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Banks and the public sector authorities

Abstract

The purpose of this paper is to view the current financial crisis through the prism of models of the relationships between the banking sector and the public sector authorities, in particular to distinguish between the Anglo-Saxon and Asian models. In the Anglo-Saxon model, the authorities focused on controlling inflation, while banking strategic policy decisions were left to bank managers in a context of 'light-touch' regulation. In the Asian model, strategic banking policy decisions were much more closely constrained by outside, often public sector, agents. Now the Anglo-Saxon model has been found wanting, and the public sector has had to intervene much more closely to prevent collapse, providing systemic financial institutions with insurance against both illiquidity and insolvency. Will this lead to a greater synthesis between the Anglo-Saxon and Asian models?

Keywords: banking models, financial regulation, bankers' remuneration, capital adequacy, risk management, leverage, credit crunch.
JEL Classification: E63, G18, G21, L51.

Introduction

The aim of this paper is to view the current financial crisis through the prism of conceptual models of the basic relationships between the commercial banking sector, on the one hand, and the public sector authorities, comprising the government, especially the Ministry of Finance, Central Bank and specialist regulatory/supervisory authorities, on the other. In Section 1 I set out my interpretation of the Anglo-Saxon model of this relationship, as it stood in June 2007 before the crisis, and contrast this with, a less clearly defined, Asian model; the European (Rhineland) model being an uncomfortable mixture of the two.

In Section 2 I describe how the original Anglo-Saxon model imploded under the pressure of events (2007-9), and how it is being gradually refashioned, though alongside various dead-end turnings. In some respects this has been bringing the two models, the Anglo-Saxon and the Asian, closer together. I conclude, in the last Section, by asking whether the remaining differences may disappear, so that the world moves closer to a unified model.

1. The Anglo-Saxon model and its Asian counterpart

1.1. The macro-economic structure. The main focus of monetary policy in the Anglo-Saxon model has been for the Central Bank to set (short-term) interest rates so as to hit an inflation target, whether implicit (USA) or explicit, over some future forecast horizon[1]. With some admixture of luck, such inflation targeting did lead to some fifteen years (1992-2007) of growth and stability, the 'great moderation', a golden age, at least in the Anglo-Saxon developed countries. There were some weaknesses, e.g. notorious 'imbalances', low savings rates in the Anglo-Saxon countries, enhanced inequality, etc., but so long as good times continued, these were put on one side as issues to be addressed later.

The implicit assumption was that so long as the macro-economy was held stable, so would be its financial infrastructure. Or to put the same point in another way, if the financial system autonomously misbehaved, this might be expected to show up quickly enough in forecasts for the output gap and for inflation, in time to allow successful remedial action through the standard official interest rate tool. The success of the Greenspan Fed in doing just so on several occasions reinforced the credibility of this hypothesis.

1.2. The incentive structure for bank executives. Within the Anglo-Saxon model, key decisions are taken by a firm's, or a bank's, top executives. While the board, key stakeholders, the government and public opinion more widely, all have some influence, at least on some occasions, and decisions are always taken within a context, nonetheless such decisions are generally taken independently by top management.

The main theme of governance theory and of practical remuneration policy had been, over previous decades, to aim at aligning managerial interests with those of shareholders. This was done, with a vengeance, by rewarding top managers, mainly via bonuses, for success in achieving steady earnings growth, and rising share prices. Given the difficulty of distinguishing between prudent risk aversion and plain bad management during booms, and the relatively short expected shelf-life of a top manager, this would usually lead to short-termism, i.e. concern with the here and now and not with steady, incremental growth of the firm over a medium or longer term time span.

[1] The standard Taylor reaction function is faulty because it relates decisions to current inflation and output gap rather than to forecast values of these variables, but explains policy quite well ex post, because current, and past, values of those variables are the main factors driving the forecasts of their future values.

Perhaps more important, the limited liability of shareholders meant that they, and a fortiori their top managers, would prefer a risky option (with the same expected mean outcome) to a safe policy. This is shown in Figure 1, where a 50/50 chance of A or B will always be preferred to C. One answer to this had been to organize some (particularly risky) financial institutions into partnerships rather than limited liability companies (e.g., the large US investment houses), but this had eroded over time, partly because of the advantages of companies in raising new capital and partly of the desire of existing partners to cash in their chips while they could.

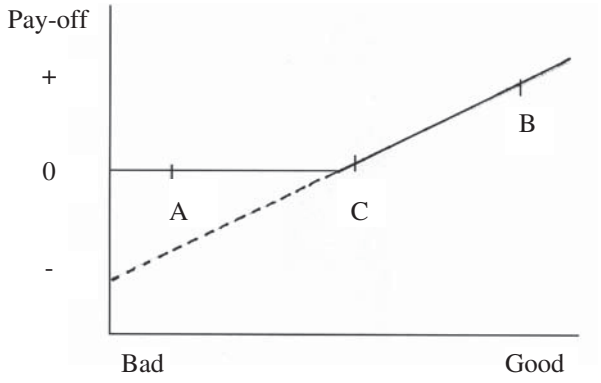

Fig. 1. The pattern of returns to limited liability shareholders

A more realistic constraint on such risk-seeking was meant to come from minimum capital requirements, and from tying executive bonuses and wealth to the value of the company. If the (required) capital position of a company (bank) is raised from C to B in Figure 1, then the advantage of the risky option, with the same dispersion as before, over the safe option disappears. Moreover, requirement that banks hold minimum capital provides a buffer to absorb losses, and to protect the taxpayer and the public sector from having to pick up the pieces.

1.3. Regulation and supervision. Consequently, the focus of regulation and supervision in the Anglo-Saxon system was to ensure the provision of a sufficient minimum capital buffer. Moreover, so long as their buffer was sufficient to ensure solvency, it was held that liquidity could always be attained by accessing the broad and efficient wholesale money markets. Given the availability of such funding liquidity, regulators/supervisors allowed banks throughout the Anglo-Saxon world to cut back on their asset liquidity, to a tiny fraction of what had once been in place, say in the 1960s.

The general belief, e.g. of Alan Greenspan, was that with sufficient capital and personal wealth tied up in their own companies top bank executives would never allow their own banks to come under serious risk of having their own institution collapse.

Hence, regulation could be light-touch and based on general principles rather than intrusive intervention. Indeed, the original raison d'etre of the Paulson Report in March 2008 was to try to lighten capital market regulation in the USA to cope with competition from London; the crashing of gears to change direction in mid-draft in that Report is rather obvious.

A serious problem with the precept of leaving risk management primarily to bank executives is that the probability of really severe tail events, such as a major systemic crisis, cannot be easily established, if at all (early warning exercises have a poor track-record in some countries more than others). Moreover, private sector bank executives would often regard it as being the public sector authorities' responsibility to cope with a crisis systemic tail-event. So the risk management models used by banks, such as Value at Risk, tended to focus on sensible procedures for handling normal conditions, represented by normal distributions, rather than on extreme tail events.

But their models were, at least initially, technically much more sophisticated than those of the regulators/supervisors, so the latter tended to get cognitively captured, in that they used the models developed to assess and to control risk conditions in individual banks under 'normal' conditions, rather than to examine the effects of major shocks on the financial system as a whole. This syndrome reached its apex with the adoption of Basel II, which, combined with the simultaneous application of 'mark-to-market' 'fair value' accounting, had the unintended effect of making the official regulatory system much more procyclical and unstable than previously.

1.4. The Asian model. Whilst the basic (USSR) communist model of finance was clearly distinct from the Anglo-Saxon model, it is harder to identify a clearly Asian model. Nevertheless, I would suggest, though others will know better, that there are some distinct features of the Asian approach, by which I primarily mean the banking systems of China, India, Indonesia and Japan.

Amongst these are:

1. A greater disposition to have a sizeable proportion of the domestic banking system under public sector ownership and/or control. Where there are private sector banks, these are more likely to be family-owned and/or related to industrial groupings, than the limited liability companies with widely dispersed shareholders of the Anglo-Saxon model. Thus, there are likely to be more external constraints on the control and power of bank executives in the Asian model.
2. There is also, under this model, much greater direct influence of the public sector, especially the Ministry of Finance/Central Bank, in providing 'guidance' on the quantum of bank lending to the

private (and public) sectors, and even 'guidance' on the sectoral distribution of such lending, e.g. agriculture, construction, infrastructure, etc.

Anglo-Saxon free marketeers claim that the greater direct intervention of the public sector in the banking sector leads to allocative inefficiency, higher non-performing-loans and, in the limit, corruption. But it also greatly reduces the pressure for short-term profit maximization.

By the same token, the wish of the authorities to encourage growth, and the comparative power of large industrial borrowers, vis a vis the Asian banks, have helped to make external finance, primarily bank-funded, rather than via the (relatively) undeveloped capital markets.

Again, the closer, and more continuous, involvement of the public sector with the banks has also meant that the external control mechanisms of the Anglo-Saxon system, e.g. transparent accounting and external supervision, are less well developed in the Asian system.

In part, because shareholders are less important in this system than the public sector and/or dominating family/industrial influences, the appointment mechanism and incentive structure of top managers differ from those of the Anglo-Saxon world. And some of the directors are more likely to be parachuted in from outside (perhaps from public sector bureaucracy or industry). Once again, short-term profit maximization, though not unimportant, will often be less crucial for preferment than carrying out the wishes of those ultimately in charge. Rewards and incentives come less in the form of pecuniary rewards (e.g., bonuses) and more in the guise of ascendancy to a higher rung in the ruling hierarchy.

Under these conditions regulation and supervision are more basic and simple, partly because more external control is exerted directly. With less regulation, there is less incentive for regulatory arbitrage. For all these reasons there has been less financial innovation in the Asian model, which now seems much closer to traditional banking than that in the Anglo-Saxon system with its reliance on derivatives, off-balance sheet shadow banking, securitisation, etc.

2. The implosion of the Anglo-Saxon model

2.1. The macro-economic context and the sad history of the crisis. The international macro-economic context in 2006, and up to around August 2007, continued to appear benign, as can be checked by looking at forecasts issued up to that date. To be sure, US official interest rates in 2003-2005 were, with the benefit of hindsight, held perhaps 1%, or even 1½% too low, and this contributed to the housing boom, both in the USA, and abroad, to the search for yield and to the expansion of financial leverage. But, pace John Taylor, Getting Off Track (2009), we find it hard to believe that a relatively minor error in setting interest rates could really destabilize the bulk of the Anglo-Saxon financial system (and if it did, it would then suggest that the system was remarkably precarious).

Instead our belief is that the basic source of the crash is the one described by Hy Minsky (1977 and 1982), which is, in effect, that stability carries within itself the seeds of future instability. A combination of the 'great moderation', and low and competitive interest rates, caused all financial institutions, but especially banks, to expand leverage. This was particularly so in Europe, where there was no required leverage ratio, so European banks levered themselves up, as much as 50 to 1, by buying highly rated tranches of mortgage-backed securities, and amongst investment houses in the USA where the leverage constraints had recently been relaxed. It was no accident that the epi-center of the crisis was to be found in these two sectors.

The adoption of the pro-cyclical combination of Basel II and mark-to-market accounting served to hide the fragility of the over-extended financial and banking positions both from the regulators and from the regulated. Northern Rock had a leverage ratio of over 50 to 1, was highly reliant on wholesale funding, and was making mortgage loans with no equity buffer in the over-heated UK housing market. Yet a couple of months before its effective demise in September 2007, the FSA assessed that its compliance with Basel II was so good that it could even increase its dividend! Similarly, the profitability and balance sheet positions of banks in the USA, and elsewhere, in mid 2007 appeared so comparatively strong (partly because the shadow banking system was only dimly perceived by the regulators), that it then appeared improbable that the relatively minor losses in asset values following on from the downturn in the US housing market and the demise of sub-prime could not be quite easily absorbed by these profitable and well capitalized banks.

And the initial losses were quite small. But the banks (and other parts of the financial system) were over-leveraged and over-extended, and both the high profits and excess capital buffers were, in some considerable part, figments of the world of over-inflated asset values and credit ratings. In reality the margins were much thinner. Banks and professional investors came, fairly quickly, to realize this, and the corollary was that the solvency of some parts of the shadow banking system, and by extension of some banks, was no longer absolutely assured. That led to the withdrawal of

asset-backed commercial papers, to the closure of wholesale markets, and to severe liquidity problems which interacted with solvency concerns.

All this led to massive de-leveraging, several self-amplifying destructive value-reducing spirals (*vide* the Geneva Report, Brunnermeier et al., 2009), until the whole process came to a cataclysmic juddering halt in September 2008 with the bankruptcy of Lehman Bros and the rescue of AIG. During the intervening period central banks had been struggling to meet the steadily increasing demands for liquidity, by lending to an ever-widening set of financial institutions, on an ever-widening range of collateral assets, at ever longer maturities.

But central banks cannot provide capital. And as market prices and credit ratings went into reverse, more capital became required, and, as the financial system weakened, the market began to demand ever higher capital buffers. Not surprisingly the capital market became closed, most of the time, to new equity issues by banks; and most Sovereign Wealth Funds came to regret their investments during the few windows of opportunity. During this period the authorities failed to prevent continuing dividend payments and massive compensation packages; indeed they did not have the legal powers to do so; and banks could not cut back unilaterally on such out-payments without adverse signalling implications. So the banks, and many associated financial intermediaries, such as monoline insurers, became massively under-capitalized.

Eventually, it seemed that the State had to step in, using taxpayer funds on a gargantuan scale. The alternative was complete financial collapse, as the Lehman bankruptcy presaged. Moreover, partly to limit the fiscal burden, the authorities also sought to encourage, perhaps even to bring pressure on, the bigger and better capitalized banks to absorb their failing brethren, often by waiving anti-trust and cartel regulations, as in the case of Lloyds and Halifax/Bank of Scotland (HBOS) in the UK. The result has been the concentration of banking systems in the Anglo-Saxon countries into a small number of vast and widespread enterprises, probably too large to control efficiently (Citi and BoA) and certainly too large to close.

2.2. Whither the Anglo-Saxon model? The old basis of the relationship between the public sector authorities and the financial system in the Anglo-Saxon model, whereby the public sector sets the broader macro-economic and regulatory context, and the private financial system decides autonomously on its own behavior within that, has been upset, if not blown away entirely. It is neither just nor wise that the public sector has come to own all the banks in Iceland and Ireland, and large swathes of the financial sector in the USA (Fannie Mae, AIG, etc.), in the UK (Lloyds, RBS), and in Europe (Fortis, Dexia, HRE, Landesbanken).

But probably more important, the public sector has now effectively guaranteed virtually all non-equity liabilities, including various kinds of subordinated debt, everywhere. The public sector has become the guarantor not just of bank liquidity, but also, except for equity shareholders, of the solvency of all systemic financial institutions. Where, in a crisis, a widening range of institutions, but also even quite small ones, such as the Dunfermline Building Society in Scotland, fall under state control or ownership, the crisis really comes to be regarded as 'systemic'.

Such ownership of private sector financial institutions has been assumed reluctantly in the Anglo-Saxon countries, as an unfortunate concomitant of the necessary recapitalization. Steps have been taken, wherever possible, to design the recapitalization, e.g. by the issue of preference shares rather than diluting equity, so that business decisions are left with private sector managers. Even when a controlling equity stake is taken, the role that the public sector adopted has generally, at least in public, been one of an arms-length shareholder with no direct say in decisions.

The model which the Anglo-Saxons are following is close to that applied during the Scandinavian banking crisis of the early 1990s. In that case the authorities took the banks in need of recapitalization into public ownership, injected new capital, tidied up the balance sheet, and then found themselves able to sell the banks back to the private sector, at a profit, within a few years. But this rapid recovery was, in some large part, due to sharp depreciations of their currencies, and a rapid rise in net exports, in a context in which the much larger Rest of the World was, after 1992, growing quite fast (see Jonung, 2008). Such favorable macro-economic conditions will not be available to the developed world as a whole. Consequently, any early sale of ownership stakes in such banks could probably only be done at a loss, and to avoid having to absorb such a concrete loss, governments may find themselves in a controlling position for much longer than they now hope.

Although governments have avoided the phrase 'nationalization' like the plague, largely for presentational and political reasons, there is a growing tension between the reality of control and the desire to avoid interference in what is seen as properly private sector decisions. Much of the blame for the continuing depression is placed on the 'credit crunch'. But if a state actually owns some banks, why can it just not order them to expand lending? The rapid recovery of China, apparently fuelled by

massive State-ordered expansion of bank lending in 2009, has not gone unnoticed. So we have the curious spectacle of UK Chancellor Darling and his German counterpart threatening banks, in general, with (unstated) sanctions if they do not increase lending to the private sector, and yet, apparently, not taking steps to enforce just those elements where they have powers to control (except in the case of Northern Rock where a planned policy of running down the book was reversed by official diktat).

Moreover, the political hot-spot of the recent crisis was the continuation of huge pay-outs to, failing, bank executives. Should a publicly owned bank really go on paying these seven figure salaries to top executives? The reported negotiation of a potential pay out of over 9 million pounds to the new CEO of RBS, Stephen Hester, was not popular.

If the public sector owns banks, and other financial intermediaries, can, or should, it refrain from using its controlling position, for example to achieve social, or political, objectives? For the time being however, it seems as if such questions are being avoided and sidelined on the grounds that such a state controlling position was obtained unwillingly and accidentally, and is *prima facie* intended to be strictly temporary and shortly reversed. If, however, we are right that the recovery will be so anaemic that such stakes cannot be easily resold for many years, such issues may come to have greater prominence.

The likelihood that public sector recapitalization will bring with it constraints on private sector freedom of action in such delicate areas as remuneration and dividend policies, and perhaps on asset market decisions, is already clearly influencing banking decisions. If the banks can take actions to reduce the need for public sector support, they will tend to do so. In some cases this may take the form of aggressive deleveraging, running down the balance sheet, in order to preserve capital, and hence avoid the need for public sector assistance. But such a response would only worsen the macro-economic conjuncture. Of course, banks claim that sluggish bank lending is due to a fall in demand, but they are or have been, at the same time, tightening the terms and the spreads at which borrowers can access funds.

But the questions about the implications for public/private roles in this field of public ownership of banks are, perhaps, minor compared to the questions posed by the State's role as the ultimate guarantor of the solvency of (non-equity) bank liabilities. In effect, the State, in the face of a systemic crisis, has not only insured bank liquidity, via the Central Bank, but also the solvency of bank creditors. The implications for moral hazard are obvious.

This is not a comfortable outcome, to say the least. But what can be done about it? There are two natural responses. The first is to try to reset the structure so that we can return to the status quo ante, in which the State would no longer play a role of general guarantor; and bankruptcy, and the fear of private sector loss would provide some (enough?) discipline against excessive risk-taking. The second is to recognize that the financial system is so central to any market economy, that the State will always provide de facto ultimate insurance in a crisis, and to adapt and adjust policy to reflect that.

There are several versions of the first proposal, most of which have a slightly quaint flavor of seeking to revert to an unspoilt, earlier and simpler Arcadian age before the wiles and innovations of investment bankers fouled the nest. The first is the call to break up big banks, so they can be more easily shut. "If banks are too big to fail, they are too big", Mervyn King has said, and he has the support of Paul Volcker. Whereas it is true that some banks are now too big to fail on their own even with zero contagion, the key systemic problem still remains contagion. Contagion depends on the (perceived) similarities between the failing bank and its confreres, and on the interconnections between them. Northern Rock, and IKB and Sachsen, were not large, but if Northern Rock had been allowed to fail, there would have been a run on Bradford & Bingley and Cheltenham & Gloucester the day after, and on HBOS the day after that[1]. If a large bank was broken up into segments that were just smaller-scale mirror images of the original, then the contagion/systemic problem would remain almost as bad[2]. As several economists, such as W. Wagner and V. Acharya (see, for example, Acharya, 2009, and Wagner, 2007/2008) have noted, contagion is a positive function of similarities between banks. The micro-prudential supervisor wants diversification within each individual bank; the macro-prudential supervisor should want diversification between banks. A danger of micro-prudential regulation is that it forces all the regulated into the same mould.

So, apart from the legal issues of whether the government should over-ride private property contracts by enforcing a break-up, there are doubts whether having many smaller banks would help to ease contagious crises. We should recall that it was the myriad of small banks that failed in the USA in

[1] The sceptic will note that all these banks did eventually fail and had to be taken over, but crisis resolution is, in some large part, about playing for time, and seeking to avert panic. If such time is not well used, one may then just get a slower-moving collapse. The difficulty in 2007/8 was that the basic concern was ultimately about solvency/capital adequacy, and this was not really addressed until after the Lehman failure.

[2] But this approach might at least allow the first small bank to run into difficulties to go bankrupt, pour encourager les autres, even if runs on similar banks are then vigorously rebuffed. When Barings was allowed to fail in 1995, the Bank of England prepared preventative measures to support the remaining British merchant banks.

1929-33, whereas the more oligopolistic systems in some other countries, e.g. Canada and the UK, were more resistant. A more realistic approach is to try to assess how far the larger banks involve greater systemic risk, and then impose additional offsetting charges (as discussed further below).

A second approach is to try to limit the range of institutions/functions to which the safety net applies. This theme goes under several headings, such as Narrow Banking, bring back Glass-Steagall, with the associated populist phrase that current banking combines 'a casino with a utility'. This has obtained surprising traction, even in the august pages of the Financial Times, given how silly the idea is. Perhaps the worst error of the crisis was to allow Lehman Bros to fail, but this had no retail deposits. In the populist jargon, it, and AIG, and Bear Stearns, were casinos, not utilities. For reasons set out in our paper on 'The Boundary Problem in Financial Regulation' (Brunnermeier et al., 2009) (Appendix to the Geneva Report, 2009, and my own paper in the National Institute Economic Review, October 2008), regulatory constraints on the protected narrow sector will drive business to the unregulated sector during normal times, but provoke a flight back to safety during crises, thereby worsening the crisis.

Banking is about risk-taking, e.g. with maturity mismatch. Securitization and derivatives are used to lessen and to hedge such risks. A narrow bank which has to hold all its assets (unhedged) to maturity can be very risky; is a fifteen year fixed rate mortgage loan a suitable asset for a bank, or something that a specialized building society (S&L) should hold? What exactly do the proponents of narrow banking suggest in the case of relationships with industry? Relationship banking, as practiced in Asia and in Europe, places these banks far more at risk to the changing fortunes of their major clients, than in the more arms-length, and capital-market-integrated, Anglo-Saxon model. It is arguable that the Asian/Rhineland model can only exist because the State is perceived as the ultimate guarantor. Presumably, without such a guarantee, the Anglo-Saxon model had to be safer, but it has now been shown not to be safe enough.

A third strand in this genre, which overlaps with the second response of adapting to the new reality, is to try to shift the burden of guaranteeing the banks back to the private sector, in this instance to the debt holders, by forcibly requiring subordinated debt to be transmuted into equity at the behest of the authorities in the event of a crisis. There is a question of the legality of this with existing debt instruments, but it could be required to be a feature of (some or) all future debt issues. But even with the present structure of debt, the debt holders of failing institutions, such as Fannie Mae, could have been penalized, as they were in the case of Lehman Bros. The effect of this latter was to transfer the losses to other debt holders, such as money market mutual funds, and thereby to widen the crisis. The US authorities, in those cases where they rescued a financial institution, generally did not impose losses on debt holders, mainly out of concern about the reputation, and the access to, and cost of, future funding of their financial system. When push came to shove, the US authorities were, therefore, not prepared to impose large losses on such debt holders. Would they act differently in future if they did have the right to enforce the transmutation of debt into equity. Perhaps, but, if so, what would be the cost to the banks of being required to hold a second-tier tranche of transmutable debt?

There is a need to reconsider the role of (transmutable) debt as an element in banks' capital base, but, beyond that, most of the proposals for enabling the public sector to withdraw from its role as ultimate guarantor of the financial system would be ineffective, or damaging to efficiency, or both. So we need to turn to the second set of responses, of adapting to the new reality.

This new reality is that the public sector, the State, is the ultimate guarantor of both the liquidity and the solvency of all the systemic parts of the financial sector. Or, in other words, that the public insures the systemic components of finance. If we now view the State as providing such insurance, it gives guidance on what needs to be done to prevent both that task becomes an excessive burden to the taxpayer (who will then get stuck with meeting any such pay-outs), and that the insured, the systemic banks and other key financial institutions, do not take advantage of their insured status to extract rents (moral hazard).

The answer, of course, must lie in, first, seeking to measure the extent to which the behavior of the insured places the State's insurance function at risk, and, second, in imposing sanctions, which could take various forms, against such adverse behavior. Both steps in this procedure are difficult. In the case of measurement, problems are made worse, inter alia, by externalities, whereby an act undertaken by an individual component will not be fully internalized but react, often in very different ways, on the system as a whole, by the intertemporal nature of finance, whereby acts undertaken now will have a probable, but uncertain and stochastic, effect in future, and by innovation, whereby the regulated will seek to adjust in order to minimize the constraints on themselves of external regulation.

One example of externalities is that, when faced by pressures on both liquidity and capital adequacy, the obvious escape route for an individual bank is to cut

back on lending. But that simply transfers the reinforced pressures to the rest of the system. So, while it certainly remains essential to measure the liquidity and capital adequacy of each (systemic) individual institution, it will also be necessary to monitor carefully aggregate developments in financial conditions. Moreover, such (aggregate) developments have time-varying implications. A generalized rapid expansion (increased leverage) of domestic (bank) credit will initially enhance asset prices, profitability and economic activity, but, if pursued too far – with the development of asset bubbles – will raise the probability of future bad debts, financial problems and crashes in future. A problem is that such a future reversal remains stochastic, more likely, but still uncertain. Accountants prefer to stick with what they can objectively measure, and time and state varying probabilities of default do not come into this category. Hence, attempts to measure financial fragility, such as in the Spanish dynamic pre-provisioning approach, frequently collide with the precepts of accountants (and of the tax authorities who fear that the use of probabilistic measures can lead to the manipulation and deferment of taxes).

Unless regulation binds, it will not be effective. So effective regulation will prevent the regulated from carrying out their preferred policies. So they will try to avoid and to evade such regulation, largely by means of innovating around it. As Edward Kane has frequently emphasized, the regulatory process is dialectic, i.e. one where the regulated have more money, skills and incentives than the regulators. Those who have the greatest incentive to avoid the constraints of regulation, usually via innovation, are those who command the residual profits of the enterprise, i.e. the shareholders, especially since they can put all losses, via limited liability, onto the public sector insurer and thence onto the taxpayers. In this context a major error of Anglo-Saxon (banking) governance mechanisms was to seek to align the incentive structures, embedded in remuneration, of bank executives (and of key employees more generally) with that of shareholders (Bebchuk and Spamann, 2009). Perhaps the more (bureaucratic) incentive structures of Asian banking were a strength, rather than a weakness? We have, on occasions, advocated, with tongue only slightly in check, the allocation of a non-transferable unlimited-liability share to all senior bank executives, cancelable only on death or n (n=3?) years after leaving the bank. Some have retorted that this would unduly diminish risk taking, the basis for the capitalist dynamic. Perhaps so, but then what remuneration structure would provide the optimal degree of risk-taking, if alignment with limited liability shareholders leads to excessive risk-taking, but unlimited liability to excessive risk aversion? Much more analytical research needs to be done in this area.

The question of sanctions is not only equally important, but just as difficult. Indeed, one of the greatest weaknesses of the Basel Committee on Banking Supervision (BCBS) was that, as an advisory committee without any constitutional backing, it felt constrained from considering, or even advising on, sanctions, since such legal matters lay in the province of each nation state. So the BCBS restricted itself to advising on principles and norms, without any advice on what should have been done as the regulated entities either approached, or fell below, desired levels. Since the BCBS has taken the lead on (international) banking regulation, the proper structure of sanctions (to maintain and uphold good behavior amongst the regulated) has been an under-researched field. This is particularly important since the choice of minimum satisfactory levels, e.g. of tier 1 capital or of liquid assets, will always be somewhat arbitrary. What is necessary is to start putting remedial pressure on the regulated, as an institution falls below 'good' levels, in a graduated, but, steadily increasing, manner. About the only regulation to do so is the US FDIC Improvement Act of 1991, which was advised by two economists, George Benston and George Kaufman.

There are several ways to apply sanctions. They could take the form of straight payments to the public sector authorities, premia for insurance, increasing as the measured risk becomes assessed as greater; or of measures, such as requiring counter-cyclical or risk-weighted capital or liquidity requirements, which impose costs on banks (and may, or may not, provide income to the public sector) as such banks become riskier and raise the risks of the financial system as a whole. In short, risks increase with leverage and with the extent of maturity mismatch. The solution, therefore, is to raise taxes on banks in line with the extent of leverage and of maturity mismatch. The aim is to mitigate cycles in financial leverage and maturity mismatch.

Essentially, the Anglo-Saxon model has been short of one necessary instrument, the ability to adjust regulatory pressure so as to restrain such financial cycles. Indeed, the direction of policy movement until recently, with the introduction of Basel II and mark-to-market accounting (both procyclical), was counter-productive, and did nothing to restrain the recent severe financial cycle. The problem now is to design and to introduce a new instrument(s) that will provide such mitigation with the least cost to financial intermediation, and the best influence on appropriate innovation and risk-taking. This will not be easy, and is at an early stage of design. Some academic examples can be found in the Geneva

Report (2009) and in Restoring Financial Stability (NYU, 2009, eds. Acharya and Richardson). Less has been written on this in official Reports, since they have been more tentative (e.g. the White Papers in the UK and of the US Secretary of the Treasury) and they rarely couch the problem in this stark fashion.

3. A synthesis of models?

As outlined above, the Anglo-Saxon model has now been shown to be flawed and will have to change in several significant respects. The public sector, the State, has clearly become the guarantor of all systemic financial institutions, providing both liquidity and solvency insurance. Fear of bankruptcy, especially within the context of limited liability (for shareholders and bank executives), will not restrain moral hazard. The public sector, as the provider of ultimate insurance, will now need to apply new instruments to prevent its insurance function being misused.

In the Asian model, the close links between the authorities and the key financial intermediaries has generally been more realistically appreciated. But the way in which such exposure to insurance payouts has been handled has been rather by direct external control measures than by broader market mechanisms. In the Anglo-Saxon model the aim is to induce the agent, in this case the bank executive, to follow desirable (hopefully welfare maximizing) lines of behavior by setting general market mechanisms, such as regulations, market prices, taxes and subsidies, and then letting the agent decide on his own (maximizing utility) within this general framework.

That framework was found to be insufficient, and Anglo-Saxons may, at least for a time, be less arrogant about the superiority of their approach. But they may succeed in patching up their framework by adopting generalized regulatory measures that apply counter-cyclical pressures on financial cycles in leverage and maturity mismatch. If they succeed in this approach, should Asian countries adopt similar mechanisms? And if they do, will this result in a closer match, a greater synthesis, between the two models? Perhaps these are questions where, in truth, only time and coming experiences can be the true teachers and providers of answers. *Ad hoc* research can here certainly never be the only solitary reliable answer.

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