Wholesale Data Market Study

Annex 1: Financial Analysis

29 February 2024

Contents

1 Introduction

1.1 This annex sets out our analysis of firms' financial information. For each market in scope, we have looked at firms' business models, their corporate structure, and their financial performance. The aim of this analysis was to better understand the structure and outcomes of each market.

1.2 Our analysis of firms' profitability also forms an important part of our assessment of competitive conditions in wholesale data markets. When competition is effective, we would expect returns to be gradually driven down towards the minimum level required by investors. Where profits above this level are a persistent feature of a market, it could indicate low levels of competitive pressure.

1.3 This annex provides a summary and explanation of our analysis. The structure is as follows:

- **Methodology** – We explain how we have approached our analysis. We consider:
  - Sample: We describe our approach to sample construction across all 3 markets and provide an indication of representativeness of each sample within its respective market.
  - Data: We describe the information our analysis is based on and explain what steps we took to address any issues arising from the data we received.
  - Metrics: We outline the principles and assumptions we adopted when calculating certain financial metrics, including our rationale for any adjustments we made.
- **Results** – We outline the key findings from our analysis for credit ratings data providers, benchmark administrators and market data vendors in turn. For each market we consider:
  - Revenues: We examine firms' key revenue streams based on product / service segment and geography. We also assess the flow of money across the distribution chain, from the point data is originated down to the end user.
  - Costs: We identify the key inputs to product / service provision and examine trends over time and across firms.
  - Profitability: We assess whether firms are profitable, examining both margins and returns. We assess firms' operating margins against peers within their market, as well as against other industries. We benchmark firms' return on capital employed (ROCE) against the estimated weighted average cost of capital (WACC).

2 Methodology

Sample

2.1 We built our samples (Table 1) based on the following criteria and considerations:

- **Credit ratings (CR) data** – To ensure a comprehensive view of the market, we selected sample firms from the start of the value chain, namely the CRA issuance activity undertaken by credit ratings agencies (CRAs). Not all CRAs currently offer value-add CR data products via a subscription model, with some firms in the market still only distributing 'raw' CR data for free. An important part of our analysis focused on understanding what differentiates those that monetise their credit ratings data from those that do not. The identification of sample firms was very straightforward for this market, because (i) the CRA issuance activity is currently within our regulatory perimeter and (ii) the number of firms authorised to operate as CRAs in the UK, totalling 12 at the time of sending our information request, is small enough that we could look at the entire market. We received financial information from 9 CRAs, as the remaining 3 were de-scoped due to minimal-to-nil revenues generated from UK customers. As to CR data, out of 8 CRAs which currently monetise CR data globally, only 5 generate sales from UK-domiciled clients. They do so either directly, or through separate corporate entities, which fall outside of our regulatory perimeter. We refer to these unregulated entities as data affiliates.
- **Benchmarks administrators** – We adopted a proportionate approach by building a sample that was representative of the overall market in scope, namely firms listed within the UK Benchmarks Register (BMR). At the time of sending our information request, the register included 36 UK and 10 third-country benchmark administrators. In building our sample, we ensured to include a combination of large and small providers, based on UK regulated benchmarks revenues, and a variety of business models, such as diversified versus 'niche' / specialised offering. To form an accurate view of competition, we also gathered information on the business activities relating to the sale of indices outside of the scope of the UK BMR, as set out in our report.
- **Market data vendors (MDVs)** – We selected firms whose business is centred around the purchase and resale of third-party data, whilst we excluded those firms whose primary offering revolves around proprietary data generated within the same group. Our analysis is based on a final sample of 6 firms, which provided financial information across 7 entities in aggregate. We received a very limited amount of financial information from 1 additional firm. For this firm we only used their data for estimating total UK revenues. The MDV market is characterised by numerous vendors offering a wide variety of products and services, each of which might constitute relevant markets in themselves. In addition to real time, trading, price, reference and valuation data, vendors may also offer analytics, portfolio management services, research, communication tools and trading platforms. As a result, our sample is highly heterogenous, reflecting the differences in cost structures and product offerings of vendors.

Table 1: Sample overview

Key facts	***CR data affiliates & CRAs***	***Benchmark administrators***	***MDVs***
Number of firms in sample(1)	*Data affiliates: 5* *CRAs: 9*	*14*	*7*
Sample aggregate UK revenues (2022)	*Data affiliates: £87 million* *CRAs: £241-252 million*	*£451 million*	*£3 billion*
UK market aggregate revenues (estimated)	*Data affiliates: £90 million* *CRAs: £300 million*	*£600 million*	*£3.7 billion*
Sample share of UK market revenues (estimated)	*Data affiliates: 100%(2)* *CRAs: 80-84%(3)*	*75%*	*81%*

(1) We received financial information for a total of 53 entities within these firms: 6 from CR data affiliates, 16 from CRAs, 23 from benchmark administrators, 8 from MDVs. For 1 MDV we received limited information which was only included for the purposes of estimating total UK revenues. For the most part, such entities are legal entities, subject to audited accounts filing requirements. There are few exceptions where firms provided information pertaining to group divisions or units (as described in paragraph 2.14).
(2) The firms that responded to request for information (RFI) represent almost the totality of the market. Please note this is based on CR data originators only, and it does not capture revenues earned by MDVs for the redistribution of CR data feeds to end users.
(3) Whilst firms in the sample account for almost the totality of UK CRA sales, certain respondents provided granular financial information for less than 100% (but at least 75%) of their UK business. This was due to the exclusion of those entities which generated less than 10% of their revenues from UK customers. Please refer to paragraph 2.7 for more details on our information request de minimis criteria.

2.2 The composition of our final samples was mainly dictated by our ex-ante assessment around which firms would provide a good representation of the whole market. However, the limited statutory timeframe of this market study required us to focus on the most efficient and effective way to request information from parties. As a result, after having engaged with firms post launch, we de-scoped a small portion of them, due to their comparatively smaller UK presence which would not materially affect our analysis.

Data

2.3 Our analysis is primarily based on financial data related to the provision of in-scope wholesale data products and services sold to UK-based customers for the period 2017-2022. We also requested financial accounts for each legal entity feeding into this data set, so that we could reconcile each submission against audited statements.

2.4 Some firms contracted with UK customers via multiple legal entities, and therefore submitted information from these, which included non-UK domiciled entities. We discuss our definition of geographic scope below.

Geographic scope

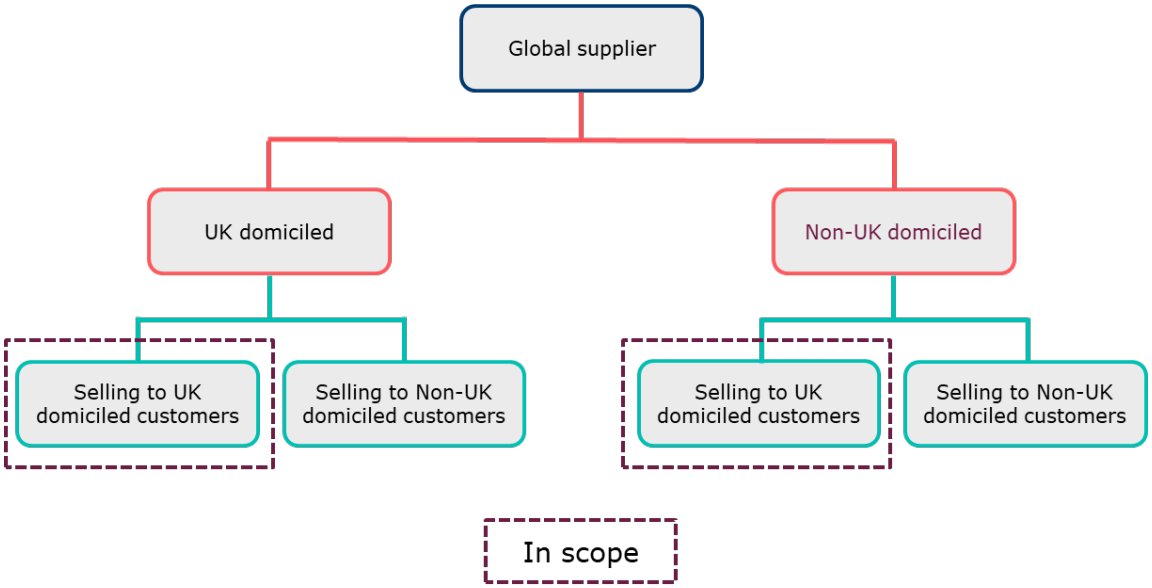
2.5 The global nature of the supply and demand of wholesale data has 2 main implications for our analysis. On one side, UK customers can access services from providers that are based anywhere in the world. At the same time, global groups that have a UK presence may access data (for the benefit of their UK operations) through firm-wide agreements held by a group entity that is not based in the UK.

2.6 We defined 'UK-based' customers based on geographic location of use (Figure 1). For most firms, this is where the legal entity signing a sale contract with a supplier is domiciled. A few respondents submitted their information based on 'ship to' location of their product / service as specified in the sale contract, which reflects the basis on which they collect customer data.

2.7 Most of the firms within our samples are large, consolidated groups, with several legal entities responsible for running their global operations. Therefore, our information request included specific criteria to balance our need for comprehensiveness of information with proportionality. We requested information on all legal entities that (i) have at least 1 UK-domiciled customer, and (ii) generate at least 10% of total revenues from UK-domiciled customers. We also requested that, notwithstanding these criteria, firms would capture at least 75% of consolidated group revenues from UK-domiciled customers.

2.8 Where firms were able to satisfy the above conditions without needing to provide granular financial information on the totality of their UK revenues, we sought additional information on how much of these had not been captured within their responses. This enabled us to estimate the total UK revenues generated by those firms.

Figure 1: Geographic scope



2.9 We are aware that these conditions pose certain limitations. On one side, they potentially lead to an underestimation of UK revenues, as they do not capture those customers that access data through firm-wide agreements. Equally, they may result in an overestimation of UK revenues, where global customers sign one contract

through a UK-domiciled entity, with services being accessed by the entire group. Notwithstanding the above, we deemed this to be the approach that would enable us to collect the most consistent data across firms.

2.10 Furthermore, we found that there is no common approach as to whether users predominantly sign multiple contracts by legal entity, or single contracts licencing use by all group entities globally. We did not receive the amount and quality of information required to be able to quantify whether, on balance, we were more likely to over- or under-estimate suppliers' UK revenues. However, the evidence received suggests that the two abovementioned limitations partly offset each other.

2.11 Where differences within our dataset emerged, either due to, or in spite of, our geographic scope definition, we carefully considered the extent to which these could bias our results. Where appropriate, we factored in any additional information provided by firms to make meaningful adjustments.

Data representation

2.12 Firms' group structures and international business models meant we often received data from multiple legal entities. However, in most cases firms think of their wholesale data business as a single commercial activity and hence, where this was the case, we combined their information to assess business performance holistically.

2.13 There were some isolated instances where firms specifically told us that they had multiple legal entities that were responsible for separate business operations. In these circumstances, we evaluated the profitability of these businesses independently. However, we aggregated the revenues of those entities for the purposes of assessing each corporate group's share of total UK revenues.

2.14 In limited instances, we received information pertaining to group divisions or units, rather than legal entities. This mostly happened where firms' operations spanned across a range of businesses, some of which beyond the activities within scope of this market study. In these circumstances, we required firms to submit additional evidence to enable our reconciliations, such as business unit reports or presentations.

2.15 We present our analysis as an aggregation of single firm results. This is due in part to our focus on market outcomes and in part due to the commercially sensitive nature of firms' information. Where we found notable firm-specific deviations from aggregate sample results, we have noted it throughout our analysis without prejudicing confidentiality.

Data sufficiency

2.16 The evidence we gathered through our financial data request was highly heterogeneous. This was due to differences in business models, how firms record financial information, and the amount of data firms gather about their operations.

2.17 We received information that either pertained to the entirety of firms' business operations, or only a portion. The latter was the case for large, consolidated groups which operate through a variety of legal entities globally, not all selling to UK-domiciled customers.

2.18 Firms also found it challenging to provide granular financial data. This mostly affected information on costs, assets, liabilities, equity, and capital expenditures, specifically relating to the business activities in scope and the servicing of UK-based customers. For the most part, firms were able to provide this level of detail for their revenue figures.

2.19 Our information request also asked firms to provide a range of supplementary information, primarily intended to ensure we were interpreting in-scope financial data correctly. This included management reporting packs, strategy documents and intercompany agreements. We used all this evidence, together with publicly available information and best efforts approximations provided by firms, to develop estimates of cost and profitability where the requested financial data was not available.

2.20 One such approach analysed trends for whole-firm ratios, such as cost categories relative to total costs, operating profit margin and return on capital, as a meaningful proxy for the performance of firms' UK operations. For the most part, the information we used as a proxy for firms' UK operations relates to totals of the legal entities that provided financial information to us, and therefore represents a subset of the consolidated group. We were concerned these proxies could introduce bias into our results if financial performance of the business in scope differed materially from the rest of the group. However, most firms confirmed that there was no material difference between servicing UK versus overseas customers.

2.21 We found that firms also classify financial information based on different criteria, resulting in heterogeneous datasets. We addressed this throughout our analysis on a case-by-case basis, depending on the most appropriate approach. This included analysing subsets of data or looking at either more or less granular data.

2.22 Addressing these issues impacted how we present our results, seeking to balance transparency and confidentiality. In some sections, we show simple averages of firm-year observations across the 6 years. In others, we present aggregated average ratios weighted by firms' UK revenues. In some cases, sample size may differ from metric to metric. In each case, the results section explains what we did and how we sought to avoid bias and / or test the sensitivity of our results.

2.23 Where we did not receive sufficient information to be able to approximate the profitability of firms' UK operations, we excluded those entities from the calculations of certain metrics, noting this in the analysis.

Metrics

2.24 Assessing the economic return in a market using accounting data can be challenging. The difficulties of isolating specific product and geographic data are discussed in the previous section. In addition, intangible assets and business cycles can complicate the calculation of returns.

2.25 To address this, we assess profitability using both operating margin and return on capital. In both cases we sought to ensure that any assumptions were based on empirical evidence. Further, our results are subject to sensitivity analysis and any assumptions used were stress tested to ensure robustness of our results.

Operating margins

2.26 A margin-based approach to assessing profitability involves benchmarking firms' operating margins against a chosen peer group. In our analysis, we compared the average operating margin of sample firms against a broad index to identify any evidence of outperformance. Operating margins are defined as:

$$\frac{Earnings\ Before\ Interest\ and\ Tax}{Revenues}$$

2.27 We selected the S&P 500 as our diversified market benchmark. This is because, out a total of 11 public firms across our samples, 7 are listed in the US, reflecting the largely global nature of firms' operations in the 3 markets in scope. Furthermore, we identified the 'Diversified Financials' industry category as the relevant peer group. This category includes firms providing CRA issuance, benchmarks and MDV services, as well as financial exchanges and payment firms, amongst others.

Return on Capital Employed

2.28 In regulatory studies, return on capital employed is benchmarked against cost of capital to test whether there is evidence of firms achieving sustained high profitability. ROCE is defined as:

$$\frac{Earnings\ Before\ Interest\ and\ Tax}{Capital\ Employed}$$

2.29 Capital employed is calculated as a company's total equity plus non-current liabilities.

2.30 In addition to the 'as reported' / unadjusted results, we also made some adjustments to results. We adjusted our ROCE calculations, and operating profits where applicable, when firms provided additional information that would make profitability metrics more representative of the 'true' business performance. These can be broadly summarised in two categories:

- Assessing performance at the consolidated level rather than at a legal entity level, where the latter would provide a partial and / or distorted view. This was the case for a small group of firms, where we received information pertaining to only one segment of a product's value chain. For example, where one entity was only in charge of commercialisation of a product / service, rather than the entire process from generation to distribution.
- Assessing performance at a business segment level rather than legal entity level, where the latter encompassed additional products to the ones in scope. This was the case for firms with a diversified business mix.

2.31 Furthermore, in limited instances we also applied adjustments based on our own judgement. These include:

- Adjusting the capital employed for standalone years based on adjacent years. This was required for a limited number of small firms, where capital employed, as well as operating performance, were negative in isolated years. This adjustment allowed us to address false positives resulting from double negatives where this was only a temporary feature of firms' performance.
- Adjusting to address certain financing decisions. We can group these adjustments in 2 broad categories: (i) where firms' liabilities included shareholder or

intercompany loans, these were reclassified as equity; (ii) for 1 firm which had negative equity but positive capital employed, for the purposes of calculating 'breakeven ROCE' (as described below) we adjusted the equity to a positive value, whilst keeping the capital employed amount unchanged. Such adjustment addressed the firm's financing of a large equity distribution through new borrowings.

2.32 As outlined above, the presence of sizeable intangible assets not capitalised on the balance sheet, such as human capital, technology infrastructure or brand recognition, may lead to an underestimation of capital employed.

2.33 Many respondents acknowledged that ROCE, without appropriate adjustments, would likely overestimate their business' performance. Whilst we requested firms to provide additional evidence that would allow us to make such adjustments, only 1 respondent was able to provide the necessary information.

2.34 Therefore, we devised a viable approach to address this limitation. Our first step was to calculate a 'breakeven ROCE' by uplifting firms' equity so that their returns would be equal to our cost of capital estimates.

2.35 We subsequently benchmarked our results against evidence from comparable companies and sectors. To do this, we collected information on price-to-book (P/B) multiples, comparing acquisition purchase prices against book values over the past 12 years.

2.36 We then compared such evidence against the 'implied' P/B multiple resulting from our 'breakeven ROCE' calculations. This allowed us to identify any instances of returns exceeding cost of capital even after increasing firms' equity.

2.37 The underlying assumption of this exercise is that that the price offered in a corporate acquisition reflects the value assigned by the acquiror to all assets of the target firm. Therefore, P/B multiples from these transactions enabled us to measure how a firm's book value, which excludes intangible assets, compares against its purchase price, which considers the value of all assets, including intangibles.

2.38 We are aware that the price paid to acquire a company is based on several factors, not just intangible assets. For example, a company's purchase price also reflects the strategic implications of the transaction, such as strengthening of market power, or expected economies of scale / scope. To mitigate those concerns, we set 4 criteria for inclusion within our list of comparable acquisitions:

- The enterprise value of the acquired company was below $2bn. This allowed us to reduce the extent to which strategic considerations may have been included within the purchase price.
- The transaction related to our in-scope markets, or to a closely comparable sector, such as software. This restricted our focus on acquisitions which were more likely to identify, and value, the intangible assets that specifically underpin the business activities that are object of our analysis.
- The acquisition multiple was above 1x. We were only interested in those transactions where there had been an upwards revaluation of assets, suggesting the recognition of intangibles not previously recorded in the target's balance sheet.
- The acquirer was a corporate. We sought to remove the impact on purchase prices of certain features that characterise private equity deals, such as being

financed through significant amounts of debt, or involving high-risk companies such as early-stage or distressed.

2.39 We gathered information on a total of 12 transactions. Of these, 9 developed software catering to financial services, whilst the other 3 developed either computer or applications software for clients in other industries. We combined these with the limited evidence provided by only 1 firm in response to our information request. This resulted in a P/B ratio range of 1.50x–5.55x, with a median point of 1.96x.

2.40 We considered whether also including trading P/B ratios, in addition to acquisition multiples, would provide us with additional evidence to further enhance our analysis. However, we ultimately decided against it, as we deemed trading multiples to be more likely to distort our estimates. This is because they are impacted by additional forces which cannot be filtered out by setting specific exclusion criteria, such as the behaviour of traders and investors.

Weighted Average Cost of Capital

2.41 As part of our profitability assessment, we benchmarked firms' returns against WACC, which expresses cost of capital as the weighted average of the cost of the two sources of external financing: debt and equity. WACC is the most widely used approach to calculating cost of capital in regulatory studies.

2.42 We asked firms to provide their own WACC, however, only a few submitted this information to us. Therefore, as a first step we derived our own WACC estimates for each of the three markets.

2.43 Given its use as a benchmark against ROCE, which is a pre-tax measure, we calculated WACC as follows:

$$K_d \times \frac{D}{D+E} + K_e \times \frac{E}{D+E} \times \frac{1}{(1-t)}$$

Where:

$D = Market\ value\ of\ debt$
$E = Market\ value\ of\ equity$
$K_d = Cost\ of\ debt$
$K_e = Cost\ of\ equity$
$t = Tax\ rate$

2.44 This version of the WACC formula ensures that both cost of equity and cost of debt are expressed on a pre-tax basis. This is done by applying the factor 1/(1-t) to the cost of equity, which is, by definition, a post-tax value. Such adjustment is not required for cost of debt since interest payments are tax deductible.

2.45 The parameters that feed into the cost of capital calculation are not easily observable. For this reason, we identified a viable range of values for each parameter, and ran scenarios based on multiple combinations of those. Below we outline our selection criteria for each of these.

- A firm's **leverage** reflects the equity versus debt financing mix chosen by management to fund its ongoing operations. We gathered yearly leverage information on a range of select comparable companies over the 2013-2022 period and used the resulting range in our scenario analysis.

- We calculated **cost of debt** by dividing annual interest payments against year-end debt balances throughout 2013-2022. Since detailed data on interest payments and debt on balance sheet was not provided by all responding firms, we supplemented their information with publicly available data, also including comparable companies. We also looked at the yield on companies' traded debt instruments to complement our evidence base.
- We estimated **cost of equity** via the Capital Asset Pricing Model (CAPM). It expresses cost of equity as a function of: (i) the risk-free rate R_f; (ii) the equity risk premium (ERP), which is defined as the return of the equity market R_m in excess of the risk-free rate; and (iii) the equity beta β_e, which reflects the firm-specific measure of exposure to systematic risk.

$$K_e = R_f + \beta_e \times (R_m - R_f)$$

2.46 Below we summarise our approach to estimating the various cost of equity parameters:

- For a proxy of the risk-free rate R_f, we used daily data on UK Treasury gilts across a range of maturities.
- For a proxy of returns of the market of investable securities R_m, we adopted 2 approaches: (i) we gathered publicly available information on daily / weekly / monthly returns for the last 6 / 10 / 30+ years across a range of indices, namely the FTSE-All Share, FTSE 100, FTSE 250, S&P 500, Straits Times Index, ASX 200; (ii) we sourced the annual ERP during the 2013-2022 period from Professor Aswath Damodaran's publicly available database, to which we added our estimated risk-free rate to derive R_m.
- To estimate β_e, since the sensitivity of a stock's return to market-wide, or systematic, risks cannot be directly observed, we sourced publicly available equity betas of comparable companies throughout 2013-2022. A firm's equity beta also reflects its financing decisions, or chosen capital structure. Therefore, to measure the risk of investing in a specific business activity without the impact of firms' financing decisions, we calculated the asset beta for each firm. We did this by 'unlevering' their equity beta, using their respective debt-to-equity ratios:

$$\beta_{asset} = \frac{\beta_{equity}}{1 + (1 - t) \times \frac{D}{E}}$$

- As a final step, we 're-levered' the asset betas, using our own leverage estimates (as described in paragraph 2.45):

$$\beta_{equity} = \beta_{asset} \times \left\{1 + \left[(1 - t) \times \frac{D}{E}\right]\right\}$$

- We are aware that the CAPM is not the only approach to calculate cost of equity. There are additional models, which were developed to address additional factors that can affect asset prices. One of these is the Fama-French Three Factor Model, which aims to provide a more accurate measure of returns by adding a size risk and a value risk factor. These types of models may produce more accurate results when seeking to calculate the cost of capital for a specific firm. However, we believe that introducing additional parameters is not necessary for our purpose, which is to estimate a representative cost of capital range for each of our 3 markets in scope.

2.47 We calculated the **tax rate** as the average effective tax rate across the 2013-2022 period, by dividing firms' annual tax liabilities against their profit before tax.

2.48 To derive our WACC estimates, we ran, for each market, multiple iterations of the cost of capital calculation, based on different combinations of the above-described parameters, which are summarised in Table 2. We then defined, for each of the 3 markets, a WACC range, based on the distribution of outcomes that resulted from those iterations. We deemed the 25th and 75th percentile to be a viable lower and upper boundary, as half of the estimated WACC values fell within a 3-4 percentage points range. We used these ranges, and the resulting mid-points, as a benchmark against ROCE in our analysis of firms' profitability.

Table 2: Summary of WACC parameters

	CR data affiliates & CRAs		***Benchmark administrators***		***MDVs***	
Factor	***Min***	***Max***	***Min***	***Max***	***Min***	***Max***
R_f	*1.5%*					
R_m (1)	*6.7%*	*11.4%*	*6.7%*	*11.4%*	*6.8%*	*11.1%*
β_e	*1.0*	*2.1*	*0.9*	*1.5*	*0.8*	*1.4*
Leverage	*2.3%*	*37.8%*	*0.3%*	*20.5%*	*4.2%*	*23.9%*
K_d	*3.3%*	*3.6%*	*3.2%*	*3.4%*	*3.4%*	*3.5%*
t	*20.9%*	*24.1%*	*21.7%*	*24.1%*	*23.8%*	*25.4%*

(1) Market return values reflected weighted averages across the indices outlined in paragraph 2.46

2.49 As outlined above, we assessed firms' profits against pre-tax cost of capital. However, we also calculated the metric on a post-tax basis to compare our figures against third-party estimates, for which the basis of calculation has not always been specified. These include evidence provided by a limited number of firms, as well as information gathered from equity research reports and data vendors. We found that over four-fifths of such third-party estimates fell within our WACC ranges, which provided further reassurance around the viability of our own estimates.

2.50 Lastly, we calculated WACC on a nominal basis, that is, we have not made any adjustments to remove the impact of inflation from our metrics. The underlying rationale is the same as the one underpinning the use of a pre-tax WACC formula. ROCE is a measure of historical returns and is calculated based on figures reported in financial accounts, which are nominal values. Therefore, the appropriate market return and risk-free rate used in cost of capital calculations should also be expressed in nominal terms.

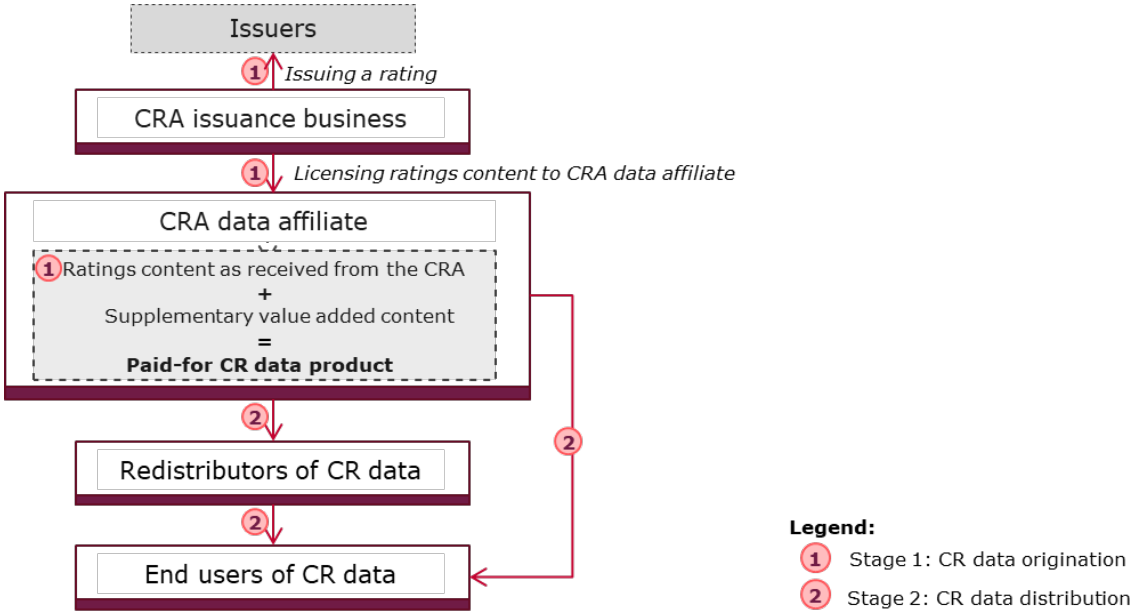
3 Credit ratings data

Market overview

3.1 Credit ratings play a valuable role for both sell-side and buy-side market participants. The value to each side increases with wider ratings coverage and higher usage on the other side of the market. How these interact with each other has an impact on competition dynamics within this market.

3.2 We begin our analysis by assessing the product life cycle of credit ratings data. The CR data market is characterised by a 2-stage supply chain (Figure 2). The first stage is the origination of CR data, which comprises the issuance of credit ratings and the subsequent production of the paid-for derived data product. This process is undertaken collectively by the CRA issuance business and CRA data affiliate. The second stage relates to the distribution of CR data to end users. This activity may be undertaken by the CRA data affiliate, who will rely on their own data distribution channels. Alternatively, redistributors such as MDVs may license the paid-for CR data product from the CRA data affiliate for further delivery to end users.

Figure 2: Credit ratings data supply chain



3.3 Such 2-stage nature of the supply chain implies that CR data revenues generated by CRA issuance firms and their data affiliates may not fully capture end users' total expenditure on CR data. We found that a significant share of end user expenditure on CR data may be earned by third-party redistributors. Interactions between CR data originators and third-party redistributors may have a role in affecting market dynamics, as they result in multiple access options for end users, as well as additional revenues and costs, depending on the commercial terms agreed between the parties.

3.4 We understand that end users may choose to access CR data in a variety of ways, depending on their preferences and use cases. We identified 4 distinct ways for end users to obtain CR data. These access options are not mutually exclusive, as users can choose to access CR data via multiple channels simultaneously. These are summarised in Figure 3 and described below:

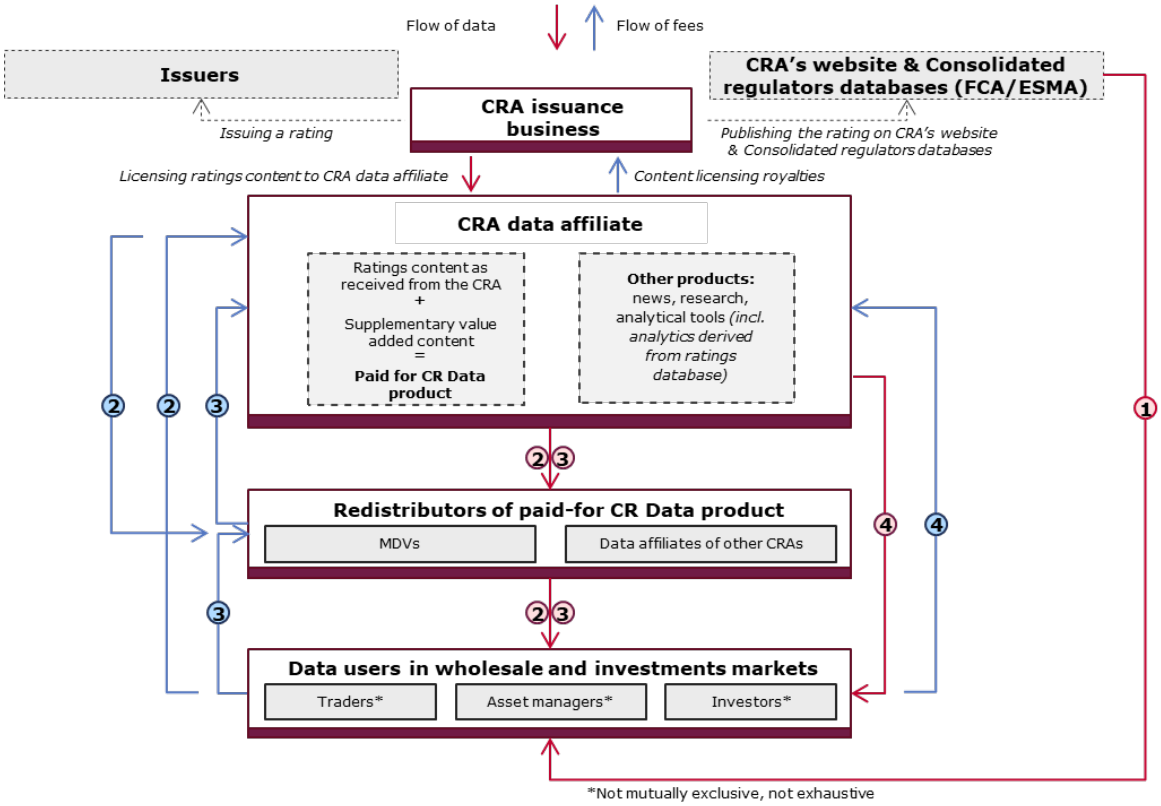
a. **Free CR data.** After issuing a rating, the CRA issuance business makes the rating available on their website and shares it with the regulator for addition to their consolidated database. End users access such rating content free of charge. Such data typically cannot be used for commercial purposes.

b. **Paid-for CR data to end users with access via redistributor.** The CRA issuance business shares ratings content with the CRA data affiliate, who then enriches it with supplementary content, such as industry classifications and security identifiers. The resulting, paid-for, CR data product is delivered to redistributors. The end user enters into commercial agreements with the CRA data affiliate, who then instructs the redistributor to make the product available via the redistributor's delivery channels. The CRA data affiliate may compensate the redistributor for facilitating data delivery to the end user via revenue-sharing agreements. While redistributors do not directly bill the end users, these need a separate commercial agreement with the redistributor to access their platform, which typically includes products other than CR data.

c. **Paid-for CR data to redistributors for further distribution.** The redistributor enters into a commercial agreement with the CRA data affiliate, which grants them the right to further monetise the product by re-selling it to their users. End users have their own licence with the redistributor, which includes access to CR data.

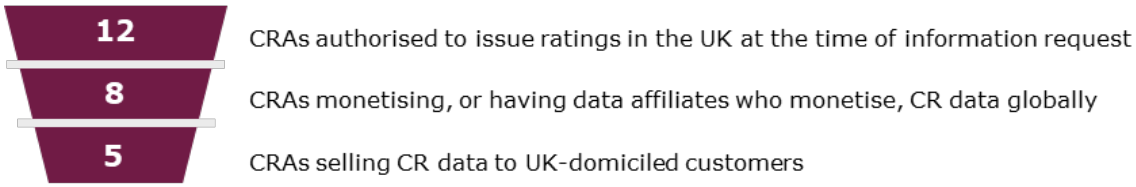
d. **Paid-for CR data directly to end users.** End users enter into a commercial agreement with the CRA data affiliate and access CR data directly through their distribution channels.

Figure 3: CR data access channels



3.5 At the time of our information request, 12 CRAs were authorised to issue credit ratings in the UK. Out of these, 8 CRAs were selling CR data to end users globally, or made such sales through their data affiliates. Of these 8 firms, 5 were selling CR data directly to UK-domiciled end users (Figure 4).

Figure 4: FCA authorised CRAs selling CR data in the UK



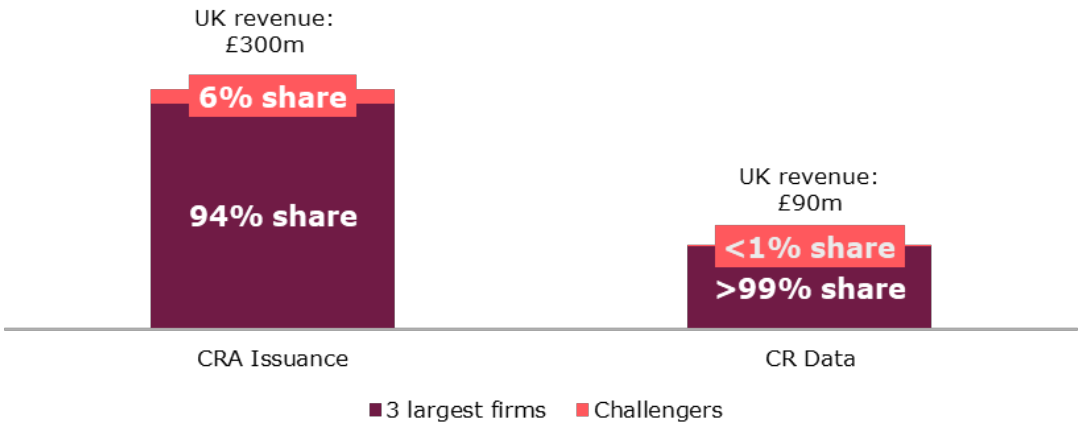
3.6 From the evidence received, we estimated that UK CRA issuance revenues were up to £300m in 2022. This amount includes revenues from public, ESG, cyber, private, and other ratings products. It does not include revenues from ancillary services, CR data or intercompany revenues. The 3 largest CRAs accounted for 94% of these aggregate revenues, and none of the challenger firms had a market share of more than 3%.

3.7 We note that the abovementioned revenue figures, and the resulting firms' market shares, are not directly comparable with those referenced in the FCA's Credit Rating Agency UK Market Share Report for 2022. This is due to how we defined in-scope revenues, based on our aim of gathering data in the most consistent way across the 3 markets, as outlined in paragraph 2.9. Furthermore, differently from the approach used in the 2022 Market Share Report, our estimates do not include revenues generated from ancillary services.

3.8 The 5 CR data originators active in the UK market generated an estimated £90m revenue from CR data sales to UK-domiciled end users in 2022, up from £70m in 2017. This figure includes both direct sales to UK-domiciled end users (option 4 in Figure 3), as well as revenues generated by CRA data affiliates with involvement of redistributors (options 2 and 3 in Figure 3). We find that the share of CRA data affiliates' revenues generated with involvement of redistributors increased over the past 6 years, suggesting a growing importance of the role of redistributors in the monetisation of CR data.

3.9 Similarly to CRA issuance activities, CR data revenues are highly concentrated amongst the data affiliates of the 3 largest CRAs. Out of 9 challenger CRAs authorised in the UK at the time of market study launch, only 2 were selling CR data to UK-domiciled end users, representing in aggregate less than 1% of the £90m UK CR data revenues. Figure 5 illustrates the relative scale and concentration of UK CRA issuance and CR data revenues.

Figure 5: Estimated shares of revenues for firms in UK CRA issuance and CR data (2022)



3.10 As illustrated in Figure 3, offerings of CRA data affiliates include products other than paid-for CR data. These may be purchased by end users alongside CR data or separately. The non-exhaustive list of such products includes credit research reports licensed by the data affiliate from the CRA issuance business for further distribution, country and industry specific news, analytics, risk modelling tools, consulting and advisory services.

3.11 Some of these products may be derived from CR data, or use CR data as one of the many inputs, such as credit rating transition matrices and default probability calculators. We sought to exclude such ancillary products from our revenue estimates, however we were not able to do it consistently. This was because firms were not able to provide sufficiently granular information to enable a precise determination of revenues strictly related to CR data. For example, one CRA data affiliate noted that paid-for CR data is delivered as part of a broader offering, which can include products other than CR data. Therefore, our estimate of revenue will include some revenue not solely generated from the sale of CR data to UK-domiciled customers.

3.12 The role of third-party redistributors in the sale of CR data to end users has become more prominent throughout the 2017-2022 period, evidenced by the increasing share of CR data revenue generated by the 3 largest data affiliates with involvement of redistributors. Reliance on MDVs for the distribution of CR data appears to be even more pronounced amongst challenger CRAs and their data affiliates. We found that, for one of the challenger firms, all of their UK CR data revenues were generated with involvement of MDVs, despite them having their own distribution capabilities.

Revenues

3.13 The contribution of CR data to the overall revenues generated by CRA data affiliates varies across firms. For some, products other than CR data account for more than half of the firm's UK revenues. We note that CRA data affiliates cross-sell various products, as described in paragraph 3.10, to increase revenue per client and ensure customer retention. We understand that some firms set annual cross-selling targets for their sales departments.

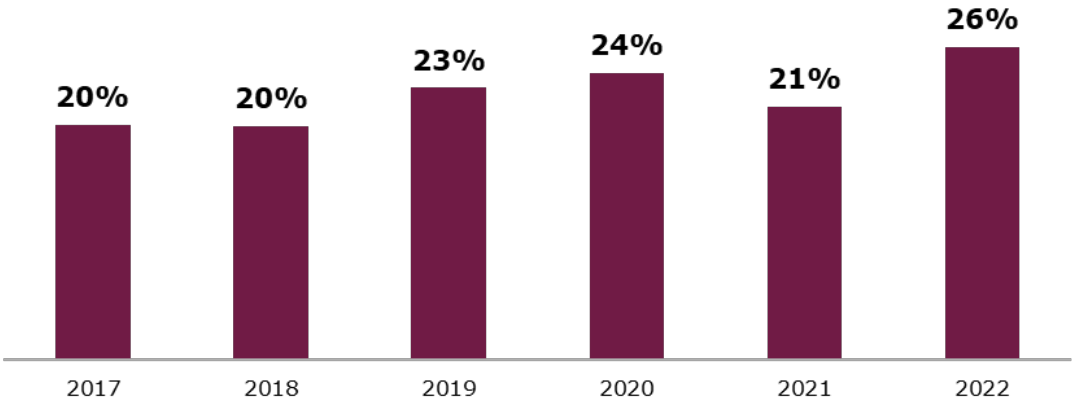
3.14 Despite this, CRA data affiliates remain commercially separate from the regulated CRA issuance businesses, with strict firewalls in place. We find no evidence of CRA issuance products being sold in conjunction with CR data, or other products sold by CRA data affiliates.

3.15 We estimate that UK revenues earned by CRA data affiliates amounted to £90m in 2022, having increased from £70m in 2017. More than half of this growth can be attributed to a higher number of UK-domiciled customers purchasing CR data, as opposed to increase in average revenue per user (ARPU). During the period, growth in CR data ARPU for UK-domiciled end users did not significantly outpace inflation. Select CRAs and their data affiliates saw their CR data ARPU decline in real terms over the period, while others demonstrated sustained growth.

3.16 For the 5 firms that monetise CR data in the UK, CR data accounted for approximately a quarter of combined UK CRA issuance and UK CR data revenues (Figure 6). We found that the share of firms' total UK revenue attributable to CR data increased marginally between 2017 and 2022, due to sustained growth in sales of CR data as well as drivers impacting CRA issuance revenues.

3.17 We also found that the contribution of CR data revenues to overall revenues varied significantly across firms. In 2022, amongst the 5 firms selling CR data in the UK, this ranged between 35% for one of the 3 largest CRAs to 2% for a challenger firm.

Figure 6: UK CR data revenues as % of aggregated UK CRA issuance and UK CR data revenues (2017-2022)



Sample size: 5 firms

Costs

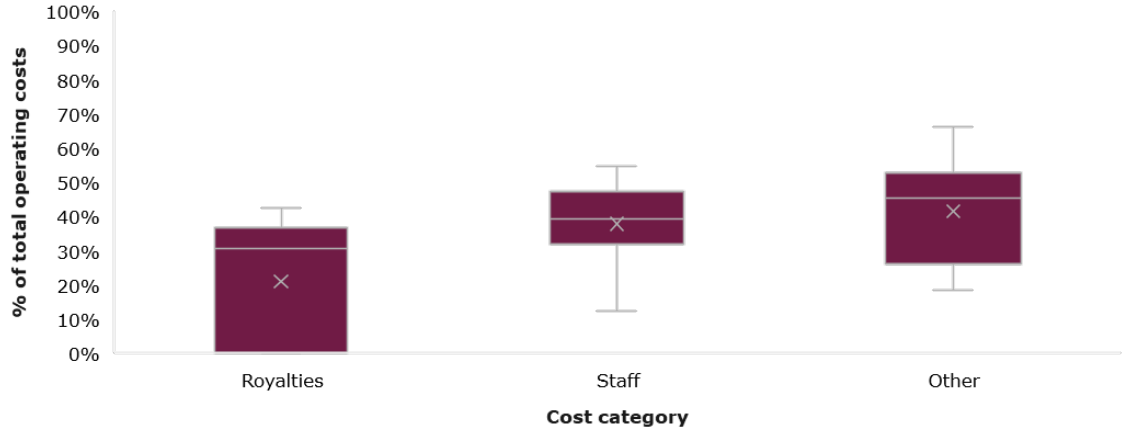
3.18 Our analysis of costs is largely based on total operating costs incurred by sample entities selling CR data to UK-domiciled end users. This was the highest level of granularity we were able to assess, due to firms' inability to allocate costs by product or geography. Firms' responses indicated that, while there are certain costs that are specific to the generation and distribution of the CR data product, most of their costs are shared across multiple products.

3.19 We found significant variance in how firms reported costs, especially when comparing the 3 largest firms against challengers. This was partly affected by different cost structures and operating models.

3.20 As our aim is to understand the competition dynamics that affect the provision of CR data to UK-domiciled customers, in our analysis we placed a higher emphasis on costs incurred by the 3 largest CRA data affiliates, as these firms account for almost the totality of UK CR data revenues (see Figure 5 above).

3.21 We found that firms' cost base can be largely split across 3 main categories – ratings content licensing royalties, staff costs, and other costs (Figure 7).

Figure 7: Firms' costs by category as a % of total operating costs – firm-year observations (2017-2022)



Sample size: 5 firms / 30 firm-year observations

3.22 Amongst the 5 firms selling CR data in the UK, ratings content licensing royalties were only recorded by the 3 largest data affiliates. For these firms, such royalties accounted for around one-third of total operating costs. These are payments made to the CRA issuance business for the licensing of ratings content and associated assets, which serve as the key input in production of the paid-for CR data product.

3.23 We found that firms adopt different approaches to determining licensing royalties. For example, royalties may be agreed as a variable fee, calculated ex-post as a percentage of revenue generated by the CRA data affiliate from CR data sales. In order to ensure that resulting intercompany payments are at arm's length, CRAs and their data affiliates determine a set of comparable content licensing transactions agreed with independent third parties. Firms determine the variable fee based on such analysis of comparable licensing transactions.

3.24 Alternatively, such payments can be fixed in nature, based on an ex-ante allocation of expected relevant costs. These can cover the time spent by the CRA issuance firm's analysts to produce ratings content, and any other related costs.

3.25 Regardless of the approach to fee determination, firms confirmed that such payments are at arm's length, determined with the involvement of external transfer pricing advisors. However, our evidence shows that these financial transfers may include a profit mark-up. We discuss the implications of such mark-ups in the forthcoming Profitability section.

3.26 Staff costs represent another substantial expense incurred by sample firms. For the 3 largest data affiliates, these costs varied between one-eighth and a half of total operating costs, based on firm-year ratios. For challengers, these never represented less than 30% of total costs. We found, based on evidence from only a subset of sample firms, that a significant proportion of staff costs relate to commercial and support functions, rather than being primarily focused on the production of CR data content. Based on this evidence, other analytical products offered alongside CR data appear more staff intensive, requiring substantial resources for product development and content production.

3.27 Other costs accounted for the remaining portion of operating expenses. For the 3 largest data affiliates, these represented between one-fifth and a half of firms' total operating costs, based on firm-year observations. For challengers, other costs accounted for at least one-quarter of firms' total costs in any year. These mainly include various group overheads, non-staff marketing expenditures, travel and entertainment expenses, software licensing, real estate and external consulting services.

3.28 These costs also include payments made in relation to revenue-sharing agreements with MDVs, for those data affiliates that have one in place. From the evidence received, we understand that users increasingly prefer to access CR data through third-party redistributors, and that these redistributors may be able to negotiate revenue-sharing agreements with CRA data affiliates. Their ability to do so depends on the relative bargaining power of the 2 parties, and the perceived 'must have' nature of the data by redistributors and end users. Not all redistributors receive such payments from CRA data affiliates, and similarly not all CRA data affiliates make such payments to redistributors. We note that such revenue sharing, where in place, may account for up to 10% of a firm's total operating costs. Firms have told us that such arrangements take 2 main types:

- **Finder's fees.** A one-time fee paid to a redistributor for acquiring a new CR data user, who then contracts directly with the CRA data affiliate. Such royalties can be either variable, typically a 10-20% of revenues earned by the CRA data affiliate in the first year, or fixed based on number of clients.
- **Recurring variable royalties.** An ongoing royalty whereby the CRA data affiliate compensates redistributors for users accessing data through their delivery channels. This is typically based on a predetermined percentage of CR data revenues.

Profitability

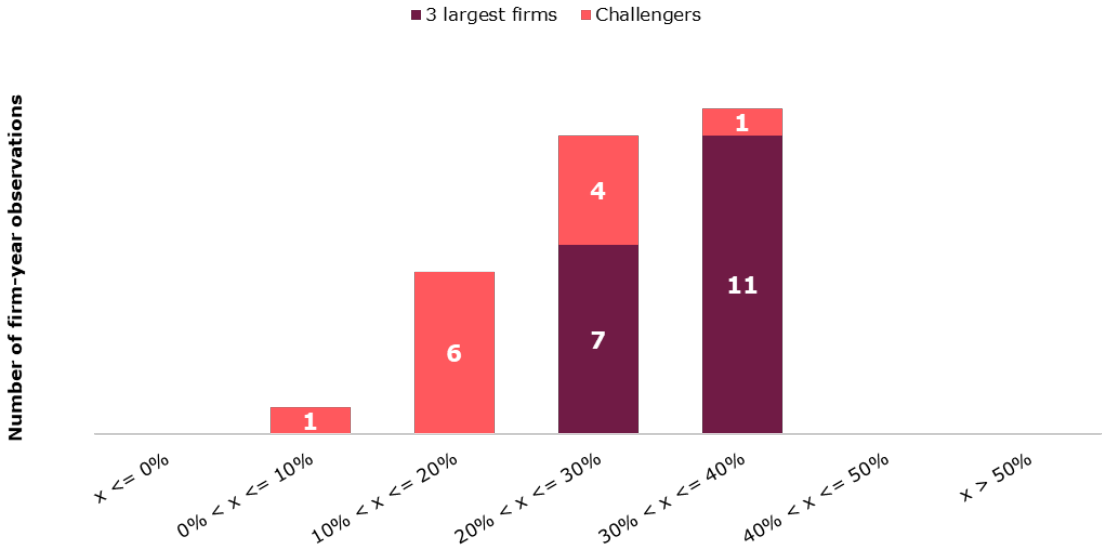
3.29 All firms told us that they do not monitor profitability at product level. In addition, none of them were able to provide proxy data to allow product-level profitability analysis on a best endeavours basis. Notwithstanding this, some CRA data affiliates indicated that the financial performance of CR data as a product may be approximated by the profitability of the firm as a whole. We applied this information throughout our analysis of operating margins and ROCE.

3.30 However, we found compelling evidence that such an approach is likely to underestimate the underlying profitability of CR data as a product. We expand on this further in the upcoming paragraphs.

Unadjusted operating margins

3.31 We found that the 3 largest CRA data affiliates consistently outperformed the 2 challenger firms, achieving operating margins that were always in excess of 25%. Conversely, challengers predominantly occupied the lower end of the distribution, with one never achieving margins above 20% in any year (Figure 8).

Figure 8: CRA data affiliates unadjusted operating profit margins – firm-year observations (2017-2022)



Sample size: 5 firms / 30 firm-year observations

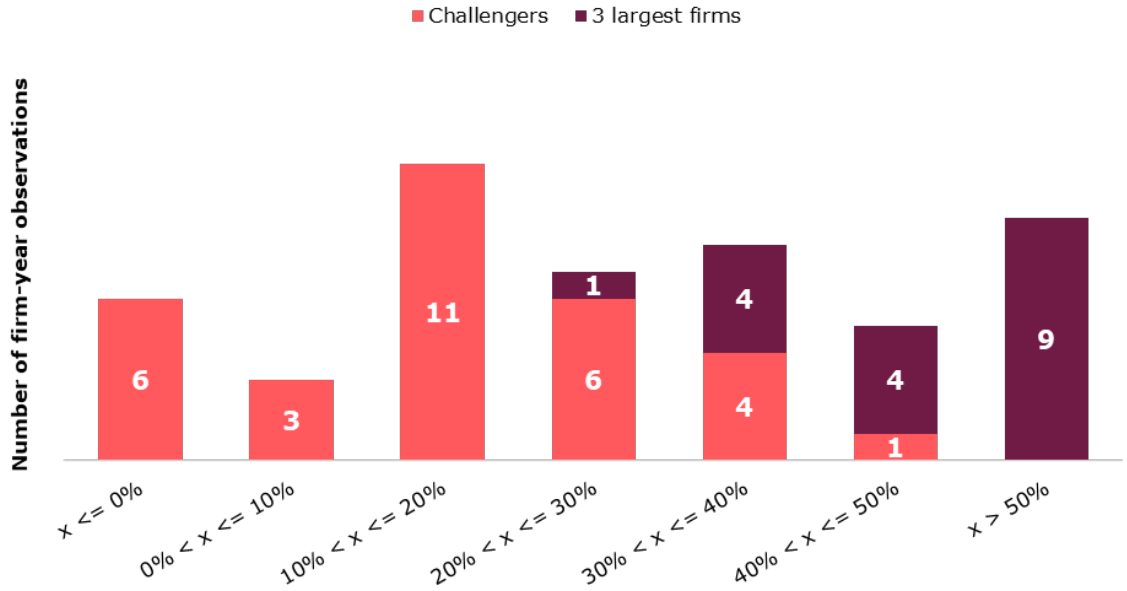
3.32 As mentioned in our costs analysis, ratings content licensing royalties constitute one of the largest expenditures incurred by CRA data affiliates. While at arm's length, any profit mark-ups inherent to such intercompany transactions represent transfers of profits from data affiliates to CRA issuers. Evidence provided by firms in respect of such mark-ups, while limited, confirms that the mark-ups could result in profit margins being up to 6 percentage points higher than reported by CRA data affiliates.

3.33 We were also aware that our results measured the profitability of CR data affiliates across multiple products, rather than of CR data as a product. We therefore also sought to estimate product-level profitability, based on additional evidence from a firm that tracks granular financial information for its various business lines. For this CRA data affiliate, the business segment housing CR data generated significantly higher profitability than other business lines. As a result, operating margins achieved by this firm specifically on their CR data product may be up to 9 percentage points higher than firm-level profitability.

3.34 Whilst we could not corroborate our findings for all sample firms, based on the above we estimate that product-level profit margins on CR data could be up to 15 percentage points higher than margins of CRA data affiliates. Obscured by intercompany transfers and diluted by less profitable products, operating profit margins of CRA data affiliates should be viewed as a lower bound for the product-level profitability of CR data.

3.35 When looking at margins achieved within the CRA issuance activity, we found a similar trend to that identified for CRA data affiliates (Figure 9). Margins achieved by the 3 largest CRA issuers markedly outperformed their challenger counterparts. Out of all firm-year observations above 40%, only 1 was attributable to a challenger CRA issuance firm. Whilst most challengers consistently earned positive operating margins throughout 2017-2022, they also accounted for all instances of results below 20%.

Figure 9: CRA issuance firms unadjusted operating profit margins – firm-year observations (2017-2022)



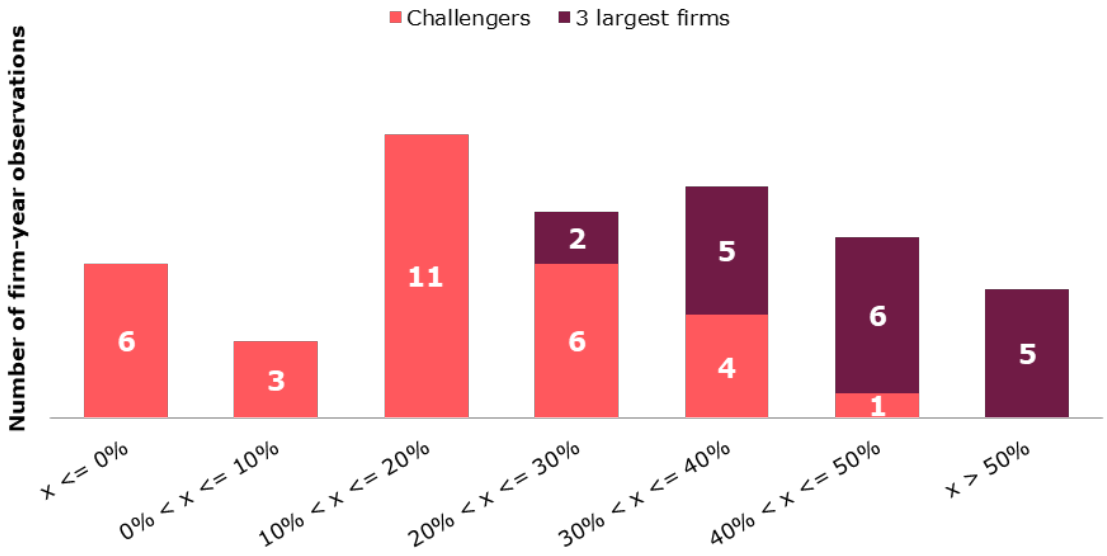
Sample size: 7 firms (2017), 8 firms (2018-2020), 9 firms (2021-2022) / 49 firm-year observations

Adjusted operating margins

3.36 With regards to CRA data affiliates, we did not identify the need for any adjustments to operating profits.

3.37 As to CRA issuance firms, we adjusted figures for one of them. This was to address differences between the financial information pertaining to the standalone entity that had responded to our information request and the accounts of the consolidated group. This adjustment resulted in a slight shift within the higher end of the distribution, which however did not alter the conclusions outlined above (Figure 10).

Figure 10: CRA issuance firms adjusted operating profit margins – firm-year observations (2017-2022)



Sample size: 7 firms (2017), 8 firms (2018-2020), 9 firms (2021-2022) / 49 firm-year observations

3.38 We also investigated to what extent the licensing revenues earned by CRA issuance firms may be driving their profitability. We found that the sample firms which received licensing royalties from their data affiliates derived less than 5% of their total revenues from such financial transfers, therefore not having a material impact on operating margins.

3.39 Such royalties may be earned by entities which were out of scope of the market study due to our geographic delineation. Where possible, we undertook our analysis of CRA issuance businesses' licensing royalties, and their impact on profitability, based on consolidated group information. Our findings further reinforced our conclusions, with royalties having a minor contribution to global revenues, and as a result profitability, of CRA issuance businesses.

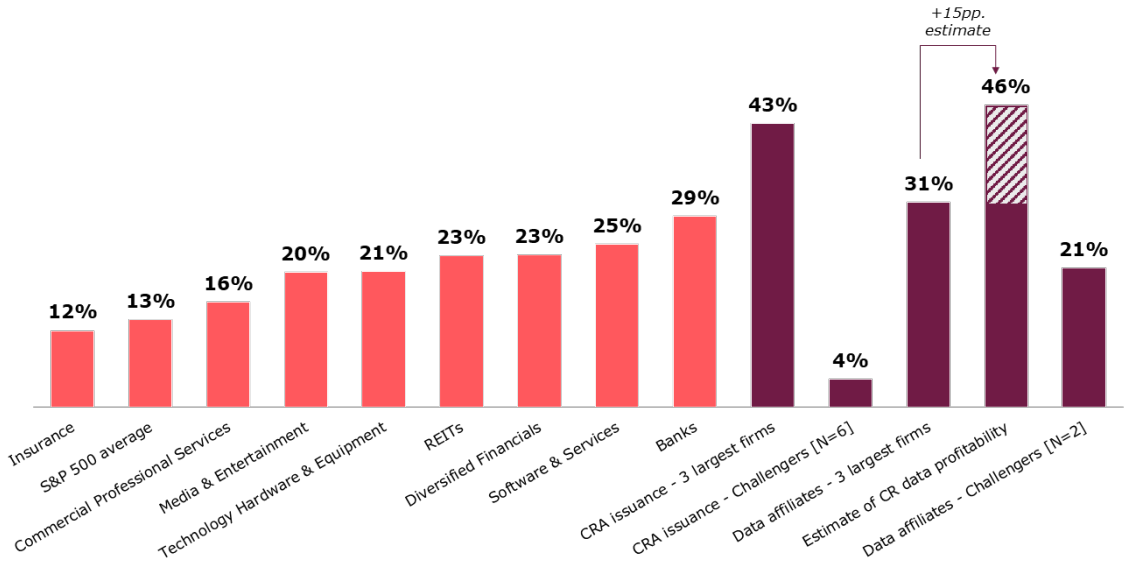
3.40 These results confirm that financial transfers for ratings content licensing have a minor role in driving the profitability of the 3 largest CRA issuance businesses. This is largely due to the relative magnitude of CRA issuance and CR data revenues generated by firms, being approximately at a ratio of 3:1 ratio as shown in Figure 6. Therefore, in the absence of such financial transfers, the CRA issuance businesses of the 3 largest CRAs would still be significantly more profitable than those of challenger firms.

3.41 The adjusted operating profit margins of the 3 largest CRA issuance firms, weighted by their respective UK market shares, averaged 43% throughout the 2017-2022 period. Conversely, adjusted margins of challengers averaged 4%.

3.42 During the same period, operating profit margins of the 3 largest CRA data affiliates and their challenger counterparts averaged 31% and 21% respectively. At the same time, we estimated that product-level profit margins of CR data sold by the 3 largest CRA data affiliates, based on our reasoning described in paragraphs 3.32-3.34, could be as high as 46%.

3.43 We placed operating margins achieved by firms in context by comparing them against the profitability of S&P 500 constituents. Our results show that both ratings services and CR data generated operating profit margins that significantly exceeded those achieved by S&P 500 index constituents, which averaged 13% over the same period (Figure 11). Industries with comparable characteristics, such as those relying on high human capital or other intangible assets, also were significantly less profitable than our sample firms.

Figure 11: S&P 500 – constituents – average operating profit margins by industry (2017-2022)



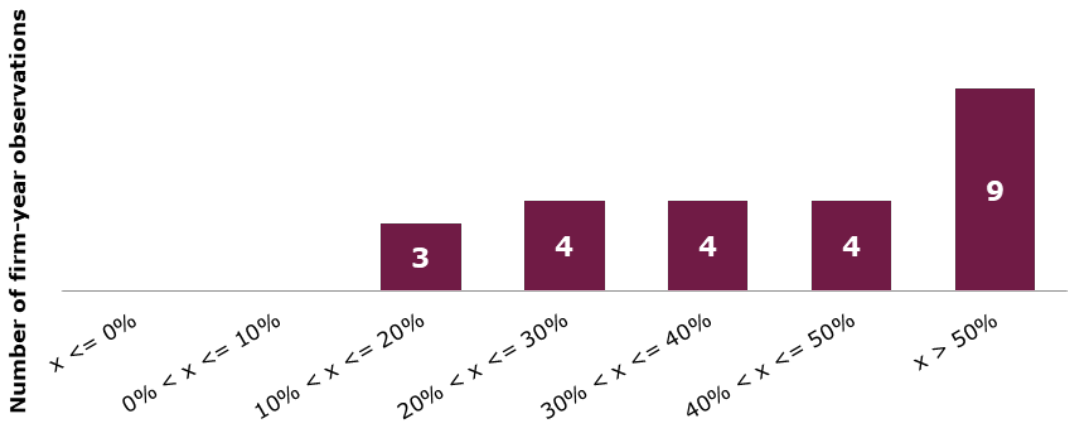
Sample size: CRA data affiliates – 5 firms; CRA issuance – 9 firms

Unadjusted ROCE

3.44 Our analysis of ROCE is based on 8 CRA issuers and 4 CRA data affiliates. This reflects the extent to which we were able to use firms' information for the purposes of benchmarking returns against cost of capital.

3.45 Figure 12 illustrates the unadjusted ROCE distribution of the 4 CRA data affiliates. Given the small sample size, we present aggregate results across large firms and challengers. Unlike our analysis of firms' operating profit margins, unadjusted returns do not show the same difference in profitability between the largest firms and challengers. This was largely due to variability in capital employed, impacted by firms' financing decisions. Notwithstanding this, sample returns were strong, with over four-fifths of observations being at least twice as high as our estimated cost of capital, introduced in paragraph 3.50.

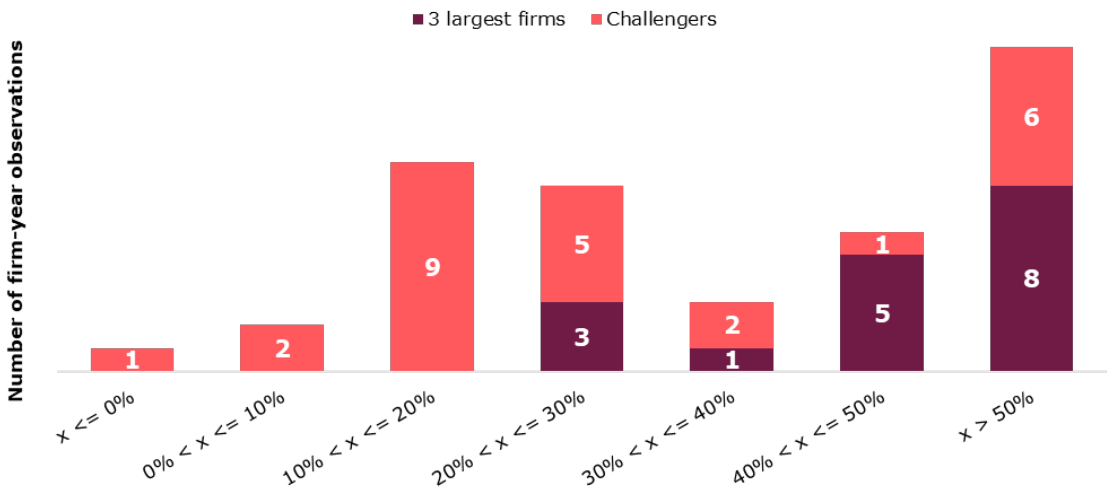
Figure 12: CRA data affiliates unadjusted ROCE – firm-year observations (2017-2022)



Sample size: 4 firms / 24 firm-year observations

3.46 With regards to CRA issuance firms, we found that all instances of unadjusted ROCE under 20% were attributable to challenger CRA issuers. However, select challenger firms were able to achieve returns that were in line with those of the 3 largest firms (Figure 13).

Figure 13: CRA issuance firms unadjusted ROCE – firm-year observations (2017-2022)



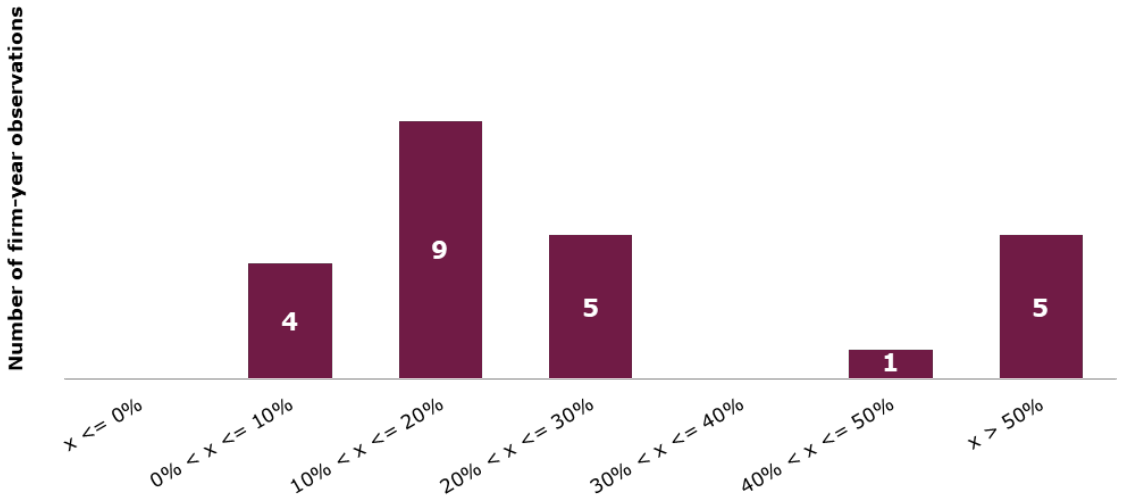
Sample size: 7 firms (2017), 6 firms (2018), 7 firms (2019-2020), 8 firms (2021-2022) / 43 firm-year observations

Adjusted ROCE

3.47 Our analysis of adjusted returns is based on the same number of data affiliate firms. Conversely, for CRA issuance firms we included 1 additional challenger firm, accounting for 5 additional firm-year observations. This is due to the application of certain adjustments to reported balance sheet information that allowed us to incorporate this firm's evidence within our analysis, in line with the principles outlined in the Methodology section.

3.48 Our adjusted results for CRA data affiliates show a lower degree of profitability compared to their corresponding unadjusted outputs (Figure 14). We also identified further evidence of the disparity in profitability between established firms and challengers, as found in our analysis of operating margins. We found that, between 2017 and 2022, challenger CRA data affiliates never achieved adjusted ROCE above 30%, whilst accounting for the majority of observations below 20%. As outlined in prior sections, these returns measure profitability of CRA data affiliates as a whole and are likely to underestimate profitability of CR data as a product.

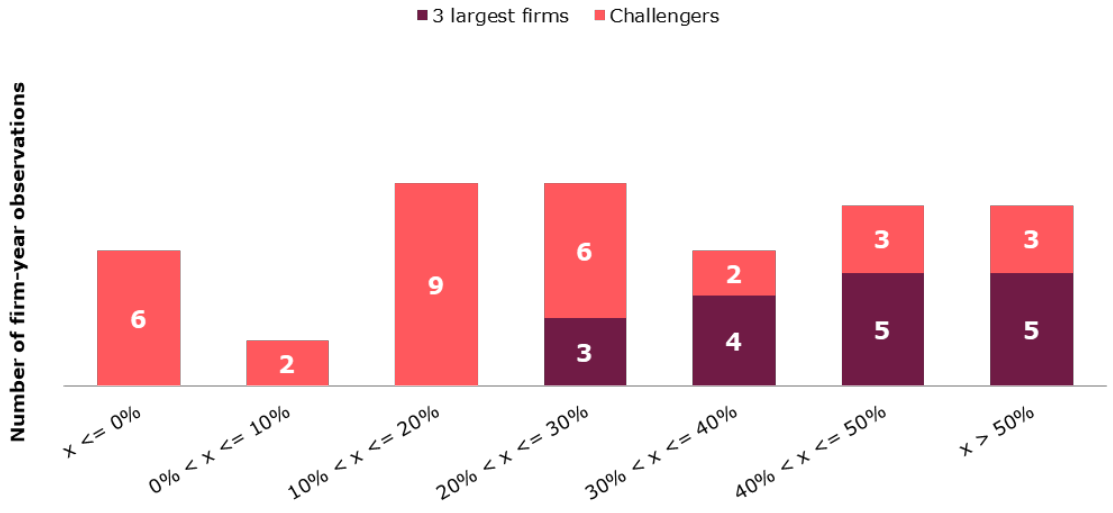
Figure 14: CRA data affiliates adjusted ROCE – firm-year observations (2017-2022)



Sample size: 4 firms / 24 firm-year observations

3.49 Results for CRA issuance firms illustrated in Figure 15 further corroborate the findings presented in our unadjusted ROCE analysis. However, on an adjusted basis we found a more marked disparity between the returns of the 3 largest CRA issuers and those of challenger firms. In all 6 years, each of the 3 largest CRA issuance firms achieved returns above 20%. Challengers were comparatively less profitable, with only select firms consistently achieving adjusted ROCE close to those earned by the 3 largest firms.

Figure 15: CRA issuance firms adjusted ROCE – firm-year observations (2017-2022)



Sample size: 7 firms (2017-2018), 8 firms (2019-2020), 9 firms (2021-2022) / 48 firm-year observations

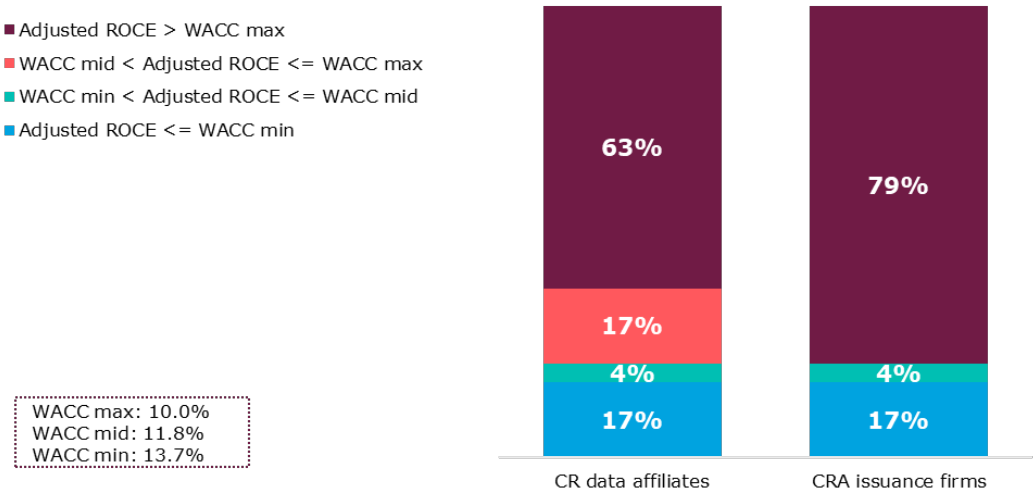
WACC and breakeven ROCE

3.50 For CRA issuance firms and CRA data affiliates, we estimated a pre-tax WACC of 10.0-13.7%, with a mid-point of 11.8%.

3.51 We found that, in most firm-year instances, both CRA issuance businesses and CRA data affiliates generated adjusted ROCE significantly above our cost of capital estimates (Figure 16). Compared to challengers, the 3 largest firms outperformed WACC more consistently and to a larger extent, evidencing a high degree of market power.

3.52 Amongst both CRA data affiliates and CRA issuance firms, all observations of returns below the WACC mid-point were attributable to challengers. In the instances where these firms achieved ROCE in excess of WACC, such outperformance was of a relatively smaller magnitude compared to their larger peers.

Figure 16: Adjusted ROCE vs WACC – firm-year observations (2017-2022)



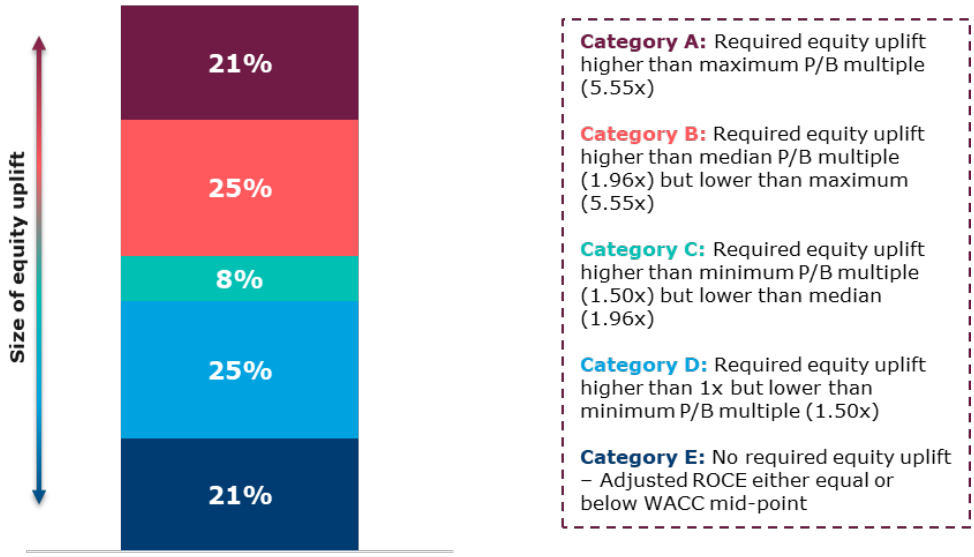
Sample size: CRA data affiliates – 4 firms / 24 firm-year observations; CRA issuance – 7 firms (2017-2018), 8 firms (2019-2020), 9 firms (2021-2022) / 48 firm-year observations

3.53 The results outlined above are based on book values, namely firms' information as reported in their financial statements. The resulting ROCE may be affected by the presence of intangible assets not accounted for on firms' balance sheets. To assess whether this may account for the high profitability, we estimated the level of intangible assets that would be required for returns to be in line with our estimated cost of capital, as described in the Methodology.

3.54 To do this, we uplifted firms' equity, for each year, up to the point where ROCE would be equal to our mid-point WACC estimate. We then grouped these firm-year results based on the minimum, median and maximum P/B multiple seen in comparable transactions, as set out in paragraph 2.39.

3.55 With regards to CRA data affiliates, we found that firms' equity would require an uplift greater than our 1.96x median in almost half of the instances, only 1 of which relating to a challenger firm. For over one-fifth of observations, firms' returns remained above cost of capital even after applying the maximum equity uplift of 5.55x (Category A in Figure 17). All of these instances related to the 3 largest data affiliates. Again, this analysis is likely underestimating the results for CR data as a product. Our findings remain largely unaffected if we use a breakeven ROCE of 13.7%, corresponding to the upper bound of our estimated WACC range. In this case, 9 out of 24 firm-year instances required an uplift in excess of the 1.96x median, none of which being attributable to challenger firms.

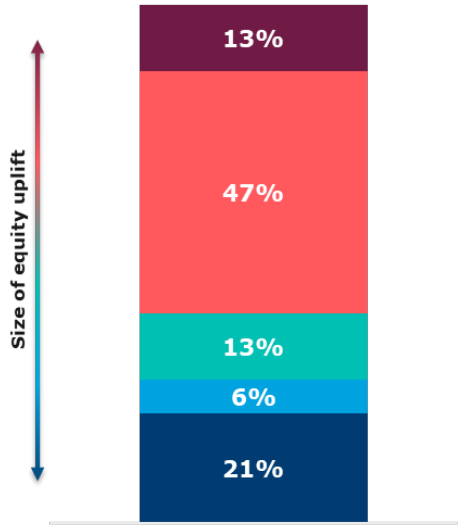
Figure 17: CRA data affiliates 'breakeven ROCE' equity uplifts – firm-year observations (2017-2022)



Sample size: 4 firms / 24 firm-year observations

3.56 With regards to CRA issuers, we found that in three-fifths of the instances, firms' equity would require an uplift greater than the median P/B ratio observed in comparable transactions for returns to be in line with cost of capital (Category A and B in Figure 18). All observations pertaining to the 3 largest CRAs were within this category. All remaining instances, where the implied P/B uplift was less than the 1.96x median (Category C and D) or was not required at all (Category E), were attributable to challenger firms. Our findings remain largely unaffected if we use a breakeven ROCE of 13.7%, corresponding to the upper bound of our estimated WACC range.

Figure 18: CRA issuance firms 'breakeven ROCE' equity uplifts – firm-year observations (2017-2022)



Category A: Required equity uplift higher than maximum P/B multiple (5.55x)

Category B: Required equity uplift higher than median P/B multiple (1.96x) but lower than maximum (5.55x)

Category C: Required equity uplift higher than minimum P/B multiple (1.50x) but lower than median (1.96x)

Category D: Required equity uplift higher than 1x but lower than minimum P/B multiple (1.50x)

Category E: No required equity uplift – Adjusted ROCE either equal or below WACC mid-point

Sample size: 7 firms (2017-2018), 8 firms (2019-2021), 9 firms (2022) / 47 firm-year observations

4 Benchmark administrators

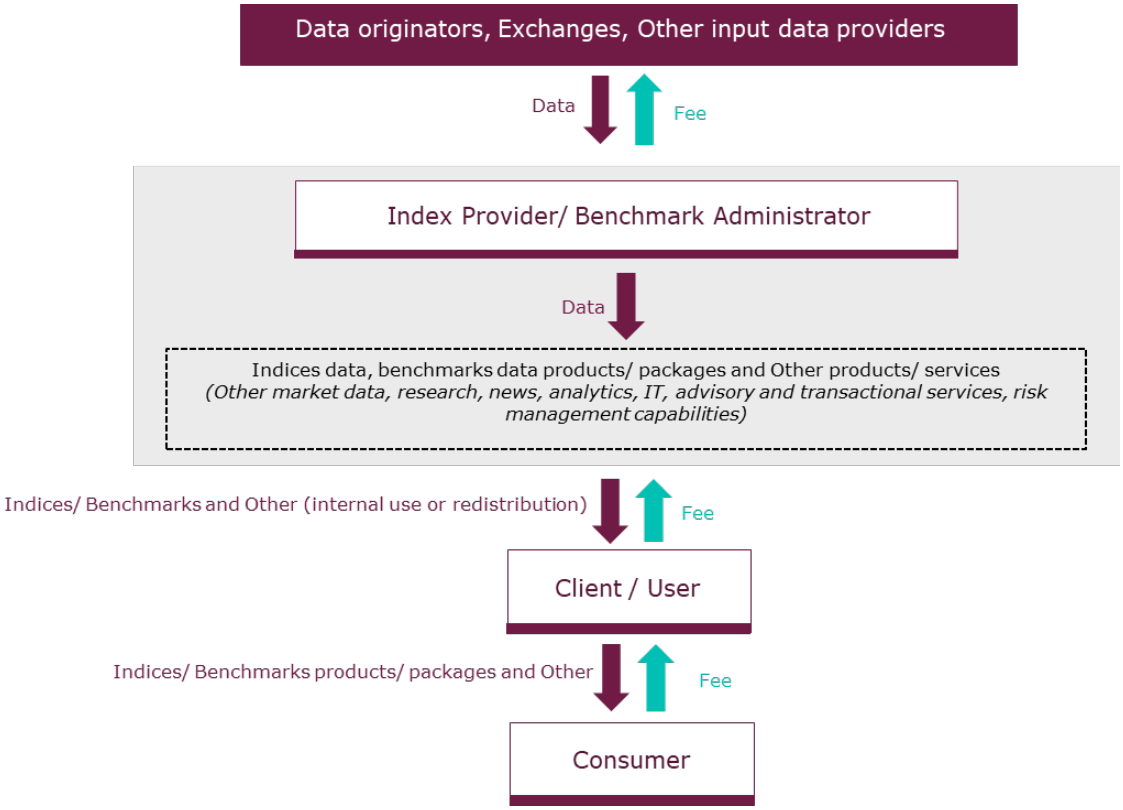
Market overview

4.1 Benchmark administrators develop, calculate, and maintain a range of indices. These firms earn revenues from licensing the use of their indices to clients, either as benchmarks or for other purposes such as internal use or redistribution (Figure 19).

4.2 Many benchmark administrators have additional revenue streams, including generation and distribution of other market data, research, news, analytics, IT, advisory and transactional services. Several are part of large groups with operations spanning across multiple areas in the financial sector. These include trading venues or entities offering asset management and brokerage services.

4.3 Benchmark administrators typically supply indices and benchmarks internationally, regardless of where they are domiciled. The largest providers form part of large, consolidated groups, and rely on their global group infrastructures to research, create, license, and distribute their indices and benchmarks.

Figure 19: Benchmarks and indices supply chain



4.4 Indices are commonly classified based on the underlying asset class, such as equity, fixed income, commodities, interest rates, or FX. Other classification criteria include geography, sectors, or themes such as climate or ESG.

4.5 Benchmark administrators purchase different types of data depending on the underlying asset class of the indices they produce. The nature of such input data is highly varied, as is the source, which includes a wide range of third-party generators.

4.6 Benchmark administrators operate through a variety of corporate structures and business models. Some undertake the entire end-to-end process, from generation to distribution. Others operate through multiple entities, each responsible for a different part of the supply chain. All these activities are reflected in firms' intercompany recharges and governed by intercompany agreements.

4.7 Revenues generated from the sale of indices and benchmarks nearly doubled between 2017 and 2022. We estimate that those earned from UK-domiciled customers amounted to around £600m in 2022 (Figure 20).

4.8 We found that the 3 largest benchmark administrators accounted for just under 70% of the UK estimated market by revenues in 2022. These firms held a broadly stable revenue share of the estimated UK total since 2017. However, throughout the 6-year period, the relative positioning within the top-3 sub-group changed.

4.9 In the following sections we focus our analysis on the financial performance of the firms within our sample.

Revenues

4.10 We received financial information from 14 firms in total, including UK and third-country domiciled benchmark administrators. Some of these undertake all business activities under a single legal entity, whilst others operate across multiple entities or business segments. This is due to entities operating in different market classes, or as mentioned above, due to them undertaking separate activities within the supply chain, such as origination versus distribution. We provide an overview of how many firms responded to our request, and the corresponding number of entities the financial information relates to, in Table 3.

Table 3: Number of firms and corresponding entities within our sample

Count	***2017***	***2018***	***2019***	***2020***	***2021***	***2022***
Firms	*10*	*10*	*14*	*14*	*14*	*14*
Entities	*13*	*13*	*21*	*21*	*23*	*23*

4.11 The growth in the number of firms in 2019 was primarily attributable to new entry. One exception related to a single firm, comprising multiple entities, which was only able to provide data from 2019 onwards despite having been active throughout the entire period under review. The additional entity recorded in 2021, conversely, related to a completed acquisition by 1 of our sample firms. Furthermore, another one of our sample firms acquired 1 company during the period under review. Such firm provided aggregate financial figures for 2021 to 2022, which did not allow us to fully remove the impact of such acquisition from our analysis to assess trends on a like-for-like basis.

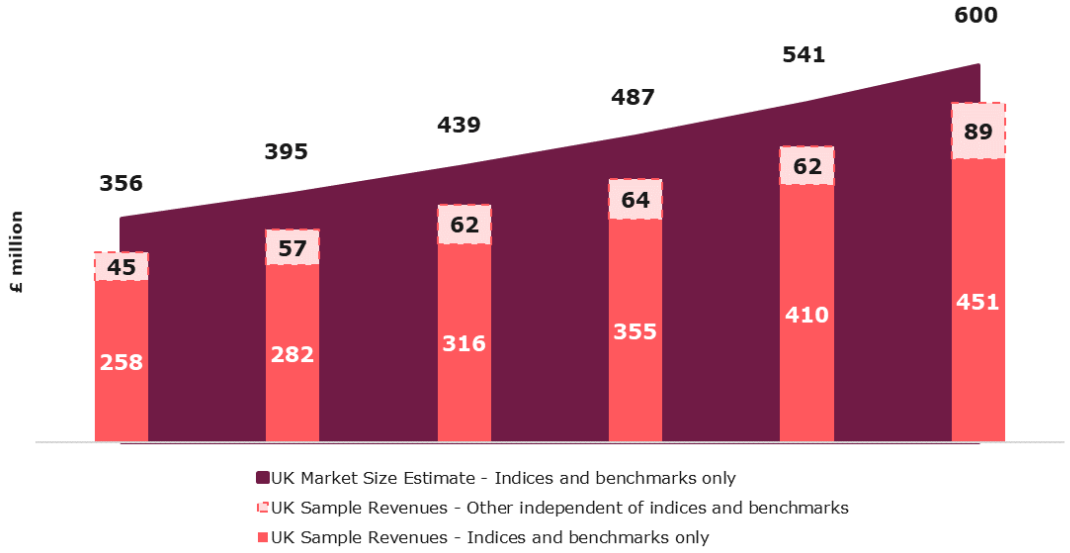
4.12 To form a comprehensive view of the different business lines within this market, we requested information on firms' index and benchmark generation activities, as well

as other ancillary activities. In addition to sales from benchmarks and indices, firms also reported revenues from the sale of additional services related to, but distinct from, the supply of benchmarks and indices. These include data insights, news, analytics, IT, advisory and transactional services. We have not included these revenues within our UK market estimates, in light of their distinct nature.

4.13 We found that firms provide access to their services through a variety of licences. They can charge recurring and non-recurring fees, which can be fixed or variable based on different criteria. These include use case, geographic location, size and type of the client, number of users, or the value of the underlying financial products referencing an index or a benchmark, namely assets under management. Some firms allow users to customise their licences, which is reflected by the use of pricing tiers and discounts.

4.14 Sample revenues from the provision of indices and benchmarks to UK-domiciled customers exceeded £450m in 2022, having grown by over 10% on average per annum since 2017 (Figure 20). Of these, on average around 22% was earned by third-country benchmark administrators and over 70% of these revenues related to equity benchmarks and indices.

Figure 20: UK market revenue estimates vs sample revenues (2017-2022)



Sample size: 8 firms (2017-2018), 11 firms (2019-2020), 13 firms (2021-2022)

4.15 Ancillary UK revenues, which include products such as analytics, totalled £89m in 2022. Whilst these are predominantly offered by the more established firms, we found that a small number of challenger firms have also started to diversify their index-related product offerings in more recent years.

4.16 For some of the larger firms, ancillary revenues also included global intercompany recharges that were associated to indices or benchmarks. Such intercompany income, rather than arising from intra-group sales, relates to distribution activities, or the recovery of operating costs incurred as a result of the shared and global nature of operations.

Costs

4.17 When analysing costs incurred by benchmark administrators, we differentiated between established firms versus challengers and new entrants, as defined in the Benchmarks Market Annex.

4.18 Firms were largely unable to allocate costs specifically to their UK benchmarks and indices business. Therefore, we analysed total operating costs based on firms' aggregate information, including ancillary products. Furthermore, several firms confirmed there were no material differences between servicing customers based in the UK compared to overseas. Therefore, we analysed firms' total costs as a reasonable proxy for their UK operations.

4.19 We asked benchmark administrators to break down their total operating costs by (i) staff, (ii) data, (iii) IT, (iv) other costs associated to their index and benchmark business, as well as (v) other costs not associated to indices and benchmarks.

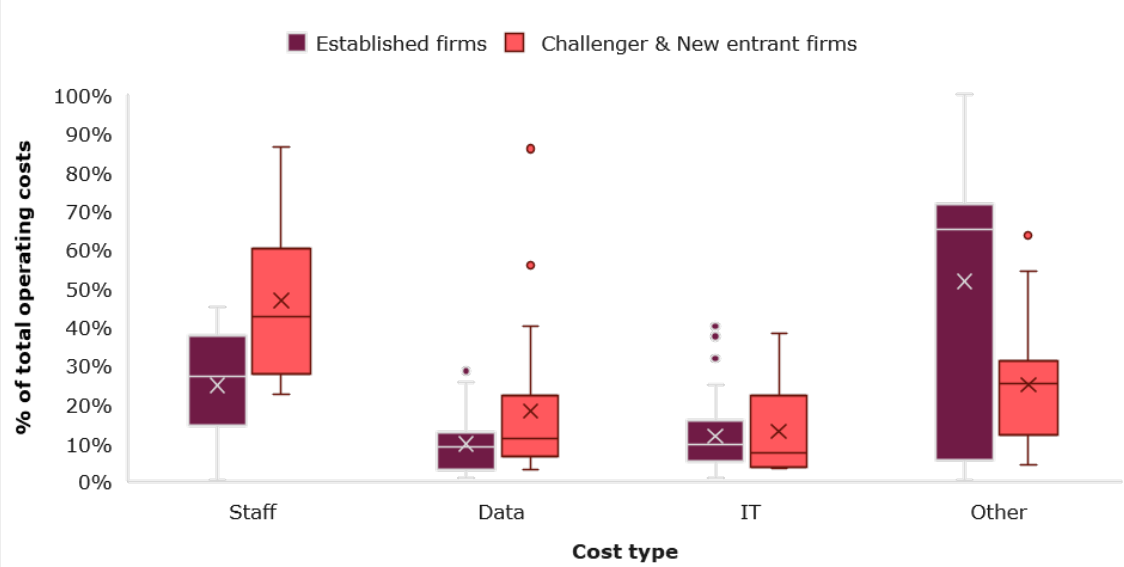
4.20 We found that the magnitude of each cost category varied greatly across our sample. This was mostly due to firms administering different types of indices and benchmarks, and varying degrees of complexity in corporate structures. However, it was also affected by firms' inability to allocate certain costs consistently across the categories outlined above. For example, some firms classed some of their benchmarks and indices expenses, including staff, data and / or IT, as 'other' (as outlined further in paragraph 4.27).

4.21 Some firms were unable to perform any cost allocation, and instead provided aggregate figures for their total costs. Whenever feasible, based on additional information provided by firms, we exercised prudent judgement in allocating a portion of these costs to our designated categories.

4.22 Due to the above, our results may not provide a perfectly accurate quantification of each cost category where firms encountered challenges in allocating operating expenses. However, on an aggregate basis they still provide a sensible representation of firms' cost structures.

4.23 On average, out of the total costs provided by sample firms, firms were able to allocate around two-fifths to the indices and benchmarks business, which are summarised in Figure 21 and described in turn in the following paragraphs. Another one-third of our sample's total aggregate costs pertained to other business lines, and mostly related to the analytics products sold by a single established firm. The remaining portion of total sample costs largely pertained to 1 firm, which was not able to confirm whether their costs related to either their benchmarks and indices business or other ancillary products.

Figure 21: Firms' costs by category as a % of total operating costs – firm-year observations (2017-2022)



Sample size: Data – 13 firms / 70 firm-year observations; Staff – 12 firms / 65 firm-year observations; IT – 10 firms / 53 firm-year observations; Other – 11 firms / 61 firm-year observations

4.24 Staff costs include salaries, incentives, commissions, and other social benefits. We found that these represent a significant portion of firms' total expenditures. For challengers and new entrants, staff costs held a relatively greater share of total costs compared to established firms.

4.25 Data costs relate to the data feeds required for the methodology and administration of indices and benchmarks. On average, these represented a more significant portion of challenger and new entrants' total costs. The most extreme cases related to instances whereby challenger firms incurred significant data-related costs during the initial stages of their business.

4.26 IT costs relate to utilising and maintaining infrastructures, cloud systems, data centre capabilities and IT support across the entire benchmark administration value chain. We found significant differences pertaining to IT costs within our sample. With regards to established providers, some firms did not record any IT costs, whilst others included intra-group recharges within these figures. Amongst challengers and new entrants, IT costs accounted for a more significant share of total expenses, with some reporting significant amounts in standalone years, mostly related to IT development work.

4.27 Some firms were not able to allocate certain benchmarks and indices expenses to staff, data or IT explicitly. These are classed as 'other' in the chart above. These include costs incurred in relation to methodology, administration and distribution of indices and benchmarks, as well as recharges for global sales, accounts management, and royalty payments.

Profitability

4.28 Within the profitability analysis of benchmark administrators, we continued to differentiate between established firms versus challengers and new entrants.

4.29 In our analysis of operating margins, we also included self-indexers, namely those firms which administer benchmarks exclusively or predominantly for internal use within their group, therefore not generating revenues directly from index licensing. However, we excluded these firms from our analysis of ROCE, as these providers were not able to provide balance sheet information specifically relating to their benchmarks and indices business line.

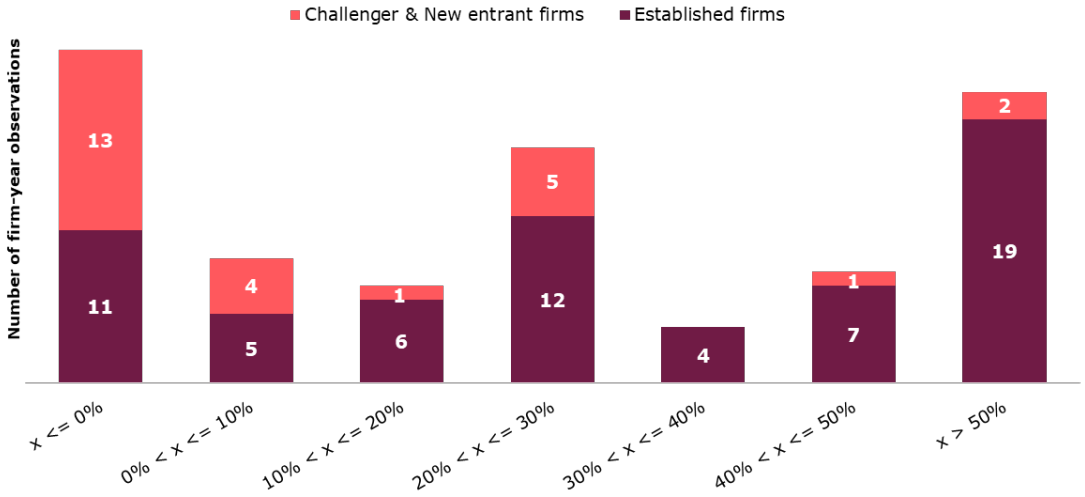
Unadjusted operating margins

4.30 Figure 22 shows the distribution of firm-year observations across the 6-year period. These reflect operating profit margins calculated based on information provided by firms prior to any adjustments. We found that the margins of firms within our sample ranged widely, from substantial negatives to over 60%. The former was associated with a new entrant, which incurred high start-up costs as part of the creation of their indices.

4.31 Amongst established firms, we found that around two-thirds of firm-year observations were above 20%. There were, however, limited instances of lower performance, mostly relating to isolated years or single entities within a larger group. For the most part, these were achieved by smaller firms, based on UK revenues, within this sub-group.

4.32 Conversely, challengers and new entrants did not perform as strongly. Half of firm-year observations were negative, whilst less than one-third was above 20%. However, there were firms, mostly operating in niche markets, whose performance turned positive in the 2 most recent years. Results achieved by firms in this sub-group were more volatile compared to established providers, except for 1 administrator, whose margins exceeded 15% in all 6 years.

Figure 22: Unadjusted operating profit margins – firm-year observations (2017-2022)



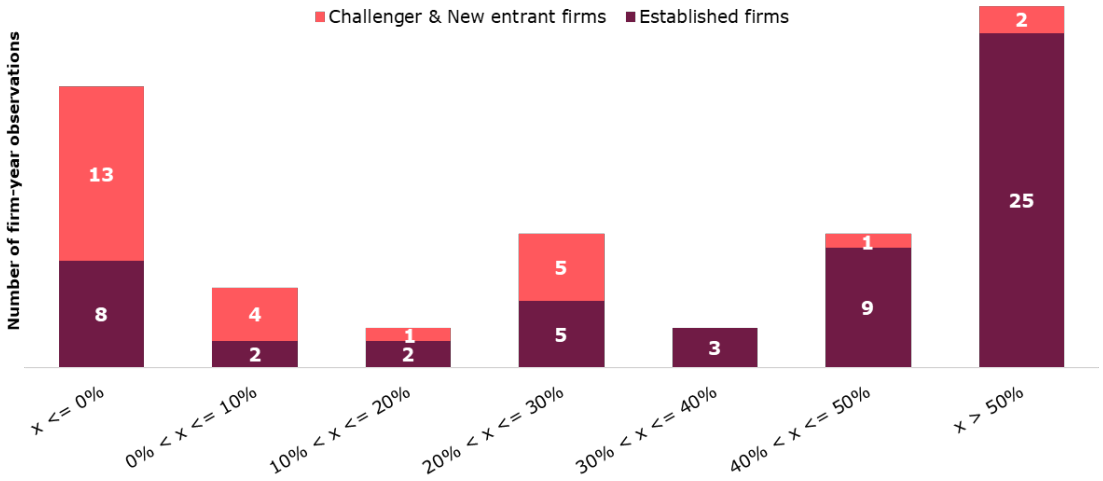
Sample size: 9 firms (2017-2018), 13 firms (2019-2020), 14 firms (2021-2022) / 90 firm-year observations

Adjusted operating margins

4.33 As outlined in the methodology, some firms noted that their reported figures were not representative of the performance of their underlying business. This was limited to 2 large providers with global operations across multiple entities and / or business segments, for whom unadjusted results only captured a portion of their index and benchmark operations. We therefore adjusted our calculations accordingly, based on additional information provided by those firms. For 1 of them, our adjustments involved aggregating multiple legal entities, leading to fewer firm-year observations.

4.34 Our adjusted results, shown in Figure 23, continued to evidence the relative outperformance of established firms against challengers and new entrants, further reinforcing our findings.

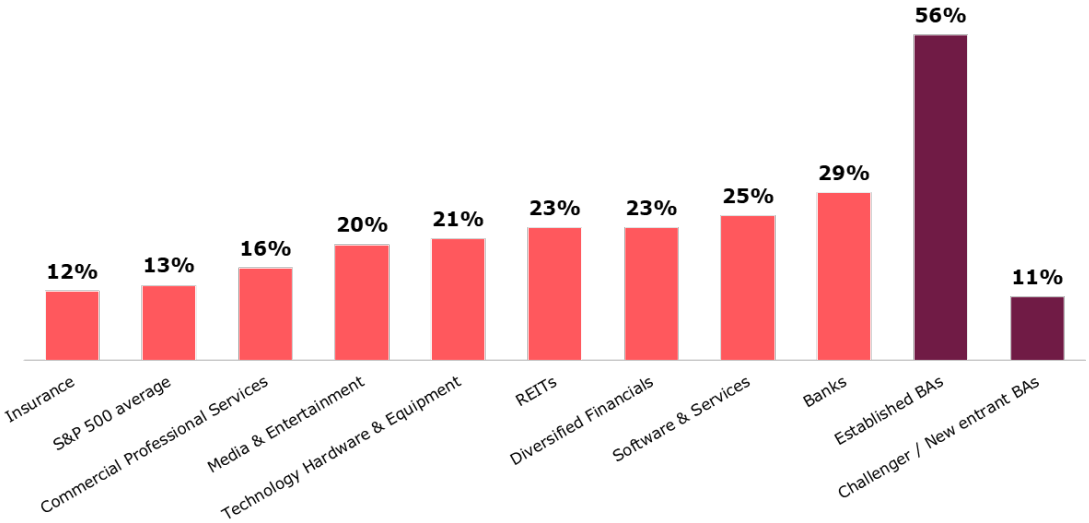
Figure 23: Adjusted operating profit margins – firm-year observations (2017-2022)



Sample size: 8 firms (2017-2018), 12 firms (2019-2020), 14 firms (2021-2022) / 80 firm-year observations

4.35 We compared firms' adjusted margins, weighted by their shares of UK revenues from indices and benchmarks, against the S&P 500. We found that established providers significantly outperformed, by a factor greater than 4, the broad market index. Conversely, average margins of challengers and new entrants were 2 percentage points lower than those achieved by S&P 500 constituents (Figure 24).

Figure 24: S&P 500 constituents – average operating profit margins by industry (2017-2022)



Sample size: Established BAs – 7 firms; Challenger & New entrant BAs – 6 firms.

Unadjusted ROCE

4.36 Similarly to operating margins, firms' yearly returns fell within a wide range, from negative returns of 50% to positive returns over 100% (Figure 25). Throughout the

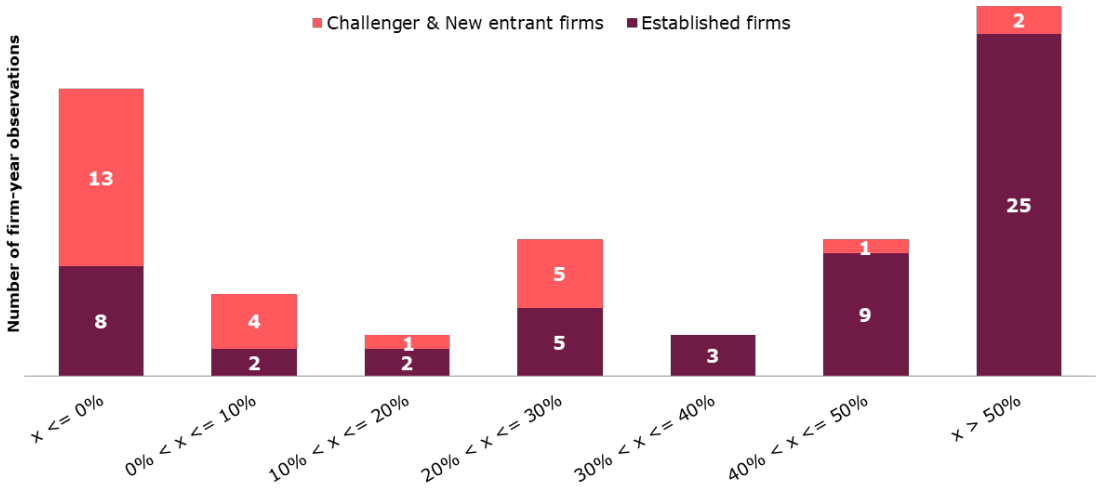
6-year period, the financial performance of established firms was comparatively stronger than that of challengers and new entrants.

4.37 We would expect some variation in financial performance in a market where there are differences across firms' sizes, asset classes, and corporate structures. Yet, our results continued to evidence a significant disparity between most established providers and challengers / new entrants.

4.38 Amongst established firms, we found that over one-third of firm-year observations were at least 3 times as high as our estimated cost of capital (introduced in paragraph 4.43), and only one-quarter were negative.

4.39 Conversely, the ROCE achieved by challengers and new entrants was weaker and less conclusive compared to established firms. We found that over two-fifths of observations amongst challengers and new entrants were negative, whilst less than one-fifth outperformed WACC by the same 3x factor. Results achieved by these firms were largely variable throughout the 6 years, except for 1 provider whose average ROCE exceeded 25%.

Figure 25: Unadjusted ROCE – firm-year observations (2017-2022)



Sample size: 8 firms (2017-2018), 9 firms (2019-2022) / 58 firm-year observations

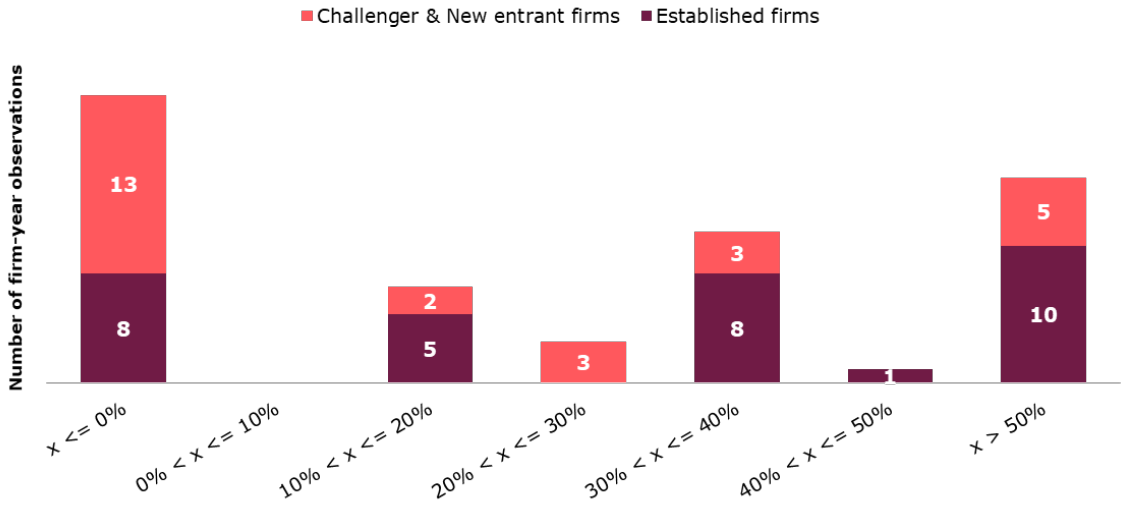
Adjusted ROCE

4.40 We adjusted the returns of 6 firms within our sample. For 3 of these, including the 2 outlined in the adjusted operating margins section, we calculated returns based on consolidated group information, which provided a more accurate representation of these firms' benchmarks and indices' business performance. For the remaining 3, our adjustments were mostly limited to single-year instances of negative capital employed and operating profits, which we addressed in line with our approach in paragraph 2.31. Our findings following such adjustments further reinforce our conclusions (Figure 26).

4.41 For established firms, 3 in 5 firm-year observations were over twice as high as cost of capital, and only 1 in 4 was negative.

4.42 A higher proportion of observations amongst challengers and new entrants, amounting to half of total count, was negative. This was mostly driven by the inclusion of 3 firms, 2 of which were consistently underperforming, that had been excluded from the previous analysis as their unadjusted results were not meaningful. We continued to observe volatile financial performance amongst the majority of challengers and new entrants.

Figure 26: Adjusted ROCE – firm-year observations (2017-2022)



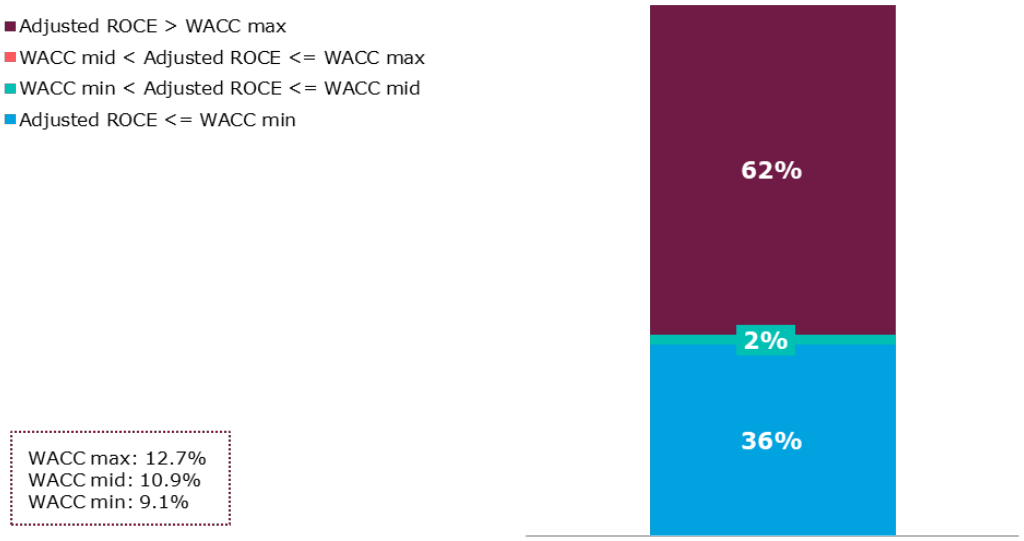
Sample size: 7 firms (2017-2018), 10 firms (2019-2020), 12 firms (2021-2022) / 58 firm-year observations

WACC and breakeven ROCE

4.43 Our pre-tax WACC estimate for benchmark administrators, calculated in line with the approach described in the Methodology, ranged between 9.1% and 12.7%, with a mid-point of 10.9%.

4.44 We found evidence, for several firms, of returns exceeding the upper boundary of our estimated cost of capital range (Figure 27). For established firms, more than two-thirds of observations were above 12.7%, which is consistent with a high degree of market power. Conversely, for challengers and new entrants, half of observations were below our range minimum.

Figure 27: Adjusted ROCE vs WACC – firm-year observations (2017-2022)



Sample size: 7 firms (2017-2018), 10 firms (2019-2020), 12 firms (2021-2022) / 58 firm-year observations

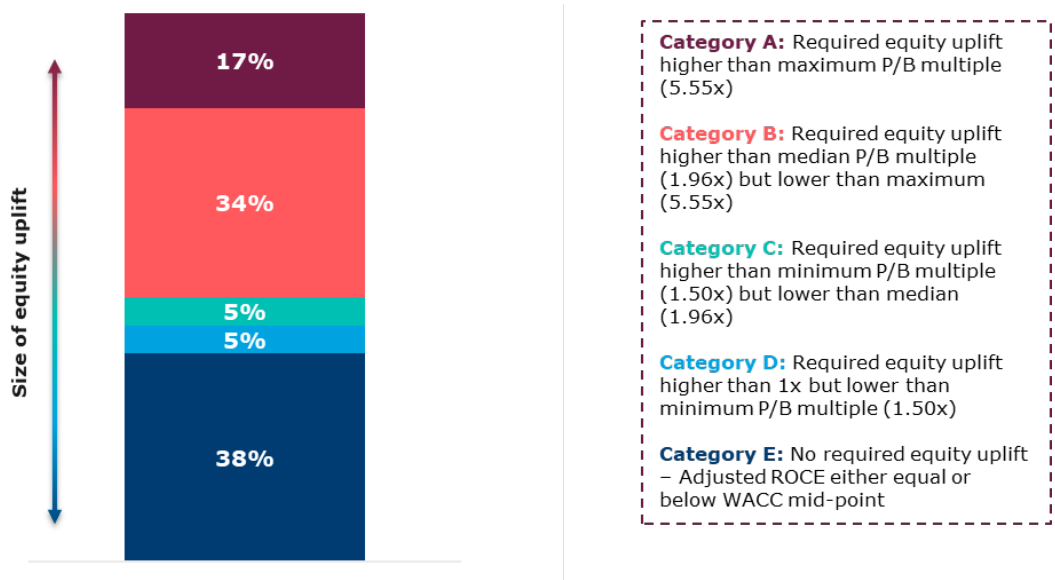
4.45 These results are based on book values, which may be underestimating firms' true economic capital by not considering the value of intangible assets. We therefore calculated the increase in equity required for ROCE to be in line with our WACC mid-point. We then compared our results against P/B ratios from comparable acquisitions, as outlined in the Methodology.

4.46 We found that, even after uplifting equity values to account for uncapitalised intangible assets, firms' returns substantially exceeded our estimated cost of capital mid-point in around half of total instances. For over one-third of observations, firms' equity required an uplift between the 1.96x median and the 5.55x maximum P/B ratio for ROCE to be in line with WACC (Category B in Figure 28). In one-sixth of instances, the required equity uplift exceeded the highest P/B ratio observed from comparable transactions (Category A).

4.47 We found that, even where firms were affected by acquisitions that resulted in a temporary decline in ROCE, a significant equity uplift was still necessary for returns be in line with cost of capital.

4.48 Using the maximum WACC estimate of 12.7% as a breakeven value did not result in significant changes to our findings, with half of firms' observations still requiring an uplift of at least 1.96x for ROCE to be in line with WACC.

Figure 28: 'Breakeven ROCE' equity uplifts – firm-year observations (2017-2022)



Sample size: 7 firms (2017-2018), 10 firms (2019-2020), 12 firms (2021-2022) / 58 firm-year observations

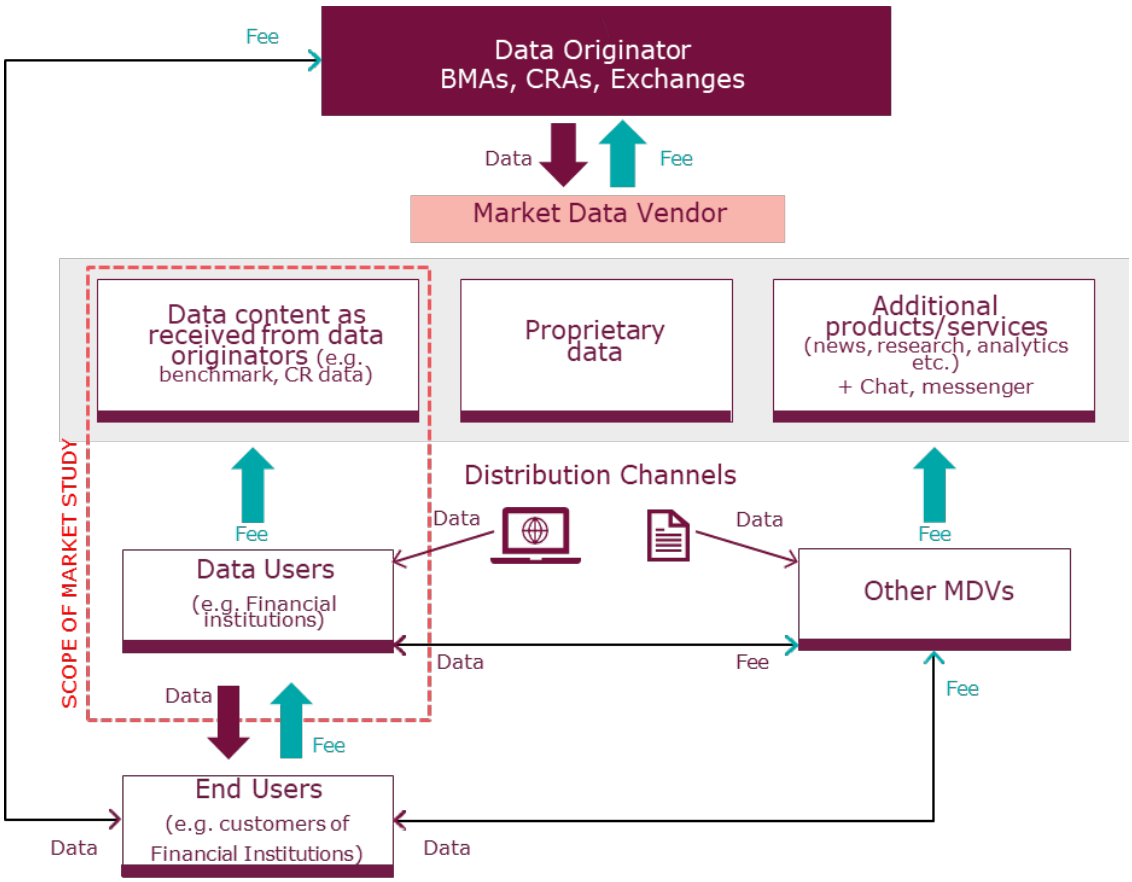
5 Market data vendors

Market overview

5.1 The main role of MDVs is the redistribution of wholesale data, such as trading, benchmarks and CRA data to end users.

5.2 MDVs offer a range of solutions, such as third-party data, proprietary data, and additional services such as analytics, news, messenger. They distribute these through a variety of channels, such as desktop applications, web-based tools, and data feeds (Figure 29).

Figure 29: MDVs supply chain



Revenues

5.3 MDVs have wide offerings across types of data and additional services. This made it difficult for firms to isolate the financial information we required in line with the scope of our market study. Our analysis is based on best efforts estimates of revenues from the distribution of third-party data. As discussed above, we worked with firms to ensure biases were minimised where possible.

5.4 Table 4 shows the number of firms that responded to our information request, and the related entities for which we obtained data. Due to business re-organisations that occurred during the period under review, some firms could not provide their revenue figures throughout 2017-2022. Furthermore, 1 firm provided information relating to 2 separate legal entities which jointly ran the group's MDV operations. We therefore combined the information to assess the MDVs' business performance of this group holistically (in line with our approach described in paragraph 2.12).

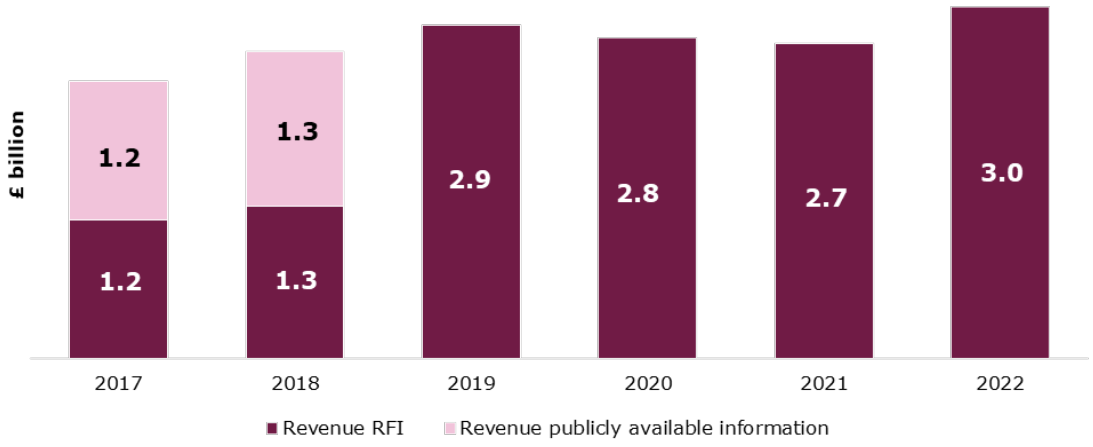
Table 4: Number of firms and corresponding entities within our sample

Count	2017	2018	2019	2020	2021	2022
Firms(1)	5	5	6	6	6	6
Entities	6	6	7	7	7	7

(1) *We also received very limited financial information from 1 additional firm, which we were only able to use for the purposes of estimating total UK revenues.*

5.5 The aggregate revenues generated from sales to UK customers by our sample firms exceeded £3bn in 2022, having grown at around 5% on average per annum since 2017 (Figure 30). To supplement partial submissions by some firms, we incorporated publicly available information relating to the same legal entities. This allowed us to estimate the revenue trend on a like-for-like basis.

Figure 30: Sample UK revenues (2017-2022)



Sample size: 5 firms (2017-2018), 6 firms (2019), 7 firms (2020-2022)

5.6 We requested that firms provide revenue information by product, namely (i) terminal, (ii) API / data feeds, and (iii) other ancillary products and services, such as news, chat, and analytical solutions.

5.7 For the most part, firms provided approximate figures. Furthermore, 1 firm only provided data for 4 out of 6 years, whilst others only provided aggregate figures, allocating all revenues under 1 product category. As a result, sample averages reflect our best effort at estimating product-level revenues.

5.8 Between 2017 and 2022, terminal sales accounted for almost half of our sample's aggregate revenues. Other ancillary products / services also accounted for a

significant fraction of the total, approximately two-fifths of the total, albeit these include instances where firms provided aggregate revenue figures due to being unable to provide product breakdowns. Sales of API / data feeds accounted for the residual share of aggregate revenues.

5.9 We found that, since 2018, the proportion of revenues relating to these 3 products remained broadly consistent with the 2017-2022 average. In 2017, terminal revenues accounted for a slightly higher share of aggregate revenues, just over half of the total. From 2018, the slight contraction in terminal sales was offset by a corresponding growth in revenues generated by ancillary products and services. This trend is consistent with statements made by most firms, acknowledging a strategic focus on growing their offerings through new data such as ESG or crypto assets, analytics and ancillary products.

Costs

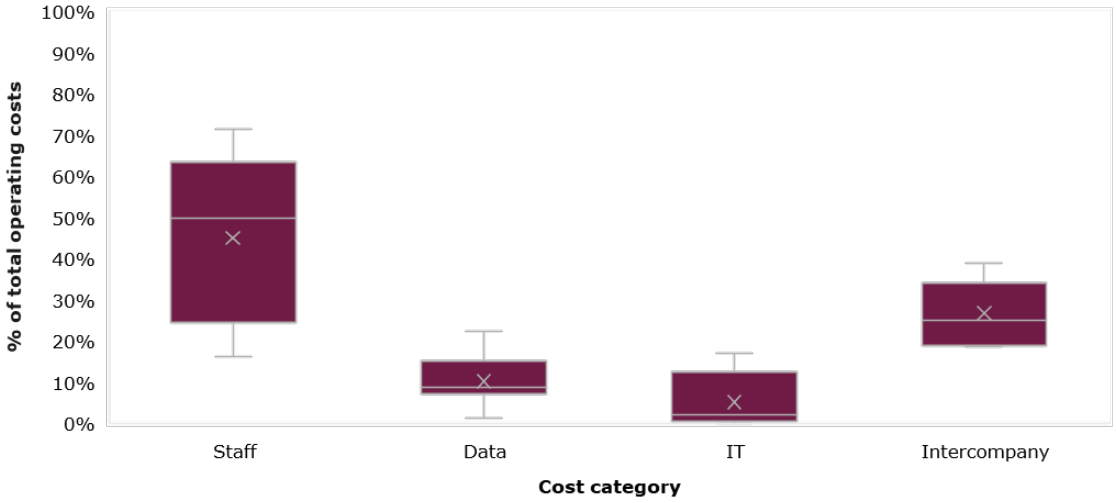
5.10 Firms also found it challenging to provide granular cost data on in-scope activities. We discuss in more detail how we adapted our approach to work with the data available in the Methodology.

5.11 In the MDV sector we requested cost information across 4 main categories, namely (i) staff, (ii) data, (iii) IT, and (iv) intercompany charges. The degree of variation in these figures further supports the qualitative evidence we gathered from firms, suggesting that business models vary widely between firms.

5.12 However, 1 firm classified almost half of their costs as 'other'. This included amounts which they were not able to allocate to our main categories, alongside costs such as depreciation and amortisation charges and property costs. As a result, for this firm the relative magnitude of each category against the total operating cost base is likely to be an underestimate. For each of the other firms, at least 95% of their total costs were captured within our 4 categories.

5.13 In light of the above, we relied less on sample averages than on more granular data, which offers an indicative assessment of the difference in costs between firms (Figure 31).

Figure 31: Firms' costs by category as a % of total operating costs – firm-year observations (2017-2022)



Sample size: Staff – 5 firms / 28 firm-year observations; Data – 5 firms / 28 firm-year observations; IT – 4 firms / 24 firm-year observations; Intercompany – 3 firms / 16 firm-year observations

5.14 We found that, for the most part, staff costs represented the most significant expense incurred by MDVs. Within our sample, there is a high variability in the relative magnitude of these costs within total operating expenses. These accounted from just below one-fifth to almost two-thirds of the total. For 3 firms, staff costs accounted for a higher share of the total in 2022 compared to 2017. This growth was driven by higher staff compensation and headcount, to assist a growing customer base and support the development of new products. For the other 2 firms, staff costs as a percentage of total operating expenses increased temporarily, but then returned in line with 2017 levels.

5.15 Data costs never exceeded one-quarter of total operating expenses in any firm-year instance. However, we still found a significant degree of variability amongst sample firms, with some incurring data costs in the low single digits, as a percentage of their total. Furthermore, within our sample we did not identify a shared growth trend throughout the period under review.

5.16 IT costs are incurred when onboarding data providers and establishing connectivity between the MDV and the end user. This includes setting up access, adding new data, or maintaining the IT and communication infrastructure, data centres and node sites. Only 4 MDVs reported IT-related costs in their submissions. All of them mentioned that these costs are almost always recovered either through service fees or recurring subscription fees charged to their users, rather than being shared with data originators. For the most part, we found that IT costs accounted for less than 3% of total costs, although in limited instances these represented around one-sixth of vendors' total costs. Furthermore, these costs seem to represent a relatively stable share of total operating expenses for each firm. However, firms acknowledged that such costs are often recognised as payments to other group companies to use a shared IT infrastructure, and therefore classified within intercompany expenses (described below). This is likely to underestimate the true magnitude of IT costs.

5.17 Intercompany costs mostly relate to the resources, capabilities and rights that other group companies have developed, maintained, or acquired. Only 3 firms provided

information on intercompany expenses, as an aggregate figure combining staff, data and IT. For these, intercompany costs were sizeable, ranging from one-fifth to over one-third of a firm's total amount. For only 1 firm, their relative share of the total costs contracted throughout the period by around 7 percentage points.

Profitability

5.18 Our profitability assessment is also based on best efforts estimates provided by firms. Results are based on a sample of 5 firms. However, for 1 firm we only received data for the most recent 4 years, whilst for 1 other firm we were only able to calculate ROCE for the most recent 3 years, based on the information received from such firm.

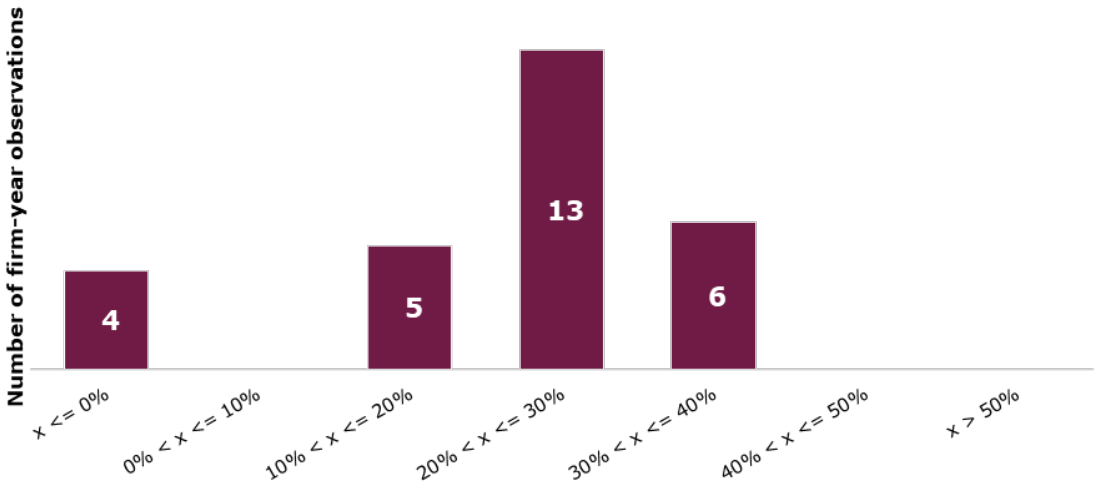
5.19 Firms were unable to provide information by geography, and so as above we collaborated with respondents to establish whether there were any notable regional differences between the performance of their UK operations and their wider corporate group. We found no indication of regional differences in performance, and therefore we analysed profitability ratios at a whole-firm level as a viable proxy for the performance of firms' UK operations.

Unadjusted operating margins

5.20 Figure 32 illustrates the distribution of unadjusted operating margins achieved by MDVs during the 6-year period under review. Margins achieved within our sample ranged widely, from single-digit negative values to over 30%. For over two-thirds of firm-year observations, margins exceeded 20%, therefore being 5 percentage points above the sample's weighted average (shown in Figure 34).

5.21 The variability emerging from whole-sample results partly masks a relatively more stable performance achieved by firms on a standalone basis, with no firms' margins varying by more than 11 percentage points across the 6-years period. The best and the worse performing firm were the ones with the most stable operating margins across the period under review.

Figure 32: Unadjusted operating profit margins – firm-year observations (2017-2022)



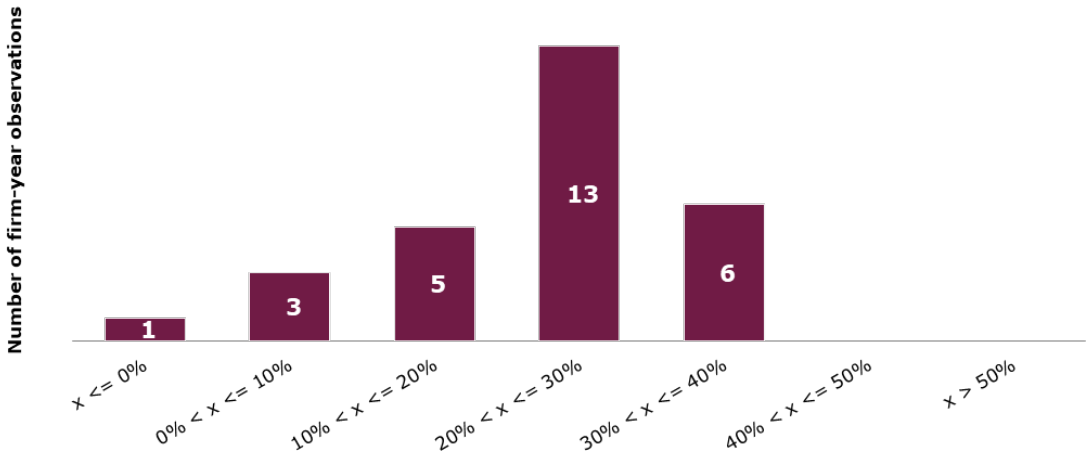
Sample size: 4 firms (2017-2018), 5 firms (2019-2022) / 28 firm-year observations

Adjusted operating margins

5.22 One firm noted that their reported figures were not providing an accurate representation of the performance of their business operations. We therefore adjusted our calculations accordingly, incorporating the additional information provided by this firm, in line with the principles outlined in the Methodology.

5.23 The application of our adjustments resulted in a slight improvement within the lower end of the distribution, with 3 firm-year observations shifting from negative values to the 0%-10% range (Figure 33).

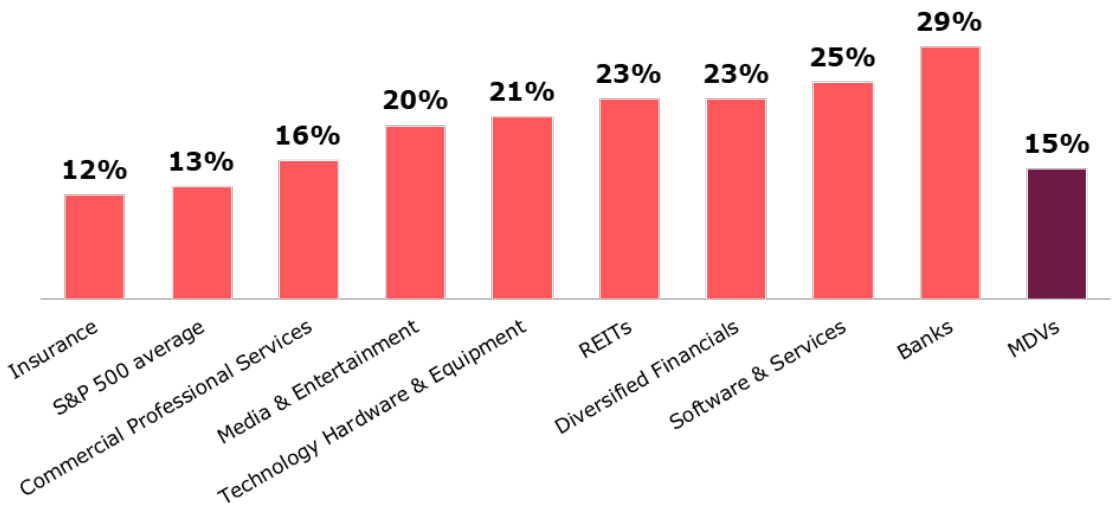
Figure 33: Adjusted operating profit margins – firm-year observations (2017-2022)



Sample size: 4 firms (2017-2018), 5 firms (2019-2022) / 28 firm-year observations

5.24 We benchmarked the 6-year average operating margins achieved by MDVs, weighted by their respective share of UK revenues, against other industries (Figure 34). Margins achieved by our sample firms did not appear high when benchmarked against the S&P 500, being only 2 percentage points above the index average. Furthermore, they were considerably lower, by at least 8 percentage points, than those achieved in comparable industries such as Diversified Financials and Software & Services.

Figure 34: S&P 500 constituents – average operating profit margins by industry (2017-2022)



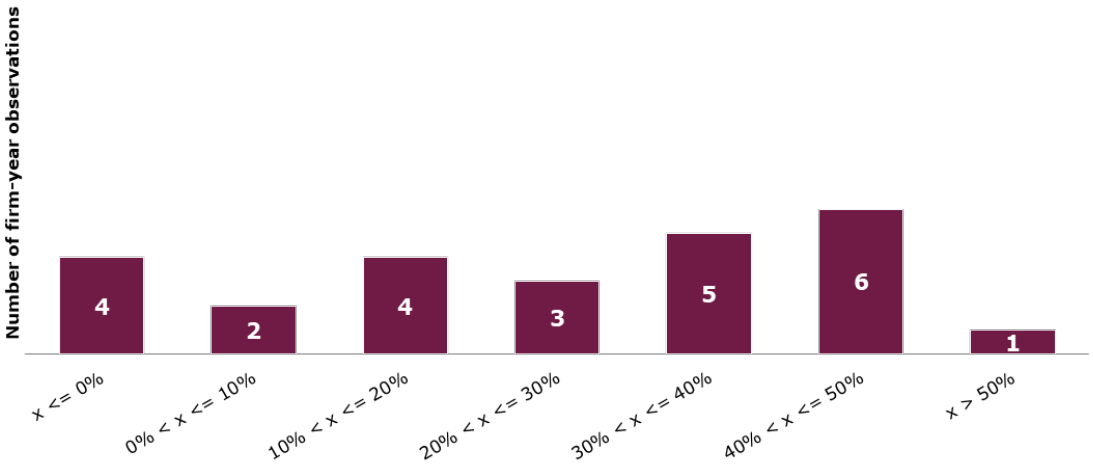
Sample size: 5 firms

Unadjusted ROCE

5.25 The aggregate results of our analysis of firms' return on capital were characterised by even greater variability than the operating margin results described above, mainly driven by capital employed fluctuations experienced by 1 sample firm (Figure 35). Throughout 2017-2022, 3 in 5 firm-year observations were above 20%, being twice as high as our estimated cost of capital (introduced in paragraph 5.28).

5.26 When looking at single-firm trends over time, we found broadly stable returns over the 6-year period for the majority of them. Only 2 firms achieved profits that were consistently at least twice as high as the estimated cost of capital throughout the 6-year period. Conversely, 1 firm was loss making in all years.

Figure 35: Unadjusted ROCE – firm-year observations (2017-2022)

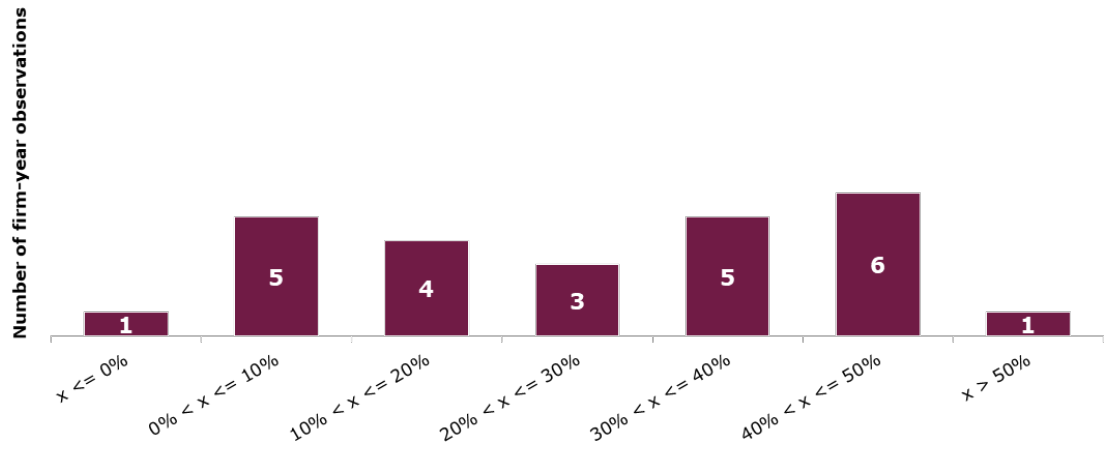


Sample size: 3 firms (2017-2018), 4 firms (2019), 5 firms (2020-2022) / 25 firm-year observations

Adjusted ROCE

5.27 We adjusted returns for only 1 firm, reflecting the adjustments to operating margins described in paragraph 5.22. This led to 3 firm-year observations moving from negative values to positive low single-digits (Figure 36). Despite this, these observations remained significantly below our estimated cost of capital (as per paragraph 5.28).

Figure 36: Adjusted ROCE – firm-year observations (2017-2022)



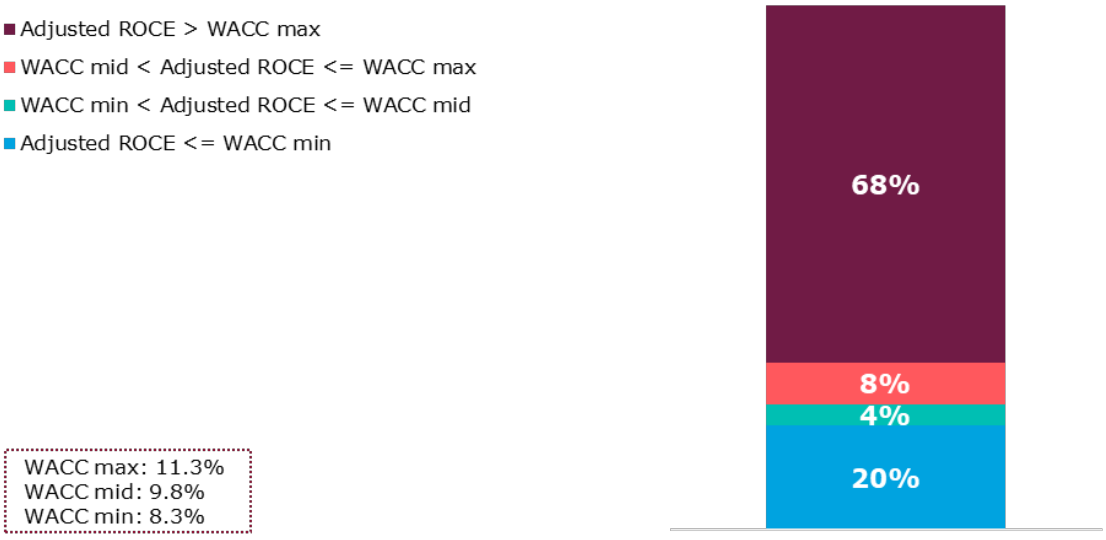
Sample size: 3 firms (2017-2018), 4 firms (2019), 5 firms (2020-2022) / 25 firm-year observations

WACC and breakeven ROCE

5.28 The WACC estimate for the MDV market ranged between 8.3% and 11.3%, with a mid-point of 9.8%.

5.29 We found evidence of returns being above our WACC mid-point estimate for three-quarters of firm-year observations (Figure 37). Two firms achieved returns that were consistently at least 2.5 times as high as WACC throughout the 6-year period, evidencing a degree of market power. Conversely, for 1 firm ROCE remained significantly below the estimated cost of capital in all years. For the other 2 firms, the results of our profitability benchmarking assessments were less conclusive.

Figure 37: Adjusted ROCE vs WACC – firm-year observations (2017-2022)



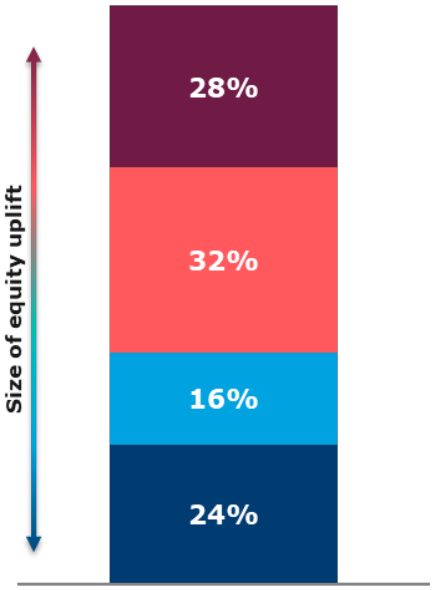
Sample size: 3 firms (2017-2018), 4 firms (2019), 5 firms (2020-2022) / 25 firm-year observations

5.30 The ROCE results presented above are based on book values, which may be underestimating firms' true economic capital by not considering uncapitalised intangible assets. We therefore calculated the increase in equity that would bring ROCE in line with our WACC mid-point, in line with the approach outlined in the Methodology. We then compared these results against the minimum, median and maximum P/B multiple observed in comparable acquisition transactions, as set out in paragraph 2.39.

5.31 Our findings evidence that the high returns achieved by some MDVs remain significantly above WACC even after uplifting their equity. In over one-quarter of instances, the required uplift exceeded the 5.55x maximum P/B multiple from comparable acquisitions (Category A in Figure 38). In almost one-third of instances, firms' equity would require an uplift between the 1.96x median and the maximum P/B multiple (Category B).

5.32 We also found that, in almost one-quarter of firm-year observations, returns were either in line, or below, cost of capital, therefore not requiring any adjustments (Category E). Our results were largely unaffected by using the upper boundary of our WACC estimates (11.3%) instead of the mid-point as our breakeven value.

Figure 38: 'Breakeven ROCE' equity uplifts – firm-year observations (2017-2022)



Category A: Required equity uplift higher than maximum P/B multiple (5.55x)

Category B: Required equity uplift higher than median P/B multiple (1.96x) but lower than maximum (5.55x)

Category C: Required equity uplift higher than minimum P/B multiple (1.50x) but lower than median (1.96x)

Category D: Required equity uplift higher than 1x but lower than minimum P/B multiple (1.50x)

Category E: No required equity uplift – Adjusted ROCE either equal or below WACC mid-point

Sample size: 3 firms (2017-2018), 4 firms (2019), 5 firms (2020-2022) / 25 firm-year observations

12 Endeavour Square London E20 1JN
Telephone: +44 (0)20 7066 1000
Website: www.fca.org.uk