

Income statement		A	B	Company	141100
Net sales		110	280	> 390	Net sales
COGS (including deprecn.)		(50)	(155)	> (205)	COGS (include. deprecn.)
Selling & admin. expense		(20)	(65)	> (85)	Selling & admin. expense
EBIT		40	60	> 100	EBIT
Tax expense	40.00%	(16)	(24)	(20)	Interest expens 10.00%
NOPAT		24	36	80	EBT: Pretax income
				(32)	Tax expense
				48	Net income

Balance sheet		A	B	Company
Current assets	40	100	140	
Long term assets	80	250	330	
Total assets	120	350	470	
Current liabilities	20	50	70	Debt/invested capital 50.00%
Invested capita	100	300	400	200 Long term debt
				200 Stockholder's equity

2 ROI		A	B	Company
Divisional		24.00%	12.00%	15.00%
Share of invested capital		25.00%	75.00%	Weighted average ROI
Company ROI	= [Net Income + (1-tax) x Interest expense] / Invested capital			
	= [48 + 60.00% x 20] / 400 = 15.00%			
Company ROI	= NOPAT / Invested capital			
	= 60 / 400 = 15.00%			

3. ROE = Net income / Stockholder's equity
 = \$ 48 / \$ 200 = 24.00%

ROE also equals
 = [Long term debt / Stockholder's equity] x ROI - (1-tax) x interest rate
 = [\$ 200 / \$ 200 x [15.00% - 60.00% x 10.00%] = 9.00%
 + ROI = 15.00% = 24.00%

4. Residual Income With company ROI as capital charge rate

	A	B	Total
NOPAT	\$ 24	\$ 36	
Capital charge rate x invested capital	15.00% \$ 100 x (15) = \$ (15)	15.00% \$ 300 x (45) = \$ (45)	
Residual Income	\$ 9	\$ (9)	= \$ -

5. WACC

	Equity	Debt	
After tax cost	18.00%	6.00%	
Weight	x 50.00%	x 50.00%	WACC
	= 9.00%	= 3.00%	= 12.00%

WACC is less than the company ROI. So the company is profitable.

Divisions With WACC capital charge rate

	A	B
NOPAT	\$ 24	\$ 36
Capital charge: charge rate x invested capital	12.00% \$ 100 x (12) = \$ (12)	12.00% \$ 300 x (36) = \$ (36)
Residual Income	\$ 12	\$ -

Company Residual income (EVA)
 Net income - cost of equity x Equity
 \$ 48 - 18.00% x \$ 200 = \$ 12