

CAPITAL REGULATION IN THE NEW WORLD: THE POLITICAL ECONOMY OF REGIME CHANGE**YALE PROGRAM ON FINANCIAL STABILITY, YALE, 1 AUGUST 2014****PAUL TUCKER, HARVARD KENNEDY SCHOOL AND BUSINESS SCHOOL**

One of the striking things about moving from the UK to the US is that there is a quite different emphasis on explanations of the great financial crisis. I have found that here it is widely regarded as a liquidity crisis, whereas in London most people would say that it was, at root, a solvency crisis. Exaggerating somewhat, here higher capital requirements are advocated in order to reduce the incidence of self-fulfilling runs. In London, higher capital is advocated to reduce the probability of fundamental insolvency. My own view is, and throughout my involvement in the international reform programme was, that the crisis was driven by both liquidity and solvency problems. Of course, the liquidity run on banks and shadow banks put the economy and asset values on a lower path, and so eroded the margin of solvency in many intermediaries. But the margin of solvency started off wafer thin at many intermediaries, so not much had to go wrong in the economy for some firms to be underwater.

I am going to open my remarks with an account of regulatory requirements before the crisis, which I will suggest puts into perspective why the international authorities didn't set a higher equity requirement in Basel 3. Then I will step back and argue that , individually and in combination, stress testing and the introduction of macro-prudential regimes bring about a revolution in capital policy: substantively and in terms of political economy. I shall conclude with some advocacy of why it makes sense to add a debt-requirement to the minimum equity-requirement, in terms of ensuring a firm's resolvability and in enhancing market discipline. As befits my slot, some of the brush strokes will be broad.

Just what was the equity requirement, and what is it now?

Perhaps the best way of getting across that solvency was at the heart of the problems driving the crisis is to review the pre-crisis minimum capital requirements for banks. It is sometimes said, by way of summarizing the changes in the Basel capital regime, that so-called Tier 1 capital as a percentage of risk-weighted assets has increased from 4% to 6%. But that obscures what is, in fact, an order of magnitude increase in equity requirements. Bear with me as I go through the steps.

Basel 1 did, indeed, set a 4% requirement for what was called Tier 1 capital. But Tier 1 capital included more than equity, and only equity can be sure to absorb losses this side of a bankruptcy proceeding. In a fateful step, which isn't discussed enough, in 1998 the Basel Committee said that only 2 percentage

points of that 4% had to be common equity¹. Just pause there: that means that simple leverage of more than 50x was being condoned. That's simply assuming that risk weights were less than 100%. If, as was the case in some countries, the average risk weight was around 50%, then leverage of 100x was being tolerated.

But it was worse than that because 'common equity' was measured without adjustments for items recorded by accountants as assets but which don't --- can't --- help in a crisis. Thus, goodwill was included, reflecting perhaps the premium paid in a take-over representing anticipated *future* benefits from running the acquired business. That's no use in absorbing losses today. Similarly, deferred tax assets were included. They are worth something only if the firm survives to make profits, which by definition is irrelevant when current losses jeopardise solvency. A third example was the inclusion of investments in insurance subsidiaries, which could help in a crisis only if the insurance business could be sold or release any surplus capital (requiring approval from insurance supervisors). Basel 3 addresses this problem of how to measure capital for prudential purposes, and here's the rub. The published Quantitative Impact Study revealed that, on average across banks domiciled in the Basel Committee's member countries, items that should in fact be deducted from capital amounted to about 50% of common equity. In other words, when *tangible* common equity is measured in a way that is more fit for purpose, the minimum risk-asset ratio requirement was about 1%.

Note that I have said nothing yet about the measurement of risk-weighted assets. They were problematic too. For example, a zero weight was applied to 364-day lines of credit, which played an important role in the boom in Asset-Backed Commercial Paper (ABCP) conduits. There was a zero weight for some sovereign exposures. No account was taken of the possibility that banks would stand behind the Structured Investment Vehicles they had sponsored or the Money Market Mutual Funds they managed. And all that's before we get to the question of problems with internal risk models. Taken together, this catalogue suggests that the minimum requirement for tangible common equity was plausibly *below* 1%.

Even assuming market forces required a 'cushion' on top of that regulatory minimum, there wasn't much room for economic deterioration. Sooner or later, the regime's deep flaws were going to be painfully revealed. I think that lends support to the view that this wasn't just a liquidity crisis, where panic pushed the economy onto an inferior path, validating the run. Some banks around the world were simply bust when the sun stopped shining. And that was set to bring terrible costs in those economies heavily dependent on banks for the supply of credit to firms and households.

What is the new equity requirement?

¹ Strictly, the 1998 announcement said that equity should be 'predominant' in Tier 1 capital, but that could be satisfied so long as equity's share was a shade over 50%.

For the largest firms, the new Basel equity minimum is about 10%. A base requirement of 4.5%, a capital-conservation buffer of 2.5%, plus a surcharge for global systemically important institutions (GSIFIs) of up to 2.5% (so cumulatively up to 9.5%)².

Compared with the previous regime of about 1%, the upshot is an *order of magnitude* increase in the minimum requirement for tangible common equity. On top of that, the leverage minimum of 3% will tend to bind on those banks that are concentrated in businesses that typically attract low risk weights. Further, the package is not yet complete. The fundamental review of capital requirements for the 'trading book' and for interest-rate risk in the 'banking book' is pending. Provisions against bad debts will, in future, need to be made on an expected-loss basis, which is more forward looking than an approach that waits until impairment is manifest. And I live in hope of the international authorities putting floors on risk weights: relying entirely on firms' internal models is like institutionalizing regulatory capture.

As I see it, one reason for stopping at a roughly 10% equity requirement for the biggest banks was that the international authorities didn't want to put all their eggs in one basket given the uncertainties around regulatory arbitrage and around the effect on aggregate credit-supply conditions. Instead, in what was referred to as the "bookends strategy", international standard setters wanted to combine a big increase in equity requirements with a credible regime for resolving distressed firms without taxpayer solvency support. As I shall discuss, the resolution part of the reform programme has implications for banks' overall capital structure, requiring a layer of bonded-debt to facilitate capital reconstruction once equity is exhausted. But before coming to that, I want to say something about the deeper question of how the authorities should determine the minimum equity requirement. This will shed light on other components of the emerging regulatory regime.

How to determine equity requirements: general

At a very high-level, the minimum equity requirement needs to reflect two things. First, the degree of confidence society wants that there won't be a systemic banking crisis. Second, a set of assumptions about the riskiness of the world (the underlying stochastic process, if you like).

The first is normative. That doesn't mean the desired degree of resilience against systemic disruption can never change, but one would expect it to be stable. The challenge is to extract from society what it is, how much protection society wants. That is where stress testing comes in.

² That is before any Pillar 2 requirements, but I ignored those in describing the previous regime too.

The second is positive; it reflects judgments about the world. Because of the endogeneity of risk --- that banking system exuberance makes the world riskier but also pushes up asset values, which fuel the appetite for risk --- one could crudely think of the world's riskiness as having two (or three) modes: normal and exuberant (and depressed). Minimum regulatory requirements could in theory be calibrated for the worst conceivable risk environment. But too few people believe that would leave credit supply in normal conditions unaffected for it to have been a viable policy. That being so, static requirements are not going to be enough in an 'exuberant' risk environment. In other words, dynamic adjustment has to be introduced into the regime, in order to maintain the desired degree of systemic resilience across different risk environments. This is where macro-prudential policy comes in.

Viewed like that, the advent of stress testing and macro-prudential policy brings a significant regime shift.

Stress testing: choosing the degree of resilience

What I have said about stress testing rather inverts the purpose for which it was used to such effect by the US authorities in the spring of 2009. Then the simple aim was to find out whether banks were bust and needed more capital given the plausible economic consequences of 2008's collapse. Since then, an increasing number of regulators, led by the Fed, have been incorporating *annual* stress testing into their supervisory regime. Part of the objective is, of course, the same: to discover the state of the banks. But something else is opened up too, because the scenarios and the results are made public.

That means that, year in year out, commentators, the markets and, most important, legislators will have an opportunity to comment on the supervisory enterprise: whether the chosen scenario was too mild or too stiff, whether the results are acceptable or unacceptable. Precisely because the event is discrete, regular and fairly transparent, I see a reasonable prospect of this leading to a much richer debate and understanding of what society wants, and what it is getting from supervisors. It is never going to be as straightforward as society setting (or, in the US and euro area, acquiescing in) a numerical target for inflation. But supervisors and legislators have the opportunity to use the debate around each year's stress test to frame some normative standards that don't just come from technocratic judgments.

Macro-prudential policy

The benchmark instruments of macro-prudential policy are the capacity to *vary* capital, liquidity and collateral requirements in the light of evolving threats to stability. As I have described it, this is *not* about

changing the regulatory goalposts. Rather it is about recalibrating, as needed, to maintain a broadly unchanged degree of resilience in the system.

In some ways this is analogous to the operation of monetary policy. In order to keep the path of aggregate demand broadly in line with the economy's productive capacity, the central bank changes its policy rate of interest in a way designed to keep the short-term real rate of interest (r) in line with the underlying equilibrium rate of interest that would maintain the economy in balance if prices and wages were flexible (r^*). Thus, in the face of shocks to the economy, the policy rate might need to change in order to leave demand conditions broadly unchanged. In the prudential sphere, an exuberant boom might temporarily alter the riskiness of the world (change the underlying stochastic process), in which case capital (K) requirements (or minimum collateral requirements) might need to be increased temporarily in order to maintain an *unchanged* desired degree of system resilience. In summary notation, if monetary policy is about trying to keep r in line with r^* , macro-pru policy is about trying to keep K in line with K^* .

In other words, banks and others would be required to build up an extra buffer during periods of stability-threatening exuberance because, on a forward-looking basis, the resilience of the system would otherwise be eroded. The policy 'tightening' might affect credit conditions and so subdue the boom, but that would depend upon whether the authorities' actions revealed information about the state of the system and about their own intentions³. More important, the policy action would ameliorate the bust. When the 'bubble' burst, a debt-overhang would still impede the subsequent macroeconomic recovery, but the downturn would be less severe if banking did not collapse, because its resilience had been broadly maintained when the environment was unusually threatening.

A lot can be said about this, but I shall make just three points. First, it is consistent with the responsibility for macro-prudential policy being delegated to an independent agency because, as with monetary policy, a political decision-taker would be tempted to substitute their own interests (re-election) for the country's interests, allowing a potentially destabilizing credit boom to persist in order to harness the 'feel-good factor'⁴.

Second, on this view, the objective of macro-prudential policy can be thought of as inter-temporal stabilization. Conditions are 'tightened' today --- or rather, resilience is reinforced today --- in order that credit supply does not collapse later when the 'bubble' bursts. On this view, a central bank would be endowed with a remit and powers *only* to safeguard stability, not to intervene in those market malfunctions, including some asset-price booms, that might jeopardize the efficient allocation of resources in the economy but do not materially threaten stability itself. Of course, in practice that distinction involves difficult judgments, but some boundaries are definitely needed to the powers and responsibilities of central banks.

³ Tucker, "Banking reform and macro-prudential regulation: implications for banks' capital structure and credit conditions" 2013.

⁴ There is not enough work on time-consistency and political-preference problems in macro-prudential policy. Something as pared down as the Barro-Gordon model of price-stability credibility is needed.

Third, policy will need to be systematic. Stress testing will help with that, but it will no doubt take policymakers a while to determine and convey their macro-prudential 'reaction function'. As such, this is one manifestation of what I think will unavoidably become a broader trend in financial regulation: that policy will be systematic and so rule-*like* but not based on entirely static rules. I have argued the same for policy on shadow banking: that because of the prevalence of regulatory arbitrage in a shape-shifting industry, constrained discretion will need to be employed alongside detailed rule books⁵.

Is equity enough? Gone-concern loss-absorbing capacity and market discipline from bond holders

Although there were many drivers of the global financial crisis, it is widely acknowledged that an important one was the moral hazard arising from perceptions that some firms were too big or too interconnected to be allowed to fail in a disorderly way. The 'beneficiaries' were the holders of bonds issued by banks, dealers and their holding companies. It is hard to see how the Too Big To Fail (TBTF) problem can be addressed without putting those bondholders at risk: that's the nub of the issue.

Raising equity requirements for banks --- in the limit to 100% --- would, through regulatory arbitrage and structural evolution, simply transfer the problem of excessive leverage and maturity-transformation to some other type of financial intermediary funded by short-term and longer-term debt. To address the moral hazard problem, bondholders need to be exposed to loss *whatever* the type of systemically significant firm or activity they are financing.

The resolution-regime reforms, not only here in the US but also in Europe and elsewhere in the world, are directed at precisely that. Apart from the statutory powers that are needed, a key ingredient is that significant financial groups should have in issue sufficient term debt to enable, through *de facto* conversion, the equity base of a distressed group to be restored. This is what the current debate about GLAC, gone-concern loss-absorbing capacity, is about. It is due to reach fruition at the Brisbane Summit of G20 Leaders this autumn.

I mention it today because only then will we know the overall prescribed capital structure. As I said when I was in office, at that point the Basel Committee would do well to reframe their capital policy⁶. There would be just two components: tangible common equity for absorbing losses in a going concern, and GLAC for absorbing excess losses and delivering re-equification via resolution.

⁵ Tucker, Financial Times op-ed 18 June 2014.

⁶ Tucker 2013, *op cit*.

Conclusion

Summing up, the reform programme is all about getting back to base. It was mad to treat anything other than tangible common equity as capable of sustaining a going concern. It was mad to recognize bad debts only when a borrower fell into arrears. It was mad to rely so heavily on firms' internal models, when the whole point of bank-capital regulation is that individual firms won't, and can't be expected to, give proper weight to the spillovers (negative externalities) from the own distress. It was mad to think that standard resolution techniques, involving carving out 'critical services' in the midst of crisis, could be used on the most complex firms. Those follies are being addressed.

But one of the timeless lessons of policymaking is that one can't see one's own mistakes, what will look silly, laughable or even mad to the next generation. We can see one general thing even now, however, partly thanks to the work of researchers here in Yale. That is, that re-regulating *de jure* banks can never be enough, because the economic substance of banking would simply reinvent itself, with its attendant fragilities, elsewhere. Not all of shadow banking is a product of regulatory arbitrage, but a lot is.

That means the big regime shifts I have summarized today --- stress testing, dynamic macro-prudential policy, credible resolution regimes --- they are not and cannot just be about banks. Suitably adapted, they need to be applied to the rest of the industry too. That is demanding for regulators unless they are given the necessary mandate by legislatures.

What we are living through, therefore, is not just a package of technical changes to the capital regime, but a reshaping of the political economy of regulation. Stress testing brings transparency, and an opportunity for society to debate the degree of systemic resilience it wants. And both macro-prudential policy and the need to cope with regulatory arbitrage point towards a regime of constrained discretion rather than of static rule books. The two trends are related. The more society can frame how much resilience it wants, the more it will be tolerable to delegate some constrained discretion to unelected prudential supervisors.