The Hashemite Kingdom of Jordan

TELECOMMUNICATIONS REGULATORY COMMISSION

REGULATORY DECISION

ON

THE PRINCIPLES TO BE USED IN THE CALCULATION OF LICENSEES' REGULATED COST OF CAPITAL

Board of Commissioners Decision No (5 – 4 / 2008) issued on 28th January 2008

Purpose of this Regulatory Decision

Following the public consultation on the principles for the calculation of the cost of capital for an licensee's regulated cost of capital that was conducted during April and May 2007, and subsequent comments received from interested parties, (namely Jordan Mobile Telephone Services Company/Zain, Umniah for Mobile Services Company/Umniah, Jordan Telecom/Orange Fixed and Petra Jordanian Mobile Telecommunications Company/Orange Mobile), the TRC hereby issues this Regulatory Decision which sets out the principles that will be used by the TRC in the calculations of the cost of capital to be used where required, for regulatory purposes.

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1 Introduction

On April 25th, 2007 the TRC issued the Consultation Document titled 'Notice Requesting Comments on the Principles to be used in the Calculation of Licensee's Regulated Cost of Capital' discussing and analysing the issues related to the principles to be used by the TRC in the calculation of the regulated Cost of Capital (CoC). Following this a consultation period was granted allowing interested parties the opportunity to submit comments on the consultation document. This paper comprises the TRC's decisions relating to this consultation and includes the TRC's consideration of the comments received from interested parties.

At present, the TRC will calculate the regulated cost of capital for a period of 1-year and will review it on an annual basis. However, in the future and especially in the context of forward looking LRIC models able to produce forward looking rates for 3 to 5 years in advance the TRC will review its position and assess the need for setting CoC for more than one year.

The TRC reserved the right to revise elements of this Regulatory Decision if circumstances change.

This Regulatory Decision is issued pursuant to Article 6 (sections a, b, d, e and f) of the Telecommunications Law which requires that the Commission shall undertake the following duties and responsibilities:

a. *To regulate telecommunications and information technology services in the Kingdom in accordance with the established general policy so as to ensure the provision of high quality telecommunications and information technology services to users at just, reasonable and affordable prices; and, by so doing, to make possible the optimal performance of the telecommunications and information technology sectors.*

b. *To establish the basis for regulation of the telecommunications and information technology sectors, in accordance with the approved general policy, in such a way that services meet the comprehensive developmental needs of the Kingdom; in accordance with rules and instructions issued by the Board for this purpose.*

d. *To protect the interests of users and oversee the actions of persons and Licensees to ensure that the conditions of Licenses are observed, including specified service standards, service quality, and prices; and to take the necessary steps in this regard to provide for the punishment of those who violate these conditions.*

e. *To stimulate competition in the telecommunications and information technology sectors, relying on market forces, and so regulating them as to ensure the effective provision of telecommunications and information technology services and to ensure that its regulations is effective and efficient; to forbid anti-competitive behaviour or practices; to forbid actions by any person to abuse a dominant position in the sector, and to take all necessary actions in this regard.*

f. *To assess the need for the adjustment of the level of, regulation of any telecommunication service, or specific type or group thereof, with regard to competition or any other factor that may require such adjustment or forbearance, and to recommend the same to the Board for approval.*

and article 12/a/7 of the Telecommunications Law:

a. *The Board shall exercise all the necessary authorities to carry out the duties entrusted to the Commission by virtue of this Law, including the following:*

   7) *To establish the bases for determining rates and charges for Telecommunication Services offered to Beneficiaries by Licensees, in line with the state of competition in offering of services and service levels, and to monitor the compliance of Licensees as may be necessary.*

and the Interconnection Instructions issued on January 5th 2005:

Section 1.3(8) of the Interconnection Instructions - *All Licensees shall comply with these Instructions to the extent that they are applicable to their licensed activities as determined by the TRC.*

Section 1.3(9) - *The Instructions shall apply to all Licensees unless expressly stated otherwise. The TRC will determine which Licensees are required to produce and publish a Reference Interconnection Offer (RIO). Such a determination shall be made known to affected parties following due public consultation. A Licensee so determined is referred to, within the Instructions as a 'Designated Licensee'.*

Section 7.1.1 (268) - *All Licensees' Interconnection charges shall be cost based rates that are transparent, reasonable, having regard to economic feasibility, and sufficiently unbundled so that the interconnecting party does not pay for Network components or facilities that it does not require for the service to be provided, it being understood that no unreasonable and unrecoverable costs will be imposed on the Licensee in connection with any unbundling.*

Section 7.1.1 (269) - *It is TRC's policy to move to a charging system based on Long Run Incremental Costs. However, TRC recognises that such an approach is not immediately applicable to Jordan and, in the short term, TRC has commenced a Consultation on Interconnection rates, which better reflect the costs incurred by Licensees in providing the Interconnection Services. The TRC also intends to develop a neutral cost model for the purpose of assessing the Licensees' Interconnection cost calculations.*

Section 7.1.1 (270) - *Until the TRC's internal cost model is complete and decisions regarding calculation of Interconnection costs are finalized, new fixed line entrants shall be permitted to charge call termination rates that are no higher than the Incumbent's.*

Section 7.1.1 (271) - *Cost based charging shall apply equally to all Interconnection Services.*

2 Principles to be used by the TRC in calculating the regulated cost of capital

2.1 The formula to be used for the calculation of the regulated cost of capital

The TRC will use the post tax Weighted Average Cost of Capital formula (post tax WACC) as defined below as the principle mechanism to calculate the regulated cost of capital for licensees, where required.

$$WACC_{post-tax} = r_e \frac{E}{V} + r_d \frac{D}{V}(1-t_c)$$

Where:

r_e = return on equity (cost of equity)

r_d = return on debt (cost of debt)

E = market value of equity

D = market value of debt

V = market value of Firm (D+E)

t_c = marginal corporate tax rate

Where the weights are equal to the relative proportions of debt and equity used in financing the licensees' assets.

The TRC will calculate and publish both the pre-tax and post-tax (net of the tax shield, i.e. tax deductible debt) WACC, which will allow flexibility in the adoption of the cost of capital within relevant cost modelling approaches. The relationship between pre-tax and post-tax WACC is defined by the following formula:

$$WACC_{pre-tax} = WACC_{post-tax} /(1-t_c)$$

2.2 Cost of Equity

The Capital Asset Pricing Model (CAPM) will be used (with appropriate adjustments) as the base model in the calculation of the cost of equity. The cost of equity, calculated using the CAPM, is defined by the following formula:

$$r_e = r_f + \beta_{e,l}(r_m - r_f)$$

Where:

r_f = Risk free return

$\beta_{e,l}$ = Levered equity beta

r_m = Market return. [$(r_m$-$r_f)$ if often referred to as the market risk premium]

Furthermore, the international data will be used for the market risk premium and is likely to be also used for equity betas. Adjustments to the standard CAPM are required to make it appropriate for Jordan as an emerging market. The necessary adjustments will be made to the standard CAPM, as described in section 2.2.4 of this Regulatory Decision.

2.2.1 Risk Free Rate

The TRC will review the availability of data and will calculate the risk free rate using either of the methods described below, depending on the availability of data that is deemed relevant, and will base its decision on the averages within a range of plausible estimates:

- Method 1 – Local Bond Yield. This method starts with the yield on a local currency denominated bond and adjusts for sovereign risk and possibly extension of duration if appropriate;
- Method 2 – International currency denominated local bond yield. This method uses the yield of a local currency denominated bond and adjusts for sovereign risk, duration (if appropriate) and currency effects;
- Method 3 – Mature market bond yield. This method starts with the yield on a mature stable market bond and adjusts for inflation differential.

2.2.2 Equity Risk Premium (ERP)

The TRC will base the developed market ERP on the latest available Dimson, Marsh and Staunton (DMS) studies and will consider both the geometric and arithmetic mean of ERP and may use either geometric, arithmetic or a combination.

2.2.3 Betas

The TRC has determined that, where possible, the beta will be based on Jordanian data. In cases where suitable data required to calculate the betas are not readily available, the TRC will use benchmark estimates based on the betas of international companies.

2.2.4 Adjustments to the standard CAPM

The model proposed by Bekaert-Harvey will be used as an adjustment model to the standard CAPM and will assess the following three factors, which contribute to market segmentation and an increased equity risk premium, to asses the need for an additional risk factor to be incorporated into the standard CAPM.

1. Market capitalisation to GDP - which appears to be the most influential. It provides a good proxy for the perception of the diversifiability of the stock market. Where a stock market is dominated by only a few industrial sectors or where investment returns are low, a lower ratio should be observed;
2. Inward investment levels - which is a good indication of the relative risks associated with investing in an emerging country. In many cases, however, the potential higher risk reward of investing within an emerging market may help reduce the risk of a portfolio, due to different correlations with the portfolio;

3. Liquidity of the stock market - which is important to a certain degree. The liquidity of the stock market is important as it helps identify the ease by which an investor may buy into a country. However it does not in any sense affect the rate of return of a stock. Its relevance is not as great as liquidity within a bond market, where the rate of return of a particular bond is influenced by the liquidity of the bond market.

In order to test the robustness of the adjustments to the standard CAPM, the TRC will review the following alternative methods for determining the country risk premium:

1. A risk premium will be calculated with reference to country risk ratings published by international institutions.
2. A risk premium will be calculated with reference to the spread between Jordan Government bonds and developed market Government bonds of the same duration and currency where possible.

2.3 Nominal and Real Return

Given that at present interconnection rates and WACC are set for one year and a stable inflation rates can be estimated for that year, the TRC intends to use the nominal WACC.

However, in the future and especially in the context of forward looking tariffs with a 3 to 5 year horizon, the TRC will consider the impact of future inflation estimates and will review its position and assess the need for the use of a real WACC.

2.4 Cost of Debt

The TRC will estimate the cost of debt based on a review of current issued debt by the required licensee where available. In cases where observation of current debt rates are unavailable, the TRC will estimate the cost of debt using factors relating to the risk free rate, a country risk premium (if needed) and a company specific premium. Furthermore, the debt rate may vary between new entrants and established licensees due in part to differences in terms of access to capital markets and the perception of risk.

2.5 Gearing

The TRC retains the option to use either the actual level of gearing observed in the licensee or to set a gearing level based on the TRC's assessment of an efficient licensee.

In its deliberation, the TRC will review the actual level of gearing of the relevant licensee to ensure that inefficient levels of gearing are not rewarded, and may adjust this gearing in calculating the regulated cost of capital to reflect an efficient level. In such a case, the efficient level of gearing will be determined through an assessment of gearing information obtained for comparable efficient licensees (i.e. those that operate in what are considered competitive markets). However, for the avoidance of doubt, the TRC does not intend imposing a particular gearing structure upon a relevant licensee, but merely will reflect an efficient level within the regulated cost of capital calculation.

2.6 Treatment of Integrated Businesses

In the case of integrated businesses, a separate WACC will be calculated for the fixed and mobile business units only. The TRC has concluded that it will use the following mapping of business units to licensee types:

Business Unit	*Representative Comparable beta and gearing*
> Fixed Network Services	Incumbents
> Public Mobile Wireless Services	Mobile sector

The TRC will use comparable published betas from other international markets to disaggregate integrated licensees within Jordan based on the above mapping.

It is noted that while, in an ideal situation, it would be preferable to disaggregate the business streams into their individual components and to calculate a WACC for each business unit, at this stage, due to objective considerations, disaggregation beyond the fixed and mobile business units may not be sufficiently robust. However the TRC reserves the right to require further disaggregation in the future, should it be deemed necessary.