Notes

Introduction: Resolvability Will Determine the Future of Banking

1. Dewatripont & Tirole (1994, pp. 31–32, 87–92).

1 "Too Big to Fail" Is Too Costly to Continue

1. For a discussion of the impact of financial crises on economic growth, see Huertas (2011a, pp. 1–2) , Rogoff and Reinhart (2009), and BCBS (2010a).
2. On the consequences of Lehmans' failure, see Huertas (2011, pp. 82–83). For an analysis of Lehmans itself, see Valukas (2010).
3. FSB (2013b) lists the 29 G-SIBs. For the criteria describing what makes a bank systemic, see BCBS (2013a). This builds on earlier work, including Tarashev et al. (2009).
4. On the importance of financial market infrastructures, see CPSS-IOSCO (2012).
5. For a discussion of these policy measures, see Huertas (2011, pp. 82–99).
6. Larry Summers used this phrase in his remarks at the IMF Economic Forum on 8 November 2013. See Kose and Portillo (2013).
7. Key factors determining the credit rating of a sovereign are the debt-to-GDP level, the trend in that level and the probability that an event may occur that will require massive additions to government expenditure. One such "event risk" is the possibility that a government might have to rescue one or more of its banks (see Moody's Investor Services, 2013a).
8. Gros (2013) coined the term "doom loop".
9. On forward guidance, see Bernanke (2012), BoE (2013a), Cœuré (2013), and Woodford (2013).
10. On quantitative easing, see Bernanke and Reinhardt (2004), Bernanke (2012), and Joyce et al. (2011).
11. On outstanding level of Fed's holdings of mortgage-backed securities, see Federal Reserve balance sheet week ended 8 January 2014 at http://www.federalreserve.gov/releases/h41/current/h41.htm#h41tab3.

12. For a discussion of ECB monetary policy, see ECB (2012).
13. There are some exceptions to this statement, e.g., the ECB is holding in reserve the actual implementation of its "outright monetary transactions" policy (the direct purchase of government bonds).
14. G-20 (2009).
15. Information on FSOC is available at http://www.treasury.gov/Pages/default.aspx; on the ESRB at http://www.esrb.europa.eu/home/html/index.en.html; and on the FPC at http://www.bankofengland.co.uk/financialstability/pages/fpc/default.aspx.
16. See Tucker (2012) and Moody's Investor Services (2013a).
17. On Eurozone, see also Merler and Pisani-Ferry (2012), and Huertas (2013a).
18. See Moody's Investor Services (2013b).
19. Haldane (2010, p. 25) estimated the subsidy to global banks to be approximately $40 billion in 2007 prior to the crisis, but $250 billion in 2009. See also Schlich et al., 2014.
20. Cunliffe (2014). See also Powell (2013), and Lew (2013).

2 *Less Likely to Fail: Strengthening Regulation*

1. For full details, see BCBS (2011a, b). BCBS (2011c) provides a summary template and guidelines regarding disclosure.
2. In addition to the items discussed in the text, Basel III requires banks to deduct the following from CET1 capital amounts relating to (i) its cash flow hedge reserve, (ii) the shortfall of the stock of provisions to expected losses, (iii) the gain on sale related to securitisation transactions, (iv) investments in own shares, (v) cumulative gains and losses due to changes in own credit risk on fair valued financial liabilities and (vi) reciprocal cross-holdings in the capital of banking, financial and insurance entities. The bank also had to take into account any unfunded pension fund liabilities on its balance sheet when calculating CET1 capital.
3. The rationale in each case was that such assets could not readily and unequivocally absorb loss. In the case of deferred tax assets, they could not be readily sold to third parties and their value hinges upon the bank actually earning a profit in the future. Consequently, banks have to deduct deferred tax assets in full from CET1 capital, but may put DTAs relating to timing differences into the sin bucket. In the case of mortgage servicing rights, they could be sold to third parties, but their value realised might deviate markedly from book value, especially if interest rates were to change and/or a large number of

institutions were to attempt to sell such rights at the same time.In the case of investments in other financial institutions, the intent was to restrict the extent to which capital could be double counted within the banking system as a whole. The actual limits depend on the degree of control that the investing bank might have over the investee financial institution, as measured by the share of the investing bank's interest in the common equity of the investee institution. For small interests (ownership interest less than 10 per cent), the investing bank is able to hold positions in aggregate of up to 10 per cent of its own CET1 capital. Any amount in excess of this threshold has to be deducted from CET1 capital in full. For significant ownership interests in unconsolidated financial institutions (ownership interest greater than 10 per cent) the investing bank has to deduct the entire amount of its holdings in the common stock of the investee bank (but this amount can be put into the sin bucket).

4. Regarding the capital conservation buffer, see BCBS (2011a, pp. 54–57).
5. On the systemic surcharge, see BCBS (2013a).
6. On the counter-cyclical capital buffer, see BCBS (2010c) and (2011a, pp. 5–7, 57–60). For an analysis, see Drehmann et al. (2010) and Repullo and Saurina (2011).
7. For the trading book, see BCBS (2011d). For the securitisation framework, see BCBS (2013c).
8. BCBS (2011a, pp. 3, 29–51).
9. BCBS (2013d).
10. For the banking book, see BCBS (2013e). For the trading book, see BCBS (2013f).
11. Basel III introduced the leverage ratio in concept in 2010 (see BCBS, 2011a, pp. 4–5, 60–64) and has progressively refined the approach (BCBS, 2013i). In January 2014 the committee reached a final decision on the definition of the ratio (BCBS, 2014a).
12. BoE (2013b, pp. 69–70).
13. BCBS (2014a).
14. Ibid.
15. BoE (2013b, pp. 69–70) also documents differences in the leverage ratio according to the measurement standard employed, as does UST et al. (2013).
16. PRA (2013a) gives details. The 3 per cent ratio corresponds to the definition in the EU Capital Requirements Regulation (CRR).
17. For a discussion of the Bank of England's views on leverage, see BoE (2013b, p. 69). In a letter to the Governor of the Bank of England the Chancellor of the Exchequer (HMT, 2013a) stresses that the PRA

already has the power to set leverage ratios for individual banks and for the system as a whole and that the FPC has the power to make recommendations to the PRA in this respect. The Chancellor also asked the Bank to consider whether the FPC should be granted the authority to set the leverage ratio directly rather than merely recommend to the PRA the steps that the PRA should take.

18. UST et al. (2013). The US proposal refers to the original Basel III agreement (BCBS, 2011a) with respect to leverage rather than the revised (BCBS, 2013i) or final (BCBS, 2014a) proposal. However, the US proposal indicates that the United States will adapt the proposal to conform to changes that the Basel Committee may make in the global approach.
19. FSB 2014a.
20. BCBS (2008a) details the principles for liquidity risk management and supervision. The original Basel III accord (BCBS, 2011a) introduced the concept of a global liquidity standard. Subsequent work has refined the components relating to the liquidity coverage ratio (BCBS, 2013b, 2014b) and its disclosure to supervisors and the public (BCBS, 2014c). The Committee has also further developed the concept of a net stable funding ratio (BCBS, 2014d).
21. This avoids what Goodhart (2010, p. 175) has called the "taxi-rank" problem – a requirement that one taxi always be waiting at the train station, with the result that it cannot be used until a second taxi arrives.
22. BCBS (2010b, pp. 25–31, 2014d).
23. This section draws on EY (2013a). FSB (2013a) states the overall policy and is the source of the quotes in this section.
24. For details, see BCBS (2013g).
25. On remuneration reform, see FSF (2009); and FSB (2009). FSB (2011b) provides an overview of how jurisdictions have implemented the principles. See also Huertas (2011, pp. 171–172).
26. FSB (2013c, pp. 26–28) provides a summary. For details on progress, see FSB (2013d).
27. For an assessment of benefits, see BIS (2013).
28. For a summary of authorities' efforts to coordinate their approaches, see ODRG (2013)
29. In December 2013 the CFTC, the US agency responsible for the regulation of derivatives, outlined its view on the comparability of derivatives regimes in six foreign jurisdictions to US rules as part of its program of substituted compliance (with US rules). In other words, the CFTC view of coordination is the process by which others comply with the CFTC's rules, not to the degree to which US and other regimes satisfy global standards. For details, see CFTC (2013).

30. For a summary of the swaps push out rule, see Nazareth (2013).
31. For UK legislation, see United Kingdom (2013). The paper introducing the draft bill (HMT/BIS 2013) contains the rationale for the legislation. This is largely based a report by the Independent Commission on Banking (2011) chaired by John Vickers. Note however that the original ICB report recognised that retail banking could be as risky as investment banking.
32. Liikanen (2012a). For the full report, see Liikanen (2012b). The French Law of 26 July 2013 is available at http://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000027754539. For the German law, see http://www.bundesrat.de/cln_330/SharedDocs/Drucksachen/2013/0301–400/378–13,templateId=raw,property=publicationFile.pdf/378–13.pdf.
33. The final Volcker Rule is a joint rule of the five US federal agencies responsible for regulation and supervision of financial institutions in the United States (Board of Governors of the Federal Reserve System, Office of the Comptroller of the Currency, Federal Deposit Insurance Corporation, Securities and Exchange Commission and Commodities Futures Trading Corporation). The final text of the rule is available at http://www.federalreserve.gov/newsevents/press/bcreg/bcreg20131210a1.pdf. For a summary and legal analysis, see S&S (2014).
34. The rule also applies to non-US banking organisations. Their US operations are subject to the rule in the same manner as US banking organisations, and their non-US operations are also subject to the rule unless such operations are "solely outside the United States." Note that the rule classifies trading with a US person outside the United States as being "within the United States" so that foreign banking organisations that trade with US persons (such as US banks) in covered financial instruments will effectively become subject to very extensive US reporting and compliance requirements.
35. On balkanisation, see Goodhart (2013, pp. 254–255).
36. HMT (2012, pp. 7–8).
37. See FINMA (2012).
38. Tarullo (2012).
39. FRB (2012) and FRB 2014.
40. Barker and Braithwaite (2013).
41. For a general discussion of financial institution taxation in the wake of the crisis, see IMF (2010).
42. For an economic analysis of the FTT, see Matheson (2011).
43. A summary of developments with respect to the EU proposal for a FTT is available at http://ec.europa.eu/taxation_customs/taxation/other_taxes/financial_sector/index_En.htm.

44. See Perotti and Suarez (2011).

3 Less Likely to Fail: Sharper Supervision

1. On micro-supervision, see Sants (2009); Huertas (2011, pp. 184–192); and PRA (2013b).
2. For example, the German supervisor BAFIN rejected Deutsche Bank's first choice for chief risk officer. See Taylor and Hübner (2012).
3. See, e.g., PRA (2013b, p. 17).
4. Quote is from Sants (2009).
5. FSB 2014b.
6. BCBS (2013h).
7. The United Kingdom is one example. See PRA (2013b, pp. 30–31).
8. For the US rule on capital plans, see FRB (2011). Note that the supervisory review of the bank's capital plan will also have a macro-prudential dimension, especially in the case where the bank is systemically significant in the domestic economy. Although reductions in the growth or absolute level of assets is one way to improve a bank's capital ratio, the supervisor is hardly likely to approve such plans if they involve a reduction in credit to SMEs and households at the trough of the cycle.
9. PRA (2013b, p. 26).
10. The United States conducts an annual comprehensive capital assessment review (CCAR) (see FRB, 2011). The EU conducts a stress test periodically for all EU banks. This will be coordinated with the asset quality review to be conducted by the ECB for Eurozone banks. Individual jurisdictions within the EU also conduct stress tests (for the United Kingdom, see PRA, 2013b, p. 26; BoE, 2013d).
11. For details of the ECB asset quality review, see Constâncio (2013) and Huertas (2013a).
12. The principles are detailed in BCBS (2008a).
13. BCBS (2013j) details the behaviour under stress of various funding sources including the implications for unencumbered assets. It also provides a survey of the academic literature relating to these issues. See also BoE (2013d).
14. For details of central bank lending policies in the United States, see FRB (2010) and Board of Governors of the Federal Reserve System (2013); in the United Kingdom, see BoE (2013c); and in the Eurozone, see ECB (2011).
15. On recovery planning, see Huertas and Lastra (2011); PRA (2013c); EBA (2013).

16. For a discussion of supervisory intervention, see PRA (2013b, pp. 30–35).
17. For a summary of history of FSB, see http://www.financialstability-board.org/about/history.htm.
18. For an example of such a periodic report, see FSB (2013c) and FSB 2014a.
19. For background on the Financial Stability Oversight Council, see http://www.treasury.gov/initiatives/fsoc/about/Pages/default.aspx.
20. For background on the ESRB, see http://www.esrb.europa.eu/about/background/html/index.en.html.
21. For background on the FPC, see http://www.bankofengland.co.uk/financialstability/pages/fpc/default.aspx.
22. The so-called credit view of the monetary transmission mechanism contends that the availability and volume of bank credit has an independent effect on the aggregate economic variables such as consumption and investment over and above the impact from interest rates alone. Hence, if bank capital or bank liquidity constrains (facilitates) bank lending, movements in bank capital and/or liquidity will augment the cycle. See Bolton and Freixas (2006). Brunnermeier et al. (2009) document that movements in asset prices will have a pro-cyclical effect on capital (via market-to-market accounting) and on liquidity (via valuation of and advance rates on collateral used in repos and other secured borrowings). This creates a positive feedback loop, augmenting the upturn and deepening the downturn. See also Huertas (2011a, p. 41).
23. For details of the counter-cyclical capital buffer, see BCBS (2010c). On the effectiveness of the buffer in offsetting pro-cyclicality, see Repullo and Saurina (2011).
24. On debt overhang, see Admati et al. (2012).
25. For details of the AQR/BSA that the ECB proposes to conduct in connection with the introduction of banking union, see ECB (2013a) and Huertas (2013a).
26. See FSB (2013f). For a general discussion of shadow banking, see Poszar et al. (2013); Kodres (2013); Tarullo (2013); Jackson (2013); Huertas (2011a, pp. 206–210).
27. On "acquire to arbitrage," see Huertas (2011a, pp. 35–38).
28. In the United States the FSOC (2012) made proposals to this effect in November 2012 as did the European Commission (2013) in September 2013.
29. For the FSB recommendation, see FSB (2013g).
30. For an analysis of re-hypothecation, see Singh and Aitken (2010).
31. On risks in the repo market and proposed mitigation, see FSB (2013g); Dudley (2013); FRBNY (2012); FSOC (2012, p. 133).

32. The over-reliance on intraday credit results from the decision of the two hub banks to act in effect as principal rather than agent in the tri-party market. They have tended to repay the lenders (repurchase the securities) at the start of business each day without demanding repayment from the borrower (e.g., a broker-dealer) in the expectation that the borrower would be able to find a new third-party lender by the close of the business day. During the day the hub bank acts as the lender to the borrower. This creates undue concentration risk:
    - for major broker-dealers and other firms that rely on repo for the bulk of their short-term funding. If the hub bank decides to increase collateral demands (haircuts) or cut off credit entirely, this could push the broker-dealer into resolution – a step that could have system-wide repercussions.
    - or the system as a whole, if one or both of the hub banks were to fail, so might many of the borrowers, for they would be hard-pressed to make immediately alternative funding arrangements.

    This risk is being addressed. The hub banks are revising their clearing arrangements to reduce the intraday credit that they provide. By year end 2014 approximately 90 per cent of tri-party repo will be on an agency basis where the loan comes directly to the borrower from the lender without any intra-day credit from the hub bank. See Dudley (2013).
33. For example, lenders have set haircuts too low relative to the risk of the borrower and the price volatility and market liquidity of the collateral. Lenders have also taken as collateral securities that they would not be allowed to own outright.
34. Lenders generally do not have a mechanism in place to allow for gradual liquidation of collateral seized in the event a borrower defaults. Lenders therefore attempt to sell immediately the assets taken in lieu of repayment. In the event of a default by a major broker-dealer, dumping very large amounts of securities into an already troubled market will depress prices to "fire sale" levels and cause further mark-downs in capital and shortages in liquidity in various participants across the market as a whole.
35. In the United States, e.g., the Financial Stability Oversight Committee has formally designated nine financial market infrastructures as systemically important financial market utilities. See http://www.treasury.gov/initiatives/fsoc/Documents/2012%20Appendix%20A%20Designation%20of%20Systemically%20Important%20Market%20Utilities.pdf.
36. See CPSS-IOSCO (2012).
37. For recovery plans, see CPSS-IOSCO (2013). For resolution plans for FMIs, see FSB (2013e, pp. 15–26) and Huertas 2014a.

38. FSB (2013c, p. 16).
39. FSB (2013h). In the United States the FSOC has designated American International Group and Prudential Financial as systemically important financial institutions (see http://www.treasury.gov/initiatives/fsoc/designations/Pages/default.aspx).
40. The exception to this statement is General Electric Capital Corporation, which the FSOC designated as systemic in July 2013 (FSOC, 2013a).
41. On Fannie and Freddie, see Acharya et al. (2011) and Huertas (2011a, pp. 209–210).
42. In addition, a number of banks "low-balled" their LIBOR submissions during the crisis in order to avoid giving the appearance that they were under liquidity pressure and had to pay up for funds. In at least one case (Barclays) it appeared that this was done with the knowledge and approval of the bank's senior management. When this came to light, the senior management of the bank was replaced. Cf. CFTC (2012).
43. Wheatley (2012).
44. IOSCO (2013).
45. Griffin and Campbell (2013).
46. For an overview of securitisation, see Jackson (2013, pp. 383–392).
47. Huertas (2011a, pp. 29–33) and Jackson (2013).
48. On reform of credit rating agencies, see FSB (2013c, pp. 30–32).
49. For a list of prominent SEC enforcement cases with respect to insider trading, see http://www.sec.gov/spotlight/insidertrading/cases.shtml.
50. Financial Action Task Force (2012).
51. On initiatives with respect to consumer protection, see OECD (2013) and FSB (2011a).
52. For further information on the CFPB, see http://www.consumerfinance.gov/.
53. FCA (2013, pp. 10–24).
54. Indeed, prior to the crisis central banks and other authorities remained quite optimistic about the economy, stating that growth would continue and that there was little or no chance of a recession developing – all thanks to the "Great Moderation" that central bank monetary policy had helped bring about (Bernanke, 2004). Consequently, in normal times the economy is as or more likely to drive the supply of credit as credit supply is likely to drive the economy.

4 *Safe to Fail*

1. FSB (2011c).

2. Normal transactions would include payments and settlement of securities trades and various other “non-investment” transactions with both individual and institutional customers. In contrast, investment obligations would be subject to a stay (e.g., on the payment of interest and dividends or the repayment of capital instruments) as outlined later.
3. For a description of the key attributes of a resolution regime, see FSB (2011c). For an assessment of progress in implementation of these key attributes, see FSB (2013i, j).
4. For details, see Huertas (2014b) ; Huertas and Nieto (2014).
5. In some jurisdictions the central bank has a formal role in the trigger process. For example, in the United Kingdom under the Banking Act 2009 the Financial Services Authority (the supervisor at the time) had to seek the advice of the Bank of England before formally pulling the trigger (finding that the bank failed to meet threshold conditions).
6. However, the supervisor alone can exercise forbearance, if the bank finances itself solely through equity and insured deposits. This occurred in the United States in the 1980s in the case of savings and loan associations (thrifts). In many ways, the “prompt corrective action” provisions of FDICIA (1991) were designed to put a limit on such supervisory forbearance.
7. However, forbearance and the provision of emergency liquidity assistance does give unsecured creditors both the opportunity and incentive to run and get out whole (without loss) before the bank enters resolution. To keep the bank in operation, the central bank would have to extend increasing amounts of collateralised credit, further reducing the unencumbered assets that might serve to back the bank’s unsecured liabilities and furthering increasing the losses that such creditors would suffer, if the bank eventually did enter resolution.
8. Such disruption from closing an internationally active bank in the middle of the day is known as “Herstatt risk.” This refers principally to settlement risk – the risk that one side of a transaction will settle, whilst the other remains open. Although infrastructures and participants have taken various measures to reduce such risks, significant settlement risks remain. In addition, closing a G-SIB in the middle of a business day is likely to cause a significant number of trades to fail. This may have knock-on effects on the risk positions of major market participants. See Huertas (2014a).
9. See FSB (2013j) and FSB 2014a.
10. Conceptually, it is possible to set in advance the terms on which write-off or conversion would occur, if the bank went into resolution.

To the extent that investor obligations contain such clauses, the resolution authority should implement them immediately at or immediately before putting the bank into resolution. The converted instrument would then slot into the creditor hierarchy in its new capacity.

Conceptually, it is also possible to imagine that the resolution authority would set the terms of conversion at the resolution weekend, or that the terms could be negotiated among the parties during the weekend. The former is potentially arbitrary, so that it will be more difficult for the bank to place instruments with investors. The latter is utterly impractical, given the short time period available (36–48 hours), the diversity of investor interests and the inability to establish with precision the amount of loss that the bank must take.

11. Note that it may not be necessary to bail-in the senior debt, if the amount of Additional Tier 1 and Tier 2 capital is sufficient to recapitalise the bank.
12. Note that the issuance of such proceeds notes greatly reduces the need to conduct an immediate valuation of the bank-in-resolution for the purpose of apportioning ultimate loss. Provided the authorities do not engage in forbearance (allow banks that fail to meet threshold conditions to continue in operation), losses should be less than the amount of the bank's primary loss-absorbing capacity (common equity plus instruments subject to mandatory bail-in). Consequently, the valuation immediately required at the point of resolution is
    - an assessment that the bank has reached the point of non-viability (so that the trigger to resolution is pulled);
    - an assessment that losses will not be greater than the total amount of investor capital (primary loss absorbing capacity); and
    - an assessment of the advance rate that the central bank is willing to make on the unencumbered assets that the bank-in-resolution will pledge to the central bank as collateral for the liquidity facility that the central bank provides to the bank-in-resolution.
13. IIF (2011). However, some resolution regimes (e.g., EU BRRD) leave open how such a claim could be satisfied.
14. On asset encumbrance, see CGFS (2013).
15. See Huertas (2014a).
16. For a discussion of the impact of QFCs on resolution, see Roe (2011).
17. Huertas (2013a).
18. See Bovenzi et al. (2013).
19. For example, Iceland changed its banking law in 2008 after the entry in resolution of Landsbanki and other Icelandic banks with foreign branches.

20. See, e.g., PRA (2014).
21. FDIC (2013).
22. In the United States, e.g., the FDIC may employ the Orderly Liquidation Authority (the basis for the SPE approach) if and only if it can demonstrate that resolution under normal bankruptcy procedures (as called for under Title I) would be harmful to financial stability in the United States and this decision has the prior approval of the FDIC itself (two-thirds of its board), the Board of Governors of the Federal Reserve System (with two-thirds majority) and the Secretary of the Treasury "in consultation with the President."
23. FDIC (2013).
24. FRB (2014).
25. In particular, such a process shall make clear that the original parent holding company has no claim on the subsidiary bank-in-resolution, but mandate that the original parent holding company provide a warranty and indemnity to the restructured bank-in-resolution for liabilities relating to misconduct at the subsidiary bank-in-resolution prior to the entry of the subsidiary bank into resolution. Note that condition (2) (the restriction on the parent holding company paying dividends or making distributions) holds only so long as the parent owns the subsidiary. If the subsidiary enters resolution and the parent's equity is written off, the parent is no longer responsible for assuring that the bank-in-resolution has adequate reserve capital.
26. For further discussion of such a liquidity facility see Huertas (2013a).
27. Merton and Perold (1993). See also Strongin (2013).

5 Setting Up for Success

1. For a discussion of supervisors as monitors and minders, see Huertas (2012b).
2. To a certain extent, investors can supplement their own analysis of the bank by "free-riding" on the supervisor's monitoring and minding activities. The supervisor will generally have greater power than a private investor to obtain information from the bank. To the extent that such regulatory reports are made public in a timely manner, investors can get sight of the same data that the supervisor uses to judge the bank's condition. This will aid investors in forming their own view of the bank's condition.

   The supervisor will also generally have more power to "persuade" the bank to take the measures necessary to arrest deterioration in its condition and/or to initiate its recovery plan. What investors will do is form a view on effectiveness of the supervisor as a “minder”: can the supervisor identify problems promptly, can it induce the bank to take remedial measures as soon as possible and can it refrain from exercising forbearance? If so, this “minding” activity will reduce the probability that the bank will reach the point of non-viability/enter resolution as well as reduce the loss to investors, if the bank does enter resolution.

3. Low RoE-low risk equities can perform just as well or better than high RoE-high risk equities. In fact, total return to shareholders from holding utility stocks (a proxy for low return-low risk equities) has compared favourably with the total return realised by shareholders in financial institutions. See Huertas (2009).
4. This, of course, is just a restatement of textbook corporate finance, the so-called Modigliani-Miller theorem. Under too big to fail, banks have been largely exempt from the rule that higher risk means a higher cost of equity capital. Resolution reform will remove that exemption and make banks more similar to non-financial corporations. For further discussion see Huertas (2012b, 2013c).
5. Secondarily, the bank may earn income from the instruments whilst they are in inventory.
6. At a minimum, the business model should include all the risks the bank will take. Had such an analysis been conducted prior to the crisis, banks might have seen that they were overlooking or underestimating liquidity risk as well as conduct and operational risks.
7. The business model should assure that the bank prices risk correctly. Under-charging customers for the risk of credit is particularly dangerous. Banks that follow such a policy will gain a disproportionate share of such credit and fail to earn enough income over time to provision adequately for the impairments that will arise.
8. For example, if a bank is to compete in offering credit cards to consumers, it has to be ready to offer customers limits that are in line with the income and spending habits of its target customer base.
9. Acemoglu and Robinson (2012).
10. Quote is from Sands (2013). In fact, finance has a long history of such moments – the negotiable CD, money market mutual funds, derivatives and so on; so it will pay banks to think through how markets may evolve and to be prepared to adopt and/or adapt innovations that may occur elsewhere.
11. Although regulation may currently provide some protection against competition from new entrants, banks should not derive too much comfort from this. Any benefit is likely to be temporary. The prospect of profit makes potential entrants quite inventive in devising ways to

access the most profitable parts of the revenue pool. And the prospect of lower prices and/or better service, along with the view that small firms do not pose a threat to financial stability, may persuade the authorities to tolerate or even welcome the additional competition that new entrants would pose.

12. There are already examples of banks moving in this direction. See Chassany and Goff (2014).
13. See Huertas (2011, pp. 35–38); Jackson (2013).
14. This should be documented in the bank's risk appetite framework and risk appetite statement – each of which will be subject to supervisory review (see Chapter 2).
15. For a fuller description of the role of internal audit, see Chartered Institute of Internal Auditors (2013).
16. Banks purportedly pursued this strategy prior to the crisis. Actually, they didn't. They failed to distribute. Assets got stuck on the bank's balance sheet, so that the strategy in practice became "acquire to arbitrage" rather than originate to distribute. See Huertas (2011, pp. 35–38).
17. On acquire-to-arbitrage, see ibid.
18. In some cases, holding "idle" inventory may actually detract from the bank's ability to win new business. For example, if a bank's existing loans to a corporate client already approach its internal or legal lending limit, the bank will have little or no scope to respond to new credit demands from the client.
19. See McGrath (2013).
20. See Mayer-Schönberger and Cukier (2013); Davenport (2013); Davenport and Harris (2010).

Conclusion: Is Basel Best?

1. In addition, as outlined in Chapter 4, banks and authorities will have to develop a means to assure that qualified financial contracts do not disrupt the resolution process as well as a means to assure that financial market infrastructures remain robust.
2. It will certainly help, as outlined in Chapter 5, if banks can devise means to make work to meet regulatory requirements do "double duty" and meet business requirements as well.
3. See Powell (2013), for example.
4. In an extreme case, global banks would become little more than owners of various national entities, each independent of one another. This could hamper trade and growth, particularly if such national

entities could not readily book business with institutions or individuals resident outside the borders of the country in which the bank is incorporated.

5. Goodhart (2013, p. 15).
6. The US savings and loan (thrift) industry is a good example of the unintended adverse consequences of financial regulation. Regulation forced such banks to specialise in long-term, fixed rate mortgages financed by short-term insured deposits subject to a ceiling (Regulation Q) on the rate of interest that could be paid to depositors. When the Federal Reserve raised interest rates above the Reg Q ceiling in order to combat inflation, thrifts experienced significant deposit outflows, leading to the failure of over one thousand thrifts, the collapse of its deposit insurance fund and a bill to the taxpayer of over $150 billion. For a summary, see White (1991).

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