

MBUS 3000

March 26th 2013

Midterm Answers

Gnucash Turning Unearned Revenue into real revenue

PV of a stream of income

Start Reading Mixerman Diaries

[www.mixerman.net/diaries1.php](http://www.mixerman.net/diaries1.php)

# Test Review

# Present Value of a Stream of Revenue

## Using the Mortgage Calculator Backwards

# PV of a stream of income.

quarterly payments of \$4,500  
risk free  
for 5 years  
use treasury 5 year yield of .84%  
PV= \$88,045

Principal	Payments per Year
<input type="text"/>	<input type="text" value="4"/>
Annual Interest Rate	Number of Regular Payments
<input type="text" value="0.8400"/>	<input type="text" value="20"/>
Balloon Payment	Payment Amount
<input type="text"/>	<input type="text" value="4500.00"/>
<input type="checkbox"/> Show Amortization Schedule	
<input type="button" value="Calculate"/>	

Principal	Payments per Year
<input type="text" value="88045.70"/>	<input type="text" value="4"/>
Annual Interest Rate	Number of Regular Payments
<input type="text" value="0.8400"/>	<input type="text" value="20"/>
Balloon Payment	Payment Amount
<input type="text"/>	<input type="text" value="4500.00"/>
<input type="checkbox"/> Show Amortization Schedule	
<input type="button" value="Calculate"/>	

Note for our purposes we will use the treasury rate when it's a "risk free" amount. However most people wouldn't use the treasury rate for risk free. Because interest rates on US treasuries are distorted right now. They actually pay "negative" interest in real terms. they don't even keep up with inflation. in the real world you would use a your best guest at the inflation rate for a "risk free" interest rate.

Now consider the case of a songwriters stream of quarterly income.

over the last 3 years the income stream is as follows

$f_x$	A	B
1	\$3,342	
2	\$4,756	
3	\$2,941	Low
4	\$5,113	High
5	\$4,431	
6	\$4,111	
7	\$5,076	
8	\$3,751	
9	\$3,799	
10	\$3,024	
11	\$4,638	
12	\$4,678	
13		
14	average	4138.333333333333
15	median	4271
16	standard deviation	763.525356289475
17	"historic volatility"	17.88%

suppose we wanted to buy this songwriters catalogue. we decide to just consider the next 5 years of royalties and we want to estimate a PV

Principal	57542.75	Payments per Year	4
Annual Interest Rate	0.8400	Number of Regular Payments	20
Balloon Payment		Payment Amount	2941.00
<input type="checkbox"/> Show Amortization Schedule			
<input type="button" value="Calculate"/>			
<small>This loan calculator is written and maintained by Bret's Blog. See <a href="#">Bret's Blog</a> for help, a spreadsheet, derivations, calculations, and more.</small>			

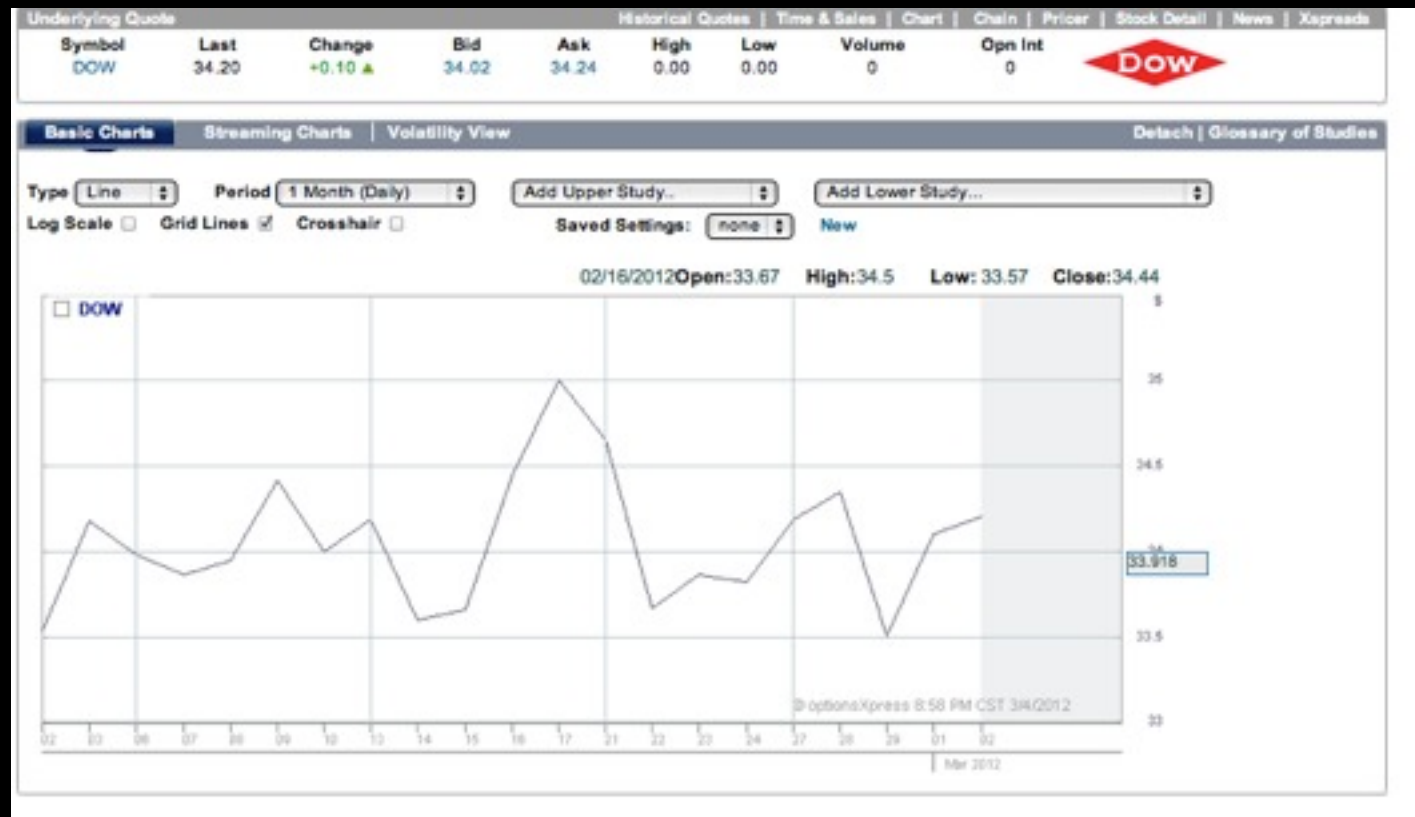
low estimate

Principal	100039.48	Payments per Year	4
Annual Interest Rate	0.8400	Number of Regular Payments	20
Balloon Payment		Payment Amount	5113.00
<input type="checkbox"/> Show Amortization Schedule			
<input type="button" value="Calculate"/>			
<small>This loan calculator is written and maintained by Bret's Blog. See <a href="#">Bret's Blog</a> for help, a spreadsheet, derivations, calculations, and more.</small>			

high estimate

# Risk and Volatility

## Stock Historic Volatility



economic, environmental and social responsibilities.  
 (Company Press Release)

Date	Value
10/2012	0.67
12/28/2012	6.52
1/30/2012	16.32
2/30/2012	2.09
	5.23

Option Statistics (DOW)	
Today's Option Volume*	7,244
Avg Option Volume	15,823
Open Interest*	400,853
Avg Open Interest	396,085
Avg Put Call Ratio	1
Historic Volatility (30 day)	20.48
Put Call Ratio	0.55
Implied Volatility	25.90

\* Delayed

A better way might be to use something like “historic volatility” that is used for stock prices. and from this historic volatility find an appropriate interest rate to use to compute PV



## Risk Management and Insurance Program



## Risk Management and Insurance Program

The Terry College's risk management-insurance program traces its formal beginning to 1965, and in a short period of time it has grown into the largest undergraduate program of its kind in the U.S.

Terry's risk management-insurance program is also one of the very best, having risen to the No. 2 spot in the country behind Wharton in current rankings from *U.S. News & World Report*.



Moore Chairholder of Insurance and Department Head Rob Hoyt explains enterprise risk management.

Terry's risk management and insurance program also offers graduate courses in risk

UGA is home to some of the best risk management/analysts in the US.  
They could come up with a very sophisticated way of pricing this catalogue.

Let's try pricing this catalogue again.

This time let's pretend that we got expert advice from the risk management dept  
They told us to use the median quarterly income and an interest rate of 9.44 %

Principal: 67470.35

Payments per Year: 4

Annual Interest Rate: 9.4400

Number of Regular Payments: 20

Balloon Payment:

Payment Amount: 4271.00

Show Amortization Schedule

This loan calculator is written and maintained by Bret's Blog. See [Bret's Blog](#) for help, a spreadsheet, derivations, calculator, etc.

Later we are told that they forgot to add risk associated with the revenue valued in euros. i.e. there is a foreign currency exchange rate risk. they change the interest rate to 13.13%

Principal	61913.36	Payments per Year	4
Annual Interest Rate	13.1300	Number of Regular Payments	20
Balloon Payment		Payment Amount	4271.00

Show Amortization Schedule

This loan calculator is written and maintained by Bret. See [Bret's Blog](#) for help, a spreadsheet, derivations, calculations, etc.



# PV of stream of income

My BMI airplay royalty statements average about \$6000 a quarter.  
How do i calculate the PV of the next 3 years of BMI statements?

**Amortization Calculator**

Almost any data field on this form may be calculated. Enter the (or zero) the value that you wish to determine, and then click "Calculate".

Principal	Payments per Year
<input type="text"/>	<input type="text" value="4"/>
Annual Interest Rate	Number of Regular Payments
<input type="text" value="6.0000"/>	<input type="text" value="12"/>
Balloon Payment	Payment Amount
<input type="text"/>	<input type="text" value="6000"/>

Show Amortization Schedule

This loan calculator is written and maintained by Bret's Blog. See [Bret's Blog](#) for help, a spreadsheet, derivations.

**Amortization Calculator**

Almost any data field on this form may be calculated. Enter the (or zero) the value that you wish to determine, and then click "Calculate".

Principal	Payments per Year
<input type="text" value="65445.03"/>	<input type="text" value="4"/>
Annual Interest Rate	Number of Regular Payments
<input type="text" value="6.0000"/>	<input type="text" value="12"/>
Balloon Payment	Payment Amount
<input type="text"/>	<input type="text" value="6000.00"/>

Show Amortization Schedule

This loan calculator is written and maintained by Bret's Blog. See [Bret's Blog](#) for help, a spreadsheet, derivations.

The first four Camper Van Beethoven Records generate an average of \$12,000 in royalties a year (to CVB). The licensing deal expires soon. Assume we don't want to release these ourselves. What is the PV of 5 years of \$12000 a year?

If I use 10% annual interest rate?

If I use 5%?

If I use 20%

# Mariah Careys \$80,000,000 deal\*\*

Principal: 80000000.00

Payments per Year: 4

Annual Interest Rate: 6.0000

Number of Regular Payments: 28

Balloon Payment:

Payment Amount: 3520086.12

Show Amortization Schedule

Calculate

This loan calculator is written and maintained by Bret's Blog. See [Bret's Blog](#) for help, a spreadsheet, derivations, calculator, etc.

needs to generate 3.52 million a quarter plus cover all manufacture and distribution costs

More Gnucash.

Gnucash  
more touring  
turning unearned income into “real” income (accrual  
accounting)  
using the agency escrow account  
due march 6



The band tours to Birmingham alabama then Atlanta  
feb 24-26

From Petty Cash

2/24 per diems of \$25 each frank max and robert

2/24 \$250 cash from bottle tree

2/25 per diems of \$25 frank max and robert

2/25 \$250 cash from the earl

02/24/12		Max Per Diem	ing/Performance Costs:Per Diems	n		25.00	76.00
02/24/12		Frank Per Diem	ing/Performance Costs:Per Diems	n		25.00	51.00
02/24/12		Robert Per Diem	ing/Performance Costs:Per Diems	n		25.00	26.00
02/24/12		The Bottle Tree	Income:Performance Fees	n	250.00		276.00
02/25/12		Max Per Diem	ing/Performance Costs:Per Diems	n		25.00	251.00
02/25/12		Frank Per Diem	ing/Performance Costs:Per Diems	n		25.00	226.00
02/25/12		Robert Per Diem	ing/Performance Costs:Per Diems	n		25.00	201.00
02/25/12		The Earl Atlanta	Income:Performance Fees	n	250.00		451.00
02/25/12							
02/25/12	Num	Description	Transfer	n	Increase	Decrease	Balance

# Credit card expenses

2/24 Fuel Cheveron Birmingham AL \$65  
 2/24 Courtyard Marriot Birmingham AL \$84.10  
 2/26 Quik Stop Duluth GA \$75

02/24/12		Chevron Birmingham	:Touring/Performance Costs:Fuel	n		65.00	118.83	
02/24/12		Courtyard Marriot Birmingham	rmance Costs:Travel and Lodging	n		84.10	202.93	
02/26/12		Quik Stop Duluth	:Touring/Performance Costs:Fuel	n		75.00	277.93	
02/26/12		<i>Num</i>	<i>Description</i>	<i>Transfer</i>	<i>n</i>	<i>Decrease</i>	<i>Increase</i>	<i>Balance</i>

# Convert Unearned Income Liability to income.

## Open unearned per fees ledger

Date	Num	Description	Transfer	R	Decrease	Increase	Balance
02/22/12		The Bottle tree deposit	nt Assets:Agency Escrow Account	n		250.00	250.00
02/22/12		The Earl deposit	nt Assets:Agency Escrow Account	n		250.00	500.00
02/24/12		The Bottle tree	Income:Performance Fees	n	250.00		250.00
02/25/12		The Earl	Income:Performance Fees	n	250.00		0.00
02/25/12	<input type="checkbox"/>	<i>Num</i>	<i>Description</i>	<i>n</i>	<i>Decrease</i>	<i>Increase</i>	<i>Balance</i>



2/26 Pay manager 15%  
 from checking account 15% of \$1000  
 why aren't we paying agent?

\*DavidLoweryMBUS3000.gnucash - Checking Account - GnuCash

Save Close Duplicate Delete Enter Cancel Blank Split Jump Schedule Transfer Reconcile

Accounts Checking Account Agency Escrow Account Petty Cash Chase Visa Credit Card Unearned Perf Fees

Date	Num	Description	Transfer	R	Deposit	Withdrawal	Balance
01/18/12		Frank intial cap contrib	Account:Frank Contributed Capital	n	100.00		100.00
01/18/12		Max initial cap contrib	Account:Max Contributed Capital	n	100.00		200.00
01/18/12		Robert initial cap contrib	Account:Robert Contributed Capital	n	100.00		300.00
01/25/12		Athens first loan	Long Term Liabilities:Vehicle Loan	n	10,000.00		10,300.00
02/01/12		Athens Ford E-150 van	Assets:Fixed Assets:Vehicle	n		9,000.00	1,300.00
02/01/12		TRANSFER TO PETTY CASH	Assets:Current Assets:Petty Cash	n		100.00	1,200.00
02/20/12		Deposit to Checking	Assets:Current Assets:Petty Cash	n	1,000.00		2,200.00
02/20/12	1001	Red light management	Expenses:Commissions Management	n		225.00	1,975.00
02/20/12	1002	High Road Touring	Expenses:Commissions Agency	n		150.00	1,825.00
02/25/12		Athens First Bank	-- Split Transaction --	n		327.39	1,497.61
02/26/12	1003	Red light management	Expenses:Commissions Management	n		150.00	1,347.61
02/26/12		<i>Num Description</i>	<i>Transfer</i>	<i>n</i>	<i>Deposit</i>	<i>Withdrawal</i>	<i>Balance</i>

# 2/27 High Road (agent) emails escrow statement wires \$400 to check account

2/22	The Bottle Tree	deposit received	\$250
2/22	The Earl	deposit recieved	\$250
2/24	The Bottle Tree	commission	-\$50
2/25	The Earl	commision	-\$50
2/27	Net to artist		\$400

\*DavidLoweryMBUS3000.gnucash - Agency Escrow Account - GnuCash

Save Close Duplicate Delete Enter Cancel Blank Split Jump Schedule Transfer Reconcile

Accounts | Checking Account | Agency Escrow Account | Petty Cash | Chase Visa Credit Card | Unearned Perf Fees

Date	Num	Description	Transfer	R	Increase	Decrease	Balance
02/22/12		The Bottle tree deposit	rned Revenue:Unearned Perf Fees	n	250.00		250.00
02/22/12		The Earl deposit	rned Revenue:Unearned Perf Fees	n	250.00		500.00
02/24/12		High Road Touring	Expenses:Commissions Agency	n		50.00	450.00
02/25/12		High Road Touring	Expenses:Commissions Agency	n		50.00	400.00
02/27/12		To Athens First Checking	Current Assets:Checking Account	n		400.00	0.00
02/27/12	Num	Description	Transfer	n	Increase	Decrease	Balance

# Finally record the van depreciation

## approx 438 miles \$65

\*DavidLoweryMBUS3000.gnucash - Vehicle - GnuCash

Save Close Duplicate Delete Enter Cancel Blank Split Jump Schedule Transfer Reconcile

Accounts Checking Account Petty Cash Vehicle

Date	Num	Description	Transfer	R	Increase	Decrease	Balance
02/01/12		Athens Ford E-150 van	Current Assets:Checking Account	n	9,000.00		9,000.00
02/18/12		Depreciation	formance Costs:Van Depreciation	n		116.40	8,883.60
02/26/12		Depreciation	formance Costs:Van Depreciation	n		65.00	8,818.60
02/26/12	<input type="checkbox"/> Num	Description	Transfer	n	Increase	Decrease	Balance



## Balance Sheet 12/31/12

### Assets

<u>Assets</u>		\$0.00
<u>Current Assets</u>	\$0.00	
<u>Agency Escrow Account</u>	\$0.00	
<u>Petty Cash</u>	\$451.00	
<u>Checking Account</u>	\$1,747.61	
<u>Fixed Assets</u>	\$0.00	
<u>Vehicle</u>	\$8,818.60	
<b>Total Assets</b>		<b>\$11,017.21</b>

### Liabilities

<u>Liabilities</u>		\$0.00
<u>Current Liabilities</u>	\$0.00	
<u>Credit Cards</u>	\$277.93	
<u>Unearned Revenue</u>	\$0.00	
<u>Long Term Liabilities</u>	\$0.00	
<u>Vehicle Loan</u>	\$9,764.28	
<b>Total Liabilities</b>		<b>\$10,042.21</b>

### Equity

<u>Equity</u>		\$0.00
<u>Frank Capital Account</u>	\$0.00	
<u>Frank Capital</u>	\$0.00	
<u>Frank Contributed Capital</u>	\$100.00	
<u>Frank Distributions</u>	\$0.00	
<u>Max Capital Account</u>	\$0.00	
<u>Max Capital</u>	\$0.00	
<u>Max Contributed Capital</u>	\$100.00	
<u>Max Distributions</u>	\$0.00	
<u>Opening Balances</u>		\$0.00
<u>Robert Capital Account</u>	\$0.00	
<u>Robert Capital</u>	\$0.00	
<u>Robert Contributed Capital</u>	\$100.00	
<u>Robert Distributions</u>	\$0.00	
<b>Retained Earnings</b>		<b>\$675.00</b>
<b>Total Equity</b>		<b>\$975.00</b>

## Profit & Loss For Period Covering 01/01/12 to 12/31/12

### Revenues

<u>Income</u>		\$0.00
<u>Merchandise Sales- Retail</u>	\$0.00	
<u>Music CDs Vinyl downloads</u>	\$0.00	
<u>Softgoods</u>	\$0.00	
<u>Performance Fees</u>	\$2,500.00	
<b>Total Revenue</b>		<b>\$2,500.00</b>

### Expenses

<u>Expenses</u>		\$0.00
<u>Commissions Management</u>	\$375.00	
<u>Commissions Agency</u>	\$250.00	
<u>Interest Expense</u>	\$91.67	
<u>Touring/Performance Costs</u>	\$0.00	
<u>Fuel</u>	\$330.23	
<u>Per Diems</u>	\$375.00	
<u>Supplies-Touring and Performance</u>	\$13.60	
<u>Tolls and Parking</u>	\$0.00	
<u>Travel and Lodging</u>	\$208.10	
<u>Van Depreciation</u>	\$181.40	
<u>Vehicle Repairs and Maintenance</u>	\$0.00	
<b>Total Expenses</b>		<b>\$1,825.00</b>
Net income for Period		\$675.00