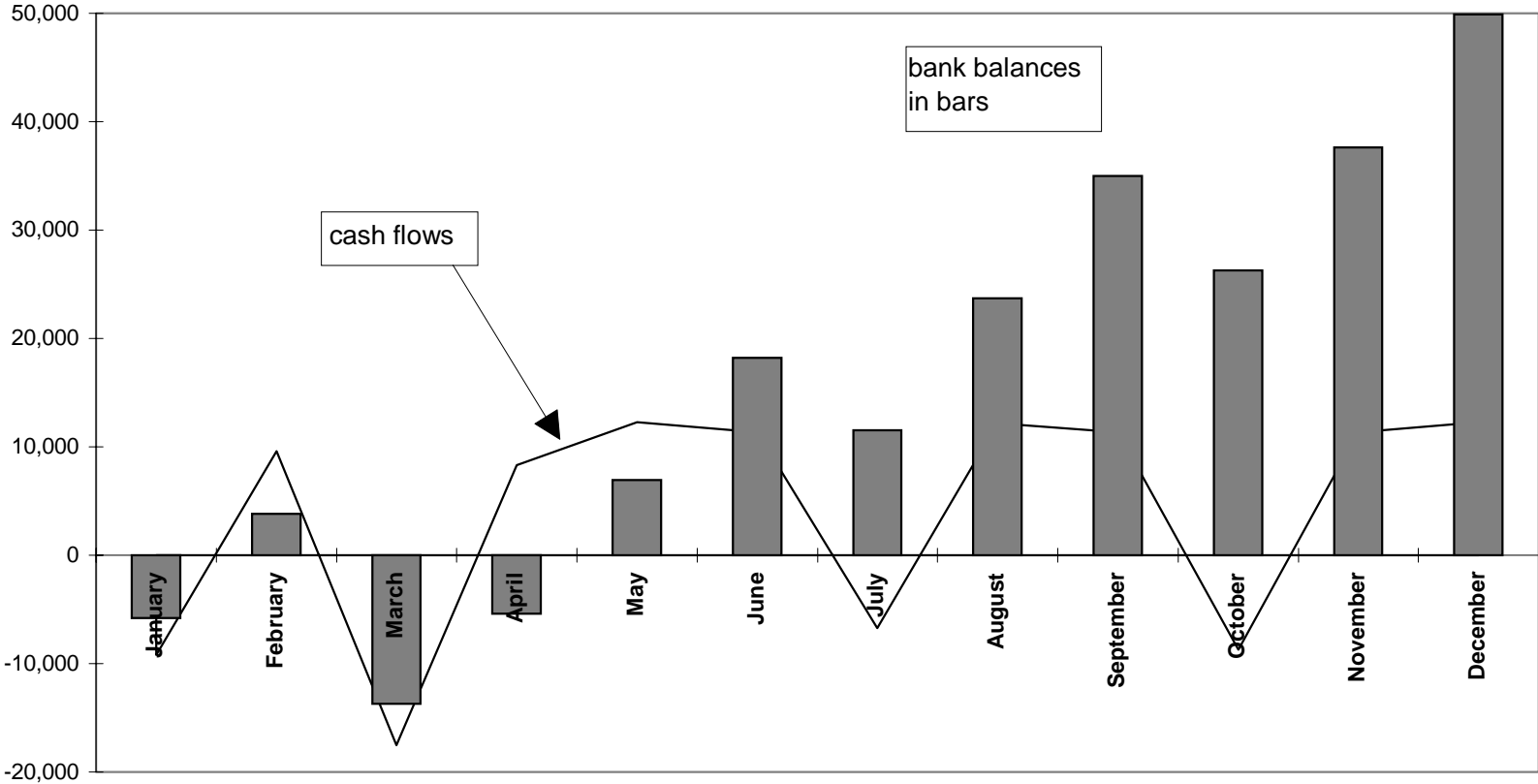


MOTEL CASH FLOWS ON A MONTHLY BASIS												
	percent	rate										
double occupancy	60%	\$55.00										
single occupancy	40%	\$45.00										
occupancy rate (percent)	71%											
marginal cost per guest/night	\$5.00											
rooms	25											
taxes	11%											
December taxes payable	5,500											
	January	February	March	April	May	June	July	August	September	October	November	December
days in month	31	28	31	30	31	30	31	31	30	31	30	31
initial cash balance	3,456	-5,773	3,823	-13,694	-5,373	6,911	18,232	11,516	23,700	35,021	26,305	37,627
Inflows												
billings	28,063	25,347	28,063	27,158	28,063	27,158	28,063	28,063	27,158	28,063	27,158	28,063
hotel taxes on billings	3,087	2,788	3,087	2,987	3,087	2,987	3,087	3,087	2,987	3,087	2,987	3,087
total inflows	31,150	28,135	31,150	30,145	31,150	30,145	31,150	31,150	30,145	31,150	30,145	31,150
Outflows												
personnel costs	6,780	6,780	6,780	6,780	6,780	6,780	6,780	6,780	6,780	6,780	6,780	6,780
hotel taxes	5,500	3,087	2,788	3,087	2,987	3,087	2,987	3,087	3,087	2,987	3,087	2,987
Federal taxes	2,500			2,500			2,500			2,500		
state taxes	500			500			500			500		
property tax			30,000									
marginal costs, guests	4,402	3,976	4,402	4,260	4,402	4,260	4,402	4,402	4,260	4,402	4,260	4,402
insurance	16,000						16,000					
utilities	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300
maintenance	300	300	300	300	300	300	300	300	300	18,300	300	300
total outflow, before mortgage	37,282	15,443	45,570	18,727	15,769	15,727	34,769	15,869	15,727	36,769	15,727	15,769
mortgage												
beginning principal	295,625	295,238	294,848	294,454	294,057	293,656	293,251	292,843	292,431	292,015	291,595	291,171
monthly payment	3,097	3,097	3,097	3,097	3,097	3,097	3,097	3,097	3,097	3,097	3,097	3,097
of which:												
interest	2,710	2,706	2,703	2,699	2,696	2,692	2,688	2,684	2,681	2,677	2,673	2,669
principal	387	390	394	397	401	405	408	412	416	420	424	427
total outflow	40,379	18,539	48,667	21,823	18,866	18,823	37,866	18,965	18,823	39,866	18,823	18,866
cash flow to owners	-9,229	9,596	-17,517	8,321	12,284	11,321	-6,716	12,184	11,321	-8,716	11,321	12,284
ending cash balance	-5,773	3,823	-13,694	-5,373	6,911	18,232	11,516	23,700	35,021	26,305	37,627	49,910
total cash flow	46,454											

	percent	rate	
double occupancy	60%	\$55.00	
single occupancy	40%	\$45.00	
occupancy rate (percent)	71%		
marginal cost per guest/night	\$5.00		
rooms	25		
taxes	11%		
December taxes payable	5,500		
	January	February	March
days in month	31	28	31
initial cash balance	3,456	-5,773	3,823
Inflows			
billings	28,063	25,347	28,063
hotel taxes on billings	3,087	2,788	3,087
total inflows	31,150	28,135	31,150
Outflows			
personnel costs	6,780	6,780	6,780
hotel taxes	5,500	3,087	2,788
Federal taxes	2,500		
state taxes	500		
property tax			30,000
marginal costs, guests	4,402	3,976	4,402
insurance	16,000		
utilities	1,300	1,300	1,300
maintenance	300	300	300
total outflow, before mortgage	37,282	15,443	45,570
mortgage			
beginning principal	295,625	295,238	294,848
monthly payment	3,097	3,097	3,097
of which:			
interest	2,710	2,706	2,703
principal	387	390	394
total outflow	40,379	18,539	48,667
cash flow to owners	-9,229	9,596	-17,517
ending cash balance	-5,773	3,823	-13,694
total cash flow	46,454		

MOTEL CASH FLOW AND CASH BALANCE



PRO FORMA PROFIT AND LOSS

Total Cash Inflow	366,762
Expenses	
personnel	81,360
other expenses	121,030
mortgage interest	32,278
Taxes	
property taxes	30,000
hotel taxes	38,759
Depreciation	20,000
Total expenses	323,426
Profit before taxes	43,336
State tax (3.2%)	1,387
Federal tax (28%)	11,746
Profit after taxes	30,203
Add back depreciation	50,203
Less mortgage principal payments	4,881
cash flow to equity owners	45,322
effective tax rate	30.3040%

Spreadsheet showing row totals

occupancy rate (percent)	71%				
marginal cost per guest/night	\$5.00				
rooms	25				
taxes	11%				
December taxes payable	5,500				
	January	February	December		totals
days in month	31	28	31		
initial cash balance	3,456	-5,773	37,627		
Inflows					
billings	28,063	25,347	28,063		
hotel taxes on billings	3,087	2,788	3,087		
total inflows	31,150	28,135	31,150		366,762
Outflows					
personnel costs	6,780	6,780	6,780		81,360
hotel taxes	5,500	3,087	2,987		38,759
Federal taxes	2,500				10,000
state taxes	500				2,000
property tax					30,000
marginal costs, guests	4,402	3,976	4,402		51,830
insurance	16,000				
utilities	1,300	1,300	1,300		15,600
maintenance	300	300	300		21,600
total outflow, before mortgage	37,282	15,443	15,769		283,149
mortgage					
beginning principal	295,625	295,238	291,171		
monthly payment	3,097	3,097	3,097		37,159
of which:					
interest	2,710	2,706	2,669		32,278
principal	387	390	427		4,881
total outflow	40,379	18,539	18,866		320,308
cash flow to owners	-9,229	9,596	12,284		46,454
ending cash balance	-5,773	3,823	49,910		
total cash flow	46,454				

ASSUMPTIONS IN PRO FORMA P&L

- Cash basis
- All income flows through to owners at their tax rate
- Treatment of owners' salaries
- Marginal tax rate

Note that the cash flow here is different from that in spreadsheet (\$46,454).

Reconciling the Bank Statements with the Pro Forma		
total of monthly cash flows	46,454	
difference in taxes		
state taxes	-613	
Federal taxes	1,746	
Net	45,322	

CALCULATING THE FREE CASH FLOW

FREE CASH FLOWS--the indirect method	
Profit after Taxes	30,203
Add back Depreciation	20,000
Add back after-tax interest	22,496
Free Cash Flow	72,699

Calculate the Free Cash Flow directly

FREE CASH FLOWS--the direct method				
Total cash inflow	366,762			
Total expenses	271,149	excludes depreciation, interest		
Net	95,613			
Taxes on above	28,975	at effective tax rate of 30.304%		
Net	66,639			
Depreciation tax shield	6,061			
Free Cash Flow	72,699			

Calculating the value of the motel

- What do we want to calculate? Equity? Debt? Whole motel?
- Sequential versus direct valuation?
- Combined cash flows versus individual cash flows?
- Discount rates? WACC? cost of equity?
- Mid-year discounting versus end-of-year?
- Residual value?

Ongoing value?

Breakup value?

Calculating the value of the motel

- The projected annual cash flows will recur in each of the next 10 years.
- The motel has a real, pre-tax, residual value at the end of 10 years equal to the price paid for it (\$400,000).
- All of the projected cash flow numbers assume no change in prices. This means that the cash flows can be divided into a real and a nominal component:

Annual expected real cash flow from operations	66,639
Annual expected nominal cash flow--depreciation tax shield	6,061



$$RADR^{nominal} = (1 + 20\%) * (1 + 3\%) - 1 = 23.6\%$$

- The depreciation tax shield is nominally risk free.

$$\begin{aligned} & PV(\text{real non-depreciation CFs@20\%}) + \\ & PV(\text{nominal depreciation tax-shields@10.21\%}) \\ & + PV(\text{nominal, after-tax residual@23.60\%}) \end{aligned}$$

$$PV(\text{real non-depreciation CFs@20\%}) =$$

$$(1.20)^{0.5} \cdot \sum_{t=1}^{10} \frac{66,639}{(1.20)^t} = 306,045$$

$$PV(\text{nominal depreciation tax-shields@10.21\%}) =$$

$$(1.1021)^{0.5} \cdot \sum_{t=1}^{10} \frac{6,061}{(1.1021)^t} = 38,745$$

MOTEL TERMINAL VALUE

- Motel's *nominal residual value* at the end of 10 years will be its current value inflated over 10 years: $400,000 \times (1.03)^{10} = 537,567$.

Initial cost of motel	400,000
accumulated depreciation	220,000
Motel book value at end of year 10	180,000

Calculation of capital gains

Motel nominal market value, year 10	537,567
Book value, year 10	180,000
Capital gain	357,567
Capital gains tax (30.304%)	108,357
Net	429,210

Alternatively:

$$\text{residual cash flow} = (1 - 0.30304) * 537,567 + 0.30304 * 180,000 = 429,210$$

$$PV(\text{nominal, after-tax residual}) = \frac{429,210}{1.2360^{10}} = 51,580$$

The market value of the motel is given by the sum of these three items:

$$\text{motel market value} = 306,045 + 38,745 + 51,580 = 396,370$$

The motel's equity value

$$\textit{Value of Motel} = \textit{Value of Equity} + \textit{Value of Debt}$$

Current value of the mortgage is \$295,625.

Value of the equity is given by $\$396,370 - \$295,625 = \$100,745$.

CALCULATING THE WACC

	A	B	C	D	E	F	G	H	I	J	K	L	M
2	inflation rate	3.00%											
3													
4	year	0	0.5	1	2	3	4	5	6	7	8	9	10
5	nominal cash flow												
6	operating cash flows			68,638	70,697	72,818	75,002	77,252	79,570	81,957	84,416	86,948	89,557
7	depreciation			6,061	6,061	6,061	6,061	6,061	6,061	6,061	6,061	6,061	6,061
8	market value	-396,372											
9	total nominal cash flows	-396,372	-364,578	74,698	76,758	78,879	81,063	83,313	85,631	88,018	90,477	93,009	95,617
10	IRR = nominal WACC	18.20%	<-- =IRR(C9:M9,0)										