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An overview of the UK banking sector since the Basel accord: brief insights from a new regulatory database[1]

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[1] This paper was prepared for the meeting. The views expressed are those of the authors and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

An Overview of the UK Banking Sector since the Basel Accord: Brief Insights from a New Regulatory Database

Sebastian J A de-Ramon,[1] William B Francis and Kristoffer Milonas

Abstract

This paper provides an overview of the dramatic changes in the UK banking sector over the 1989-2013 period, seen through the lens of a newly-assembled database built from banks' regulatory reports. This database, which we refer to as the Historical Banking Regulatory Database (HBRD), covers financial statement and confidential regulatory information for all authorized UK banks and building societies at the consolidated (group) and standalone (bank) level. As a result, it permits both a more comprehensive picture of the UK banking sector as well as a more refined view of sub-sectors, such as small banks, than possible with other existing datasets (e.g. from external vendors or aggregate statistics). The overview focuses on developments in banks' CAMEL characteristics (**C**apital adequacy, **A**sset quality, **M**anagement skills, **E**arnings performance and **L**iquidity), and relates these developments to concurrent regulatory changes, such as the Basel Market Risk Amendment. In a forthcoming paper, we suggest ways in which the database can be used for evidence-based research and policy analysis.

Keywords: Bank regulation, regulatory data, database, capital requirements, CAMEL, capital, capital requirements, asset quality, management, earnings performance, liquidity, funding

JEL classification: G21, G28, N2, G01

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Executive Summary

This note summarises the longer working paper discussed at the fall 2016 IFC conference (forthcoming as a Bank of England working paper available at http://www.bankofengland.co.uk/research/Pages/workingpapers/default.aspx). That paper describes the evolution of the UK banking sector over the years 1989-2013 through the lens of a newly-developed Historical Bank Regulatory Database (HBRD). It also details the new database, highlights its benefits relative to existing commercial databases and discusses potential uses for researchers and policy analysts.

Evolution of the UK banking sector and its regulation

We structure our analysis using the well-known CAMEL framework covering aspects of banking conditions related to **C**apital adequacy, **A**sset quality, **M**anagement skills, **E**arnings performance and **L**iquidity. We focus the analysis mainly on aggregate measures of each CAMEL factor to illustrate the breadth of the new database. We analyse the developments separately for small and large (top 8 in total assets) banks as these two groups present key differences. We overlay this analysis with a review of changes in regulation that interplayed with these developments.

Our findings are as follows:

- *Capital adequacy*, measured according to risk-based standards at the time, increased steadily in the run-up to of the 2008-09 financial crisis, while it fell on a non-risk adjusted basis. This latter trend was especially evident at the largest institutions due to a reduction in risk-weighted assets stemming from wholesale shifts in assets from the banking book to the trading book, attracting lower capital requirement with the introduction of the Basel Market Risk Amendment (MRA) in 1996. Large banks also had lower overall risk-based capital ratios, lower risk-based capital requirements and lower proportions of high-quality (Tier 1) capital relative to small banks.

- With regards to *asset quality*, large banks shifted portfolios from traditional lending to trading activities, reflecting in part the heightened incentives (to lower regulatory capital requirements) under the MRA. Small banks, on the other hand, increased lending as a share of their portfolios throughout 1989 to 2013. Actual and provisioned losses were high during the distressed period in the early 1990s and again during the recent financial crisis, particularly at large banks.

- *Management skills*, as measured by the cost-to-income (efficiency) ratio, remained relatively stable over the period 1989 to 2007, but worsened notably with the onset of the 2008-09 financial crisis as banks faced higher costs of dealing with mounting loan problems and misconduct charges.

- The distress periods of the early 1990s and again during the recent financial crisis can be seen clearly in banks' *earnings performance* measures. Post-crisis earnings measures remain low by historical standards as banks face challenges from legacy assets and low interest margins.

- Aggregate *liquidity* metrics generally worsened up until the crisis. Broadly speaking, large banks had higher levels of liquid assets, but less stable funding (measured as deposits to assets and a proxy for the Net Stable Funding Ratio, NSFR).

In a forthcoming working paper, we explore these developments in greater detail.

Benefits of the database

A key benefit of the HBRD is its application to a wide set of highly relevant policy questions and the opportunities it affords to generate evidenced-based policy.

Important dimensions of the database include:

1. Coverage

    a) Long time series, covering the evolution from Basel I to Basel III, five different regulatory reporting regimes, and several distress episodes (e.g. the UK small-bank crisis in the early 1990s, the dotcom turmoil in 2000-02 and the 2008-09 financial crisis).
    b) Broad cross-section, covering the UK banking sector (UK registered banks, foreign subsidiaries and building societies excluding branches of foreign domiciled banks).
    c) Both solo and group (consolidated) data.

2. Unique content not available from existing external sources.

    a) Confidential regulatory information on required capital not currently available elsewhere.
    b) Level of consolidation is the same as used for regulatory purposes, which is not always the same as in public financial reporting; using the latter could be misleading when evaluating, for example, behaviour in response to changes in regulation.

3. Potential for future use with ease and confidence:

    a) Consistent definitions of variables, constructed using regulatory reporting instructions from the respective reporting regimes.
    b) Extensive data checks.
    c) Accompanying manual and metadata.
    d) Available to external users (subject to security clearance).

Future use of the database in research and policy analysis

In a forthcoming working paper, we suggest ways in which the historical developments we have explored could be investigated in a more granular way, and more generally how the database could be used to address both current policy issues and research questions covered in the literature. We believe the new database offers considerable scope for contributing to the evidence base on the impacts of regulatory changes on bank behaviour and ex post policy reviews.

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The recent history of UK banking industry seen through a new regulatory database[1]

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BANK OF ENGLAND

The Recent History of UK Banking Industry Seen Through a New Regulatory Database

IFC Biennial Basel Conference

8th September 2016

HBRD (or Hybrid) Database

Sebastian de-Ramon, Bill Francis, Kristoffer Milonas

BoE PPD and Research Hub

Database Comparisons

Database feature	HBRD	BoE MASD panel	Capital IQ	Bankscope
Number of Banks & B. Societies	533 (If authorised 89-13)	118 (86 currently)	371 (mostly banks)	617
Groups	173 (UK groups of authorised firms)	42 (38 currently)	27 (no B. Societies)	148
Periods	1989-2013	1997	1998-	1980 – (only latest 15 years available for most users)
Frequency	Quarterly, bi-annual	Up to monthly	Annual (quarter interpolated)	Annual
Non-UK activities	Yes	No	Unknown	Yes, to the extent incl. in financial reporting
Non-UK Groups	UK incorporated subs	UK incorporated subs	International groups	International groups
Documentation	In depth	In depth	Minimal (w/support)	Fair (w/support)
Coverage of CAMELS characteristics	44 indicators	Few asset/liabilities; from 2009 sectoral breakdown: loans, approvals, write-offs	Varies by bank	Varies by bank
Regulatory risk and Capital requirements	Yes; reported at same level of application as regulatory requirements	None	None	Limited
Basis of data	Mandatory reporting for prudential regulation	Reporting mandated by regulator	Publicly available financial reporting	Publicly available financial reporting
Availability	Confidential; available to externals subject to individual security clearance	Confidential; available to externals subject to individual security clearance	Publicly available (subject to license fee)	Publicly available (subject to license fee)

Broad cross-section

Long time series

Level of application = level of reporting

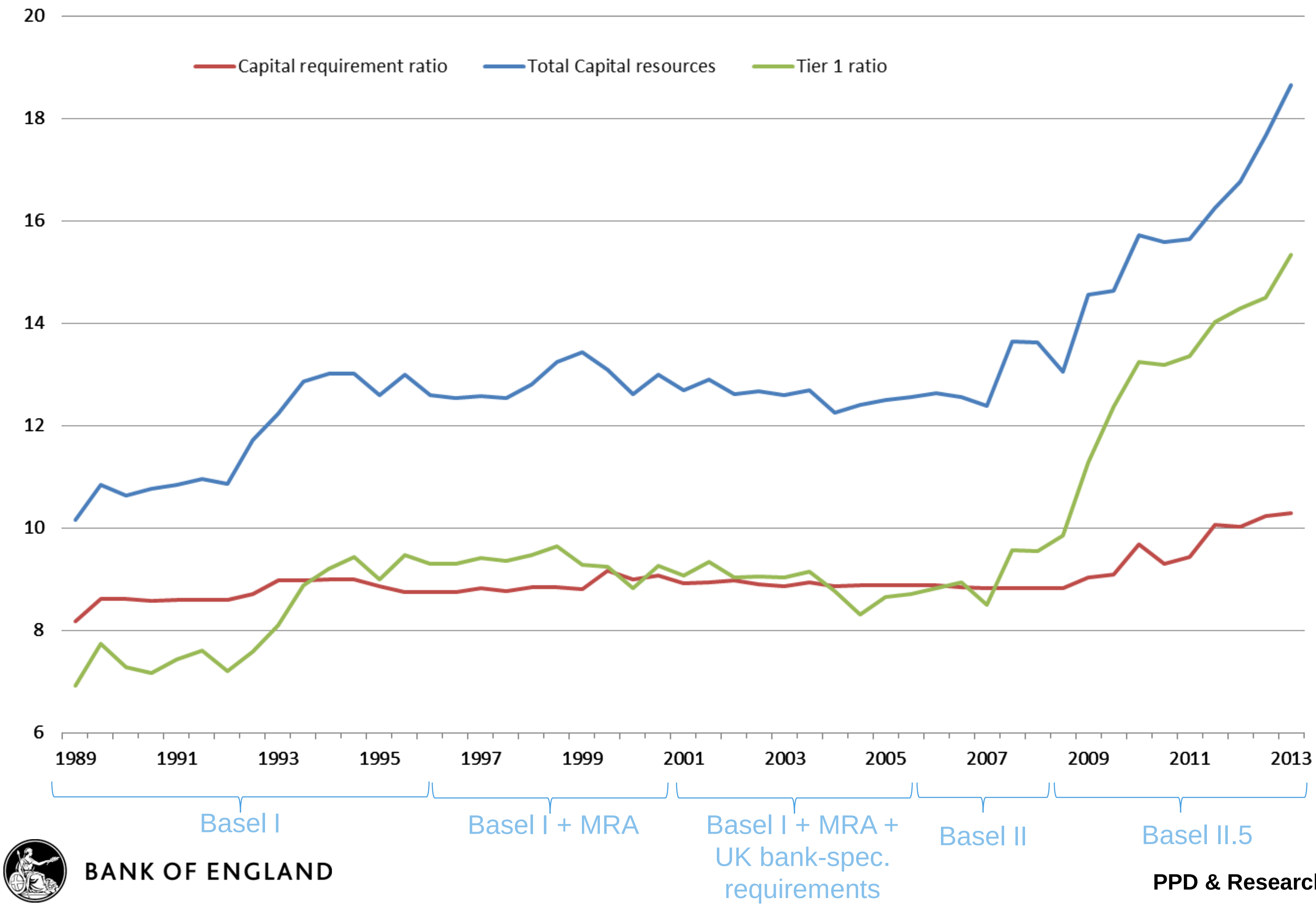
Source(s): Bank of England, Bureau van Dijk (undated), Duprey and Lé (2015), University of Toronto (2014).

CAMELS performance indicators

CAMELS

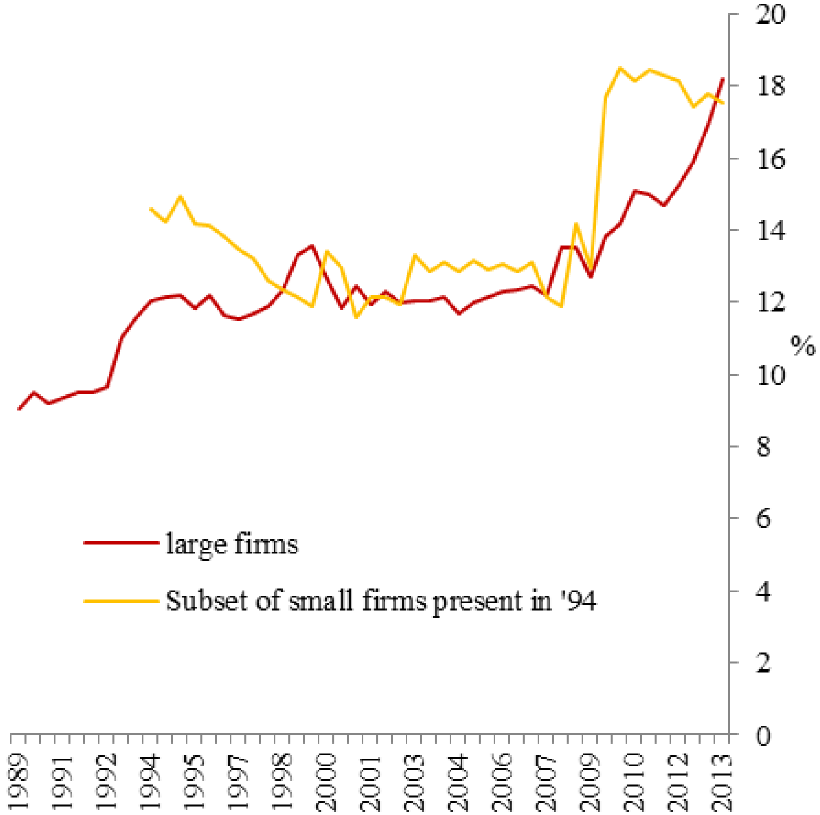
Capital Adequacy	Tier 1 risk based capital Ratio; Total risk based capital Ratio; Retained Earnings to Total Equity; Arrears Level to Provisions and Equity; Tier 1 leverage ratio; Solvency
Asset Quality	Net loss to total loans; Earnings coverage of net loss; Ratio of Provisions to Net Losses; Ratio of Provisions to Total Loans; Arrears secured unsecured; average risk weights
Management	Efficiency ratio of total overhead to net-interest and non-interest income; Size; Retail residential loans to total assets;
Earnings & Profitability	Interest Income - Interest Expense = Net Interest Income + Non-interest income - provision for Loan losses - Non-interest Expense = Pre-tax Operating Income + Extraordinary items = Net Operating Income
Liquidity and Funding	Loans to Assets ratio; Ratio of Loans to total or non-financial deposits; Ratio of Loans to Total deposits; Broad & Narrow liquid asset ratio
Sensitivity to Market Risk	Trading book assets to total assets; Net interest income to total assets; Sensitivity in NPV of bank to yield curve shifts

UK Bank Capital and Requirements

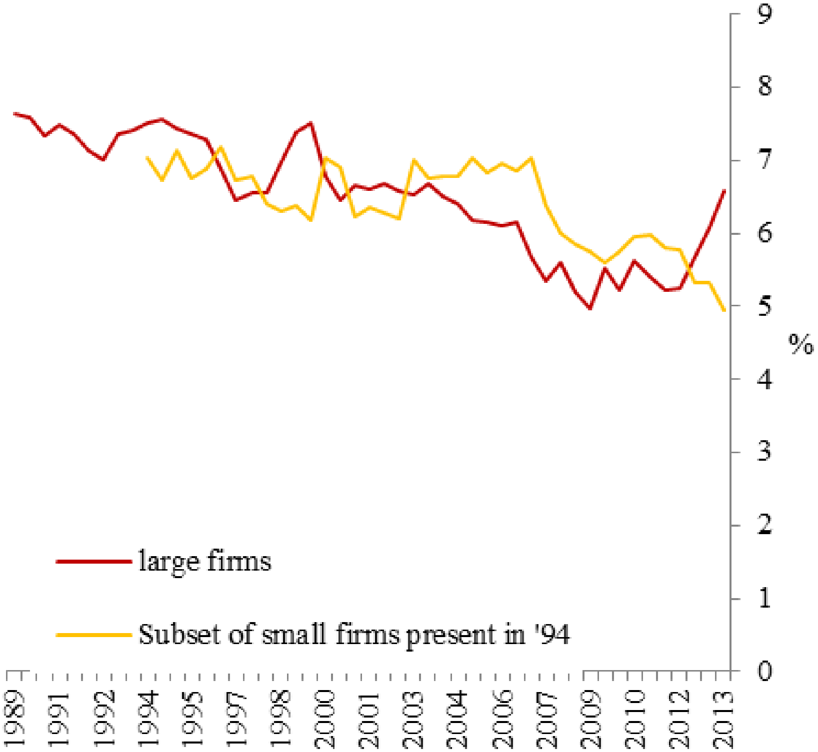


Capital: Aggregate Evolution

Risk Based capital ratio

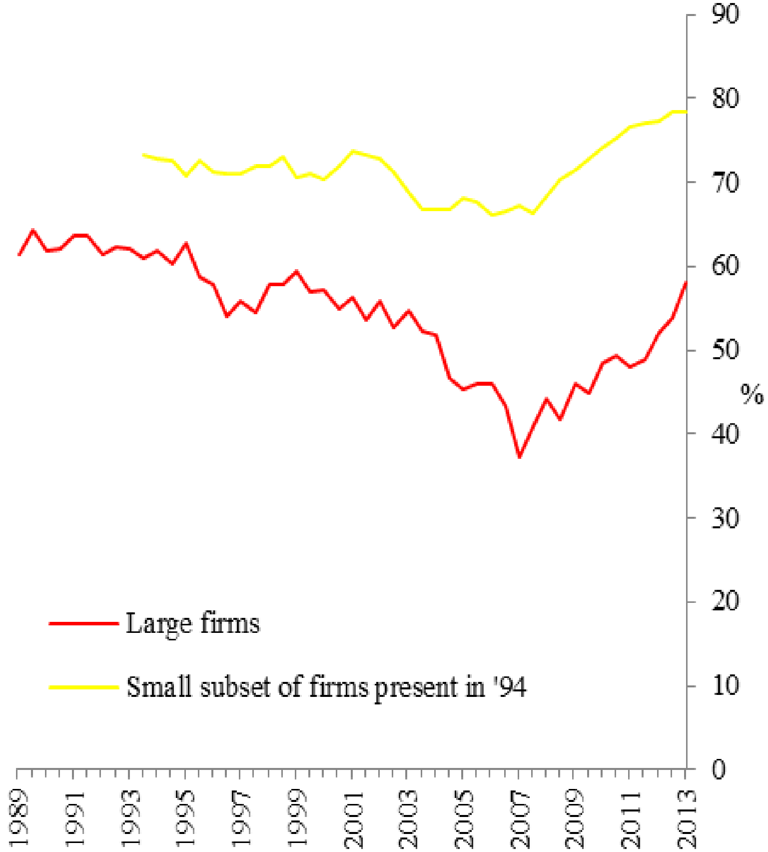


Leverage ratio



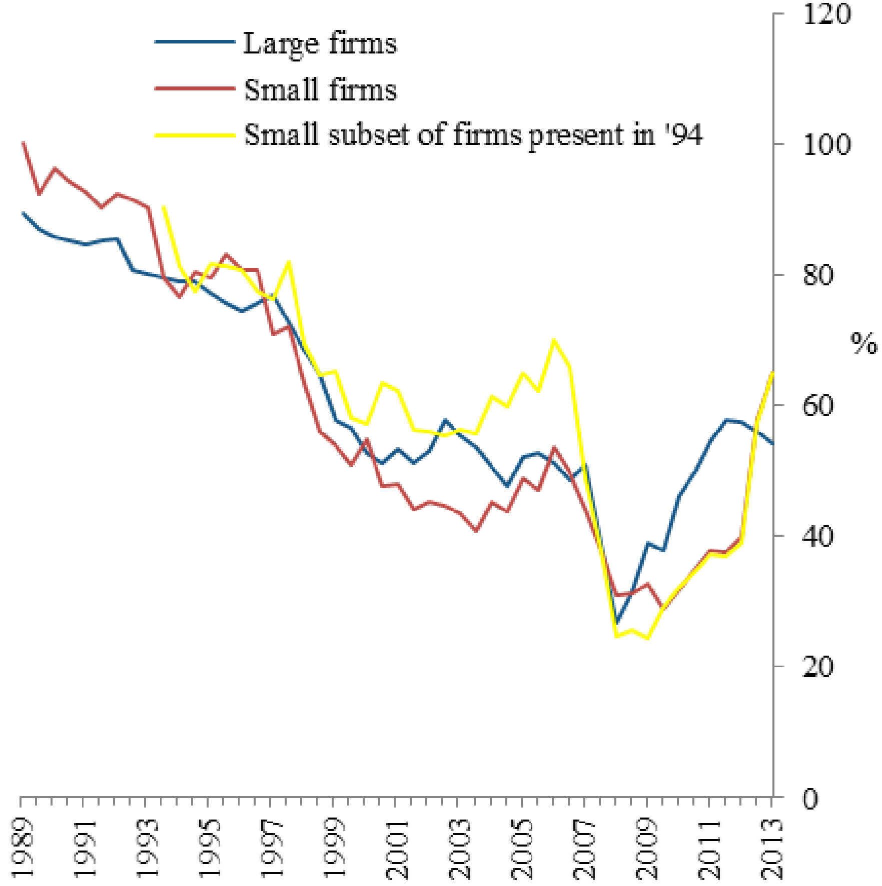
Liquidity and funding

- NSFR proxies as comprehensive measures of funding stability.
- $NSFR_{proxy} = \dfrac{Available\ Stable\ Funding_{proxy}}{Required\ Stable\ Funding_{proxy}}$
- $Available\ Stable\ Funding_{Proxy} = 0.7 \times NonFinancialDeposits + TotalCapital$
- $Required\ Stable\ Funding_{proxy} = 0.85 \times Loans + (Assets - LiquidAssets - NonLiquidTradingAssets) + 0.5 \times NonLiquidTradingAssets$



Quantity and quality of liquid assets

- Quantity of liquid assets fairly stable until crisis, increased during the crisis
- Quality of liquid assets (≈HQLA; share of gilts, central bank balances etc.)
  - Decreased until crisis, then reversed



Conclusions – key benefits of HBRD

- Coverage
  - Long time series
  - Broad cross-section
  - Both solo and group data
- Unique content not available in external sources
  - Confidential regulatory information on e.g. required capital
  - Level of consolidation = level of application of regulation
- Potential for future use with ease and confidence
  - Consistent definitions of variables
  - Extensive & transparent data checks
  - Accompanying manual and metadata
  - “Processed” version for quick analyses; “raw” for advanced ones

Questions to you

- Similar data in other countries?
- Further uses for this type of regulatory dataset?
  - E.g. UK subsidiaries of foreign banks?
- Experiences of using regulatory data vs commercial data
  - pros and cons?

Thank you!