

## Bank Strategy I: Formulating Strategy and Direction

The global financial crisis of 2007–2009 had the effect of making all participants in the banking industry, from regulators, central banks and governments to bank boards, directors and trade associations, undertake a fundamental review of the principles of banking. Issues such as capital and liquidity management, and systemic risk, became the subject of renewed focus. In practical terms, legislators realised that they needed to address the issue of the “too-big-to-fail” bank; this issue remains unresolved, and ultimately the realisation will dawn that the global economy simply cannot withstand certain financial institutions failing. But instead of this being taken to mean that banks can operate perpetually in an environment in which their profits are privatised and losses are socialised, it should be apparent that these institutions will have to be run on principles that ensure that they survive throughout the business cycle. This will call for more enlightened strategy and management, as well as an inherent conservatism. If bankers wish to run a proprietary trading outfit, or wish to maximise market share and return on capital, or outperform their peers, then they should go and work at a hedge fund. Those who manage a retail deposit-taking institution will need to remain aware of the responsibilities they bear.

From the point of view of bank practitioners, the most important task is to address the issues of capital, liquidity and risk management, and work them into a coherent strategy that is designed to produce sustainable returns over the business cycle. In this chapter we introduce these topics as part of a wider discussion on formulating bank strategy, and consider how this strategy should be worked around the changed requirements of the post-crisis age.

## **THE SUSTAINABLE BANK BUSINESS MODEL**

The basic bank business model has remained unchanged since banks were first introduced in modern society. Of course, as it is as much an art as a science, the model parameters themselves can be set to suit the specific strategy of the individual bank, depending on whether the strategy operates at a higher or lower risk-reward profile. But the basic model is identical across all banks. In essence, banking involves taking risks, and then applying effective management of that risk. This risk can be categorised as follows:

- managing the bank's capital;
- managing the liquidity mismatch: a fundamental ingredient of banking is “maturity transformation”, the recognition that loans (assets) generally have a longer tenor than deposits (liabilities).

If we wished to summarise the basic ingredients of the historical bank model, we might describe the following terms:

- leverage: a small capital base is levered into an asset pool that can be 10, 20, 30 times greater, or even higher;
- the “gap”: essentially funding short to lend long. This is a function of the conventional positively sloping yield curve, and dictated by the recognition of the asset–liability mismatch noted above;
- liquidity: an assumption that a bank will always be able to roll over funding as it falls due;
- risk management: an understanding of credit or default risk.

These fundamentals remain unchanged. The critical issue for bank management, however, is that some of the assumptions behind the application of these fundamentals *have* changed, as demonstrated by the events of 2007–2009. The changed landscape in the wake of the crisis has resulted in some hitherto “safe” or profitable business lines being viewed as risky. Although more favourable conditions for banking will return in due course, for the foreseeable future the challenge for banks will be to set their strategy only after first arriving at a true and full understanding of economic conditions as they exist today. The first subject for discussion is to consider what a realistic, sustainable return on capital target level should be, and that it is commensurate to the level of risk aversion desired by the bank's Board. The Board should also consider the bank's capital availability, and what sustained amount of business this would realistically support. These two issues need to be addressed before the remainder of the bank's strategy can be considered.

## **Bank Strategy**

The most important function that a bank Board can undertake is to set the bank's strategy. This is not as obvious as it sounds. It would be surprising to a layperson to observe just how often banks, both large and small, sophisticated or plain vanilla, have no real articulated strategy, but it is a fact. It is vital that banks put in place a coherent, articulated strategy in place that sets the tone for the entire business, from the top down.

In the first instance the Board must take into account the current regulatory environment. This includes, of course, the requirements of the Basel III rules, as well as the requirements of the national regulator. A bank cannot formulate strategy without a clear and genuine understanding of the environment in which it operates. Once this is achieved, before proceeding with a formal strategy, the bank needs to determine what markets it wishes to operate in, what products it sells and what class of customer it wishes to serve. All its individual business lines should be set up to operate within the main strategy, having identified the markets and customers. In other words, all the business lines exist as ingredients of the strategy. If a business line is not a fit with the strategy, it should be divested; equally, if a bank wishes to enter into a new business, then the strategy should be reviewed and realigned if it does not naturally suggest the new business. Again, this sounds obvious, but there are many cases of banks entering piecemeal into different businesses, or maintaining business lines that have been inherited through previous growth or acquisition, that do not fit the bank's culture.

In other words, a bank cannot afford to operate by simply meandering along, noting its peer group market share and RoE, and making up strategy as it goes along. This approach, which it would seem is what many banks do indeed follow, however inadvertently, results in a senior management and Board that is not fully aware of what the bank's liabilities and risk exposures are.

The first task then is to understand one's operating environment. It is then to incorporate a specific target market and product suite as the basis of its strategy. Concurrent with this, the bank must set its RoE target, which drives much of its culture and ethos. It is important to get this part of the process right, and at the start. Prior to the crash, it was common for banks to seek to increase revenue by adding to their risk exposure. Assets were added to the balance sheet or higher risk assets were taken on. In the bull market environment of 2001–2007, and allied to low funding costs as a result of low base interest rates, this resulted in ever higher RoE figures, to the point where it was common for even "Tier 2" banks to target levels of 22%–25% RoE in their business appraisal. This process was of course not tenable in the long run.

The second task, following immediately from the first, is to set a realistic RoE target, or better still, RoA target, that is sustainable over the entire business cycle. This cannot be done without educating board directors as well as shareholders, who must appreciate the new, lower RoE targets. Managing expectations will contribute to a more dispassionate review of strategy. As important, risk-adjusted RoE should also be set at a realistic level and not be allowed to increase. Hence, the Board and shareholders must accept that lower RoE levels will become the standard. This should also be allied to lower leverage levels and higher capital ratios.

Also, concurrently with the above process, a bank must ask itself where its strength lies, and formulate its strategy around that. In other words, it is important to focus on core competencies. Again, the experience of the crash has served to demonstrate that many banks found themselves with risk exposures they did not understand. This may have been simply the holding of assets (such as structured finance securities) whose credit exposures, valuation and secondary market liquidity they did not appreciate, or embarking on investment strategies such as negative basis trading without being aware of all the risk measurement parameters of such strategies.<sup>1</sup> To properly implement a coherent, articulate strategy, a bank needs to be aware of exactly what it does and does not have an expertise for undertaking, and not operate in products or markets in which it has no genuine knowledge base.

Allied to an understanding of core competence is a review of core and non-core assets. Bank strategy is not a static process or document, but rather a dynamic process. Regular reviews of the balance sheet need to be undertaken to identify any non-core assets, which can then be assessed to determine whether they remain compatible with the strategy. If they are not, then a realistic disposal process should be drawn up. In the long run, this is connected with an understanding of where the bank's real strengths lie. Long-term core assets may well differ from core assets, but this needs

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1 Without naming the banks, the author is aware of institutions that purchased ABS and CDO securities under a belief that the senior tranche, rated AAA, would not be downgraded even if there were a default in the underlying asset pool, presumably because the junior note(s) would absorb the losses. Of course, this loss of subordination does erode the initial rating of the senior note, with a consequent markdown in market value. Another institution, according to anecdotal evidence received by the author in an email from one of its employees, entered into negative basis trades without any consideration for the funding cost of the trade package. This resulted in losses irrespective of the performance of the basis. In this case, it is clear that the trading desks in question entered into a relatively sophisticated trading strategy without being sufficiently aware of its technical and risk implications.

to be articulated explicitly. The decision on whether an asset is core or non-core, or core or long-term core, is a function of the bank's overall strategy of what its expertise is and what markets and customers it wishes to service. This will be embedded in the strategy and the bank's business model. This drives the choice of products and business lines that the bank feels it can add value in.

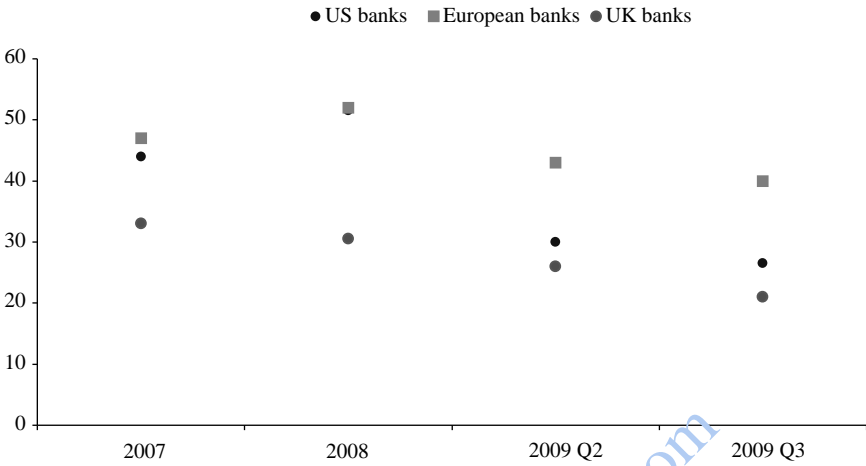
## Leverage Ratios

Elsewhere we discuss bank capital structure. There is no doubt that the new model for banking assumes higher capital ratios and buffers for all banks in the longer term. The higher level of capital will be substantial in some cases, because under the Basel III rules trading businesses will be required to hold up to three times as much capital as vanilla banking business. Basel III also imposes a limit on the leverage ratio, and indeed some national regulators already are doing so; this follows the example of the regulators in Canada and Australia, two jurisdictions that had imposed leverage ratio limits and which, not coincidentally, did not suffer a bank crash in 2008.

A leverage ratio is the total value of a bank's assets relative to its equity capital. The financial crash highlighted the extent of risk taking by certain banks when measured using leverage ratios. As a measure of the ratio of assets to owner's equity, they are an explicit indication of risk exposure. Lehman Brothers leverage ratio increased from approximately 24:1 in 2003 to over 31:1 by 2007. Such aggressive asset growth generated tremendous profits during the boom years, but exposed the bank to such an extent that even a 3% or 4% decline in the value of its assets would eliminate completely its equity. This duly happened.

This is why Basel III has introduced a limit on leverage ratios as an added safety measure, alongside minimum capital requirements. In the aftermath of the crash it is accepted that bank leverage ratios have to adjust downwards, and the prevailing sentiment today dictates that boards should be wary of a business model that ramps up the ratio to an excessive level. Figure 16.1 shows levels during 2007–2009; prudent management suggests average levels will be much lower than these figures over the next 10–15 years. This is not only business best-practice, but will also contribute to greater systemic stability.

Bank management will have to adjust to a concept of an explicit leverage ratio limit, the rationale for which is clear. The experience of the last and previous crises has shown that during a period of upside growth, banks' risk models tend to underestimate their exposure. This has two consequences: first, the bank takes on ever greater risk, as it targets greater revenue and profit during a bull market, and second the amount of capital

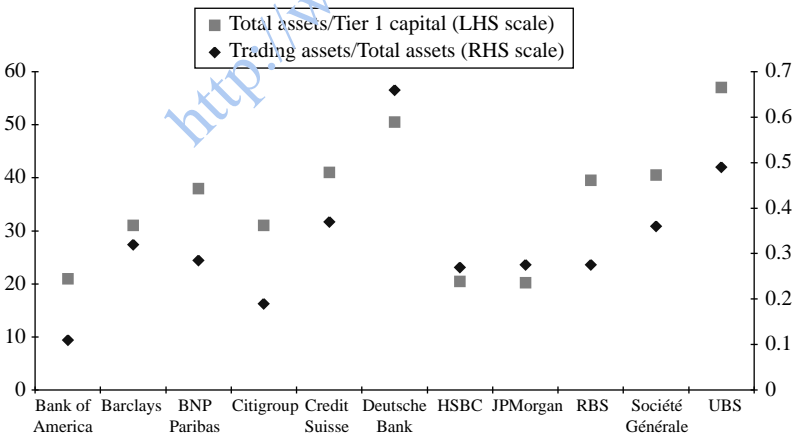


**FIGURE 16.1** Bank median leverage ratios, 2007–2009.

Source: Bank of England (2009).

set aside is below what is adequate at the time the crash occurs. Figure 16.2, which shows a sample of “bulge-bracket” banks, suggests that banks focused on trading assets as they expanded their balance sheets.

In such an environment, capital ratio requirements are an insufficient safeguard against instability, and it becomes necessary to monitor leverage ratios. Hence, in the post-crash environment banks need to adjust their business strategy to allow for this constraint.



**FIGURE 16.2** Selected bank ratio of total assets to Tier 1 capital and trading assets to total assets, 2008.

Source: Bank of England (2009).

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Canada	Tier 1 and Tier 2 capital must be at least 5% of on-balance sheet assets plus qualifying off-balance sheet assets.
Switzerland	Tier 1 capital must be at least 3% of on-balance sheet assets less Swiss domestic lending for bank holding companies, and at least 4% for individual institutions. This rule applies only to Credit Suisse and UBS.
US	Tier 1 capital must be at least 3% of on-balance sheet assets for “strong” bank holding companies and at least 4% for all other bank holding companies.

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**FIGURE 16.3** Summary of selected regulatory leverage ratio limits.

Source: Bank of England (2009).

As we noted above in the case of Lehmans, excessively high leverage results in a higher sensitivity of the balance sheet to trading and/or default losses. Limiting the amount of leverage acts as an additional risk control measure, backing up the safety net provided by a regulatory capital buffer. But when one thinks about it, this is a sensible measure on its own. It should not have to be imposed by regulatory fiat. In advance of the introduction of the standardised ratio as part of Basel III, banks should have addressed this issue anyway as part of their prudential capital and risk management.

A number of jurisdictions already employ a leverage ratio limit, although there is no uniform definition (see Figure 16.3). Under Basel III the rules will incorporate a limit, with a common definition of capital and an agreed measure of all assets, both on- and off-balance sheet.

## Capital Structure

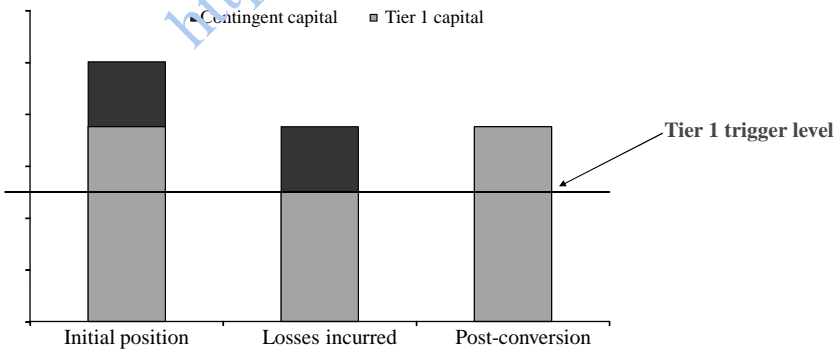
The efficient management of capital is a vital function of bank senior management. In the aftermath of any recession, capital is of course a scarce commodity. However, this fact itself leads to one of the lessons learned from the crisis: the need for “countercyclical” capital management. In other words, boards should treat capital as scarce at all times, and build up capital bases even as a bull market is helping to generate higher profits. The level of capital needs to be sufficient to cushion the fallout from “stress events”, which are the outlier events that normal distribution models used in finance do not capture.

Elsewhere in this book we have discussed the value of contingent capital instruments that can convert to equity at any time should the issuing bank’s capital ratio fall below a pre-specified level. Going forward, this should be the only “sophisticated” financial instrument in the bank’s capital

structure. It will assist efficient capital management, as well as investor transparency, if a bank's capital is held in the form of simple instruments only, essentially common equity and retained profits (reserves). Of course, long-dated debt instruments can also form part of capital, but again it is more transparent if these are vanilla instruments.

Capital itself on its own is an insufficient protection against firm failure. Bank management must take additional measures, over and above capital buffers, to safeguard the institution in the event of systemic stress or other market crash events, because the capital base on its own will be insufficient to preserve the firm as a going concern. Hence, leverage ratio limits and robust liquidity management is as important as capital buffers. A report from the BoE (2009) suggests that on average a Tier 1 capital ratio of 8.5% would have been needed by banks to avoid falling below the Basel minimum of 4% during the last crisis. This suggests that the current requirement is far too low to act as a genuine risk-based capital reserve. Of course, a financial crisis will affect different banks in different ways; the BoE report goes on to state that even if all the banks in its study sample had indeed possessed a Tier 1 ratio of 8.5%, as much 40% of those banks would still have breached their 4% limit during the crash. For some firms the "in hindsight" sufficient level of capital was as high as 18%.

The implications of the BoE report are clear: minimum capital requirements must be higher, and banks also need to build in an element of flexibility into their capital structure, perhaps by means of contingent capital instruments. Contingent capital is any instrument that would convert into common equity on occurrence of a pre-specified trigger. This is illustrated in Figure 16.4. An issue of bonds by Lloyds Banking Group in 2009, Enhanced



**FIGURE 16.4** Illustration of contingent capital note triggering.

Source: Bank of England (2009).



Capital Notes, was of this type. Such instruments enable a bank to purchase catastrophe insurance from the private sector, rather than from the public sector via the lender of last resort. They also allow a bank to hold a Tier 1 equity reserve at a lower cost, in theory at least, than equity itself.

### **EXAMPLE 16.1 FUTURE BANK CAPITAL STRUCTURE**

The financial crash resulted in a major review of the hitherto conventional bank funding model, with results that were exemplified by the UK FSA's consultative papers of 2008 and 2009 on liquidity and the publication of the Basel III guidelines in 2010. Further regulatory reform impacting the liquidity structure of banks is inevitable. An example of this is the FSA's Bail-In regime for UK banks, designed to ensure an orderly wind-down of banks that have become a "gone concern". The impact of such regulatory changes, together with the change in emphasis for bank funding away from short-term wholesale funding to long-term funding and more core customer funding, means that the future bank capital structure will look different in some respects from what it has done recently.

The following factors are influencing change:

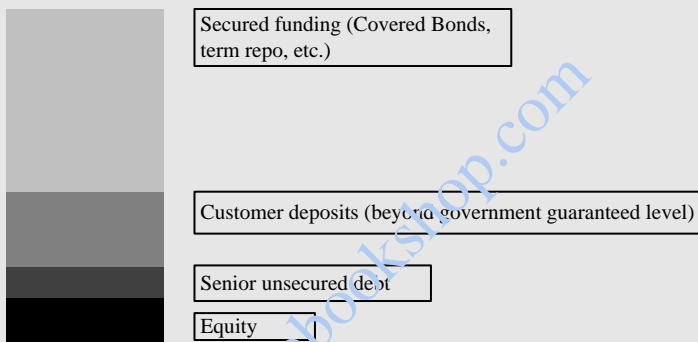
- a move away from short-term unsecured wholesale funding: the liquidity crisis of 2008 reinforced the lessons from earlier bank liquidity crises, that an excess reliance on wholesale funding is overly risky;
- a move towards secured funding away from unsecured funding: the experience of 2008–2009 demonstrated that, provided collateral quality was acceptable, repo funding remained available for banks where unsecured funding had frozen. A greater share of the bank funding model will comprise secured funding in the form of repo, TRS, ABS/RMBS and Covered Bonds;
- the FSA Bail-In regime will classify senior unsecured debt as a class of liabilities that absorbs losses following the erosion of Tier 1 equity. While this simply reinforces what was always in legal theory the case (senior debt lies above equity and subordinated debt in the capital structure, so would be expected to absorb losses at some point), the expectation now is that the Central Bank backstop or taxpayer-funded bailout will not be invoked so

*(continued)*

readily, thus the risk premium demanded from investors to hold such liabilities will increase;

- subordinated debt may be difficult for most banks to place with investors, in which case it will be discontinued. Senior unsecured debt would be issued, at a relatively higher yield spread than previously, in the 1- to 10-year tenor; longer dated issuance is more likely to be the preserve of high-rated banks.

For all but the most well-capitalised and/or highest rated banks, we can expect to see a capital structure on the liabilities' side as illustrated in Figure 16.5.

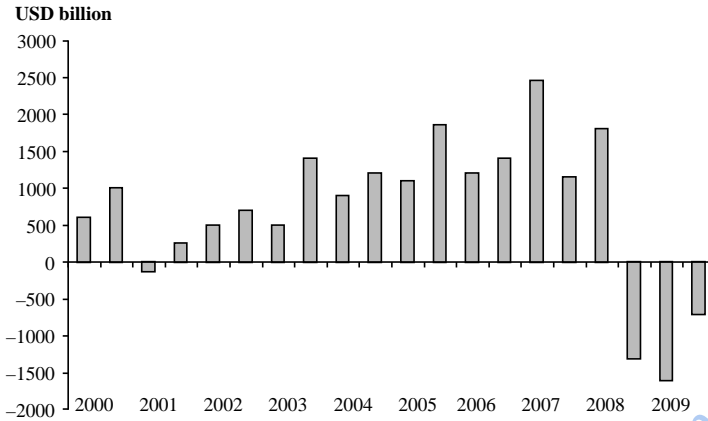


**FIGURE 16.5** Future bank liabilities structure.

## Core Competence: "Know Your Risk"

Regulatory authorities noticed a considerable decline in cross-border lending flows in the aftermath of the Lehman bankruptcy; for instance, see the BoE's *Financial Stability Report* dated June 2009. This is significant. During the bull market of 2001–2007, international lending volumes had expanded steadily (see Figure 16.6), as banks grew their balance sheets and sought higher yield opportunities overseas.

It is evident that during and after the bank crisis, when inter-bank market liquidity had dried up, banks pulled back from overseas markets, irrespective of whether these were deemed peripheral or not, and concentrated on core markets. This reflects informational advantages in core markets compared to overseas and non-core markets. The UK corporate lending sector makes a case in point: between 2002 and 2009, lending volume from UK banks fell by approximately 16% (the figure between 2006 and 2009 was a decline of 14%). However, the equivalent figures for foreign subsidiaries was a fall of 10.5% and 20%, while for foreign branches the decline was even more



**FIGURE 16.6** Cross-border bank lending volumes, 2000–2009.

Source: Bank of England (2009).

dramatic, at 17% and 46%.<sup>2</sup> Foreign banks would, on average, have less depth and breadth of corporate relationships, while branches would be expected to have even less developed relationships in the domestic market.

The lessons for the bank business model are clear: during an expansionary phase, it is important to remain focused on areas on core competence, and sectors in which the bank possesses actual knowledge and strength. Concentrating on areas in which the bank carries competitive advantage makes it less likely that loan origination standards will decline, resulting in lower losses during an economic downturn. There is also a technical reason for ensuring that overseas lending standards are maintained strictly, and limits set carefully, because it is often undertaken in foreign currency. A bank's ability to fund such lending is more dependent on external markets and wholesale counterparties relative to domestic currency lending, thus making the bank more vulnerable to a market downturn. For example, the cross-currency swap market in US dollars came under pressure, resulting in higher swap prices, following the Lehman default, and many banks struggled to obtain dollar funding during this period.

## Corporate Governance

We introduce here bank corporate governance in the context of bank strategy; the subject is discussed in greater detail in Chapter 18. The governance structure of a bank is a vital part of ensuring effective overall control and risk

<sup>2</sup> Source: Bank of England (2009).

management. An inadequate set-up will result in ineffective decision-making. The crash has highlighted the importance of addressing, in robust fashion, the following:

- What should the makeup of the Board itself be? What is the right number of executive directors and NEDs?
- How should the Board's performance be measured?
- Is the knowledge base, expertise and experience of the Board adequate? Does the CEO possess the right background in banking?<sup>3</sup>
- Are the board executives actually challenged in their decision-making?

Other questions to address include: (i) Is the Board provided with sufficient and adequate management reporting, in accessible fashion, on the bank's performance and risk exposures? (ii) Are there controls built into the firms' cultures such that they are adhered to when the bank's business strategy is in conflict with them?

The role of NEDs came under scrutiny in the wake of the 2008 crash. That some NEDs were not up to the standard required is evident; however, this should not detract from the vital function, in theory at least, that they do undertake. In the first instance, business best-practice dictates that the risk management function should report to a NED on the Board. This clearly implies that the NED in question must be sufficiently experienced and capable. The national regulator should always interview the relevant NED to ensure that this person meets the standards required.

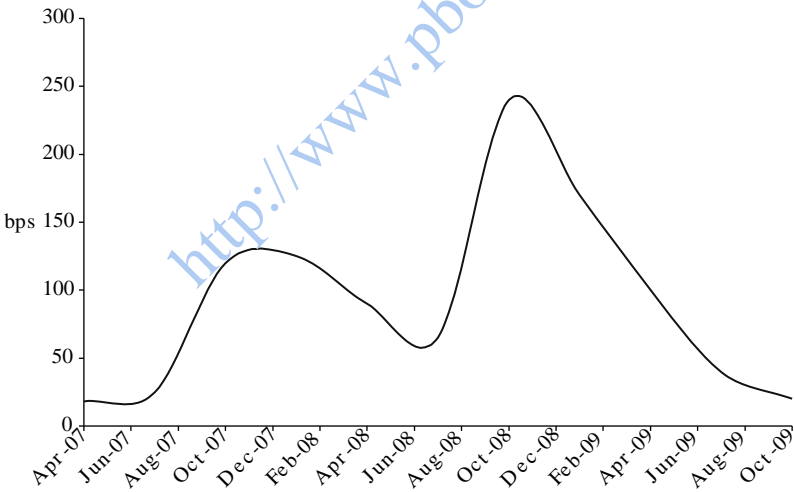
It is rare to observe genuine control at all levels of a bank that also boasts true innovation, creativity and efficiency. It may be, for instance, that some institutions are simply too big to manage effectively, especially when things start to go wrong. However, this does not mean we should not attempt to implement an effective strategy at the top level and still maintain efficiency at the "coal face". The bank crisis demonstrated that in some cases bank boards were not able to maintain effective control of the business as they expanded. Certain desks originated risk that went beyond the stated (or believed) risk-appetite of the parent banks; in other cases, the risk management department was marginalised or ignored, and at board level there was a "rubber stamp" mentality. These instances have significant implications for bank corporate governance.

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<sup>3</sup> The CEOs of two British banks, HBOS and Bradford & Bingley plc, had backgrounds in supermarket retail and not banking. They also had management consulting backgrounds.

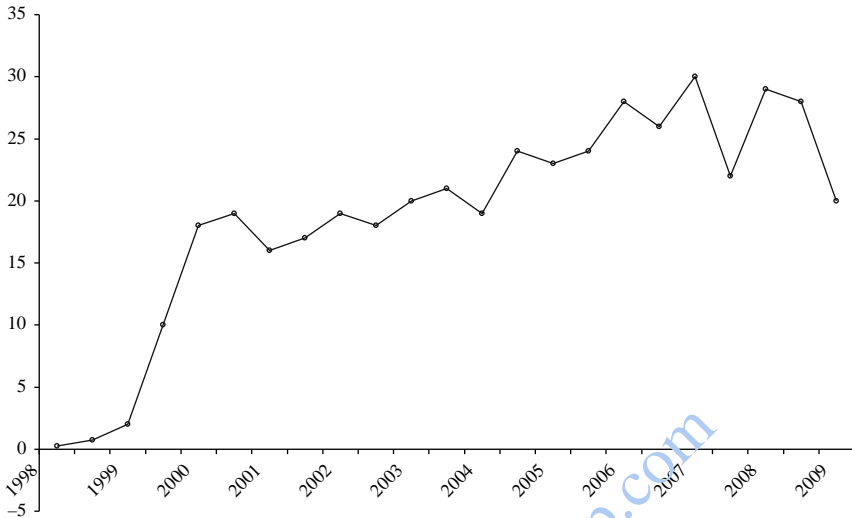
### Countercyclical Funding

One additional lesson learned from the crash is that banks should take advantage of “benign” conditions to improve their funding structures. Figure 16.7 shows the rise and fall in Libor spreads during 2007–2009, giving an idea of the market conditions that may prevail and suggesting when a bank may wish to take on more funding to take advantage of Libor rates.<sup>4</sup> In the first instance this would involve reducing the reliance on short-term funding. The definition of “short-term” is not universal; depending on which person one asks, it may mean up to one week or up to three months. Irrespective of the view that an individual bank takes, and this should reflect the bank’s particular business model and current funding gap, best business practice suggests that a time of low funding spreads is the opportune moment to change the liability structure by increasing average maturity tenor. For instance, in the UK, overall banks had reduced their reliance on funding of up to 1-week from 15% of unsecured wholesale funding in December 2008 to 9% by October 2009. The aggregate customer funding gap (the difference between customer loans and customer deposits) was at GBP610 billion by Q2 2009, compared to GBP842 billion at the end



**FIGURE 16.7** Sterling Libor–OIS spread, 2007–2009.  
Source: Bloomberg L.P.

4 See Chapter 10 in Choudhry (2007a), which discusses the fair value of the Libor term premium.



**FIGURE 16.8** UK banks customer funding gap 1998–2009, median value.  
Source: British Bankers Association.

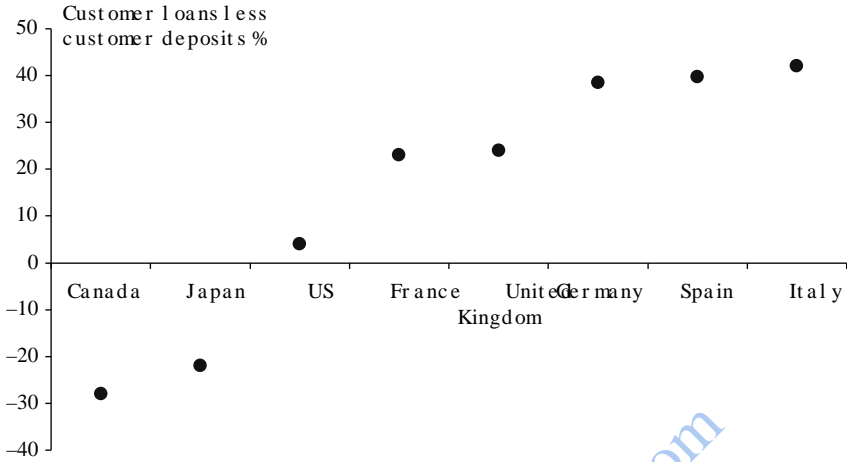
of Q4 in 2008. This was 18% of all loans, the lowest proportion since 2003.<sup>5</sup> This is shown at Figure 16.8.

This is a critical feature of the new bank business model. The main lesson of the 2007–2009 crisis was the importance of liquidity risk management. To mitigate the impact of the next recession, bank funding structures need to be set up to reduce the reliance on short-term funding and unstable wholesale funding. They also need to extend the maturity of the liability side of the balance sheet. Excluding notable exceptions such as the banks in Australia and Canada, many country banks' customer funding gaps are uncomfortably high (see Figure 16.9). Banks must address two requirements, which are (i) to reduce the reliance on wholesale funding, which is not “sticky” and is less stable than retail customer deposits, and (ii) to increase the average tenor of their liabilities. The UK bank sector, for example, remains vulnerable in this regard: the BoE reported in 2009 that about 50% of UK bank aggregate wholesale funding was lower than six months in maturity.<sup>6</sup>

Bank funding strategy should therefore include targeting increased use of retail funding. Retail deposits are treated by regulators as being more stable, with greater expectation of being rolled over and not withdrawn on

<sup>5</sup> Source: Bank of England (2009).

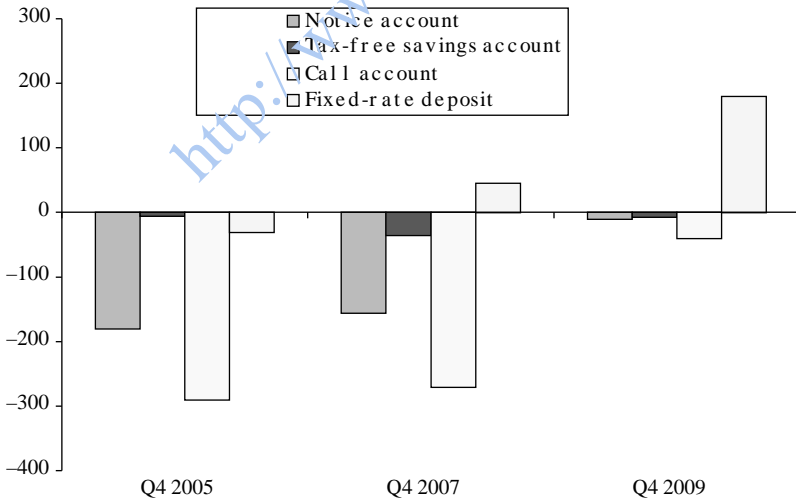
<sup>6</sup> Source: Ibid.



**FIGURE 16.9** Selected country bank funding gaps.  
Source: Bank of England (2009).

maturity. To reduce its funding gap (whatever it is), a bank would seek to grow its retail deposits.

At a tactical level, this raises the question of what interest rate to pay to attract more such deposits. Figure 16.10 shows the change in average spread on retail savings products offered by UK banks from 2005 to 2009.



**FIGURE 16.10** UK banks retail deposit spread.  
Source: Money Observer.

From a spread below Libor, the spread was increased to almost 200 bps over Libor. Partly this reflects the fact that absolute base interest rates had fallen to a very low level, but it also reflects the increased demand for such deposits from banks. It is important not to pay a rate that is excessively above that in the market, partly for reputation reasons, but also so as to not convey the impression that the bank is in difficulty and desperate for funds.

The overall impact of the new modified strategy will be a higher funding cost. In adopting a more robust funding structure, there will be added costs associated with raising longer dated liabilities (assuming a positive-sloping yield curve) and paying more to attract stable retail deposits. However, the object of this strategy is to reduce the vulnerability of the bank should there be another external shock, or systemic instability.

### **EXAMPLE 16.2 THE UNITED KINGDOM INDEPENDENT COMMISSION ON BANKING (ICB)**

The UK ICB was set up by the UK government to provide recommendations on the future of banking, and published its report in September 2011. Its high-level objective was to describe a framework that ensured a more stable banking system in the UK. Its highest impact findings can be summarised as follows:

- establishment of a “ring-fence” separating the retail arm of a bank from an investment banking (IB) arm;
- a higher minimum required loss-absorbing capital base.

For banks that operate in both retail and IB sectors, the ring-fencing must be organised along the following business lines:

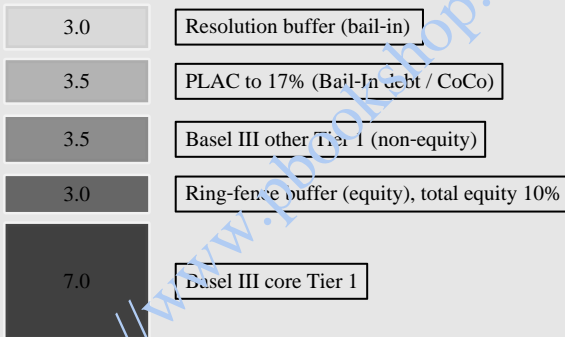
- mandatory businesses: individual deposits; SME deposits; overdrafts;
- permitted businesses: corporate banking; private banking; trade finance and project finance; retail assets; European Economic Area (EEA) business;
- prohibited business (and therefore outside ring-fence): trading and wholesale markets; proprietary derivatives trading; non-EEA business.

The organisation must ensure that each part of the bank, inside and outside the ring-fence, is able to meet capital and liquidity requirements on a stand-alone basis. The part inside the ring-fence can deal with the part outside up to a 25% of Tier 1 capital large exposure limit, and otherwise as simply another third-party entity.



Under the ICB regime UK banks will have to set aside a higher core Tier 1 equity level and also a higher total capital base, referred to as the primary loss absorbing capacity (PLAC), which includes other Tier 1 capital and required buffers. This is illustrated in Figure 16.11. The PLAC can include up to 3.5% of “bail-inable” debt; in practice, it is likely to be senior unsecured bonds designated as such, and which would absorb losses after equity has been wiped out (in other words, once the bank is no longer a going concern), and CoCo bonds. If there is no resolution regime in place for the bank, the so-called “Living Will” that describes the mechanism for an orderly wind-down of a bank that is now a gone concern, then a further 3.0% buffer is required.

The date for UK banks to demonstrate implementation of the ICB’s requirements will be in 2019. Of course, irrespective of the changes in the UK banking market as a result of the ICB report, the principles of banking described in this book will remain unchanged.



**FIGURE 16.11** UK ICB regulatory capital regime.

## STRATEGY INPUTS

Notwithstanding that all banks are ultimately similar beasts, the strategy formulated for an individual bank will be unique to it and reflects its particular market, business model, customer base and operating environment. Unlike some of the other subjects dealt with in this book, it would be difficult (and of questionable value) to come up with a “template” strategy document. Instead, in this section we will illustrate business best-practice with a description of the relevant inputs to a coherent strategy. These would then be modified for each specific case.

It is important that a bank articulates its strategic vision, and publicly announces its quantitative and qualitative targets. This may sound obvious,

but one would be surprised how many financial institutions do not actually do this beyond bland platitudes, and simply bumble along from one year to the next.

## Vision Statement

The concept of a vision statement is beloved of management consultants and therefore care must be taken to avoid writing one that is simply verbiage and platitudes, and thereby a worthless, pointless document. To be of value, it should capture succinctly and accurately what the bank aspires to be. In a top-down strategy origination process, it would drive the quantitative and qualitative elements of the bank strategy; hence, if the statement is well formulated it becomes a worthwhile input to the strategy. It can set the risk-reward culture at the bank. If the bank wishes to deviate from this culture, it would then look to revise the statement (and its strategy). In other words, a vision statement serves as a statement of intent, so that all the bank's stakeholders know what its business model and objectives are.

For example, a framework vision statement might encompass one or more of the following:

- to be a stable commercial bank serving the requirements of customers in the EMEA region;
- to achieve a consistent RoE of 12%–14% and RoA of 4%–5% throughout the business cycle;
- to maintain an AA–/Aa2 credit rating;
- to generate revenue from customer business, within core business lines;
- to focus on customer requirements, emphasising a robust risk management culture;
- to limit cost base, including employee remuneration, to [ ]% of revenue base.

Note how the above almost explicitly restricts proprietary trading business. A bank whose primary focus lay outside some or all of the above would craft a different vision statement. Equally, if the bank that drafted the above statement wished to move into new businesses or products that were not covered by its current vision, it would modify it, thereby giving intent of its new focus.

With the vision set, the bank should drill down from it and articulate its strategic plan. This is still a general statement; it is the next layer down that will describe detailed target metrics. For example, the hypothetical bank that drafted our vision statement above might describe its strategic plan in the following terms:

## BANK STRATEGIC PLAN

- Business focus
  - home market, euro-zone and Gulf Co-operation Council (GCC) region;
  - customer base for corporate and institutional banking: corporate and financial institutions;
  - customer base for retail banking: high net worth individuals (HNWIs) in home market and GCC region;
  - limit balance sheet to EUR [ ] billion;
  - limit wholesale funding share to 20%.
- Management focus
  - limit cost base to [ ]% of revenue base;
  - explicit metric for balance sheet usage;
  - return target set at 12%–14% on a sustained basis;
  - robust risk management organisation, policy and reporting line;
  - incentivise long-term customer-focused business.

The above can be built on and developed into greater detail. The next input to the strategy is the next level down, the target metrics.

## Strategy Setting: Performance Parameters

The second tier of strategy development is the formulation of a bank-wide business plan and target return metrics. This should set key performance indicators (KPIs) in actual quantitative terms. The base KPIs are:

- capital: return on capital; return on equity; RAROC; assets-to-capital ratio;
- liquidity: loan-to-deposit ratio; liquidity ratio; wholesale funding ratio;
- cost base: front-office/back-office ratio; cost–income ratio;
- risk appetite: provisions/lending; NPLs/lending; VaR;
- growth: asset growth; liability growth.

We emphasise that the targets are not necessarily minimum levels, and in some cases they can be maximum levels. A sustained performance of 12% RoE over a 10–15-year period is infinitely preferable, from an aggregate market viewpoint (or from society's viewpoint), to several years of 22% RoE followed by losses for a year or two. Equally, a market share target of 10% does not mean that a level of 20% is desirable: an emphasis on market share as a KPI was one of the forces that drove Northern Rock

**TABLE 16.1** Bank strategy setting: quantitative targets.

Bank level		
Core Tier 1 capital		
Return on equity		
Return on assets		
Wholesale funding share		
Leverage ratio		
Cost-income ratio		
Treasury	Corporate banking	Retail banking
Return on capital	Return on capital	Return on capital
Return on equity	Return on equity	Return on equity
Liquidity ratio, 1-week and 1-month	Loan-to-deposit ratio	Weighted average cost of deposits
Front office/Back office cost ratio	Front office/Back office cost ratio	Front office/Back office cost ratio
Cost-income ratio	Cost-income ratio	Cost-income ratio
VaR limit	Provisions/Lending ratio	Loan growth
Securities growth year-on-year (y-o-y)	Loan growth	Deposit growth
Sharpe ratio	Deposit growth	
	Unfunded asset growth	

and Bradford & Bingley to their demise. In any case, market share is not a value-added KPI for banks; it should have no place in bank strategy.

The next level down is quantitative target setting. We imagine a medium-sized commercial bank with three business lines: Treasury, corporate banking and domestic retail banking. Table 16.1 shows the elements of quantitative returns targets that would be set into the strategy, at the bank-wide level and at the individual business unit level. These are not set in stone; they should be set as part of 1-year and 3-year plans, but reviewed on an annual basis. Note how some of them are control targets (such as the Treasury department's liquidity ratio) and cost targets. Not all the elements of the strategy are revenue or returns orientated. The control and cost elements are an important part of the strategy.

The extent of the bank's achievement against the 3-year strategic target should be reported on a regular quarterly basis, as shown at Table 16.2. Given the dynamic situation of the markets and the need to respond to events, there is less worth in setting a longer term (say 5-year) strategic target in anything but the broadest terms; that is, at the level of the vision statement. However, some banks still do this. One would be right to

**TABLE 16.2** Performance against strategy: example quarterly report.

	Quarter-end actual	3-year target
Core Tier 1 capital	7%	10%
Return on equity	9.80%	11%
Wholesale funding share	33%	20%
Leverage ratio	23:1	15:1
Cost-income ratio	66%	50%

question the actual practical value of such targets on a day-to-basis, although they do serve a purpose in communicating to stakeholders a coherent view of the Board's strategic vision and direction.

## **FORMULATING SUSTAINABLE BANKING**

The requirements of Basel III standards and those of national regulators will play a major role in bank strategy. The Board should seek to have its own view on sustainable banking nevertheless, and consider the regulatory standards to be a minimum requirement. The specific areas of capital and liquidity, as well as sound asset origination policy, must be set by the Board in line with its own beliefs and understanding. To summarise, the basic strategy is identical for all banks and meets regulatory requirements. At the individual level, strategy should reflect core competence and strengths.

### **Setting Through-the-cycle Strategy**

Inherent to the strategic thinking of the bank is the belief that the strategy should be sustainable. That is, it should focus on preserving returns and capital strength through the business cycle. This belief needs to be a genuine part of the Board's thinking. In other words, the bank needs to stick to its core strengths and ignore KPIs such as balance sheet growth or market share during a bull market phase in the economic cycle. Allied to this is governments' and regulators' conversion to the idea of "macroprudential" strategy; although the practical impact of this sort of thinking is not new, it has just been forgotten in recent years.

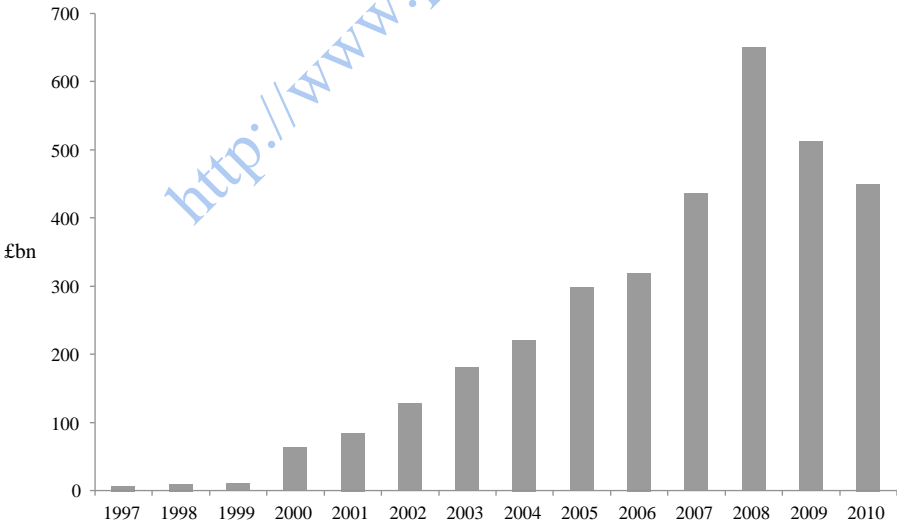
Viewed from this perspective, bank strategy falls into two categories:

- **Macroprudential:** banks should strengthen their balance sheets and liquidity ratios during the expansionary period of the economic cycle, while profits are growing and conditions are benign. This can be done by:

- limiting the asset-side growth of their balance sheet;
- retaining a greater proportion of profits as reserves during the bull market phase;
- setting a leverage ratio limit.
- **Microprudential:** at all times increasing the level, and quality, of capital and liquid asset buffers; and increasing the average tenor of liabilities.

Both elements of strategy work towards preserving a bank as a going concern irrespective of the state of the economy. Higher capital ratios and absolute levels *per se* should act as a more effective buffer to cushion the impact of an economic downturn, when business volumes decrease and loan losses increase; at the same time, a more conservative liquidity regime, with limits on use of wholesale funding and larger gaps, means that a bank will be less able to grow rapidly during a boom period in the cycle.

The importance of emphasising a macroprudential approach to maintaining the pre-specified strategy reflects the fact that the practice of corporate governance, in all industries, often adopts a “herd mentality”. It may be difficult to resist a prevailing trend even if that runs counter to one’s better instincts. We illustrate this using Figure 16.12, sourced with data from the European Central Bank. This shows the increase in the funding gap, measured as customer loans less customer deposits, on an aggregate



**FIGURE 16.12** UK banks customer funding gap, 1997–2009.

Source: European Central Bank.

basis for four large UK banks during the period 1997–2009. The worsening LTD ratio during this time, which was mirrored at the individual bank level, is a perfect example of how banks can end up adopting the same approach when the latest fad becomes viewed as business best-practice. Bank management needs to be mindful of this danger during a bull market.<sup>7</sup>

In assessing what factors should form part of strategy formulation, it is also worth noting those factors that should be expressly left out of the process. The bank crisis of 2007–2008, as well as banking failures throughout history such as the US bank crash of 1980–1982 and the zombie-like experience of Japanese banks in the 1990s, all resulted from banks adopting a management approach that allowed them to become over-extended through:

- ever-greater risk taking and leverage levels;
- over-reliance on wholesale funding;
- increasing exposure to higher risk product classes, such as 100LTV mortgages, adjustable-rate mortgages, buy-to-let mortgages or derivatives trading;
- poor management decisions on acquisitions and new business lines;
- an emphasis on market share and high RoE as KPI targets.

Understanding that these areas should *not* form any element of bank strategy is part of understanding how strategy itself feeds into sustainable banking.

## Basel III Impact On Strategy Setting

The Basel III requirements can be viewed as the base element of a bank's strategy. Given that they are minimum requirements, strategy should be set to ensure that they are adhered to at all times. By definition this means preserving the bank as a going concern at all times.

The first element is the capital ratios. We repeat these here for readers' convenience, at Table 16.3.

As well as increasing the level of regulatory capital, implementing Basel III results in a higher quality of capital. There is a stricter definition of "common equity", and a more conservative definition of Tier 1 and Tier 2 capital.

The countercyclical capital buffer is a nod to the post-crash thinking on the need for macroprudential strategy and regulation. It is designed to

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<sup>7</sup> The four banks whose customer funding gaps are aggregated in this sample are Barclays Bank, HBOS, Lloyds TSB and Royal Bank of Scotland. The figure for 2009 and 2010 includes the combined Lloyds Banking Group entity.

**TABLE 16.3** Basel III capital levels, %.

	Common equity	Tier 1	Total capital
Minimum	4.5	6	8
Conservation buffer	2.5		
Minimum + conservation buffer	7	8.5	10.5
Countercyclical buffer range	2.5		

Source: BCBS.

protect the banking sector as a whole during periods of growth, or more realistically excessive growth, which would otherwise result in higher aggregate systemic risk. The exact size of the buffer is set by the national regulator, within the Basel guidelines. It is the responsibility of the regulator to ensure transparent communication and reporting by each bank; however, business best-practice is for a bank to set the procedures required to meet this buffer requirement itself, without waiting for regulatory pressure. Because it is not necessarily apparent when one is approaching, or already in, a period of “excess” economic growth, the bank should place a number of indicators under observation, and monitor these for early warning signs. It can then take appropriate action in a number of areas, including capital buffering, but also loan origination standards (which tend to deteriorate in a bull market and/or period of excess liquidity). These indicators might include the:

- level of private sector credit to GDP ratio;
- credit to GDP gap (that is, the gap between the ratio and its trend).

We discuss the issue of countercyclical capital and “through the cycle” regulation again in the next chapter. From the point of view of individual bank strategy, it is important that a bank monitors macro-level “early warning” indicators on a regular basis, to be aware of the state of the economy and thereby take measures to guard against the impact of overheating. These indicators should form part of the regular MI monitored at the ALCO and other relevant high-level management committees such as the Balance Sheet Management Committee and ExCo.

The choice of which indicators to monitor is open to debate. For example, in a discussion paper the BBA recommended the following:

- the overall level of lending in the economy, both as an absolute level and as a percentage of GDP;



- the rate of increase in retail lending; for example, credit card and residential mortgage approvals, as well as the rate of increase in lower credit-quality lending;
- the rates of return on equity on bank capital, and whether this is running at above long-run averages;
- aggregate economic indicators such as the rate of growth of GDP and asset prices, compared to medium-term average rates.

However, there is an argument that these are as much lagging as leading indicators, and their forecasting ability may be limited. Other possible indicators to monitor for macroprudential reasons include:

- the Baltic Dry Index, which is an index of bulk carrier shipping prices. Again, the forecasting ability of this index may be limited. For example, it reached an all-time high in May 2008, which was right at the start of the UK and (some parts of the) EU recessions. As with the other indicators, it may be viewed more as a hindsight high-water or low-water mark of the business cycle;
- world trade volumes, rate of growth month-on-month: a fall is viewed as a good leading indicator.

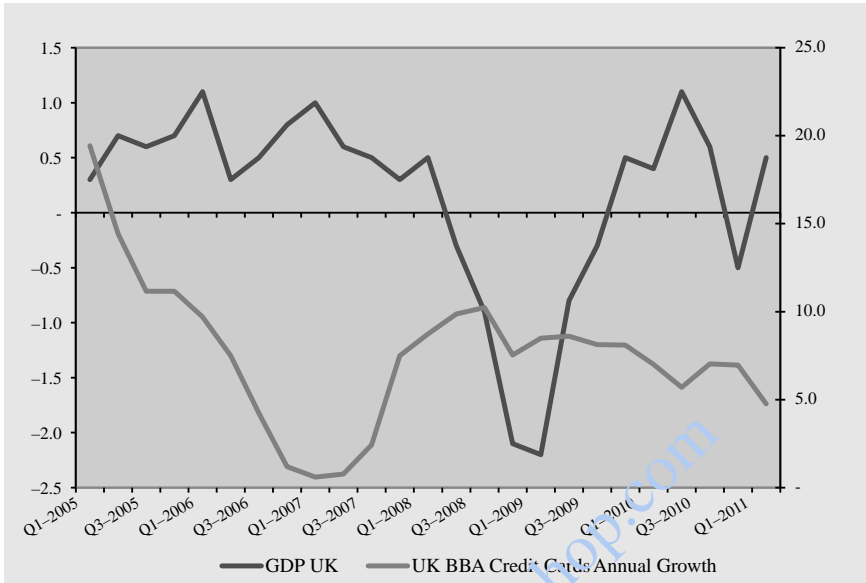
Example 16.3 describes the use of the Leading Economic Indicator (LEI) statistic, developed by Stock and Watson (1989). The author recommends using this methodology as the principle forward-looking forecasting metric, and it should be reported monthly in the ALCO and ExCo packs. Where a bank organises a BSMCO as part of its governance structure, the statistic should be reported to it as well. The Example box illustrates the LEI time series for the UK economy, from a calculation spreadsheet developed by the author and Zhuoshi Liu.

### **EXAMPLE 16.3 EARLY WARNING INDICATOR METRICS**

Banks monitor credit card spending and other customer data to provide market intelligence on the state of the economy, as a proxy indicator of distress or recovery.

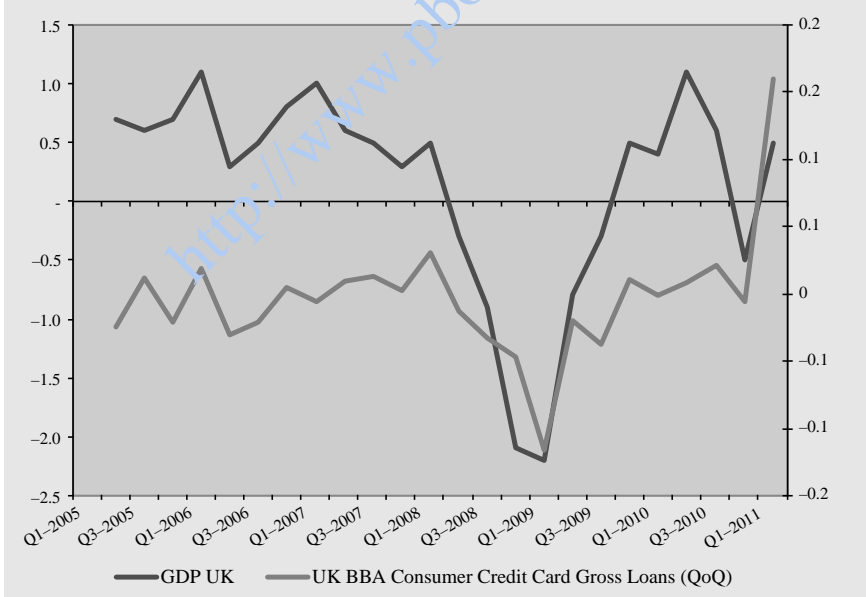
The main drawback of such observable market factors, however, is that they are generally lagging indicators, and would prove inadequate as forecasting tools; for example, see Figure 16.13 and Figure 16.14 for UK credit card spending data against UK GDP

*(continued)*



**FIGURE 16.13** UK credit card growth and UK GDP 2005–2011.

Source: BBA.



**FIGURE 16.14** UK credit card gross loans and UK GDP 2005–2011.

Source: BBA.

output. Not only is consumer spending not sufficiently correlated with the state of the economy, it can also act as a contra-indicator.

A more effective measure for planning purposes is a composite index constructed from a set of transparent underlying macroeconomic variables. The following observations apply to the UK economy only, but the methodology can be extended without loss of effectiveness to any defined economic space for which statistical parameter input data are readily available, such as the eurozone.

### **Objectives of an Economic Indicator**

For use as a strategic decision-making and/or forecasting tool, a statistical metric should be observed to be a leading rather than lagging indicator. In other words, we require it to highlight an impending slowdown in the market before that slowdown occurs “officially”; or at least as the slowdown is taking place. This is not possible with baseline data such as GDP output increase/decrease statistics, which are by definition lagging indicators. Given that the technical definition of a recession is two successive quarters of negative GDP growth, we require a leading indicator to imply a contracting economy before the economy actually starts to contract as defined by this measure. An indicator that tracks the economy is by definition dependant on its statistical inputs, which are snapshots in time and therefore already historic on publication. However, a composite measure has an advantage over one-dimensional indicators in at least attempting to cover a broader swathe of the economy.

### **Observation and Assessment of Conventional Indicators**

In practical terms, for ALCO purposes we assume that any statistic will be monitored on a monthly basis. The most straightforward way to present this is as a graphical time series. Visual inspection of time series charts is a valid form of analysis (see Hatanaka 1996). To be of use as an early-warning indicator, we would require the metric to flag the onset of recession as early as possible.

### **Recommended Forecasting Indicator**

A tractable and simple construction is the coincident and leading economic indices recommended by Stock and Watson (1989). We constructed these indices and observed that it was a leading  
*(continued)*

forecasting indicator for the UK economy for both the 1990–91 and 2008–09 recessions. Its construction method and form of output makes it an accessible metric for gauging the future direction of the economy, particularly when the index value moves from positive to negative (or vice-versa). That said, it also reflects the lagged nature of its input parameters and this manifests itself in a delayed reaction when emerging from recession, as observed at a number of points in the time-series illustration.

Nevertheless it is worthwhile to monitor this statistic monthly at ALCO for all the regions in which the bank has business interests, and for which economic statistics are available.

### **Methodology**

A description of the LEI is given in Appendix 16.1. The LEI is designed to provide an advance warning of movements in the business cycle, and not just changes in GDP growth. In truth, it is incorrect to define a recession purely in GDP output terms (see Burns and Mitchell, 1946), although because this view is common we take that as the main yardstick. That said, the LEI input parameters reflect different forms of economic activity.

The inputs to the LEI are user-defined. We specified the model with the following:

1. UK Building Societies - New Commitments (semi-adjusted)
2. UK CBI Monthly Enquiry: Order Book Volume – Balance (non-adjusted)
3. UK CBI Monthly Enquiry: Volume of Expected Output – Balance (non-adjusted)
4. UK FT All Share Index (EP) (non-adjusted)
5. UK Gilt 10 year-3 month yield spread
6. UK Productivity – Whole Economy (semi-adjusted)
7. UK Total Gross Operating Surplus of Corporations (current prices) (semi-adjusted)
8. UK Money Supply – Broad Money (M2) (current prices)
9. UK Coincident Economic Indicator (CEI)

The CEI is constructed from the following inputs:

1. UK Index of Production
2. UK Unemployment Rate (semi-adjusted)
3. UK Household Disposable Income (real terms)
4. UK Retail Sales (including Automotive + Fuel)

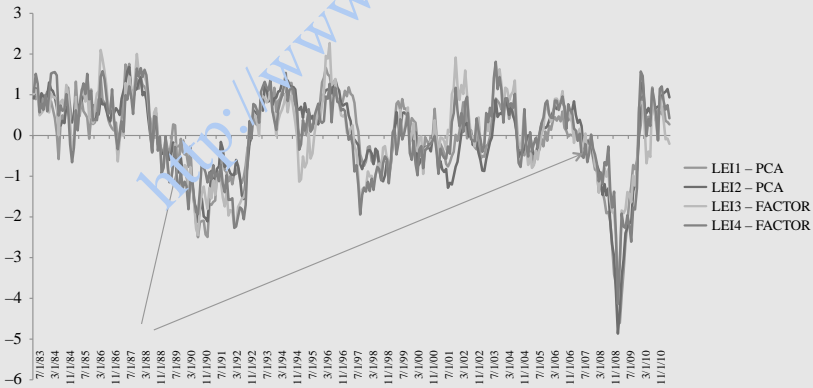
Stock and Watson describe two approaches to constructing the index; namely, principal component analysis (PCA) and a factor model. The model is summarised in Appendix 16.1.

LEI1 and LEI2 use PCA analysis, in which the CEI is a principal component of the four macro variables. For LEI1 we use the lagged coincident variable, plus the 8 macro variables; for LEI2 we use only the 8 macro variables, together with the CEI input as independent variable. LEI3 and LEI4 are factor models, given by equations (A16.1.1–A16.1.3) in Appendix 16.1. All four indicators are described by Equation (A16.1.4).<sup>8</sup>

**Empirical observations**

The LEI for the period July 1983 to April 2011 for the UK economy is shown in Figure 16.15A and Figure 16.15B (illustrated using monthly and quarterly time steps).

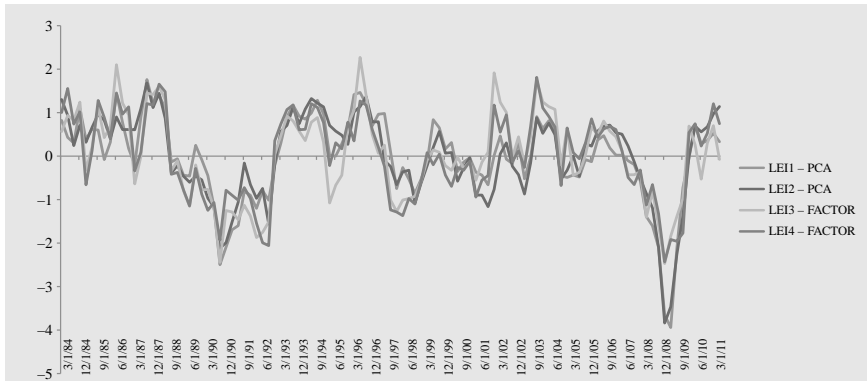
The arrows in Figure 16.14A indicate the start of the 1990–1991 and 2008–2009 recessions in the UK. Note that all versions of the LEI are advance indicators of the change in the business cycle, as well as lagging indicators of the recovery (as given by GDP statistics). Be aware that a return to positive GDP growth is not indicative of recovery in all economic sectors, nor of a definitive turnaround in the business cycle.



**FIGURE 16.15A** UK LEI 1983–2011, monthly time steps.

*(continued)*

<sup>8</sup> Note that the lambda term in Equation (4) is estimated for LEI1, and is zero for LEI2, LEI3 and LEI4.



**FIGURE 16.15B** UK LEI 1983–2011, quarterly time steps.

Therefore the LEI may also be suggesting a slower return to true recovery than what was implied by GDP output data.

### Conclusions

On the basis of the empirical evidence, the LEI appear to be effective early warning indicators of the direction of the economy, particularly when the index value moves from positive to negative or vice-versa. The author recommends that a bank ALCO monitors the LEI on both monthly and quarterly basis for the economy or economies that the bank operates in. Based on the results for the UK, the LEI2 and LEI3 produce a smoother time series compared to LEI1 and LEI4.

Banks should monitor the statistics they understand and use them for policy formulation, particularly if the indications are that the economy is overheating and may be about to enter recession. If the view of senior management was that this was going to occur, then it would be prudent to tighten loan origination standards, increase capital buffers and secure more term funding, among other protective measures.

Liquidity management is driven by Basel III minimum levels for the LCR and the NSFR. The LCR is designed to make banks better able to withstand a liquidity shock, by ensuring that they possess sufficient high-quality liquid assets that can offset cash outflows in a stressed environment (the time of this stressed period is viewed as being 30 days. The UK FSA has a metric that extends this period to 90 days). The NSFR promotes funding resilience at a bank over the longer term by ensuring that stable sources of liabilities are in place to support long-dated illiquid assets.

### EXAMPLE 16.4 CALCULATION OF COUNTERCYCLICAL CAPITAL BUFFER

The countercyclical capital buffer (CCB) is a function of the credit exposure of a bank in each different national regulatory jurisdiction, weighted by this exposure. It is given by

$$CCB = \sum_{i=1}^N W_i \times CCB_i$$

where  $W$  is the weighting, or proportion of total capital exposure, and  $CCB$  is the countercyclical capital buffer for each jurisdiction  $i$ . Assume that a bank has credit exposure in the following markets,

Domestic market	50%
France	20%
US	20%
GCC	10%,

and that the national regulators in these regions set the CCB level as 2%, 2.5%, 1.5% and 2%. The CCB required by the bank would be

$$\begin{aligned} CCB &= [50\% \times 2\% + 20\% \times 2.5\% + 20\% \times 1.5\% + 10\% \times 2\%] \\ &= 2.000\%. \end{aligned}$$

The LCR and NSFR requirements are minimum standards. Individual bank boards should look to run a more conservative regime than that required under the Basel III rules. For example, the LCR can be applied to a 90-day rather than 30-day stressed cash outflow period, while the NSFR can be set at 110% or 120%, rather than the 100% Basel requirement.

Basel III also sets a leverage ratio limit. This is a straightforward non-risk-based measure, based on the accounting balance sheet. Again, a bank can set its own, more conservative limit.

### LIQUIDITY AS ASSET CLASS

As this book states on a number of occasions, an emphasis on capital levels is a necessary but not sufficient condition to maintain sustainable banking. Liquidity levels are as important as capital; hence, liquidity preservation is

an essential element of bank strategy. From the vision statement downwards, liquidity should be viewed as the cost of doing business, and therefore never compromised in the desire for higher returns or easier access to new business areas. It can also be viewed as an asset class in its own right. Banks that preserve liquidity are (i) viewed as better quality counterparties, so leading to a reduction in their funding costs (ii) able to generate revenue from this liquidity strength position.

Thus, at the strategy level liquidity must be viewed independently of credit risk and interest rate risk. There is no one precise measure for liquidity, consequently no set measure of its value. Notwithstanding this, it is worthwhile using a number of proxy measures to measure the level of liquidity in the market, and thereby attempting to obtain a measure of its value.<sup>9</sup> For example, in the repo market the lenders of cash will require collateral from the borrower to reduce their counterparty credit exposure. The higher the quality of collateral, typically the lower the margin (haircut) required. The ratio of the repo cost over the asset spread is one proxy measure of the price of liquidity.

To measure this in practical terms, we can value liquidity by calculating the ratio of the repo margin on ABS bonds over the yield spreads on the ABS securities themselves. This is not easily observable in the market, but a bank can use Bloomberg and/or Reuters as well other data sources to check the yield spread on AAA RMBS securities, and also ask its investment bank what repo margin would be to fund such assets. If this ratio is increasing, then the value of liquidity is increasing. As a yardstick, this ratio was approximately 1:5 or 20% during 2005–2007 (a 5% haircut on AAA RMBS, which themselves returned on average 20–25 bps over Libor), but had increased to 1:10 or 10% by Q1 2009.<sup>10</sup>

Another proxy measure of the value of liquidity involves looking at structured finance securities. Collateralised bonds such as mortgage-backed securities or covered bonds are bonds secured against specific pools of assets. For the euro-zone a general measure of their return is given by the iBoxx Euro Collateralised Bonds benchmark yield. Prior to the 2008 crash the spread was stable at around 20 bps during 2003–2007. Subsequently, this spread increased dramatically, hitting over 200 bps in Q1 2009.<sup>11</sup> Of course, this spread measure was simply undervalued before the crash; however, it is worthwhile to keep it under observation, as an indicator of the value of liquidity.

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<sup>9</sup> See Choudhry (2007b) for a discussion of the different proxy measures.

<sup>10</sup> Source: Author's notes, from KBC Financial Products and Europe Arab Bank plc.

<sup>11</sup> Source: Bloomberg L.P.



The author recommends the CDS and ASW basis as an alternative proxy measure of the cost of liquidity. The academic community is not entirely convinced of this measure, but the case for it is strong. A CDS contract is in theory the price of pure credit risk, with no element of cash funding liquidity. An asset swap is a cash product, requiring the investor to invest actual cash, and thus incorporates a funding element as well as a credit risk exposure element. The difference between these two levels must therefore, by definition, include a factor for the value of cash liquidity. Bank ALM and Treasury managers should always monitor the CDS basis for their most relevant markets, to gauge an idea of the cost of liquidity.<sup>12</sup> An increasing basis indicates (but is not limited to indicating) a higher premium for liquidity.

The importance of liquidity management in the high-level strategy process reflects the view that liquidity is best viewed as an asset class in its own right. We take this further with a look at funding products and at the right policy to apply in derivatives funding.

## Funding Tools

The bank Treasury desk can make use of a number of financial instruments to meet liquidity objectives, as opposed to revenue objectives. The use of these instruments should be described in the lower level strategy document, to ensure that management understands the motivation behind their use. That is not to say that such products cannot be used as part of normal customer revenue-generating business; rather, the bank should describe the full range of liquidity instruments that can be used to enhance its liquidity position.

In addition to vanilla funding instruments such as deposits, CDs, MTNs and so on, the following can also be considered:

- tri-party repo;
- TRSs;
- existing assets “collateral upgrade”;
- liquidity option transactions.

The option facility is described in Example 16.5.

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12 A detailed discussion of the CDS-ASW basis is given in the author’s book *The Credit Default Swap Basis* (Bloomberg Press 2006).

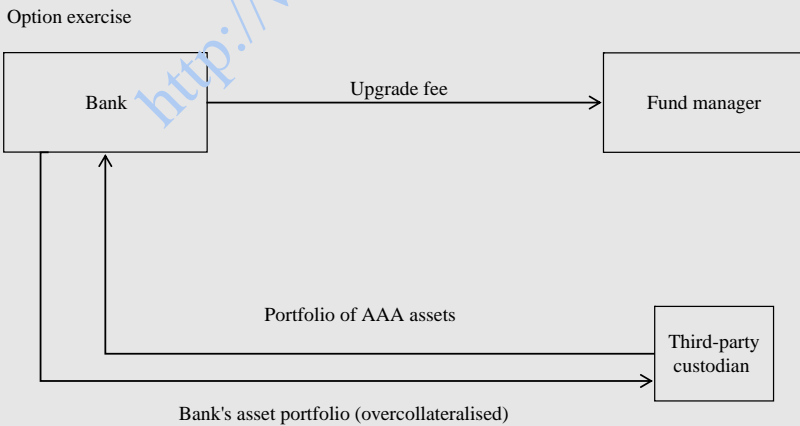
### EXAMPLE 16.5 LIQUIDITY OPTION FACILITY

The common liquidity-raising transactions, repo and TRS, are described in the existing literature, including the author's book *Bank Asset and Liability Management*. Other means by which banks can generate liquidity for strategic purposes, for example to assist with meeting long-term funding plans or regulatory requirements, are via collateral upgrade and liquidity option trades. These can be medium- or long-dated (say, up to 5-year) facilities.

In a liquidity option facility the bank pays a premium that grants it the option to swap portfolios with a counterparty any time during the term of the facility. This gives access to high-quality collateral.

The transaction is illustrated at Figure 16.16. The counterparty places a portfolio of liquid assets, such as AAA sovereign bonds, into an account managed by a third-party custodian. It continues to retain economic interest in the assets. The bank enters into an option facility for either a fixed period, say three years, or in the form of a rolling "evergreen" facility. This might be in the form of a 366-day facility that continually increases its term by one day every day. Should the bank exercise the option, it pays an upgrade fee and receives the high-quality bonds from the custodian, in return for putting up a portfolio of its assets as collateral.

For liquidity metrics purposes, this facility counts as term funds equal to the term of the upgrade. For example, the trade may specify



**FIGURE 16.16** Liquidity option facility.

that the bank can receive the liquid securities for a period of 95 or 180 days on exercise; this will count as permanent 3-month funding for the bank during the life of the option, thus reducing its LAB requirement by the same amount. For banks that have to fund their LAB with greater than 1-year money, the exercise option will have to specify a 366-day upgrade tenor.

The bank will pay an option premium for the life of the trade, as well as an upgrade fee should it exercise the option. Again, the bank has access to a pool of high-quality securities, while the counterparty enhances the return it receives on its existing holding of sovereign securities.

## Funding Policy

The emphasis on liquidity management being as important as capital management in the formulation of strategy means that all aspects of funding policy must be reviewed, and reset to optimum, at the highest level. We discussed liquidity policy in Part III of the book, and there is no need to consider it again here. However, we do note that asset funding requirements have a significant impact on the liquidity position of most banks, and should be considered at the strategy level. Practitioners should be in no doubt as the importance of funding policy in bank strategy, and it is equally important to allow for the impact of securities and derivatives trading, and the collateral requirements thereof, in this funding policy.

## CONCLUSION

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A neutral observer of the world's economic system would conclude fairly quickly that the financial markets, and banks, are an indispensable part of the economy and societal well-being. It is vital therefore that any regulatory system should incorporate the means of enforcing stability in the banking market. It should also allow for financial market innovation, because it has been largely through innovation that many of the benefits of finance have been made available to the wider population. But the key priority is effective regulation, so that even if individual banks are forced into liquidation, market stability is maintained. In other words, regulation must seek to preserve stability but also recognise that the main business of banks involves

taking risk: the act of maturity transformation, the cornerstone of banking, creates risk exposure.

Bank senior management and the Board should accept that the institutions they run are a pivotal part of society, and in the post-crisis era they will be closely regulated. Contributing to the stability of the market is as important an objective for a Board as is achieving shareholder RoE targets. To this end, an understanding and appreciation of market stability is vital. In the first instance, increasing bank capital levels is a necessary but not sufficient means to ensure a stable banking system: liquidity management is as important. In this regard, the UK FSA's requirement that all UK-regulated banks must maintain an LAB is a correct one. Forcing every bank to invest a proportion of their assets in cash, central bank deposits and liquid AAA-rated sovereign securities is the best insurance protection against future liquidity crises.

The exact proportion of the balance sheet that should be placed in the LAB is a function of the liquidity gap that the bank runs, and the diversity and security of its funding arrangements. But a form of LAB is business best-practice and all banks should seek to have one in place. In itself this is not a new suggestion; a truly liquid portfolio was commonplace in banks around the world 15 or 20 years ago. However, banks started to unilaterally relax their own requirements and remove liquidity portfolios, or move them into assets that were not truly liquid (such as bank FRNs), to the point where such portfolios had become rare even in supposedly conservative institutions such as the UK building societies. It is evident that the prevailing orthodoxy has now reverted to its original one.

Bank boards should seek to simplify their capital structures, in the interests of transparency and investor comfort. The simplest structure may well be the most efficient, with a liability base comprised of: pure equity, retained profits, senior unsubordinated bonds and deposits. Deposits are part of the country's deposit guarantee scheme, so such a structure leaves no ambiguity about what stakeholders are at risk should the bank fail.

The nature of bank liquidity management has been transformed, although many of the "new" requirements in regimes such as those implemented by the FSA are more of a return to basics than actual new practices. The bank business model for the next 10 or 20 years will incorporate these practices, with boards recommended to pay close attention to their bank's liability structure. The basic tenets of the new liability model are (i) less reliance on wholesale funding, (ii) less reliance on short-term funding, (iii) a more diversified funding base, and (iv) genuine self-sufficiency in funding. Under this new model, banks will be considerably less likely to suffer failure at the time of the next market crash or systemic stress event.

Sustainable bank strategy should be designed to be just that: pertinent throughout the business cycle. An obsession with maximising return on capital or market share, and their even less logically tenable cousin, the bank's position on the "league table" of transaction volume, cannot be part of such a through-the-cycle strategy.

## APPENDIX 16.1: THE LEADING ECONOMIC INDICES

We describe here the factor model proposed by Stock and Watson (1989), referred to as the LEI (the actual model used to calculate results shown in Example 16.1 has been adapted for use with specific parameter inputs by Zhuoshi Liu and Moorad Choudhry).

Coincident and leading economic indicators are designed to track, and in the latter case forewarn, of swings in the broad-based economy given by the business cycle. The CEI changes at approximately the same time as the whole economy, thereby providing information about the current state of the economy. The LEI is a short-term predictor of the future state of the economy.

The basic model states that the business cycle is measured by observing movements across a number of different time series, which are captured by a single variable  $C_t$  that describes the state of the economy. This variable is unobserved, and we assume that changes in it drive all movements in the economic input indicators. In other words, the dynamics of each coincident time series is described as being driven partly by changes in this unobserved variable, and partly by a specific "idiosyncratic" factor. The idiosyncratic factor is assumed to be uncorrelated with the other idiosyncratic factors as well as with the common unobserved factor.

The coincident indicator model that we specify is thus a dynamic factor model, which has strong precedent in the academic literature. We specify an  $n \times 1$  vector  $X_t$  of the logarithms of the macroeconomic variables that (we assume) are driven by the "state of the economy" factor measure. The single index model  $X_t$  is comprised of the unobserved common factor  $C_t$  and the  $n$ -dimensional idiosyncratic factor  $u_t$ . Both components are assumed to follow a linear stochastic path. Stock and Watson specify the model in terms of  $\Delta X_t$  and  $\Delta C_t$ , as follows:

$$\Delta X_t = \beta + \gamma(L)\Delta C_t + u_t \quad (\text{A16.1.1})$$

$$D(L)u_t = \varepsilon_t \quad (\text{A16.1.2})$$

$$\phi(L)\Delta C_t = \delta + \eta_t \quad (\text{A16.1.3})$$

where  $L$  denotes the lag operator, and  $\phi(L)$ ,  $\gamma(L)$  and  $D(L)$  are scalar, vector and matrix lag polynomials.

The model implies that the unobserved common factor  $C_t$  is the sole causal factor driving all the dependent variables  $X_t$ . The practical impact of this is minimal if one assumes that the relative movements of the components of  $\Delta X_t$  to any combination of external factors is identical to  $\Delta C_t$ .

The LEI model seeks to estimate the dynamics of the unobserved factor over the next six months. This is done using A16.1.1 to A16.1.3 and adjusting by  $C_{t+6} - C_t$ . We construct the LEI by modelling the variables ( $Y_t$ ) and the unobserved factor  $C_t$  as a vector auto regressive system in the form of the following simultaneous equations:

$$\Delta C_t = \mu_c + \lambda_{CC}(L)\Delta C_{t-1} + \lambda_{CY}(L)Y_{t-1} + v_{Ct} \quad (\text{A16.1.4})$$

$$Y_t = \mu_\gamma + \lambda_{\gamma C}(L)\Delta C_{t-1} + \lambda_{\gamma\gamma}(L)Y_{t-1} + v_{\gamma t} \quad (\text{A16.1.5})$$

where  $v_{Ct}$ ,  $v_{\gamma t}$  are serially uncorrelated error terms.

To calculate LEI we regress  $\Delta C_{t+6}$  against the other observed economic indicators as well as the current CEI for each of the macroeconomic indicators  $X_t$ . Thus the LEI is given as

$$L_t = K + \beta_i X_{i,t} + \gamma \Delta C_t \quad (\text{A16.1.6})$$

where  $K$  is a constant.

## REFERENCES

- Bank of England (December 2009), *Financial Stability Report*, Issue No. 26.
- Choudhry, M. (2007a), *Bank Asset and Liability Management*, Singapore: John Wiley & Sons (Asia) Pte Ltd.
- Choudhry, M. (2007b), *The United Kingdom Government Bond Market: The Impact of the Introduction of Structural Reforms on Market Liquidity*, PhD thesis, Birkbeck, University of London.
- Burns, A.F. and Mitchell, W.C. (1946), *Measuring Business Cycles*, New York: NBER.
- Engle, R.F. and Watson, M.W. (1981), "A One-Factor Multivariate Time Series Model of Metropolitan Wage Rates", *Journal of the American Statistical Association*, 76: No. 376, 774–81.
- Hatanaka, M. (1996), *Time-Series-based Econometrics: Unit Roots and Cointegration*, Oxford: Oxford University Press, p. 9.

- Sargent, T. J., and Sims, C.A. (1977), "Business Cycle Modeling without Pretending to Have Too Much A Priori Economic Theory", in C. Sims et al., *New Methods in Business Cycle Research*, Minneapolis: Federal Reserve Bank of Minneapolis.
- Stock, J.H. and Watson, M.W. (1988), "Testing of Common Trends," *Journal of the American Statistical Association*, 83, No. 404, 1097-1107.
- Stock, J.H. and Watson, M.W. (1989), "New Indexes of Coincident and Leading Economic Indicators", in Blanchard, O.L. and Fischer, S., (editors), *Macroeconomics Annual 1989*, Vol. 4, New York: National Bureau of Economic Research.

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