

# THE BRITISH PERSPECTIVE: THE VALUATION OF PORTS FOR NON-DOMESTIC RATING.

Nick Cooper, Utilities Rating Team, Valuation Office Agency

## Background

1. In the UK most property is subject to a tax based on its market value<sup>1</sup>. Non-domestic rates are based on annual market values and the current definition of rateable value is:

*“an amount equal to the rent at which it is estimated the hereditament might reasonably be expected to let from year to year on these three assumptions—*

- (a) the first assumption is that the tenancy begins on the day by reference to which the determination is to be made;*
- (b) the second assumption is that immediately before the tenancy begins the hereditament is in a state of reasonable repair, but excluding from this assumption any repairs which a reasonable landlord would consider uneconomic;*
- (c) the third assumption is that the tenant undertakes to pay all usual tenant’s rates and taxes and to bear the cost of the repairs and insurance and the other expenses (if any) necessary to maintain the hereditament in a state to command the rent mentioned above].”<sup>2</sup>*

2. The full rates bill is found by multiplying the rateable value and rate poundage for the year (45.6p in 2004/05 in England) although the actual rates may vary with transitional and other relief. In 2003/04 £15.6 billion was raised in rates in England alone.

## The task

3. The Valuation Office Agency (VOA) is responsible for assessing rateable values in England and Wales<sup>3</sup>. However, since 1973 the rateable values on large ports (about 50) have been set by formula directly by the Government and, as a result, there is now a 30 year gap in their conventional valuation. That gap will end on 1 April 2005 when the formula will be revoked and the ports will again fall to be assessed to rateable value by the VOA.

4. Since the Summer of 2002 we have been preparing those valuations. Our method has been to undertake full receipts and expenditure valuations on a sample of 5 ports and then develop a valuation model for the others. The 5 sample ports were:

- Felixstowe (container port),
- Newport (privately owned general cargo port),
- Dover (ferry port),
- Tyne (trust owned general cargo port), and
- Great Yarmouth (small port).

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<sup>1</sup> Some property is exempt – most notably agricultural land.

<sup>2</sup> paragraph 2(1) of Schedule 6 to the Local Government Finance Act 1988 as amended.

<sup>3</sup> values are assessed by the Scottish Assessors in Scotland.

5. The model was developed early in 2004 and all ports were consulted on their draft values in February. The final values were lodged with the Government at the end of May 2004. Ports may appeal from April 2005.

## **Subject of the valuation**

### *Aggregation of the assessment*

6. By their nature, ports maybe spread across several sites separated by the river or other property (for instance, the Port of Tyne comprises 2 main sites on opposite sides of the river). We have found that retaining a single unit of assessment for all utilities is essential if we are to use the receipts and expenditure method of valuation. Otherwise it is necessary to apportion revenue and expenditure to particular sites which can undermine their accuracy. Specific legislation is used in the UK to ensure that dispersed port sites occupied by the same authority are treated as a single assessment.

### *Plant and machinery*

7. All land and buildings are rateable plus certain items of plant and machinery. An expert committee<sup>4</sup> considered which items of plant and machinery in the utilities should be rateable. They decided that at ports only fixed cranes, lock gates and RO/RO boarding equipment should be rateable. Therefore, all modern cranes, cargo moving equipment and most plant and machinery is not part of the valuation and, furthermore, forms part of the capital which the tenant requires to run the business.

### *Crown land*

8. River beds are likely to be owned by the Crown and, whilst such land maybe dredged and the navigation maintained by the port authority under statutory powers (known as the conservancy functions), we do not believe that the port authority is in rateable occupation of the river bed itself. As a result income and expenditure associated with the conservancy functions of a port are removed from the port valuation.

## **Valuation method**

9. Traditionally, rating valuers use 3 methods of valuation – the rental method, the receipts and expenditure method and the contractor's basis.

### *Rental method*

10. The rental method uses either direct rental evidence on the property itself or indirect evidence on similar properties to establish the rateable value. In the UK, ports tend to be owner-occupied by statutory authorities (public or private). As a result, there is little rental evidence in the UK on complete ports. We often find various aspects of ports which are leased (most obviously warehousing and ancillary offices) and occasionally such let outs include operational property (such as a ferry berth or a private quay). However, such let outs, where they exist, are unlikely to provide suitable evidence for a whole port because:

- they are used for very specific purposes, such as the import of a single cargo,

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<sup>4</sup> The Rating of Plant and Machinery in Industries currently subject to Prescribed Assessment: A report by the 2<sup>nd</sup> Wood Committee, March 1999, Cm 4283.

- the rent payable is before improvements which maybe substantial,
- the landlord (the port) will receive substantial dues from the tenant which will influence the rent,
- the port authority is often a shareholder in the terminal operator again raising questions about the quality of the rent, and
- they are usually on a different scale to the main port.

11. Therefore, we have found the rental method to be unavailable for large ports.

*Receipts and Expenditure method*

12. The preferred method of valuation for utilities is the receipts and expenditure (R&E). In rating, the R&E method requires us to examine the income and expenditure expected by the hypothetical tenant. Expenditure includes repair of the hereditament and depreciation of the tenant's assets. From the balance of income over expenditure (the divisible balance) is taken the tenant's share which, broadly speaking, is the amount which the tenant requires to take the tenancy. What is left is the landlord's share and, therefore, the rateable value.

13. We believe that the R&E is particularly well suited to most ports because:

- both the revenue and expenditure can be clearly identified in respect of the port, and
- that revenue is very closely associated with the occupation of the port itself. A tenant considering a bid for a port could not easily establish a port nearby as an alternative means of securing the revenue. The port has a monopoly of place which means the revenue is only secured with the occupation.

14. For the ports exercise we used a "snap shot" approach to the R&E method in which we adopted single year revenue and expenditure figures having regard to the historic figures and also to future prospects. Therefore, in very simple terms, the 1 April 2003 valuation would take the following form:

	2000/01	2001/02	2002/03	Adopted
Gross receipts	10,000,000	11,000,000	12,000,000	13,000,000
<b>Total Income</b>				<b>13,000,000</b>
Cost of Sales	3,000,000	4,000,000	5,000,000	6,000,000
Other expenses	2,000,000	2,000,000	2,000,000	2,000,000
Additional repairs	300,000	300,000	350,000	350,000
Expenditure before tenant's depreciation				8,350,000
Tenant's Depreciation				900,000
<b>Total Expenditure</b>				<b>9,250,000</b>
<b>Divisible balance (Income less expenditure)</b>				<b>3,750,000</b>
Value of tenant's assets			20,000,000	
Working capital			1,400,000	
Tenant's capital			21,400,000	
return on tenant's capital			8%	
Tenant's share			1,712,000	1,712,000
<b>Rateable value</b>				<b>2,038,000</b>

15. Whilst the valuation does not specifically forecast income and expenditure, the adopted figures have regard to future prospects. A more refined approach, which we have adopted for other utilities such the gas and electricity networks, is to explicitly forecast income and expenditure in a form of discounted cash flow valuation as follows:

	2003/04	2004/05	2005/06	2006/07	2007/08
<b>Turnover</b>	<b>13,000,000</b>	<b>14,000,000</b>	<b>15,000,000</b>	<b>16,000,000</b>	<b>17,000,000</b>
Cost of Sales	6,000,000	6,500,000	7,000,000	7,500,000	8,000,000
Other expenses	2,000,000	2,300,000	2,600,000	2,900,000	3,200,000
Additional repairs	350,000	400,000	450,000	500,000	550,000
Tenant's Depreciation	900,000	1,000,000	1,100,000	1,200,000	1,300,000
<b>Total Expenditure</b>	<b>9,250,000</b>	<b>10,200,000</b>	<b>11,150,000</b>	<b>12,100,000</b>	<b>13,050,000</b>
<b>Divisible balance</b>	<b>3,750,000</b>	<b>3,800,000</b>	<b>3,850,000</b>	<b>3,900,000</b>	<b>3,950,000</b>
Working capital (2 months)	1,391,667	1,426,458	1,462,120	1,498,673	1,536,140
Tenant's assets	20,000,000	20,500,000	21,012,500	21,537,813	22,076,258
Tenant's capital	21,391,667	21,926,458	22,474,620	23,036,485	23,612,397
Return on tenant's capital	8.0%	8.0%	8.0%	8.0%	8.0%
<b>Tenant's share</b>	<b>1,711,333</b>	<b>1,754,117</b>	<b>1,797,970</b>	<b>1,842,919</b>	<b>1,888,992</b>
<b>Rent</b>	<b>2,038,667</b>	<b>2,045,883</b>	<b>2,052,030</b>	<b>2,057,081</b>	<b>2,061,008</b>
PV rate	10.70%				
PV factor (1/4 in advance)	0.98777	0.89230	0.80605	0.72814	0.65776
Present Value (1/4 in advance)	2,013,738	1,825,535	1,654,038	1,497,840	1,355,645
PV factor (simple)	1.000000	0.903342	0.816027	0.737152	0.665901
Equivalent rent (1/4 in advance)	<b>2,024,731</b>				

16. The choice of which R&E approach to adopt will depend upon the extent to which income and expenditure can be forecast with accuracy. A five year forecast has been adopted as this fits with the rating hypothesis (a year to year tenancy with a prospect of continuance).

17. The adjustment for equivalent rent<sup>5</sup> reflects the assumption that the rent remains the same in nominal terms over the tenancy. The impact of such an assumption is that the PV rate merely alters the weight given to particular years and is not, in itself, a value significant factor. This would, of course, be different on a capital valuation where the PV rate would be central to the capital value of the cash flows. The more significant rate in an annual rental valuation is the return on tenant's capital.

#### *Contractor's basis*

18. The contractor's basis proceeds on the assumption that the tenant has an alternative to renting the subject property – he may instead purchase a comparable site elsewhere and build a substitute property. The decapitalised cost of such a substitute will inform his rental bid for the actual subject.

19. In general, we have not yet turned to the contractor's while we have reliable trading information to support an R&E valuation. However, we may need to consider it on appeal –

<sup>5</sup> Sum of PVs over sum of PV factors.

either as an alternative to the R&E or as a method where the port is incapable of being operated for profit. We would expect there to be uncertainty in a contractor's valuation of a port because:

- there may be little evidence of construction costs for new port development on green sites. Most port development is at existing ports usually involving development of old port facilities and done in difficult operational circumstances. Such costs are unlikely to provide good evidence of the cost of a new port,
- some ports (especially those which are loss making) will have superfluous land and quayside. The size of the substitute will, therefore, be different to the actual port,
- older ports will suffer obsolescence in comparison to the modern substitute. For instance, older ports may cost more to maintain, and need more staff and equipment. Whilst such obsolescence can be analysed, the allowance can still be very subjective, and
- we could expect pressure for "end allowance" in the valuation. In particular, loss making ports may have been developed with grants from public bodies and the impact of grant upon contractor's valuations remains an area of dispute.

### **Issues in the receipts and expenditure method**

20. The 5 sample valuations were based upon a detailed analysis of each port's trading position. Some of the main issues we faced in the valuation were:

- repair,
- tenant's depreciation, and
- tenant's share.

#### *Repair*

21. UK ports tend to comprise old infrastructure which may have been "sweated" over recent years. This, combined with the presence of Accelerated Low Water Corrosion, means that repair is a prominent issue with UK operators. The amount of repair costs to be included in the valuation was a major issue for 2 reasons:

- the treatment of repair costs in company accounts is not consistent. Some will capitalise more repairs than others and the only method of establishing the true extent of the repairs is to examine the items sent to the balance sheet year on year. We did that in the 5 samples but the results provided only limited guidance, and
- there was a dispute over the meaning of repair in rating. The hypothetical tenant must repair but not renew or improve the hereditament and the dividing line is not always clear. The ports believe that the underlying repair cost can be captured by examining the cost of replacing the port over its working life. We prefer to look at the recent historic spend on repair as we believe this more accurately captures the shorter term repair costs to be faced by a tenant.

22. The rating hypothesis<sup>6</sup> requires us to assume that the hereditament is in a reasonable state of repair. Therefore, we believe that our repair spend must be either:

- enough to maintain the actual state of repair (where that is “reasonable”), or
- the spend we might expect if the hereditament was in “reasonable” repair.

23. It may be the case that historic spend on a port does not accurately reflect what should be spent and that some “catch up” works are needed. However, we do not believe it appropriate to assume a level of spend which would *improve* the state of repair of the hereditament.

24. The intention of the rating hypothesis (that the property is in a reasonable state of repair) is to provide consistency by ensuring the *actual* state of repair does not affect the value. As such, ports with different levels of repair should not see different rateable values for reasons of disrepair alone. Nevertheless, it is still necessary to ensure the valuation includes sufficient expenditure to *maintain* a reasonable level of repair.

#### *Tenant’s depreciation*

25. As discussed above, cranes and most other plant and machinery is not rateable. Instead, these items are provided by the incoming tenant (and we assume for rating purchased from the outgoing tenant at market value). In operating the port the tenant will make a non-cash charge (which we call depreciation) to ensure that:

- he has sufficient funds to replace his assets at the end of their working life, and
- his capital is maintained in real terms.

26. At the 5 sample ports we undertook a class by class analysis of the ports’ asset registers indexing plant and machinery to their modern replacement costs. Most of the value of the tenant’s assets was in cranes on which we performed item by item revaluations to modern replacement costs. The tenant’s depreciation was found by taking the full replacement cost of the assets over their full working lives.

27. The results were very consistent and suggested that the tenant’s depreciation was equivalent to 13.5% of expenditure (in the valuation) before depreciation. The figure was lower for RO/RO ports as the ferry boarding equipment is rateable and, therefore, belongs to the landlord.

#### *Tenant’s share: choice of method*

28. The tenant’s share is the cash which the tenant takes out of the business so as to induce him to take the tenancy. Tenant’s share does not cover the time and expertise which the senior managers may bring to the port (if it was assumed that those managers also had an interest in the ownership of the port) as such costs should be captured in expenditure. It is there to provide a return on the capital invested by the tenant having regard to:

- the amount of capital, and
- the risk to that capital.

29. There are 3 recognised methods of reaching the tenant’s share:

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<sup>6</sup> see paragraph 1

- return on tenant's capital,
- split of divisible balance, and
- percentage of receipts.

30. All methods were considered:

- percentage of receipts can be useful in drawing a comparison across similar properties (as we have done with ports). However, there is little reason why the tenant would base his share purely on the level of receipts so it does not provide a solution from first principles,
- the split of divisible balance can provide more reasonable results provided the sector has an even spread of profits. It is generally based upon the split of assets, by value, between the landlord and the tenant. However, where the profits in a sector vary considerably then the tenant's share by split of divisible balance also varies. The method then generates very large tenant's shares on profitable properties and very small tenant's shares on less profitable properties. Such variations are not justified where, as with ports, the variation in profit comes from the nature and location of the property and not necessarily the actions of the tenant, and
- a percentage return on the tenant's capital. This is the method which has the best grounding in reality. Investment decisions are made having regard to the capital invested and the return needed on that investment. As such the tenant would base his tenant's share on the return he needs from the capital invested. This was the approach adopted for ports.

*Tenant's share: tenant's capital*

31. At the 5 sample ports we had already found the modern replacement cost of the tenant's assets for tenant's depreciation and from this we calculated the depreciated replacement cost using the remaining working lives of the assets. However, we were concerned that the depreciated values would understate the tenant's capital as many of the assets were old and would have to be replaced by the tenant in the near future. Therefore, the tenant's capital in respect of an asset was taken to be the higher of:

- the depreciated replacement cost, or
- 50% of the modern replacement cost.

*Tenant's share: return on capital*

32. We adopted an 8% real return on capital for the tenant's share at the ports. The basis for the 8% is explained at Annex A but central to the adopted rate is that it is based upon actual returns which real investors have received from established ports.

33. Most of the ports felt the rate was too low and quoted much higher target rates adopted by their owners. We felt it was important to distinguish between returns from established ports and the forecast returns needed to facilitate new development. We believe that target rates of return for new port developments will overstate the return expected from an established port and it is the established port which is the subject of the valuation. Target and internal rates of return used by companies are likely to be overstated as:

- their main purpose is to sift new investment proposals in, for instance, port expansion or new plant. Such new investment is, inevitably, more risky than existing operations and will require a higher return,
- port development is very capital intensive and operators are unlikely to have sufficient capital to undertake all available opportunities. Therefore, the target rates are set to facilitate capital rationing ensuring that the capital flows only to the highest returns. Such returns will be in excess of existing returns, and
- internal rates of return are used as a management tool and are likely to reflect the benchmark of the company rather than the realistic returns expected from existing operations.

34. An 8% real return on capital was, therefore, adopted for the 5 sample ports but, in the time available, it was not possible to assess the tenant's capital for all other ports. We therefore analysed the tenant's share at the 5 ports by reference to turnover and adopted a range of 6% to 9% of turnover for tenant's share. We adopted a figure within this range having regard to:

- the plant required to run the port. Ports which have less non-rateable items (such as RO/RO ports) might expect to have a lower tenant's share than those with large non-rateable items (such as rail mounted cranes). Ports on split sites may also expect to have more non-rateable items, and
- the nature of the port. Smaller ports which may be dependant upon a few cargos maybe less attractive to commercial operators and, therefore, may require a higher tenant's share to attract an operator.

35. Exceptionally, the adopted tenant's share at very profitable ports was higher than 9% of turnover reflecting the increased risk to that level of profit.

## **The results**

36. The results of the 5 sample valuations were used to develop a valuation model which we used to value the remaining large ports.

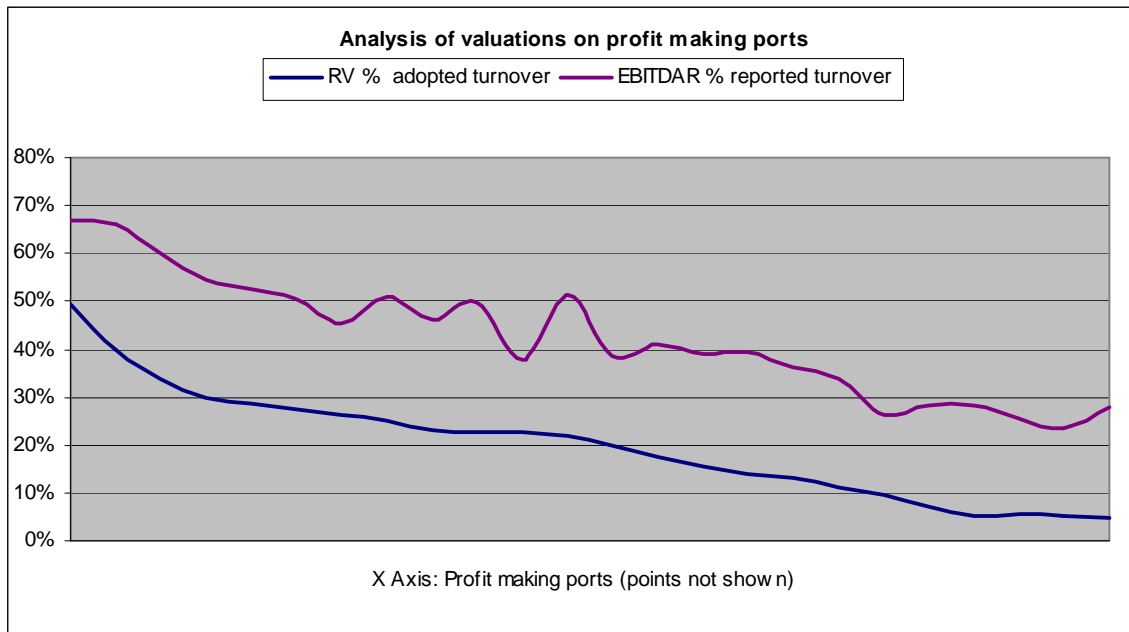
### *Profit making ports*

37. The key feature of the revaluation for profit making ports is that the values were set over a wide range when considered against turnover. At first glance this could be a feature which would raise concern with a valuer but we felt it was justified because:

- UK ports have a wide variation in profits, and
- such variations flow mainly from the nature and situation of the port and not necessarily from the actions of the operator – therefore, they are a feature of the rateable property and should be reflected in the value of that property.

38. This variation can be illustrated by comparing the rateable value as a percentage of the turnover in the valuation with the EBITDAR as a percentage of the accounting turnover for the profitable ports. (EBITDAR is the accounting earnings (profit) at the port before interest, tax, depreciation, amortisation and rental income from properties shown separately in the

rating list). It is, therefore, the cash earnings at the port unaffected by either the accounting policies of the port or the extent of the property portfolio.



39. As can be seen, the spread of rateable values is quite wide but this is matched in the spread of actual earnings.

#### *Loss making ports*

40. A number of the UK ports are loss making and generate a nil rateable value on the model. Such ports are generally occupied by local government or trust bodies representing the local community. VOA believe that such ports still merit a substantive rateable value. The hypothetical tenant (and usually the actual occupier) would not be motivated by profit. Instead they would occupy the port so as to maintain the socio-economic benefits which flow from its operations such as:

- direct employment at the port,
- regional and local economic growth attributable to the presence of a port,
- improvement to the overall infrastructure of the locality and, therefore, its competitiveness, and
- an increase in visitors.

41. The tenant, acting reasonably, would be willing to pay a substantive rent to secure those benefits and the landlord, acting reasonably, would look to extract such a rent. Clearly, valuation of such benefits is very difficult. In the past a floor of 5% of receipts has been adopted for ports and this was repeated for the revaluation. However, in the light of any appeals we may turn to the contractor's basis of valuation.

#### **Conclusions**

42. The revaluation on the ports was a small part of the revaluation of all non-domestic properties in which the principle of "Right First Time" valuations was central. For the ports, a right first time exercise was only possible with:

- a coordinated approach from the ports industry,
- full cooperation from the ports themselves, and
- the time to do the work.

43. We have considered all the major issues which will affect rateable values but it is too early to judge the accuracy of all assessments. Many ports have been assessed without an inspection and the 30 year gap in conventional valuation means that several issues of principle (such as repair and tenant's share) lack guidance.

44. Furthermore, it is unlikely that the ports industry will accept the new rateable values without appeal. The prescribed formula included a cap on rateable value at 13% of receipts. We have removed that cap so the rateable value on the profit making ports has increased from £40 million to £110 million.

Nick Cooper  
Utilities Rating Team  
Valuation Office Agency  
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## The basis for an 8% real return on tenant's capital

- A1. For a profit making port, we believe the most likely hypothetical tenant is a limited company – most likely listed on the stock exchange – funded from a balance of debt and equity. As such, the best method of assessing the return needed by such a tenant is the Weighted Average Cost of Capital (WACC). This method examines the cost of equity and the cost of debt and then calculates a weighted average cost having regard to the balance between equity and debt.
- A2. All figures are real.

### *Cost of equity*

- A3. The cost of equity was adopted using the Capital Asset Pricing Model (CAPM). This model assumes that equity investors will require at least a risk free rate of return plus a return for market risk. The market risk is based upon the overall premium which the market rewards for investing in a balanced portfolio of equity (systematic risk) and the volatility of the particular investment against that market (the beta factor).
- A4. VOA research suggests that, at the valuation date of 1 April 2003, the risk free rate was no more than 3% and that the premium for market risk was no more than 4.5%. In the UK there are 4 port operators with London Stock Exchange listings and the London Business School risk management service assesses their beta factors at between 0.62 and 0.72 (i.e they are less volatile than the market average). Adopting the top end of this range gives a cost of equity of:

$$3\% + (4.5\% \times 0.72) = 6.24\%$$

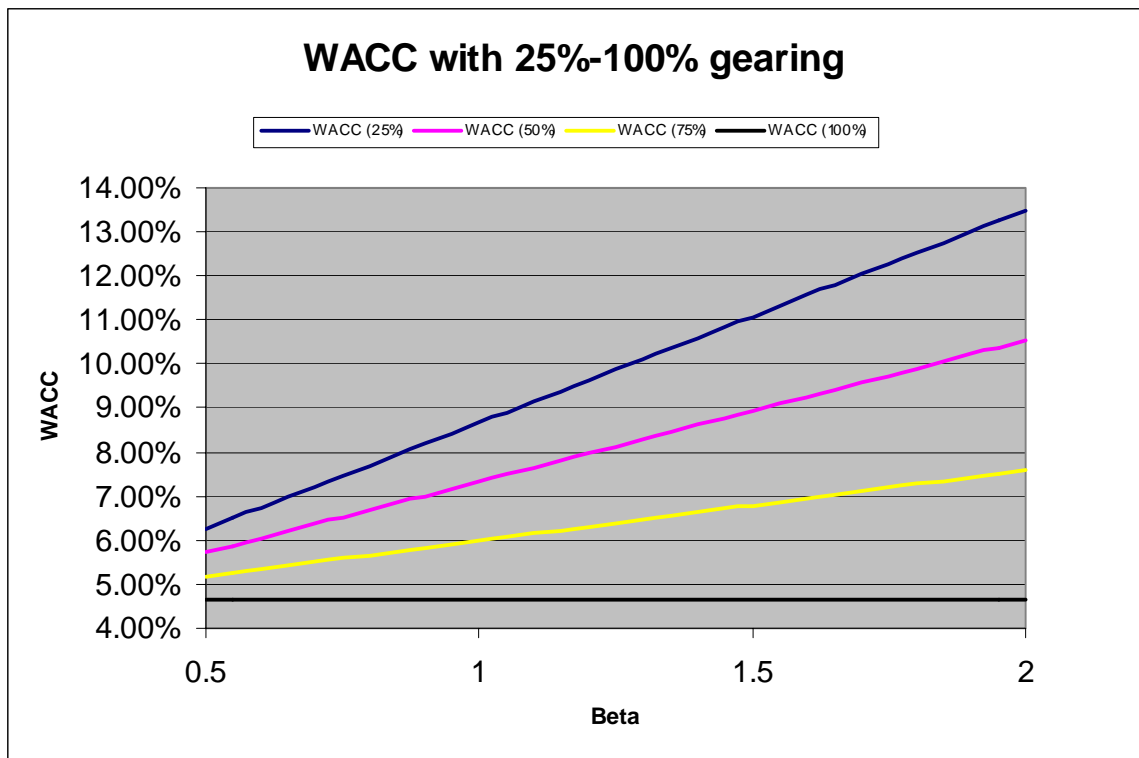
- A5. This is a post tax return (i.e. 6.24% after tax has been paid) but tax does not feature in the valuation as it is paid by the tenant from his share. We, therefore, require a pre-tax cost of equity which, at 30% tax, is 8.91%.

### *Cost of debt*

- A6. Published material from early 2003 suggests that the cost of debt for a listed company was about 4.65%. No adjustment is required for tax as interest payments are tax deductible.

### *WACC*

- A7. Therefore, with a gearing of 50% debt and 50% equity, the real WACC would be 6.78%  $((0.5 \times 8.91) + (0.5 \times 4.65))$ . However, the WACC for the hypothetical tenant could vary by their gearing (proportion of debt) and their beta factor which suggests that the return in the valuation should be adopted having regard to a range of WACCs based on the above cost of debt, risk free rate and market risk premium but variable gearing and beta factors as follows:



A8. We have adopted 8% as a defensible WACC. As can be seen, a WACC above 8% is only possible on the model if beta rises well above 1 and the gearing drops below 50%.

*Real or Nominal*

A9. Although the cash flows in the valuation are nominal, we have adopted a real WACC. This is because the tenant's capital and the tenant's depreciation both grow with inflation which, therefore, provides the tenant with protection from inflation. A nominal WACC would, therefore, provide the tenant with duplicate protection from inflation.