

STORE CARDS MARKET INQUIRY

The CC's 'emerging thinking'

Annex J: Cost of capital of store card providers

Introduction

1. In this annex, we develop an estimate of the cost of capital for the store card industry based on information from providers and on research conducted by the CC. This estimate is referred to in Annex I in our discussion of the financial performance of store card providers. We begin by setting out our proposed approach to the assessment of profits in this market.

Proposed approach to the assessment of profitability

2. For the purposes of assessing profits in this industry we intend to focus our efforts on comparison of the return on equity (ROE)—ie the returns to shareholders, after interest payments and after tax—with the cost of equity. This contrasts with the return on capital employed approach (ROCE) in which returns to both debt and equity holders are considered and compared with the weighted average cost of capital (WACC). Although the two approaches are mathematically equivalent, it is normal to assess financial institutions' profitability on the basis of return on equity.¹ We prefer this approach conceptually as we consider that borrowing and lending money is at the core of these institutions' business operations and not just a pure financing function.² Their main source of revenue is interest income and their largest expense is interest payable. This is reflected in the presentation of interest expense as an operating item in the statutory accounts of banks including non-deposit-taking financial institutions.
3. Aside from our own conceptual preferences, ROE appeared to be widely used within the industry as a performance measure. It featured in most of the management accounting information we were given by providers, and was often the performance measure of choice used in contractual profit-sharing arrangements with retailers. It was also widely used by analysts and other commentators in the financial services sector.
4. Irrespective of our decision to assess the returns to equity, we still have to establish an appropriate capital structure and an appropriate cost of debt. As most store card providers were operating within subsidiaries of larger organizations, the capital structure of the subsidiary would not necessarily reflect that of a stand-alone store card business. Neither would the cost of debt. Since the group treasury would be funding a variety of business activities, the funding mix would be likely to differ from that of a stand-alone store card provider. Additionally, the interest expense in their management accounts was typically an inter-company charge and not necessarily cost-reflective. By establishing the appropriate capital structure and cost of debt, we thought that a more accurate assessment of the returns to equity could be made.

¹For example, the CC adopted this approach in its report on the supply of banking services by clearing banks to small and medium-sized enterprises within the UK, The Stationery Office, Cm 5319, March 2002.

²See also Copeland, Thomas E, Tim Koller and Jack Murin, *Valuation* (1996).

The cost of equity

General approach and conclusions

5. We followed the CC's market investigation guidelines. These stated that the CC would generally look to the capital asset pricing model (CAPM) when considering the cost of capital, but would have regard to alternative models where appropriate. Our current view is that any conceptually sound alternative model would be unlikely to give a substantially different answer to the CAPM.
6. The CAPM postulates that the opportunity cost of equity (K_e) is equal to the return on risk-free securities (R_f) plus the company's systematic risk (as measured by beta or β) multiplied by the market risk premium ($R_m - R_f$):

$$K_e = R_f + \beta (R_m - R_f)$$

7. Since there was no listed pure-play store card company in the UK from which to obtain a beta, we looked for an appropriate comparator industry. We thought that the US credit card company MBNA Corporation (MBNA) and Capital One Financial Corporation (Capital One) were the best comparators, as the systematic risk of credit cards and store cards was felt to be similar. We assumed a beta based on that of MBNA and Capital One of 1.17.
8. We estimated the nominal risk-free rate to be between 4.2 and 4.9 per cent during the period from 1999 to 2003 based on redemption yields for UK index-linked gilts. We estimated the equity risk premium to be 4 per cent based on studies of long-term historical returns and expected returns on international equity markets.
9. Using these three elements we estimated a range for the nominal post-tax cost of equity of between 8.87 and 9.55 per cent during the period from 1999 to 2004. We estimated that the average cost of equity was 9.1 per cent during this period. Table 1 summarizes the various elements used in the calculation of this range.

TABLE 1 Cost of equity range

	1999	2000	2001	2002	2003	2004	per cent Simple average
Risk-free rate	4.39	4.22	4.49	4.59	4.87	4.19	
Equity risk premium	4.00	4.00	4.00	4.00	4.00	4.00	
Beta	1.17	1.17	1.17	1.17	1.17	1.17	
Cost of equity	9.07	8.90	9.17	9.27	9.55	8.87	9.1

Source: CC.

Estimates of beta

10. As noted above, there was no pure-play UK store card listed company from which to obtain a beta. We therefore sought to identify publicly traded companies or sectors similar to the store card industry. Since beta measures systematic (or non-diversifiable) risk, we looked for a company or sector with similar systematic risk profile to the store cards industry.
11. Systematic risk is reflected in the volatility of a company's earnings compared with the volatility of market. A high level of bad debts does not necessarily mean a company is exposed to systematic risk. As long as the level of bad debt can be

reliably predicted, even if it is consistently high, the company can price accordingly and the volatility of its earnings will not be affected.

12. We considered whether the average beta of the UK clearing banks might be used as a proxy for the beta of the store cards industry. However, we concluded that the large banking groups were exposed to significantly different risks to that of a UK store cards business. They were not just involved in consumer finance, but also corporate and investment banking, and on a global scale. Most had exposure to emerging markets. For these reasons we did not think that these banks were sufficiently similar to a pure store card company for the purposes of estimating the beta.
13. We also considered whether the UK Consumer Finance sector might be an appropriate comparator for this purpose. The UK Consumer Finance sector (as defined by the FTSE-Actuaries Index) is dominated by the 'doorstep' lenders, Provident and Cattles. We understand that these companies were significantly exposed to the 'sub-prime' market, and in other respects had a very different business model from that of store card lenders or other mainstream consumer finance operations. We concluded that for these reasons, the UK Consumer Finance sector would not be an appropriate comparator for the purposes of estimating a beta for store cards.
14. We thought the closest comparator to the store card business was the credit card business. However, there are no pure-play credit card companies listed in the UK. We therefore looked at MBNA and Capital One, both of which are mono-line credit card companies listed on the New York Stock Exchange. We saw no reason why these companies should not be used to proxy the beta for the UK store cards business. In particular, we did not consider credit cards to have significantly differing systematic risks to store cards. Although we recognized differences between the two industries (features of credit cards included interchange fees, wider acceptance including overseas, increased fraud risks, higher credit limits) we thought that on balance these were likely to slightly increase the systematic risk of credit cards in relation to store cards. We considered that the beta of these companies might therefore provide a conservative estimate for that of the store cards business. If anything, we considered it likely that the true beta for store cards might be slightly lower.
15. We obtained betas for MBNA and Capital One from Barra, Inc (Barra), a leading investment research firm, as shown in Table 2. Barra calculated two types of beta. The historical beta is calculated after the fact by regressing stock excess return—defined as the return above the risk-free rate—against market index excess return based on the last five years' worth of data. The predicted beta (also known as fundamental beta) was derived from Barra's risk models. It forecasts a stock's sensitivity to the market before the fact. The risk factors included in the model include industry exposures as well as size, volatility, momentum and value factors. Since we were concerned with determining a cost of capital for the period 1999 to 2003, we initially focused on the historic beta. However, we noted that there were unexpected variations between the historic betas of the companies in question, and on further examination we learned that Capital One had been heavily involved in the sub-prime sector during this period and that this had resulted in volatility of credit loss rates. More recently we understood that management had attempted to alleviate investor concerns by, among other things, dramatically reducing growth in sub-prime receivables. Taking this into consideration we thought that Capital One's predicted beta of 1.12 was more appropriate for our purposes. We used the average of Capital One's predicted beta and MBNA's historical beta of 1.17 as a proxy for the UK store cards industry.

TABLE 2 US Barra equity model (as at 31 August 2004)

	<i>Primary sector</i>	<i>Historical</i>	<i>Predicted</i>
MBNA	Financial services	1.22	0.99
Capital One	Financial services	1.67	1.12

Average of MBNA historical and Capital One predicted = 1.17

Source: Barra.

16. The betas in Table 2 are equity betas and reflect the debt:equity ratios of the individual companies in question. According to financial theory, it would be necessary to ungear and re-gear these betas to reflect the debt:equity ratio which we thought appropriate for the store card business. However, since the average equity ratio of Capital One and MBNA appeared to be the same as the ratio we were assuming for the store cards industry, no adjustment was necessary in this case. The equity ratios of the companies are discussed in further detail in paragraphs 33 to 43.
17. In this annex, we use a beta of 1.17 based on the average of Capital One's predicted beta and MBNA's historical beta.

The risk-free rate

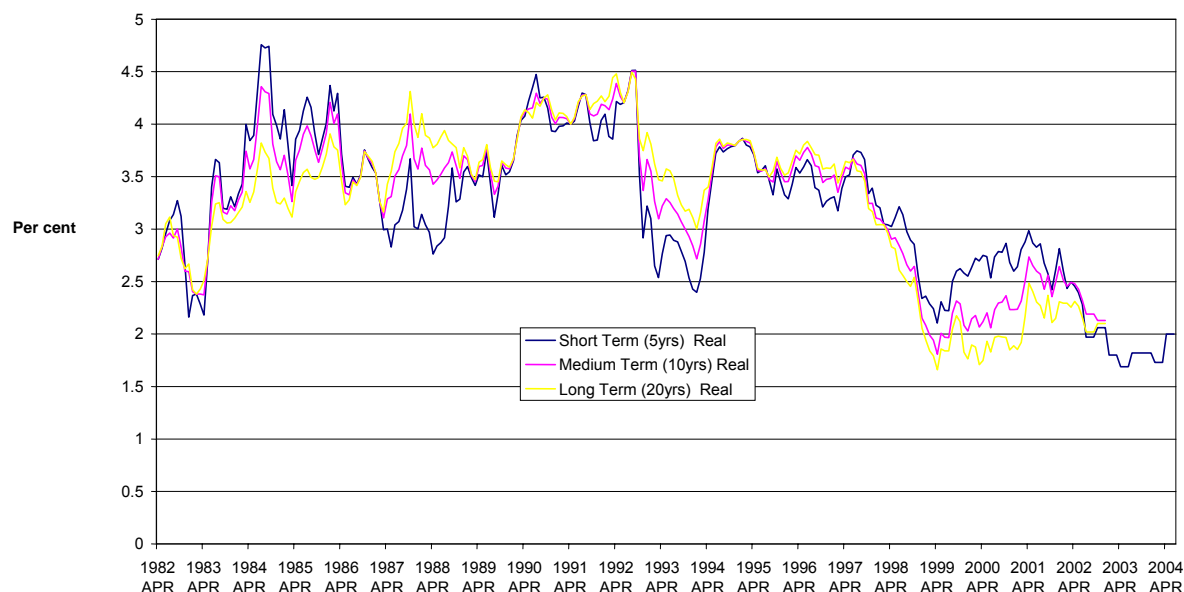
18. Unlike other elements of the CAPM, the risk-free rate is observable from trading in liquid markets. The UK Government has issued index-linked securities (index-linked gilts), which are generally considered to have negligible default risk and inflation risk³. The redemption yield on these index-linked gilts provides a direct estimate of the real risk-free rate for differing maturities. The Bank of England makes regular estimates of index-linked yields for various maturities. Figure 1 shows the index-linked yields from February 1985 to June 2004.

³Some inflation risk arises from the RPI being lagged by eight months.

FIGURE 1

Redemption yields on index-linked gilts

(estimated by Bank of England from a smoothed zero coupon yield curve)



19. Figure 1 shows that the yields have been on a downward trend since the early 1990s. At November 2004 the prospective yield on long-dated (20 years) index-linked gilts was around 1.8 per cent, and the yields for medium-term (10 years) and short-term (5 years) index-linked gilts were also below 2 per cent. All of these figures were below their averages for the whole period (about 3.5 per cent) but above the long-run real return on government securities (about 1.3 per cent from 1900 to 2000).
20. The level of government borrowing is generally regarded as a driver of gilt rates. There was considerable need for government borrowing in the UK during the 1980s and this could have contributed to the historically high rates during that period. Other relevant factors for the downward trend in yields in recent years include the minimum funding requirement for pension schemes, which increased the demand for both conventional and index-linked government securities and thereby placing upward pressure on their prices.
21. In its 2002 reports on Manchester Airport⁴ and BAA,⁵ the CC used a range of 2.5 to 2.75 per cent for the real risk-free rate, derived from its estimate at that time of medium-term average indexed-linked gilt yields. In its report into mobile network operators,⁶ the CC used the same range. The CC noted that the factors referred to above had reduced yields and that it was necessary to adjust for such factors when using the risk-free rate to estimate the cost of equity.

⁴Manchester Airport PLC: a report on the economic regulation of Manchester Airport PLC, The Stationery Office, December 2002.

⁵BAA plc: a report on the economic regulation of the London airports companies (Heathrow Airport Ltd, Gatwick Airport Ltd and Stansted Airport Ltd), The Stationery Office, November 2002.

⁶Vodafone, O2, Orange and T-Mobile: reports on references under section 13 of the Telecommunications Act 1984 on the charges made by Vodafone, O2, Orange and T-Mobile for terminating calls from fixed and mobile networks, The Stationery Office, February 2003.

22. Taking all the above into account (and the fact that we are assessing past operating performance rather than forward looking price caps), we used the annual average medium-term (2016) index-linked gilt rates for each year under consideration. Adjusting for inflation to obtain the real risk-free rate produces the following results over the period under consideration.

TABLE 3 The nominal risk-free rate

	1999	2000	2001	2002	2003	2004*
Annual average yield—2.5% index linked treasury stock 2016	2.04	2.08	2.34	2.34	2.01	1.97
RPIX	2.30	2.10	2.10	2.20	2.80	2.18
Risk-free rate†	4.39	4.22	4.49	4.59	4.87	4.19

Source: Bank of England web site.

*Latest available data.

†Compound rate.

The equity risk premium

23. The equity risk premium (ERP) is not directly observable from market data because the future payout from equities, unlike that on bonds held to maturity, is uncertain. Traditionally, the CC and regulators have used two methods to estimate the ERP: historical data showing the difference between the realized return on equities over the RFR; and forward-looking data relating to investors' current expectations of the ERP.⁷
24. If it is assumed that the ERP is constant over time and that, on average, investors' expectations are realized, then current and future ERPs can be estimated from a historical average of the difference between past equity returns and risk-free rates. Since equity returns tend to be volatile from year to year, it is common practice in the finance literature to consider returns over an extended period. As noted above, equities are regarded as a longer-term investment and it would therefore seem appropriate to use a holding period of the order of ten years.
25. Fama and French (2002) estimates of the ERP in the USA for the period 1872 to 2000 using the dividend growth model and average stock returns were 3.5 and 5.6 per cent respectively. They argued that the difference between the two estimates was largely due to the unexpected capital gains during the period 1951 to 2000, and accordingly judged that the ERP estimate using the dividend growth model was closer to the true expected value than an estimate using historical returns.
26. Data obtained from Dimson, Marsh and Staunton (2002) has produced arithmetic averages of ten-year holding returns for UK equities for the period 1900 to 2000 of 6.08 per cent. The arithmetic average of ten-year holding returns on UK bonds over the same period was 1.4 per cent. This suggests a historical risk premium of 4.7 per cent.
27. According to Wright, Mason and Miles (2003), the central estimate on the ERP was between 4 to 5 per cent using an arithmetic mean. This was derived from historical returns (from an international set of data over the 20th century) on equity capital of between 6.5 to 7.5 per cent (arithmetic mean). They added a commonly used

⁷The CAPM ERP is the *expected* return on equities minus a known RFR.

estimate of the risk-free rate of the order of 2.5 per cent (based on a sample of data from around 1980).

28. Turning to forward-looking estimates, Dimson et al (2002) did not expect stock market investors to enjoy a repeat of the returns of the 1990s. In terms of excess return on equities relative to less risky government bills or bonds, their analysis suggests that investors should expect long-run out-performance by equities closer to 3 per cent a year on average in the future.
29. There remains much uncertainty about the ERP and we continue to attach weight to both the historical evidence and the evidence of market expectations. Our current view is that the ERP lies in the range 3.0 to 5.0 per cent and we have adopted the mid-point of this range going forward.

The views of the providers

30. Some providers argued that the store card market was riskier than credit cards because of the reliance in the store card market on certain key retailers. We were not particularly persuaded by this argument because we did not consider that it constituted a systematic risk. We thought that credit card providers were also reliant on distribution channels, albeit more usually in the form of 'affinity partners' rather than retailers. Credit card companies were also prone to losing accounts through switching to alternative credit cards or forms of credit, particularly if an innovative new product was launched, for example with the ability to offer more favourable rates or new features.
31. Card providers also referred to significant additional costs incurred as a result of providing marketing infrastructure to their retail clients. Again we were not persuaded that these costs were such as to increase significantly the systematic risk of the store card business against credit cards.
32. Our estimate of the cost of equity was at the lower end of the range of estimates we received from card providers. Card providers gave estimates for their cost of equity of between 10 and 15 per cent.

The equity base

33. We thought about the equity base of a store card provider in terms of the percentage of the loan book (or the receivables balances) that it needed to fund with equity. This had the advantage of simplicity. In this market (and in other financial services markets), the vast majority of the asset base was the loan book. Fixed assets (buildings, computer systems and the like) tended to be very small in relation to the size of the loan book, as did intangible assets such as goodwill.
34. Since there were no stand-alone store card companies, an industry average equity:debt ratio could not be observed. All companies were part of larger financial services organizations (or retail groups in the case of Argos Financial Services, Marks & Spencer Financial Services and John Lewis). Therefore we could not observe the equity level of their store cards business directly. We estimated an appropriate equity level for the store cards industry based on regulatory requirements, as we believed these to be the most reliable indicators of the appropriate level of equity for a 'stand-alone' business without the complications of inter-group funding arrangements, company-specific tax considerations, and other company-specific decisions about capital structure.

35. These regulatory requirements stemmed from the Financial Services Authority (FSA). We understand that in so far as a store card business was 'deposit-taking', or if it formed part of a larger financial institution that was regulated by the FSA, it could fall within the definition of an FSA-regulated firm. The larger financial institutions involved in the market are all regulated. Some store card providers are not regulated by the FSA.
36. The FSA told us that under the current regime, it performed an assessment of each firm to establish the overall risk it posed to the health of the UK financial system. This included looking at the impact a collapse of the firm would have on the market and the probability of such a collapse. The latter was assessed by looking at a number of factors relating to the business risks and the control risks of the firm in question. The risk assessment resulted in an individual capital ratio (ICR) being determined for the firm. The ICR represented the minimum percentage of its risk-weighted assets that the firm was required to fund using Tier 1, 2 and 3 capital. The ICR had the status of guidance rather than a legal requirement but in reality was regarded as a minimum level.
37. For a regulated firm with a store cards business, the store cards portfolio was subject to a 100 per cent risk weighting, similar to most other forms of consumer debt. Of consumer debt, only mortgages received a lower risk weighting, currently 50 per cent.
38. The FSA emphasized that the ICR did not simply prescribe the minimum level of equity. Only the Tier 1 element had to be equity (share capital and retained profits or innovative tier 1 capital⁸). The Tier 2 element comprised long-term (minimum five-year or 'perpetual') subordinated debt and general and property revaluation reserves. Tier 3 comprised shorter-term (minimum two-year) debt and was available to support trading book positions only; ie not consumer debt. The capital base comprising the three tiers did not include certain items such as intangible assets, investments in subsidiaries and holdings in other banks' capital. Broadly, at least 50 per cent of the ICR had to be Tier 1, and dated Tier 2 could not exceed 50 per cent of Tier 1. For the purposes of this assessment we included only Tier 1 capital in our definition of equity. Mathematically this does not affect our assessment of profitability as the interest charge in the profit and loss account will be adjusted for all providers based on our assumption about the debt:equity mix.
39. Store card providers told us that they had been set ICRs of between 8 and 12 per cent equating to minimum equity percentages of between 4 and 6 per cent.
40. However, the FSA said that the market ratings agencies would expect Tier 1 capital to be around 7 to 8 per cent and therefore these regulatory minima were unlikely to be seen in practice. Another consideration was that companies were required to consider the need to hold 'buffer' capital sufficient to ensure that the regulatory minima were not breached at any time. The amount of this buffer capital was not specified but the FSA said that it would expect companies to hold between 0.5 and 2 per cent above the ICR for this purpose.
41. We also considered the capital ratios used by store card providers to assess the performance of their businesses.
42. We also examined the capital structure of the US mono-line credit card providers. We found that securitization programmes were widely used by these companies to

⁸Capital having substantially the characteristics of equity and limited to 15 per cent of Tier 1 capital.

reduce their funding costs. These programmes involved tranches of receivables being funded 'off-balance-sheet'. Hence the equity:debt ratio on the balance sheet looked quite high (around 17 per cent for MBNA) whereas in fact the proportion of total receivables (or total managed assets) funded by equity was much lower, at about 8 per cent.⁹ Table 4 shows the ratio of average equity to average managed assets for each company during the five-year period from 1999 to 2003.

TABLE 4 Average book equity:debt ratios

	<i>per cent</i>					
	1999	2000	2001	2002	2003	<i>Five-year average</i>
Capital One	8	8	8	8	8	8
MBNA	6	7	8	8	9	8

Source: CC analysis based on company accounts.

43. Taking into account the regulatory requirements, the ratings agencies, the internal ratios used by the providers, and the ratios of the US credit card providers, our current view is that a debt:equity ratio of 92:8 per cent is appropriate for the purposes of assessing profitability in this industry.

The cost of debt

44. In establishing an appropriate cost of debt for a store card business, we sought to establish whether any of the store card providers had raised debt directly against their store card portfolio, or whether finance tended to be raised by other areas of the business. In the latter case, this made it hard to establish a store card-specific cost of debt.
45. Some providers said that they were funded by their Group treasury and were not able to give an indication of the cost of debt of their store card business. Other providers were less diversified and therefore their cost of debt was a more reliable indicator of that of a stand-alone store card business. Others had raised funds directly against their store card portfolios via securitization arrangements. We considered these funding arrangements including the credit ratings assigned and the spreads over LIBOR.
46. We accepted that there was some uncertainty around the precise spread over LIBOR that a store card provider might pay, assuming that store card provider adopted the capital structure discussed in paragraph 43. In particular, we thought that the cost of debt might rise if gearing rose (ie the equity in the company were reduced). Since the providers typically held higher equity balances than our assumption of 8 per cent, it would not necessarily be correct to assume that the cost of debt would remain unchanged should this equity balance be reduced.
47. For this reason we examined the cost of debt of the US mono-line credit card companies. We found that a major source of funding for these companies was securitization arrangements. Other sources included various interest-bearing deposits, short-term borrowings and long-term bank debt. We understand that securitization arrangements have increased in popularity in recent years as they

⁹We accept that theoretically the market values of debt and equity should be used. However, given that the UK providers are unlisted, we used book values as a proxy for market values. This approach is consistent with our view that the US credit providers are an appropriate comparator for the UK store card industry in terms of the cost of equity and in particular, the beta.

provide an opportunity to reduce the overall cost of debt. By structuring the transaction so that the bond holders are protected from the bankruptcy risk of the issuer, high levels of gearing can be maintained while at the same time the bulk of the bonds could achieve AAA or AA ratings.

48. Only MBNA disclosed a weighted average rate for both on- and off-balance-sheet finance in its annual report. These average annual rates are shown in Table 5 for the years 2001 to 2003. As can be seen, the average rates on the securitized pool were significantly lower than on the on-balance-sheet debt. This was consistent with MBNA's senior debt rating of BBB+ (Standard and Poors), indicating a spread in the order of 150 basis points.

TABLE 5 **MBNA on- and off-balance-sheet funding rates**

	<i>Securitized pool</i> \$bn	<i>Average rate</i> %	<i>On-balance-sheet interest-bearing liabilities</i> \$bn	<i>Average rate</i> %	<i>Total managed interest-bearing liabilities</i> \$bn	<i>Weighted average rate</i> %
2003	80	2.04	42	3.60	122	2.58
2002	72	2.51	37	4.35	109	3.13
2001	69	4.44	31	5.82	100	4.87

Source: MBNA Annual Report.

49. Taking into account the evidence from MBNA, and from the providers, we thought it reasonable to assume the following funding mix for the loan portfolio:
- (a) Equity 8 per cent
 - (b) Debt 92 per cent, comprising:
 - (i) 50 per cent securitized loans—AAA rated—assume 30 bp spread; and
 - (ii) 50 per cent on-balance-sheet bank debt—BBB rated—assume 150 bp spread.

The average spread on debt would then be 90 basis points over LIBOR.

The weighted average cost of capital

50. Using the above gearing and cost of equity assumptions, we have calculated an indicative nominal WACC for the store card industry. Table 6 shows estimated WACCs for the period 1999 to 2004 producing a simple average of 4.6 per cent over the period.

TABLE 6 WACC

	1999	2000	2001	2002	2003	2004	<i>Simple average</i>
LIBOR one-year annual average (%)	5.7	6.4	5.0	4.4	3.8	4.9	
Spread (%)	0.9	0.9	0.9	0.9	0.9	0.9	
Cost of debt (pre-tax) (%)	6.6	7.3	5.9	5.3	4.7	5.8	
Tax rate (%)	30	30	30	30	30	30	
Cost of debt (post-tax) (%)	4.6	5.1	4.1	3.7	3.3	4.1	
Risk free rate	4.39	4.22	4.49	4.59	4.87	4.19	
Equity risk premium	4.00	4.00	4.00	4.00	4.00	4.00	
Beta	1.17	1.17	1.17	1.17	1.17	1.17	
Cost of equity (pre-tax) (%)	13.0	12.7	13.1	13.2	13.6	12.7	
Cost of equity (post-tax) (%)	9.07	8.90	9.17	9.27	9.55	8.87	
Equity (%)	8.0	8.0	8.0	8.0	8.0	8.0	
Pre-tax WACC (%)	7.1	7.7	6.5	5.9	5.4	6.4	6.5
Post-tax WACC (%)	5.0	5.4	4.5	4.2	3.8	4.4	4.6

Source: CC.
