Retail banking market investigation

Approach to market-wide financial and profitability analysis

27 March 2015

This is one of a series of consultative working papers which will be published during the course of the investigation. Parties wishing to comment on this paper should send their comments to retailbanking@cma.gsi.gov.uk by 10 April 2015.

Contents

Page

Purpose of this paper 2
Introduction 2
Role of profitability analysis 3
Scope of our analysis 5
Proposed profitability measures and benchmarks 8
Detailed approach to profitability analysis 10
Appendix 1: Cost of equity: planned methodology 16

Purpose of this paper

1. The purpose of this paper is to set out the Competition and Market Authority's (CMA's) likely approach to assessing the financial performance of the retail banking market in undertaking any market-wide profitability analysis. This paper discusses market-wide profitability. We propose to undertake a separate financial analysis on customer and product profitability.

2. We have received submissions from several parties on the subject of market-wide profitability in particular highlighting why it will be particularly difficult in practice to estimate economic profits robustly at an individual provider or industry level.

3. We sent a detailed financial information request to the five largest providers of personal current accounts (PCAs) and small and medium-sized enterprises (SME) banking services in the UK to which we received responses in mid-March 2015. We are currently reviewing these responses and will provide an update on our approach to a market-wide profitability assessment in due course.

4. We welcome views and comments on this paper by **10 April 2015**.

Introduction

5. In the context of our investigation, when reaching a view concerning the functioning of a market, we consider the outcomes of the competitive process in that market: including prices; product quality and range; and levels of innovation.

6. While profitability analysis provides a framework for assessing the level of prices, broader financial analysis can provide insight into the various factors affecting the performance of firms in the market and hence the competitive dynamics of the sector.

7. We do not regard 'excess' profitability in itself to be a problematic feature of any market, but instead a market outcome that provides an indication that competition problems may exist. In other words, excess profitability is one of the possible symptoms of, rather than a cause of, ineffective competition. Our profitability findings may also be used in the context of determining the scale of the consumer harm or detriment that might arise in the form of higher prices.

8. In this paper we set out the role of financial and profitability analysis in a market investigation and describe our proposed approach. The main role of

this analysis is to answer the question of whether prices have been above competitive levels over the recent past (see paragraph 11 onwards for a discussion of the levels of profit earned in a competitive market). This analysis can also help identify which, if any, firms have market power and, if so, in which market segment(s), and inform an assessment of whether larger firms have been more profitable than smaller firms.

9. This paper has four main sections:

(a) Role of profitability analysis: discussion of the purpose of profitability analysis in a competition investigation and the factors considered when interpreting the results of this analysis.

(b) Scope of our analysis: identification of the firms, business activities and time period of relevance to our assessment.

(c) Proposed profitability measures and benchmarks: discussion of the theoretical basis of the adjusted return on equity (ROE) measure, assessment of profitability using other measures, and the benchmarks against which we propose to assess profitability.

(d) Approach to profitability analysis: discussion of our proposed approach to measuring economic returns and capital employed.

Role of profitability analysis

Purpose of profitability analysis

10. The aim of profitability analysis, as set out in the CMA's market investigation guidance (Guidelines),[1] is to understand competitive conditions within a market by examining the outcomes of that market in terms of the financial performance of the participating firms. The Guidelines state that:

> Firms in a competitive market would generally earn no more than a 'normal' rate of profit – the minimum level of profits required to keep the factors of production in their current use in the long run, ie the rate of return on capital employed for a particular business activity would be equal to the opportunity cost of capital for that activity.[2]

[1] *Guidelines for market investigations: Their role, procedures, assessment and remedies (CC3)*, April 2013. The CMA adopted the Competition Commission's (CC's) guidelines.
[2] CC3, paragraph 116.

11. The purpose of conducting profitability analysis, therefore, is to understand whether the levels of profitability (and therefore prices) achieved by the firms in the reference markets are consistent with levels we might expect in a competitive market. If excess profits have been sustained over a relatively long period of time, this could indicate limitations in the competitive process.

Interpretation of profitability analysis

12. In interpreting the results of our analysis, we take into account a number of factors. First, our Guidelines recognise that at particular points in time the profitability of some firms may exceed what might be termed the 'normal' level. There could be several reasons for this, including cyclical factors, transitory price or other marketing initiatives, and some firms earning higher profits as a result of past innovation, or superior efficiency.[3] We will consider how these factors affect our interpretation of any observed gap between returns and the cost of equity; and how they affect our interpretation of differences in profitability between firms.

13. However, a situation where profitability of firms representing a substantial part of the market has exceeded the cost of capital over a sustained period could be an indication of limitations in the competitive process.[4]

14. On the other hand, our Guidelines highlight that a finding of low profitability does not necessarily signify that competition is working well, since low profitability may be concealing ineffective competition. For example, incumbent firms, despite being protected from new entry, may not earn high profits because they are inefficient and operate with higher costs than would be sustainable with stronger competition in the market.[5]

15. We may be interested in the trend in profits over the period of review as an indicator of improvements or deteriorations in the competitive environment. For example, where profitability has increased over a number of years, this may indicate a worsening of the competitive situation or weakening of competitive pressures in the reference markets. We plan to take into account the effects on revenues and costs of regulatory interventions, macroeconomic changes or other events when evaluating any trends in profitability. These changes will serve to provide the context of how we interpret the results of our profitability analysis.

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[3] CC3, paragraph 117.
[4] CC3, paragraph 118.
[5] CC3, paragraph 125.

16. Finally, to put our profitability assessment into the wider context of our market investigation, in reaching a view about the functioning of the reference markets and identifying any market features that may have an adverse effect on competition, profitability will be only one of the outcomes of the competitive process we will be taking into account, and we will take into account evidence on other market outcomes, including product quality and range; and levels of innovation, as well as our analysis of the evidence on the different market features that might give rise to an adverse effect on competition. Therefore, in the context of our market investigation, we will be considering the evidence on market outcomes in the round, rather than individually on any particular area of analysis.

Scope of our analysis

17. In this section we set out the scope of our profitability assessment and the relationship with our terms of reference, highlighting which business activities we consider to be relevant, which firms we intend to analyse and the time period over which we will assess profitability.

The reference market and the business activities

18. Our terms of reference[6] define the reference markets as retail banking services to personal current account customers and to small and medium-sized enterprises.

19. 'Retail banking services' means:

    (a) In respect of personal current account customers, provision of an account marketed to individuals rather than businesses, which provides the facility to hold deposits, to receive and make payments by cheque and/or debit card, to use automated teller machine facilities and to make regular payments by direct debit and/or standing order but does not include:

    - an account in which money is held on deposit in a currency other than the official currency of the UK; or
    - an account in which credit funds are held and offset against mortgage debt or a loan (other than an overdraft facility), ie a current account mortgage.

[6] Retail banking market investigation terms of reference.

(b) In respect of small and medium-sized enterprises, the provision of banking services, which includes, but is not limited to, the provision of business current accounts, overdrafts, general purpose business loans and deposit accounts, but which excludes the provision of other non-lending products such as insurance, merchant acquiring, hedging and foreign exchange

20. 'Small and medium-sized enterprise' means a business that, in respect of a given financial year applying to it, has annual sales revenues (exclusive of VAT and other turnover-related taxes) not exceeding £25 million. For this purpose a 'business' shall have the same meaning as an 'undertaking' under the Competition Act 1998.

21. Consistent with the terms of reference, our profitability assessment intends to examine the provision of (a) PCAs and (b) SME banking services separately.

22. We note that there are no stand-alone providers of PCAs or SME banking services in the UK. Rather, these services are provided by providers with a broad range of business models. We note that some of the providers are universal banks, where investment banking activities are carried out alongside retail banking activities (for example Barclays, HSBC, RBS), and others are retail banks where the focus is on personal and commercial customers (for example Lloyds, Handelsbanken (in the UK) and Santander) or on specific customer segments (for example, Nationwide Building Society (Nationwide), which does not currently offer a business bank account).

Identifying the relevant firms

23. Our market-wide profitability assessment will focus on the five largest providers of PCAs and SME banking services in the UK, namely Barclays, HSBC, Lloyds, RBS and Santander. In the UK, these firms have an estimated combined market share of approximately 83 and 94% for PCAs and SME banking services respectively, based on the number of accounts held.[7]

24. We do not propose to examine the profitability of PCAs and SME banking services by UK nation (ie England, Wales, Scotland, Northern Ireland) because the banks were not able to provide us with financial information split in this way.

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[7] Source: PCA market shares: CMA phase I analysis based on data from the banks; SME market shares: 2013 Charterhouse survey. The CMA will update the market shares in the course of this investigation and they are liable to change.

Time period under consideration

25. We aim to examine trends in profitability over a full business cycle, in order to provide a representative picture of profitability that is not unduly distorted by unusual macroeconomic conditions or one-off events. We acknowledge that the 2007 global financial crisis and the subsequent economic downturn were unprecedented macroeconomic conditions, resulting in a particularly challenging backdrop to our profitability analysis and its interpretation.

26. In doing this we will seek to balance this aim with the constraints faced by the banks to provide us with financial information in the form required for the purposes of our analysis, as well as the fact that past acquisitions and divestments may reduce the value of such historical analysis.

27. We asked the banks to comment on the appropriate time period over which to consider the profitability of its retail business and of the retail banking industry in general, and whether they would be able to provide financial information going back over an extended period.

28. All five of the largest providers of PCAs and SME banking services in the UK told us that we should examine profitability over a sufficiently long period. However, all also acknowledged the difficulties of providing reliable and consistent data beyond the five-year period to 31 December 2014 for which we had requested detailed financial information in our financial information request.

29. Alternative approaches suggested by the banks included:

    (a) Considering the results of stress tests carried out by banks at the request of regulatory authorities as fears about a recession mounted. These stress tests required that banks model assumed default rates based on scenarios determined by reference to previous recessions and provided the then Financial Services Authority (FSA) with guidance as to the losses that banks might suffer. This contemporaneous assessment may provide a helpful insight in relation to the loss assumptions through a 'normal' recession.

    (b) Assessing a 'normal' level of through-the-cycle impairments, by evaluating what a normal level of impairments might be (ie in a steady state, while removing the exceptional factors regarding low interest rates and forbearance).

30. We welcome views and comments on these alternative approaches.

Proposed profitability measures and benchmarks

Profitability measures

31. There are a number of different ways of measuring profitability. Our Guidelines primarily refer to the rate of return on capital, which can be based on cash flows (truncated internal rate of return) or profits: return on capital employed (ROCE). These approaches are very similar in substance, with the choice between them determined in part by industry characteristics and in part by data availability.

> Where investment is characterized by large one-off expenditure, or the industry has experienced a period of growth, it may be desirable to consider profitability over a relatively long period of time or on a project appraisal basis. For example, it may be appropriate to use a cash-flow-based model to compute a measure of the internal rate of return (IRR) where reliable data is available on this basis.[8]
>
> Where possible, the CC will base its calculations on financial data that can be reconciled to audited financial statements, albeit with appropriate adjustments. For example, where the market of interest is a division or segment of a company it may not be possible to obtain reliable cash flow data at this level and the CC may therefore adopt a return on capital approach for this reason.[9]

32. We have considered different approaches to assessing banks' profitability and we intend to compare the banks' ROE with the cost of equity.[10] We consider that borrowing and lending money is at the core of the banks' business operations and is not just a pure financing function as it is for most non-banking businesses. We observe that a banking business is largely funded by its customers; customers' deposits and other customer accounts have a dual nature, being both a liability, or means of financing lending activities, as well as a retail product in their own right, ie forming part of working capital. Virtually all of a bank's debt capital is provided by its customers, not outside investors, and we therefore do not consider it appropriate to include such deposits in the capital base.

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[8] CC3, Annex A, paragraph 10.
[9] CC3, Annex A, paragraph 11.
[10] In the financial questionnaire we asked the banks to comment on this approach.

33. In addition, ROE is widely used within the sector as a performance measure, for example in the banks' published reports and accounts, and press releases; and in equity research notes. We also note that the CC used the ROE approach in previous investigations in the financial services sector: payment protection insurance (2009), store cards (2006), and banking services to SMEs (2002).

34. The ROCE approach compares returns to debt and equity holders with the cost of holding debt and equity, ie the weighted average cost of capital. In the absence of debt capital the ROE approach is conceptually the same as the ROCE approach.

35. When estimating return on capital, including when estimating ROE, our approach is generally to start with accounting profit produced in line with 'generally accepted accounting principles' and then to make adjustments to arrive at an economically meaningful measure of profitability.[11] Economic profits can differ in important respects from accounting profits, with adjustments most commonly required to the value of capital employed in the business to (a) ensure that all assets required for the operation of the business, including intangible assets, are recognised on the balance sheet, and (b) the value at which these assets are included in the capital base reflects the current opportunity cost of owning the asset.[12]

36. The Guidelines also highlight that, in situations where capital employed cannot be reliably valued, we may consider alternative measures, such as the return on sales or other relevant financial ratios.[13] Finally, while we do not propose to carry out a full ROE comparative analysis, we do propose to compare the profitability of the five largest providers of PCAs and SME banking services in the UK with the smaller established banks with at least 1% market share (Nationwide, Co-operative Bank and National Australia Bank (NAB) (that operates in the UK under the Yorkshire Bank and Clydesdale Bank brands)[14] (for PCAs), and Co-operative Bank and NAB (for SME banking services)). We also propose to compare the profitability of the five largest providers of PCAs and SME banking services in the UK with these smaller established banks by using other measures including profit per customer. We welcome comments on whether there are other appropriate measures to assess financial performance.

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[11] CC3, Annex A, paragraph 9
[12] CC3, paragraph 115, and Annex A, paragraph 14.
[13] CC3, Annex A, paragraphs 9 and 15.
[14] We propose to examine the UK operations of NAB as a whole.

Benchmarks

37. When measuring profitability on the basis of ROE, we consider the cost of equity to be the appropriate benchmark as this represents the opportunity cost of capital for the relevant activities. We plan to use the capital asset pricing model (CAPM) to estimate this, as we consider that this model has the strongest theoretical foundations.[15] Appendix 1 sets out our proposed approach in more detail.

Detailed approach to profitability analysis

Introduction

38. In order to conduct separate assessments of profitability for each of PCAs and SME banking services, it is necessary to identify the relevant activities for each segment and ensure that the financial information used for the assessments (a) reflects these activities on a consistent basis across the banks, and (b) reflects an arm's-length transfer price for any funding making use of customer deposits that is used in other business units of the banks (also known as funds transfer pricing).

39. In this section we set out how we would propose to deal with funds transfer pricing issues, as well as the main adjustments to accounting information that we consider would be necessary to ensure that our analysis is economically meaningful.

Identifying the relevant activities

40. As mentioned above, we note that there are no stand-alone providers of PCAs or SME banking services in the UK; PCAs and/or SME banking services are carried out alongside other retail banking activities such as savings and mortgages. Providers' business models may differ, with different strategies regarding products offered, customers targeted and channels of distribution.

41. PCAs and SME banking services are typically shared with one or more other customer groups or banking products; this means that measuring income and costs for a specific product category (like PCAs) or customer segment (like SME banking services) is not straightforward.

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[15] CC3, Annex A, paragraph 16.

42. In order to ensure that all revenues and costs relevant to PCAs and SME banking services are included, we asked the banks to provide profit and loss information in a standard format. These are discussed separately below.

Funds transfer pricing

43. Funds transfer pricing (FTP) is the means by which banks attribute funding costs to the business unit making use of the deposits raised (ie loans originated), and to attribute income to the business unit generating the deposit (ie deposits taken) or other funding source (ie issued bonds). The overall net profit and loss effect of FTP to a bank is zero.

44. Both the taking of deposits from customers (liabilities) and lending to customers (assets) contribute to the performance of a bank as a whole. FTP is a mechanism to adjust the profitability of both parts of the bank to incorporate arm's-length funding costs; without it, all deposits may appear to be loss-making and assets unduly profitable. FTP therefore directly impacts the reported profitability of transactions and businesses. The FTP mechanism ensures that funding costs and the associated indirect costs are all included.

45. The chief purpose of FTP is the alignment of the incentives of individual divisions or product areas with those of the bank. By seeing a 'true' cost or value of funds, an individual product owner can make decisions about pricing or product distribution that best serves the interests of the bank as a whole.

46. FTP has been a regulatory requirement since 2009[16] but banks are free to design and implement their FTP policy as appropriate for them. There are a number of different methods, including single pool matching, multiple pool rate matching,[17] and matched maturity. Under the matched maturity method, the bank matches each individual customer account with a market-driven index such as the treasury yield curve,[18] the swap curve[19] or a London Interbank Offered Rate (LIBOR) based curve: this best reflects the use of funds on the

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[16] Prudential Sourcebook for Banks, Building Societies and Investment Firms (BIPRU); BIPRU 12 Liquidity Standards. Following the financial crisis FTP became a key focus of the FSA's (now Prudential Regulation Authority's) liquidity risk regime.

[17] Single pool and multiple pool rate matching are simple approaches. Under single pool matching, the funding pool (treasury function) supplies liquidity to business units at a pool rate that is normally a market or market-derived rate. Under multiple pool rate matching, the funding pool supplies liquidity by matching the characteristics of assets and liabilities with a particular type of funding profile. The simplest approach uses a short term rate (LIBOR) and long term rate (swap) which are applied to assets and liabilities by their approximate maturity. A spread can be added to LIBOR and the swap rate in order to more accurately reflect the bank's true cost of borrowing.

[18] The treasury yield curve is a curve showing yields or interest rates across different contract lengths for a UK government bond.

[19] The swap curve is a curve showing yields across different lengths for a swap (a derivative contract that typically exchanges – or swaps – fixed rate interest payments for floating rate interest payments).

wholesale market. Cash flow, repricing and maturity of the financial instrument is used to determine the point on the transfer curve to find the transfer rate. The matched maturity approach has become the most common approach to FTP; it is transparent, consistent and includes indirect funding costs,[20] and accurately measures the marginal spread for each product.

47. The funding cost may include an interest rate risk element (arising from holding assets and liabilities with different repricing dates, which creates exposure to changes in the level of interest rates), and a liquidity element. The liquidity element may be further divided into two parts:

    (a) A liquidity premium (a cost for advances and deposits which are deemed to have a liquidity life of greater than three months, the theory being that illiquid assets should predominantly be funded either by long term funding or core deposits).

    (b) A liquidity recharge (a reallocation of the cost of maintaining a diversified portfolio of unencumbered liquid assets to comply with internal operational cash flow projections and external regulatory liquidity limits to those businesses that created the liquidity risk).

48. FTP arrangements are necessarily provider specific, and will reflect each provider's individual circumstances, including its balance sheet position, credit rating and possibly its business strategy. We will need to understand the reasons for any differences. In the financial questionnaire, we asked the banks to allocate relevant interest income and expense to their PCAs and SME banking services and explain the assumptions used. We consider that the effect of differences in FTP is likely to be larger where there is a large imbalance of deposits and loans (hence possibly more important for PCAs than SME banking services).

Allocation of shared and common costs

49. As set out above, PCAs and SME banking services are typically shared with one or more other customer groups or banking products and there is a significant degree of joint production. Branch networks, frontline staff, payment systems, ATMs, self-service kiosks, and IT systems are parts of the value chain that are shared with other customer groups or banking products. In addition to the shared costs, most providers will incur a variety of common costs such as head office costs, although these are unlikely to be as large.

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[20] Examples of indirect funding costs are the cost of the contingent liquidity risk, such as holding a liquidity buffer, and the cost of a mismatch risk.

We would need to allocate a proportion of these total shared and common costs to PCAs and SME banking services.

50. We will consider what allocation method would be appropriate. Theoretically, we consider that the lower bound is equivalent to the incremental cost of providing the PCAs or SME banking services. We consider that the upper bound is equivalent to an efficient stand-alone cost. However, as there is a significant degree of shared costs in the banks' cost base, this range is likely to be extremely wide.

51. We acknowledge that each bank will use a range of methods to allocate its shared costs and that each bank's approach to the allocation of shared costs is likely to differ depending on its organisational structure, activities, strategy, and other business needs. In addition, different banks will adopt different business models, and provide only a subset of personal and/or business banking products to different sub-sets of customers. It may be that reported fully allocated costs for a product or service are not comparable across providers; furthermore cost allocation methods need to be adjusted regularly to reflect providers' changing business needs and cost structure. We also acknowledge that total cost data for a provider may not be consistent over the relevant period.

52. In the financial questionnaire, we have therefore asked the banks to allocate a proportion of all relevant costs to their PCAs and SME banking services and explain the assumptions used.

Adjustments to income and costs

53. As already stated above, our Guidelines state that we are concerned with economic profits and that these can differ in important respects from accounting profits.[21]

54. We will start with operating profits and make adjustments to this figure. Any adjustments we will make will need to be consistent with the valuation of equity capital (see below). We will consider possible adjustments to profits for the relevant period, for example levels of bad debt above their longer-term sustainable level. We also will analyse cost/income ratios and seek to understand any differences between the banks.

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[21] CC3, paragraph 115.

Recognition and valuation of equity capital

Introduction

55. As mentioned above, our Guidelines state that we need an economically meaningful value for the equity capital that may not accord with the value ascribed in the financial records.[22]

56. There are a number of issues to discuss in relation to an appropriate valuation of the equity capital. From our initial review of the banks' financial statements and discussions with the banks, we understand that the PCAs and SME banking services are not reported in a stand-alone and separately audited balance sheet. We asked the banks to estimate a value for equity capital in response to our financial questionnaire. This value is a starting point, or baseline figure: the value for equity capital estimated by the banks may not be an economically meaningful measure.

57. In order to arrive at an economically meaningful measure, the adjustments suggested in our Guidelines are:

    (a) adjustment of historic cost to replacement cost or Modern Equivalent Asset value; and

    (b) inclusion of certain intangible assets subject to certain criteria.

58. We discuss each of these in turn and also consider whether there are alternative methods we should examine.

Adjustment of historic cost

59. Typically the CMA has accepted the merits of adjusting historic book values of capital employed to an economic base where there is clear evidence of a material distinction between historic and economic values, where parties have put forward a clear argument and evidence.

60. We will consider the arguments for adjustments to book value presented by the banks on a case-by-case basis. We will also consider whether there are any adjustments to be made that have not been presented by the banks.

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[22] CC3, Annex A, paragraph 13.

Intangible assets

61. Intangible assets are non-physical non-monetary assets that are typically not recorded on the balance sheet. They can comprise items such as know-how, brand value, customer base, and trained staff, and are often internally generated. Where a business has spent money in the past to create an intangible asset that will generate a stream of revenue in the future, it may be important to recognise that expenditure in evaluating economic profitability. We typically seek to recognise intangibles when the following criteria are met:[23]

    (a) Cost incurred primarily to obtain earnings in the future.

    (b) Cost additional to costs necessarily incurred at the time in running the business.

    (c) Cost identifiable as creating an asset separate from any arising from the general running of the business.

62. We will consider the arguments presented by the banks for inclusion of intangible assets in equity capital on a case-by-case basis.

Alternative methods for estimating equity capital

63. We will consider whether there are alternative methods for estimating equity capital of PCAs and SME banking services.

64. Firstly, it may be beneficial to review our approach against what was carried out in the 2002 CC SME banking investigation. To arrive at a baseline capital figure, the CC started with the equity capital of the whole of each bank and then removed capitalised goodwill. The banks proposed other adjustments which were assessed by the CC on a case-by-case basis. A further step was required to attribute capital to support the SME banking business. It then increased this by 20% to reflect the risks of the SME banking business.

65. Secondly, we will also consider whether an estimate of equity capital could be based on allocation of capital by reference to minimal capital ratios set by prudential regulation, such as risk-weighted assets or leverage ratio. We welcome comments and views on these alternative methods.

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[23] CC3, Annex A.

Appendix 1: Cost of equity: planned methodology

Introduction

1. In this appendix, we set out our proposed approach to calculating the cost of equity for PCAs and SME banking in the UK.

2. In order to determine whether competitive conditions in PCAs and SME banking allow banks to earn 'excessive' profits, therefore, we require a benchmark cost of equity. In many cases, we would seek to establish a single benchmark cost of equity for an industry. However, in this case we note that we are examining two reference products and their cost of equity may differ.

3. We first set out the theoretical framework that we use to estimate the cost of equity, before discussing each of the key parameters in turn, highlighting the type of analysis that we will carry out in order to reach an estimate of the relevant cost of equity.

Framework for estimating the cost of equity

4. Our Guidelines state that we generally look to the CAPM when considering the cost of capital: 'The CC will generally look to the capital asset pricing model (CAPM) when considering the cost of capital, since this is a widely understood technique with strong theoretical foundations.'[24]

5. The CAPM can be used to estimate the cost of equity. It relates the cost of equity to the risk-free rate (RFR), the expected return on the market portfolio (Rm), and a firm-specific measure of investors' exposures to systematic risk (beta or β) as follows:

   RFR + (β x (Rm - RFR))

6. Beta measures the extent to which the price of a particular share fluctuates with the market (referred to as systematic risk or non-diversifiable risk, ie the sensitivity of returns to market returns).

7. Finally, the cost of equity must take into account the effects of tax on returns to capital providers. The returns to equity holders (dividends) are taxed. Where the cost of equity is expressed pre-tax, the cost of equity used must reflect the fact that the actual return to shareholders will be reduced by the

[24] CC3, Annex A, paragraph 16.

rate of tax. We propose to estimate the cost of equity on a nominal pre- and post-tax basis.

Specification of the parameters of the cost of equity

8. There are a number of issues that we need to consider prior to undertaking the cost of equity calculation in order to ensure that it is an appropriate benchmark for the ROE calculations. These include: the relevant geographic market; the relevant activities; and the relevant time period.

9. A business's cost of equity is determined by the financial and economic conditions of the market(s) in which it operates. While many of the larger banks in this sector are multinational, the CMA will look to estimate the cost of equity that is relevant for the UK operations of these businesses only, ie the cost of equity of a hypothetical stand-alone UK PCAs or SME banking services provider.

10. As set out in paragraph 28, we plan to analyse the banks' profitability for the five years ended 31 December 2014. Hence, the cost of equity should also be estimated for this same period. We plan to estimate a single or average cost of equity for the whole period rather than a number of annual estimates.

Specification of the components of the cost of equity

Risk-free rate

11. The RFR provides a measure of the return that can be expected by an investor without accepting any risk on an investment. It is usually proxied by the redemption yield on index-linked government bonds (government bonds are also referred to as gilts) as these are regarded as having both negligible default and negligible inflation risk. We propose to use the return on long-dated index-linked UK gilts as a measure of the real RFR. In addition, as a cross-check, we may take into account the level of index-linked yield curves over the relevant period as an indication of the expected RFR. In order to estimate the nominal RFR, we will adjust these yields to reflect actual inflation over the relevant period, as measured by the retail prices index.

Equity risk premium

12. The equity risk premium (ERP), calculated as the market return (r_m) less RFR, is the additional return that investors require as compensation for the risk associated with investing in equities, rather than risk-free assets.

13. The ERP is the difference between the return provided by the market as a whole and the RFR. It is not directly observable from market data because the future payout from equities, unlike that on bonds held to maturity (other than in respect of default risk), is uncertain. In the past the CC and sector regulators have used two methods to estimate the ERP: historical data showing the difference between the realised return on equities over the RFR; and forward looking data relating to investors' current expectations of the ERP. We propose to estimate the market return and the ERP based on both historical and forward-looking approaches, including data collected by Dimson, Marsh and Staunton; and the Barclays Equity Gilt Study.[25]

Beta values

14. Under CAPM, the beta value used in calculating the cost of equity measures the riskiness of the returns on the stock being analysed relative to the rest of the market. In other words, the beta of a share measures the exposure of the company to systematic, or market, risk. It is only this form of 'non-diversifiable' risk for which investors require compensation: non-systematic risk (company specific risk) can be diversified by investors. Hence it is only systematic risk that is relevant to the cost of equity of a company.

15. For a listed entity, this is equal to the covariance between the stock's returns and the market's returns, divided by the variance of market returns.

16. The banks' retail banking businesses account for only a part of each bank's total operations, which means that the beta for retail banking may differ from the company beta. We intend to consider further the issue of suitable comparators for businesses similar to retail banking.

17. We invite parties to provide details of potential comparable companies that we may wish to take into account when forming a view on an appropriate beta value for each of PCAs and SME banking services. We will review and refine this list in order to come to a view on an appropriate set of comparable companies.

Tax rate

18. We propose to use the average statutory rate of corporation tax over the relevant period.

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[25] Credit Suisse Global Investment Sourcebook, 2014, and Barclays Equity Gilt Study, 2014.