

Name: Y. [unclear]ID# 9 [unclear]

Fina450/1 AA (SUMMER 2011)

Quiz #3A (worth 5%)

June 7th, 2011

- Demolition costs: \$280,000
- Construction Costs: \$4,800,000 (includes \$1,500,000 for condos)
- Land: \$3,700,000
- Building (Existing): \$450,000
- Demolition time: 4 months
- Construction time: 13 months (including demolition time)
- Financing cost at 6.95% per annum, compounded monthly
- Financing of demolition costs: 30% down, and balance paid on completion of demolition
- Financing of construction costs: 55% down, and balance paid on completion of construction
- The condos were sold for \$4,000,000
- Taxable capital gains: 50%
- Tax rate: 40%
 - Loan-to-Value ratio: 75%
 - You have NO cash on hand (No COH)
 - 1st Mortgage: 70% of loan, at 5.95% per annum compounded semi-annually 6.038506
 - 2nd Mortgage: Balance of loan, at 6.15% per annum, compounded semi-annually 6.249556
 - Processing fees: 0.90% of both loans
 - Term or amortization period: 10 years
 - Mortgage payments: paid annually
 - Cost of equity = ECB + 3.50% risk premium
 - Cost of Debt (rd) = Effective Cost of Borrowing (ECB)

$$\text{Land} + \text{FC} = 3,700,000 \times \left(1 + \frac{6.95\%}{12}\right)^{13} = \boxed{3,988,468}$$

$$\text{EB} + \text{FC} = 450,000 \times \left(1 + \frac{6.95\%}{12}\right)^{13} = \boxed{485,084}$$

$$\begin{aligned} \text{DL} + \text{FC} &= \begin{matrix} \text{at time} \\ -13 \text{ m} \end{matrix} 280,000 \times 0.3 \times \left(1 + \frac{6.95\%}{12}\right)^{13} = 90,549 \\ &\quad \begin{matrix} \text{at time} \\ -9 \text{ m} \end{matrix} 280,000 \times 0.7 \times \left(1 + \frac{6.95\%}{12}\right)^9 = 206,456 \end{aligned} \quad \left. \vphantom{\begin{matrix} \text{at time} \\ -13 \text{ m} \end{matrix}} \right\} \boxed{297,005}$$

$$\begin{aligned} \text{CC} + \text{FC} &= \begin{matrix} \text{at time} \\ -9 \end{matrix} 4,800,000 \times 0.55 \times \left(1 + \frac{6.95\%}{12}\right)^9 = 2,780,841 \\ &\quad \begin{matrix} \text{at time} \\ 0 \end{matrix} 4,800,000 \times 0.45 \times \left(1 + \frac{6.95\%}{12}\right)^0 = 2,160,000 \end{aligned} \quad \left. \vphantom{\begin{matrix} \text{at time} \\ -9 \end{matrix}} \right\} \boxed{4,940,841}$$

$$\text{Total cost of project} = \boxed{9,711,398}$$

75

$$\text{Condo cost} + \text{FC} = \text{at time } 1,500,000 \times 0.5 \times \left(1 + \frac{6.95\%}{12}\right)^6 = 821,013$$

$$\text{at time } 1,500,000 \times 0.45 \times \left(1 + \frac{6.95\%}{12}\right)^6 = 675,000$$

CFAT from selling condo

$$\begin{aligned} \text{sp Condo} & 4,000,000 \\ \text{less condo cost} & - 1,544,013 \end{aligned}$$

$$\begin{aligned} \text{CG} & 2,455,987 \\ \text{CG tax } 0.5 & 1,227,994 \\ \text{tax pay } 0.4 & 491,197 \end{aligned}$$

$$\text{CFAT sell condo} = 4,000,000 - 491,197 = \boxed{3,508,803}$$

$$\text{Net cost of project} = -9,171,398 + 3,508,803 = \boxed{6,202,595}$$

$$\text{Loan} = 6,202,595 \times 0.75 = \boxed{4,651,946}$$

$$D_p = \boxed{1,550,649} = \text{initial investment}$$

$$M_1 = 4,651,946 \times 0.7 = 3,256,362 \quad \text{NO COH} \quad M_1 = \frac{3,256,362}{1 - 0.9\%} = 3,285,935$$

$$M_2 = 4,651,946 \times 0.3 = 1,395,584 \quad M_2 = \frac{1,395,584}{1 - 0.9\%} = 1,408,258$$

$$M_{\text{PMT 1}}: PV = 3,285,935 \quad n = 10 \quad FV = 0 \quad I = 6.038506 \quad \text{PMT} = \boxed{447,268}$$

$$M_{\text{PMT 2}}: PV = 1,408,258 \quad n = 10 \quad FV = 0 \quad I = 6.244556 \quad \text{PMT} = \boxed{193,560}$$

$$\text{Total PMT} = \boxed{640,828}$$

$$\text{ECB: } M_{\text{PMT}} = -640,828 \quad FV = 0 \quad PV = 4,651,946 \quad n = 10 \quad \text{ECB} = \boxed{6.292158\%}$$

$$\text{ECB} = r_d$$

$$r_e = r_d + 3.5\% = 9.792158\%$$

$$\text{WACC} = r_d(1-t)(LVR) + r_e(1-LVR)$$

$$= (6.292158)(1-0.4)(0.75) + (9.792158)(0.25) = \boxed{5.2795106\%}$$

Name:

ID#

COMPLETE THE TABLES BELOW

Net Costs of Project at put-in-use	6,202,595 ✓
Loan (net)	4,651,946 ✓
Initial Investment	1,550,649 ✓
Mortgage payment of 1 st Mortgage	447,268 ✓
Mortgage payment of 2 nd Mortgage	193,560 ✓
Mortgage payment	640,828 ✓
Effective cost of borrowing (ECB)	6.292158% ✓
Discount rate (WACC)	5.2795106% ✓



Name: SEBASTIAN LIA

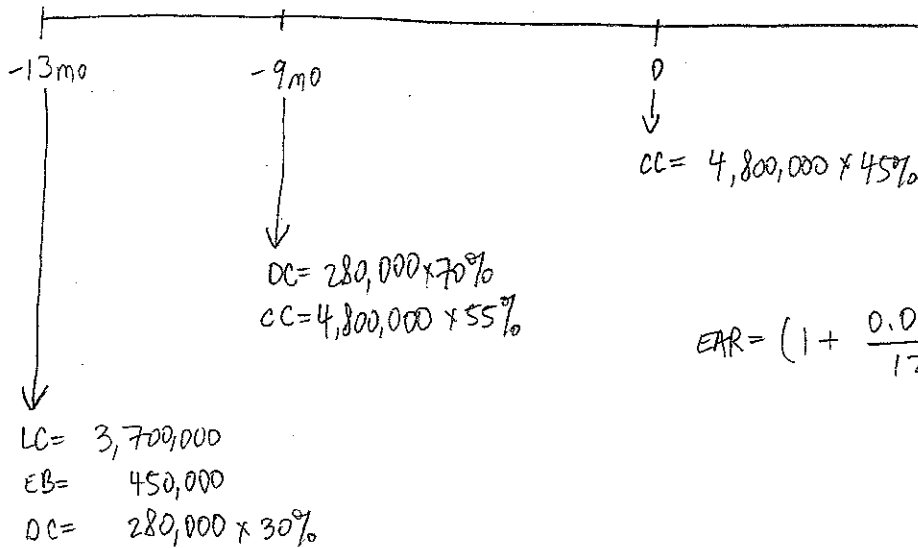
ID# 111111

Fina450/1 AA (SUMMER 2011)

Quiz #3A (worth 5%)

June 7th, 2011

- ✓ • **Demolition costs: \$280,000**
- ✓ • **Construction Costs: \$4,800,000 (includes \$1,500,000 for condos)**
- ✓ • **Land: \$3,700,000**
- ✓ • **Building (Existing): \$450,000**
- ✓ • **Demolition time: 4 months**
- ✓ • **Construction time: 13 months (including demolition time)**
- ✓ • **Financing cost at 6.95% per annum, compounded monthly**
- ✓ • **Financing of demolition costs: 30% down, and balance paid on completion of demolition**
- ✓ • **Financing of construction costs: 55% down, and balance paid on completion of construction**
- ✓ • **The condos were sold for \$4,000,000**
- ✓ • **Taxable capital gains: 50%**
- **Tax rate: 40%**
 - ✓ • **Loan-to-Value ratio: 75%**
 - **You have NO cash on hand (No COH)**
 - **1st Mortgage: 70% of loan, at 5.95% per annum compounded semi-annually $EAR = 6.038506\%$**
 - **2nd Mortgage: Balance of loan, at 6.15% per annum, compounded semi-annually $EAR = 6.244556\%$**
 - **Processing fees: 0.90% of both loans**
 - **Term or amortization period: 10 years**
 - **Mortgage payments: paid annually**
 - **Cost of equity = ECB + 3.50% risk premium**
 - **Cost of Debt (rd) = Effective Cost of Borrowing (ECB)**



$$EAR = \left(1 + \frac{0.0695}{12}\right)^{12} - 1 = \boxed{7.175717\%}$$

$$LC + FC \Rightarrow 3,700,000 \times (1.07175717)^{13/12} = \boxed{3,988,468}$$

$$EB + FC \Rightarrow 450,000 \times (1.07175717)^{13/12} = \boxed{485,084}$$

$$DC + FC \Rightarrow 280,000 \times 0.30 \times (1.07175717)^{13/12} + 280,000 \times 0.70 \times (1.07175717)^{9/12} = \boxed{297,005}$$

$$CC + FC \Rightarrow 4,800,000 \times 0.55 \times (1.07175717)^{9/12} + 4,800,000 \times 0.45 = \boxed{4,940,841}$$

$$TCOP = \boxed{9,711,398}$$

$$\text{CONDO COSTS} + FC = 1,500,000 \times 0.55 \times (1.07175717)^{9/12} + 1,500,000 \times 0.45 = \boxed{1,544,013}$$

CFAT SALE OF CONDO @ YRO

CONDO SALE PRICE	\$4,000,000
- CONDO COSTS + FC	(1,544,013)
CAPITAL GAINS	2,455,987
TAXABLE C.G. 50%	1,227,993
TAX 40%	(491,197)
CFAT SALE OF CONDO	<u>3,508,803</u>

$$NCOP = TCOP - CFAT = \boxed{6,202,595}$$

Name: _____

ID# _____

COMPLETE THE TABLES BELOW

Net Costs of Project at put-in-use	\$ 6,202,595
Loan (net) 75%	4,651,946
Initial Investment	1,550,649
Mortgage payment of 1 st Mortgage	447,268
Mortgage payment of 2 nd Mortgage	193,560
Mortgage payment	640,828
Effective cost of borrowing (ECB)	6.292158%
Discount rate (WACC)	5.27951%

$$4,651,946 \begin{cases} 70\% & 3,256,362 / (1 - 0.0090) = 3,285,935 \\ 30\% & 1,395,584 / (1 - 0.0090) = 1,408,258 \end{cases}$$

M.1

$$\begin{aligned} PV &= 3,285,935 \\ N &= 10 \\ I/Y &= 6.038506\% \\ FV &= 0 \\ PMT &= \boxed{447,268} \end{aligned}$$

M.2

$$\begin{aligned} PV &= 1,408,258 \\ N &= 10 \\ I/Y &= 6.244556\% \\ FV &= 0 \\ PMT &= \boxed{193,560} \end{aligned}$$

ECB

$$\begin{aligned} PV &= 4,651,946 \\ N &= 10 \\ PMT &= -640,828 \\ FV &= 0 \\ I/Y &= \boxed{6.292158\%} \end{aligned}$$

5

$$\begin{aligned} WACC &= r_D (1-t)(LVR) + r_E (1-LVR) \\ &= 6.292158\% (1-0.40)(0.75) + (6.292158\% + 3.50\%)(0.25) \\ &= \boxed{5.27951\%} \end{aligned}$$

Name:

Lalacina Marina

ID#

248555

Fina450/1 AA (SUMMER 2011)

Quiz #3A (worth 5%)

June 7th, 2011

- Demolition costs: \$280,000
- Construction Costs: \$4,800,000 (includes \$1,500,000 for condos)
- Land: \$3,700,000
- Building (Existing): \$450,000
- Demolition time: 4 months
- Construction time: 13 months (including demolition time) $13-4=9$
- Financing cost at 6.95% per annum, compounded monthly
- Financing of demolition costs: 30% down, and balance paid on completion of demolition
- Financing of construction costs: 55% down, and balance paid on completion of construction
- The condos were sold for \$4,000,000
- Taxable capital gains: 50%
- Tax rate: 40%
 - Loan-to-Value ratio: 75%
 - You have NO cash on hand (No COH)
 - 1st Mortgage: 70% of loan, at 5.95% per annum compounded semi-annually 6.038506
 - 2nd Mortgage: Balance of loan, at 6.15% per annum, compounded semi-annually 6.244556
 - Processing fees: 0.90% of both loans
 - Term or amortization period: 10 years
 - Mortgage payments: paid annually
 - Cost of equity = ECB + 3.50% risk premium
 - Cost of Debt (rd) = Effective Cost of Borrowing (ECB)

$$LC + FC = 3,700,000 \times \left(1 + \frac{0.0695}{12}\right)^{13} = 3,988,468 \checkmark$$

$$C.B. + FC = 450,000 \times \left(1 + \frac{0.0695}{12}\right)^{13} = 485,084 \checkmark$$

Demolition cost:

$$T = -13 \quad 280,000 \times 0.3 \times \left(1 + \frac{0.0695}{12}\right)^{13} = 90,549$$

$$T = -9 \quad 280,000 \times 0.7 \times \left(1 + \frac{0.0695}{12}\right)^9 = 206,456$$

$$\underline{297,005}$$

Construction cost:

$$T = -9 \quad 4,800,000 \times 55\% \times \left(1 + \frac{0.0695}{12}\right)^9 = 2,780,841$$

$$1 \text{ Page } T=0 \quad 4,800,000 \times 45\% = 2,160,000$$

$$\underline{4,940,841} \checkmark$$

$$TNP = 9,711,398$$

6

Condo cost:

$$\begin{aligned}
 T = -9 & \quad 1,500,000 \times 55\% \times \left(1 + \frac{0.0695}{12}\right)^9 = 869,013 \\
 T = 0 & \quad 1,500,000 \times 45\% = 675,000 \\
 & \quad \underline{\underline{1,544,013}}
 \end{aligned}$$

CFAT Sales of Condo:

Selling price	4,000,000
Cost	1,544,013
<hr/>	
Capital gain	2,455,987
Taxable gain (50%)	1,227,994
Tax (40%)	491,198
<hr/>	
CFAT Sales of Condo	3,508,802

$$NCOF = 9,711,398 - 3,508,802 = 6,202,596$$

$$\begin{aligned}
 & \text{Loan needed } 75\% \quad \swarrow \quad \searrow 25\% \text{ Downpayment} \\
 & \quad \quad \quad 4,651,947 \quad \quad \quad 1,550,649
 \end{aligned}$$

NCOH

$$\text{Loan} = \frac{4,651,947}{(1 - 0.009)} = 4,694,195$$

$$70\% \text{ 1M @ } 6.038506 \quad n=10$$

$$PV = 3,285,937$$

$$FV = 0$$

$$PMT_1 = 447,268$$

$$30\% \text{ 2M @ } 6.244556 \quad n=10$$

$$PV = 1,402,258$$

$$FV = 0$$

$$PMT_2 = 193,560$$

$$640,828$$

Name:

~~Lalakin~~ Marina

ID#

~~9287992~~**COMPLETE THE TABLES BELOW**

Net Costs of Project at put-in-use	6,202,596
Loan (net)	4,651,947
Initial Investment	1,550,649
Mortgage payment of 1 st Mortgage	447,268
Mortgage payment of 2 nd Mortgage	193,560
Mortgage payment	640,828
Effective cost of borrowing (ECB)	6.292153%
Discount rate (WACC)	5.279507%

$$PMT = 640,828$$

$$n = 10$$

$$PV = 4,651,947$$

$$FV = 0$$

$$ECB = 6.292153$$

$$WACC_{AT} = 6.292153(1 - 0.4) \cdot 75\% + \overset{3.792153}{(6.292153 + 3.5)} \times 25\% =$$

$$= 5.279507\%$$

5

Name: Christine T.

ID# 9571

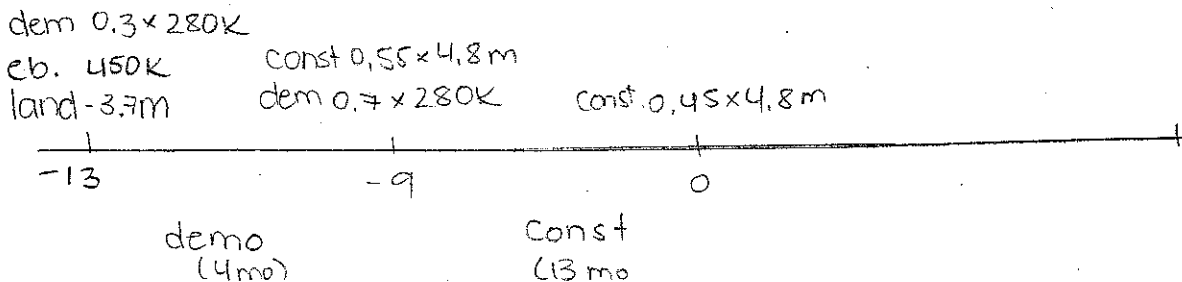
Fina450/1 AA (SUMMER 2011)

Quiz #3A (worth 5%)

June 7th, 2011

- ✓ • Demolition costs: \$280,000
- ✓ • Construction Costs: \$4,800,000 (includes \$1,500,000 for condos)
- ✓ • Land: \$3,700,000
- ✓ • Building (Existing): \$450,000
- ✓ • Demolition time: 4 months
- ✓ • Construction time: 13 months (including demolition time)
- ✓ • Financing cost at 6.95% per annum, compounded monthly
- ✓ • Financing of demolition costs: 30% down, and balance paid on completion of demolition
- ✓ • Financing of construction costs: 55% down, and balance paid on completion of construction
- ✓ • The condos were sold for \$4,000,000
- ✓ • Taxable capital gains: 50%
- ✓ • Tax rate: 40%
 - ✓ ○ Loan-to-Value ratio: 75%
 - ✓ ○ You have NO cash on hand (NO COH) ✓
 - ✓ ○ 1st Mortgage: 70% of loan, at 5.95% per annum compounded semi-annually
EAR = 6.038506
 - ✓ ○ 2nd Mortgage: Balance of loan, at 6.15% per annum, compounded semi-annually
EAR = 6.244556
 - ✓ ○ Processing fees: 0.90% of both loans
 - ✓ ○ Term or amortization period: 10 years
 - ✓ ○ Mortgage payments: paid annually
 - ✓ ○ Cost of equity = ECB + 3.50% risk premium
 - ✓ ○ Cost of Debt (rd) = Effective Cost of Borrowing (ECB)

sale condo



TCOP.

$$\text{land: } 3\,700\,000 \left(1 + \frac{0.0695}{12}\right)^{13} = 3\,988\,468$$

$$\text{exist, b: } 450\,000 \left(1 + \frac{0.0695}{12}\right)^{13} = 485\,083$$

4

demo c:

$$\text{at } t=-13 : (0.3 \times 280\,000) \left(1 + \frac{0.0695}{12}\right)^{13} = 90\,549$$

$$\text{at } t=-9 : (0.7 \times 280\,000) \left(1 + \frac{0.0695}{12}\right)^9 = 206\,456$$

$$\text{dem } \Sigma = 297\,005$$

const c

$$\text{at } t=-9 (0.55 \times 4\,800\,000) \left(1 + \frac{0.0695}{12}\right)^9 = 2\,780\,841$$

$$\text{at } t=0 (0.45 \times 4\,800\,000) = 2\,160\,000$$

$$\text{const } \Sigma = 4\,940\,841$$

$$\text{TCOP} = (\text{land} + \text{fc}) + (\text{eb} + \text{fc}) + (\text{dem} + \text{fc}) + (\text{const} + \text{fc})$$

$$\text{TCOP} = \boxed{9\,711\,397}$$

$$\text{NCOP} = \text{TCOP} - \text{CFat condo}$$

$$\text{Sp condo } t=0 : 4\,000\,000$$

- const condo + fc:

$$\text{at } t=-9 (0.55 \times 1\,500\,000) \left(1 + \frac{0.0695}{12}\right)^9 = 869\,013$$

$$t=0 (0.45 \times 1\,500\,000) = 675\,000$$

$$\text{C. condo } \Sigma = 1\,544\,013$$

$$\begin{array}{ccc} \textcircled{A} & \textcircled{B} & \textcircled{C} \\ \text{SP} & \text{CC} + \text{fc} & \text{cap.g} \\ 4\,000\,000 - 1\,544\,013 = & 2\,455\,987 & \end{array}$$

$$\text{cap.g tax} = 2\,455\,987 \times 0.5 = 1\,227\,994$$

$$\text{corp tax} = 1\,227\,994 \times 0.4 = 491\,198$$

$$\text{CFat condo} = \overset{\text{SP } \textcircled{A}}{4\,000\,000} - \overset{\text{corp T. } \textcircled{E}}{491\,198} = 3\,508\,802$$

$$\text{NCOP} = \text{TCOP} - \text{CFat condo}$$

$$= 9\,711\,397 - 3\,508\,802 = \boxed{6\,202\,595}$$

$$\text{loan} = \text{NCOP} \times 0.75 = 4\,651\,946$$

$$\text{dpmt} = \text{NCOP} \times 0.25 = 1\,550\,649$$

Name:

ID#

COMPLETE THE TABLES BELOW

Net Costs of Project at put-in-use	6 202 595 ✓
Loan (net) * assuming net = net of processing fees.	4 651 946 ✓
Initial Investment	1 550 649 ✓
Mortgage payment of 1 st Mortgage	447 268 ✓
Mortgage payment of 2 nd Mortgage	193 560 ✓
Mortgage payment	640 828 ✓
Effective cost of borrowing (ECB)	6.292158% ✓
Discount rate (WACC)	5.2795106% ✓

loan: 4 651 946
NCOH

$$m_1 = \frac{3\,256\,362}{1 - 0.009} = 3\,285\,935$$

$$m_2 = \frac{1\,395\,584}{1 - 0.009} = 1\,408\,258$$

m_1

$$PV = -3\,285\,935$$

$$FV = 0$$

$$n = 10$$

$$i/y = 6.038506\%$$

$$2 \text{ pmt} = 447\,268$$

m_2

$$PV = -1\,408\,258$$

$$FV = 0$$

$$n = 10$$

$$i/y = 6.244556\%$$

$$2 \text{ pmt} = 193\,560$$

$$\text{mtg pmt}_{\text{ann}} = 640\,828$$

ECB: tot am borrowed

$$PV = (3\,285\,935 + 1\,408\,258) - (29\,573) - (12\,674) = 4\,651\,946$$

$$PV = -4\,651\,946$$

$$FV = 0$$

$$n = 10$$

$$\text{pmt} = 640\,828$$

$$i/y = \text{ECB} = 6.292158\%$$

$$\begin{aligned} \text{WACC} &= (6.292158)(1-0.4)(0.75) + (6.292158 + 3.5)(0.25) \\ &= 2.8314711 + 2.4480395 \\ &= 5.2795106 \end{aligned}$$

Name: M. [redacted]

3B

ID# [redacted]

Fina450/1 AA (SUMMER 2011)

Quiz #3A (worth 5%)

June 7th, 2011

- Demolition costs: \$280,000
- Construction Costs: \$4,800,000 (includes \$1,500,000 for condos)
- Land: \$3,700,000
- Building (Existing): \$450,000
- Demolition time: 4 months
- Construction time: 13 months (including demolition time)
- Financing cost at 6.95% per annum, compounded monthly
- Financing of demolition costs: 30% down, and balance paid on completion of demolition
- Financing of construction costs: 55% down, and balance paid on completion of construction
- The condos were sold for \$4,000,000
- Taxable capital gains: 50%
- Tax rate: 40%

$$TCOP = 8000000 + 300000$$

- Loan-to-Value ratio: 70%
- You have NO cash on hand (No COH)
- 1st Mortgage: 75% of loan, at 5.95% per annum compounded semi-annually
- 2nd Mortgage: Balance of loan, at 6.15% per annum, compounded semi-annually
- Processing fees: 0.90% of both loans
- Term or amortization period: 10 years
- Mortgage payments: paid annually
- Cost of equity = ECB + 3.50% risk premium
- Cost of Debt (rd) = Effective Cost of Borrowing (ECB)

CFAT Sale of condo

Sale	4,000,000
cc+fc	(1,544,013)
Capital gain 50%	2,455,987
Taxable gain	1,227,994
	(441,198)
	<u>3,508,802</u>

LC	3,700,000	DC	196,000	CC	2,160,000
DC	84,000				
EB	450,000	CC	2,640,000		

-13

condo
825,000condo
675,000

LC+FC

$$3,700,000 \left(1 + \frac{0.0695}{12}\right)^{13} = \boxed{3,988,468}$$

DC+FC

$$280,000 (0.30) = 84,000$$

$$84,000 \left(1 + \frac{0.0695}{12}\right)^{13} = 90,549$$

$$196,000 \left(1 + \frac{0.0695}{12}\right)^9 = 206,456 + \boxed{297,005}$$

EB+FC

$$450,000 \left(1 + \frac{0.0645}{12}\right)^{13} = \boxed{485,084}$$

CC+FC

$$4,800,000 (0.55) = 2,640,000$$

$$2,640,000 \left(1 + \frac{0.0695}{12}\right)^9 = 2,780,841$$

$$+ 2,160,000 = \boxed{4,940,841}$$

$$TCOP = 3,988,468 + 297,005 + 485,084 + 4,940,841 = \boxed{9,711,398}$$

$$NCOP = 9,711,398 - 3,508,802 = 6,202,596$$

COMPLETE THE TABLES BELOW

Net Costs of Project at put-in-use	6,202,596 ✓
Loan (net)	4,341,817 ✓
Initial Investment	1,860,779 ✓
Mortgage payment of 1 st Mortgage	447,268 ✓
Mortgage payment of 2 nd Mortgage	150,547 ✓
Mortgage payment	597,815 ✓
Effective cost of borrowing (ECB)	6.281805 ✓
Discount rate (WACC)	5.5728996 ✓

$$\text{Loan} = 6,202,596 (0.70) = 4,341,817$$

$$\text{Down} = 6,202,596 - 4,381,248 = 1,821,348$$

$$\text{Initial Investment} = \text{Down pmt} + \text{p.1 mortgage 1} + \text{p.1 mortgage 2}$$

$$1,860,779 = 1,821,348 + \underline{29,573} + \underline{9,858}$$

$$4,381,248 \begin{cases} 3,285,936 (0.009) \\ = 29,573 \\ 1,095,312 (0.009) \\ = 9,858 \end{cases}$$

M1 (0.75)

$$\text{PV} = 4,381,248 (0.75) = -3,285,936$$

$$n = 10$$

$$\text{FV} = 0$$

$$\text{I/Y} = \left(1 + \frac{0.0595}{2}\right)^2 = 6.038506$$

$$\text{CPE pmt} = \underline{447,268}$$

M2

$$\text{PV} = -1,095,312$$

$$n = 10$$

$$\text{FV} = 0$$

$$\text{I/Y} = 6.244556$$

$$\text{CPE pmt} = \underline{150,547}$$

M2 (0.25)

$$\text{Loan} = \frac{4,341,817}{(1 - 0.009)} = \underline{4,381,248}$$

ECB

$$\text{PV} = 4,381,248 (1 - 0.009) = -4,341,817$$

$$n = 10$$

$$\text{FV} = 0$$

$$\text{pmt} = 597,815$$

$$\text{CPE I/Y} = 6.281805$$

$$\begin{aligned} \text{WACC} &= 0.06281805 (0.70) (1 - 0.40) \\ &\quad + (0.06281805 + 0.0350) (0.30) \\ &= 0.026383581 + 0.029345415 \end{aligned}$$

Name: [redacted] *rel*

ID# 6102968

Fina450/1 AA (SUMMER 2011)

Quiz #3A (worth 5%)

June 7th, 2011

- Demolition costs: \$280,000
 - Construction Costs: \$4,800,000 (includes \$1,500,000 for condos)
 - Land: \$3,700,000
 - Building (Existing): \$450,000
 - Demolition time: 4 months
 - Construction time: 13 months (including demolition time)
 - Financing cost at 6.95% per annum, compounded monthly
 - Financing of demolition costs: 30% down, and balance paid on completion of demolition
 - Financing of construction costs: 55% down, and balance paid on completion of construction
 - The condos were sold for \$4,000,000
 - Taxable capital gains: 50%
 - Tax rate: 40%
 - Loan-to-Value ratio: 70%
 - You have NO cash on hand (No COH)
 - 1st Mortgage: 75% of loan, at 5.95% per annum compounded semi-annually
 - 2nd Mortgage: Balance of loan, at 6.15% per annum, compounded semi-annually
 - Processing fees: 0.90% of both loans
 - Term or amortization period: 10 years
 - Mortgage payments: paid annually
- Cost of equity = ECB + 3.50% risk premium
- Cost of Debt (rd) = Effective Cost of Borrowing (ECB)

Land.
EB.
DC=30%

DC=30%
CE=55%

0.45% = CE

$$\begin{array}{c}
 \text{---} \overline{\text{---}} \text{---} \\
 \begin{array}{ccc}
 -13 & 9 & 0
 \end{array} \\
 LC + IC = 3,700,000 \left(1 + \frac{6.95\%}{12}\right)^{13} \\
 = 3,988,468
 \end{array}$$

$$\begin{array}{c}
 EB + IC = 450,000 \left(1 + \frac{6.95\%}{12}\right)^{13} \\
 = 485,084
 \end{array}$$

$$\begin{array}{c}
 CC + IC = 4,800,000 \times 55\% \times \left(1 + \frac{6.95\%}{12}\right)^9 \\
 = 2,780,841
 \end{array}$$

$$\begin{array}{c}
 DC + IC \\
 280,000 \times \left(1 + \frac{6.95\%}{12}\right)^{13} \times 30\% \\
 = 905,491
 \end{array}$$

$$\begin{array}{c}
 280,000 \times \left(1 + \frac{6.95\%}{12}\right)^9 \times 70\% \\
 = 2,064,561
 \end{array}$$

2,970,051

$$\begin{array}{c}
 4,800,000 \times 45\% \times 1 \\
 = 2,160,000
 \end{array}$$

= 4,940,841

$$\text{total} = 3,988,468 + 485,084 + 2,970,051 + 4,940,841 = 9,713,984$$

COMPLETE THE TABLES BELOW

Net Costs of Project at put-in-use	6202595 ✓
Loan (net)	43 41816 ✓
Initial Investment	1860779 ✓
Mortgage payment of 1 st Mortgage	447268 ✓
Mortgage payment of 2 nd Mortgage	150547 ✓
Mortgage payment	597815 ✓
Effective cost of borrowing (ECB)	6.281810% ✓
Discount rate (WACC)	5.572903% ✓

$$6202595 \times 0.3 = 1860779 \quad 6202595 - 1860779 = 4341816$$

$$\text{loan} = 4341816 \quad \begin{cases} m_1 (75\%) = 3256362 \\ m_2 (25\%) = 1085454 \end{cases}$$

NO COH

$$m_1: PV = \frac{3256362}{1-0.9\%} = 3285935$$

$$N=10$$

$$FV=0$$

$$i = \left(\frac{5.95\%}{2} + 1 \right)^2 - 1 = 6.038506\%$$

$$\Rightarrow PMT = 447268$$

$$m_2: PV = \frac{1085454}{1-0.9\%} = 1095312$$

$$N=10$$

$$FV=0$$

$$i = 6.244556\%$$

$$PMT = 150547$$

$$r_e = 6.281810\% + 3.50\% = 9.78181\%$$

$$\left. \begin{array}{l} \text{total PMT} = 597815 \\ \text{total PV} = 4341816 \\ FV = 0 \\ N = 10 \end{array} \right\} ECB = 6.281810\%$$

$$WACC = r_d (1-T) LRV + r_e (1-LRV) = 6.281810\% \times 0.6 \times 0.7 + 9.78181\% \times 0.3$$

$$= 2.638360\% + 2.934543\% = 5.572903\%$$