Banking industry reform

A new equilibrium

Part 2: Detailed report

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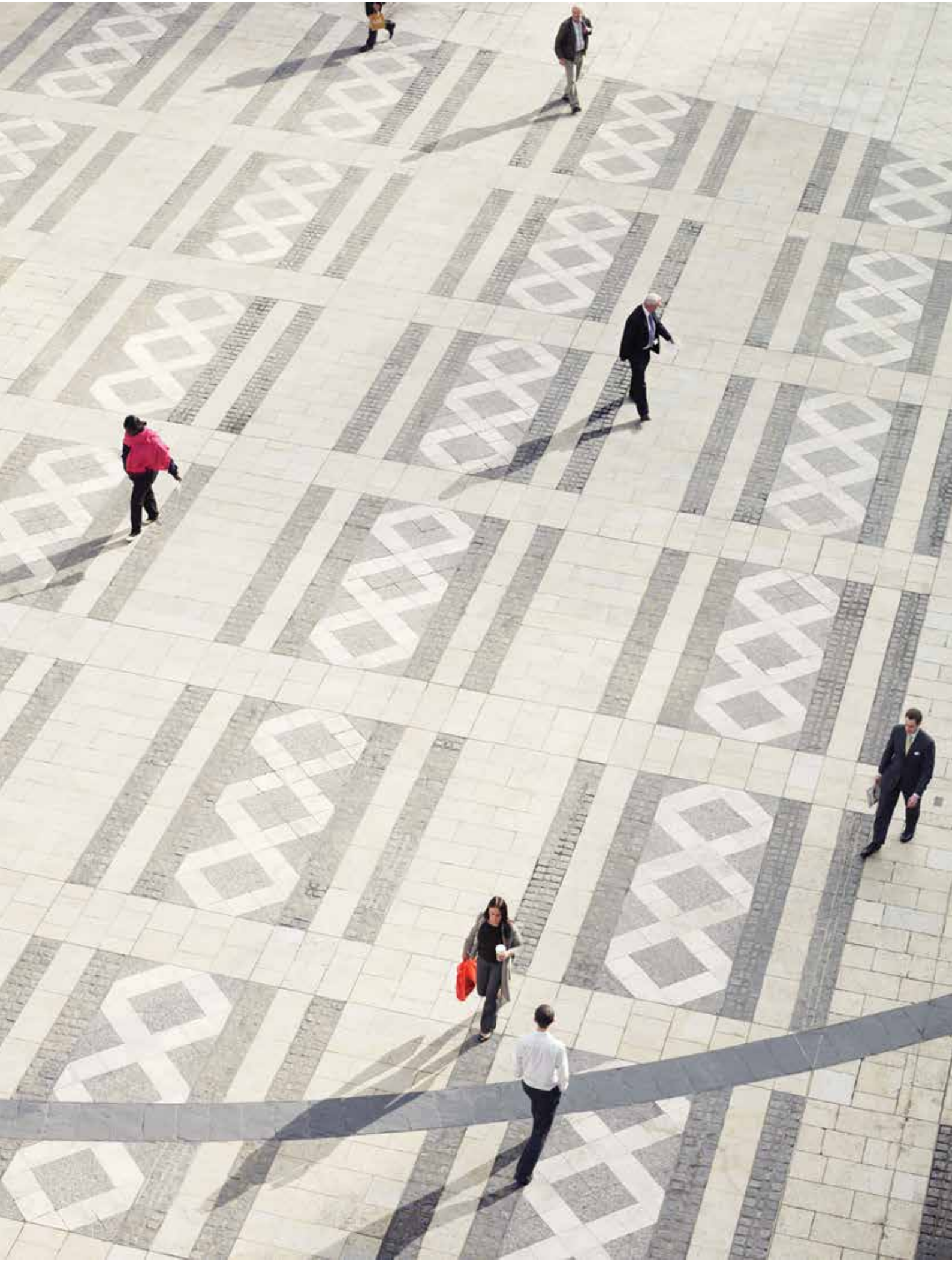

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Introduction

This 'Part 2' of our report builds on the headline messages and summary content contained in Part 1.

Section I – Current landscape sets the scene and profiles the current bank responses to industry reform as a mixture of 'the good, the bad and the ugly'.

Section II – The new economics of banking examines in some detail how regulatory reform - particularly new capital and funding requirements– is changing the economic landscape of banking, but not in the way that is generally supposed. We challenge the wisdom of seeking to restore Return on Equity (RoE) towards pre crisis levels and optimising for Regulatory Capital (or Risk-weighted Asset – RWA) usage.

Section III – The future equilibrium looks ahead at where we believe the industry will settle – on a range of dimensions – in a post crisis, post reform world.

By way of introduction, the key messages from Part 1 are repeated here for ease of reference. A full copy of Part 1 is available on our website at www.pwc.com/banking.

Key messages

A permanent shift to a 'new equilibrium'	The financial crisis has changed everything. Policy makers and regulators are leading the reform agenda and forcing the pace, but they are only the catalysts. The real drivers – the expectations of a wider set of stakeholders, and the realities of a new economic and commercial landscape – will fundamentally and permanently reshape the banking industry. A new equilibrium will emerge in terms of performance benchmarks, industry structures, business models, financial structures, taxation, products, pricing, conduct and remuneration. We paint a picture of this.	Pages 7; 29-42
Bank responses could be counter- productive to themselves and to the economy; more intervention is in prospect	Current bank responses are a mixed bag of sound, disciplined business adjustments, messy reactions to short-term regulatory and other imperatives, and potentially damaging over-reactions and distorted reactions to events. Efforts to restore return on equity (RoE) and optimise regulatory capital usage (RWAs) are dominating the change agenda. Both have their place, but can lead to false economies, value destruction and market disruption. Both could frustrate the objectives of industry reform and lead to further regulatory and public policy interventions. This is further undermining investor confidence.	Pages 7-11

Banks and bank investors need to re-set expectations	A return to RoE in the mid teens is unrealistic and unjustified. We estimate that the cost of equity (CoE) will subside to 8-10% as bank balance sheets are strengthened and the systemic riskiness of bank assets (which spiked in the crisis) returns towards historical norms. Maintaining hurdle rates in the mid teens will result in value being left on the table. While the drag of further asset deflation/impairment, weak economic growth and capacity overhang will depress RoE in the short term; thereafter, industry average RoE will recover to a 'healthy' equilibrium of 9-11%. There are strong historical precedents for RoEs at this level to coincide with valuation multiples of 1-1.5 times. There will be substantial variation around these averages, reflecting increasing disparity in business models, risk profiles and capital structures. RoE was never a good comparative or absolute performance indicator and it is positively misleading now – we advocate that banks and investors should focus on economic spread (ES: RoE minus CoE) performance instead.	Pages 13-19; 29-32; Appendix
Banks need to reinstate 'economic' decision tools, not get drawn further into regulatory models	Although regulatory formulations dictate aggregate capital requirements, they should not feature unduly in business decisions at the margin, in areas such as business mix and deal pricing. Where they give rise to a genuine constraint, and a need to optimise within that constraint, the basis of optimisation should be economic, and not be corrupted by regulatory bias. In any event, optimisation should be influenced strongly by longer term strategic considerations such as the integrity of the franchise, competitive positioning, and future growth options as and when the constraints ease. Current approaches appear mechanistic, binary and short-sighted.	Pages 20-28
Fresh equity is sorely needed, but the confidence crisis needs to be overcome	As a means to restructure, deleverage on the asset side only goes so far, it leaves value on the table and it is highly procyclical. The sooner that banks can de-lever by raising fresh equity, the better for them, their investors and the wider economy. Dilution of equity returns is not the real barrier to this. The real issue is the deep-rooted crisis of investor confidence in the sector, fuelled by anxiety about more bad news in the pipeline; economic, market and regulatory uncertainty; and perceptions of systemic control weakness and poor conduct. Confronting this should be the highest priority.	Pages 19; 29-32; 41-42
There is a bright future	The world needs a stable and vibrant banking industry, and will find a way to have one. Beyond the crisis, there will be opportunities in new economies, markets, demographics and technologies. Banks have a major role to play in helping to tackle some of the world's toughest economic and environmental challenges. With effort, they can and will transform their status and image from being the core of the problem to being a key part of the solution.	Pages 36-40; 43-44

I – Current landscape

The purpose of this paper is to examine the implications of some key aspects of banking industry reform in terms of how we think banks should frame their responses.

The thrust of the reform is to try to ensure that banks are better capitalised, more liquid, more securely funded and generally better 'behaved' than before. Taken together, it is clear that this isn't about tweaking the rules here and there – the political/regulatory/fiscal complex is intent on reforming the banking industry and will keep on pulling all of its levers until it is satisfied that the job is done.

The challenge this presents to banks is enormous, partly in the scale and urgency of the changes being demanded, but also in the degree to which the reforms are shifting the commercial and economic foundations of banking. For example, the new capital and funding requirements are generally regarded as having introduced a substantial additional cost burden that the banks will need to cover[1]; the targeting of certain product areas[2] or risk types[3] for particularly onerous regulatory treatment is generally regarded as having skewed the economics and general commercial attractiveness of certain products; and the differing regional/jurisdictional interpretations and timetables for these shifts are generally regarded as having skewed the competitive landscape as well. And there is another major issue – tax – which again is expected to skew choices everywhere from domicile to legal structure to capital structure to product design and accounting policy.

Meanwhile, there remains a high degree of uncertainty about where exactly all of this will finish up, which in turn is causing reluctance to commit to strategies, investments or even trades (product, hedging or financing) with anything more than a few months' time horizon[4].

So far, the response to the reforms has been dramatic, from large-scale deleverage programmes, aggressive cost reduction measures, business and product rationalisations including curbs on new business growth, pricing adjustments, and changes to an array of commercial and operational practices particularly in the areas of collateralisation and settlement. This is all being done ostensibly to comply to the new regulations while, in the interests of ensuring financial viability, restoring returns on equity (RoE) to as near pre crisis levels as possible, following a new mantra of risk-weighted asset (RWA) optimisation[5].

To set the scene, various commentators have put the headline adverse RoE impact of industry reform at anywhere between 4 and 13 percentage points, depending on the sector, and have highlighted a number of so-called mitigants and management actions to close as much of this gap as possible. We think this is the wrong mindset to start with, but before going there it is worth reflecting on the scale of the challenge that banks are facing with regard to making up the RoE shortfall.

1 Even allowing for a normalisation of funding markets, which still looks some way off.

2 For example, long-dated trading book assets.

3 For example, counterparty credit risk (CCR).

4 There is of course a big irony in this, considering the financial stability and economic recovery motivations for much of the reform.

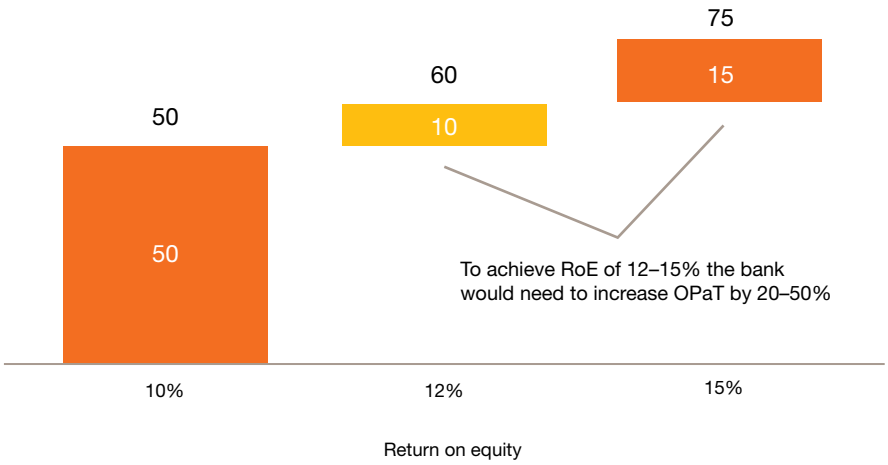
5 Not quite new, but being pursued with renewed vigour and urgency.

Taking as a starting point pre crisis RoE levels of c. 15%[6], and deducting a headline RoE impact of, conservatively, 7 percentage points (the basis of this illustration being a diverse banking group with a significant investment banking division), gives a new baseline RoE of 8%. Then, allowing a recovery of say 2 percentage points for the category of mitigating actions that may be considered 'easy' – derived essentially from efficiencies in RWA calculations, hedging/collateralisation adjustments and non-core asset disposals[7] – leaves a residual 'problem' shortfall of about 5 percentage points. Although many banks have started to set expectations that this gap will never be closed fully (implying a moderated 'problem' shortfall of 2–5 percentage points against revised expectations) this is still a tough challenge on a substantially higher capital base.

Exhibit I illustrates the quantum of improvement in operating profit performance that this would imply for a representative bank looking to lift its RoE from 10% to the 12-15% range[8].

Exhibit II then presents this in terms of what would be required for this to be delivered entirely through, respectively, improvements in gross income and cost performance.

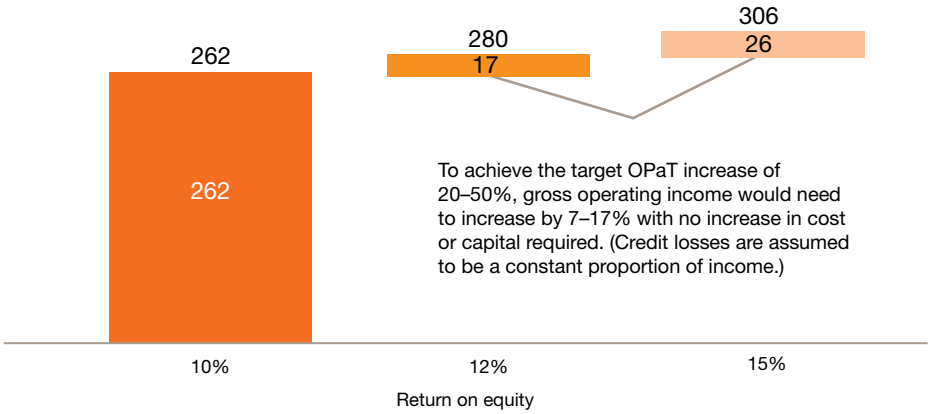
Exhibit I Required improvement in operating profit after tax (OPaT)



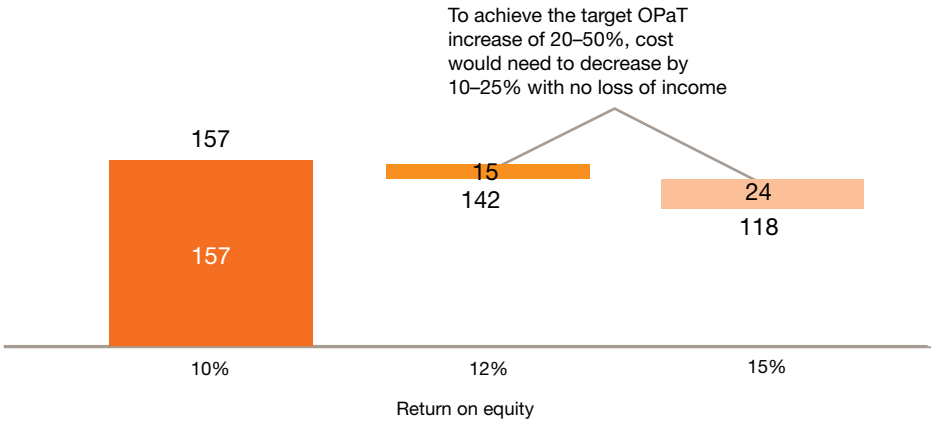
Source: PwC Analysis

Exhibit II Required improvement in income or cost

Income increase (before credit losses)



Cost decrease



Source: PwC analysis

6 Stripping out the immediate pre crisis returns that were driven by unsustainable credit expansion.

7 Easy in the sense of being easy decisions to take, but not necessarily easy to execute.

8 In this illustration, the representative bank has baseline equity of 500, OPaT of 50, a cost: income ratio of 60% and a marginal tax rate of 36%.

Banks' responses are a mixed bag of sensible and overdue adjustments, frictional diversions and distractions, and damaging overreactions and distortions.

While these percentage improvements in gross income and cost performance might seem modest enough, with a weak macroeconomic climate, substantial built-in pressure on funding and compliance costs, and intense competitive volume and margin pressure, they are very aggressive indeed. Another way to view the challenge is to hold income and cost constant, and consider the scale of efficiency in RWA usage that would have to be found – over and above the 'easy' measures referred to earlier – in order for RoE targets to be met. Using the same representative bank example, achieving an RoE uplift to 12–15% would require the same income and cost performance to be delivered off a 17–33% lower capital base.

Whichever way this is viewed, if banks are seriously intent on closing this gap, it will require a degree of drastic action that is best summed up in a recent report by Morgan Stanley and Oliver Wyman which, as reported by the Financial Times (25/3/12), foresees that over the next one to two years wholesale banks globally will cut a further $1 trillion (up to 15%) off their balance sheets, and take out $10–$12bn in costs through pay cuts and retrenchment, in an effort to restore RoE to a 12–14% range.

The problem is that, while it makes obvious sense on the face of it for banks to seek to maximise their RoE, and to deploy scarce resources (in this case regulatory capital) judiciously, being too aggressive and rigid in these pursuits could be counterproductive. For example, they could lead to underinvestment in critical infrastructure; interrupt the provision of credit and other financial services in the marketplace; disrupt customer relationships; pose procyclical threats to the wider economy; and thereby induce a vicious spiral in bank performance and economic stability and growth. This is clearly not what policymakers intended and, without delving into where the blame for this lies, we think it is crucial that banks look at the big picture at this point. If nothing else they should be conscious of the possibility that their actions, though they may seem rational at one level, risk frustrating the intentions of policymakers and, thereby, precipitating a fresh wave of regulation (Basel IV).

While there are some positives, we believe overall that banks' responses are a mixed bag of sensible, disciplined and in some cases long overdue adjustments (good); frictional diversions and distractions as firms try to come to grips all at once with the overlapping agendas of regulatory compliance and short-term business model adjustments (bad); and plain damaging overreactions, or distorted reactions, to what's going on around them (ugly).

The good

As well as creating an asset bubble that subsequently burst, the banking boom years also masked the onset of a number of problems which are harder and will take longer to fix than just plugging a hole in the balance sheet. These include:

- poor cost control
- ill-disciplined investment (the pre crisis syndrome of trying to be big in everything), and
- ill-disciplined other things – poor risk control in particular – as banks pushed everything aside in a headlong race for asset and market share growth.

Although the latest wave of regulatory reform is not directly focused on addressing these things, or at least not for the reasons banks themselves should, the pressures and constraints they are introducing are prompting banks to refocus on their core businesses and to introduce the sort of cost, investment and risk disciplines that should have been there all along and are long established in other industries.

The reality of the crisis and the very public debate that has followed has also prompted a wave of soul-searching in areas such as organisational vision, leadership, culture and reputation.

Taking each of these in turn:

Cost

Banks historically have managed their businesses with revenue as the principal performance driver, and typically have taken action on cost only as a short-term corrective measure in reaction to revenue shortfalls or where their cost:income ratios have drifted out of line with those of their peers.

And while revenues have been growing on the back of credit-fuelled economic expansion, banks have not been pressured to initiate the sort of structural cost efficiency drives that have been a central focus in more mature, lower margin, or inherently cost-driven industries[9] for years.

Banks are now sensing a long-term shift in their circumstances and realising the need for a change in their approach to cost. A stagnation (following the sharp reversal) of revenue growth, more intense competition in specialised product segments, and the regulatory trend towards trading on public exchanges and increased price transparency, are all going to make cost an increasingly important performance differentiator for banks.

These factors are causing banks to take a longer term strategic approach to cost restructuring. It is no longer enough to rebalance and keep a lid on costs through periodic and superficial cost-cutting measures (often going after 'soft targets' such as headcount and investment spend) and generic top-down budget restrictions (often poorly targeted and restricted to a single reporting period horizon). Banks are now looking more at initiating comprehensive, multi-year, strategic cost restructuring programmes, with clear definition and tracking of benefits, and an explicit targeting of more deeply entrenched cost categories (such as property and third-party supplier spend) with a longer term – but more enduring – payoff. To prevent these benefits from being eroded, they are also starting to embed cost control mechanisms into their 'business-as-usual' decision-making and accountability frameworks across all parts of their business, including front office business units that traditionally have been more revenue focused.

Business focus

The squeeze on financial capacity (capital and funding), the pressure to restore RoE performance, and various other market developments are all forcing a rethink of strategy, scale, coverage and business mix. Although the main thrust of this paper is to say that this can go too far, at a more benign level this is prompting:

- a general shake-out of the overcapacity that is the legacy of the boom years, and
- a critical review of where banks can seriously sustain competitive edge in the longer run, resulting in a new era of specialisation, with cohorts of banks forming to compete in certain product and regional segments and a smaller population (a 'super league') of universal banks surviving on their global reach and their volume-driven trading, clearing and settlement capabilities. This will be in contrast to the pre crisis paradigm where a much larger group of banks aspired to the universal banking model and basically chased everything that moved.

Risk and control

To the extent that banks have seen within their own experiences of the crisis symptoms of lax risk control, they are generally responding by firming up the power and influence of Risk and other control functions. There are two key aspects to this: one being a renewed investment in risk management people, policy, process and infrastructure; and the other being a reassertion of the independence of the Risk function and a general sharpening of its teeth. Both of these are healthy developments and, as long as they are not taken too far, they should help to restore the balance that was always intended by the 'three lines of defence' model of risk governance[10].

Vision and culture

We also see signs that the reform agenda, and the internal and external debates that it has prompted, is challenging conventional industry thinking in a way that will hopefully shift that thinking into a new, better and more sustainable place.

One example of this is a renewed focus on corporate culture, which in some institutions is now starting to be tackled head-on through integrated change programmes focused on leadership, codification, training and reward/sanction.

9 Such as the airline and automotive sectors.

10 The three lines of defence model essentially segregates between risk management discipline and accountability in front-line businesses (first line); independent risk oversight and control (second line); and assurance of policy and process compliance (internal audit, or third line).

The bad

The challenge many banks face, however, is the sheer scope and complexity of industry reforms they have to deal with, and the extent and pace of organisational and balance sheet adjustment that they are under pressure to deliver in response. This is exacerbated by the fact that most banks are not set up organisationally to deal strategically with change on this scale, or to balance priorities across a wide spectrum of internal stakeholders.

This can make it hard to set and follow a clear agenda and, by default, organisations can too easily lapse into 'firefighting' mode, manifesting in, for example:

- overcorrecting on organisational and policy changes, particularly in risk[11], and
- allowing a plethora of change programmes and structures to form – regulation by regulation, business area by business area, issue by issue, deadline by deadline – each with overlapping terms of reference, driving more work and cost overall than is needed, and slowing the whole process down[12].

In addition to the things of this nature that banks might find themselves doing, we would include in this 'bad' category things they are not doing, but arguably should be doing, due to having ostensibly higher short-term priorities. For example, given the extent of industry change and market repositioning that is under way, we think it is especially important at this time to maintain investment in areas such as product and service innovation; technology; sustainability; restoring reputation; and retaining and developing talent.

The ugly

The third category of response, and really the focus of this paper, comprises the overreactions and distorted reactions that we fear are being contemplated and set in train. These include:

- Dramatically overshooting on the 'good' responses in a way that undermines future productivity, quality and growth.
- Allowing the 'bad' responses to result in an entrenched culture of firefighting, underinvestment and general short-sightedness.
- Taking conscious specific decisions that, again, could cause lasting damage. For example:
  - Shutting down sound businesses in response to short-term resource constraints, resulting in a loss of future growth options and disrupting customer relationships.
  - Losing market share to competitors and new entrants by overreacting on product pricing and other commercial terms such as collateral requirements.
  - Exacerbating asset price deflation and economic procyclicality by selling off non-core assets in fire sale conditions as a means to hit ratios early, and/or to present a 'clean' core business to the market[13].

Specifically, we fear that their interpretations of, and responses to, the rules – particularly the Basel III changes to the RWA treatment of certain product types – may result in them closing down or mothballing sections of their business, disrupting their customer relationships, 'right-sizing' and reshaping their operating platforms, etc. … when in reality (simplistically, but to make the point) all that's being asked of them (the UK ring-fencing reforms notwithstanding) is that they restructure their balance sheets to make their businesses more financially secure.

11 The danger here is that the pendulum will swing too far, and then swing back again sometime in the future when memories of the crisis have faded.

12 To help deal with this, we advocate a three-dimensional governance structure picking up (i) regulatory and other change drivers; (ii) business and functional stakeholders; and (iii) execution workstreams, all coordinated through a central team with Steering Committee oversight and CEO sponsorship.

13 One senior bank executive described contemporary portfolio management essentially as a process of "selling everything that isn't nailed down".

II – The new economics of banking

Investors do not have a right to expect equity returns at or near previous levels.

We have already observed that the industry has set about trying to find ways to restore RoE to as near pre crisis levels as possible, and has adopted RWA optimisation as a new mantra in this quest.

Essentially, our thesis is that, while both of these are laudable enough on the face of it, they can be taken too far. That is, at some point they depart from what we see as the new economic reality.

RoE restoration

There are two intertwined factors at play here. One is an assumption that investors expect, and have a right to expect, equity returns at or near previous levels, and that banks must therefore take any and all steps to deliver them or face having the equity supply shut off. The other is that a key source of the projected structural RoE shortfall (once asset write-downs and restructuring charges have washed through and global economic recovery picks up again) has to do with the additional capital cost burden that Basel II.5 and III have introduced.

Starting with the latter of these, we ask whether these costs are genuine economic costs. Specifically, we ask what is wrong with the time-honoured notion that the value of a firm has got nothing to do with how it is financed[14], or the corresponding (and much overlooked) feature of the capital asset pricing model (CAPM[15]) that makes the cost of equity (CoE) sensitive to leverage. Put simply, a strict application of these theories would say that the increase in equity capital levels being mandated will be offset precisely by reductions in the unit cost of equity as calculated in the CAPM. The corollary of this, with respect to the first assumption, is that investors do not have a right to expect equity returns at or near previous levels.

To illustrate, let's say a bank has equity capital of $5bn and a CoE of 15%. Let's then say that it is required to add a further $1bn of equity to satisfy the new regulatory capital ratios. The theory goes that the incremental cost of carrying the extra capital is offset precisely by the reduced cost of equity (to 12.5% in this construction, via the 'geared' equity beta term in the CAPM), which is applied not just to the new $1bn but also to the $5bn that was there already. In notional monetary terms the total cost of equity is $750m both before and after the capital injection.

The classic answer to the 'what is wrong with …?' question talks about a variety of 'real world' considerations that are assumed away by Modigliani & Miller (MM). Even the 'real-world-adjusted' variation of MM is often claimed not to be supported by empirical studies or, curiously, that it somehow doesn't apply to banks[16]. Naturally enough, this question of whether MM applies or not was argued backwards and forwards vociferously between the banks, regulators and their respective advisers as the Basel III proposals went through the consultation phases[17]. It is still doing the rounds.

14 Courtesy of Modigliani & Miller in their 1958 paper 'The Cost of Capital, Corporate Finance and the Theory of Investment', American Economic Review, amended in 1963.

15 Using the CAPM, CoE is expressed as $R_f + \beta^* EMRP$, where R_f is the risk-free rate, β is a firm's equity beta and EMRP is the equity market risk premium. The CAPM is one of the most widely used methods to calculate CoE in both academic and commercial communities. Although other methods exist to calculate CoE, the CAPM is preferred for the transparency of its calculation and its practicality, in that the data used is relatively easy to obtain.

16 A recent Bank of England paper (Discussion Paper No. 31: revised and expanded version*; Optimal bank capital) concluded that a dampened form of MM should be applied.

17 PwC has played a role in this debate, our advice to industry and regulatory communities being that the knock-on effects on the industry and economy, and associated transitional costs, are more important things to dwell on than the fundamental rights and wrongs of Modigliani, Miller et al.

Without wanting to lay out the arguments again here, the 'real-world-adjusted' M&M proposition, applied to a hypothetical bank, looks like this:

Exhibit III

Recapitalisation Case	Geared capital Structure	Less geared capital structure
Balance Sheet		
• Equity	400	500
• Debt - Retail	2250	2250
• Debt - Wholesale	1350	1250
• Debt - Long term	500	500
• Total Asset/Liabilities	**4500**	**4500**
P&L		
• Operating profit	250.0	250.0
• Interest	-166.6	-158.8
• PBT	83.4	91.3
• Tax	-30.4	-33.2
• PAT	53.0	**58.0**
Risk Measures		
• Equity beta	1.25	1.00
• Debt beta	0.10	0.10
• Asset beta	0.20	0.20
Performance Measures		
• ROE	**13.3%**	**11.6%**
• COE	**10.6%**	**9.5%**
• Economic Spread	2.6%	2.1%
• Economic Profit	**10.54**	**10.54**

Market parameters	
• Risk Free rate	5%
• EMRP	4.50%
• Retail deposit	2%
• Debt margin	1.50%
• Interest premium	0.10%
• Tax Rate	36.4%

Source: PwC analysis

The key things to notice here are that, although RoE comes down with the addition of new equity, so too does CoE. And although the drop in the CoE is less than the drop in the RoE (i.e. economic spread narrows), that spread, when applied to the higher capital base, yields the same Economic Profit (EP[18]) as before. Of course the parameters in this illustration have been set deliberately to create that result – the point being to demonstrate that there are plausible real-world circumstances (with regard to tax and debt margin in particular[19]) in which EP would be unaffected by an equity injection.

18 EP is the excess profit after all economic costs – including capital costs – have been met.

19 The lower the tax rate, and the higher the debt margin (i.e. the spread over benchmark yields that the bank needs to pay on its debt), the more equity finance is favoured from an EP perspective. It turns out that these two factors are quite finely balanced in the 'real world', and are arguably trending in equity's favour. The 'interest premium' parameter in this analysis picks up the assumed drop in the cost of borrowing that would follow the equity injection – the addition of equity improves the risk position for both debt and equity investors.

Indeed, it is possible also to imagine circumstances in which the net effect on EP would be positive, as the below version of the same analysis illustrates[20]:

Exhibit IV

Recapitalisation Case	Geared capital Structure	Less geared capital structure
Balance Sheet		
• Equity	400	500
• Debt - Retail	2250	2250
• Debt - Wholesale	1350	1250
• Debt - Long term	500	500
• Total Asset/Liabilities	**4500**	**4500**
P&L		
• Operating profit	250.0	250.0
• Interest	-166.6	-158.8
• PBT	83.4	91.3
• Tax	-23.4	-25.6
• PAT	**60.0**	**65.7**
Risk Measures		
• Equity beta	1.25	1.00
• Debt beta	0.10	0.10
• Asset beta	0.20	0.20
Performance Measures		
• ROE	15.0%	13.1%
• COE	10.6%	9.5%
• Economic Spread	4.4%	3.6%
• Economic Profit	17.55	18.20

Market parameters	
• Risk Free rate	5%
• EMRP	4.50%
• Retail deposit	2%
• Debt margin	1.50%
• Interest premium	0.10%
• Tax Rate	28.0%

Source: PwC analysis

What this implies is that, when viewed through an EP (as opposed to RoE) lens, this hypothetical bank should not feel the need to find cost savings, modify pricing, raise the hurdle rate for investment, or do any of these things in order to restore any element of the drop in RoE.

The fact that banks do nevertheless feel this need at the present time suggests that what is going on is a combination of the following:

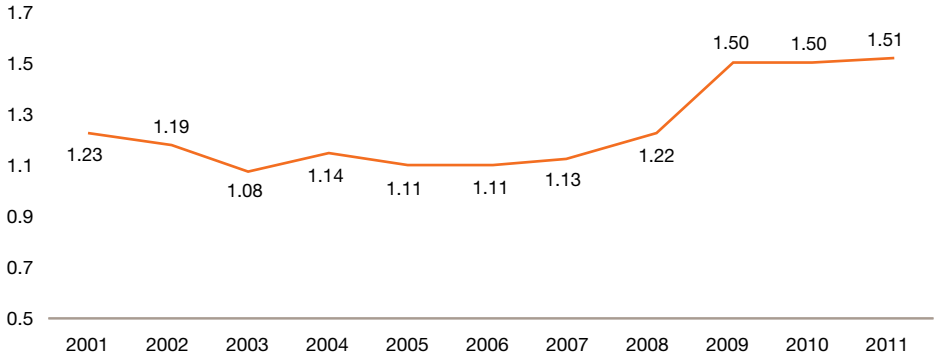
- They are not convinced that there has been, or will be, a reduction in the cost of equity commensurate with the reduction in leverage.
- They are feeling the pressure from investors who have yet to recalibrate their expectations based on what is realistic or what is justifiable as a margin over a reduced CoE[21].

20 The only difference in this version being a lower – and actually more realistic – marginal tax rate

21 A more cynical interpretation would be that the pressure is felt internally due to agency considerations arising from remuneration and incentivisation arrangements for senior managers (stock, stock options and bonus schemes linked to RoE performance, all of which – given the asymmetry of options and bonus schemes particularly – benefit from leverage).

So what is actually happening with the CoE, empirically, as banks build their capital levels up? On the face of it, a crude analysis suggests that CoE has actually spiked up, despite a reduction in leverage, as the below plot of observed bank equity betas from 2001 to 2011 suggests (Exhibit V[22]).

Exhibit V Trend in the average bank equity betas of US and European banks

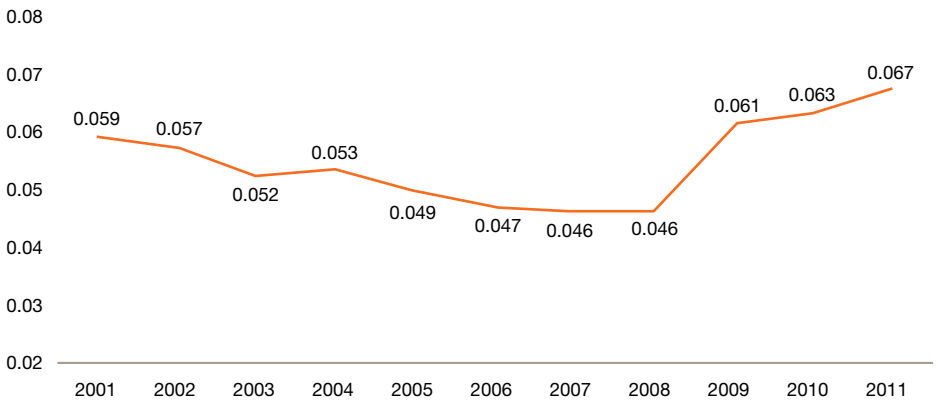


Source: Thomson Reuters DataStream, PwC analysis

One reason for this is that, because the conventional methodology for estimating CoE for an organisation involves using a number of years of historic price data to calculate the equity beta, it is inevitably a lagging indicator of the sort of impact we're looking for[23]. Another reason is that there may be other factors pushing equity betas and therefore equity costs up, effectively counteracting the reduction caused by deleverage. Given that the financial crisis and subsequent economic turbulence have essentially been bank-led, it wouldn't be a great surprise to find that banking stocks have displayed a heightened level of systemic risk (the thing that beta measures), irrespective of leverage.

And that is exactly what we do find when we unravel gearing effects from the observed equity betas since before the crisis began. Exhibit VI plots the trend in underlying asset betas[24] from 2001 to 2011 for the same group of banks, and shows that they have indeed increased substantially since 2007 and remain at an elevated level.

Exhibit VI Trend in bank asset betas of US and European banks



Source: Thomson Reuters DataStream, S&P Capital IQ, PwC analysis

22 The banks included in this analysis are HSBC, Barclays, Lloyds Banking Group, Standard Chartered, The Royal Bank of Scotland, Societe Generale, Deutsche Bank, Bank of America, Citigroup, Wells Fargo & Company, UBS, Credit Suisse, BNP Paribas, UniCredit, Morgan Stanley and Goldman Sachs.

23 This is because it reflects historical average leverage, as opposed to current leverage.

24 The equity beta incorporates both underlying asset risk and the incremental financial risk caused by gearing. It is possible to isolate these two components. Asset betas in the range of 0.05 to 0.1 may appear odd to cost of capital practitioners. The lowest asset betas we typically see in the corporate world are around 0.3. However, bank asset betas are indeed extremely low, which fits the popular characterisation of banks that they are basically highly levered plays on GDP – so stripping out the leverage leaves very little risk. Another way to view it is that a fully equity financed bank looks a lot like a straight portfolio of bonds, which explains why banking asset betas are closer to debt betas.

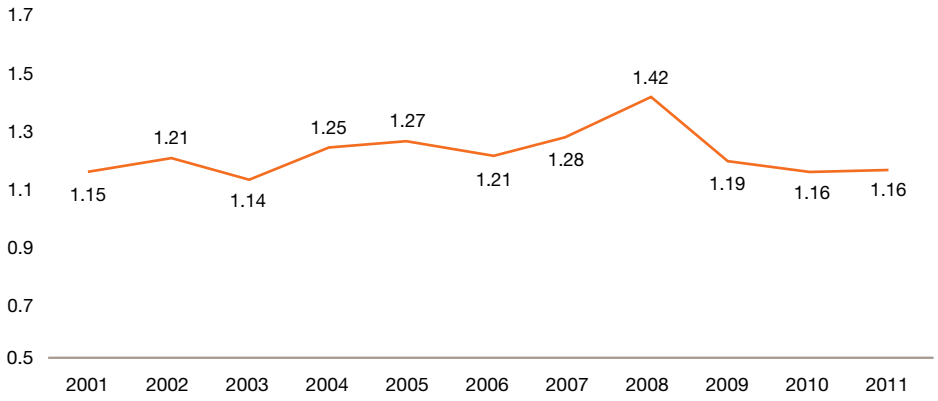
If banks are concerned that equity costs are staying stubbornly high, by focusing on the additional regulatory capital burdens they're worrying about the wrong thing.

Besides the point about the crisis having been bank-led, it is also highly likely that banking sector equity volatility has in the past been dampened by the existence of implicit government guarantees, and that the policy moves to effectively remove these guarantees have and will continue to push up bank equity betas[25].

So, by looking simplistically at headline equity betas, conventional CoE models are misrepresenting the economic reality and failing to isolate two crucial and (for now) substantially offsetting phenomena: (i) an increase in the systemic riskiness of bank assets; and (ii) the moderating effect of reduced leverage.

A truer picture emerges if you start with the asset betas from Exhibit VI and re-lever them at the prevailing leverage rate, year by year (as opposed to the historical average leverage rate implied in the conventional approach). This trend is illustrated in Exhibit VII below and suggests that, already, bank equity betas have settled back to pre crisis levels.

Exhibit VII Trend in re-levered equity betas of US and European Banks



Source: Thomson Reuters DataStream, S&P Capital IQ, PwC analysis

Looking ahead, as banks continue to build up their equity positions in line with Basel III requirements, and as the systemic volatility of banking stocks subsides[26], it would be reasonable to suppose that the downward trend in (adjusted) bank equity betas since 2008 will continue.

Besides beta, it may also be the case that other CoE drivers (per the CAPM) are moving around.Specifically, although official interest rates in Western economies remain at historic lows, the eurozone crisis, general downgrading of sovereign credit risk, and general levels of stock price volatility have all potentially had a detrimental effect on the CoE. For example, the six-month implied volatility of the FTSE 100 Index has increased from a historic average of 18% to around 26% since August 2011[27]. A similar trend is observable in the S&P and DAX indices where implied volatility has increased from a historic average of 18% and 23%, respectively, to 27% and 31% since August 2011. This evidence suggests that the current EMRP may be higher than estimates used in many CoE calculations.

25 Technically, this would not affect asset betas, as it pertains to the other side of the balance sheet, and in any case, being specific to banking, it is not truly systemic. Rather, it should be viewed as a form of releverage – in effect, with the loss of the guarantee, banks have lost a part of their capital structure, albeit not one that is observable or traceable in bank balance sheets. You could say this is the real reason why policymakers are so determined to force through higher levels of equity capital – essentially to fill the gap left by their removal of the implicit guarantees.

26 Partly also in response to the cost agenda where the targeting of fixed costs should also reduce operational leverage.

27 Daily average of six-month implied volatility between 01/01/2000 and 01/01/2007, Thomson Reuters Datastream.

So, while conventional CoE models may not in themselves provide evidence of a strong favourable degearing effect, an analysis of the underlying components and drivers clearly does. And by inference, if banks and investors are concerned that equity costs are staying stubbornly high, by focusing on the additional volume of capital required by new regulation they're arguably worrying about the wrong thing – if it wasn't for the moderating effects of reduced gearing, the cost of equity would be higher still! Ultimately, we expect that the factors that are currently pushing equity costs up (asset betas, the EMRP, the removal of the implicit government guarantee) will dissipate somewhat over time and that this, coupled with the effects of reduced gearing, will cause CoE to settle substantially *below* pre crisis levels. See the Appendix for a fuller description of our CoE analysis.

***

The final frontier in the RoE debate is investor expectations. Recall that in the earlier 'hypothetical bank' analysis we glossed over the drop in RoE, asserting that the focus should instead be on EP.

The challenge here of course is: 'What does your average investor care about EP?' This is a serious issue, brought home recently by a bank chief executive pleading, rhetorically: "show me the investor who is willing to put fresh equity into banking". Investors of course have their own risk appetite and investment goals to think about and they might simply want a decent (i.e. minimum mid teens) return on their equity.

We have a number of observations on this:

1. Something has to give if regulators/society is demanding that banks be better capitalised, and the only thing that can give (aside from benign levels of cost reduction and repricing which, as already argued, will never bridge the gap) is equity returns. So there is an inevitability about this.

2. Tax notwithstanding, investors are not being asked to accept an adverse performance outcome – they're just being asked to accept a different risk/return proposition from what they're used to. The classic counterargument to the investor risk appetite challenge is to say that if investors are unhappy with the (financial) risk/return profile offered through the stock itself, they can always introduce gearing into their own portfolios. Meanwhile, though it is true that banking stocks are not exactly flavour of the month, at market-to-book ratios at c. 0.6 times this is substantially priced in already and, on the flipside, there may be some bargains out there. Incidentally, notwithstanding concerns about the veracity of book asset values, and/or the possibility of further losses still in the pipeline, the sub-par market-to-book ratios we see presently provide prima facie evidence that future equity returns are being discounted at too high a rate.

3. Some challenge this notion on the basis of macro level equity supply constraints, suggesting the issue is not just investor unwillingness given the returns on offer, but also a more fundamental system-wide shortage of the stuff. We do not credit this argument – there is no shortage of investable equity in the world, and anyway it is a mistake to imagine that equity (relative to other forms of investable wealth) is a finite resource, or that debt and equity investors are different people. It's the same pot of money at the end of the day. Since we're not talking about an additional funding requirement – this is simply a substitution of one form of capital (equity) in place of another (debt), a system wide debt-equity swap if you will, the relative prices of each should adjust to the respective share of asset risk that is borne by each. And individual investors can choose the combination of each (through old fashioned asset allocation, plus additional gearing if they so wish) that satisfies their investment goals.

4 Others raise the challenge that if investors are not getting the returns they're looking for from banking stocks, they will simply divert their equity dollars into media, technology, energy, or whatever sectors are still offering these sorts of returns. But again, investors are not a homogenous group. Certainly, some investors may divert their money, but others will see value on the other side of that trade, or simply be attracted to the new risk/return proposition being offered. We suggest respectfully that the barrier to raising fresh equity at the present time isn't the dilution of equity returns caused by higher regulatory capital ratios. Rather it is the more fundamental crisis in investor confidence in banks, banking and bankers brought about by the unprecedented losses sustained over recent years, coupled with lingering anxiety about the possibility and cost of further government and regulatory intervention[28].

This suggests that banks should focus disproportionately on restoring that confidence by (to state the obvious) delivering sound sustained performance from their core businesses, being proactively transparent in their risk disclosures (internal stress test results for example) and, when it comes to stakeholder relations, redirecting some of their energy away from lobbying regulators and towards charming investors, customers and employees.

In summary, while we wouldn't want to trivialise the impact of the change, in the long run we see nothing fundamentally wrong or value-sapping in banks holding more equity than they did pre crisis[29]. Indeed, there is strong evidence that low RoEs (sub 10%) and healthy market-to-book ratios (>1) can coexist and have done so for long periods of history.

***

So much for equity, what about the other respects in which banks have to restructure their balance sheets – specifically liquidity and funding?

Although once again the theory predicts the associated costs will eventually come out in the wash as well, it is harder to see relief on this front any time soon. Specifically, although the requirement to hold large quantities of low risk, low yielding financial assets (to satisfy liquidity requirements) should contribute to the general de-risking of bank asset portfolios (with payback eventually through reductions in the cost of the debt and equity which funds those assets), the frictional cost of carry, exacerbated by market supply and demand forces for qualifying assets, will we think result in a structural cost that will not be dissipated in the foreseeable future. Likewise on funding, while the requirement for debt issuance to be more long term (to satisfy the net stable funding ratio (NSFR) should buy some relief through improved credit ratings, we would not expect that to self-correct either. And the partial loss of the implicit government guarantee will result in a long-term structural premium on the cost of bank debt, albeit offset to some degree by reduced gearing. Finally, the prospect of taxes being levied directly on bank liabilities (such as the bank levies currently in force in Europe) may further exacerbate the after-tax cost of debt funding.

28 Such as subordination of their interests through balance sheet restructuring; so-called 'slotting' of regulatory capital rules for particular asset classes such as Commercial Real Estate (CRE); direct intervention in areas such as retail product pricing and SME lending; and more direct fines and sanctions. Of course the likelihood of these interventions is increased by the continuation of alleged banking scandals over money laundering, Libor fixing, etc.

29 There is of course an upper limit to this logic – you wouldn't want to see banks being 100% equity financed, partly because a lot of debt is in the form of product, i.e. deposits, on which banks make welcome profit margins, and partly because, with wholesale markets functioning normally, debt remains an efficient and flexible form of financing. Also at very low levels of leverage, the tradeoff between the tax shelter and marginal debt pricing is lopsided.

Pricing

The question of costs leads inevitably to the question of pricing.

There is a lot of evidence of pricing disturbance in the market as the normal pricing determinants – particularly capital and funding costs, and their components OIS, CVA, FVA and CVA volatility – have been thrown into disarray by market and regulatory changes. As individual banks are feeling or interpreting the extent and incidence of these costs in different ways, and also being inconsistent in how and when they respond on pricing, getting a reliable read on market pricing is extremely difficult at present. And once again, to the extent that there is any distortion in this (and we think there is), the cost of this distortion will bear on banks' customers too through skewed absolute product price levels and wider spreads.

The anecdotal evidence of this is very strong. Some banks are taking a lead in reformulating their pricing models to take account of the new market and regulatory 'realities', but in doing so are pricing themselves out of the market[30]. Others, including perhaps the less sophisticated players, are sticking with their existing pricing approaches and picking up market share.

Those taking the lead on pricing modifications would probably argue that they are happy (ish) to allow others to pick up business on uneconomic terms, viewing them essentially as victims of adverse selection who will pay a price in the end. On the other side of the argument, some might view the current market pricing instability as a temporary aberration, and that the others are either overreacting or reacting to false signals. This group is more inclined to ignore the regulatory noise until things settle down, and be glad of the chance to take some more of the market in the meantime ('beneficial selection', to coin a phrase). So, who's right? Is there a chance that some are doing the right thing (i.e. being prudent) but getting it wrong, while others are doing the wrong thing but getting it right?

We think the answer lies in distinguishing very clearly between the following cost components:

- systemic, economic costs, i.e. those that are likely to be common across all institutions, irrespective of their portfolio compositions or capital structures[31]
- idiosyncratic costs, i.e. those that are legitimate economic costs, but which are particular to the institution[32]
- Non-economic costs, e.g. those that manifest through internal cost allocation frameworks, but which (either erroneously, or as part of a deliberate intervention) do not represent true economic costs[33].

The first two should certainly feature in the pricing model, but should be distinguished to allow banks to analyse their own price determinants, to interpret competitor prices, and thereby to know where they stand in the market and be able to take informed and rational pricing decisions on that basis.

The footnoted examples of these cost categories highlight the very crucial significance of capital constraints to the pricing question. First, the question of whether capital constraints do or don't exist is the key determinant of whether regulatory capital charges, or economic capital charges which reflect idiosyncratic portfolio features, are real costs at all. The obvious trap here is the understandable compulsion to factor these costs in ('doing the right thing') where there is actually no need ('getting it wrong')[34].

30 This has led some banks to revert back to pricing methodologies which they believe to be wrong in order to maintain market share and customer relationships.

31 For example: baseline funding and liquidity costs (FTP); OIS; systemic aspects of CVA; systemic aspects of economic capital charges (assuming adjusted for leverage and the yield on invested capital); and target profit margins to cover baseline operating cost allocations.

32 For example: FVA; idiosyncratic aspects of CVA; funding and liquidity surcharges; and idiosyncratic aspects of economic capital charges (e.g. reflecting credit portfolio concentrations or diversifiable market and operational risks) in circumstances where capital is constrained.

33 For example, regulatory capital charges (in excess of systemic economic capital charges); and idiosyncratic economic capital charges (reflecting portfolio concentration, etc.) where capital is not constrained.

34 Of course, if this is where the rest of the market is going, the rational decision for a relatively unconstrained bank is to go with the market to capture a price premium, or else seize the opportunity to undercut for market share.

Banks that are better capitalised should have structural pricing advantages over those that are less well capitalised.

Second, where marginal capital constraints do exist (the typical state of affairs for banks at present) being able to distinguish between the first two cost categories (systemic versus idiosyncratic) helps to highlight the degree to which these constraints contribute to the cost load, and hence to a potential pricing disadvantage in the market[35].

Conventional wisdom already holds that having a substantial capital buffer confers benefits in terms of strategic flexibility and resilience. We have already argued that the costs of maintaining this position are potentially overstated if not entirely illusory. The reasoning set out above goes further still: it implies that banks that are relatively better capitalised (i.e. which are less capital-constrained) should also have structural pricing advantages over those that are less well capitalised. This is the very opposite of the conventional view.

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Quite apart from the difficulty in knowing how to price their products into the market, since the existence and observability of market prices is such a central component of both fair-value accounting and internal financial control (independent price verification – IPV – in the jargon), the pricing disturbance in the marketplace is posing serious challenges here too.

This may necessitate a refinement to the basis on which bureau-based price verification services are delivered and used.

This is not just a technical accounting issue, but something that can also exacerbate underlying market tensions and distortions. For example, if entities are required or forced to sell off positions due to capital and/or other constraints, the 'sell-off' pricing can feed through to other entities through the IPV process, causing them to have to write down their assets with the result that they too come under capital pressure. This issue is obviously most acute in illiquid markets where the market pricing consensus that drives IPV can be very erratic, reacting abruptly and dramatically to whatever market transactions do occur.

RWA optimisation

Banks have always sought ways to reduce their regulatory capital requirements, essentially for the same reasons discussed in the previous section. However, although countless millions have been spent on this (e.g. in gaining various internal model approvals for advanced treatment of 'pillar 1' risks[36], and preparing persuasive ICAAP[37] documents to minimise capital add-ons under 'Pillar 2'[38]), in truth the real stakes in this – from an RWA or regulatory capital perspective at any rate – have so far been pretty marginal. The key reasons for this claim are that:

- Regulatory capital has not been the only driver of banks' capital strategies. They have also had separate reasons[39] for holding the levels of capital that they have. In other words, obtaining 'RWA relief' has not translated necessarily into an opportunity for capital reduction or levered growth.

35 The second category can be thought of as opportunity cost. That is, a bank in a constrained situation is likely to look for a price premium on a trade or product area which uses up scarce capacity extravagantly, to offset the opportunity cost of not using that capacity elsewhere, or equally (in more conventional cost accounting terms) to make a proportionate contribution to covering the institution's fixed cost overheads. Note that the cost of capital is not an overhead in this sense. Meanwhile the notion that there is an opportunity cost in using scarce capital for relatively low-return business pre-supposes that the opportunity to use it on high-return business is real and sustainable in the face of wider market competitive forces.

36 Market, credit and operational risks.

37 Internal Capital Adequacy Assessment Process.

38 Covering all other risks and mitigating actions.

39 Such as achieving target credit ratings; maintaining a buffer for strategic investment purposes; and satisfying internal risk appetite criteria.

- While the regime introduced by Basel II wasn't actually seeking an overall increase in bank capital – merely a stronger linkage between capital and risk – regulators were also not prepared to see substantial capital reductions, either for individual banks or system wide. What they 'gave up' through model approvals etc. in Pillar 1 they tended to claw back in Pillar 2. So the capital efficiencies that banks sought through their various Basel II programmes turned out to be something of a chimera.

Basel II.5 and III changed all of that. This time, forcing increased capital levels is absolutely on the regulators' agenda and now, for good and not-so-good reasons, RWA optimisation is suddenly a top strategic priority across the whole industry.

The not-so-good reasons have been talked about already. The better reasons have to do with the reality that, for some banks, the Basel III capital rules will kick in before they have had the chance to build up their capital stocks. As such, on current asset and flow volumes, they will simply have insufficient capital to satisfy the new capital ratios, even with the seemingly generous transition period that was agreed by the G20. So they have no option but to find ways to reduce their regulatory capital needs.

By now, most organisations in this situation have already estimated their RWAs under the new rules; identified the overall reduction needed; made at least a first pass at prioritising where the reductions can be made; and in many cases got to work on the 'low-hanging fruit'. Low hanging fruit in this case tends to involve:

- cleaning up data, models, systems and ensuring that legacy booking, netting and consolidation practices do not drive overstatements of RWAs
- renegotiating credit support annex (CSA) schedules[40] to ensure maximum RWA benefit from netting and collateralisation opportunities
- recalibrating hedging policies and strategies
- accelerating regulatory capital model approvals
- disposing of assets that are anyway regarded as being peripheral to strategy[41], and
- restructuring capital to ensure most favourable regulatory tiering treatment (although a lack of clarity on the regulatory status of various instruments such as bail-in bonds is still hampering progress on this front).[42]

Where it gets trickier is when the low hanging fruit doesn't get them far enough, fast enough, and they need to make tougher decisions, which might involve for example:

- going further and faster on asset sales than would be warranted by a purely strategy-driven rationalisation of the business, or by an execution strategy based purely on maximising realised value [43]
- curtailing or ceasing business in the most impacted product areas
- entering into complex, costly and potentially risky hedge structures, and
- pressuring customers on collateral arrangements to the point where relationships and market share are put at risk.

40 Bilateral agreements between counterparties specifying arrangements to post collateral on derivatives contracts.

41 As distinct from disposing of assets to release RWAs which might otherwise be considered central to strategy. There is an obvious tautology trap here - we have seen instances of banks defining their core businesses specifically by reference to RWAs.

42 The capital squeeze is intensified by lack of regulatory clarity over the eligibility of Tier 2. Issues of Basel III - compliant Tier 2 instruments have been limited as the technical standards for these are not yet finalised. At the same time, the contribution of existing Tier2 instruments to regulatory capital is being phased out.

43 Care is also needed here not to be too tempted by the desire to purge the past at any cost, or to latch onto asset sales as the quick fix in preference to initiatives that make more economic sense but are tougher or take longer to execute.

Once again we see scope for banks' responses to become distorted, in this context by a combination of (i) allowing RWA outcomes to distort even the narrow evaluation of business and product performance, relative to RWA usage; and (ii) failing adequately to factor wider and longer term commercial and strategic considerations into the optimisation process.

We discuss each of these syndromes and alternative ways of addressing them under, respectively, *Portfolio optimisation* and *Strategy optimisation* below.

Portfolio optimisation

Portfolio optimisation came to prominence in a banking context through the development of the secondary and derivative credit markets in the 1990s, and through the evolution of 'economic' performance measurement tools (such as risk-adjusted return on capital (RaROC) and return on economic capital (RoEC)) to act as its guide. Two broad developments have shaped it since then:

1. With Basel II, the required investment in data, models and processes for calculating RWAs, and the greater risk-sensitivity of the RWA measures themselves, led many banks to adopt regulatory capital as a satisfactory proxy for economic capital, rather than running two parallel systems. Credit risk and credit assets were still the dominant focus of portfolio management.

2. With Basel II.5 and III, other risk factors have emerged as crucial drivers of RWAs – market risk and counterparty credit risk in particular – and this, coupled with the sudden emergence of financial capacity constraints (including regulatory capital of course but also funding and liquidity) has brought other asset types and businesses into play and shifted portfolio management from a 'risk-adjusted performance enhancement' paradigm to a 'constrained optimisation' paradigm.

These two developments have dramatically upped the ante on portfolio optimisation, and caused banks to look at their whole businesses (i.e. not just credit assets) through an RWA lens in particular[44].

However, another feature of Basel III has put a spanner in the works in a major way. By effectively targeting certain product areas (such as OTC derivatives and structured credit) for particularly onerous RWA treatment, Basel III has caused some banks to query whether, given this distortion, RWAs can any longer be regarded as an acceptable proxy and allocation mechanism for the economic cost of risk. This issue has caused two rival camps to form:

- Those who argue that, though not perfect, RWAs are still a fact of life, and that since they remain the principal determinant of actual capital holdings, the business portfolio should be optimised according to RWA usage.
- A splinter group, which was perhaps never entirely satisfied with the substitution of regulatory capital for economic capital in the first place, and which senses that the time is now right to lobby for a reversion to an economic basis of optimisation. This group is very much in the minority.

Our answer to this is that both camps are right. Their positions are reconcilable through a two-dimensional analysis as illustrated in Exhibit VIII overleaf, where assets A–E are plotted cumulatively in diminishing order of their 'true' economic contribution[45] (vertical axis), relative to their RWA usage (horizontal axis). This approach clearly allows the overall portfolio and its components to be looked at through both 'economic' and 'regulatory' lenses, both separately and in conjunction.

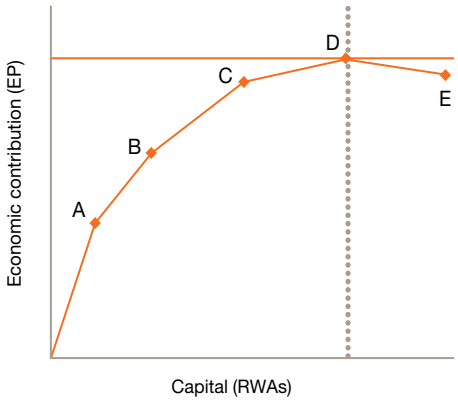
Most importantly, since the economic contribution (vertical axis) already accounts for risk, via an economic risk charge, it is uncorrupted by any distortions arising from an RWA basis of economic cost allocation.

And based on the reasoning from earlier sections, this works even if the total quantum of capital attributable to the portfolio is RWA-driven, as long as the cost of capital is calibrated to take account of portfolio leverage. That is, although the overall quantum of capital may be RWA-driven, its monetary cost is driven by economic factors (asset Beta and leverage in particular, where the leverage effect largely offsets the quantum effect leaving asset Beta as the residual factor). This effectively means that it is fine to look at economic contribution through a purely economic lens even when the quantum capital requirement – at both portfolio and asset levels – is set by regulation.

44 As part of this, RWA-centric measures such as return on RWAs (RoRWA) have started to displace the 'economic' performance measurement tools referred to earlier.

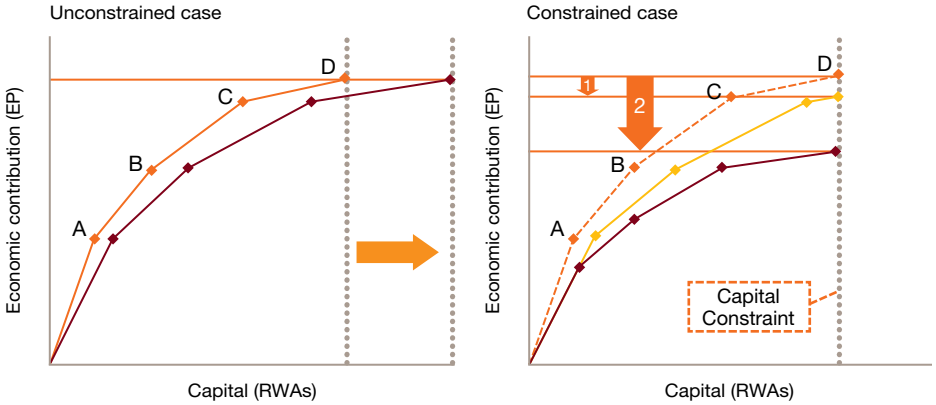
45 Measured in this illustration by economic profit (EP), which is by definition already adjusted for the economic cost of risk, for example through an economic capital (EC) charge.

Exhibit VIII Pre Basel III



Source: PwC illustration

Exhibit IX Post Basel III



Source: PwC illustration

Of course in this simple example, where capital is freely available to support all value-accretive assets, the solution is obvious (the portfolio should comprise assets A–D but not E) and can be read off the vertical axis alone. The horizontal axis is interesting and relevant to capital planning, but has no bearing on portfolio composition or performance appraisal.

If this illustration is taken as the pre-Basel III position, Exhibit IX illustrates what happens when the RWA formulation changes, first in a situation where capital supply is not constrained (left) and then when it is (right).

Stepping through these, in the unconstrained case (left), the economic profit impact of the increased RWA requirement is indeterminate (zero as illustrated, due to reduced CoE, but could be marginally up or down depending on marginal tax and funding cost impacts). As in the pre-Basel III case (Exhibit VIII) the RWA calculation is interesting but has no bearing on portfolio composition, which remains unchanged. What may have changed, however (which is not evident in the illustration), is their rank order in terms of economic contribution (unchanged) relative to RWAs (substantially affected by the product and risk class-specific modifications to RWA formulations introduced in Basel III). While this is of no consequence in the unconstrained case, it becomes highly significant in the constrained case.

In the constrained case (right) the economic profit impact is certain to be negative, and more or less pronounced depending on the response. In this case, the RWA measure becomes relevant as the binding constraint that needs to be optimised, and the optimal portfolio comprises the assets that generate the greatest economic contribution (EP) per unit of RWA, until the aggregate RWA constraint is reached. In the above illustration, we show the difference in aggregate EP impact between an optimised response (1) and a simple proportional scaling back of the business to come within the portfolio constraint (2).

The crucial features of this approach are that the measure of economic contribution on the vertical axis is already adjusted for risk (in contrast to a cruder RoRWA approach, which simply looks at nominal return); and that this risk adjustment is uncorrupted by RWA bias. The importance of this is illustrated in Exhibit X below, which compares the performance ranking and 'optimal' weighting of four representative assets using alternative optimisation bases, where:

- in the constrained case, portfolio RWAs are capped at 10,000
- optimisation basis 1, the favoured approach, ranks assets based on their 'pure' economic (risk-adjusted) contribution, relative to RWA usage
- optimisation basis 2 ranks them using a more traditional RoRWA measure
- optimisation basis 3, a hybrid of 1 and 2, ranks them by EP/RWA, but where the risk charge in the EP term is itself RWA-driven.

The illustration shows that, relative to the unconstrained case EP result of 25, optimisation basis 1 results in an EP underperformance of just 2 (8%), whereas optimisation bases 2 and 3, both being relatively crude, and each subject to RWA bias, give a very different performance ranking and 'optimal' portfolio weighting. They also deliver an adverse EP outcome – a negative delta of 5 (20%) – as a consequence of giving a zero weighting to asset 3 (the most favoured asset under basis 1).

Although again this illustration is artificial and designed to make a point, its key point is that even a modest disparity between economic and regulatory formulations can throw up big disparities in the relative performance ranking of portfolio assets.

This highlights the glaring error in so much of what is said on this topic: that in a Basel III world, suddenly and permanently, a substantial proportion of banking business has been rendered uneconomic by virtue of the regulatory capital charge that it carries, irrespective of what the true economic cost of that business might be[46], and that by inference the purpose of portfolio optimisation is to weed this out.

Exhibit X

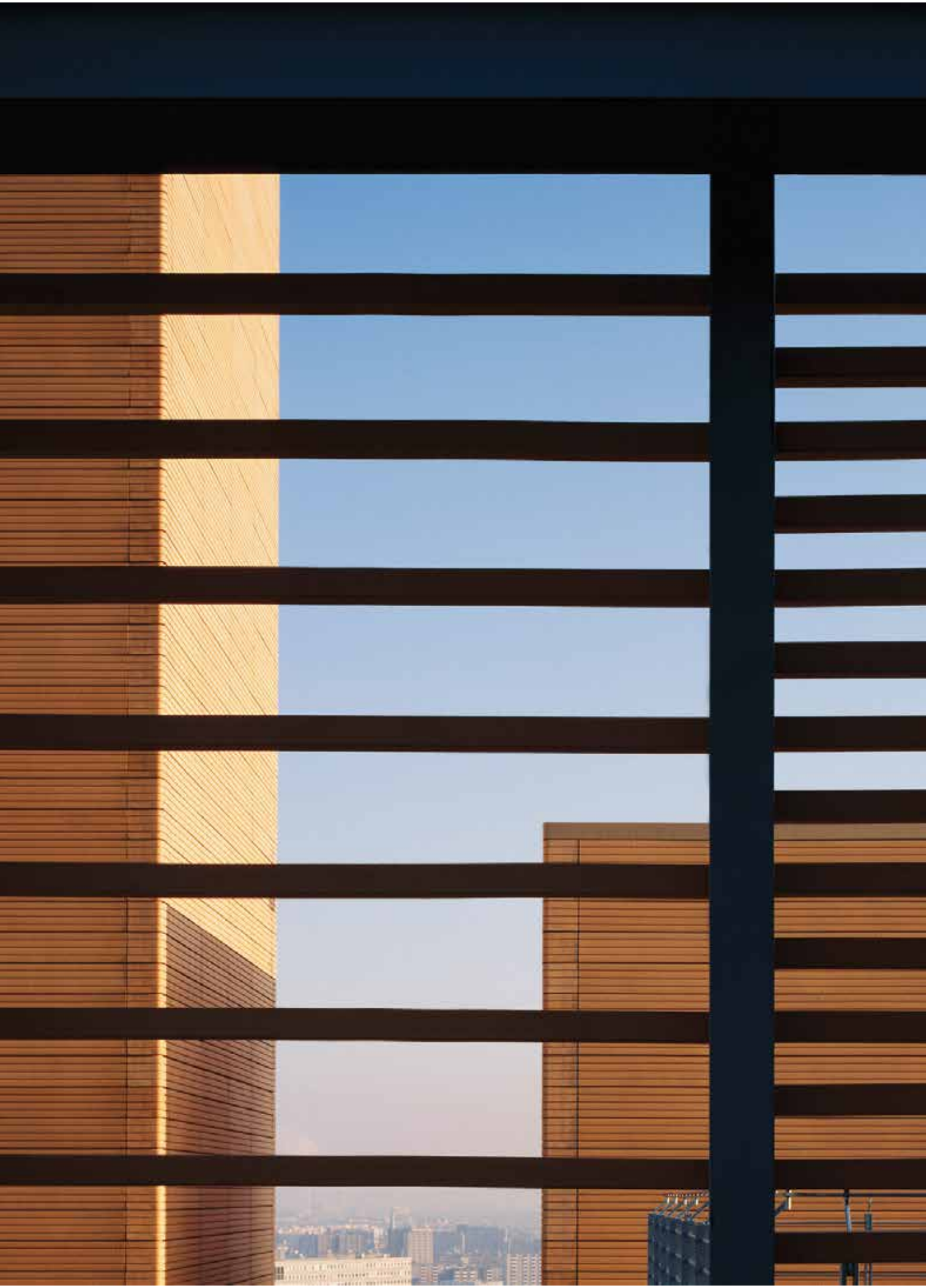
Unconstrained case							Constrained case*											
							Optimisation basis 1			Optimisation basis 2					Optimisation basis 3			
							EP/RWA			RoRWA			RWA charge	EP**	EP**/RWA			
Asset	Nominal profit	Economic risk charge		EP	RWA		%	Rank	weight[2]	%	Rank	weight**			%	Rank	weight[2]	
		% total			% total													
1	20	17	17%	**3**	1780	14	**0.17%**	3	100	**1.12%**	1	100	14	6	**0.32%**	1	100	
2	35	32	32%	**3**	3812	30	**0.08%**	4	34	**0.92%**	3	66	30	5	**0.12%**	3	66	
3	10	6	6%	**4**	1220	10	**0.33%**	1	100	**0.82%**	4	0	10	0	**0.02%**	4	0	
4	60	45	45%	**15**	5688	46	**0.26%**	2	100	**1.05%**	2	100	46	14	**0.25%**	2	100	
Total	125	100		**25**	12500									25				
Constrained case EP**									23			20					20	
Constrained case EP as % of uncontrained case EP									92%			80%					80%	

* Assumes a portfolio RWA limit of 10,000
** EP calculated on basis of RWA driven capital allocation

Source: PwC analysis

46 Measured in this illustration by economic profit (EP), which is by definition already adjusted for the economic cost of risk, for example through an economic capital (EC) charge.Of course, this leaves open the question of how economic risk charges should be calculated and allocated, if not by reference to RWAs. Economic capital (EC) is the popular answer to this; however, in truth, economic capital (particularly in its conventional form) has its own distortions and limitations, in particular its failure to distinguish between systematic and idiosyncratic risks. While this isn't a problem when considering capital requirements for solvency purposes – risk is risk in this context – when it comes to performance and pricing applications, systematic risk is what matters. Technically, isolating this and making it the basis of economic costing is the way forward in this area. Meanwhile, pragmatism – blending metrics, correcting for known distortions, calibrating to market analogues, applying judgement, collectively under a 'next generation' EC banner – is the best and only practicable approach.

It should also be acknowledged that some features of regulatory capital calculation under Basel II.5/III have forced a recognition of certain risks – counterparty credit in particular – that were previously underrepresented in both regulatory capital and most economic capital models. The contention however is that they have gone too far, in part due to a legitimate need to calibrate overall capital requirements to stressed conditions. The distortion here arises from the failure to recognise the separate concerns about risk – its implication for solvency on the one hand, and its implication for performance and pricing on the other. It makes no sense to address both through the same analysis.



Strategy optimisation

Although the previous section may suggest that there is an elegant closed-form mathematical solution to this, the reality is of course not like this. In an earlier section we referred favourably to the strategic rethink that regulatory reform has precipitated, ushering in a new era of business focus and specialisation, and a revised assessment of what banks are fundamentally for and how this should influence their conduct. 'Strategic Optimisation' might be another term for this – something not unlike portfolio optimisation as described above, but a multi-period version of it which also factors in all of the complexities, subtleties, interdependencies, uncertainties and competitive considerations that business strategists (as distinct from traditional portfolio managers) have to deal with.

Specifically, in contrast to the closed form, one-period, deterministic version described in the previous section, a more strategic approach would take the following into consideration:

- The fact that constrained portfolio optimisation is only a valid construct for as long as the constraint remains and, as we have already argued, banks should look first to relieve that constraint – or at least anticipate future periods in which that might be possible – before performing irreversible surgery on their businesses.
- The fact that assets do not necessarily perform in isolation of each other – there may be interdependencies and synergies in terms of, for example, integrated product offers; multi-product customer relationships (possibly involving cross-subsidy); and common operating platforms, distribution channels, etc., which mean that the sort of recalibration of portfolio weightings suggested by the previous analysis is actually too simplistic[47].
- Longer term views on how the bank believes the market is going to develop and what profit or economic profit prospects it offers over future periods, i.e. beyond the horizon of a single-term prospective (or, worse, retrospective) EP measure. This would include how other market participants are expected to respond, or be forced to respond, to the reforms. Clearly, if a large part of the industry is forced or induced into less RWA-intensive product areas, it will have implications for profit margins in those areas, and will also create opportunities in more RWA-intensive product areas for those with the capital resources to exploit them.
- The respects in which banks' own conduct – the coherence of their visions and strategies; the integrity, consistency and transparency of their actions; and the sincerity with which they address themselves to the wider economic, environmental and societal ramifications of what they do – will influence the attitudes and behaviours of all their stakeholders[48] towards them in ways that feed back positively into their financial performance.
- Inherent uncertainty with regard to how the market, regulatory environment, competitive landscape and stakeholder attitudes and behaviours are going to unfold. That is, whatever banks may believe about the future (base case), they should build their strategies on a richer analysis of scenarios (upside and downside), stresses and sensitivities. As well as reaffirming the resilience of their strategies in the face of uncertainty, this can help to build optionality into banks' portfolio choices to enable them to respond quickly and efficiently, as and when the landscape shifts (as surely it will)[49].

More fundamentally, there is something perverse about the thought process, implied in portfolio optimisation, which starts with the question: "We have X Capital … what's the best thing to do with it?" Whereas, perhaps a more strategically coherent question would be: "We see a profitable opportunity to service the needs of *abc* customers, with *xyz* products and services, in $\alpha\beta\gamma$ ways… what resources do we need for that?" The point here is simply that the products and services that banks develop and offer should, in the main, be designed around some underlying customer need. Fundamentally, this is what sustains the industry, and therefore we suggest that any genuinely strategic response at the present time should be rooted in a clear sense of what customers want and will pay for.

47 A refinement to deal with this could involve incorporating second-order EP impacts on 'core' assets, for example through customer demand disturbances or fixed cost reallocations.

48 Including of course customers, but also investors, policymakers, employees, partners, suppliers …

49 The concept of so-called 'real options' is increasingly underpinning strategy appraisal, particularly in volatile environments and sectors where optionality carries a high premium.

We have seen examples of a more strategic approach being taken recently in the public pronouncements of firms like UBS, who have set a new strategic direction based on a balanced scorecard of (yes) regulatory capital intensity, but also a number of apparently longer term business attributes such as growth prospects and market standing, as illustrated in the following extract (Exhibit XI) from their 17/11/2011 Investor Day presentation.

In some ways this looks a bit like a qualitative version of the two-dimensional analysis we illustrated in the portfolio optimisation section above, but rendered more 'strategic' by reference to things like client relevance, synergy, growth prospects and market standing, and the synthesis of a directional (as opposed to definitive) response (exit; decrease; maintain; increase). What is less clear from this extract is whether the 'attractiveness' scale corresponds with what we have termed 'economic contribution' (i.e. whether it takes account of the economic cost of risk) and also what weight is given to the 'capital intensity' dimension in driving out a strategy. It is worth observing that UBS is one of the better capitalised major banks in the market at the present time, and hence is one of the better placed banks to maintain a presence in ostensibly attractive (albeit capital-intensive) business areas, or indeed to take market share from more capital constrained institutions which have no option but to exit.

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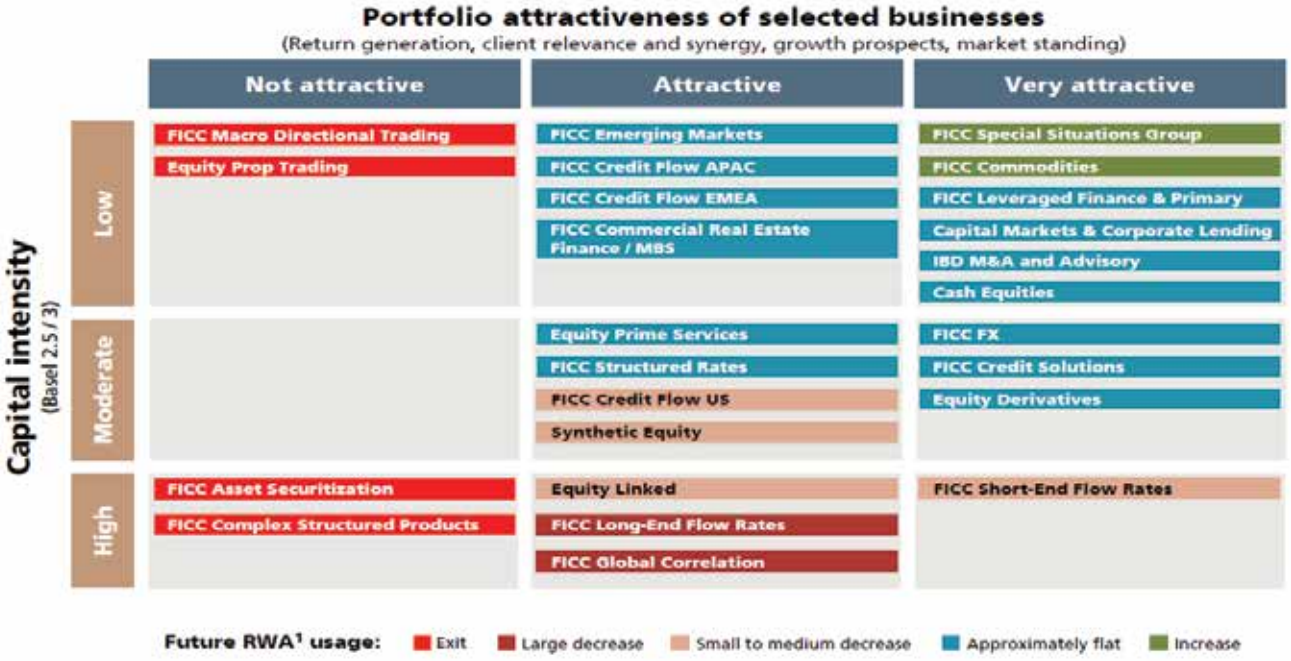
In summary, we believe it is important not to try to solve too much for the present, but instead to get a clear picture of the future equilibrium, the organisation's place in it, the options it presents, and to solve for that.

Exhibit XI



Source: UBS investor day presentation, 17/11/2011

III – The future equilibrium

In this final section we return to various dimensions that have been touched on in this paper and, looking ahead, posit a view on where we think they will settle in a future equilibrium.

Specifically, we take a view on the following:

- leverage, equity costs and equity returns
- tax
- industry structure and business models
- product offerings and pricing, and
- conduct and reputation.

Leverage, equity costs and equity returns

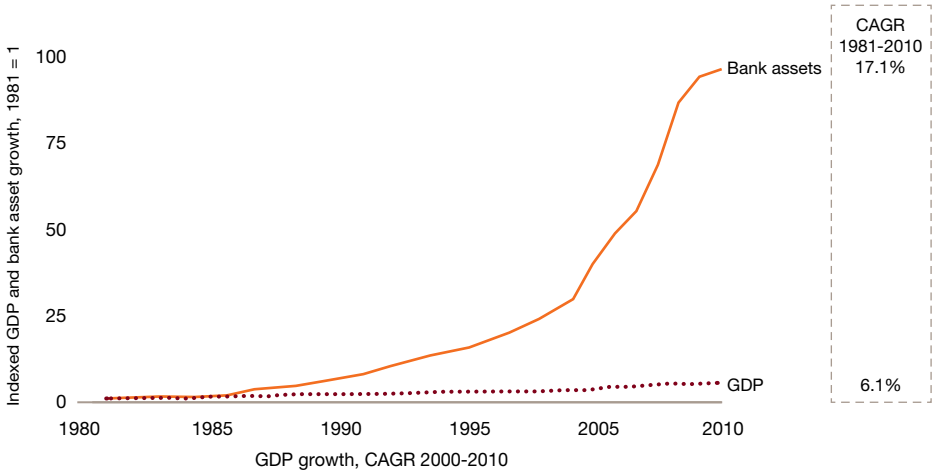
There has been significant 'bottom-up' analysis across the industry trying to model the potential RoE impact of each component of the new regulatory landscape. This analysis has been focused largely on 'first order' capital and funding impacts, and the degree to which 'mitigating actions' can offset those impacts. The main purpose of this analysis has been to highlight where banks should look to prioritise their mitigation efforts, and also – as discussed in the previous section – to suggest where banks should redirect their capital resources to best effect.

In some cases, this bottom-up analysis has been aggregated and extrapolated to support hypotheses about near-to-medium term segment and industry level equity performance prospects. This is all very well, and useful input to help individual banks and investors decide where to place their bets, but in our view it should not be taken as indicative of where things will settle in the long run. Beyond the near term, second- and third-order factors such as shifts in underlying financial and operating cost structures, price competition and shifting patterns of market demand (itself a function of price, but also driven by underlying economic activity) will start to exert an overwhelming and ultimately stabilising influence on overall equity returns.

On this basis we believe that a long-run equilibrium will be one in which the industry settles on a capital structure that satisfies all stakeholders; where the relative costs of debt and equity have readjusted to reflect their respective share of the risk burden; where the various debt and equity cost premia (legacy of the financial crisis) have ebbed away as much as they are going to; and where price competition has driven average equity returns down to a reasonable and sustainable margin (no more than 1%-2%) over that cost.

The reason we think that this *has* to happen is because the only conditions that would prop equity returns up in an equilibrium state would be a permanent absence of competition in the market, or a permanent resumption of super-normal financial asset/volume growth over-and-above GDP growth. Neither is plausible. On the former, although as we suggest later there will be some industry consolidation on the supply side (reduced overcapacity, specialisation) that capacity will be chasing a limited customer revenue pool and so price competition should be as fierce as or fiercer than ever. On the latter, as Exhibit XII below shows, the growth in bank assets between 1980 and 2010 was far in excess of underlying economic growth, and this was a very significant source of nominal equity returns during that period[50]. The subsequent period of asset shrinkage/write-downs, and corresponding negative equity returns, bears testimony to the unsustainability of this level of underlying asset growth, and hence also of the level of nominal equity returns that it drove pre crisis.

Exhibit XII World indexed bank assets and nominal GDP, 1981–2010



Source: PwC analysis

50 It has been noted in the press recently (Financial Times China edition, Lex column, 30/03/12) that banks delivered high equity returns in the pre crisis era largely on the back of leverage. We agree with this of course, but actually we think underlying nominal asset growth was a bigger factor. Both are a thing of the past. The same article makes the intriguing point that the universal bank model has actually been a means of creating a diversified pool of earnings, which could then be geared up to boost RoE, more so than the traditional arguments for business growth and integration - creating synergies and securing economies of scale.

The dynamic that will *cause* it to happen is that banks and investors will eventually come to terms with, or indeed actually embrace, the risk/return proposition that the new bank leverage position gives rise to. We see both 'pull' and 'push' elements to this. Starting with 'pull', we think banks will increasingly perceive a shift in the relative attractiveness of equity versus debt financing, arising from:

- a continuation of the premium cost of debt, both in the wholesale funding market and through intensified competition for a static or dwindling pool of retail and commercial deposits[51], and a recognition that equity has funding as well as risk-absorption properties
- the attractiveness of equity in the context of supplementary regulatory ratios introduced as part of Basel III – specifically the leverage and net stable funding ratios
- possible changes in the tax code, such as the penalisation of debt liabilities through bank levies, or the general lowering of corporate tax rates eroding the value of the tax shelter that debt provides[52], and
- increasing recognition of both the product pricing benefit and also the strategic 'option value' of equity financing[53].

As a result, we think banks will turn increasingly to equity markets and mount more concerted marketing efforts based on the above arguments. Any residual reservations about equity dilution will start to be tackled by looking at structures for reintroducing leverage remotely (e.g. by investors themselves, or else through the creation of SPVs, which manufacture geared versions of ordinary bank stocks).

On the 'push' side, we believe that the true blockage on both equity and debt supply – the crisis in investor confidence – will dissipate as the fallout from the crisis subsides, global economic growth resumes and bank management teams campaign more effectively for investor and other stakeholder approval.

In both respects, a failure to match the equity demanded by regulators with an injection of equity supply from the market would result in value being left on the table, and we don't see that situation lasting for long.

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On the basis of the above we envisage that with leverage ratios settling out at less than 20 times, the industry average CoE will fall to around 8–10%.

Although the primary source of the drop from the 10-12% levels we have been used to will be an arithmetic result of the change in leverage (i.e. through the geared beta term in the CAPM), and therefore in principle might be expected to happen instantaneously, in reality, other factors unrelated to capital structure – particularly the equity market risk premium and bank asset betas – will likely take time to erode and in their equilibrium state will probably settle somewhat higher than their historical levels[54].

Assuming a long-run sustainable equity spread (RoE–CoE) for better performing banks of no more than say 1%-2%, we're looking at equilibrium average RoE for them in the order of 9–11%. A key assumption in this is that asset growth will be more or less shackled to GDP growth for the foreseeable future. That's the long-run outlook, but it may yet take some years to get there (with negative equity spreads) as the frictional restructuring costs, reputational setbacks and the reversal of the pre crisis 'supernormal asset growth' phenomenon work their way through.

While we talk in terms of industry average CoE and RoE, we should emphasise that looking at these measures in absolute, and as averages across industry, is increasingly unhelpful. To reiterate, our central hypothesis in this context is that (i) underlying CoE is a crucial determinant of where banks and investors should set RoE targets, particularly in a low growth environment; (ii) CoE is highly sensitive to gearing; (iii) bank gearing is changing dramatically and will be very different across sectors and regions for the foreseeable future; and therefore (iv) RoE will be less reliable – or positively misleading – as a comparative performance measure beyond tightly defined peer groups, or for individual banks from one period to the next. In its place we expect that investors and analysts will focus more on things like economic spread (RoE–CoE) and economic profitability (EP/assets), partly for the sake of comparability, and partly in response to the general tightening of margins (i.e. they will want to track them more closely).

51 There is ample evidence of retail and commercial depositors becoming more savvy and selective in where they place their liquid funds from a risk and return perspective.

52 Note that in the earlier 'hypothetical bank' analysis, whether a capital injection increases or decreases EP depends on the balance of two key variables: the effective tax rate and the debt funding margin – under a new equilibrium, we expect both of these variables to have moved significantly and permanently in favour of equity financing.

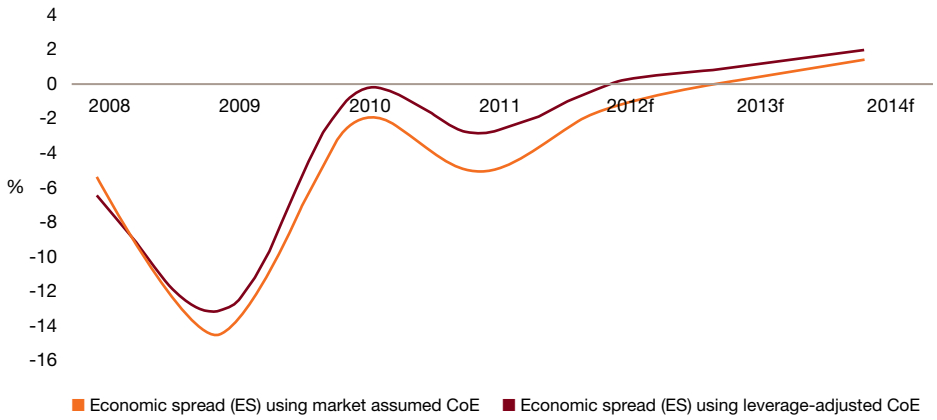
53 By creating debt headroom, it better enables banks to realise investment opportunities when they present, and also to not be forced into costly asset deleverage to relieve capital pressure during downturns.

54 The residual premium in bank asset betas ties in with the general view that bank asset risk was under-represented in the market pre crisis.

Viewed through an economic spread lens, where CoE is calculated on the 'adjusted beta' basis we have described, we believe the prospects for banks to return to economic viability (defined as covering their costs of equity) are quite promising. Exhibit XIII illustrates this, plotting what we see as the migration of economic spread into positive territory in 2013 and beyond. Note that this outcome relies critically on adjusting the CoE for gearing affects[55].

On the funding side, we envisage that the loss of the implicit government guarantee (meaning that debt holders will take a greater share of the pain in future crises) and the effect of higher capital ratios will more or less balance out. But the requirement to extend the maturity profile on bank funding will result in a permanent funding cost premium over benchmark yields (of say 100–150 basis points on gross funding, including deposits) compared to the pre crisis era when banks could make greater use of short term interbank and commercial paper (CP) markets at LIBOR flat or even sub-LIBOR, and deposits were cheap. This premium will ultimately flow through to pricing.

Exhibit XIII Migration of banking industry economic spread (RoE–CoE), 2008–2014f



Source: PwC analysis – derived from PwC CoE calculations and actual/broker forecasts for RoE

55 Note also that the broker forecasts of RoEs that support this analysis were polled before the more recent set of alleged banking scandals so there could be significant downside to this depending on the public policy / regulatory response. Either way though, on an adjusted CoE basis the banking sector should return to economic breakeven profitability about a year sooner than would be apparent from a conventional CoE analysis.

Boards and executives will need to make much more complex judgements about the ethical and reputational aspects of their tax affairs.

Tax

In relation to tax, the overwhelming phenomenon at the present time – particularly in the West – is the strong public mood to tax banks more, without necessarily tracing through to where the ultimate incidence of this will fall or what the second-order impacts may be. This is an essentially political matter and a somewhat spurious one given that it is ultimately the public who bear these taxes, whether as taxpayer-owners, regular pension fund investors, or customers – a case of taxing Peter to pay Peter.

The more respectable, policy-oriented, debate has two strands: one – related to the overall amount of tax paid – is the stance that banks should make a 'fair and substantial contribution' towards the bail-out costs incurred by taxpayers[56]; the other – related to the basis of taxation – is the argument for tax to be used, alongside regulation, as a lever for banking reform.

With regard to the former, the key threads to the debate are about the logic of relating an ongoing tax take to a historic/one-off taxpayer cost; whether taxing banks differently from other private companies will cause damaging distortions (e.g. skewed investment choices, attempts at tax arbitrage, further boosts to 'shadow banking', etc.); and what is meant by 'fair' and 'substantial'. On a prospective basis, the most coherent argument for banks to be taxed more is as consideration for the implicit government guarantee they enjoy, rather than as recompense for a historic payout under that guarantee. But with the guarantee being unravelled by things like ring-fencing in the UK and being replaced by other (costly) financial protections such as increased financial buffers and bail-in bonds, the ongoing justification for tax surcharges weakens. Also, while it remains highly uncertain how much of the guarantee will ultimately be unravelled, with a strong likelihood that this will go further in some jurisdictions than in others, the task of making the tax cost 'fair and substantial', relative to the benefit of the guarantee, in a way that leaves the international tax playing field reasonably level in this respect would seem to be very difficult indeed.

The latter agenda – the use of tax as a policy lever, explains the current debate about whether, for example, the tax deductibility of debt should be tackled or, similarly, whether additional tax benefits should be conferred on the holders of securities such as Cocos and bail-in bonds that have equity-like loss absorption properties. Likewise with the bank levies on (non-equity) liabilities that are being introduced in Europe. While they have obvious headline revenue raising properties, they also have the policy attraction of favouring equity and longer term debt financing over short-term debt financing.

On both fronts, banks have a responsibility to engage in the debate in a positive and balanced way. The main priority in this, we believe, is to keep it as much focused on the policy considerations and not get drawn into the political realm except where necessary to set the record straight. An example of the latter is the need to present a balanced case on the question of whether – as first suggested by the IMF and then subsequently repeated by the G20 and the EU – banks are fundamentally under-taxed. There is plenty of evidence to support the contrary view and unless that case is made cogently, in a balanced way, and with an emphasis on the policy considerations arising, there is a risk that political agendas will dominate and distort the outcome.

Looking ahead, although the global trend is strong, we believe there is little prospect of formal global agreement among governments in relation to the form of reform-driven tax measures.

56 This position was initiated at the G20 Finance Ministers' meeting, Pittsburgh 2009.

More so than with regulation – with tax there are too many national vested interests (such as in the UK with a global financial centre to maintain), and disparities in sovereign fiscal circumstances and political timetables, for a stable global consensus on the taxation of banks to materialise. Instead, we are more likely to see individual countries introducing their own regimes, such as the financial transactions tax in France.

This will increase the risk of distortion and instability in global financial markets. Apart from the somewhat divergent approaches which are likely to emerge between Western economies, we think the overall thrust of increasing taxes on banking will be stronger among Western economies as a bloc, relative to emerging markets, and that this will contribute to the general migration of banking activity and bank capital in that direction.

In terms of a future equilibrium, first, we think it will take longer for the banking tax environment to settle into one, as the current array of tax proposals – many of them quite radical – will continue doing the rounds for as long as the political recriminatory mood prevails, and for as long as governments, with their own balance sheets to think about, need to keep all revenue raising options (particularly populist ones) on the table.

Once this settles, we see a future equilibrium in which banking tax regimes generally arrive at a 'maximum sustainable tax take' point, where the ultimate bearers of bank tax – customers, investors and employees essentially – have absorbed the changes and adjusted their positions and behaviours as much as they are going to. More specifically, we envisage the following:

- The current conflation of objectives – policy shaping versus revenue raising versus restitution – will dissipate in favour of the former, which is here to stay. From now on, banks will always be singled out for 'special' tax treatment and banks need to get the facts and their point of view out to help ensure that this creates as little adverse market distortion as possible.
- The policy shaping agenda will remain, as it is presently, more active in Europe. While there is a sense in Europe that they are taking a global lead on the issues, and while there is always the possibility that other economic blocs will follow suit on specific measures as a means of raising revenue, in general, tax authorities outside Europe will likely be more cautious in introducing reforms. Among other things, they will look to the European experience as it unfolds for inspiration. How strong an advertisement that proves to be, of course, remains to be seen.
- On the specific measures, any new 'incidental' bank taxes that are introduced (such as FTT) will be hard to unwind once enacted, regardless of merit, as the political argument to tax banks less, and therefore other things more, will be hard to sustain.
- Proposals to remove or erode the tax deductibility of debt, and/or to introduce tax incentives for equity instruments, will not be adopted as they would be too hard to isolate to banks and be too disruptive to introduce across the board.
- The levy on bank liabilities – currently confined to Europe – may well propagate to other regions as, among the various measures being looked at to extract a 'fair and substantial contribution', it is the most practical and most coherent from a pure policy perspective.
- Meanwhile, we expect a big focus on tax avoidance, with public shaming being used more alongside more traditional forms of tax ruling and sanction. This will hugely complicate the tax planning process for banks, as it will no longer be a case of working to the letter of the tax code, and boards and executives will need to make much more complex judgements about the ethical and reputational aspects of their tax affairs. We expect a much more active dialogue with the tax authorities, and a great deal more transparency, to be key features of this.
- The general level of corporation tax (not specific to banking) that is trending downwards globally will settle into the 20%–25% range. Bank-specific taxes will in general be increased, or policed more effectively.

Following a key theme of this paper, we expect the overall future tax equilibrium will be one that favours (intentionally and otherwise) a greater degree of equity financing of the banking sector than hitherto.

Industry structure and business models

We noted in an earlier section that banks have already started to re-evaluate their competitive positioning and business mix. The squeeze on financial capacity (capital and funding), restrictions on proprietary trading/investments, the pressure to restore RoE performance, and various other market developments are all forcing a rethink of strategy, scale, coverage and business mix.

There is widespread consensus in the market that this will reshape industry in the following ways:

- ***Overall balance sheet shrinkage*** as the industry sells down 'non-core' assets, adjusts to underlying economic conditions and the general deleverage trend among its client base, and migrates away from balance sheet-driven banking towards a more service-oriented model[57].
- ***Capacity reduction and specialisation*** as banks respond to softening demand and funding cost pressures by cutting out excess operating costs and withdrawing from markets where they can't compete.
- The emergence of a ***'super-league' of universal banks*** with the resources and economies of scale to take up a proportion of the business given up by others, and to move aggressively into the new areas of clearing, settlement, collateral transformation/trading, and electronic trading and distribution.
- A migration of assets into the ***shadow banking*** sector, partly through acquisition and servicing of run-off portfolios, and partly to dis-intermediate (or rather re-intermediate) the capital, funding and compliance costs of bank-supplied credit.
- For those banks that availed of taxpayer capital support and now find themselves partially state-owned, the emergence of subtle or not-so-subtle pressure to deliver a ***'utility'*** style banking service.

Although we agree directionally with these trends, we would make the following additional observations:

57 The latter trend is under way already in more developed markets, driven by disintermediation rather than regulation, but is now being given further impetus by regulatory balance sheet pressures and heightened bank funding costs.

Balance sheet shrinkage

We expect that balance sheet shrinkage across the market will overshoot, just as balance sheet growth did before it. But the reason for the overshoot on the downside is not so much an over-interpretation of economic signals and an excessive tightening of risk appetite (though this might also be a factor), but because it is being driven largely by the so-called 'deleverage' agenda. This has the following sub-features:

- It is being stimulated more by the need to hit new capital, funding and leverage ratios than out of a desire to de-risk as such, and it is therefore likely to continue some way past the turnaround in underlying economic fundamentals.
- Deleverage through asset disposal/limit tightening and business rationalisation (ergo, balance sheet shrinkage) is seen as a path of lesser resistance than raising fresh equity and funding in the current environment, even though in principle it leaves value on the table (or potentially even destroys value through overzealous disposal efforts).
- The inherent procyclicality of aggressive disposal programmes will also contribute to the trend going past its equilibrium state.

Although there will be some permanent loss of volume to the sector through the intervening years of dampened economic growth, as well as some permanent migration to public debt markets and shadow banking, we expect that in the equilibrium state, capital and funding will return and bank balance sheets will readjust and grow again.

Capacity reduction and specialisation

Capacity reduction has some parallels with balance sheet shrinkage, but has a different dynamic. The overcapacity in the market currently is clearly more operational and cost-related than balance sheet-related. Although earlier on we flagged a concern that the cost reduction measures being instigated might be overly aggressive (chasing unrealistic RoE targets), the concern is as much that they are ill-directed and reactionary, i.e. directed at soft-target variable costs (people, business lines and distribution centres basically) that can deliver quick results, rather than at the harder-to-shift, more malignant, fixed-cost categories. As the lead time for addressing the latter is longer, it is unlikely that this will overshoot. However, we do see some capacity shortages arising at the product level, essentially due to systemic reactions to regulations affecting those products. For example, all the talk is of capacity rationalisation in FICC, and it seems clear that regulation, rather than underlying supply and demand conditions, is driving that trend. This is not sustainable.

Universal banking

While we believe cost dynamics – and scale efficiencies in particular – will dictate the outcome of rationalisation in high volume, commoditised product markets (favouring the 'super-league' banks), elsewhere the rationalisation will be more on service quality, relationships and product specialisms.

We do not expect the 'super-league' to be a homogenous group as there are several dimensions on which a future world might support a small number of genuine universal banks, including geographic, product/service coverage, and scale/execution capability. The key question is, by virtue of what will banks that aspire to this elite survive in the new world? Or, to put it another way, what will insulate them from the need that others will have to specialise, shrink down to a core franchise, optimise their balance sheets, etc.?

The classic answers to these questions talk about things like pricing power, the product and geographic coverage needs of similarly universal clients, operational economies of scale, product synergies, a legacy of established franchises and infrastructures in key product and regional portfolios, and risk diversification (the weakest of this lot). But in the current environment the challenges for aspirants will be intense, with stiff competition from their peers and niche specialists in an oversupplied market, and compounded by ongoing regulatory headwinds as the 'too big to fail' issue rumbles on. Although aspects of industry reform – derivatives trading and clearing in particular – will be a boon to the so-called 'flow monsters', the regulatory headwinds for universal banks will otherwise be formidable, particularly the additional capital buffers and other regulatory burdens for banks with global systemically important financial institution (G-SIFI) status[58].

Apart from regulation, there is also a more fundamental question about diseconomies emanating from the universal bank model. Traditionally, this would manifest as administrative overhead, lack of focus and lack of agility. These are all valid, but they have been compounded lately by deeper concerns about control and culture, lapses in which are particularly damaging to a universal bank franchise.

The banks that make it in the super-league will be those that (i) have the strongest legacies coming out of the crisis (infrastructure, balance sheet, reputation) – crucial defensive assets if they are already in place, but arguably too costly to build to a 'universal bank' specification if not; (ii) succeed through firm leadership and control in sustaining that position; and/or (iii) are best positioned with regard to global macroeconomic trends in markets, investment and trade flows.

Shadow banking

Although deleverage (meaning non-core asset sales) and regulatory arbitrage will induce a flow into shadow banking, the pace and ultimate extent of this will be less than many expect, for the following reasons:

- The pace of deleverage itself has been is a lot slower than some might have hoped, due largely to the market glut that has arisen, together with deep investor anxiety about asset quality, data quality, and the costs of ongoing asset management and servicing obligations.
- This slow down in the pace of deleverage will allow time for other adjustment factors to catch up, such as natural asset attrition (or conversely rehabilitation back into 'core' portfolios); the recovery of banks' own balance sheets; and recalibration of investor expectations, allowing them scope to pursue more value-preserving workout and restructuring avenues than outright sale.
- The window of regulatory arbitrage between banking and shadow banking sectors will gradually narrow and thereby stem the flow.

As a consequence of these factors, we expect to see a greater use of non-core structures, increasingly in the form of legal vehicles (as opposed to management structures) so as to facilitate inbound equity participation as opposed to outbound asset sales, and potentially as prominent and permanent features of the corporate landscape. While our central view is that these will remain on individual bank balance sheets (and will possibly be replicated across multiple asset classes, tailored to third-party investor appetites), some may also float off either individually or as JVs etc., or be floated out of government sponsored schemes such as NAMA in Ireland.

58 Accepting that, at 29 per the FSB G-SIFI list as of November 2011, this is a much larger group than the ten or so we expect to see in the super-league. The current leader-board would probably comprise three Americans, four Europeans, and two global investment banks (also American). Interestingly the current G-SIFI list has only one emerging markets bank (Bank of China). Given global economic trends it would be strange if that number didn't grow, and potentially result in an incumbent or two being knocked off the board.

Utility banking

As regards utility banking there is a presumption that this translates to low returns and that this will be an adverse development for shareholders. However:

- To the extent it merely reflects a shift in risk profile this is not necessarily a bad thing – witness the long run performance and survival record of banks and building societies that have stuck to a basic business model and done it well.
- To the extent that it reflects other public policy motivations involving interventions on pricing, lending, service provision, industrial relations, etc. as a means of nursing the wider economy, at some point the focus will shift to returning banks to the private sector, presumably in a state that maximises the sale price. We expect this shift of focus to be rapid when it comes, and to pre-date actual/planned sale timeframes by some years.

Lastly, there remains the question of where the innovation and investment will come from to cater to a new world order of shifting demographics, new trade patterns, mounting environmental and natural resource pressures, and transformed business models and commercial practices across the wider economy. Will it come from the remaining universal banks with the muscle and investment capacity to commit to the task; or the newly refocused product/regional specialists with the innovative spirit and agility to seize the opportunities; or a resurgent domestic credit sector[59] picking up on local demographics in high growth emerging markets; or entirely new entrants[60] spotting a gap in the market and moving in?

We return to this question at the product level briefly in the next section, but in terms of industry structure and business models, we believe the right answer at this point has to be 'all of the above' – the entire industry will need to adapt. After all, with these forces in the background, and rapidly coming to the foreground, it is a wonder that banks are putting innovation and investment in the new, more sustainable, resource-efficient economy so low down the list. To sideline such issues as slow burn incubator opportunities, or to park them in the CSR department separate from mainstream strategy, is to completely miss the point: these are issues of risk management, new markets and products, and capital vallocation. They are central to corporate strategy, and as such there is something very unsatisfying about discussing a new equilibrium simply in terms of who's who in the FICC/equities/FX/ mortgages/credit cards, etc. zoo.

Product offerings and pricing

This is where the market will be most acutely disrupted and, we think, where a new equilibrium will take longest to become established.

Banks' trading, sales, structuring and CVA desks are working hard to drive product and pricing responses to the wave of change impacting the market. Examples include:

- Embedding charges for counterparty risk and funding costs much more closely into products, and setting up internal treasury, trading and transfer pricing mechanisms to support this at the trade and counterparty level.
- Recalibrating pricing models to account for amended regulatory capital and liquidity requirements (e.g. a 25-year swap clearly needs to be priced in anticipation of its financing burden under Basel III, at least).
- Focusing much more heavily on individual client and product profitability and revisiting the cross-subsidisation patterns (e.g. swap revenues cross-subsiding cheaper loans for corporates) that have prevailed hitherto.
- Restructuring products to make them more capital or funding efficient, e.g. reducing duration by shortening tenors, introducing mandatory break clauses into long-dated rates trades, using more extinguishers with embedded Credit Default Swaps, etc.

In our view, this is only the start of what's to come, as industry reforms and some of the industry structure and business model changes discussed in the previous section play out through product markets and pricing.

On pricing, we see two key sources of disruption. The first, as we have already discussed, is the shifting foundations of capital, funding and liquidity costs. We think this will stabilise progressively over two to three years as the regulatory landscape settles, banks adapt themselves to new funding arrangements, and wholesale capital and funding markets establish their own equilibrium. Over this timeframe, we expect individual banks to revisit their pricing models (we suggest along the lines of the systemic and idiosyncratic cost components we referred to in an earlier section) and to develop pricing strategies accordingly, in relation to their target markets.

In parallel with this, but extending over a substantially longer period (five years plus), we believe the market capacity adjustments; the shifts in the competitive landscape; and potentially a resurgence of demand as global economic growth resumes, will all have a substantial bearing on general price levels.

59 Perhaps grown out of the credit union and micro-finance movements.

60 These could either be start-ups, or imposters from other sectors such as insurance, shadow banking or even industrial/service firms that are already on the case in other respects.

The future commercial landscape will feature products and services that have not really existed before, but for which evolving global business, economic, regulatory, demographic and environmental conditions will generate new demand and opportunities for innovation.

The adjustment will not be smooth, however: the fact that capacity reduction is being driven indirectly through the so-called deleverage agenda, rather than by a more fundamental assessment of future market demand, suggests that the industry could find itself short of capacity just when global economic growth is starting to pick up. Also, the fact that the areas being targeted for rationalisation are a function of regulation (RWA treatment, essentially), rather than underlying market demand, means that inter-product price and margin distortions are highly likely to arise.

We expect these forces to echo through the system for an extended period of time before economic fundamentals eventually dominate and an equilibrium price pattern is established. By the time that happens, we expect inter-product price distortions to have dissipated more or less entirely (so, back to pre crisis relativities) and absolute price levels to have settled only marginally higher (say 100–125bps on funded products; 25–50bps on derivatives) than the pre-boom/pre crisis levels (reflecting structurally higher funding and liquidity costs, but structurally lower operating costs).

As part of this, we would expect banks to have identified and addressed any idiosyncratic aspects of their business models that give rise to adverse pricing disparities (relating to funding structure, portfolio composition, or operating model) and, from this, a 'normal' degree of market price consistency will return. Ultimately, we see a severing of the link between capital and pricing, and the emergence of a new 'market-consistent' methodology based on intrinsic, systemic product risk, and modified at institution level only for the operating/service costs arising – the earlier analysis on bank asset beta trends is instructive in this regard.

In terms of actual product offerings, we expect the equilibrium landscape to reflect the following:

1. Products that are essentially unaffected or only marginally affected by the latest regulatory developments, such as corporate advisory, fixed income and equity origination sales and trading, spot FX, retail and business lending, transaction and custodial services, and exchange-traded products.

2. Products that have gone away and won't be missed, such as fund derivatives, constant proportion portfolio insurance (CPPI) structures, synthetic collateralised debt obligations , power reverse dual currency swaps (PRDCs) and some credit index trades that are used to hedge these products.

3. Products that have been rendered unattractive on the supply side, but for which there remains strong underlying customer demand. We expect these will be either:

   - re-engineered with things like new collateral and clearing arrangements, break clauses and embedded credit instruments, or offered in substantially different form to mitigate their RWA impact
   - offered through non-bank channels (in similar or dissimilar form), or
   - offered more or less in their current form but at a higher market price.

   This 'catch-all' category includes a broad spectrum of longer dated structured and derivative products. At the 'vanilla' end of the spectrum – FX and interest rate swaps and options – we expect the market to polarise between exchange traded/centrally cleared and over the counter (OTC) segments. Although the thrust of regulation is designed to favour the former, we believe that a cohort of relationship-oriented banks will continue supplying products to corporate and financial clients that require more bespoke product structures. Despite being punitively priced for a time, we believe that supply and demand conditions for a healthy resumption of this business will return. Collateral arrangements will feature much more prominently however, which will also spawn a sizeable market for collateral financing and transformation products. At the more structured end of the

spectrum, we envisage banks seeking to restructure their offers to minimise capital and funding burdens, but at the same time a trend towards 'shadow banking' and/or disintermediation filling the void – essentially connecting long-dated issuers more directly with liability-driven investors.

4 Products and services that have not really existed before, but for which evolving global business, economic, regulatory, demographic and environmental conditions will generate new demand and opportunities for innovation. Again we see a number of subcategories emerging:

- ***Regulation-driven*** – essentially driven by banks' own appetites to structure their portfolios by either trading among themselves in ways that mitigate their RWA burdens (CVA hedging structures, and correlation trades around central counterparty exposure, being the obvious examples) or by creating new asset classes (such as CVA securities) for distribution to yield-hungry asset managers.
- ***Investor-driven*** – products designed to tap into the goals and risk appetites of institutional investors, such as longevity trades (following an increasing number of deals that have been concluded in recent years with growing ticket sizes), property derivatives and innovative forms of credit protection such as instruments with payouts denominated in 'crisis-proof' commodities.
- ***Emerging market-driven*** – based on the shifting pattern of global investment and trade flows (with and particularly between what we term SAAME nations[61]); the general opening up of emerging financial markets (such as international and domestic Chinese-listed derivatives where regulators are gradually opening up the market); and shifting customer demographics and demand profiles in high population/high-growth economies at the domestic level (micro-finance; venture finance; SME lending; inbound investment financing).
- ***Macro commodity and environment-driven*** – products designed to help create, clear and hedge the market for an increasingly scarce, contested and volatile resource base of precious commodities such as oil, certain metals, water, forestry, agriculture, food and other natural resources. The growth of public–private financing mechanisms, using risk transfer and credit enhancement, will also be a key feature as fiscally constrained governments confront the upfront capital costs of dealing with climate change, water shortages and resource scarcity. Market mechanisms, such as we have seen mainly in Europe for carbon credits, are also likely to be a key aspect, given their efficiency over taxes and subsidies, and could expand beyond carbon to other environmental areas, as we have seen in the US for example.

But until this equilibrium position is reached (five years plus in our view) we think the product and price picture will involve:

- an extended period of market illiquidity and wide bid–offer spreads as banks and customers figure out what's what
- due to uncertainty and opacity, a heightened risk of adverse selection, but equally, what we have termed 'beneficial selection'
- polarisation of the market (in terms of provider, product and client) between scale/volume/low margin, and bespoke/specialist/higher margin. The latter will suffer initially (overreaction, and snuffing out of underlying market demand), but will come back as (i) the intrinsic market demand for product resurfaces and (ii) banks and investors return with the capacity, pricing ability and product offers to meet that demand on attractive terms
- reflecting the heightened complexity and commercial sensitivity of the pricing conundrum, a renewed emphasis on the internal governance of pricing, across the full value chain (raising resources; optimising allocation; transfer pricing to front office; and price setting in the market) to ensure there is transparency and also appropriate allocation of decision rights to support optimal performance and accountability, and
- a possible need for supplementary controls in respect of price verification.

61 In South America, Africa, Asia and the Middle East.

We do not believe banks should become honest plodders again – through innovation and agility they can take up the challenges and opportunities of a new world in a bold, positive, even exciting way.

Conduct and reputation

So far we have focused mainly on the financial and fiscal aspects of industry reform. But there is arguably something more fundamental going on: let's call it a moral dimension which, though typically not spelled out, has arguably become the true driving force behind industry reform.

What do we mean by a moral dimension? In an earlier section we referred to a 'political/regulatory/fiscal complex', intent on reforming the banking industry, and prepared to keep on pulling all of its levers until it is satisfied that the job is done. This complex is clearly acting on behalf of a wider society which feels it has been badly burned – and not a little betrayed – by the banking crisis, and which is now looking for remedies if not outright revenge[62]. Following this logic, the banking industry will continue to suffer a torrent of regulatory intervention; will continue to face direct public scrutiny and pressure over all manner of things (investment policy, selling practices, environmental standards, remuneration); will continue to pay a premium for funding; and will continue to underperform in equity markets … until it is judged by wider society to have been fully and permanently 'reformed'.

We have touched on this issue at various points through earlier sections of this paper: In section I (Current landscape) we asserted that the thrust of the reforms is to try and ensure that banks are better capitalised, more liquid, more securely funded and *generally better behaved than before*. In the same section we commented on a renewed focus on corporate culture, but lamented the fact that the current intensity of new regulation is deflecting attention and investment away from certain investments and transformations, such as sustainability, that are crucial to long term performance. In section II (The new economics of banking) we suggested that the difficulty in raising fresh capital has more to do with a crisis in investor confidence than RoE dilution per se. Later in that section we distinguished between portfolio optimisation and strategy optimisation by reference (among other things) to the coherence and integrity of banks' strategies including with respect to the wider economic, environmental and societal ramifications of those strategies.

Although this might seem like a disparate and unconnected set of issues, we think that the connections are strong enough, and the signals are clear enough, to believe that a new equilibrium in the realm of conduct is in prospect. We believe this new equilibrium will have as a core foundation the principle that doing the right thing by your stakeholders is not only a pre-condition, but is also a means to doing the best thing by your shareholders. There is nothing new in this principle of enlightened self-interest: other industries (and indeed some banks) have travelled this route before, notably the retail and consumer goods, food and beverage sectors, where customer attitudes are key, followed by energy and mining where the concern is perhaps more to reassure investors, lobby groups, local communities and governments. Of course, there have been some casualties among the early pioneers[63], but in the main we believe that the trend is set and will strengthen as the global economy adjusts to the realities of balancing growth with resource constraints and avoiding dangerous environmental impacts such as climate change and water scarcity. Banks that not only adjust their portfolios but also participate in financing this transition will gain their reputations as being part of the new economy, just as those that fail to adapt will see their reputations tarnished.

Following this theme, we expect that this enlightened self-interest will induce banks as a first step to focus on restoring the confidence of all of their stakeholders, as a means to renew their licence to innovate and grow, to raise finance, to take risk, to price commercially, to generate profits and to pay dividends. The hygiene factors of transparency, integrity, resilience and control are the key ingredients here, we believe. But to be clear, we're not advocating that banks should all become honest plodders again. Through innovation and agility in new markets, new economic models, new products, new ways of tackling some of the world's toughest economic challenges, we believe they can (and with permission, will) take up this challenge and

62 And wider society is not just looking for remedies through regulation, but is also exerting direct pressure through public protest over a range of issues including, most prominently, executive pay and bonuses.

63 Variously, victims of misfortune, poor execution and the mistaken view that delivering on the promise is optional.

opportunity in a bold, positive, even exciting way[64]. Accordingly, in terms of stakeholder relations, while the focus has been on regulators so far, over time we expect this focus to pan across from people who grant the licence (politicians and regulators[65]), to people who provide the resources (investors), people who provide the business (customers), people who are also engaged in facilitating 'new economy' projects (professional services, local authorities, industry associations, other commercial businesses) and, last but not least, people who provide the talent and expertise to make it all happen (executives and staff).

There is a crucial ingredient for this to happen, and that is leadership. Not so much of the swashbuckling type that created the mess in the first place, but one characterised by a vision, an ability to inspire, influence and drill others, and so to bring about a comprehensive and lasting shift in culture. A recent article in the Financial Times ridiculed the notion that culture holds the key – arguing that when people start to use the word 'culture', it is a sure sign they are running out of practical ideas[66]! There may be something in this – for sure it is a necessary rather than sufficient condition for success – but anyone who seriously disputes that culture is a crucial and tractable instrument of leadership in any large organisation – and particularly now in banking – or who believes that it is possible to transform the corporate vision, conduct and reputation of a bank without tackling the culture within it, through effective leadership, surely hasn't been watching.

***

Since it is bankers we're talking about, we can't conclude this section without a comment on bonuses.

We do believe that the time will come when banking executives and staff are again viewed as deserving recipients of performance awards, perhaps no more than in other commercially driven organisations, but no less either. The key shift we envisage (actually the continuation of a trend already started) is that the basis of incentivisation and reward will broaden out from being dominated by short-term financial performance to something more balanced. As part of this, we also believe that the principle of enlightened self-interest discussed above will gradually permeate through bank cultures and ultimately into performance objectives and evaluation criteria.

This latter development – of recalibrating performance scorecards – may be a more enduring and satisfactory approach to aligning incentives with desired behaviours[67] than the recent experiments with things like complex risk-adjusted performance metrics, equity participation, bonus clawbacks and the like. For one thing, as a recent PwC and London School of Economics study identified[68], overly complex structures are wasteful in terms of cost versus impact on motivation and performance. And secondly, the chronic issue with bonus structures is their asymmetry and hence their inducement to risk-taking and other sources of volatility such as leverage[69].

Risk-adjusted performance metrics dampen rather than correct this asymmetry. Clawbacks are meant to tackle the asymmetry. But even as a package they have serious limitations in terms of what they can capture (bearing in mind that the P&L consequences of risk and reputation can take a long time to materialise, and can be difficult to attribute when they do). So, recognising that financially driven bonus structures and equity participation can both encourage disproportionate risk-taking and leverage, in a future equilibrium we see these being replaced or at least tempered with more traditional behaviourally driven performance incentives, involving balanced scorecards, salary reviews, promotions and simple cash bonuses[70].

64 Some banks are better placed than others in this respect. Banks that already have a presence in key emerging markets, that have invested in 'new economy' products and technologies, and that have come through the crisis with their balance sheets and reputations more or less intact, will fare best. Whereas Western banks that have required taxpayer assistance (and are consequently pressurised to retract into their traditional domestic markets), and those that are capital constrained (and therefore will find it harder to justify investments with uncertain/longer term pay-offs) will fare worst.

65 Politicians and regulators, by the way, also have a key role to play in this transformation. First, by not being too much focused on narrow short-term domestic interests (c.f. the issue referenced above about pressurising banks to retract into traditional domestic markets), and secondly by not being so zealous in rolling out new and constrictive regulation as to stifle this activity. While the global economy clearly needs a stable banking system, it also needs a vibrant banking system.

66 "Woodrow Wilson knew how to beard behemoths" – Financial Times, 5 July 2012.

67 Not just in respect of reputation/conduct towards external stakeholders, but also with reference to other desired behaviours on teamwork, risk management, compliance, etc.

68 'Making executive pay work: The psychology of incentives' – PwC study in conjunction with the London School of Economics and Political Science 2012.

69 The asymmetric pay-off (unlimited upside; limited downside) is akin to a financial option on a risky asset. Like the option, its value is greater the more volatile the underlying asset.

70 In this eventuality, a lot will ride on the design of the scorecards themselves and the integrity, sophistication and completeness of the processes for populating them. In other words, this is where the sophistication and complexity should be – not in the structuring of the awards that they drive.

IV – Conclusion

While it is impossible to capture the full implications of the foregoing, for all sectors, and for all scenarios in what is a highly volatile, economic and commercial environment, we believe that a number of clear themes emerge.

For sure we are entering a phase of capacity reduction and specialisation, but we believe industry reform is the catalyst for this and not the cause. The true cause has to do with what the industry in general, and some individual banks, allowed themselves to become during the boom years: overstretched, overgeared, too many things to too many people and, in many cases, without the requisite systems, controls, experience and culture to sustain themselves. The reversal of this, while perhaps painful in the short term, now seems an entirely natural and even desirable development. If the bad news is that there is still a huge legacy of problems to work through, the good news is that the fundamental customer need for banking products and services has not gone away, and the opportunity in the long run to service that need profitably has not gone away either. We simply do not accept that industry reform has meant that banking in general, and structured and derivative products in particular, have become borderline if not outright uneconomic. While there are costs, these are largely frictional and transitional. Those that aren't will be absorbed one way or another by the market. As with any change, there will be relative winners and losers, and the winners will be those that manage through this transition most effectively, maybe pick up some cheap assets and market share on the way, and emerge in the new equilibrium with their franchises and balance sheets in best shape. In a nutshell, there is everything to play for.

Against this backdrop, the important thing we believe is for banks to develop a clear vision of the future equilibrium and their place in it, and to tailor their strategies, business models, and customer and investor propositions accordingly. Target customers, niche product offers, relative operational and distributional strengths and brand integrity should lie at the heart of this.

But perhaps more importantly still, since this vision will not be accurate – the landscape will keep changing, and optimal business responses will depend as much on the responses of competitors as on what transpires at a macro level – banks should map out a number of scenarios and develop detailed actionable strategies in relation to each one. They should keep on refreshing this picture as often as they can. In the jargon, they should invest heavily in creating and managing 'real options', because underlying volatility (in terms of markets, economies, regulation, etc.) puts a very substantial premium on optionality.

If this is the name of the game, qualifying to play has to be a top priority. And we're not just talking about regulatory approval here: in order for banks to thrive in the new equilibrium, we believe they will need to renew their licences in a much broader sense – in the eyes of regulators of course, but also investors, rating agencies, customers, policymakers and, ultimately, the public at large. We believe banks need to mobilise on all of these fronts, in a way that caters to the respective interests of each of these constituencies, but which is underpinned by a core strategic narrative that is clear and compelling.

If we were to single out three stakeholder groups for particular attention, it would be ***investors***, the ***wider public*** and ***customers.***

In order for banks to thrive in the new equilibrium, we believe they will need to renew their licences in a much broader sense – in the eyes of regulators of course, but also investors, rating agencies, customers, policymakers and, ultimately, the public at large.

Investors because it is they who will need convincing that the new equilibrium of leverage, cost of equity and return on equity is both inevitable and that the move from the old to the new satisfies the 'pareto' condition of not leaving them worse off in value terms (probably better). It is curious that they have been left largely out of the debate so far and not been as actively engaged or responded to by bank management as other stakeholders have. They are principals in this and it is time to bring them in. The ***wider public*** because, as much as anything else, it is the public attitude that is fuelling the political and regulatory agenda. It is therefore hard to see how banks can resume control of their destinies, to pursue growth and investment strategies free of supervisory intervention and resistance, without first restoring the confidence of the societies they serve and for whom policymakers and regulators act as proxy. And finally ***customers*** because, while investor and public endorsements are crucial thresholds into the new equilibrium, it is only customer endorsement, through the enthusiastic take-up of bank products and services, which will sustain them in that equilibrium.

In the short term, we think it is crucial that banks recalibrate their economic models, performance targets and pricing formulas to the new economic realities, and clearly distinguish between the 'economic' and 'idiosyncratic' cost factors as described in earlier sections.

When it comes to portfolio optimisation, we believe the first priority (though with a longish lead time) should be to alleviate the constraints that are causing the need to optimise in the first place, for these cause value to be left on the table. Meanwhile, recognising the reality of constraints in the short term, we believe it is crucial that the optimisation criteria (most particularly the economic performance characteristics of assets and business lines) are not distorted by regulatory capital formulations and also that they take full account of longer term strategic and commercial considerations. Once again, the value of optionality should feature strongly in this.

To conclude, we think a radical rethink of strategy and decision-making is called for. This rethink needs to be framed by a strong sense of a new equilibrium; the economic relationships (macro and micro) that will govern it; the dynamics that will bring it about; and the transitional states it will go through. We hope through this paper to have triggered some thoughts on all of these fronts. Of course, for individual banks it needs to be realistic about the nature and extent of the legacy they need to deal with (overstretched business models, inflated costs, underperforming assets, poor systems, tarnished reputations, etc.), but we believe banks should address these issues with a mindset that there is a future in which they can prosper, and in a way that clearly and demonstrably takes them in that direction.

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Appendix

Sources and calculations of cost of equity assumptions

This appendix expands upon the table set out in Part 1 and incorporates the analysis presented in Part 2, Section II – The new economics of banking. Specifically, it describes the calculations and assumptions that sit behind the leverage-adjusted view of the cost of equity, and shows how the changes in sector leverage, and underlying changes in bank asset beta, have combined and will continue to drive the cost of equity in the new equilibrium.

Risk-free rate: The risk free rate in each year is based on the 1-year average of 10-year US Treasuries.

Equity market risk premium (EMRP): We use an EMRP based on the in-house PwC view in each year. These estimates are based on a range of sources including third-party ex-ante and ex-post estimates, surveys of practitioners and academics and other empirical and market implied methods used for measuring the EMRP. Prior to the crisis, this was set at 4.5% but was increased during the financial crisis to 5.0% as a consequence of increased equity market volatility. More recently the impact of Quantitative Easing and flight to quality effects have reduced Government bond rates in the UK and US and we have therefore widened the EMRP assumption to 6% to leave the overall market-wide cost of equity little changed. For a fuller discussion on techniques for estimating the EMRP, please refer to our recent report for the 2012 FSA review of projection rates[71].

		Pre-boom (2003)	Pre crisis (2007)	Crisis fallout (2011)	New equilibrium
Leverage		**23x**	**31x**	**19x**	**<20x**
Risk-free rate		4.0%	4.6%	2.8%	4.1%
Equity market risk preium (EMRP)		4.5%	4.5%	6.0%	5.0%
Asset beta		0.052	0.046	0.067	0.060
Equity beta	Market assumption	1.1	1.1	1.5	–
	Leverage adjusted	1.1	1.3	1.2	0.8
Cost of equity (CoE)	**Market assumption**	**8.9%**	**9.7%**	**11.9%**	**–**
	Leverage adjusted	**9.1%**	**10.4%**	**9.8%**	**8-10%**
Return on equity (RoE)		**12%**	**20%**	**7%**	**9-11%**
Economic spread (RoE-CoE)	**Market assumption**	**3%**	**10%**	**-5%**	**–**
	Leverage adjusted	**3%**	**9%**	**-3%**	**1.2%**

Beta: Equity betas for the banks in our comparator group[72] are estimated using five years of monthly price data and "Blume" adjusted. This is an industry standard approach and we therefore take these to represent market assumptions. They also correspond with anecdotal evidence. For the leverage-adjusted equity betas we un-lever observed equity betas using a five year average of each bank's leverage, where leverage is defined as total assets to total book equity. These un-levered, or asset, betas are then re-levered using the leverage ratio in the specific year to calculate a leverage-adjusted equity beta. We use the Harris-Pringle beta leverage formula.

Return on equity (RoE): The RoE is obtained from external sources. Historic RoE is from Thompson Reuters DataStream and analyst forecasts for RoE are sourced from S&P Capital IQ. We should point out that the RoE forecasts were taken before the latest string of reputational setbacks (Libor, AML, Sanctions etc.) so there are some risks to these projections.

71 http://www.fsa.gov.uk/static/pubs/other/projection-rates12.pdf

72 The comparator group used in our analysis is: HSBC, Barclays, Lloyds Banking Group, Standard Chartered, The Royal Bank of Scotland, Societe Generale, Deutsche Bank, Bank of America, Citigroup, Wells Fargo, UBS, Credit Suisse, BNP Paribas, UniCredit, Morgan Stanley and Goldman Sachs.

For more information on this publication Banking industry reform: A new equilibrium, or other PwC financial services programmes, please contact Áine Bryn, Global Financial Services Marketing Leader,on +44 207 212 8839, or aine.bryn@uk.pwc.com.

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