Orange Mobile answers to TRC WACC Consultation

Content

1 Introduction

On the 1st of September 2016, the TRC has issued a "Notice requesting comments on the calculated Weighted Average Cost of Capital". This consultation aims at receiving comments on the methodological choices that have been made to set the value of all the parameters which are involved in the assessment of the WACC, following the calculation principles detailed in the TRC Determination N° 5-4/2008.

In the present answer, Orange Mobile wishes to kindly draw the attention of the TRC on some specific issues. Indeed, it appears that:

- Some approaches, although theoretically correct and adapted, have been wrongly applied, leading to manifest biases in the WACC final assessment;
- Some approaches and choices are not appropriate and would require to be reconsidered.

Those points are presented and detailed in section 2, while section 3 contains a table which summarizes Orange Mobile view for each question of the TRC.

2 Main issues

This section lists our main observations regarding the valuation of the parameters proposed by the TRC.

2.1 Valuation of debt

The TRC values both debt and equity through their market value. While this is line with best practices for the valuation of equity, accordingly with Capital Asset Pricing Model (CAPM) principles, it is not for debt valuation.

Indeed, in order to assess their returns on debt, **creditors rather use the book value**, unless they re-finance passed debts).

In addition, the market value of debt is usually more difficult to obtain directly, since very few firms have all their debt in the form of bonds outstanding trading in the market. The book value of debt is then more robust than its market value.

Orange Mobile therefore kindly asks the TRC to use the book value to calculate the debt instead of the market value, in accordance to international best practices.

2.2 Equity risk premium (ERP)

The TRC assesses ERP as Total Market Return (TMR) minus Risk Free Rate (RFR). TMR and RFR are valued on a comparable basis, i.e. with the same duration and in the same market (the US). The TRC assesses TMR thanks to Dimson, Marsh & Staunton (DMS) long-run assessment.

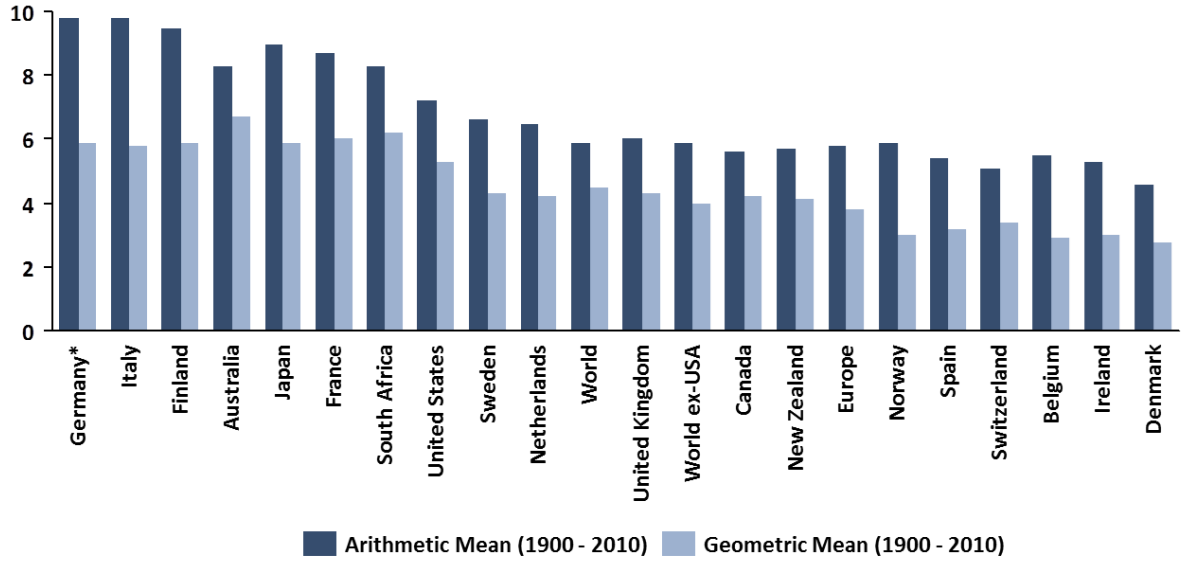
Under such methodology, we conclude that the TRC calculates the ERP of the United States[1] and applies it to the Jordan market. This is not correct: according to a lot of analysts (amongst which Fernandez, Stern or DMS), the ERP varies from one country to another, and generally increases with the Country Risk Premium (CRP). It is then incorrect to assume that:

$$Cost\ of\ equity = RFR + \beta \times ERP_{US} + CRP_{Jordan}$$

As mentioned, Dimson, Marsh and Stauton value equity risk premia specifically for each country, in addition to their valuation of country risk premia (see Figure 1). ERP is valued in comparison with bills, i.e. long-term debt: ERP has indeed to be valued in comparison with bills if risk-free rate is based on long-term debt, as does the TRC.

[1] The TMR and the RFR used to calculate the ERP are US based.

Figure 1 - ERP relative to bills according to DMS



Source: Dimson, Marsh, Staunton, Equity Premia Around the World, London Business School, 7 October 2011

Therefore, we do not understand why the TRC estimates the ERP through a calculation based on US parameters themselves, estimated thanks to DMS, if DMS directly provide country specific ERP, hence more robust and accurate than hybrid calculations based on various sources.

In the same way as DMS, another analyst, Damodoran, computes region-specific and country-specific ERP, also with comparison to bonds. However, Damodoran computes Equity Risk Premia relative to mature market bonds, and not to national bonds – as DMS does. As a consequence, ERP computed by Damodoran must be used following a different formula than DMS:

$$\boldsymbol{Cost\ of\ equity = RFR + \beta \times TotalERP_{Jordan}}$$

Where $Total\ ERP_{Jordan}$ already accounts for Jordan ERP and Jordan country risk premium.

Damodaran performs three calculations of Total ERP, all based on country-specific stocks, and in which the country risk premium is based on:

- Market volatility relative to S&P 500;
- Ratings;
- Credit Default Swaps(CDS).

The first approach above is subject to an extensive research paper, and therefore not regularly updated: therefore, we do not think this is an appropriate source.

The two latter indexes are updated online, on Stern University website[2], on a regular basis.

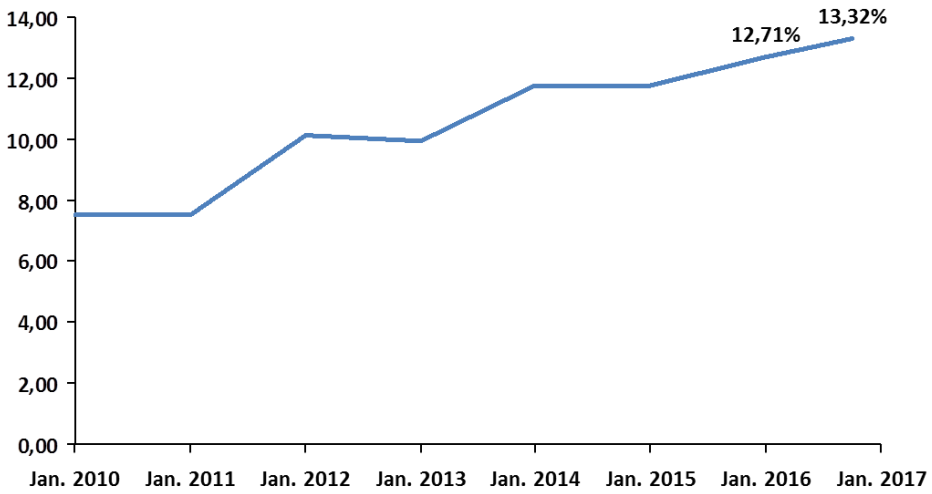
[2] http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ctryprem.html

- The rating based approach estimates the equity risk premium based on the average default spread of countries which have the same Moody's rating. For example, countries which are rated B1 by Moody's have an average 5.05% default spread, and therefore an average 13.32 ERP. Under the rating based approach, Jordan, which is rated B1, has then an ERP of 13.32% in 2016, and 12.50 in January 2015.
- The CDS based approach consists in using national CDS default spread instead of average rating based default spread in order to estimate the total ERP. While this method presents the advantage of assessing a country specific ERP, instead of an ERP per rating as per the above approach, it is not available for countries where the lack of CDS prevents from estimating the CDS default spread, which is the case for Jordan.

As we recommend the use of a directly computed ERP (as detailed above), we then recommend the use of the Damodaran-computed total ERP based on ratings, rather than the use of DMS ERP, due to its regular update by Damodaran and its accounting of Jordan specifics. In addition, it is important to note that the TRC also uses Damodaran rating based approach to estimate the country risk premium (see next section). Therefore, the use of Damodaran approach to estimate the ERP seems natural and gives more consistency to the global exercise.

Damodaran ERP evolution has been increasing during last years, to reach 13.32% in October, as presented in Figure 2 below.

Figure 2 - Jordan ERP, Damodaran estimation based on ratings-based default spreads



Source: Damodaran, http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ctryprem.html

In the paragraphs 5 and 6 of section 4 of the consultation, related to the CRP estimation, the TRC discusses the relevancy to use an average value of Damodaran's CRP rather than the most recent figure, in order to cope with what the TRC calls "Business cycle events", which would tend to

overestimate the CRP. As we now recommend using a consistent approach for the ERP, the question of the observation period also raises here.

Orange Mobile agrees with this view to consider a defined observation period rather than a punctual value. However, as we will also mention in next section, the observation period of 5 years suggested by the TRC seems over estimated. In general, the observation period used to estimate ERP or CRP is rather 3 years.

Indeed, using a 5 years period rather than 3 years does not provide more robust future proof forecast. On the contrary, a 5 years period may be too long to capture the recent financial trends. A three-year period may be preferred, as it is long enough to be robust to very short term variations, while short enough to capture only the recent financial trends (increased country risk premium in Jordan, low interest rates period in developed countries).

Hence, we recommend using a 3 years observation period, starting from October 2016. Based on such approach, Jordan total ERP (i.e. already accounting for the country risk premium) would be 12.38%.

Orange Mobile kindly requests the TRC to adjust its calculation accordingly.

2.3 Country risk premium (CRP)

As already mentioned, the TRC intends to assess the CRP on the basis of Damodaran rating-based Default Spread. Orange Mobile agrees with this approach, for the reasons detailed above, since it is the approach we also recommend to estimate the ERP.

However, we have two observations:

- This approach is incorrectly implemented by the TRC, as a confusion was made between the rating based default spread and the country risk premium;
- The 5 years estimation period used by the TRC is too long.

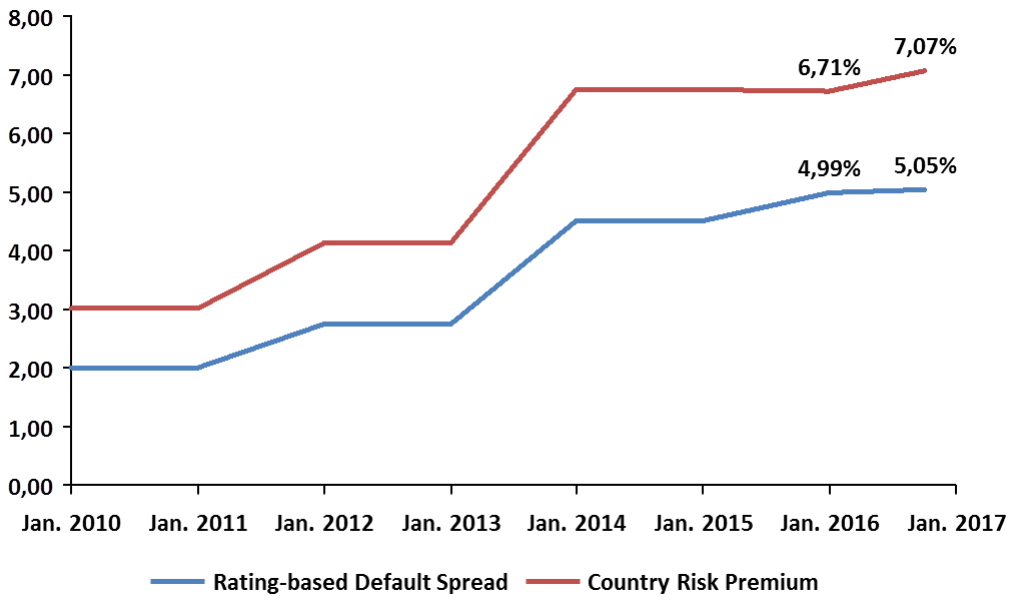
Regarding the first point, the TRC states in its consultation, paragraph 4.4 (p.9) that "*Professor Damodaran uses the **average default spread** for the rating class B1, which is 4.99% in 2015. Figure 4.1 shows the evolution of the **CRP** for Jordan.*" However, when we look at the figure 4.1 of the consultation, which supposedly present the evolution of CRP, the value proposed for 2015 is 4.99%, which does not correspond to the CRP but to the average default spread.

Indeed, professor Damodaran multiplies the default spread by a factor (the relative equity market volatility), in order to estimate the CRP on the basis of the default spread. For example, in 2016,

Damodaran estimates this factor to be 1.34 (it varies over time)[3]. Then the CRP is not 4.99% but 6.71%.

The figure below shows the compared evolution of the Default spread and the CRP as provided by Damodaran for Jordan, based on its rating by Moody's.

Figure 3 - Jordan Default spread and CRP, Damodaran estimations



Source: Damodaran, http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ctryprem.html

One can easily deduce that the Figure 4.1 of the TRC consultation presents Damodaran default spread instead of CRP. This confusion has led the TRC to severely underestimate the CRP, and thus the WACC.

Orange Mobile kindly requests the TRC to correct its calculation by using the CRP instead of the default spread.

In addition, we believe, as explained in the previous section, that the observation period of 5 years considered by the TRC is too long. Instead, we recommend using a 3 years period observation starting from October 2016.

[3] "You can estimate an adjusted country risk premium by multiplying the default spread by the relative equity market volatility for that market (Std dev in country equity market/Std dev in country bond). I have used the emerging market average of 1.34 (estimated by comparing a emerging market equity index to an emerging market government/public bond index) to estimate country risk premium."
http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ctryprem.html

Replacing the default spread by the correct CRP and using a 3 years observation period would lead to value the CRP at 6.82%, instead of 3.6%. Orange Mobile kindly requests the TRC to adjust its calculation accordingly.

2.4 Beta assessment

The TRC estimates the mobile beta according to the following approach:

- First, the TRC states that the beta of the market should be based on JTG's beta, which should be identical for fixed and mobile activities if there was no revenue share for mobile. The TRC assesses JTG's Asset Beta at 0.50 over a 2 years period from July 2011 to July 2013, apparently in line with international comparators (0.50 – 0.56).
- Then, the TRC applies a 1.6 multiplier for Orange Mobile to account for the revenue share to which mobile operators are subject since July 2013.

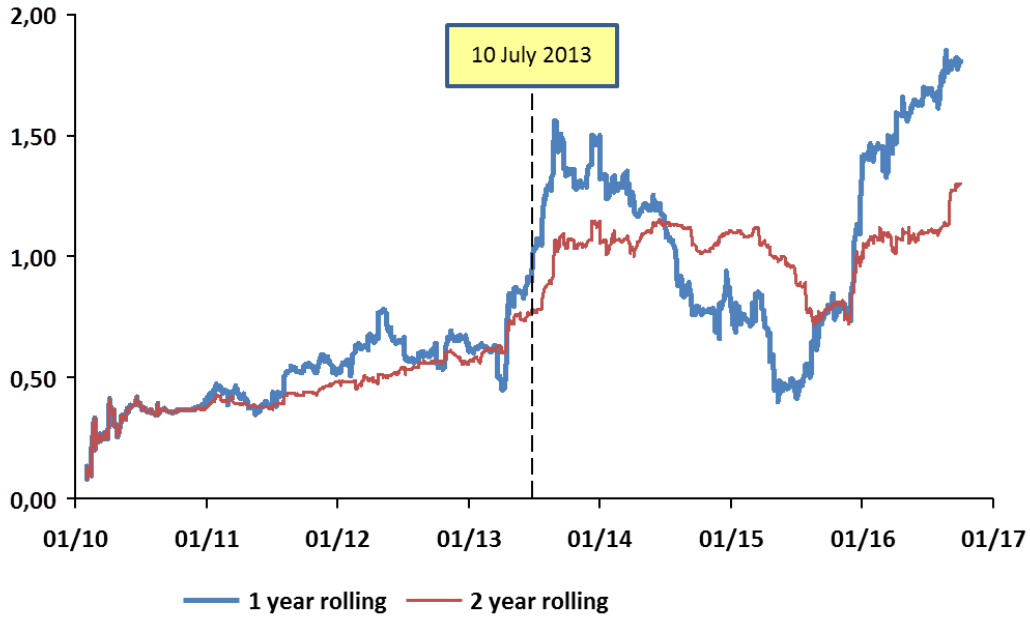
Here again, we have two comments:

- We believe here that there was a mistake in JTG's Asset Beta calculation, which is higher than 0.50;
- We consider that the application of a 1.6 multiplier does not rely on sufficiently solid ground.

As the TRC correctly states in paragraph 1 of section 5, the beta is defined as the covariance between returns on an asset and returns on the market portfolio, divided by the variance of returns on the market portfolio. Applying this approach to JTG share price return and Amman stock exchange free-float index over a 2 years period, we conclude that the Asset Beta should be equal to 0.75 and not 0.50.

The figure 5.2 of the TRC consultation shows the 1 year rolling asset beta, and not the 2 years beta as the TRC states it retains: it is not possible then to derive the value of the Asset Beta from the TRC figure. Therefore, we have recalculated the 2 years rolling asset beta, and compared it to our own calculation of the 1 year rolling asset beta. It shows that the value of the 2 years rolling Asset Beta as on 10 July 2013 is 0.75 and not 0.50.

Figure 4 – 1Y rolling and 2Y rolling asset beta evolution



Source: own analysis, based on data provided in appendix

Orange Mobile kindly requests the TRC to adjust the beta for the Mobile activity from 0.50 to 0.75, which is the value of JTG 2-year rolling asset beta as on 10 July 2013, using the daily values of shares and returns detailed in annex.

In addition, the TRC explains that the 1.6 factor should be applied to the mobile activity beta to reflect the increase in volatility of the mobile market due to the application of a mobile revenue share from July 2013. The reasons why the revenue share should increase volatility are described in paragraph 4 and 5 of section 5.2, where the TRC explains that they *"expect that operators subject to revenue share have higher betas, everything else being equal",* since "*the volatility of profits is higher in the presence of a revenue tax".*

We do not agree with this statement. Indeed, an additional tax applied to revenues regardless of the profitability of the operator can just be seen as an additional OPEX for the operator, which can be approximated to a variable cost, since revenues are supposed to increase with the number of units of service sold, and since the tax is proportional to revenues. Such a tax can therefore be considered as inefficiency for the operator which provides the same service at a higher cost level.

The reasoning of the TRC implies that the volatility of the asset is directly linked to the impact of the tax on the profit margin of the activity (since the tax is on revenues and not on margin). It is not clear then why the TRC states that without revenue share, fixed and mobile beta should be equal since there is absolutely no evidence that profit margin levels are similar in fixed and mobile activities, for convergent operators. Moreover, the TRC states in paragraph 3 of section 5.1 that *"a profit increase (ceteris paribus) (…) does not imply that the volatility, i.e. the riskiness, of profits increases. As a*

consequence, productive efficiency is not a beta factor." Since an additional tax can be seen as an inefficiency (as explained above), this tends to demonstrate that a higher tax level should not impact the beta except in a short term. This is what can be observed on figure 4 above: while there as been indeed an increase of the beta following the new tax application, it can be seen that the effect on the beta has not excessed 2 years, before the beta reaches again its natural trend.

The statement that "*revenue shares increase the volatility of returns to shareholders*" is therefore supported by neither any evidence nor solid reasoning. Orange Mobile kindly requests the TRC not to adjust the beta for mobile activity on such reasoning which is not consistent.

2.5 Impact assessment

Orange Mobile has raised some concerns in the previous section, regarding some manifest methodological mistakes and regarding some methodological choices which, while not incorrect in theory, are not the most adapted to the Jordan context and would therefore need to be updated.

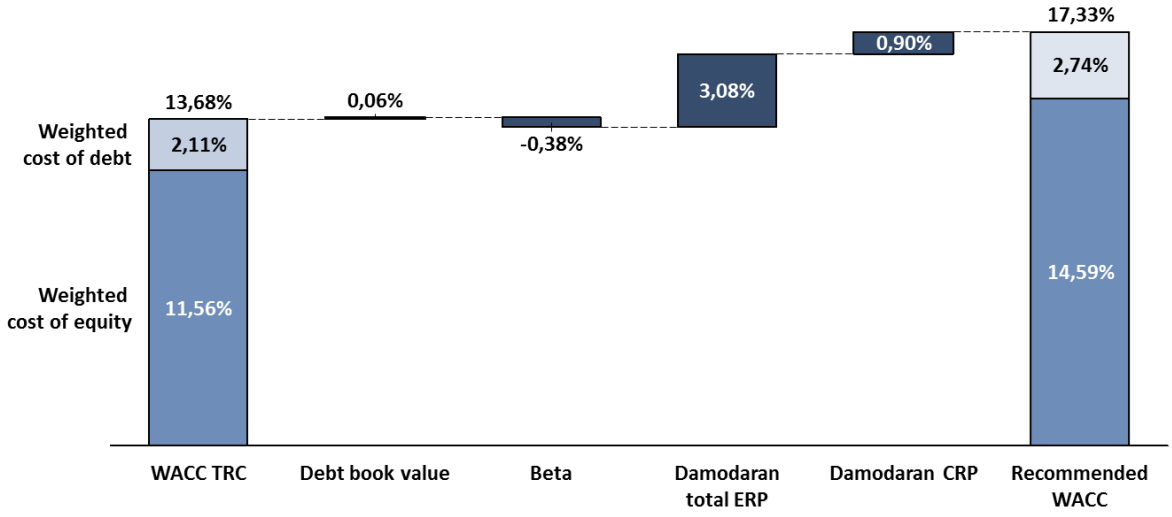
In order to be transparent with the TRC, Orange Mobile proposes here below an impact assessment of the proposed changes on the final WACC, for the mobile activity.

- The impact of choosing the debt book value rather than its market value was assessed assuming a decrease of the Gearing from 32% to 28%.
- The asset Beta is set at 0.75 (before levering)
- The ERP is set at 12.38% (but changing the calculation formula of the cost of equity).
- The CRP is set at 6.82%.

Please note that this impact assessment is based on the "Low scenario" figures for all the parameters on which we agree. The final figures must then be also compared to the "low estimation" of the WACC.

With all our recommendations, the Real Pre-Tax WACC would be equal to 17.33%, instead of the 13.7% mentioned in the consultation (comparison between *low* scenarios). This should be compared to current value of 18%.

Figure 5 - Impact assessment of requested changes to the TRC approach



Source: own analysis, based on TRC low estimation

3 Summary of Orange Mobile opinions for each TRC question

N°	Question	OF opinion
1	Do stakeholders agree with estimating the cost of debt based on the weighted average of embedded and new debt costs?	Agree.
2	Do stakeholders agree with adopting a long-run historical approach to estimating the TMR and risk-free rate?	Orange Mobile agrees to adopt a long run historical approach to estimate ERP but **disagrees** to estimate ERP as TMR minus RFR. It is suggested to rather use estimates of ERP already estimated by financial researchers (notably Damodaran). We recommend (for practical and consistency purposes) the use of Jordan-specific total ERP computed by Damodaran, with post-tax cost of debt computed as $$Cost\ of\ equity = RFR + \beta \times ERP_{Jordan}$$ **On this basis, we have calculated the Jordan ERP on a 3 years average (see question 5), which is equal to 12.38%**
3	Do stakeholders agree with the adoption of the arithmetic mean to calculate the total market return and risk-free rate?	Agree

N°	Question	OF opinion
4	Do stakeholders agree about the use of CDS spreads to estimate the country risk premium?	Orange Mobile agrees to use CDS spreads of similar rated countries to estimate the country risk premium, in order to ensure consistency with ERP determination. Damodaran provides a rating-based CRP for Jordan at 7.07% in 2016. **Orange Mobile disagree with the use of the default spread instead of the CRP**, since Damodaran mentions that an additional factor must be applied, and that therefore the CRP is always higher than the default spread. http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ctryprem.html
5	Do stakeholders agree with taking a long-run average of CDS spreads to estimate the country risk premium?	**Orange Mobile does not agree**, since the TRC shall assess all financial parameters with a consistent observation period. • A five-year period may be too long to capture the recent financial trends. • A three-year period may be preferred as it is long enough to be robust to very short term variations, while short enough to capture the recent financial trends (increased country risk premium in Jordan, low interest rates period in developed countries)
6	Do stakeholders agree with the proposed estimation technique for the beta, particularly on data frequency, estimation window, reference index and levering?	Data frequency: agree Estimation window: shall be consistent with observation period for all other parameters. We recommend using 3 years. Levering the beta: Agree. Orange Mobile disagree with the calculated value of 0.50 proposed by the TRC.

N°	Question	OF opinion
7	Do stakeholders agree with the view that the beta for fixed and mobile operators should be equal, with the exception of the revenue share impact?	Orange Mobile considers that the beta should be the same for both markets, regardless of the existence of a revenue share mechanism.
8	Do stakeholders agree with the proposed revenue share adjustment for mobile operators?	Orange Mobile considers that the beta should be the same for both markets, regardless of the existence of a revenue share mechanism.. We do not agree with the proposed adjustment which is not supported by any argument.
9	Do stakeholders agree with the view that the beta for efficient operators should not be different from that of the actual Jordanian operators?	Agree:
10	Do stakeholders agree with the approach of estimating the efficient level of gearing based on the gearing of international comparators?.	Agree, but MENA operators might have been more relevant in the context of Jordan.
11	Do stakeholders agree with adopting a 2-year average to estimate the gearing?	Disagree. A consistent observation period shall be adopted for all parameters, as they are correlated together.
12	Do stakeholders agree with the use of debt indices to calculate the efficient cost of debt instead of using the operators‟ actual debt costs? Please justify your response.	Orange Mobile has no comment on this point
13	Do stakeholders agree with the approach used in calculating the cost of embedded debt?	Orange Mobile has no comment on this point

N°	Question	OF opinion
14	Do stakeholders agree with the approach used in calculating the cost of new debt?	Orange Mobile has no comment on this point
15	Do stakeholders agree with calculation of the weights on the cost of new and embedded debt?	Orange Mobile has no comment on this point
16	Do stakeholders agree with the use of mid-point of the WACC range as the final estimate? Please justify your response.	Agree.