evolving macro-financial stability framework requiring further analytical work are recounted.

1. Measured contrarianism as a niche specialism.

All international organizations (IOs) effectively compete in a marketplace to provide services, functions, tasks and skills to an international community of member states (Seabrooke and Henriksen, 2017). Relevant, salient IOs pursue a comparative advantage by performing a specific function, and offering skills and services not easily replicated, or reproduced by others. The Bank for International Settlements (BIS) is no exception. There are tasks to which it is well placed to perform, given its mandate, expertise, skills and intellectual culture, - and limitations, - or areas of activity that are beyond its capabilities.

The role BIS staff and their research programmes, played in establishing a new macroprudential perspective on financial stability following the financial crisis, reflected the particular niche strengths of the institution, as well as its limitations (Baker, 2017). BIS work conducted prior to the crisis of 07-08, developed the idea that there was a need for a new macro-financial stabilisation framework (Crockett, 2000b, Borio, Furfine and Lowe, 2001, Borio and Lowe, 2002, Borio, 2003, Borio and White, 2004, White, 2006, Borio and Shim, 2007, Borio and Drehmann, 2009). Following the crisis, a back catalogue of earlier work was drawn upon by key expert committees and institutional settings tasked by G20 leaders with diagnosing and responding to the crisis (Baker, 2013).

Crucially, the case of the 'macroprudential shift' provides a good illustration of what the BIS is well equipped for. The BIS has a capacity to challenge orthodoxies and accepted practice by generating ideas, conceptual frames and data that help to re-define how policy challenges are understood. As a self-financing institution, with some degree of governance autonomy, it can develop its own independent research programmes, can access data from member central banks and has a staff profile with the expertise and the space to develop ideas and analyses. It also regularly interacts with both standard setting committees and national authorities. BIS staff and management have the access to the networks, expertise, data and the independence of thought to perform 'measured contrarianism.'

The contrarian element of measured contrarianism is relatively straight forward. It refers to: a willingness to lean against established intellectual and policy beliefs in the name of avoiding complacency, false confidence and excessive ambition; a preparedness to question market trends and prices as something necessarily rooted in deeper fundamentals; and a willingness to lean against collective societal and market expectations and sentiments by interrogating their foundations.

The measured component is less clear, but has a double meaning. One relates to style, disposition and use of language. It is about avoiding alarmist, excitable or overly strong claims, but using a circumspect, cautious and qualified tone, that may gently escalate over time out of necessity (escalating candour). A second element is about ensuring positions and warnings are based on careful analysis of data and robustly tested measurement indicators.

Monitoring and thinking about financial vulnerabilities means that the BIS is an organization that worries. 'Reasoned worrying' is hardwired into the DNA of the institution, as it is with many national central banks. For political economy reasons however, domestic authorities are sometimes limited by mandates and constrained by prevailing public and political sentiment. BIS analyses and its independent voice can therefore lend force to and supplement the efforts of national central banks in taking action to temper financial booms.

In an area such as financial stability policy, which by its very nature involves monitoring the build-up of conditions that cause crises, it is important that the international community is served by an international institution that is prepared to challenge market and policy making consensus. Excessive optimism and common collective thinking can quickly become a contributory driver of unsustainable financial booms (Widmaier, 2016, Brunnermeir and Ohemke, 2012)[3]. In this context, considered and 'measured contrarianism,' becomes a much needed, and precious antidote.

Just as central banks can experience reputational hits if they follow 'time inconsistent' monetary policies, adopting excessively contrarian positions in inappropriate circumstances can lead to the erosion of credibility and the attachment of pejorative labels such as 'Casandra.' Contrarian thinking is an important commodity in the field of financial stability, but it has to be used sparingly.

More research is required on whether systematic criteria could inform and guide 'measured contrarianism', but the broad underpinning philosophy is similar to using 'constrained discretion' to build track record and credibility. It means operating with caution, and crucially neither overstating, nor understating potential risks and threats to financial stability, while retaining a vigilant intellectual disposition.

Keeping abreast of financial risks that are by their nature dynamic and ever evolving also requires a framework, or way of thinking, that can explain and identify processes likely to cause financial disruptions and instability as part of longer run cycles of risk taking. A willingness to challenge assumptions of semi-permanent stability and equilibrium is essential in countering financial instability as a vital component of 'measured contrarianism'[4].

The BIS engages in 'measured contrarianism' in different ways. One way is through collecting and analysing data that identifies the build-up of system level risks. Another way is challenging complacent consensual thinking by developing accounts of how financial

[3] In economics this relates to the Minskyan notion that excessive optimism about the future might generate leverage cycles (Brunnermeir and Ohemke, 2012, Bhattacharya et al, 2014, Caballero and Simsek, 2017), but also how herding behaviours amplify financial volatility (Devenow and Welch, 1996, Nofsinger and Sias, 1999, Welch, 2000, Persaud, 2000). Political scientists have also considered how ideational stability and consensus can induce complacency, policy fine tuning, or narrowing, as a cause of economic and financial instability, ultimately producing ideational instability, redundancy and renewal due to the anomalies that develop in established approaches accumulated over time (Widmaier, 2016, Hall, 1993.)

[4] While institutions such as the International Monetary Fund (IMF) have highly skilled personnel and much macroeconomic expertise, the financing operations and pool of capital the organization presides over, involves the direct monitoring of member countries' financing positions. This together with the formalism associated with article four surveillance, conditionality agreements, and greater board level vetting of intellectual content and agendas has traditionally made it more difficult for the IMF to play a role of challenging conventional accepted wisdom and optimism, because of greater political sensitivities and contention, surrounding its role, the analysis it develops and what the analysis is used for. In contrast, the BIS has traditionally had a greater degree of intellectual autonomy though this fluctuates across time and is contingent upon circumstances.

markets can be unstable, because of the evolving dynamic incentives, behaviours, practices and modes of thinking that characterize those markets. A further way is by creating tools and instruments, to act as new technologies to constrain and offset some of these very processes. All three have been evident and at work in the macroprudential shift, but without the conceptual shift, the contribution of the other two (indicators and instruments) would be much diminished.

In a favoured refinement of Milton Freidman's famous idiom, Claudio Borio, now head of the BIS Monetary and Economics Department, wryly reflected that, 'we're all macroprudentialists now' (Borio, 2011). While the BIS has certainly challenged and changed understandings of crisis and financial instability, the extent to which the BIS perspective is truly shared and present throughout the evolving international financial architecture is far from clear. Ultimately, the macroprudential case illustrates that while the BIS and its staff can author new ideas and set in train modes of thinking that can change how policy makers think about and approach financial stability, the organization can also never control what happens to these ideas, as well as how they evolve and are interpreted once they leave the tower.

2. The Macroprudential Perspective: Origins of an Intellectual Shift

The term 'macroprudential' refers to an approach in which prudential regulatory instruments and settings are adjusted (often in a time-varying fashion) to target system wide financial risks and reduce potential harms to the wider macroeconomy. However, the macroprudential perspective goes beyond this simple literal description to encompass a conceptual framework for thinking about the functioning and processes that characterise financial markets and their capacity to hinder macroeconomic performance.

In the BIS conception, a macroprudential perspective involved two dimensions of systemic financial risk. A *time dimension of risk* refers to how perceptions of risk change over time. Financial market participants have difficulty in calculating the time dimension of risk, because short-time horizons produce extrapolations of current conditions into the future, resulting in misperceptions of risk, which in turn could drive excessive risk taking in boom periods. At some point events cause a reassessment of the true nature of these risks. These behaviours and incentives produce cycles of risk taking. Such cycles often move financial asset values and credit provision to extremes, lengthening and amplifying both upswing and downswing phases of such cycles in a phenomenon known as *procyclicality* (Crockett, 2000b, Borio, Furfine and Lowe, 2001, p.2,). This so-called time-dimension aspect of risk for example, later informed the development of countercyclical capital buffers.

A second *cross sectional dimension* refers to how risk is distributed within the financial system. Financial stability problems can arise when many institutions have similar exposures and institutions are highly interconnected, or when an outsized institution has a disproportionate impact on the system as whole. These factors can reduce systemic resilience and increase the vulnerability of individual institutions in ways that are not apparent, when they are considered on a stand-alone basis. Regulators consequently need to pay attention to the systemic significance of institutions and their contribution to overall system wide risk, with those of greater systemic significance being subjected to tighter standards (Crockett, 2000b, Borio, 2003). This cross-sectional framing later informed efforts to identify global systemically important financial institutions (G-SIFIs) and set prudential standards accordingly.

The first recorded usage of the term macroprudential dates back to 1979 in the Basel Committee on Banking Supervision (BCBS), 28-29 June 1979. Chair of the Committee, Bank of England official Peter Cooke, referred to how microprudential problems could become macroprudential ones (systemic,) with macroeconomic implications (Clement, 2010). A well-

known favoured BIS definition is that a macroprudential objective involves limiting the costs to the economy from financial distress, by constraining "systemic risk" (Crockett, 2000b).
A macroprudential perspective sees systemic outcomes as being determined by the collective behaviours of individual marker institutions, or "in economic jargon, as 'endogenous' to the system[5]. In this reading, first set out in a speech in 2000 by BIS General Manager, Andrew Crockett, actions that seem desirable from an individual institution's perspective can result in 'unwelcome systemic outcomes'. Such 'fallacies of composition', occur when one wrongly 'infers that something is true for the whole, from the fact that it is true for each of the individual components of the whole (Brunnermeier, et al, 2009, p.75).' One example is when individual institutions may understandably tighten lending during a recession, with detrimental affects for system wide credit and stability if all banks do the same thing at more or less the same time. The resulting impact on economic activity, can lead to a further deterioration in the credit quality of portfolios (Crockett, 2000b). This is a key feature of the phenomenon of 'procyclicality' in which financial cycles are amplified by such systemic forces and patterns.

The table below from Claudio Borio's 2003 paper summaries the distinction between the macroprudential and microprudential perspectives as initially laid out in Crockett's 2000 speech. The table is a useful device for thinking about how the emergence of a macroprudential perspective, represented an intellectual shift, or a shift in ideas, mind-sets and conceptual framing. The emergence of a macroprudential perspective can be said to have some elements and characteristics of a shift in ideas (Baker, 2013).

As defined here, the macro and microprudential perspectives differ in terms of *objectives* and the *model* used to describe risk (Table 1).

Table 1

The macro- and microprudential perspectives compared

	Macroprudential	**Microprudential**
Proximate objective	limit financial system-wide distress	limit distress of individual institutions
Ultimate objective	avoid output (GDP) costs	consumer (investor/depositor) protection
Model of risk	(in part) endogenous	exogenous
Correlations and common exposures across institutions	important	irrelevant
Calibration of prudential controls	in terms of system-wide distress; top-down	in terms of risks of individual institutions; bottom-up

The shift in ideas represented by the macroprudential framing consists of three distinct elements. First, a macroprudential perspective provides a different causal account of the source and causes of financial crises, by elaborating on earlier endogenous accounts that had fallen out of fashion (Minsky, 1995, Kindleberger, 1978, Baker, 2018). Prevailing conceptions during the great moderation period, tended to see primary risks to the financial system arising from exogenous shocks, through events or practices external to the financial system. An endogenous account of financial risk involves a qualitatively different causal claim about the origins, sources and mechanisms of financial crises. Here emphasis shifts to

[5] Earlier accounts of endogenous forces in the financial system are evident in Kindleberger 1978, Minsky, 1995.

how practices and processes internal to financial markets, propagate and amplify crises, through valuation techniques, risk models, investment decisions, the collective impact of individual decisions, as well as synchronised collective behaviours (Shin, 2010, Borio, 2003). On the upswing phase of a cycle such endogenous factors can combine to produce excessive risk taking, leverage, credit provision and over extended balance sheets. On the downswing phase of a cycle risk aversion amongst market actors can shrink credit provision and macroeconomic activity. Crises in such a reading are primarily a function of these endogenous phenomenon.

Second, a macroprudential perspective involves a shift in the primary unit of analysis from the micro or individual level to the systemic level. Analysis and focus moves from the individual financial institution and the integrity of its risk models, to the collective, or system wide consequences of the interactions between those models and institutions. As Andrew Crockett explained, focusing on individual institutions resulted in supervisors striving for too much (preventing individual failures), but delivering too little. Occasional individual failures, Crockett explained are not a problem. Rather what matters most is how the collective behaviour of institutions impact on (macro) economic outcomes (Crockett, 2000b).

Third, a macroprudential perspective offers a different account of both individual and systemic behaviours, especially the combined, collective implications of those behaviours, with a broader range of unstable outcomes becoming possible. Even when agents behave rationally (sometimes they can behave myopically and herd), collective vulnerabilities can still result because of the collective impact of the interactions between those behaviours, reflecting the fallacy of composition problem noted above. More specifically risks rose during expansions and later materialised in recessions.

In short, the emergence of a macroprudential frame has entailed: i) a shift in a causal account of a given phenomenon; ii) a shift in the primary unit of analysis; iii) a changed conception of agents' behaviours and their collective, systemic implications. These premises are long way from an expectation that rational forward looking agents will produce an efficient equilibrium most of the time. In natural sciences, all of the above together might be said to resemble a Kuhnian style paradigm shift. In social sciences however, and in the world of public policy, paradigm shifts, require more than a shift in theoretical and conceptual framing. They also require a political diver, as part of a policy project, that presents a qualitatively different vision of state- society relations and of market systems (Hall, 2013, Ruggie, 1982, Baker, 2018).

The macroprudential perspective has no such pretensions. It presents a different set of assumptions and account of the world of financial markets, relative to assumptions of largely efficient financial markets (Fama, 1991,) or dynamic stochastic general equilibrium (DSGE) modelling (Smets and Wouters, 2007, De Grauwe, 2010). Both largely discount long run financial cycles as a macroeconomic phenomenon The perspective has however, remained focused within the relatively technical domains of crisis diagnosis and financial regulation and supervision, rather than offering a prescriptive overarching vision of the 'good' financial system (Baker, 2018).

The intellectual content and claims made within the macroprudential framing enable measured contrarianism in three ways: i) conceptual; ii) practical instruments; iii) data and indicators. The rest of the chapter provides an account of how the macroprudential perspective has proceeded and how it has enabled and represented 'measured contrarianism' across these three levels.

3. A History of the Macroprudential Perspective

Usage of the term 1979 - 1999

After the first recorded mentions of the term macroprudential in some of the documentation of the BCBS, further references came in October 1979, in a Bank of England background document. The document was submitted to a working group chaired by Alexandre Lamfalussy, BIS Economic Adviser and chair of the European Currency Standing Committee (ECSC). It explained that a macroprudential approach considered problems that bore upon the *market as a whole* as distinct from an individual bank and that might not be obvious from a focus on individual institutions. The eventual Lamfalussy report mentioned the term macroprudential seven times, although the term did not make it into the G10 governors' public communiqué in April 1980[6].

The Lamfalussy report made three main points of a macroprudential nature. First, the growth of individual bank lending may look sustainable, while aggregate lending may not be. Second, perceptions of risk may focus narrowly on past performance, rather than broader future risk. Third, individual banks tend to underestimate the importance of liquidity risk, which requires a market wide perspective. From the very outset a macroprudential perspective provided a framing that allowed for a mildly sceptical reading of the ways in which individual financial institutions assessed risks and the likely systemic financial vulnerabilities arising from this.

In 1986, some six years later, the term first appeared in an official public document for the first time. A BIS European Currency Standing Committee Report (ECSC) considered how financial innovation (derivatives and securitization) might raise risks for the financial system as a whole through: regulatory arbitrage; the underpricing of risk on new instruments; overestimation of their liquidity; the opaqueness of risk resulting from inter connections in the financial system; the danger of risk concentrations; the overloading of payment and settlement systems due to a high volume of transactions; increased market volatility and growth in overall debt.

After this 1986 report, the term macroprudential largely disappeared from public documents, but continued to be used in internal BIS paperwork and influenced the thinking of staff. The 67th Annual BIS report in the mid-1990s (BIS, 1997,) raised concerns about a lack of transparency in derivatives markets and the concentration of market-making functions in a few institutions, which could undermine the robustness of market liquidity (Clement, 2010).

In 1998, BIS staff conducted an in-house survey of financial stability arrangements amongst central banks. The document made brief reference to the need for more countercyclical provisioning in policy frameworks to counter procyclicality, with prudential standards and regulations, being tightened or relaxed for this purpose, depending on the part of the financial cycle[7]. Unfortunately, proposals under the Basel II process, where moving in the opposite direction. They involved greater reliance on institutions own risk models in the calculation of capital requirements, that in turn were sensitive to and largely followed market prices.

BIS staff were beginning to raise the issue of the financial cycles and highlight the need for countercyclical regulatory policy. Going public with such concerns, given the direction in which the Bank's dominant shareholder central banks were moving in the BCBS, was difficult. The 1998 document remained confidential and internal to the BIS, because it contained information on lender of last resort and crisis management practices, that central banks were reluctant to make public.

The difficulty in engaging in public discussions of procylicality, were further illustrated a year later in 1999. BIS General Manager, Andrew Crockett, acting as the first chair of the

[6] "Report of the Working Party on possible approaches to constraining the growth of banks' international lending", 29 February 1980, in BISA 1.3a(3)J – Working Party on constraining growth of international bank lending, vol 2. Clement, 2010.

[7] This document is one of the confidential sources, the author had access to, as referred to in footnote 2.

new Financial Stability Forum (FSF), created by the G7 to consider cross-cutting financial stability issues in the aftermath of the Asian financial crisis of 1997-98, wrote a letter to the chair of the BCBS, Bill McDonough of the New York Federal Reserve, dated 6th October 1999. The letter, raised the issue of whether capital adequacy standards could at times accentuate the financial cycle, by not constraining lending in the upswing phase of the cycle, but restricting it in a downswing phase. Crockett asked whether a regime calibrated in the opposite direction by raising capital in the upswing phase of the cycle, would be better placed to cushion losses in the downswing phase. The FSF asked for the opinion of the BCBS on these issues.

In March 2000, the BCBS published a ten-page response to the FSF and Crockett's letter. It addressed the question of whether capital regulations could potentially accentuate economic cycles (be "pro-cyclical)". The BCBS expressed the view that supervisors should generally seek to reinforce rather than counteract signals coming from banks own risk management models. Weak institutions should be encouraged to build up their capital, rather than expand risk-taking in a downswing phase of the cycle, because of the danger that this would create moral hazard incentives (BCBS, 2000, p.5.) The BCBS did acknowledge that bank risk taking could be procyclical, but ultimately played down the extent to which their own work would fuel such a process. Rather, the softening of market discipline and the resulting moral hazard implied by a countercyclical framework was a far greater danger. At this point, the BCBS essentially opposed a countercyclical capital regime, and instead focused on incentives facing individual institutions, rather than systemic patterns that might induce financial instability.

Deepening Conceptual Understanding in the 2000s

BIS management and staff reacted to the BCBS response by strengthening their research in the area and developing a more extensive conceptual framework to explain the occurrence of financial cycles and contagion across institutions. The path of least resistance in the circumstances would have been to remain quiet and simply accept the BCBS response, at least in public. Instead, displaying the traits of measured contrarianism, in which it is sometimes appropriate and desirable to push against dominant intellectual and market positions, the BIS went public with their framing. This body of work placed the need to counter procyclicality in financial markets centre stage, as a primary challenge for central banks in the new millennium.

The research effectively built on the earlier ideas noted above, but deepened the conceptual framing for a macroprudential perspective. BIS staff and management's willingness to become more public in outlining some of their reservations about BCBS and Basel III positions was a new departure. Many within the tower were clearly dissatisfied with the BCBS response to the concerns raised by the FSF.

In April and September 2000, having liaised with staff, General Manager, Andrew Crockett gave two speeches setting out the need for a shift in the direction of a macroprudential perspective. The speeches were in his own words, 'deliberately provocative' to 'sharpen the issues' and 'encourage a broader debate' (Crockett, 2000a, 2000b). Much of the conceptual content of the speeches was covered earlier in the chapter. The most marked feature, however was a clear shift in tone. A polite request to consider questions was replaced with a stronger statement that financial risks *were* procyclical and endogenous.

The importance of the speech was that it directly contradicted and contested the message contained in the earlier BCBS note. It was presented as an awareness raising step in a longer journey to more fully developing a macroprudential perspective, as a process that was already underway. Not all BIS staff were comfortable with the organization developing a public stance that seemed at odds with the prevailing view of the BCBS. While the BIS has a degree

of intellectual autonomy, staff have to take care not to change or challenge the practices of standard setting bodies that the organisation hosts, not least because they reflect the collective views of national authorities. Overt opposition to such collective views can run the risk of undermining the legitimacy of the BIS and damaging the credibility of standard setting bodies, as well as constituent central banks.

Nevertheless, the BIS research that followed, revealed the determination of staff to keep the macroprudential perspective alive and to develop it further, at a time when the wider climate and environment was not especially favourable. For example, one leading figure from the Federal Reserve involved in Basel II, expressed disapproval to senior figures at the BIS, at the content and tone of Crockett's speeches. One observer recalled that Crockett's speech was a courageous undertaking, in a generally unsympathetic context, and without it the macroprudential perspective may have withered.

A first major contribution to emerge following Crockett's speeches was a paper by Claudio Borio, Philip Lowe and Craig Furfine that explored the issue of procyclicality in the financial system in greater depth (Borio, Furfine and Lowe 2001). Prior to the paper, there was a sense in the central banking community, that procyclicality was a process much talked about, but little understood, and the authors set out to rectify this.

Procyclicality was defined as the process through which the financial system 'unnecessarily' amplified swings in the real economy. A key driver of both procyclicality and financial instability was identified as the inappropriate response of financial market participants to changes in risk over time. Uncertainty created measurement difficulties in relation to the time-dimension of risk, while 'market participants' incentives to react to changes in risk could often be socially suboptimal' in such a context (Borio, Furfine and Lowe, 2001, p.1). These measurement difficulties meant risks tended to be underestimated in booms leading to rapid credit growth and inflated collateral values. In recessions, risk would be overestimated leading to rapid retrenchment, downward spirals in asset values and plummeting collateral valuations. Measurement biases arose because market agents were better at assessing relative rather than absolute risk (Borio, Furfine and Lowe, 2001, p.2.)

The paper had three purposes: i) to extend empirical evidence on procyclicality; ii) to explore in more detail the underlying mechanisms causing procyclicality and the implications for monetary and prudential authorities; iii) to position these ideas in relation to the extant academic literature. The paper called for supervisors to induce an increase in capital cushions during boom periods, when they reached an assessment that risk was being mis-assessed by financial institutions, which could be linked to stress tests of particular institutions. Likewise, the possibility of minimum provisioning rates being varied and adjusted across time for the system as a whole, was raised, as were loan to value (LtV) ratio adjustments, which would tighten the terms on which new mortgages were issued. This was seen as a potential means of moderating property price cycles.

Spanish provisioning rules where banks took a charge on their profits, taking account of long-term loss experiences were also cited. This charge was to be placed in a separate statistical fund. The aim here was to reduce fluctuations in year to year bank recorded profits. Accumulated profits could then be drawn down from the statistical fund to compensate for bad years (Borio, Furfine and Lowe, 2001, p.44).

The kind of arguments being marshalled by the BIS were reinforced, when a group of academics connected to the London School of Economics Financial Markets Group, made a submission to the BCBS entitled an academic's response to Basel II (Danielsson et al, 2001.) The submission argued that Basel II was failing to address many of the key deficiencies of the global financial regulatory system and even created the potential for new sources of instability. The submission drew on a body of academic work that explored asset price

dynamics and the limits and mathematical inadequacies of private value at risk (VaR) models (Danielson, Shin and Zigrand, 2004, Morris and Shin, 1999, Embrachts et al, 2001).

Among the critiques advanced were that: proposed regulations failed to consider risk was endogenous, so VaR could destabilise an economy and induce crashes where otherwise none would occur: statistical models forecasting risks were inconsistent and biased, underestimating downside possibilities; and that financial regulation was inherently procyclical with Basel II significantly exacerbating that tendency and increasing rather than reducing the likelihood of systemic crisis.

Under the Basel II internal ratings approach the analysis explained that banks would have less capital at the cusp of a cycle, when the danger of systemic crisis was greatest, and hold too much capital, or under lend during a downturn when macroeconomic stabilisation required an expansion of lending. Regulation of the sort proposed by Basel II therefore risked destabilising the economy as a whole (Danielsson et al, 2001, p. 15).

This was a powerful argument from some of the leading thinkers and financial risk modellers in academia. There was a clear resonance with the questions raised by Crockett in his letter and speeches, as well as the subsequent BIS work on procyclicality. While the academic group noted difficulties in forecasting cycles and producing forward looking capital adjustments, they also encouraged more thought being given to this question, because the procyclicality problem was so serious and revised capital regulations in Basel II potentially exacerbated it.

In short, support for the BIS research agenda was starting to emerge from leading academic authorities. An intellectual alliance sharing a similar diagnosis of issues around procyclicality and the flaws associated with placing too much weight on an internal ratings approach, together with the limits of private risk management strategies and models, was developing.

In 2003, Claudio Borio more fully sketched the macroprudential framework in a single authored BIS working paper. Notably, Hyun Shin from the LSE academic group commented on drafts of the paper, indicating a growing interaction between the BIS's own research programme and academic work and modelling on endogenous risk. Borio explained that a macroprudential perspective, could be regarded as a kind of looking glass, for putting old issues into new focus. The objective of a macroprudential approach was to limit the risks of financial distress in terms of the real output for the economy as a whole. A macroprudential approach would be top down in that it would seek to set a threshold of acceptable tail losses across a portfolio as a whole.

Common exposures to macroeconomic risk, Borio argued, produced more severe financial crises and were the driver of the majority of major crises around the globe. Such processes and the mechanisms through which they occurred were little understood. Crises, followed certain common patterns and phases, involving a build-up phase, booming economic conditions and benign risk assessments, access to credit, fewer external financing constraints and buoyant asset prices. Such conditions masked the accumulation of real financial imbalances as the system became overstretched. At some point such a process went into reverse, with potential triggers, or shocks located in both financial and real economies. When the system suffered from a lack of buffers and the contraction went far enough, financial crises were likely. In other words, crises were seen to be a function of a system wide financial cycle (Borio, 2003).

The macroprudential perspective, had three primary differences to orthodox models of systemic risk. First crises could only be understood in terms of how vulnerabilities build up over time, due to dynamic interactions between financial and real economies. Booms sow the seeds of bust, with the trigger the least interesting feature of the story. Second, crises result from common exposures to the same risks. Third, the real action is on the asset side of the

balance sheet, rather than the liabilities side, because this is where exposures build up and where changes in value originate. Subsequent deterioration in asset quality and value drives the process of crisis.

In this vision, risk builds up during a boom, but market participants operate as if risks were falling during the boom, when in hindsight risks were probably at their peak. In contrast risks tend to be treated as highest during recessions. In reality risks rise in booms, then materialise in recessions when the boom unwinds. Losses and evaporations in wealth are then liable to being socialised, or distributed broadly across society. The main concern of a macroprudential perspective was to limit the disruption to economic life and society as a whole as a consequence of generalised financial distress (Borio, 2003, pp.8-9). The macroprudential perspective called for financial regulation to move away from narrowly conceived depositor protection, towards these broader concerns.

The paper noted that while the price sensitive calculations of minimal capital requirements proposed by Basel II, might provide a better reading of *cross-sectional risk*, it also had troublesome implications for the *time dimension of risk*, or a potential procyclical impact. The paper was peppered with approving references to the work of Goodhart, Danielsson and Shin from the LSE financial markets group, referring to an LSE endogeneity school of risk, who were making similar observations (Borio, 2003, p.8, Danielsson et al, 2001, Goodhart and Danielsson, 2001. Morris and Shin, 1999). A firmer set of intellectual foundations for a macroprudential perspective were gradually being laid.

A key moment in efforts to promote this mode of thinking outside of the BIS came at the Jackson Hole annual symposium, when Claudio Borio and Bill White were invited presenters (Borio and White, 2004). Jackson Hole is the annual flagship event for intellectual exchange in central banking circles, hosted by the Kansas City Federal Reserve. This was an important litmus test of the reaction to the evolving BIS perspective on financial instability in the wider central banking community, particularly in the United States as the world's leading financial power.

The Jackson Hole paper drew heavily on and synthesised some of the work conducted since 2000 (Borio and Lowe, 2002, Borio, Fufine and Lowe, 2001, White 2002). Its primary claim was that financial instability was beginning to replace inflation as the primary villain confronting the global economy. Simply focusing on price stability was therefore not an adequate guarantor of financial stability. Rather the evidence pointed in the opposite direction. The conjunction of liberalised financial markets with credible price-stability-oriented policies was resulting in increasing instances of financial instability, often with double digit GDP effects, significantly changing the dynamics of the economy (Borio and White, 2004, p.1).

Monetary policy focused on inflation, the paper argued, was likely to react too slowly to the build-up of financial imbalances, increasing the vulnerability of economies to boom-bust cycles. One of the consequences of lower and more stable inflation, was also an increase in private risk-taking, (with market actors assuming risks were lower and more benign). This was resulting in a greater prominence of asset and credit boom and bust cycles and a greater incidence of financial crises. At the same time, by the 1990s financial liberalisation had increased access to external forms of funding, and a much richer spectrum of tradable financial instruments, increased the prospect for over-extension during the up-phase of a financial cycle.

Expansions also potentially lasted longer, but also became increasingly costly when going into reverse. Financial factors were becoming more important drivers of business fluctuations, with this fuelled by internal bank risk ratings and credit rating agencies (Borio and White, 2004, p.7). On the downswing side of the cycle, households and businesses struggle to re-structure balance sheets, as falling profits, incomes and asset prices, produce

excessive indebtedness. Financial institutions react to this distress with a greater reluctance to extend finance, producing deep crises and recessions. Crises tend to have such common cyclical elements, with the credit-GDP gap being a particularly good indicator of over extension and future crises (Borio and Lowe, 2002).

To maximise the benefits of financial liberalisation, while minimising its costs, the paper argued it was necessary to put in place mutually supportive safeguards, in both monetary and financial spheres, through monetary and prudential policies. In the BIS view monetary and prudential policies with a macroprudential orientation should be key elements of a macro-financial stability framework. One element of this would be to require financial institutions to build up cushions during the upswing of a crisis, which could be run down in downswings. In monetary policy it was suggested authorities could tighten policy to reduce the build-up of financial imbalances, even when near term inflationary pressures were not apparent (Borio and Lowe, 2002). Such a move would also ensure authorities had more ammunition in the downswing phase of the cycle.

This was a potentially controversial message because it involved moving central banks beyond narrow inflation targeting mandates, and building indicators such as credit-GDP gaps into existing monetary policy frameworks. While the macroprudential perspective was effectively a mind-set, or way of understanding financial instability and its sources, macroprudential policies were consequently seen as only one element of the desired institutional response. The preferred BIS approach of creating broader macro-financial stability frameworks that went beyond prudential and regulatory policies, to encompass macroeconomic policy more generally (particularly monetary policy), was the logical outcome of adopting a macroprudential perspective, or mind-set (White, 2006[8]).

Audience reaction at Jackson Hole was mixed, but especially critical from US based delegates. Mark Gertler of New York University acting as discussant argued that: i) the indicators the paper proposed were unlikely to be reliably predictive; ii) financial imbalances and instability were primarily due to regulatory inadequacies rather than cycles; and iii) that there was no evidence that pre-emptive monetary policy responses to financial imbalances yielded significant benefits, but may actually do damage.

Frederic Mishkin, Ben Bernanke, Alan Greenspan as Federal Reserve Chairman and Allan Meltzer all rejected the idea that monetary policy could have a role in limiting bubbles and instances of financial instability, suggesting such moves would be counterproductive and induce recession (General Discussion, 2003). Most notably, the central thesis of the paper

[8] The idea of a macro-financial stabilisation framework was first formally referred to by the BIS in the 75th BIS Annual Report of June 2005 (BIS, 2005, p.147-152). The term was used to denote the idea that regulatory and monetary policies should be applied more symmetrically over the cycle (BIS, 2005, p.147). The aim here was to have ammunition and 'room for manoeuvre' in monetary, fiscal and regulatory policy, particularly in downturn periods. After 2005 the term macro-financial stabilisation, or stability framework disappeared from the annual report. It next reappeared as a heading: Towards a Macro-financial stability framework, in the 86th Annual Report in 2016. The discussion noted the theme had been discussed in the 84th and 85th Annual Reports, but the term macro-financial stability framework itself was not used in either report. In 2016, the term was used to refer to a set of arrangements that systematically incorporate financial stability considerations into traditional macroeconomic analysis. "At a minimum, it would encompass prudential, monetary and fiscal policies with strong support from structural measures. Its key operational feature is that authorities would lean more deliberately against financial booms and less aggressively and, above all, less persistently against financial busts." (BIS, 2016, p.17). Overall the 2016 Report signalled a greater determination by the BIS to further explore how monetary frameworks should allow for the possibility of tightening policy even if near-term inflation appears under control (p.20). This can be interpreted as the latest instalment of the BIS's 'measured contrarianism' and a renewed effort to introduce financial stability considerations into monetary policy. In 2019, macro-financial stability frameworks were noted as one of the five key areas of BIS research (BIS, 2019, p.17).

that financial instability and crises have common features reflecting an inherent market procyclicality was not engaged with. The central term procyclicality was referred to only once in post-paper discussion by Borio himself, illustrating that BIS attempts to inject this terminology and framing in international policy discussions was largely unsuccessful. The discussion did not even consider the proposition that cyclical market risk-taking caused financial instability, or that this was a characteristic of modern financial markets. Quite simply the BIS lens on procyclicality was not being engaged with by many leading macroeconomists and major figures in the world of central banking, particularly in the United States, revealing a discomfort and unfamiliarity with the terminology and the mode of thinking.

At national central banks the willingness to think in terms of non-equilbrium scenarios was increasing slowly. At the Bank of England for example, an endogenous way of thinking about financial risk was beginning to develop. This was aided by the appointment of Hyun Shin (part of the LSE endogenous school of risk) as a consultant. Crucially the Bank's financial stability team opted to keep this work private, based on a calculation that there was little appetite for it, either internally within the Bank, or externally. Some parts of some central banks were becoming more receptive to thinking in terms of macro-financial stability, but narrow mandates, equilibrium modelling and a focus on inflation targeting, was not an institutional environment that was especially conducive to progressing such thinking.

Signs that macroprudential thinking was beginning to permeate other settings and domains were also emerging in limited ways. Macroprudential monitoring was becoming more popular within the prudential supervision community, evident in macro stress testing and the development of indicators of financial distress. The IMF and World Bank's financial sector assessment programmes had encouraged such practices. There was also evidence of a macroprudential orientation filtering through into prudential instruments. Basel II for example produced some adjustments to its calibrations in response to concerns raised by the BIS and others about its potential to amplify procyclicality (Carauna, 2004). Furthermore, the supervisory review pillar could 'in-principle' be adjusted in the light of a build-up of financial imbalances.

Some supervisory authorities had also developed through the cycle stabilizing instruments. The most notable one was the statistical provisioning scheme used by the Bank of Spain, which was calibrated according to average historical experience in loan losses to avoid excessive declines in provisioning in good times (De Lis et al, 2001). In some South East Asian economies, prudential standards were also tightened in good times, mainly Loan to Value ratios (LVR) in Hong Kong, South Korea and Thailand, and tightened capital requirements against real estate lending in India, Norway and Portugal. Crucially however, such measures were piecemeal and discretionary, rather than as part of systematic macroprudential policy regimes, and were not present in the major financial jurisdictions.

The BIS perspective during this period was that the technologies and practices of countercyclical provisioning were still in their infancy. Macro-stress testing and indicators of distress still fell short of providing adequate financial stability safeguards, or as basis for discretionary policy interventions (Borio, 2006, p.19). Testing, experimenting and refining macroprudential instruments remained difficult. Institutional factors also potentially inhibited macroprudential policy instruments. Supervisory authorities focused on depositor and investor protection would have difficulty using instruments for systemic stabilization. International accounting standards also potentially clashed with the kind of statistical provisioning being used in Spain. BIS staff raised these issues in exchanges with the International Accounting Standards Board (IASB), but made little progress on an agreed way forward.

More significantly, the expertise and mind-set of supervisory authorities were not always conducive to a macroprudential perspective. The legal and accounting backgrounds present in the supervisory community were often not compatible with the perspective's macroeconomic logic (Borio, 2006, p.20). The idea that standards and capital requirements would be varied through the cycle based on evolving conditions and judgements was not easy to represent in either legal codes of practice, or on spread sheets, and would inevitably be constrained by political economy considerations (White, 2006).

Overall, BIS staff spent the 2000s gently promoting an intellectual shift that would allow 'measured contrarianism' to flourish. However, staff also noted that this alone would be insufficient. A more far reaching shift would require the creation of specific institutional mandates, indicators and instruments that would institutionally hardwire such a perspective (Borio, 2006, White, 2006).

By 2008, evidence from the financial disruptions of 2007 was being analysed and lesson drawing at the BIS was underway. Reflecting earlier work, the emerging crisis was interpreted as a long run financial cycle resulting from an overextension of risk-taking and balance sheets in good times (Borio, 2008, p.12). This reflected a broader 'paradox of financial instability', according to which financial system risk is greatest, at precisely the point when it appears lowest and most benign to a majority of actors (Borio, 2008). It is at this moment that aggressive and eventually destabilizing risks are undertaken. Analytical devices like the 'paradox of financial instability' provided an intellectual framework for thinking and acting on a contrarian basis, issuing warnings, or advocating a countercyclical tightening of policy. In the lead up to 2008, the BIS issued several warnings that excessive risks were building up (BIS, 2005, 2006, 2007, Knight, 2007).

The evolving crisis was seen as a further rationale and justification for strengthening the macroprudential orientation of policy frameworks. In reality, concrete proposals for policy instruments had not progressed much since 2002, when Borio and Lowe's paper developed early warning indicators. Two primary proxies had been advanced: an asset price gap - measured by the deviation of inflation-adjusted (real) equity prices from their long-term trend; and a credit gap measured by deviations of the ratio of private sector credit to GDP from its trend. The best warning signal was found to be if the credit gap exceeded 4 percentage points and the equity price gap was greater than 40% (Borio and Lowe, 2002). BIS work during 2008 and 2009 updated this. Property prices were included in the indicator[9]. Revised results found that best predictors to be if the credit gap exceeded 6% and at the same time either the equity gap exceeded 60%, or the property gap exceeded a threshold from 15% to 25% (Borio and Drehmann, 2009, p.34).

As the crisis of 2008 materialised, a sense of urgency was imparted to this BIS research agenda on warning indicators and policy guides. Not least because one of the primary lessons emerging from the episode was that the policy armoury for containing procyclicality remained hugely under-developed. In July 2009, BIS staff produced a research report jointly with Bank of Spain officials formulating proposals on countercyclical capital buffers.

The research developed a proposal for a counter cyclical capital buffer scheme around the following principles or features: a time varying target based on either the ratio of credit to GDP, or credit growth, deviating from long-term trend (credit-GDP gap); the target would be suspended in bad times for a pre-announced period based on aggregate losses and credit conditions, with banks allowed to use the additional regulatory capital built up in good times; a blanket restriction on dividend payments for the period of the suspension of the target. The

[9] An absence of reliable data had prevented this in 2002. The 2002 paper had also considered the use of built-in stabilisers, in addition to discretionary measures, through conservative loan-to-value ratios based on through-the-cycle valuations

credit-GDP gap was found to be the best indicator for guiding policy in the build-up phase, while some measure of aggregate losses, possibly combined with indicators of credit conditions, seemed best for signalling the beginning of the release phase. A prompt and sizeable release of the buffer was seen as desirable, as a gradual release could reduce the buffer's effectiveness. The research concluded that some degree of judgement, both for the build-up as well as the release phase, would be inevitable (Drehmann et al, 2009, later Drehmann et al, 2010).

4. Tackling Procyclicality as a Post-Crisis Priority 08-09.

In April 2008, the Financial Stability Forum produced a report on the unfolding crisis for G7 finance ministers and central bank governors, entitled 'enhancing market and institutional resilience'. The report contained no mention of strengthening the macroprudential orientation of policy frameworks. Its central message was the reiteration of a trinity of greater transparency, greater disclosure and better risk management by financial firms (Eatwell, 2009). The report did however call for further study of the forces driving procyclicality in the financial system, pledging to further investigate options for mitigating it on behalf of the finance ministers and central bank governors (FSF, 2008, p2). With the FSF looking to catalyse further work on procyclicality, the earlier research of the BIS, was an obvious first port of call.

In this respect, the BIS enjoyed a 'first mover advantage' having already conducted much of the analytical and conceptual legwork around the issue of procyclicality (Lall, 2012, Baker, 2013). Other institutions needed to draw on the BIS work, precisely because it already existed, and was the primary work in the field. On some occasions, various committees and bodies even deferred to BIS expertise, asked their advice, or directly used previous work. In the changed climate after the crisis, this earlier BIS foundational work became a means of making sense of unfolding events and market fragility, while also pointing towards a programme of reform (Blyth, 2002). For politicians and officials charged with establishing reform trajectories and conveying a sense that action was being taken to prevent future crises, the macroprudential perspective became important for the symbolic purpose of demonstrating that something concrete was being done (Lombardi and Moschella, 2017).

One of the last acts of the George Bush administration in the United States was to convene a new G20 leaders' summit to discuss and develop responses to the crisis. As part of this ongoing process a working group of finance ministry and central bank officials was established to consider regulatory overhaul in more detail. Ahead of a second G20 leaders' summit in London in April 2009, the working group published a 62-page report setting out a regulatory reform agenda in February 2009.

Recommendation three in the report called for authorities to be equipped with suitable macroprudential tools to address systemic vulnerabilities. More explicitly it noted that such tools should be developed by the BCBS, IOSCO, IAIS and the new expanded FSF (soon to become the Financial Stability Board FSB). A number of potential instruments were listed including simple measures to contain the build-up of leverage with enhanced sensitivity to off balance sheet exposures, capital requirements that adjust over the cycle, forward looking loan loss provision standards, longer historical samples for assessing risk and margin requirements, and a greater focus on loan to value ratios for mortgages. (G20, 2009, p.9). This was the first time the development of a macroprudential policy toolkit, had been formally recommended in an international policy document by major central banks and ministries of finance. Crucially, earlier BIS conceptual points were also repeated such as the

importance of the collective behaviour of economic agents being taken explicitly into account, and not simply reduced to the sum of individual component parts (G20, 2009, p.16).

This G20 working group was chaired by Tiff Macklem of the Canadian Ministry of Finance, but formerly of the Bank of Canada, and Rakesh Mohan of the Reserve Bank of India. In this sense, the report reflected that a number of officials in the central banking community had quietly begun to accept the need for a macroprudential perspective. The ideas had gained currency at the Bank of England, the Bank of Canada, and in a number of Asian countries including India and South Korea. In the UK, Charles Goodhart, together with John Eatwell of Cambridge and Avinash Persaud were explaining the macroprudential perspective, to the new head of the UK's prudential regulator, the Financial Services Authority (FSA), Adair Turner, who became a speedy convert to the perspective (FSA, 2009). In Canada, Paul Jenkins and David Longworth of the Bank of Canada were advocates of creating an extensive macroprudential regime. Important national delegations - Canada as chair of the working group, and the UK as chair of the G20 were therefore beginning to advocate a macroprudential perspective.

The process of greater acceptance at key central banks was given additional momentum by the publication of the Geneva Report in July 2009, which brought together some of the primary academic authors from the endogenous school of risk, with Andrew Crockett. One prominent Bank of England official, in conversation with the author recalled that this report made the biggest difference in terms of acceptance by the central bank community, because the standing of the academic voices involved, markedly increased the credibility of the ideas. The report claimed strongly that countercyclical capital charges were the way forward, and that capital adequacy requirements should be adjusted over the cycle by two multiples - the first related to above-average growth of credit expansion and leverage, the second related to the mismatch in the maturity of assets and liabilities (Danielsson, Shin and Zigrand 2002, Adrian and Shin, 2010, Adrian and Brunnermeier, 2008, Segoviano and Goodhart, 2009).

On procyclicality, the G20 working group noted that FSF working groups would be tasked with developing recommendations for mitigating procyclicality with respect to bank capital, provisioning practices, and valuation and leverage. The working group also noted that the FSF and its member committees should be given a mandate to mitigate procyclicality in the financial system and for developing approaches to this end (G20, 2009, p.11). As part of this effort, staff at the BIS were tasked with writing a foundational paper for the FSF on procyclicality. The BIS contribution took the form of a conceptual note drawing on the previous research described elsewhere in this chapter (BIS, 2009). Gradually, the BIS prior research and many of the ideas and concepts on which it was based were being diffused into key settings in the global financial architecture.

The FSF report on Addressing Procyclicality was published in April 2009 and was produced through three working groups: one on bank capital jointly with the BCBS; one on provisioning involving securities regulators and IOSCO; and one on leverage and valuation in conjunction with the Committee on the Global Financial System (CGFS). The reports produced by these working groups together with the BIS conceptual note on procyclicality were drawn together in a series of strong FSF recommendations to strengthen the macroprudential orientation of existing regulatory frameworks. The BCBS in particular was the target of a number of specific FSF recommendations, given the reluctance to do much to directly counter procyclicality earlier in the decade.

The first recommendation was that The BCBS should develop a countercyclical capital buffer. The second was that the BCBS should revise the market risk framework of Basel II to reduce the reliance on cyclical VaR-based capital estimates. A third recommendation included a non-risk based measure to help contain the build-up of leverage in the banking system and put a floor under the Basel II framework. Other recommendations directed at the

BCBS included enhanced stress testing to validate minimum capital buffer requirements as well making appropriate adjustments to dampen excessive cyclicality of the minimum capital requirements (FSF, 2009, pp.2-3). Further recommendations on provisioning asked the International Accounting Standards Board (IASB) to take moves to reduce procyclicality by considering an incurred loss model.

Notably, 11 of the 17 recommendations made by the FSF report were directly targeted at the BCBS. This reflected a sense at G20 leaders and ministerial levels that the BCBS had underperformed and needed to be subjected to greater accountability and oversight. To secure this, the Financial Stability Forum was converted into the Financial Stability Board and given a much stronger mandate to direct and monitor BCBS activities, given that the FSB involved finance ministry and supervisory authority representatives. This FSF report was a strong statement of its new role as an intermediary between the G20 and more technical standard setting bodies, in which these bodies would still be central in establishing new regulatory practice and frameworks, but would be subject to a greater degree of direction and scrutiny than before.

For the BIS, the contents and tone of the report represented recognition of the work the institution had been undertaking a decade earlier. That the wider international community eventually came to accept and push these positions also illustrated the value of having an institution prepared to stand outside of and challenge accepted and established thinking, by adopting more contrarian alternative positions in a public fashion. In an area like financial stability, cyclical processes inevitably necessitate the periodic deconstruction and overhaul of policy regimes. BIS analytical and conceptual work has helped to guide and critically inform this process since the financial crisis.

The FSF report on procyclicality set a trajectory for regulatory reform, in particular the agenda to be pursued in reforming Basel II. Crucially, the report called on the BCBS and the CGFS to conduct a research programme to define robust measures of funding and liquidity risk. Stress tests could then gauge the likelihood and magnitude of a future liquidity crisis in different market environments. The FSF also called on information to be collected on leverage and maturity mismatches, on a coordinated international basis, including from off-balance sheet vehicles and money market funds by both the IMF and the BIS, to be made available to authorities (FSF, 2009, p.6).

Another notable aspect of the FSF document was that the section, - *conceptual framework*, drew almost entirely on the BIS note. This included a definition of procyclicality as, “dynamic interactions (including positive feedback mechanisms) between the financial and the real sectors of the economy. These mutually reinforcing interactions tend to amplify business cycle fluctuations and cause or exacerbate financial instability” (BIS, 2009, p.1, FSF, 2009, p.8). The sources and drivers of procyclicality were also taken directly from BIS work. These were identified as limitations in risk management, particularly difficulties around the time dimension and distortions in incentives, evident in a direct link between asset valuations and funding that exacerbates procyclicality. (BIS, 2009, p.2, FSF, 2009, p.9). The conceptual framing that the FSF used to draw up and set an agenda for Basel III therefore drew heavily on prior BIS work

5. Basel III and the macroprudential framework

The revision of Basel II in the Basel III process through the BCBS, chaired by Dutch central bank governor Nout Wellink began in the summer of 2009, following on from the activity of the G20 and the revamped FSF. The process was a substantially more inclusive process than the one for Basel II. G20 Treasury officials were raising questions about the extent of BCBS involvement and centrality in preparing a new Basel accord. In this context, the new FSB was

able to shield the BCBS from a diminished role in the process, but was also able to initiate a widening of the preparation process to a broader range of voices, reflecting a sense that Basel II had been too insular and narrow, and that there was a need to broaden thinking. Accordingly, BIS staff were granted a much more active participatory role in Basel III, than Basel II.

The financial regulatory reform agenda since the crisis has been a broad one. It has increased the quality and level of capital requirements at banks, introduced and legitimated leverage ratios, set a framework for systemically important financial institutions, and developed policies on institutional resolution and reform of over-the-counter derivatives and shadow banking. The arguments in favour of the necessity for such systemic resilience enhancing measures were given extra force by the conceptual and data work developed by the BIS over the previous decade. In practical concrete terms, the biggest BIS influence has been on the discretionary time-varying policies addressing procyclicality, which have been a relatively small part of the overall reform agenda, but were most clearly driven by earlier BIS research and conceptual work. BIS staff were also involved in the discussions and conducted work relating to the methodology for developing the G-SIFI agenda and the capital surcharge for systemically important banks (SIB) (BCBS, 2011a). Here however, national delegations, particularly the United States had much more developed positions they wished to pursued in negotiations, that were at least in part aimed at countering the size of some European banks.

The countercyclical elements for Basel III, together with work on the capital conservation buffer, were handled by a group of officials, chaired by a representative from the New York Federal Reserve. Despite the new directions emerging from the FSF there was still a limited receptiveness towards and understanding of the macroprudential perspective in this group. BIS officials directly involved in the work of the group recall that many other members of the group, particularly those from the microprudential supervision community had difficulty thinking in terms of countercyclical policy and had little sense of what it would involve. There was a particular difficulty in grasping how time varying policies would be adjusted on the basis of discretionary interpretations of prevailing conditions, rather than being based on the precise implementation of a specific regulatory code and sets of rules. Some of the earlier opposition from the BCBS in 2000 were repeated in these discussions.

In the first round of debates and exchanges, BIS officials found their voice went largely unheard. Drafts of a first text were sent to the BCBS' most senior committee. The committee responded by asking where the countercyclical element in this first text was. They instructed a second group to re-visit the issues. Bank of England Governor, Mervyn King was believed to be prominent in highlighting the need for a stronger countercyclical element. As noted earlier, the Bank of England itself had undergone a partial conversion to a macroprudential perspective, through regular interactions with the LSE endogenous risk group, many of whom were former colleagues of King. The Bank was also in the process of being handed a new financial stability mandate.

The second group also had a new chair from the Bank of Canada, who invited BIS staff to present their ongoing work with the Bank of Spain on the design and operation of countercyclical capital buffers. In this second round of discussions, in the absence of other concrete proposals, the BIS idea of using a credit-GDP gap indictor to build up the capital buffer, went unopposed. Data from computational thresholds was presented to support this choice. The regular publication and communication of this indicator became part of the recommendations emerging from Basel III. Monitoring and publicising of credit-GDP gaps has since become an activity for both the BCBS and the BIS.

Basel III went onto call for countries to deploy a countercyclical capital buffer (CCyB) when aggregate credit growth was deemed to be excessive, with jurisdictions probably only deploying the buffer on an infrequent basis. The buffer for internationally active banks was to

be a weighted average of the buffers deployed across all the jurisdictions to which it had credit exposures. The requirement would in turn be released when system wide risk crystallised or dissipated. The relevant passage in Basel III reads: "If the relevant national authority judged a period of excess credit growth to be leading to the build up of system-wide risk, they will consider, together with any other macroprudential tools at their disposal, putting in place a countercyclical buffer requirement. This will vary between zero and 2.5% of risk weighted assets, depending on their judgement as to the extent of the build up of system-wide risk" (BCBS, 2011b, p.58.)

Many staff within the BIS recognise that 2.5% itself will do relatively little to push against the cycle, and might only make a small contribution to enhancing financial system resilience. The CCyB has greater power as a soft communication and signalling device that can dampen market expectations by encouraging market actors to modify their investment patterns in anticipation of its deployment, increasing resilience through this indirect route. In this respect, building the countercyclical capital buffer into Basel III, was also important in signalling an international expectation that national authorities and internationally active banks would now develop countercyclical capital buffers. At US insistence however, the CCyB did not become compulsory.

Since June 2016, the BIS has published time series data on the credit-GDP gap for more than 40 countries since 1961(Drehmann et al, 2016). The credit-GDP gap captures the difference between the credit-GDP ratio and its long-run trend. BIS quantitative work has shown it to be a reliable early warning indicator of impending financial crises (Drehmann and Juselius, 2014). Compared to other early warning indicators of crisis it has the best overall statistical performance among single indicators across a large panel of countries over the past several decades (Drehmann and Tsataronis, 2014, p. 59). It also performs well on timing, providing pre-emptive warnings and allowing policy measures time to take effect at least two years prior to crisis.

Importantly, while the use of these total credit series as input data facilitates comparability across countries, the credit-GDP gaps published by the BIS differs from credit-GDP gaps considered by many national authorities as part of their countercyclical capital buffer decisions, because they may use different data series. The gap indicator was adopted as a common reference point under Basel III to guide the build-up of countercyclical capital buffers. Authorities necessarily have to apply judgment of course in the setting of buffers in their jurisdiction, rather than mechanistically applying a credit-GDP guide. Nevertheless, the BIS data work in this area can act as a central independent reference point, that both national authorities, the BCBS and the IMF can draw upon. As such, its role is to inform, rather than dictate, supervisors' judgmental decisions regarding the appropriate level of the countercyclical buffer. Questions of course, remain regarding the traction of the data and the fashion and extent of its usage by others.

Basel III, together with the FSB's mandate to encourage and monitor macroprudential policies, has to some extent triggered and supported the building of national macroprudential policy regimes. Many major central banks from the Bank of England, the Federal Reserve (somewhat belatedly), the European Systemic Risk Board at the European Central Bank, have been given varying macroprudential mandates and many national central banks have been equipped with a wider range of instruments. Post-crisis reform proposals and their formalisation through Basel III have given some degree of energy and momentum to this process of national regime building.

For the BIS however, national regime building has also meant that the institution has become less the go to authority on macroprudential matters. Nevertheless, the macroprudential story illustrates that the BIS's capacity to develop intellectual agendas that challenge accepted wisdom both in markets, academia and amongst national central banks

and regulatory bodies. Having an organisation that is prepared to stand outside of and sometimes challenge accepted wisdom, has proven to be valuable. The persistence and intellectual independence of BIS staff, together with the cultivation and identification of important high-level academic allies, enabled the creation and diffusion of the macroprudential perspective as an intellectual framing for understanding financial systemic crisis. Such intellectual creativity is an undoubted strength of the organisation.

Once national regime building commenced, with all its country specificities and peculiarities, relating to market structures, institutional and cultural traditions, as well as coalitions and growth models, the BIS lack of country expertise has made it less well equipped to advise on, input or monitor this process. For these reasons, much of this work of assessing and monitoring national regimes has gravitated to institutions with stronger country expertise such as the International Monetary Fund (IMF), or bodies with greater national representation such as the CGFS. Nevertheless, BIS positions on the process and direction of regime building still matter because as primary creators of the frame, the BIS remains well positioned to identify shortcomings in existing frameworks and to identify future challenges.

6. Current Macroprudential policy frameworks and the BIS

The general approach of the BIS to national macropudential frameworks, and the contribution it is best suited to make in this domain, is consistent with the overarching disposition of measured contrarianism. Macroprudential and financial stability regime building is not a one-stop fix. Reflecting the nature of markets and financial risk, it is an evolving and dynamic challenge, requiring forward looking anticipatory adjustments and responses. Viewed through this lens, building adequate regulatory and policy regimes is never settled, but an ongoing responsive process of evolution and development. In this sense, an important BIS current role is to identify new frontiers for financial stability frameworks and gaps that need to be filled, rather than advising on the fine-grained details of national arrangements, or devising best practice tool-kits.

One example, of the kind of concern that the BIS maybe well placed to push is the extension of macroprudential instruments to shadow banking and other forms of asset management. For instance, recent BIS research has shown asset managers' cash hoarding to protect themselves from redemptions is an increasingly common practice that can amplify fire sales and procyclical dynamics (Morris, Shim and Shin, 2017). Again analysis identifying new evolving threats to financial stability within the conceptual frames developed by the BIS are an example of 'measured contrarianism' in practice.

The FSB has since tried to take the issue of how macroprudential policies might be extended to asset management forward, through several reports, but have encountered institutional and intellectual barriers (FSB, 2013a, b, 2015). For example, margin setting in central counter parties (CCPs) would fall under the remit of securities regulators, requiring both institutional consent and mandate amendment. It would also require an understanding of the purpose and benefits of such instruments amongst securities regulators.

A growing concern relates to whether there are enough revenue profits to meet long-term debt obligations for certain investment funds. Pension investments for example seek long-term returns, but also have large daily bond redemptions. Potential problems occur if such funds have to sell assets to meet redemptions, producing procyclical downward price spirals, which in turn creates a risk of sharp increases in bond funding (Morris, Shim and Shin, 2017). Further analytical work on such discontinuities as a cause of systemic financial disruption is required. Areas for further investigation include how arrangements for suspending redemptions among asset managers might be implemented and how cash hoarding can be incorporated into stress-testing (Morris, Shim and Shin, 2017, p.20).

Mandates and mind-sets remain a major issue in relation to extending macroprudential policy into asset management. Securities regulators who would have responsibility for overseeing such measures adopt a buyer beware attitude and see their role as ensuring transparency standards informing individual transactions are adequate, rather than introducing measures to prevent systemic discontinuities. The issue illustrates how the perimeter of macroprudential thinking and concepts has struggled to extend beyond credit and banking markets.

Since the financial crisis it is clear that the use of macroprudential instruments by national authorities has increased. BIS research shows that instrument usage in emerging markets doubled between 2006 and 2012, and in advanced economies instrument usage has increased three- fold between 2007 and 2018. The primary responsibility for monitoring macroprudential instrument usage within the international community now rests with the IMF, together with the FSB. LTVs and Debt-Service to Income ratios have a much higher statistical significance impact than countercyclical capital buffers in restraining growth in credit and asset prices. There is also a recognition of a need to develop and extend tools targeted at the non-bank sector such as asset managers and other capital markets (due to risks of regulatory arbitrage), and to consider a variety of reciprocity measures that reduce the likelihood of cross-border leakages (Borio, 2018, p.5).

On desirable national institutional arrangements there is no clear BIS position on optimum arrangements. Generally, the BIS view is that central banks need to be actively involved because of their macroeconomic expertise. The need for macroprudential bodies to have independence from government, so as to resist the political economy pressures that arise with financial booms, is believed to have been underestimated. BIS member central banks report that the common arrangement of having a committee made up of multiple agencies such as the Financial Stability Oversight Council (FSOC), come with significant collective action and co-ordination problems (Borio, 2018, p 7).

Most of all the BIS continues to illuminate and identify areas on which too little is known including: which are the best intermediate targets; how different macroprudential tools interact with one another and monetary policy; the appropriate balance between rules and discretion in macroprudential policies; how macroprudential policies should be calibrated in a bust; and potential distortionary side effects including political risks (Claessens, 2019).

Perhaps the boldest claim and one in keeping with the broad philosophy of measured contrarianism, is the need to make vigilance against financial instability a broader macroeconomic priority. This position effectively revisits themes explored in the Borio-White contribution from Jackson Hole in 2003 and Borio and Lowe 2002. It is a view that macroprudential policy itself is only one element of a broader macro-financial stability framework (Borio and White, 2004, BIS 2005, 2016). In such a conception, financial stability concerns and responsibilities need to inform both monetary and fiscal policy (as well as structural policies,) to avoid the risk of overburdening macroprudential policy (Borio, 2018). The logic here is for more pronounced countercyclical regimes in both monetary and fiscal policy, as part of a holistic macro-financial stability framework (Claessens, 2019).

Under such arrangements, monetary policy, could be tightened in the absence of inflationary pressures, to contain asset price and credit growth, but also to provide more ammunition in the downswing phase of a cycle. Foreign exchange market intervention would also be used to be build up exchange reserve buffers that could be used in a downswing phase. A significant part of the current BIS research agenda is now considering how financial stability considerations could be extended into monetary policy frameworks. In fiscal policy, tax can be used to influence asset prices and credit, such as reductions in the tax-bias favouring debt over equity. Having fiscal space to respond to the burdens of crisis

and downturns can also help in reducing the macroeconomic effects of financial instability (Borio, 2018, p.8).

There are relatively few signs however, of progress towards this kind of broader macro-financial stability framework. It is even possible that the emergence of macroprudential policies may enable monetary and fiscal policies to remain insulated from financial stability considerations (Baker, 2014, 2015). In this sense, and in keeping with the spirit of 'measured contrarianism' the construction of macro-financial stability frameworks from a BIS perspective remains a partial and incomplete project.

Conclusions

This chapter has provided an assessment of BIS contributions to the conceptual reframing of understandings of financial stability that followed the financial crisis. After 2008, a macroprudential perspective gained higher profile and new policy frameworks were built. A recent citation analysis showed that academic modelling providing measures of systemic risk since the crisis, still remain wedded to formal modelling that excludes many of the observable phenomenon and amplification mechanisms characterising longer run financial cycles that are identified by the BIS (Thiemann, Aldgewy and Ibrocevic, 2016, p 21). This could be interpreted as raising serious questions as to whether the macroprudential perspective truly has travelled outside of the BIS, especially into academic research. As a methodology however, citation analysis has limits. There is today clearly a greater understanding and sensitivity to processes such as procyclicality amongst policy authorities around the world, even if efforts to build macro-financial stability frameworks remain incomplete.

The obvious counterfactual question to pose is whether the macroprudential perspective and macroprudential policy regimes could have come into existence without the BIS? Some academic work certainly dovetailed with the BIS research and developed a similar, if not identical set of concerns and premises. But without the BIS's persistence in making submissions and developing arguments for policy makers in the FSF/ FSB, BCBS, the G20 and other fora, it is difficult to see how the perspective would have had either the prior analytical and institutional presence, or gained the momentum required to produce the macroprudential policy frameworks that have emerged since the crisis (Baker, 2013). That is not to say that the BIS achieved this on its own. In emerging markets, macroprudential style policies were being experimented with prior to the crisis, though without being labelled as such. Both the Bank of Canada and the Bank of England were becoming more sympathetic due to their own in-house analytical work, and both played an important role in producing crucial political support for the perspective in the G20 in 2009. While the Bank of Spain's experience with dynamic provisioning was a crucial reference point throughout.

In persistently and doggedly pursuing these themes at a time, when the receptive outside audience was limited, especially in the United States, the BIS effectively practised a form of 'measured contrarianism'. As a function and service the BIS provides to its member central banks, but also wider society, the organisation's capacity and ability to perform 'measured contrarianism' has somewhat deeper institutional foundations than it did prior to the crisis as a consequence of these efforts and the conceptual and analytical work produced.

These deeper institutional foundations have been pushed forward in three ways. Firstly, in relation to instruments, the BIS itself effectively designed and created a blue print for using counter cyclical capital buffers that was imported into the provisions of Basel III. BIS work has also heralded a range of other more direct through the cycle, non-discretionary instruments such as LtVs and LtRs. Analytical arguments relating to procyclicality have also helped to strengthen the case for the use of leverage ratios, more robust capital requirements and for extending macroprudential policies into shadow banking through margins and

haircuts, even if the latter has not made much progress to date. Experimentation with a much broader range of macroprudential policy instruments and indicators is ongoing in many jurisdictions around the world and BIS work has legitimated and given energy to these efforts. The BIS itself can now advocate a more targeted set of interventions to contain emerging financial risks, in its own public communications, though seldom does so in terms of national specifics, preferring to talk more broadly about global systemic risks.

Secondly, the BIS itself now has a more focused set of data collection activities around the credit-GDP gap, as its own favoured and most reliable early warning indicator. Becoming more systematic in the collection and public communication of data adds substance and rigour to performing its function of 'measured contrarianism', while enabling the organisation to be more public and transparent in doing so. Analytical data driven work at the BIS also continues to help identify new potential frontiers for macroprudential policy and new potential sources of financial instability such as cash hoarding by asset managers (Morris, Shim and Shin, 2017).

Thirdly and most significantly of all, the BIS created a new conceptual framing in a language that was intelligible to many interested and informed observers. Thinking in terms of financial cycles and recognising their endogenous sources has become more commonplace not only in central banks, but also in the financial press (Borio, 2018, p.4, graph 4). Expert public discourse more readily accepts such terms and understandings. Notions such as the 'paradox of financial instability,' explaining that risks are sown and are highest in booms precisely when they appear lowest but materialise in recessions, has helped to foster the kind of vigilant mind-set and intellectual disposition required to practice 'measured contrarianism'.

Nevertheless, the shift to macro-financial stability frameworks remains incomplete and many gaps in knowledge remain. For example, we remain a substantial way from the more holistic macro-stability frameworks envisaged by the BIS. Indeed, it is possible, that the emergence of a separate macroprudential policy field maybe slowing down the introduction of financial stability considerations into other areas of economic policy, most notably monetary policy. The latter remains a particular priority and target for the BIS as the next frontier for macro-financial stability frameworks. However, monetary policy may become more insulated from financial stability concerns as the new emerging macroprudential policy pillar, becomes the go to option for national authorities when seeking to contain systemic financial risks. The great irony here is that this would run contrary to long standing BIS views expressed in a body of conceptual work (a macroprudential perspective,) stretching over several decades, which itself has given momentum to those very macroprudential policies.

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