Determining business rates for airports

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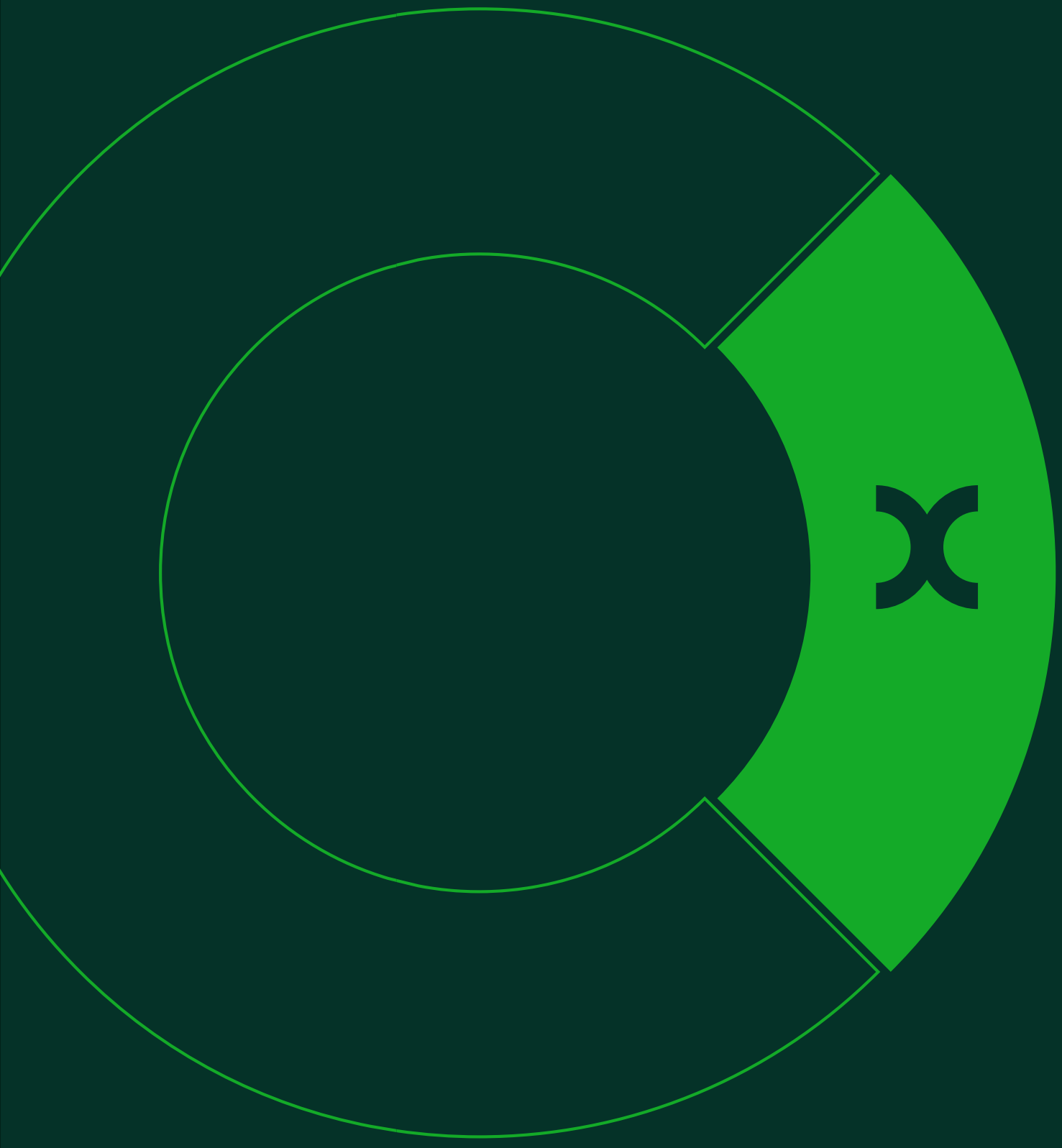
Prepared for AirportsUK

13 March 2025



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Executive summary

Key recommendations

Inclusion of all relevant repair and renewal expenditure in the valuation—as the operator of an airport the hypothetical tenant must be responsible for maintaining all assets in a condition compliant with the licence.

The tenant's share must be reflective of the relative risk assumed by the tenant—due to the relative priority of claims, the tenant faces higher risks relative to the landlord through:

- lower priority of claims in case of a default;
- higher revenue risk;
- higher cost risk and operational gearing.

Consideration of a sufficiently long time period—in the context of airports it is important to consider:

- the impact of the pandemic and the subsequent recovery period on the risks, revenues and expenditures of an airport;
- the appropriate inflation index to be applied to lumpy historical expenditure and asset values—reflecting cost trends of the underlying raw materials and specialised labour;
- adjustments to asset lives to reflect useful economic lives, including restatements where fully depreciated assets are still in use.

In this report, we outline considerations for the correct application of the receipts and expenditure (R&E) methodology for establishing a rateable value for airports. The guidance from the Valuation Office Agency (VOA) provides significant flexibility in the interpretation and application of the methodological steps of R&E. The appropriate assumptions therefore need to be considered both generally and in the specific context of airport valuation.

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A key factor affecting the methodology as applied to an airport is the role of the hypothetical tenant as the holder of the operational licence of the airport and the associated responsibilities that this implies.

The 'receipts' part of the methodology should capture a steady-state level of revenue that a hypothetical tenant can be expected to earn over the valuation period on an ex ante basis. The expenditure estimated under the methodology includes all recurring operating expenditures and repair/renewal costs of the tenant's assets. The VOA also allows the costs of repairs and renewals to the landlord's assets where relevant. Given the role of the tenant as the effective licence-holder as the operator of the airport and the associated standards of service and safety, it is reasonable to assume that the hypothetical tenant would ultimately be responsible for maintaining all of the assets in a suitable and compliant condition. All relevant repairs and renewals of the landlord's assets should therefore be included in the expenditure calculations.

Combining the receipts and expenditure estimates of the methodology, produces the divisible balance to be split between the landlord and the tenant. We consider that a reasonable estimate for the tenant's share of the divisible balance is the tenant's required return for renting and operating the asset. As a first step, we identify several approaches for estimating the required return on the asset as a whole. These approaches must be implemented in a transparent way, setting out the calculation steps and the sources of the inputs to arrive at the required rate of return.

The required return on the asset is, as a matter of principle, equivalent to a weighted average of the required returns of the hypothetical landlord and the hypothetical tenant—given that they are splitting the risk over the same asset. It is likely that the tenant will have a higher required return level than the landlord, due to their higher exposures to cost and revenue risks, as well as their lower priority of claims.

As a general methodological concern, the valuation should consider data over a sufficiently long time period in order to account for underlying trends, abstracting from volatility in the financial performance recorded in the accounts of airports. Specifically, it is crucial to consider the impact of the pandemic, and the pandemic recovery period, on an airport's revenues and business risk. Additionally, for infrequent yet large capital expenditures it is necessary to make relevant cost adjustments that are reflective of the cost increases in the associated raw materials and specialised labour.

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The VOA methodology emphasises that the valuation exercise should involve a 'stand back and look' approach to consider the reasonableness of the final rateable value in the round. We understand that the switch to the R&E methodology from the contractor's basis implies a multiple times increase in rateable value for many of the airports—this implies a rateable value that is a significantly higher than the 3–10% proportion of total revenues seen in other infrastructure sectors.[1] This indicates that the R&E methodology has probably been applied incorrectly in the airports sector.

We do not suggest that the VOA should target a specific level of ratable value relative to revenues. However, the implied results relative to other comparable infrastructure sectors is an important cross-check. We consider that reasonable and necessary adjustments to the application of the methodology would imply a reduction to the rateable values that brings them to below 10% of revenue on average.

Furthermore, as capital expenditure accounts for a high proportion of the total costs of airports, comparisons to other sectors based on the ratio of rateable value to operating profit (i.e. after depreciation charges) are likely to be more accurate than comparisons based on the ratio of rateable value to revenue.

[1] AirportsUK and Gerald Eve analysis.

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1 General receipts and expenditure methodology: overview

1.1 Receipts and expenditure methodology

The receipts and expenditure (R&E) methodology estimates the rateable value of an asset by determining a rent value that a hypothetical landlord would be able to earn if they rented out the asset. The economic rent that a hypothetical landlord could earn on the asset is the only source of asset value in the methodology—i.e. no assumption is made on value appreciation. The economic rents of the landlord are dependent on the revenue and costs generated by the tenant through operating the asset. In the context of airports, a key consideration is the requirements of the airport licence. As an operator of the airport the hypothetical tenant is responsible for ensuring that all assets are maintained in a condition compliant with licence requirements, including requirements on airfield safety and the movement of passengers around the airport. Therefore, maintenance expenditure on assets required to meet these obligations should be considered as part of the tenant's necessary expenditure for operating the airport.

The main steps of the R&E methodology are the following.

1. Determine the 'Fair Maintainable Receipts' from the occupation of the hereditament—this represents a 'steady-state' level of revenue that can be earned from operating the asset.
2. Determine the 'working' expenses from the occupation of the hereditament—all the costs that are necessary for the operation of the asset have to be considered.
3. Consider the renewal and repair costs of the asset.
4. Combine the above to arrive at the divisible balance.
5. Estimate the tenant's total capital based on the value of the tenant's assets and working capital.
6. Estimate the tenant's share—the tenant's required return for renting and operating the asset.
7. Take away the tenant's share from the divisible balance to arrive at the rateable value.

The methodological steps are visualised in Figure 1.1 below.

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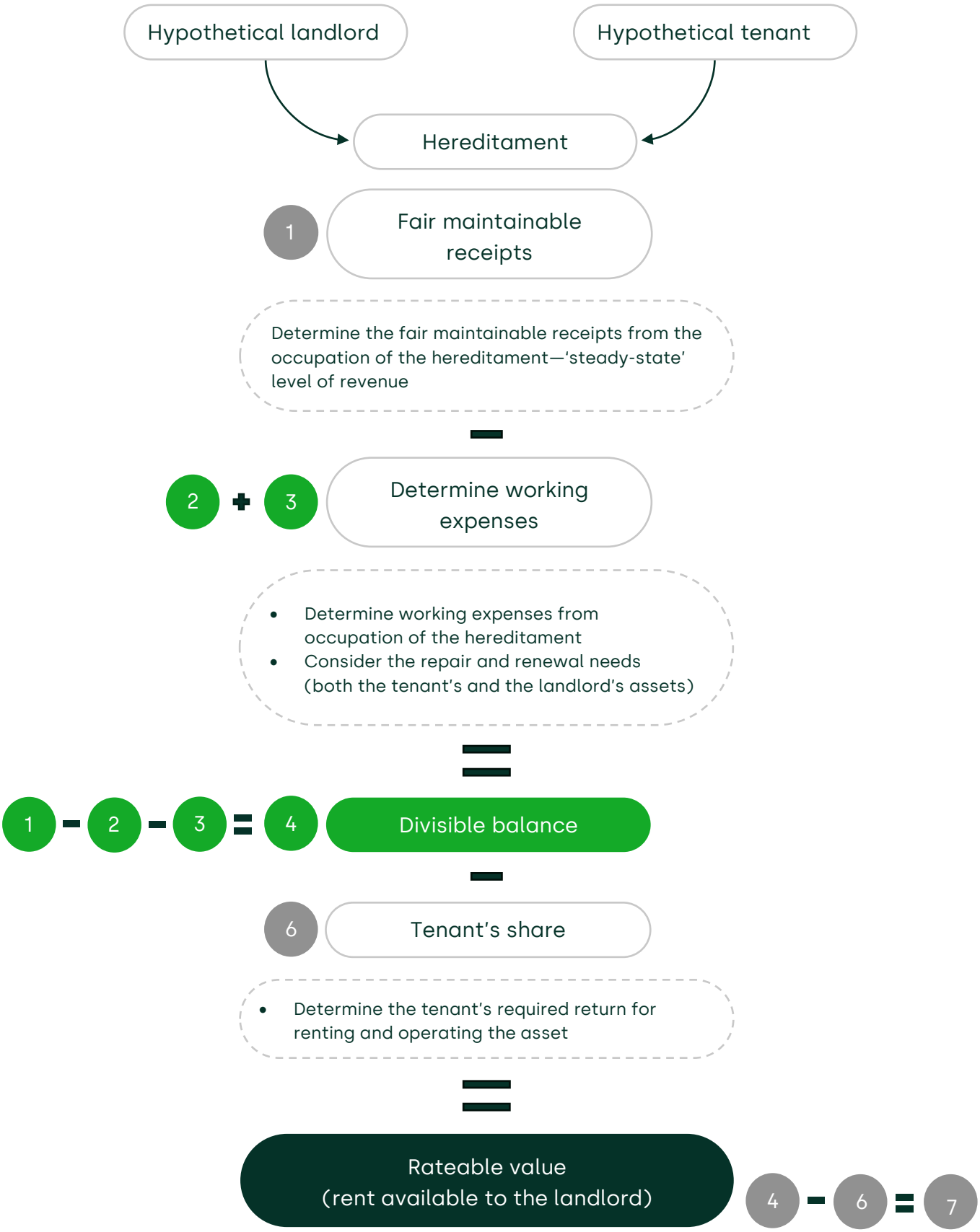
Figure 1.1 Main methodological steps of the receipts and expenditure methodology



1.2 Methodological considerations

The R&E methodology seeks to establish a steady-state rent that a hypothetical landlord should be able to extract from renting out the asset. It therefore estimates 'fair maintainable receipts'—an ex ante estimate of revenue excluding any extraordinary or non-recurring income that the actual business may be earning.

As such, a range of data needs to be considered to ensure that the valuation outcome is not significantly influenced by the individual performance of a single year. The VOA guidance suggests that at least three years of data need to be included in the analysis. Particular attention has to be given to any trends in the data or volatility of the underlying financials. In the context of airport valuation, a thorough consideration has to be given to the post-pandemic recovery trend, as well as supply chain constraints in any of the key expenditure categories. When considering historical data, the VOA methodology suggests that an inflation adjustment may be needed. This is particularly important when considering lumpy expenditure that has occurred in the past. Furthermore, a general inflation adjustment may not be accurate when considering the indexation of highly specialised cost categories, so attention must be given to the most relevant cost index. Where such information is not identifiable, it may be necessary to rely on the company's estimate of the replacement cost of the relevant asset and the associated expenditures.

Additionally, it is important to consider the 'reasonableness' of the final rateable value estimates—which is referred to in the VOA guidance as the 'stand back and look' approach. In particular, one must consider whether it is reasonable that switching the valuation method from the contractor's approach to the R&E method implies a significant increase in the rateable value for most airports—in theory, the two approaches are proxying a similar concept and thus should arrive at a similar value. In practice, it is reasonable to expect some divergence in the implied results, but a significant divergence would warrant further investigation.

We illustrate below that reasonable adjustments to some of the methodological assumptions that VOA is minded to apply would result in considerable changes to the rateable value estimates. Table 1.1 below presents illustrative estimates highlighting the differences in the VOA

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minded-to position[2] and our views on the appropriate application of the R&E methodology to airports.

Table 1.1 Illustrative difference in the application of the R&E approach to airports

£m		VOA approach	Alternative application
Revenue	**A**	**100**	**100**
Total OPEX	**B**	**56**	**56**
OPEX	B1	45	45
Inflation adjustment	B2	2	2
Expected annual forecast adjustment	B3	9	9
Maintenance CAPEX	**C**	**6**	**11**
Repairs to landlord's assets	C1		6
Renewals to landlord's assets	C2		5
Repairs and renewals of tenant's assets	**D**	**4**	**12**
Depreciation in tenant's assets	D1	4	6
Repair and renewal spend on tenant's assets	D2		6
Divisible balance	**E= A-B-C-D**	**34**	**21**
Tenant's share	**F= G x H**	**3.9**	**11.25**
Tenant's assets	G	30	75

[2] Based on our understanding of the current VOA position from conversations with a number of airports.

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£m		VOA approach	Alternative application
Required return on the asset		13%	13%
Landlord's required return		13%	10%
Tenant's required return	H	13%	15%
Rateable value	**I= E-F**	**30.1**	**9.75**
Rateable value as % of revenue		30%	10%

Note: the table presents illustrative numbers based on our understanding of the VOA minded to valuation approach to a anonymised set of airports. The numbers have been created through consulting with a group of airports on specific methodological issues in the minded-to position of the VOA and considering publicly available airport accounts.
Source: Oxera analysis.

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2 Definition of the divisible balance

2.1 Definition of rateable assets

The application of the R&E methodology requires a definition of the rateable (landlord's) assets within the hereditament being valued. While this step may be straightforward in some contexts, the scale and complexity of airports' operations make the separation of the hypothetical landlord's and the hypothetical tenant's assets non-trivial.

To accurately identify the rateable (landlord's) assets within the hereditament, it is useful to consider the objectives of the methodology from first principles. When considering a more straightforward example of a R&E valuation for a small hotel, the main relevant landlord's asset is the building in which the hotel is located, while the main relevant tenant's asset is the fitting out of the rooms. In other words, the landlord's assets comprise the physical 'shell', while the tenant's assets are brought in to operationalise the building as a hotel.

The same principle should be applied to splitting the assets within the airport hereditament between the landlord and the tenant. Following this logic, the land and the buildings of the airport can be categorised as the landlord's assets; the infrastructure assets of the airport can also, at least in part, be classified as the landlord's assets; while machinery, plant and vehicles are more appropriately classified as the tenant's assets. However, as explained below, a significant proportion of infrastructure assets are likely to be attributable to the tenant.

2.2 Receipts—income from the occupation of the hereditament

The first step of the methodology for calculating the rateable value is estimating the receipts—income that can be derived by a hypothetical occupier through operating the airport. In essence, the methodology aims to determine a reasonable level of revenue from the activities undertaken at the hereditament.

The revenues based on the airport's accounts must be adjusted to exclude any revenues that may be attributable to activities not related to the specific airport hereditament—i.e. income earned on assets based outside the airport perimeter or on a different hereditament. Examples of this include off-hereditament hotels, car parks and other real estate.

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As discussed in section 1.2, it is also important to consider the timeframe over which the income is assessed, in order to account for trends and earnings volatility.

2.3 Expenditure

The R&E methodology calculates the expenditure that is subtracted from the receipts (revenue) in order to arrive at the divisible balance—a measure of the economic profits available for division between the tenant and the landlord. Only those costs that are attributable to the occupation of the hereditament are relevant to consider.

2.3.1 Operating expenditure

The main costs included in the assessment comprise the operating expenditure that is necessary for conducting business activity on the hereditament. The relevant operating expenditure categories are likely to include:

- labour costs;
- utility costs—electricity, water, heating;
- fuel costs;
- insurance costs;
- marketing costs;
- IT costs;
- business rates payable;[3]
- other operational expenditure.

Overall, most operational expenditure categories are permitted to be included in the VOA methodology, as long as the costs are not specific to the actual occupier and would also be applicable to a hypothetical tenant. It is important to include all relevant operational expenditure categories in order to capture the real economic value of the asset.

2.3.2 Repair and renewal costs

The key factor placing responsibility on the hypothetical tenant for renewals and repairs of the landlord's asset should be the licence obligations of an airport operator. Specifically, the holder of the airport's licence (the airport operator) bears responsibility for all of the safety standard requirements for an airport. Hence, as the operator of

[3] The VOA methodology specifies that rates payable are classified as an operating expenditure.

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the airport these are the responsibility of the hypothetical tenant. This includes standards on:[4, 5]

- runway safety—including taxi-ways and stands;
- bird strike prevention;
- check-in, baggage handling and dangerous goods;
- emergency (rescue, police and firefighting) services;
- ground handling;
- general condition of the facilities.

Each of these safety categories has specific asset and infrastructure condition criteria that must be followed at all times. For example, the runway must be maintained to specific technical standards—including in terms of lighting, information signage and runway friction levels. Thus, as the effective holder of the operational licence, the tenant is ultimately responsible for meeting these standards and ensuring that the relevant infrastructure and assets are maintained at the required levels. It follows that the expenditure associated with meeting these standards must be included in the R&E valuation, regardless of whether the specific underlying assets are classified as belonging to the hypothetical landlord or the hypothetical tenant.

Additionally, the airport operator is responsible for ensuring the movement of passengers through the airport, which requires installation and maintenance of lifts, escalators and provision of special assistance services, all of which would fall under the purview of the hypothetical tenant as the airport operator.

Finally, maintenance and provision of the necessary equipment for the air traffic control tower infrastructure is also a key operating function of the airport, and as such the associated costs would need to be covered by the hypothetical tenant.

2.3.3 Repairs and renewal of the tenant's assets

The VOA methodology allows for repairs and renewal of the tenant's assets to be included within the expenditure considered in the valuation. Including accurate estimates for both repairs and renewal is key to ensuring that all the relevant economic costs of a hypothetical tenant are included.

[4] Civil Aviation Authority, 'Safety'.
[5] Civil Aviation Authority (2022), 'Licencing of aerodromes. Cap 168. Edition 12', January.

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Due to the nature of the tenant's assets, these are likely to be on average more short-lived than the landlord's assets. Thus, the useful economic life of an asset is the key determinant of the renewal needs of the asset. The annual renewal spend should be estimated either by considering a revalued depreciation expense based on replacement cost gross book value and accumulated depreciation of the tenant's assets; or any actual spend on the tenant's assets renewal recorded in the accounts of the airport. When considering renewal spend based on the recorded depreciation charges, it is important to consider any assets that are fully depreciated based on accounting book value but still have useful economic life and are in operation. The value of such assets needs to be restated to reflect the expenditure that a hypothetical tenant would incur.

A second consideration is the estimation of the repair costs of the tenant's assets. The repairs costs should be estimated consistently with the assumptions used for renewal. In particular:

- if renewals are included based on *depreciated replacement cost*, the corresponding expenditure estimate is likely to cover both the renewal and repair needs;
- if renewals are estimated based on *actual historical spend* reported in the accounts of the rated airport, any repair expenditure should be considered separately.

Conceptually, the two approaches should arrive at the same value—in economic terms, the sum of the renewal and repairs spending on the tenant's asset proxies the steady-state annualised cost of the tenant's assets. In practice, these values are likely to differ—for example, the approach based on using the actual accounts values for repairs and renewals is more likely to miss lumpy expenditure related to the assets that occurred further away from the valuation date.

2.3.4 Repairs to the landlord's assets—maintenance requirements

The VOA R&E methodology allows some of the repair and renewal costs of the landlord's assets to be included within the expenditure calculation. In particular, the methodology suggests that the following categories should be included:

- 'general repairs' to the hereditament—considered over several years of accounts to establish a normal (steady-state) level of general repairs requirements. Where general repairs are lumpy or periodical—an equivalent annual expenditure should be established;

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- 'exceptional repairs'—i.e. unexpected repair expenditure that is not part of the planned steady-state maintenance expenditure, the cost of which should be spread over several years. The methodology specifies that an allowance for exceptional repairs should not be made before the day on which the repairs occur.

Additionally, the methodology allows renewals of *parts* of the hereditament to be included in the expenditure. This implies that the tenant should not be responsible for the renewal of the landlord's hereditament as a whole. Careful consideration must therefore be given to which assets fall under the tenant's responsibility for renewal.

The appropriate methodology for estimating the repairs/renewal expenditure on the rateable (landlord's) assets is similar to that for estimating the expenditure on maintenance of the non-rateable (tenant's) assets. The two methodological options are:

- expenditure estimates based on actual airport accounts indexed by a relevant price index with appropriate smoothing applied for lumpy repair or renewal costs, based on the corresponding economic asset lives;
- expenditure estimates based on the depreciation expense of the relevant assets based on replacement cost gross book value and accumulated depreciation, and including an allowance for fully depreciated assets still in use.

The same considerations for choosing the methodology apply to rateable assets and non-rateable assets. However, as rateable assets are likely to have longer asset lives, the corresponding repair spend may be missing from the latest available actual airport accounts. For example, runway resurfacing at airports may need to take place every 10+ years. This infrequent periodicity may mean that the latest historical repair expenditure is an inaccurate predictor of future expected spend (or the average annual spend on a smoothed basis). This means that a corresponding price-level adjustment must be applied. The repair and renewal costs of these highly specialised assets are unlikely to follow general inflation—for example, these costs are likely to be more sensitive to the cost movements in relevant raw materials and specialised labour, and alternative price indices may need to be considered.

The depreciation expense charged on the relevant asset should incorporate updated expectations of the current repairs/renewal costs if prepared on a depreciated current cost basis, and may provide a

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more accurate estimate, especially in cases where the previous renewal of the asset did not occur within the most recent financial year.

2.3.5 Issues with the VOA minded-to position

Based on our understanding, VOA is currently minded not to include all of the relevant expenditure associated with maintenance and renewal of assets that it considers to be assets owned by the hypothetical landlord. However, the maintenance of these assets is crucial for airport operation and compliance with the airport's licence requirements. Therefore, as the operator of the airport the hypothetical tenant is responsible for maintaining these standards and the associated expenditure. As shown in the illustrative numbers in Table 1.1 above, while VOA only partially considers these costs in the valuation, actual airports may be spending an amount equivalent to over 10% of their annual revenue on the maintenance of the assets that the VOA assigns to the hypothetical landlord.

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3 Divisible balance and the tenant's share

By combining all of the relevant receipts and expenditure categories described in the preceding steps, it is possible to calculate the divisible balance to be split between the landlord and the tenant. The divisible balance represents the total economic profits generated by the asset in a steady state.

3.1 The divisible balance

To arrive at a rateable value from the divisible balance, the **tenant's share** must be subtracted. The R&E methodology offers several options for determining the split of the divisible balance between the landlord and the tenant. The two main options that the VOA allows for are as follows.

1. Estimating the **hypothetical tenant's required return on capital** to be taken from the divisible balance before calculating the available rent. The economic logic of this approach is that a hypothetical tenant would be willing to rent the asset *if and only if* they could expect to earn returns to cover their financing needs and business risk (i.e. expect to earn their required return).
2. Estimating a **proportional percentage split of the divisible balance** between the landlord and the tenant based on their relative negotiating strengths, their assumed risk, and their quantum of capital invested in the operation of the business.

Both of the approaches seek to proxy the overall level of profit sought by a hypothetical tenant ex ante in order for them to be willing to rent the assets.

The first approach to estimating the hypothetical tenant's required return on capital is more straightforward, as it requires only an assessment of the appropriate level of required return for a given level of risk.

The drawback of the second approach is that the relative negotiating powers of the landlord and the tenant depend heavily on their individual circumstances, as well as subjective judgement. As such, the application of the proportional split approach is likely to lead to inherently higher levels of uncertainty in the valuation.

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The required return is likely to vary significantly across airports according to size, location, regulation and overall demand risk.

3.2 Airport required return on capital

The starting point for estimating the tenant's required return on capital is to estimate the required return on capital for the *asset as a whole*. The return on the asset as a whole is conceptually a weighted average between the returns of the hypothetical landlord and the hypothetical tenant, based on the split of the risk. The R&E methodology allows for several ways of estimating the required return:

- using actual achieved rates of return on capital employed (ROCE);
- using known target or 'hurdle' rates of return;
- using a DCF discount rate approach, made up of compensation for inflation, the risk-fee rate and a risk premium;
- using cost of capital calculations (estimating the weighted average cost of capital, WACC).

The most practical of these approaches are the ROCE and WACC approaches, as 'hurdle' rate datapoints may not be available for airport operators. Estimation of an appropriate risk premium for a DCF discount rate approach may be challenging or may require a similar level of computation to the WACC approach.

These approaches must be implemented in a transparent way, setting out the calculation steps and the sources of the inputs to arrive at the required rate of return.

3.2.1 Return on capital employed (ROCE)

ROCE is defined as the ratio of earnings before interest and tax (EBIT) over capital employed (total assets less current liabilities). Calibrating the ROCE approach requires careful consideration of the accounts over a sufficiently long time period, especially if the actual rates of ROCE vary over time. In the context of ROCE for airports, the impact of the pandemic must be considered if the period of the analysis includes either those years in which air travel was directly affected by pandemic restrictions or the subsequent years in which demand for air travel was still recovering. Including the pandemic years of lower profitability would negatively bias the implied results—the pandemic and subsequent recovery years are likely to imply a lower ROCE, while the overall risk (or perception of risk) of the asset is likely to have gone up and therefore the required return of the asset is likely to be higher.

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An Oxera paper on assessing methods for profitability analysis found that a robust application of ROCE requires:[6]

- correct asset valuation—reflecting the value-to-the-owner principle;
- all changes in the book value of assets correctly reflected in the profit and loss account;
- the weighted average ROCE calculated using Kay's formula.[7]

ROCE estimates calculated without the necessary adjustments may be unreliable, as they are sensitive to variation in accounting practices, in particular in the definition of EBIT, as well as uncertainties in asset valuation necessary to estimate the capital employed.

Overall, estimating ROCE as a proxy for the required return should be done only when considering a sufficiently long time period and the underlying trend. In the context of airports, it is useful also to consider the ROCE levels in the pre-pandemic period to calibrate the return levels closer to the required return expected by investors.

3.2.2 Cost of capital (WACC)

The WACC approach aims to directly estimate the required return of an investor in the asset as a whole, based on the assumption that the required return is equal to the cost of capital. The WACC for an airport is estimated in two steps, by estimating (1) the cost of debt; and (2) the cost of equity (CoE).

The cost of debt for a specific airport can be estimated by taking into account the actual debt costs of the airport. The cost of debt is likely to vary significantly across airports based on their individual risk profiles and capital structure. Yields on publicly traded vanilla bonds issued by the airport can be considered. For airports without publicly traded debt, or airports that are part of a larger group, debt costs of other instruments can be considered.

The cost of equity for each airport may be estimated based on the Capital Asset Pricing Model (CAPM). The CAPM requires an estimate for the risk-free rate, equity risk premium and equity beta, as described in the box below. The relevant formula for the CAPM is the following:

[6] Oxera (2003), 'Assessing profitability in competition policy analysis', July, p. 11.
[7] According to Kay's method, if a rate of return is weighted by the value of capital discounted at the weighted average of the rate of return itself, then that weighted average rate of return is the IRR.

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$$CoE = risk\ free\ rate + \ equity\ beta * equity\ risk\ premium$$

Box 3.1 CAPM input parameters

- The **risk-free rate** measures the expected return on an asset that is free of risk—where the realised return on an investment will be equal to the expected return. In the CAPM framework, this riskless asset is also referred to as a 'zero-beta asset', i.e. an asset with zero sensitivity to overall market risk.
- The **equity risk premium** (ERP) is a premium above the risk-free rate that investors demand for investing in a market equity portfolio. It can also be calculated as the difference between the **total market return** (TMR) and the risk-free rate. The TMR represents the total return on a market portfolio.
- The **equity beta** in the CAPM is a measure of how risky an equity investment is compared with the average of the market portfolio. The risk arising because of a company's general exposure to the market is known as 'systematic risk'. The equity beta is a measure of the co-variance of an individual stock to the market portfolio.

Source: Oxera.

The risk-free rate is typically estimated based on yields on government bonds. However, the CAPM assumes that investors can both borrow and lend at this rate. This assumption can be violated when the risk-free rate estimate is based solely on the yields of government bonds. One factor that pushes yields of government bonds below the risk-free rate is the convenience premium.[8] Therefore, when estimating the risk-free rate for use as an input to the CAPM from government bond yields, adjustments are required to account for the convenience premium. This is consistent with the approaches that are used by the Civil Aviation Authority (CAA)

[8] Oxera has examined the existence of the convenience premium in Oxera (2020), 'Are sovereign yields the risk-free rate for the CAPM?', prepared for the Energy Networks Association, 20 May.

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and other regulators, which include an explicit allowance to account for the convenience premium in the calculation of the risk-free rate.[9]

The TMR can be estimated using a range of methodologies on both a historical and a forward-looking basis. Estimating the TMR using an ex post historical approach is a robust methodological option based on the actual market data. The main assumption of the historical ex post approach is that average historical returns provide an unbiased and reliable indicator of expected future market returns on average.

The equity beta can be estimated either directly if the company of interest is publicly traded, or indirectly by computing the equity beta for a sample of comparable companies. Estimating the equity beta for airports may be challenging due to the low number of listed airports, as well as the fact that listed airports are likely to be fairly large or be part of a larger group, which necessarily implies a different risk profile relative to a smaller airport. Specific adjustments to a beta calculated based on comparators are therefore likely to be required, for example by incorporating a size premium or a specific risk premium.

As a practical consideration, there is a WACC estimate calculated by the CAA for the economic regulation of Heathrow Airport. However, due to the scale of differences in risks and regulation between different airports, Heathrow's WACC should not be relied on as a primary method for estimating the required overall return on the assets.

3.3 The tenant's required return

After the required return for the airport as a whole is established, one can estimate the relevant required return of a hypothetical tenant. In principle, the required return of the airport as a whole is a weighted average between the required returns of the landlord and the tenant. The hypothetical tenant is likely to bear a higher level of risk than the landlord, and as such require a higher return. The main considerations for a higher required return for a tenant are based on the relative priority of claims between the hypothetical landlord and tenant. The

[9] Allowing for a convenience premium adjustment in the calculation of the risk-free rate (e.g. by including highly rated corporate bonds in the assessment of an appropriate risk-free rate) is an approach that is increasingly being used by other European regulators. For example, see CMA redetermination (2021); Civil Aviation Authority (2022), 'Economic regulation of Heathrow Airport Limited: H7 Final Proposals - Section 3: Financial issues and implementation'; Civil Aviation Authority (2022), 'Economic regulation of NATS (En Route) plc: Appendices to initial proposals for the next price control review ('NR23')', October; UREGNI (2022), 'GD23 - Gas Distribution Price Control 2023-2028 - Final Determination - Main Report', October.

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priority of claims affects the level of risk through the following transmission mechanisms:

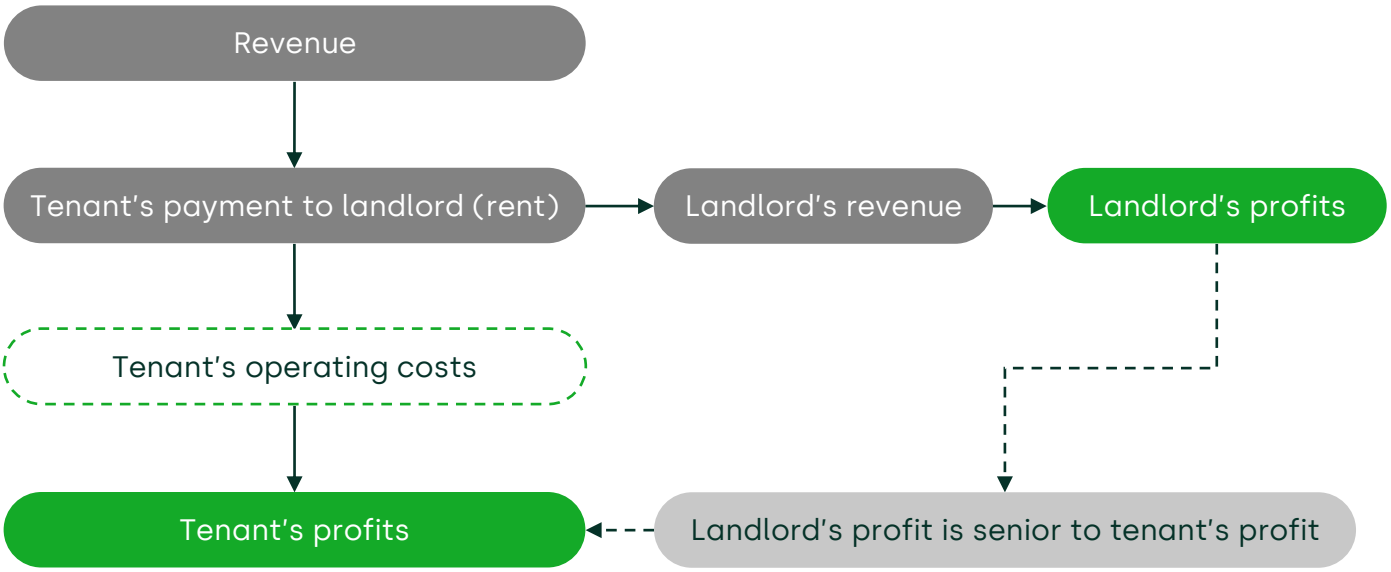
- priority of claims over the assets in an event of default;
- revenue risks;
- cost risks and operational gearing.

We outline the impact of each of these risk factors in the following subsections.

3.3.1 Priority of claims

The risk exposure of different stakeholders is affected by their priority of claims over cashflows and assets, as shown in the figure below. The ordering of claims implies an increased exposure to risk of junior claimants relative to senior claimants. The tenant has a residual claim over the cashflows generated by the assets after the rent payment to the landlord. Hence, by definition the relative risk of the landlord is lower than that of the tenant.

Figure 3.1 Priority of claims over the cashflows between the hypothetical tenant and the hypothetical landlord



Source: Oxera.

In addition to priority of claims over the cashflows, the landlord retains priority of claims over the assets in the event of default. In a default event, the tenant loses their lease and may seek to recover losses by liquidating any of their remaining assets, which in the case of an airport are likely to be lower in value than the landlord's assets. In the case of a

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tenant's default, the landlord in the first instance maintains the option to find an alternative tenant to continue the operations. In this scenario, the landlord experiences either no losses or limited losses for the period of searching for a new tenant, and the associated search costs.

There are several approaches to estimating the impact of the priority of claims on the required returns, including:

- **financial modelling** (for example, through Monte Carlo analysis), in which the impact of a downside event on the cashflows to the senior and junior claimants is analysed;
- a **benchmarking** approach, in which the required return in existing structures with varying priorities of claims is analysed. This may include comparisons of yields on senior and junior debt, or comparisons of the spread between debt and equity claims on an asset. A comparison of equity and debt spreads may be particularly useful, as equity-holders are the residual claimants on cashflows generated by the asset after interest payments have been made to debt-holders—similarly to the hypothetical tenant being a residual claimant on cashflows after the rent payment to the landlord has been made.

3.3.2 Revenue risk

Building on the concept of residual claims over the cashflows, it is clear that the revenue risk is higher for the tenant than for the landlord. The only revenue generated by the landlord is the rent payments made by the tenant. These rent payments continue for as long as the tenant's operation is a going concern. On the contrary, the economic profits generated by the tenant are directly dependent on the performance of the business. As such, the tenant acts as the holder of the first loss-absorbing capital, and may continue operations with no profits as long as the rent payments to the landlord are met.

This has a particularly large impact in the case of revenue shocks, such as those caused by the pandemic. In such cases, the immediate revenue loss is absorbed by the tenant, while the landlord still receives the rent on the asset. Moreover, in the case of a default of the tenant, the tenant is left with no further ability to recover its losses in the subsequent periods, while the landlord may still be able to be compensated in the future by renting the asset out at a higher rent—reflective of the increase in the perceived risk of the asset and the associated required return.

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3.3.3 Cost risk

The hypothetical tenant is likely to have a higher cost risk than the landlord due to having a higher operational gearing. Operational gearing is a measure of a firm's fixed cost relative to its total costs. Operational gearing has a similar effect on the risk of a firm's assets (and thus the corresponding required return) to the effect that financial gearing has on equity risk.

> Those who receive the fixed costs are like debtholders in the project; they simply get a fixed payment. Those who receive the net cash flows from the asset are like holders of common stock; they get whatever is left after payment of the fixed costs
>
> **Brealey, R.A. and Myers, S.C. (2000), *Principles of Corporate Finance*, p. 240.**

In simple terms, variable costs can be reduced quickly in response to a reduction in the associated revenue, and thus carry less risk than fixed costs. The hypothetical tenant has a higher exposure to fixed costs than a hypothetical landlord. First, the hypothetical tenant has a fixed cost in respect of the rent owed to the landlord. Second, a large proportion of other costs faced by the tenant are likely to be fixed in nature (at least in the short term)—for example, the hypothetical tenant is responsible for the labour costs of the business—labour laws imply that these costs cannot be reduced immediately in response to a decrease in revenue. In comparison, the hypothetical landlord has no cash costs—the main cost category faced by the landlord is the depreciation of the landlord's assets. Given that depreciation is a non-cash expense, a short-term decrease in revenues and profitability is unlikely to put pressure on the going concern of the hypothetical landlord.

In addition, the hypothetical tenant is exposed to sudden shocks to its variable costs—for example, sudden changes in energy prices (electricity or fuel) may have a noticeable impact on the profitability of a hypothetical tenant.

3.3.4 The hypothetical tenant's required return

On balance, combining the additional risks that the hypothetical tenant faces with respect to the priority of claims, revenues and operational gearing implies that the required return of the tenant is likely to be considerably higher than that of a hypothetical landlord. A premium to account for these risks must therefore be applied to the baseline

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required return estimate for the asset as a whole, regardless of the specific methodology adopted.

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4 'Stand back and look'—considering the reasonableness of the ratable values

The VOA guidance states that each valuation should include a 'stand back and look' approach to evaluate whether the estimated ratable values are reasonable. However, the guidance does not define criteria of 'reasonableness' for any valuation.

One approach for sense-checking reasonableness of the resulting valuation, is the difference with ratable values implied by other valuation approaches, such as the contractor's methodology. Our understanding is that for most airports the rateable values implied by the R&E approach are multiples of what these values used to be historically, when rated under the contractors' approach, rising by over four-fold for some airports. The scale of the increase raises concern over the appropriateness of the current approach to applying R&E to airports.

A second sense-check that can be applied to evaluate the results is considering the proportion of the implied business rates to the revenue or profit of the airports relative to other industries.

Research commissioned by AirportsUK suggests that for other infrastructure sectors the ratable values are less than 10% of revenue, as illustrated in Figure 4.1 below. At the same time, for many airports the proposed rateable values represent over 20% of revenues. This raises further concern over the appropriateness of the current application of the R&E approach. We do not suggest that the VOA should target a specific level of ratable value relative to revenues. However, the implied results relative to other comparable infrastructure sectors is an important cross-check.

Furthermore, as capital expenditure accounts for a high proportion of the total costs of airports, comparisons to other sectors based on the ratio of rateable value to operating profit (i.e. after depreciation charges) are likely to be more accurate than comparisons based on the ratio of rateable value to revenue.

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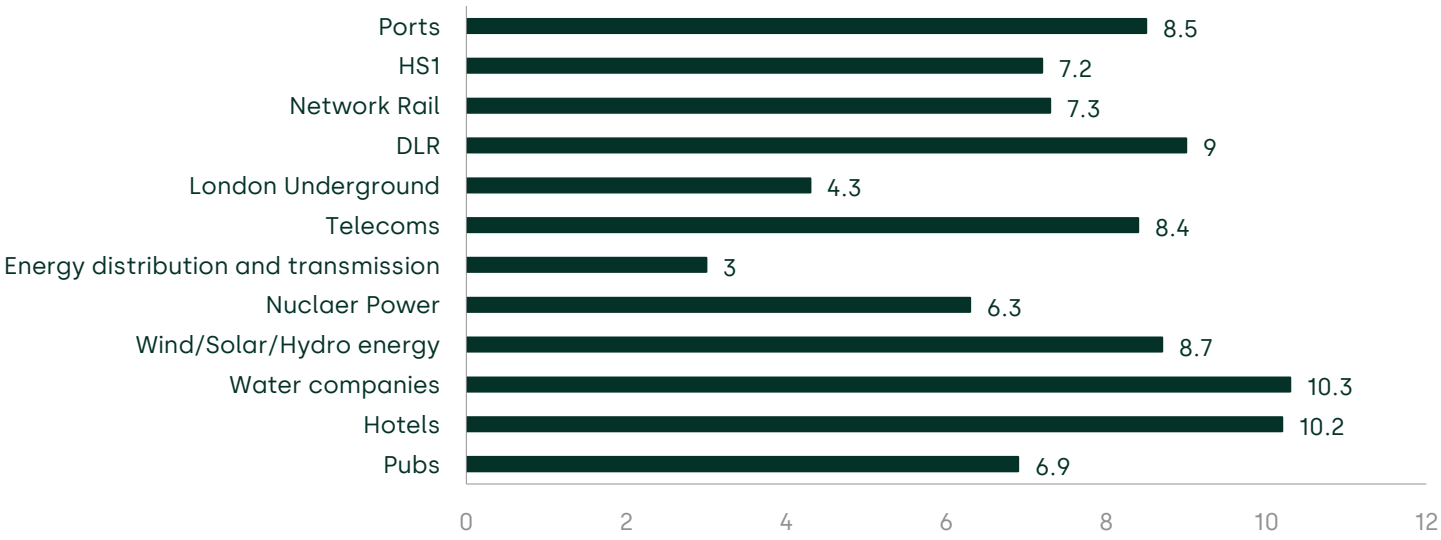
Figure 4.1 Rateable value as percentage of revenue (sector comparison)



Source: AirportsUK and Gerald Eve analysis.

As shown previously in Table 1.1 and as has been explained in this report, applying reasonable adjustments to the minded-to position of the VOA— by taking into account the responsibilities of the hypothetical tenant as the operator of the airport, accounting for the maintenance requirements of the assets, carefully considering which assets should be classified as belonging to the tenant and reflecting the higher levels of risk faced by the tenant relative to the landlord— would result in the implied rateable values being closer to valuations seen in other sectors.

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