Table 1 - Return on capital employed for fixed and mobile wholesale prices

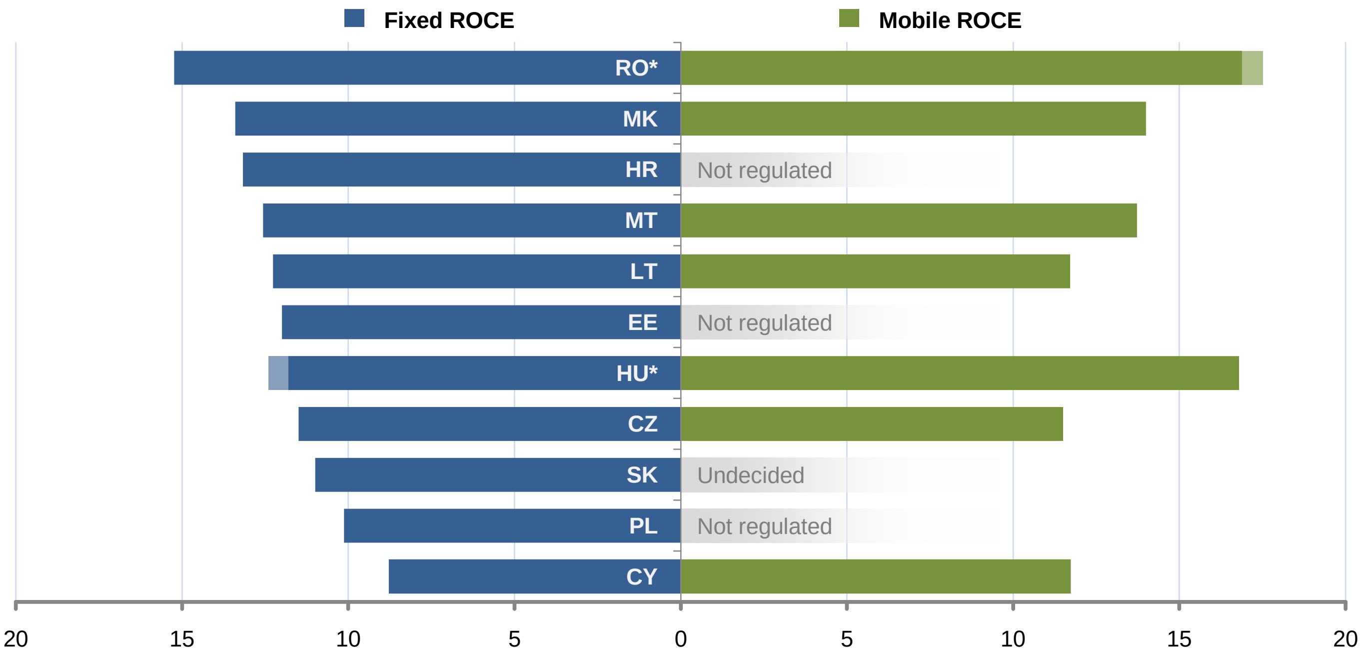
According to Article 13 (1) of the Access Directive, NRAs may impose price controls on SMP operators, including cost orientation and cost accounting obligations. NRAs must take into account the investment made by the operator and allow a reasonable rate of return on adequate capital employed (ROCE), taking into account any risks specific to a particular new network investment project.

The cost of capital can be expressed in real terms (after adjusting for inflation) or nominal terms.

It can also be expressed in post- or pre-tax terms.

A pre-tax cost of capital should be compared with returns calculated on a pre-tax basis and a post-tax cost of capital with post-tax returns.

Figure 1 – ROCE for fixed and mobile operators in CEE countries (source: CI research)
(excluding BG, LV, SI and TR where the rates are either not regulated or are not public)



* In HU the largest regional incumbent Magyar Telecom has a lower fixed ROCE than the other two incumbents Invitel and UPC.
In RO Vodafone has a higher mobile ROCE than Orange.

The table below shows the latest ROCE accepted by the regulator for fixed and mobile operators.

Country	Fixed		Mobile	
	Rate (Nominal pre-tax)	Source	Rate (Nominal pre-tax)	Source
BG	Not public	Not public, but agreed with CRC on the basis of CAS. CRC has decided to prolong the use of the existing cost orientation approach based on the fully allocated current costs (FAC) methodology and current costing. CRC intends to develop a new LRIC bottom-up model at a later date.	Not regulated	Cost orientation obligation has been imposed on Bulgarian MNOs with final decision on M7/2007. However no CAS implemented yet.
HR	13.17%	HAKOM approved by its decision from March 31, 2011 CCA LRIC based regulatory cost accounting statements prepared by T-HT for regulated products and services. In practice, HAKOM is using benchmarking methodology to approve prices for regulated wholesale products.	Not regulated	No CAS implemented yet. Benchmarking is used to approve MTRs.
CY	8.78%	Audited CAS of CYTA Cost of debt: not applicable Return on equity: not applicable	11.74 %	Audited CAS of CYTA Cost of debt: not applicable Return on equity: not applicable
	The WACC is approved within the framework of audit of the incumbent's costing system, therefore there is no specific decision regarding the issue.			
CZ	11.5%	CTU decision of Feb. 7, 2008 in force since July 1, 2008 amending an earlier CTU decision of March 2006 Cost of debt: 5.96% Return on equity: 4.70%	11.5%	CTU decision of Feb. 7, 2008 in force since July 1, 2008 amending an earlier CTU decision of March 2006 Cost of debt: 5.96% Return on equity: 4.70%
EE	12.0%	The Estonian competition authority (ECA, formed from the merger of ECB and ENCB) uses European average WACC rates published annually by BEREC (previously ERG) together with a country rating. The average EU WACC rate for 2008 was 11.2% to which ECB added 0.8% as a country rate. No follow-up published. As ECA uses benchmarking, the cost of debt and return on equity and other components of WACC are not relevant.	Not regulated	The rate of return on capital has not been assessed in the analysis of M7/2007 (previously M16/2003) as the price control is based on benchmarking. ECB intended to develop CAS principles by 2008. However, the ECB's announcement about WACC rates for 2008 (see second column) did not include relevant rates for mobile markets.
HU	11.8% Magyar Telekom 12.4% Invitel and UPC	NMHH decision of May 10, 2011 on third round analysis of M4/2007. No information is available on cost of debt and return on equity.	16.8% (proposed: 14.8%)	NHH decision of Dec. 16, 2008, on third round analysis of M7/2007 (page 12). No information is available on cost of debt and return on equity. In a draft decision for fourth round analysis of M7/2007 (notified on May 20, 2011), NMHH proposed a WACC of 14.8%, based on a new model (CEE Telecom Update Dec. 2010).
LV	Not public	Methodology of setting the rate of return on capital of Nov. 30, 2005. No rates have been approved by PUC. The rate of return is not set by PUC but is calculated by operators according to a generic formula and submitted to PUC for review. Cost calculations based on FDC are not public.	Not public	Methodology of setting the rate of return on capital of Nov. 30, 2005. No rates have been approved by PUC. The rate of return is not set by PUC but is calculated by operators according to a generic formula and submitted to PUC for review. Cost calculations based on FDC are not public.
LT	12.27%	Ernst & Young report of June 28, 2005 on the methodology of	11.72%	Ernst & Young report of Dec. 2008 sets the methodology for

Country	Fixed		Mobile	
	Rate (Nominal pre-tax)	Source	Rate (Nominal pre-tax)	Source
		calculating WACC of TEO LT. The calculated WACC is used in the LRAIC model to establish fixed interconnection charges. Cost of debt: 4.2% Return on equity: 10.31%		calculating the WACC of mobile networks. The calculated WACC will be used in the BU-LRAIC model to establish mobile interconnection charges. In case of significant changes in economic conditions, the WACC value should be re-calculated but with a forward-looking perspective. Cost of debt: 7.96% Return on equity: 15.13%
MK	13.40%	Approved by AEC based on methodology adopted in April 2010. Cost of debt: 8.58% Return on equity: 16.40% On May 7, 2010, AEC issued a decision on WACC for fixed and mobile operators in which a nominal pre-tax WACC for an efficient fixed operator was set at 13.40%.	14.00%	Approved by AEC based on methodology adopted in April 2010. Cost of debt: 8.58%-9.80% Return on equity: 15.33%-16.83% On May 7, 2010, AEC issued a decision on WACC for fixed and mobile operators in which a nominal pre-tax WACC for an efficient mobile operator was set at 14.00% for T-Mobile and ONE. On July 27, 2010 the same rate was set for VIP.
MT	12.56%	ESC WACC review – 2011: statement on revised WACC rates published on April 29, 2011 Cost of debt: 4.04% (low gearing, low estimate) – 7.61% (high gearing, high estimate). Return on equity: 11.82% (low gearing, low estimate) – 19.55% (high gearing, high estimate). NB WACC is derived as the average (or the mid-point) of the possible outcomes between high (14.77%) and low (10.27%) WACC estimates, based on a range of estimates. See Annex 2 (page 6) of the statement.	13.73%	ESC WACC review – 2011: statement on revised WACC rates published on April 29, 2011 Cost of debt: 4.04% (low gearing, low estimate) – 7.61% (high gearing, high estimate). Return on equity: 12.92% (low gearing, low estimate) – 18.71% (high gearing, high estimate). NB WACC is derived as the average (or the mid-point) of the possible outcomes between high (15.38%) and low (12.03%) WACC estimates, based on a range of estimates. See Annex 2 (page 6) of the statement.
PL	10.13%	UKE decision of April 2, 2008 Decision has immediate effect and is binding for cost calculations for 2008 and 2009. Cost of debt and return on equity are not explicitly mentioned.	Not regulated	UKE did not define a return on capital for mobile operators.
RO	15.24%	Explanatory notes to decision 1459/2005 of Oct. 27, 2005 on calculating Romtelecom's fixed interconnection tariffs based on LRIC No information is available on cost of debt and return on equity.	17.52% Vodafone 16.88% Orange	Explanatory document on LRIC model for mobile operators with SMP, April 2006.
SK	11.0%	TUSR FL-LRAIC model specification for operators with SMP published on Feb. 18, 2005 No information is available on cost of debt and return on equity.	Undecided	On Oct. 23, 2009 TUSR adopted a decision on the methodology to calculate MTRs. The decision includes the formula to set the WACC. However, MTRs have been set by regulator – the last decision adopted on May 27 setting symmetric rates for all three mobile operators at €cents 5.51 from May 30 until Jan 31, 2012. See Table 16 on MTR glide paths.

Country	Fixed		Mobile	
	Rate (Nominal pre-tax)	Source	Rate (Nominal pre-tax)	Source
SI	Not public	Details of the top-down LRIC system used by Telekom Slovenije (TS) are not public. In its third round analysis of M4/2007, APEK proposed to use WACC of 13.28% for both copper and fibre based networks. The proposal was withdrawn in July 2010. On Nov. 11, 2010, APEK notified the Commission of its draft third round analyses of M4 and M5/2007 but they contain no details on the ROCE to be used by TS.	Not public	In its responses to the comments on its M7/2007 analysis, APEK claims that target MTRs were calculated based on a hypothetical efficient operator with a 25% market share, using its bottom-up LRIC model based on WACC of 12.94%.
TR	Not public	-	Not public	-