

Estimating the Cost of Capital

Response to Consultation and Decision

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1 INTRODUCTION

In September 2012, the Malta Communications Authority (hereafter “the Authority” or “MCA”) published a Consultation and Proposed Decision on Estimating the Cost of Capital^[1] (hereafter “the Proposed Decision”). This Proposed Decision addressed the theoretical background for estimating the cost of capital and also asked for the views of respondents on a number of specific aspects related to the MCA’s proposed methodology and approach in estimating the weighted average cost of capital (hereafter “WACC”).

The consultation period for the aforementioned Proposed Decision ended on 12 October 2012, with two operators, GO plc.¹ (hereafter ‘GO’) and Vodafone Malta Limited (hereafter ‘Vodafone’) submitting their formal feedback. Feedback was also received from an individual who has requested that his comments are kept confidential.

The Authority would like to take the opportunity to thank the respondents for their contributions.

This Decision contains a summary of the feedback received from respondents, the Authority’s position in relation to those comments, and subsequently, the Authority’s decisions on the proposed methodology and approach in estimating the cost of capital.

¹ The response from GO encompasses that of GO plc and Mobisile Communications Ltd.

2 REVIEW OF THE PARAMETERS MAKING UP THE WEIGHTED AVERAGE COST OF CAPITAL

2.1 Risk Free Rate

2.1.1 Background

The risk free rate is the expected return on an asset which bears no risk at all. For an investment to be truly risk free the risk of default needs to be zero and there must be no reinvestment risk (the actual return and the expected return are equal at maturity).

In practice, it is difficult to find an investment that is entirely risk-free, since some form of reinvestment risk tends to exist. However, freely traded government bonds can generally be regarded as having close to zero risk of default and liquidity. In nominal terms, the yield to maturity on such bonds, which takes into account future expectations of inflation and any differences between the coupon rate of interest and the prevailing market rates, is typically regarded as a proxy to the risk free rate.

To address the above issue, the MCA used two approaches, namely a best practice approach (reference to papers issued by other NRAs such as Ofcom, ComReg, and AGCOM), and a comparative approach. For the comparative approach the MCA has undertaken a comparative analysis of yields recorded on 5 and 10 year Malta Government Stocks to those recorded on German Government Bonds over the last five years.

From MCA's analysis carried out on papers issued by other NRAs, it found that:

- all NRAs consider government bonds as risk free assets;
- all NRAs take into account bonds maturing in 10 years and some also take into account 5 year bonds;
- some NRAs were prudent not to rely on the very low points registered.

The comparative analysis on yields recorded on both the Maltese and the German Government Bonds, resulted in a similar range for the risk free rate as clearly shown in Table 1 hereunder:

Table 1 Comparison between yields on MGSs and German Government Bonds

	Yields on 5 year Bonds	Yields on 10 year Bonds
Malta Government Stocks	3.25%	4.23%
German Government Bond	1.76%	2.61%
Malta Country Risk ²	1.73%	1.73%
German Government Bond adjusted for country risk premium for Malta	3.49%	4.34%

Based on the above, and also in view of the results obtained through the use of alternative assets traded in a foreign market, the MCA considered a range between 3.3% and 4.3% to currently be an appropriate nominal risk-free rate for calculating the WACC rate.

2.1.2 Summary of Responses

GO expressed no reservation on MCA's recommended approach.

Vodafone had no reservations against using a best practice approach and a comparative approach in arriving at the risk free rate. Vodafone was however, of the opinion that the use of yields on ten-year bonds is more appropriate and relevant to the electronic communications industry.

Vodafone was of the opinion that the rate of 3.3% should be excluded from the WACC calculation and MCA should rely on the risk free rate of 4.3% which is derived by reference to the yields on ten year bonds.

2.1.3 MCA approach and decision

In its WACC decision of April 2008^[3], the MCA had argued that, in theory, the maturity period should be determined by reference to the investment horizon of a project, that is, the average life of the group of assets making up the investment project. Therefore for projects whose asset lives range between 9 to 10 years, it may be justified to discount future cash flows using a risk free rate derived by

² As calculated by Damodaran^[2] in 2012

reference to bonds with a maturity period of 10 years. However, from a regulatory context, the WACC is used to provide investors with a reasonable rate of return applicable to regulated markets over a given regulatory period. This implicitly requires that the maturity period should be linked to the regulatory review period.

This approach is also followed up by other NRAs such as Ofcom. In 2011, Ofcom^[4] has favoured the use of 5 year gilt yields when estimating the risk-free rate, whilst due consideration was given to 10 year gilt yields. NERA Economic Consulting (here after “NERA”) in its report for OPTA^[5], also discussed that there are two main approaches when considering the appropriate length of the maturity period used to determine a risk-free rate:

- Setting the underlying maturity equal to the end of the regulatory review period; and
- Setting the underlying maturity equal to the life of the asset.

They continue to argue that “the right approach depends on the investment horizon of a typical investor. For instance, an investment in a Greenfield project (with yet unknown demand and technology uncertainties), would need to ensure its investors an appropriate compensation for the risks over the entire project life. In this case, the investment horizon would be the asset life of the new investment ... By contrast, the likely investment horizon of an investor investing in an already existing regulated utility business – where new investments mainly reflect replacement capex – may be the regulatory period. This is because the uncertainty surrounding the allowed regulatory rate of return is revised at the beginning of each new regulatory period. In this case, the risk free rate should be based on the length of the regulatory review period.” In this context, OPTA also opted to use a 3 year gilt yields.

The MCA therefore reiterates its opinion expressed in its previous decision that the use of a maturity period that ranges between 5 and 10 years to estimate the risk free rate for local investments strikes a balance between the regulatory period and the lifetime of the investment.

Decision 1:

The Authority directs that the risk free rate should be established by reference to the current yield to maturity on Malta Government bonds maturing between 5 and 10 years as a proxy for the risk free rate for Malta. In so doing the MCA does not exclude the possibility to corroborate the results derived from the local market with assets of a foreign market if this translates in reinforcing the confidence in the results achieved.

Decision 2:

The Authority directs that the nominal risk free rate ranging between 3.3% and 4.3% is appropriate for calculating the WACC.

2.2 Equity Risk Premium

2.2.1 Background

The Equity Risk Premium (ERP) represents the additional rate of return that investors will require for investing in equity rather than risk free investments. Historical market data shows that returns on different classes of assets vary in practice, with riskier assets earning higher than average returns. Hence, the ERP is an expected return whose value depends on the perceived risk associated with the equity market and the level of investors' risk aversion. There is considerable debate over the size of this premium and the appropriate method of calculating the ERP.

In practice there are a number of different approaches which can be used to estimate the ERP and there is limited consensus on the most appropriate approach to adopt.

The key issues related to the ERP estimation include:

- Whether to use a historic or prospective approach,
- Whether to use the arithmetic or geometric mean, and
- The time period to use to compute the estimate.

For the Equity Risk Premium, whilst due consideration to the methodologies adopted by other NRAs and survey-based evidence was given, MCA in its Proposed Decision noted that, in general, NRAs refer to international studies.

The MCA reviewed international studies especially those of widely recognised experts such as Damodaran, as well as Dimson, Marsh and Staunton. Damodaran's^[6] rate estimates the implied equity risk premium at 6.01%. Similarly, Dimson, Marsh and Staunton^[7] have rates closer to 6.1%. The MCA considered these studies as reliable sources and hence proposed their use in setting the base for calculating ERP.

The MCA therefore proposed that Malta's ERP should be set between 6.01% to 6.1%.

2.2.2 Summary of Responses

Vodafone commented that it understands the MCA's decision to set the equity risk premium by reference to international studies, like Damodaran. Nevertheless, Vodafone highlighted that there are additional risks associated with a small market economy such as Malta.

GO agreed that the equity risk premium should be guided by reference to internationally recognised studies. GO also agreed with the opinion put forward by Damodaran that "equity risk premiums do vary across countries, with higher equity risk premiums applying to riskier countries." In GO's opinion, findings of comparative studies involving large countries should be applied with caution on small countries like Malta.

Both Vodafone and GO said that Malta's country risk premium as established by Damodaran^[2] and valued at 1.73% should be added to the equity risk premium that the MCA has used in the WACC calculations.

2.2.3 MCA approach and decision

MCA wishes to refer respondents to the approach applied in arriving at the risk free rate (as reproduced also in summary form under section 2.1.1 above). MCA notes that although its commentary on the subject clearly states that the country risk premium is being taken into account, Table 1 of the Proposed Decision may not have illustrated this matter clearly enough.

In order to provide further clarity, Table 1 (as reproduced again under section 2.1.1 of this Decision) has now been adjusted to distinguish clearly between the yields on the German Government Bond and the Malta Country Risk Premium. The combined result of these two risk components shows that the yields on Malta Government Stocks already provide for the added risk of investing in Malta.

The risk free rate is added to the equity risk premium in the calculation of the Cost of Equity. It is also taken into consideration in the calculation of Cost of Debt. Adding the country risk to the equity risk premium, as being suggested by the respondents, would give rise to double counting.

MCA therefore concludes that the country risk premium should not be included within the equity risk premium.

Decision 3:

The Authority directs that the Equity Risk Premium should be set by reference to internationally recognized studies.

Decision 4:

The Authority directs that the Equity Risk Premium should range between 6.01% and 6.1%.

2.3 Beta

2.3.1 Background

Beta measures the market or systematic risk that applies to a particular stream of cash flows. This should be reflected by the volatility of a company's stock price relative to the overall market, and is usually measured by the covariance between the market returns and those of the company.

In its Proposed Decision, the MCA applied two approaches to estimate Asset Beta. The first method is based on values used by other NRAs, whilst the second method analysed the asset betas of international companies operating in the telecommunications industry. In concluding its analysis on the asset betas the MCA noted that these have generally fallen over the years.

In the absence of a reliable local stock market index, the MCA has concluded that the range of betas should be set between 0.4 and 0.6 for the fixed market and an asset beta between 0.5 and 0.7 for the mobile market. These ranges are closer to the ranges observed in other NRAs position papers.

2.3.2 Summary of Responses

GO agreed with the use of the Capital Asset Pricing Model in order to calculate the cost of equity. GO, however, did not agree with the sample of telecommunications companies used by the MCA for the purpose of calculating the asset beta. GO

opined that the sample should have included companies of a similar operating size and risk as GO.

GO argued that the NRAs referred to in the document relate to the larger European countries and was of the opinion that using reports issued by smaller European states would have made the conclusions more comparable.

Vodafone had no comments on the proposals relating to the asset beta.

2.3.3 MCA approach and decision

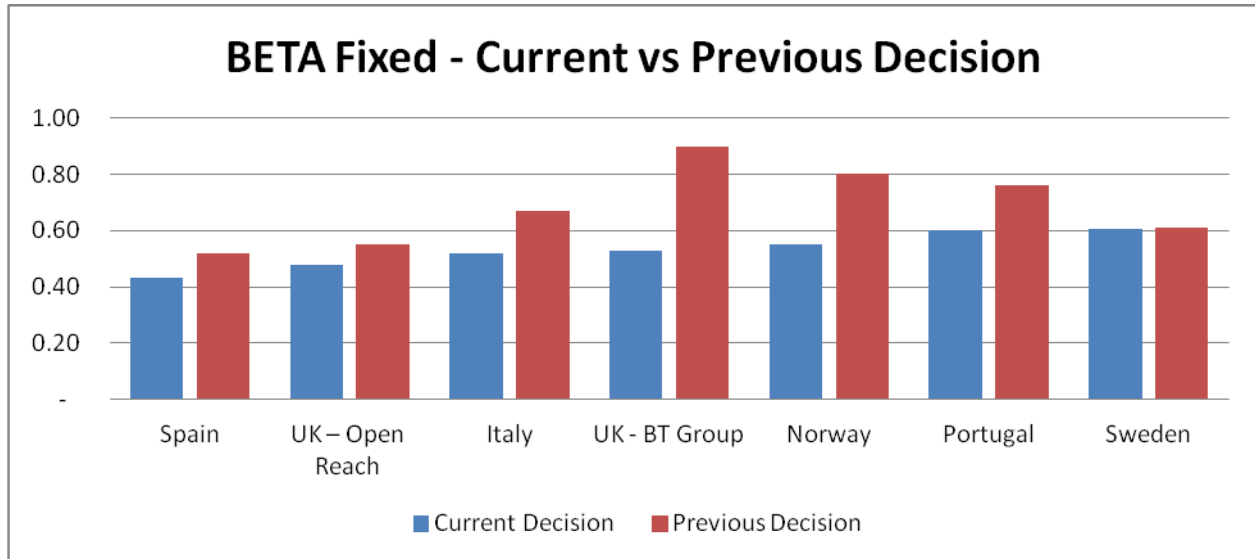
MCA understands the concerns expressed by GO. In actual fact it refers to these concerns in its Proposed Decision.

However, from a practical point of view and in the absence of a reliable local stock market index and more pronouncements from the smaller EU states, MCA has to be guided by the approach adopted by other NRAs and the reference group of listed telecommunication operators.

The above notwithstanding, a downward trend in asset Betas is clearly identifiable in both the market data as well as other NRA pronouncements as can be clearly seen in the following graphs³.

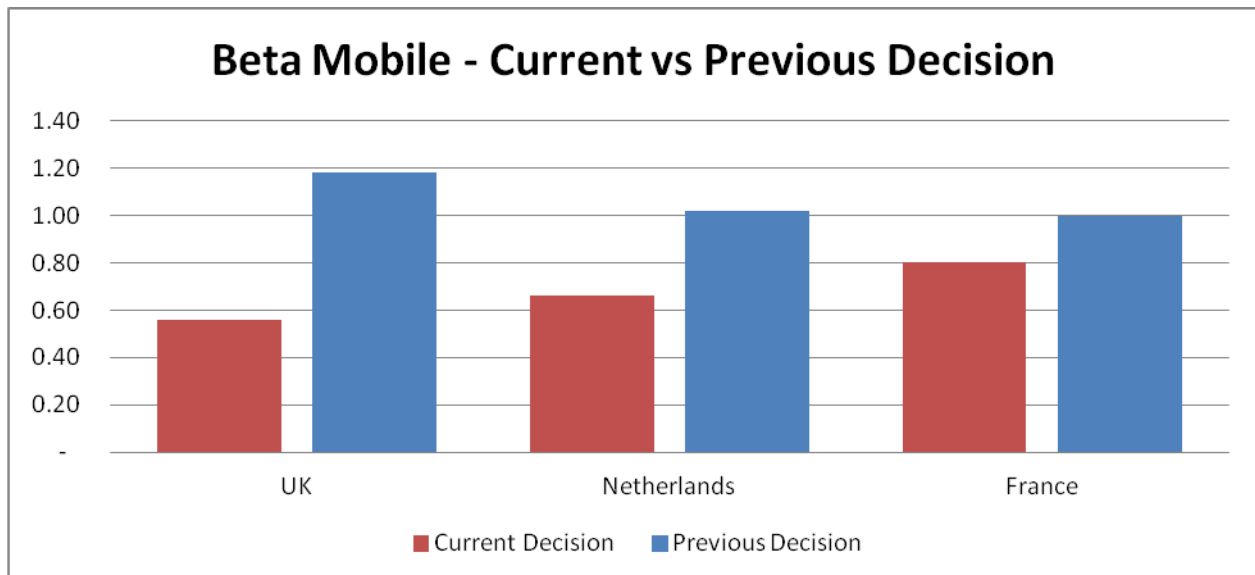
³ Graphs 1 and 2 are based on decisions of other NRAs found by the Authority. They do not include all countries that have been listed in the Consultation document since not all NRAs had past decisions available on their website.

Graph 1 Beta Fixed Market Variances



Source: Spain^{[8][9]}, UK^[10], Italy^[11], Norway⁴, Portugal^[13], Sweden^{[14][15]}

Graph 2 Beta Mobile Market Variances



Source: UK^[16], Netherlands^[17] and France^{[18][19]}.

⁴ Figures for Norway have been extracted from a presentation by Prof. T. Johnsen^[12] from the Norwegian School of Economics.

The above is reflective of the general sentiment that the telecommunications companies' returns have become less volatile than those produced by the stock markets. In view of this trend MCA confirms its decision that, in the current market scenario, a downward revision in Betas is required.

Decision 5:

The Authority directs that the asset beta should be between 0.4 to 0.6 for the fixed market and between 0.5 and 0.7 for the mobile market.

2.4 Debt Premium

2.4.1 Background

The company's cost of debt is normally identified by reference to the average cost of borrowing based on market values. However, where market information is not available or where it is unlikely that a company continues to borrow at the current cost of borrowing, estimates may need to be made.

Corporate debt behaves in essentially the same manner as government debt, however investments in corporate companies are riskier than investing in government paper, implying that a higher interest rate has to be offered to investors. In practice this debt premium is driven by credit ratings based on financial characteristics such as market capitalisation, earnings volatility, leverage and business risks specific to the company and/or sector.

In its Proposed Decision, the MCA took the view that this variable should be primarily determined by reference to the debt premia used by other regulatory authorities in estimating the cost of debt. This in view that in Malta none of the undertakings with an SMP or similar companies have a publicly available credit rating. Furthermore, as a means of data corroboration, the MCA has used the spread between Electronic Communications industry bonds and German Government bonds using Bloomberg's data. The MCA has also reviewed the financial statements of local operators and concluded that the ranges of debt premium obtained from the approaches spelt above cover those observed in the local context. The MCA proposed that the debt premium should be between 1.25% and 2.25%.

2.4.2 Summary of Responses

GO disagreed with the fact that MCA based its study to calculate the debt premium on large European countries. GO questioned the use of NRA pronouncements dating back to 2008 in arriving at the cost of debt arguing that only more recent decisions should have been considered as the market situation from 2008 has changed considerably.

Vodafone had no comments in relation to this proposed decision.

2.4.3 MCA approach and decision

MCA re-iterates that it has reviewed the average interest rate incurred by all local operators as published in their respective financial statements and that these are largely in line with the total cost of debt proposed by MCA.

In fact, the absolute majority of the bank borrowings held by local operators⁵ as disclosed in their respective financial statements are being made available at rates less than or within the range of the risk free rate being mandated in this decision.

In respect to GO's comment on the decisions of other NRAs quoted by the MCA in its Proposed Decision, the MCA refers the respondents to graph 7 in the Consultation document wherein the other NRAs quoted are clearly referenced. For sake of clarity, the following table best describes the decisions the MCA has quoted in respect of debt premium, the year in which they were published and the period covered by the decision.

Table 2 Decisions of other NRAs'

Debt premium	Published	For period covering
Denmark ^[20]	2011	2012 onwards
Sweden ^[14]	2011	2011 onwards
France ^[18]	2011	2012
Germany ^[21]	2011	2011 onwards
UK ^[10]	2011	2011 onwards
Portugal ^[13]	2010	2009 – 2011
Norway ^[12]	2010	2010 onwards
Belgium ^[22]	2010	2010 – 2013
Italy ^[11]	2010	2010 – 2012
Netherlands ^[17]	2010	2010 – 2011

⁵ Reference has been made to the 2011 Annual Financial Statements of GO Group, Vodafone Malta, and Melita Group – being the operators upon which some form of ex-ante regulation including accounting separation obligation are in force.

From the above it is evident that the data used is from the recent past. As a matter of fact any 2008 data was defined as an outlier and excluded in arriving at the proposed range.

Furthermore, the fact that the spreads on European Telecom Bonds over German Government Bonds (as shown in Table 6 of the Proposed Decision) based on six to eighteen month averages ending in June 2012 are in line with the debt premium observed in the other NRA pronouncements, provides enough comfort on the currency of the data being used.

Decision 6:

The Authority directs that the debt premium should be between 1.25% and 2.25% over the risk free rate.

2.5 Gearing

2.5.1 Background

Theoretically, a forward-looking WACC should be based on the estimated optimal capital structure over the regulated period as opposed to the existing capital structure of a company. The argument for the use of an optimal capital structure is that a calculation based on an optimal gearing reflects the fact that full use of the tax advantages of debt are taken into account whilst concurrently default risk is kept at levels acceptable to shareholders.

Opting for the use of an optimal capital structure is reinforced by the following facts:

- A company's financial structure at a point in time may not necessarily reflect the capital structure that is expected to prevail over the life of the business;
- The regulatory WACC is used to provide the operator with a reasonable rate of return on a regulated basis, assuming an efficient gearing structure.

In its Proposed Decision, MCA proposed to determine the optimal gearing by reference to the levels of gearing applied by other NRAs in comparison with the gearing levels registered by international companies operating in the telecommunications industry.

2.5.2 Summary of Responses

GO did not agree that two separate estimates of gearing for both fixed and mobile should be set. GO opined that this is no longer necessary since all major telecom operators in Malta are offering both fixed and mobile services.

Vodafone commented that they had no reservations on the proposed decision.

2.5.3 MCA approach and decision

The MCA believes that fixed and mobile operators share many characteristics and there is an ongoing convergence between fixed and mobile communications. However, the likelihood of potential differences between mobile and fixed networks in terms of capital structure and risk profile is clearly acknowledged not only by MCA but also by other NRAs. This is evidenced from Table 10 of the Proposed Decision which summarised the WACC rates used by other NRAs as published by Cullen International SA. The fact that mobile and fixed networks are as yet not fully converged, coupled with the fact that the services stemming from the two networks are subject to separate market analysis, further reaffirms the position to attach different risk profiles and consequently also different gearing structures as proposed by the Authority. This not to mention that the gearing levels as reported by the local operators in their respective financial statements differ significantly from one another.

Decision 7:

The Authority directs that the Gearing should be in the range of 40% to 50% for fixed market and 25% to 35% for the mobile market.

3 THE WEIGHTED AVERAGE COST OF CAPITAL CALCULATION

3.1 The WACC rate for different business segments

3.1.1 Background

In 2008 the MCA had consulted on whether the operators favour a deferral of the decision about the disaggregation of a company's cost of capital and both respondents were in favour of deferring the decision.

In its Proposed Decision (2012), the MCA opined in favour of deferring this decision further and asked respondents for their reactions.

3.1.2 Summary of Responses

GO believed that the MCA should generate one WACC estimate for both the fixed and mobile segments, which would also reflect the quadruple nature of the modern telecommunications operators.

Vodafone agreed with the MCA's proposal to defer the decision.

3.1.3 MCA approach and decision

With respect to the distinction between fixed and mobile WACC rates the MCA refers respondents to section 2.5.3 above.

In the absence of any adverse comments insofar as the issue of further disaggregating a company's cost of capital (e.g. access segment, core segment, other segments), the MCA confirms its intention to defer its decision on the matter.

Decision 8:

The Authority directs that the decision to further disaggregate the cost of capital for the different business segments should be deferred.

3.2 General comments received on proposed WACC rates

3.2.1 Summary of Responses

GO expressed concern that the WACC rates set by the MCA have been constantly decreasing year after year and GO believed that this did not reflect a correct representation of the current market situation.

GO quoted a number of events such as Malta ratings downgrade, Moody's Investor Services changed its outlook on rating of the European Union from stable to negative and surveys showing that the Economic Sentiment has declined. GO believed that these factors imply that cost of borrowing should increase due to the increased default risk and therefore rates of return should increase due to the added market risk.

GO also quoted an assessment made by the Head of Global Telecoms, Media and Technology Research at HSBC of the investment situation in the telecom companies^[23]. GO expressed concern that his assessment appears to be at odds with the proposed conclusion in the MCA consultation to the effect that WACC should be lowered substantially.

GO felt that the MCA did not factor properly the risks arising from the current financial turmoil and expressed concern that the MCA used a study of other NRA decisions some of which date back to 2008 when the economic scenario was very different from the current situation.

3.2.2 MCA reply

With respect to the concerns expressed by GO on the MCA's approach to calculate the WACC, the MCA would like to highlight the aspects of the methods applied by the Authority which ensures that the resulting WACC rate is reasonable in the local context.

MCA refers to its reply in sections 2.1.1 and 2.2.3 (detailed above) wherein it is clearly shown that Malta's latest country risk premium of 1.73% (subsequent to its ratings downgrade) has been provided for in the risk free rate.

MCA contends that the current economic climate has been further reflected in its proposed WACC rates by means of the upward revision in the Equity Risk Premium which has increased from 5%⁶ to 6.01% at the lower end and from 6%⁷ to 6.1% at the higher end of the scale.

MCA further contends that the best measure of the economic sentiment with respect to an industry is reflected in how equities in companies operating in that industry compare with the rest of the market. This is captured by means of the Beta measurement as illustrated in Table 3 of the Proposed Decision, which in turn reflects a standard, objective and best practice approach to quantify systematic risks.

MCA's methodology has ensured that the decisions made are based on methods that are mostly guided by current pronouncements issued by other NRAs. Wherever possible this data has been corroborated by the latest available market data. MCA therefore cannot agree to the statement made by GO that its decision does not properly reflect the current economic scenario.

3.3 Proposed way forward on the regular revisions

3.3.1 Background

Following its WACC Decision published in 2008^[24], the MCA initiated an annual work stream whereby it asked operators - with SMP status operating in the electronic communications sector - to submit annual revisions of the WACC rate faithfully observing the methodology that was established in 2008.

In its proposed decision, the MCA has expressed its opinion that, in order to reduce the regulatory burden on operators, regular proposed revisions should be initiated by the MCA, which can in turn be adopted following consultation. These revisions would occur annually, or at other intervals which reflect changes to the underlying parameters. The set of parameters reviewed would also attempt to reflect changes to the situation in capital markets.

⁶ Value currently in force as determined from the 2008 decision on the subject

⁷ Ibid

3.3.2 Summary of Responses

Both respondents welcomed and agreed on the proposed way forward.

Decision 9:

The Authority directs that regular revisions to the WACC rates shall be initiated by the MCA. These rates will become applicable following the normal consultation process.

4 MCA'S DECISION ON ESTIMATING THE COST OF CAPITAL

After taking into account the feedback received during the consultation period, and the reasons explained in Section 2 and Section 3 above, the MCA is hereby setting the WACC rate for the fixed market at 9.65% and that for the Mobile Market at 10.80%, both rates being stated in pre-tax nominal terms (refer to Appendix I hereunder for the full calculation). These revised WACC rates shall be applied to regulatory accounting periods ending on or after 31 December 2012. In any case, these mandated WACC rates shall be applicable, as deemed necessary, to any other charges subject to ex-ante regulation.

4.1 MCA Decision

Decision 10:

The Authority directs that the pre-tax nominal WACC rates for the fixed and mobile markets are 9.65% and 10.80% respectively and the said rates shall be applicable to regulatory accounting periods ending on or after 31 December 2012.

Ing. Philip Micallef

Chairman Malta Communications Authority

APPENDIX 1: COMPUTATION OF WACC RATE

The tables hereunder illustrate the resulting calculations of the mandated WACC rates for the fixed and mobile markets arising from the range of the parameters decided upon in this Response to Consultation and Decision.

Table 3 WACC calculation for the Fixed Market

	Low Gearing		Medium Gearing		High Gearing	
	Low estimate	High estimate	Low estimate	High estimate	Low estimate	High estimate
Risk free rate	3.3	4.3	3.3	4.3	3.3	4.3
Equity Risk Premium	6.01	6.10	6.01	6.10	6.01	6.10
Equity beta	0.57	0.86	0.61	0.92	0.66	0.99
Cost of Equity (post-tax)	6.73	9.55	6.97	9.91	7.27	10.34
Cost of Equity (pre-tax)	10.35	14.69	10.72	15.25	11.18	15.91
Debt Premium	1.25	1.25	1.75	1.75	2.25	2.25
Cost of debt (post-tax)	2.96	3.61	3.28	3.93	3.61	4.26
Cost of debt (pre-tax)	4.55	5.55	5.05	6.05	5.55	6.55
Optimal Gearing	40%	40%	45%	45%	50%	50%
Tax Rate	35%	35%	35%	35%	35%	35%
WACC (pre tax nominal)	8.03	11.03	8.17	11.11	8.36	11.23

The above is based on the assumptions that un-gearred beta is of 0.4 for the low estimate and 0.6 for the high estimate.

Based on the above, the WACC estimate ranges between 8.03% and 11.23% with an average pre-tax WACC rate of 9.65%.

Table 4 WACC calculation for the Mobile Market

	Low Gearing		Medium Gearing		High Gearing	
	Low estimate	High estimate	Low estimate	High estimate	Low estimate	High estimate
Risk free rate	3.3	4.3	3.3	4.3	3.3	4.3
Equity Risk Premium	6.01	6.10	6.01	6.10	6.01	6.10
Equity beta	0.61	0.85	0.64	0.90	0.68	0.95
Cost of Equity (post-tax)	6.97	9.49	7.15	9.79	7.39	10.10
Cost of Equity (pre-tax)	10.72	14.59	10.99	15.06	11.36	15.53
Debt Premium	1.25	1.25	1.75	1.75	2.25	2.25
Cost of debt (post-tax)	2.96	3.61	3.28	3.93	3.61	4.26
Cost of debt (pre-tax)	4.55	5.55	5.05	6.05	5.55	6.55
Optimal Gearing	25%	25%	30%	30%	35%	35%
Tax Rate	35%	35%	35%	35%	35%	35%
WACC (pre tax nominal)	9.18	12.33	9.21	12.36	9.33	12.39

The above is based on the assumptions that un-g geared beta is of 0.5 for the low estimate and 0.7 for the high estimate.

Based on the above, the WACC estimate ranges between 9.18% and 12.39% with an average pre-tax WACC rate of 10.80%.

5 REFERENCE LIST

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