MBUS 3755

Lecture 24
Gnucash 6
Secret Reason Labels are profitable: Behavioral Economics

My Other Classes

MBUS 4300: Music Publishing and Licensing
Tu Th 9:35 AM

MBUS 4900: Public Policy, International Relations and the Music Industry
M-W 2:55 PM

Gnucash 6

Gnucash 6 Story

Gnucash 6

The band receives the settlement statement from The Spaceland Agency. The statement is an accounting of the Agency Escrow Account. Important the agent/agency almost always deduct their commission from the agency escrow account. The Spaceland Agency does that in this case. Record new entries.

9/24 Deposit Echoplex $250 deposit
9/24 Deposit Fronterizo $500 deposit

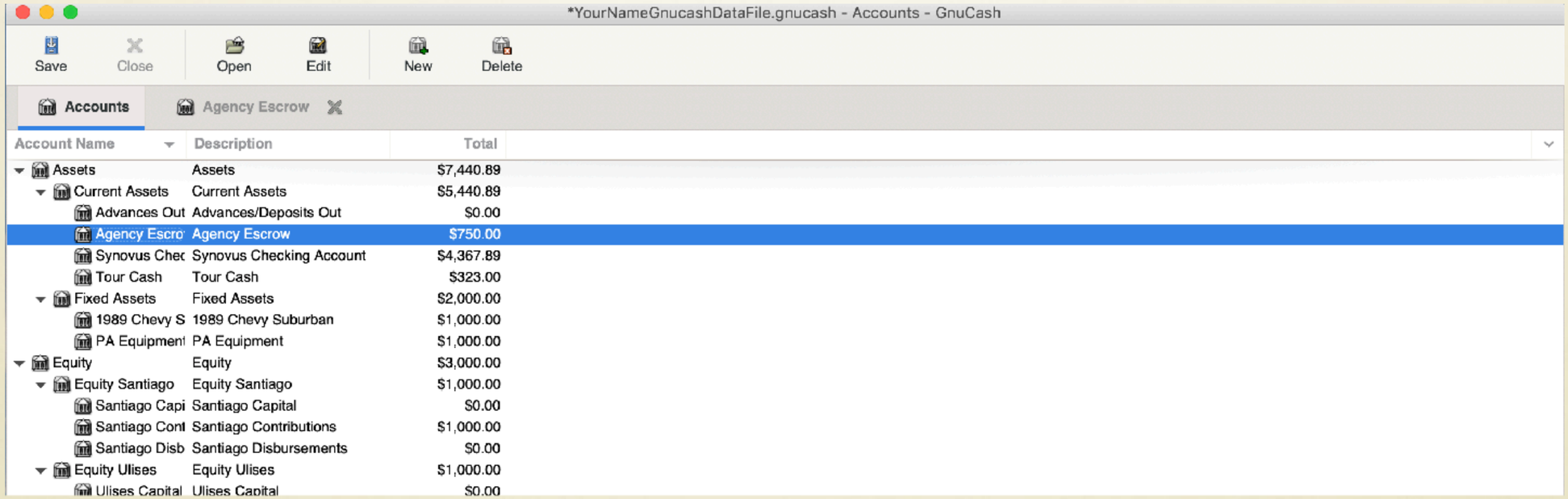
(already recorded)

New entries

10/14 Agent fee Echoplex (10% of artist gross) -$50
10/14 Agent fee Fronterizo (10% of artists gross) -$100
10/14 Balance wired to General Ortiz Checking (Synovus) -$600
Ending balance in agency escrow $0

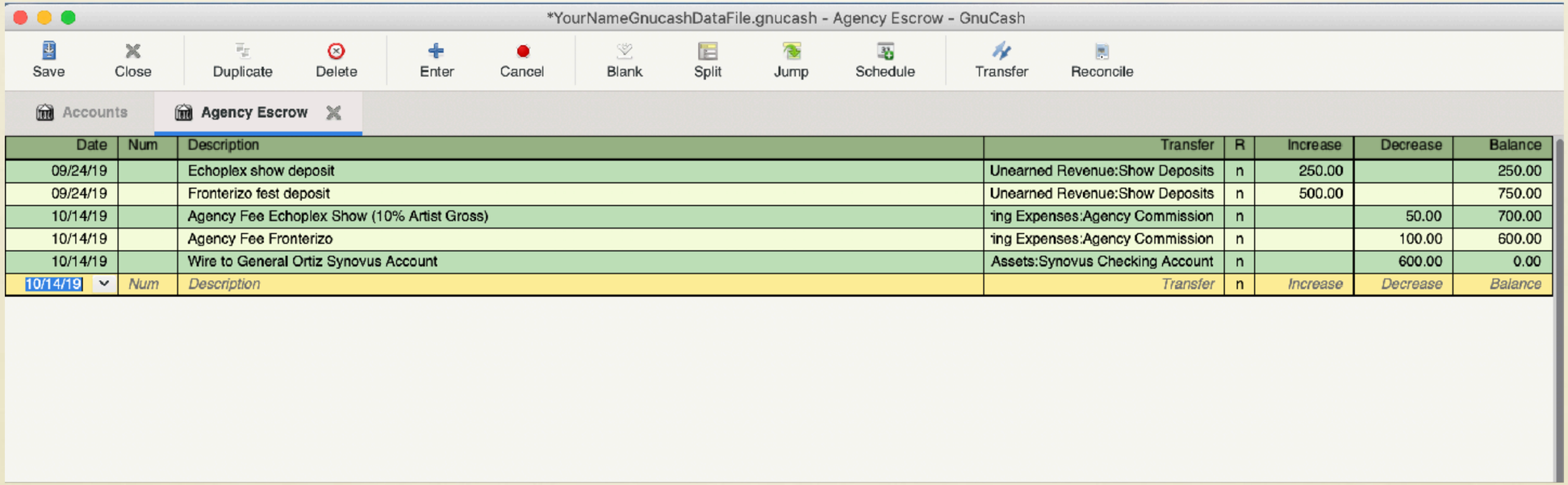
GNUCASH 6

Open Agency Escrow Ledger



GnuCash 6

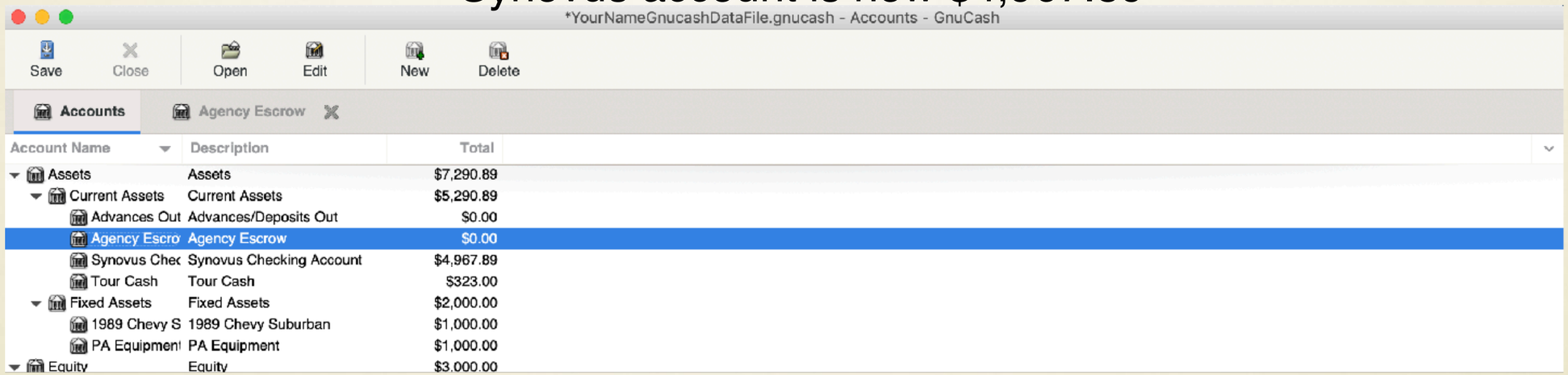
Record statement transactions



Date	Num	Description	Transfer	R	Increase	Decrease	Balance
09/24/19		Echoplex show deposit	Unearned Revenue:Show Deposits	n	250.00		250.00
09/24/19		Fronterizo fest deposit	Unearned Revenue:Show Deposits	n	500.00		750.00
10/14/19		Agency Fee Echoplex Show (10% Artist Gross)	ing Expenses:Agency Commission	n		50.00	700.00
10/14/19		Agency Fee Fronterizo	ing Expenses:Agency Commission	n		100.00	600.00
10/14/19		Wire to General Ortiz Synovus Account	Assets:Synovus Checking Account	n		600.00	0.00
10/14/19	*Num*	*Description*	*Transfer*	n	*Increase*	*Decrease*	*Balance*

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Agency Escrow is now $0
Synovus account is now $4,967.89



Note total current assets change!
From $5,440.89
to $5,290.89

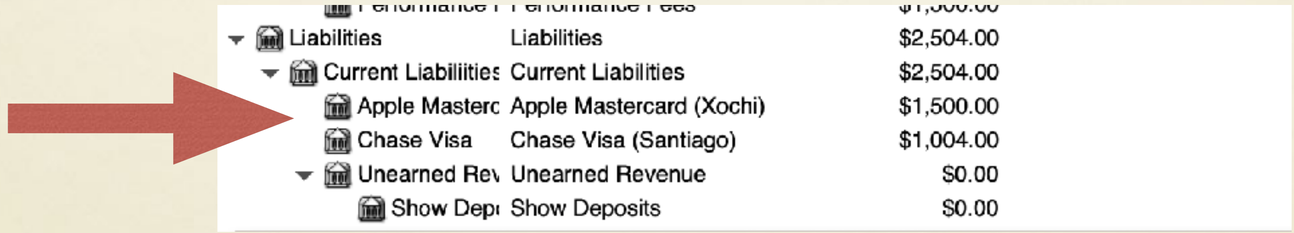
Why?

Difference is the $150 in agent fees

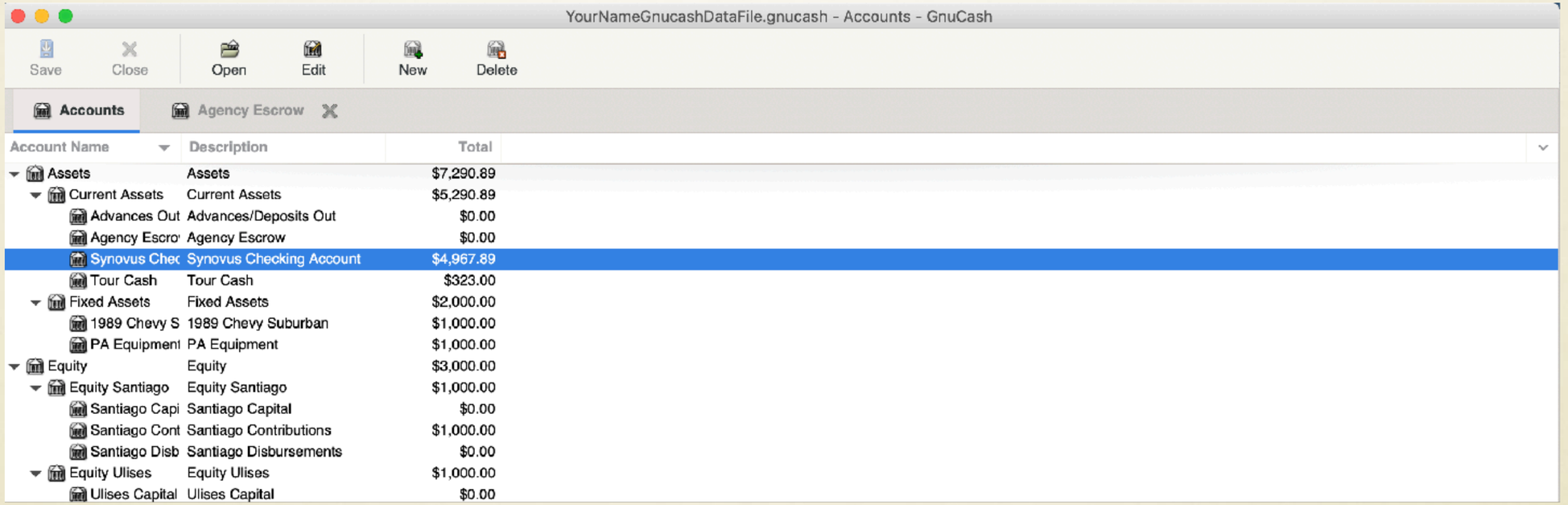
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The Band pays off credit cards.

Record in Synovus checking ledger
10/15 Payment Apple Mastercard -$1500
10/15 Payment Chase Visa -$1004



Gnucash 6


YourNameGnucashDataFile.gnucash - Accounts - GnuCash
Save
Close
Open
Edit
New
Delete
Accounts
Agency Escrow
Account Name
Description
Total
Assets Assets $7,290.89
Current Assets Current Assets $5,290.89
Advances Out Advances/Deposits Out $0.00
Agency Escro Agency Escrow $0.00
Synovus Chec Synovus Checking Account $4,967.89
Tour Cash Tour Cash $323.00
Fixed Assets Fixed Assets $2,000.00
1989 Chevy S 1989 Chevy Suburban $1,000.00
PA Equipment PA Equipment $1,000.00
Equity Equity $3,000.00
Equity Santiago Equity Santiago $1,000.00
Santiago Capi Santiago Capital $0.00
Santiago Cont Santiago Contributions $1,000.00
Santiago Disb Santiago Disbursements $0.00
Equity Ulises Equity Ulises $1,000.00
Ulises Capital Ulises Capital $0.00

Gnucash 6

Accounts | Synovus Checking Account

Date	Num	Description	Transfer	R	Deposit	Withdrawal	Balance
08/29/19		Contribution Cash	/:Equity Ulises:Ulises Contributions	n	900.00		900.00
09/16/19		Bandcamp Digital Sales	ed Music Income:Bandcamp-Digital	n	2,967.89		3,867.89
10/07/19		Fronterizo Fest	Touring Income:Performance Fees	n	500.00		4,367.89
10/14/19		Wire to General Ortiz Synovus Account	sets:Current Assets:Agency Escrow	n	600.00		4,967.89
10/14/19		Payment Apple Mastercard	Current Liabilities:Apple Mastercard	n		1,500.00	3,467.89
10/14/19		Payment Chase Visa	lities:Current Liabilities:Chase Visa	n		1,004.00	2,463.89
10/15/19	*Num*	*Description*	*Transfer*	n	*Deposit*	*Withdrawal*	*Balance*

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Credit cards all now at $0

Gnucash 6

A bands most important asset



Gnucash 6

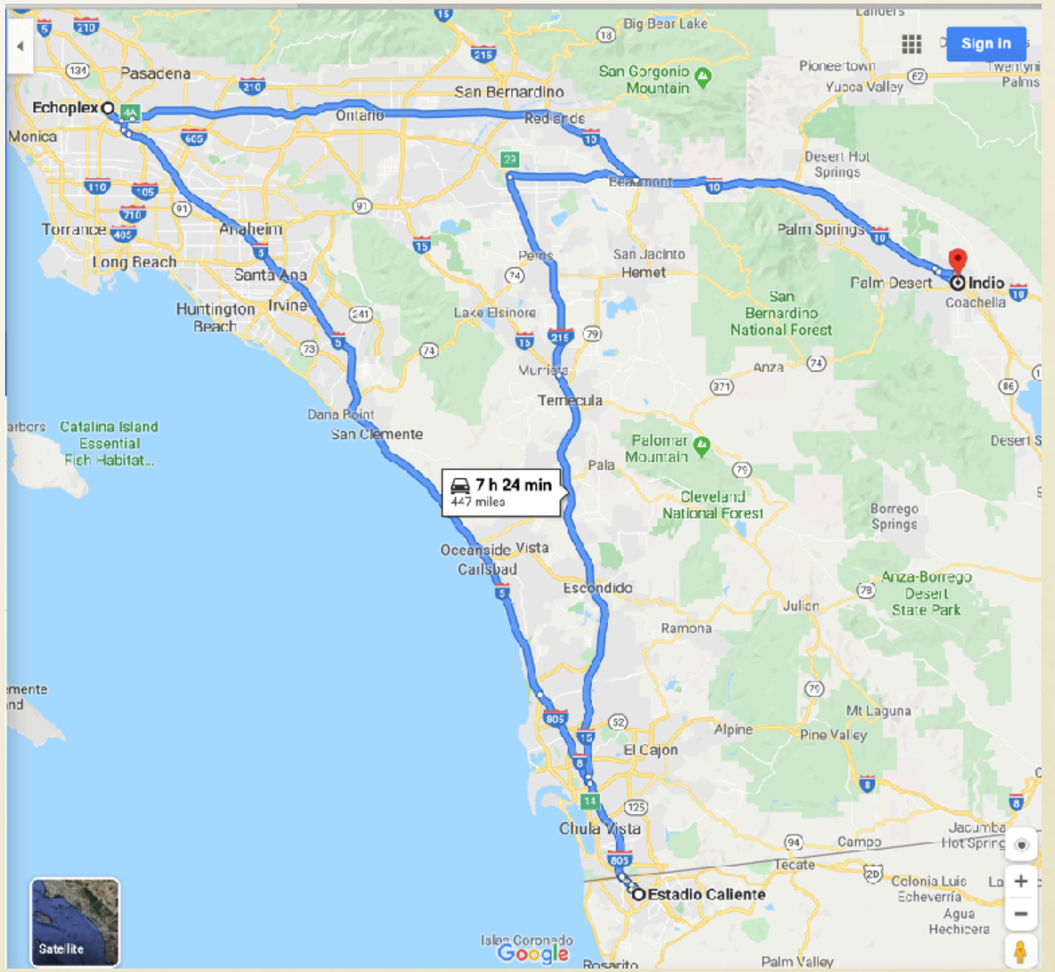
Depreciation
Philosophical discussion about depreciation.
Tax deduction vs replacement costs

See Following Slides

New Expense Account for Vehicle Depreciation
Expenses>Touring Expenses>Vehicle Depreciation

Gnucash 6

Beyond fuel and tire repair
we are “using up life” of 1989 Suburban
We should account for this expense



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Depreciation

Touring “uses up” some of the value of the van

Tax minimization v Financial Planning

There are many correct ways to calculate
depreciation. Let the real accountant do that at the end of the
year when you turn over books to them.
This is a shortcut that will give you an estimate
of how much of the touring van’s value has been used up.

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No

Is this the correct way to do depreciation?

4	Miles on Suburban	155,600
5	Life of Vehicle in miles est.	160,000
6	Useful miles left on vehicle	4,600
7	Current value	$1,000
8	Value as Scrap	$500
9		
10	raw depreciation per mile ($500/4600)	0.11
11	(Not including tire/oil/fuel)	
12		

Why do it this way?

1) It is accurate way to reflect expenses associated with driving THIS vehicle

2) by treating this as expense should leave extra $1,000 in current assets at end of life of vehicle

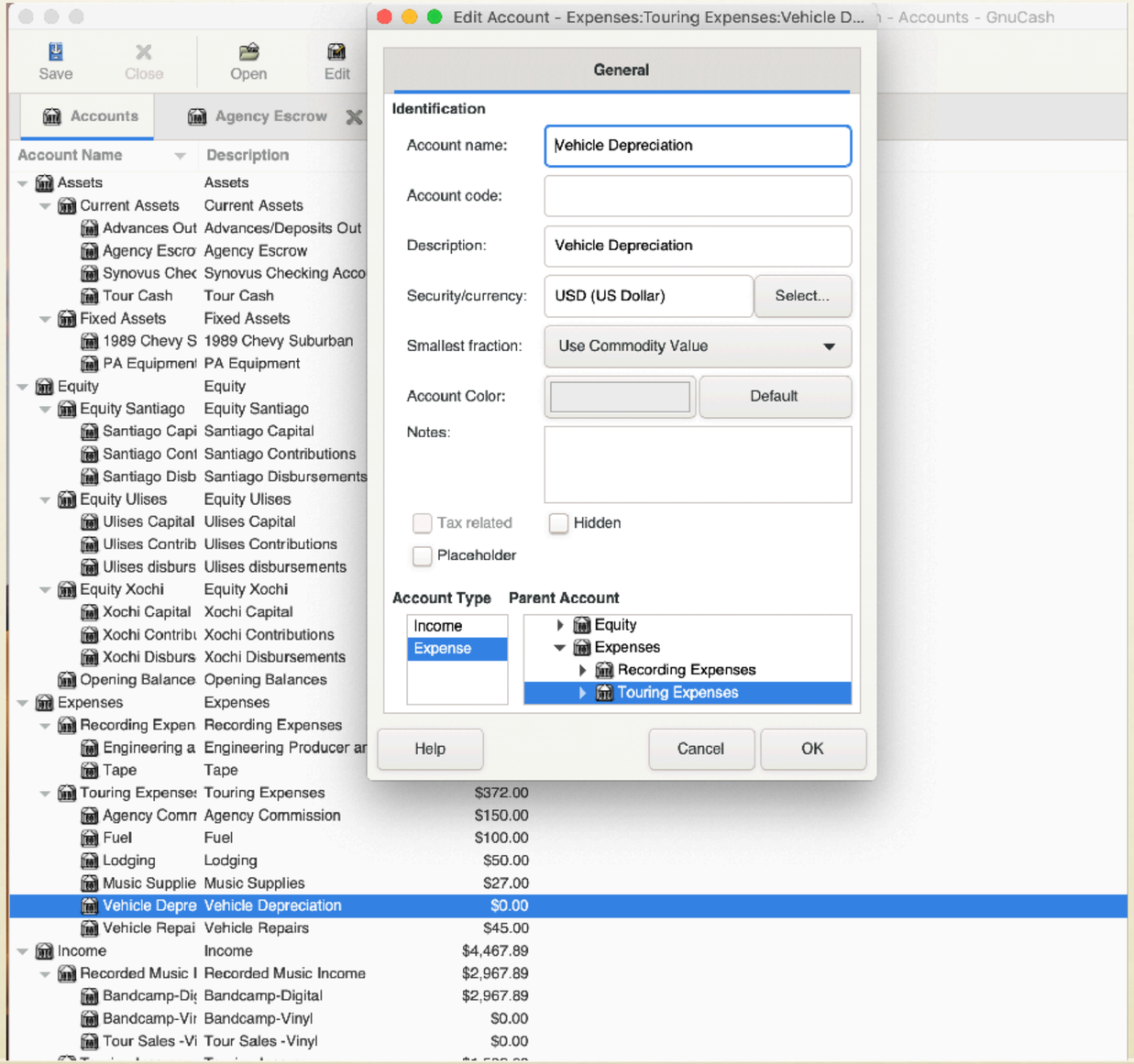
Gnucash 6

Add new account under touring expenses

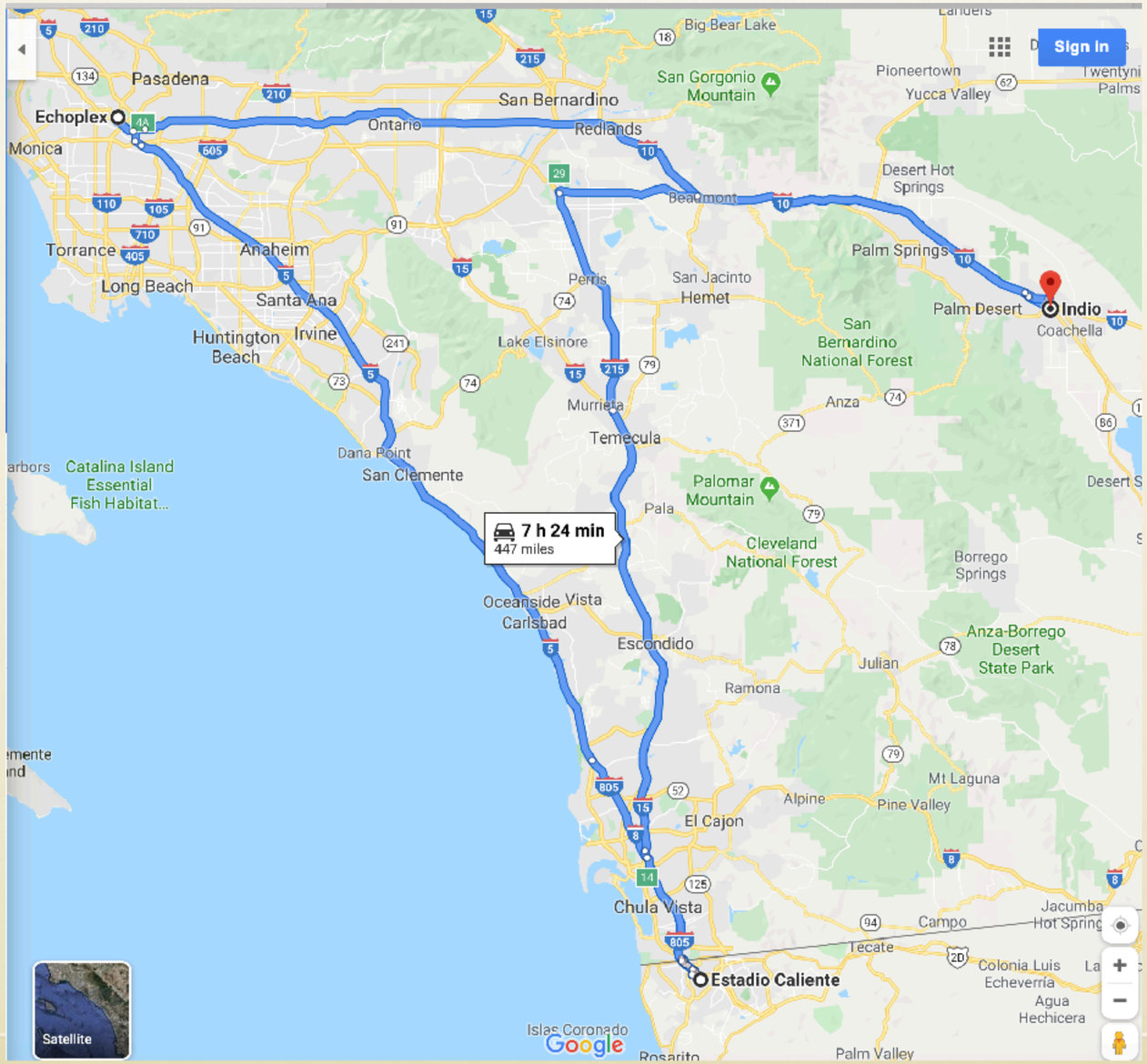
Expenses>Touring Expenses>Vehicle Depreciation



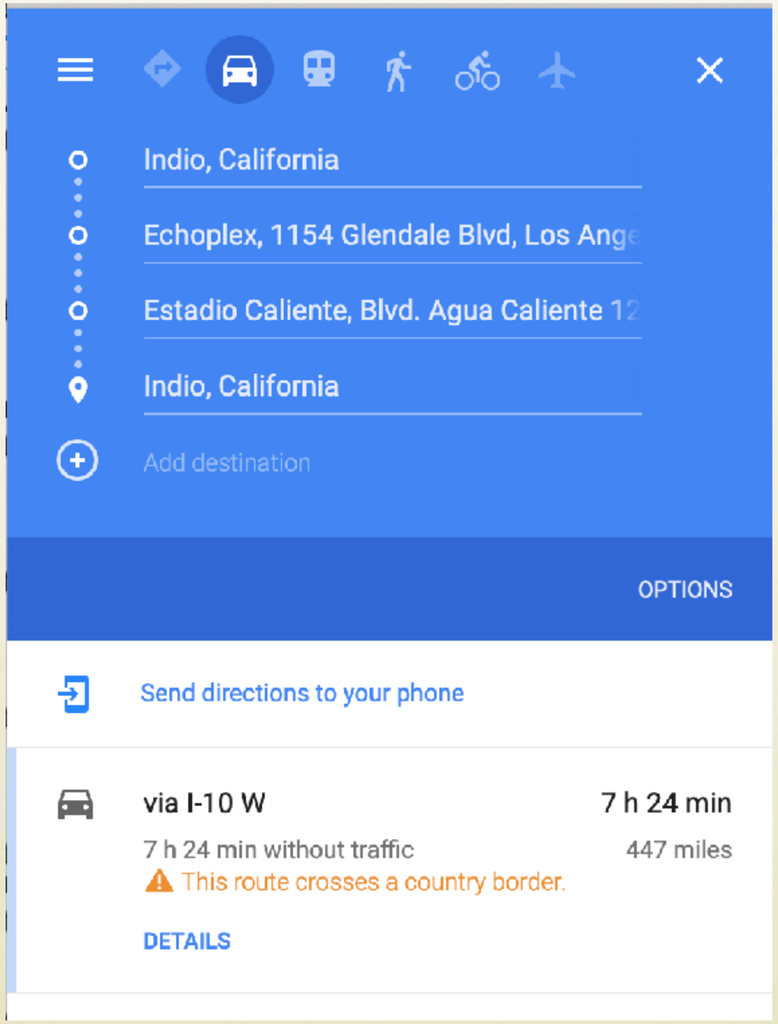
GnuCash 6


Edit Account - Expenses:Touring Expenses:Vehicle D...
- Accounts - GnuCash
Save
Close
Open
Edit
Accounts
Agency Escrow
Account Name
Description
Assets
Assets
Current Assets
Current Assets
Advances Out
Advances/Deposits Out
Agency Escro
Agency Escrow
Synovus Chec
Synovus Checking Acco
Tour Cash
Tour Cash
Fixed Assets
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1989 Chevy S
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PA Equipmen
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Equity
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Xochi Capital
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Xochi Contribu
Xochi Contributions
Xochi Disburs
Xochi Disbursements
Opening Balance
Opening Balances
Expenses
Expenses
Recording Expen
Recording Expenses
Engineering a
Engineering Producer ar
Tape
Tape
Touring Expense
Touring Expenses
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Agency Comn
Agency Commission
$150.00
Fuel
Fuel
$100.00
Lodging
Lodging
$50.00
Music Supplie
Music Supplies
$27.00
Vehicle Depre
Vehicle Depreciation
$0.00
Vehicle Repai
Vehicle Repairs
$45.00
Income
Income
$4,467.89
Recorded Music I
Recorded Music Income
$2,967.89
Bandcamp-Di
Bandcamp-Digital
$2,967.89
Bandcamp-Vi
Bandcamp-Vinyl
$0.00
Tour Sales -Vi
Tour Sales -Vinyl
$0.00
General
Identification
Account name:
Vehicle Depreciation
Account code:
Description:
Vehicle Depreciation
Security/currency:
USD (US Dollar)
Select...
Smallest fraction:
Use Commodity Value
Account Color:
Default
Notes:
Tax related
Hidden
Placeholder
Account Type
Parent Account
Income
Expense
Equity
Expenses
Recording Expenses
Touring Expenses
Help
Cancel
OK

Gnucash 6


Sign in
Echoplex
Pasadena
Monica
Ontario
San Bernardino
Redlands
Big Bear Lake
San Gorgonio Mountain
Pioneertown
Yucca Valley
Twentynine Palms
Desert Hot Springs
Beaumont
Palm Springs
Indio
Coachella
Palm Desert
Torrance
Long Beach
Anaheim
Santa Ana
Huntington Beach
Irvine
Perris
San Jacinto
Hemet
Lake Elsinore
San Bernardino National Forest
Anza
Murrieta
Temecula
Dana Point
San Clemente
Catalina Island Essential Fish Habitat...
7 h 24 min
447 miles
Palomar Mountain
Pala
Cleveland National Forest
Borrego Springs
Oceanside
Vista
Carlsbad
Escondido
Julian
Anza-Borrego Desert State Park
Ramona
Mt Laguna
Alpine
Pine Valley
El Cajon
Chula Vista
Campo
Jacumba Hot Springs
Tecate
Colonia Luis Echeverría
Agua Hechicera
Estadio Caliente
Satellite
Google
Palm Valley

Gnucash 6


Indio, California
Echoplex, 1154 Glendale Blvd, Los Ange
Estadio Caliente, Blvd. Agua Caliente 12
Indio, California
Add destination
OPTIONS
Send directions to your phone
via I-10 W
7 h 24 min
7 h 24 min without traffic
447 miles
This route crosses a country border.
DETAILS

Gnucash 6

New Expense Account for Vehicle Depreciation
Expenses>Touring Expenses>Vehicle Depreciation

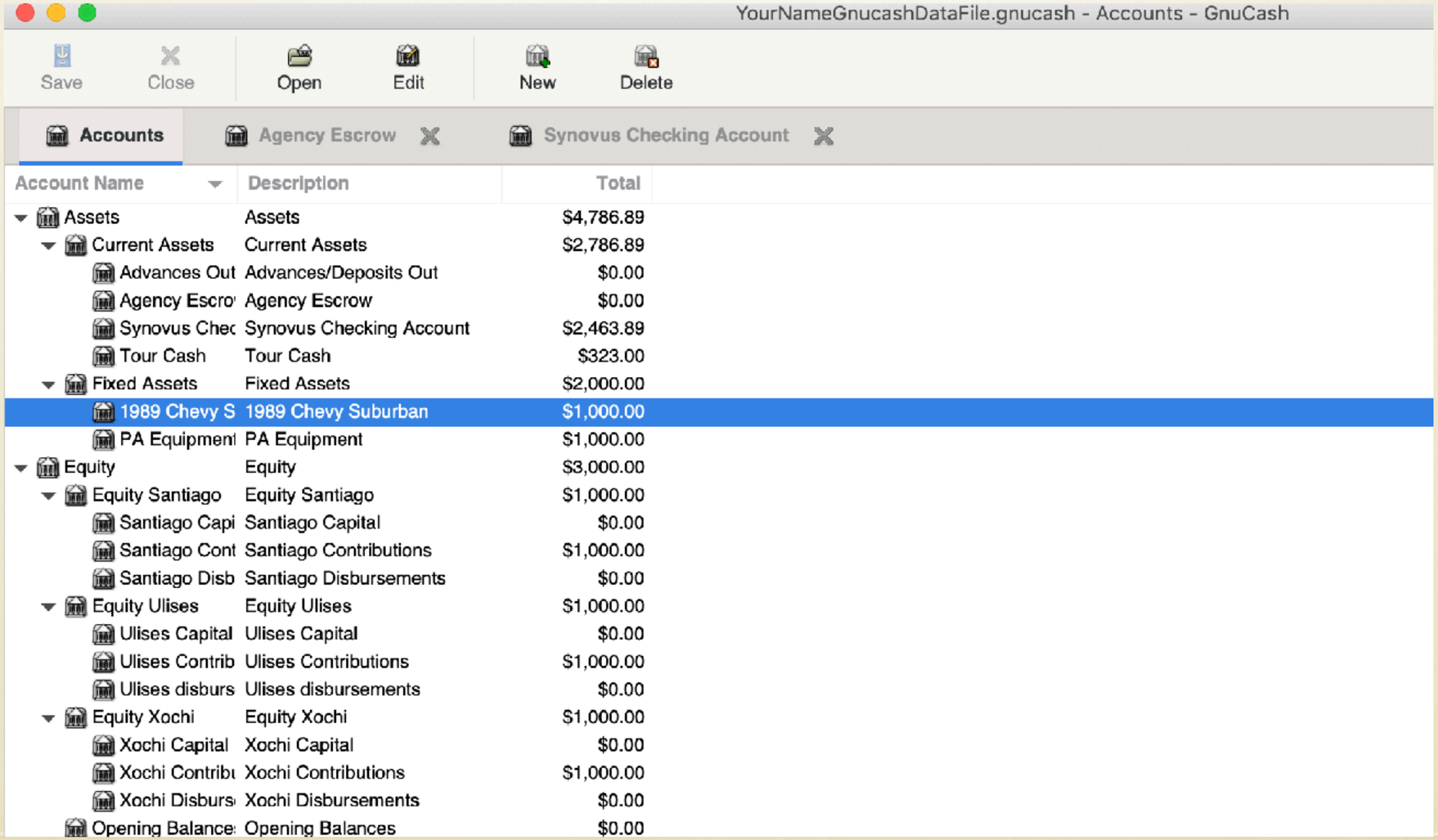
miles driven x $0.11

447 x $0.11= $49.17

Record this in the 1989 Suburban ledger (under fixed assets)

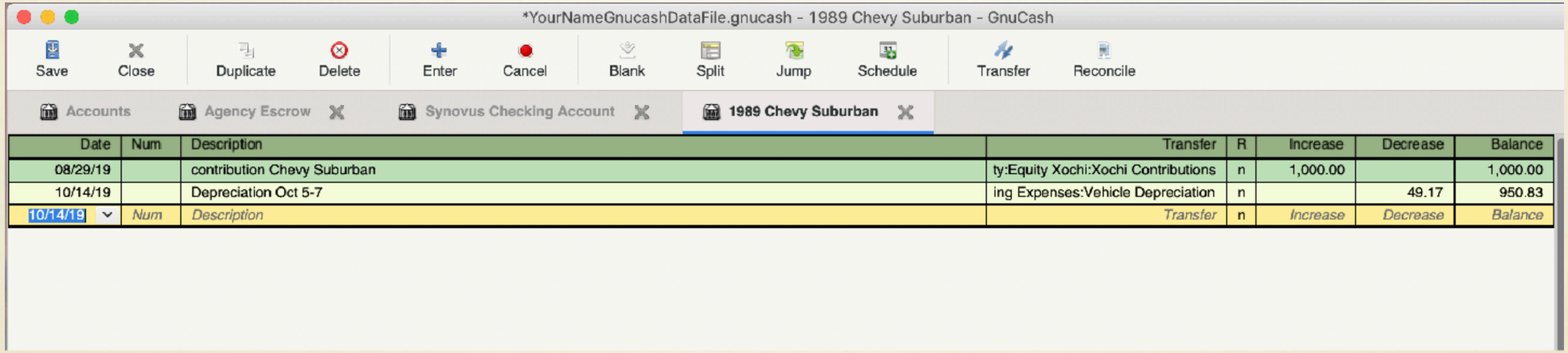
Gnucash 6

Even if it is a fixed asset you can still open ledger



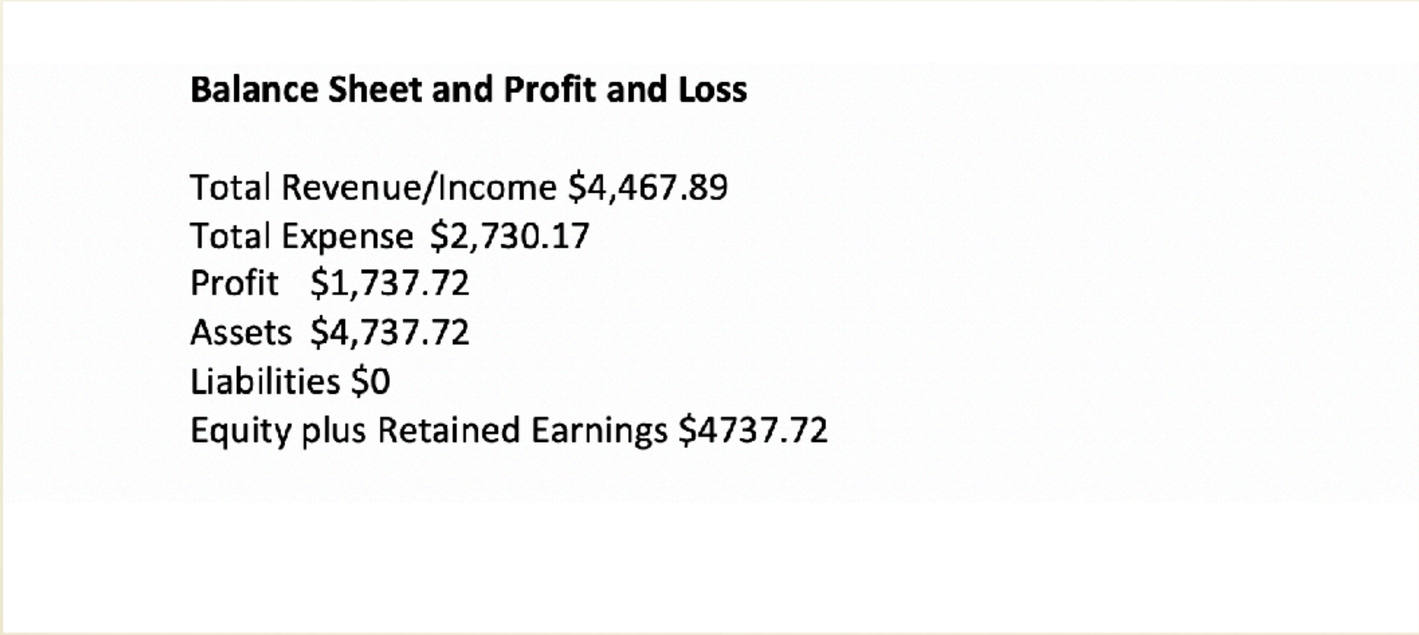
GnuCash 6

Record depreciation here

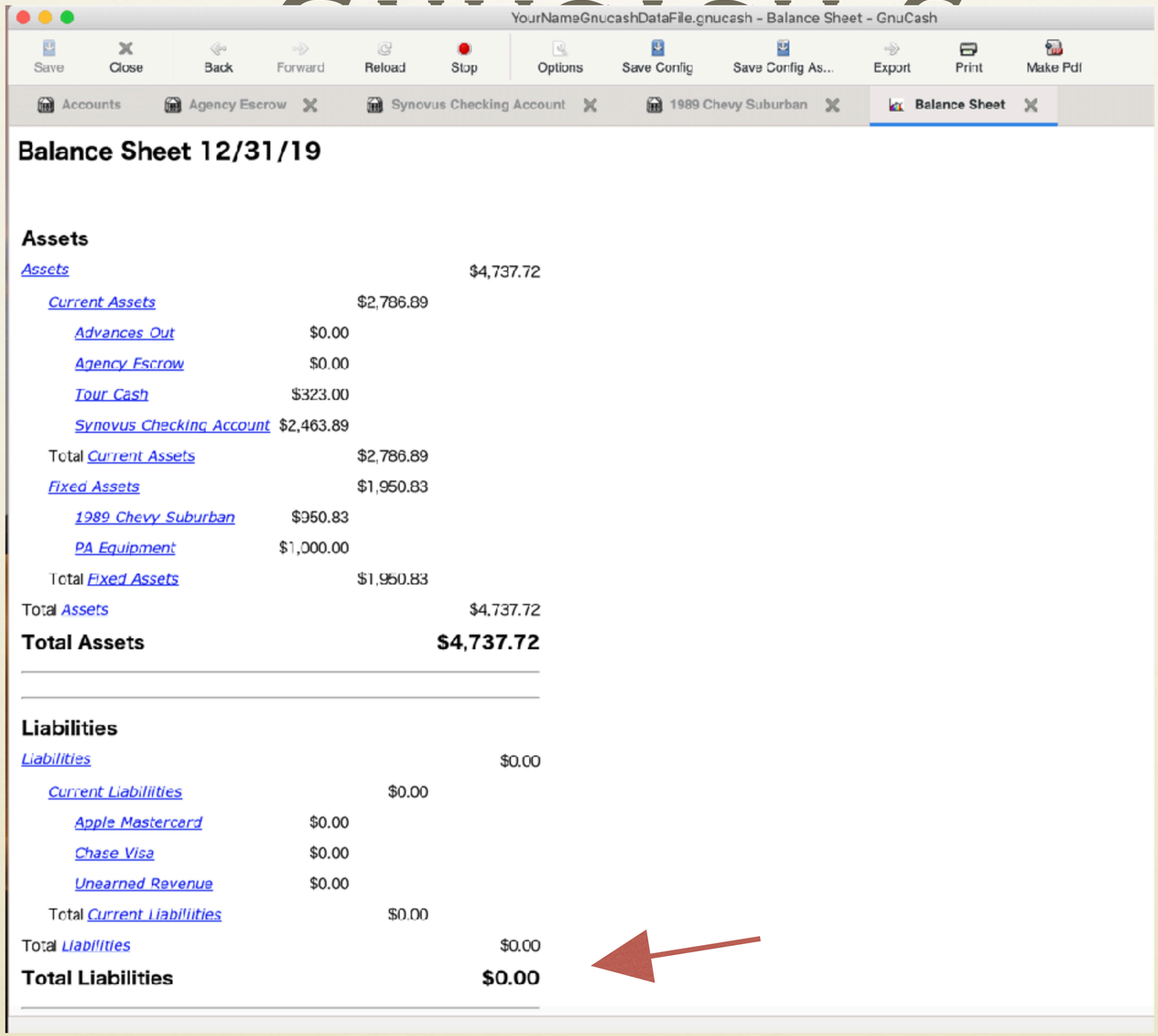


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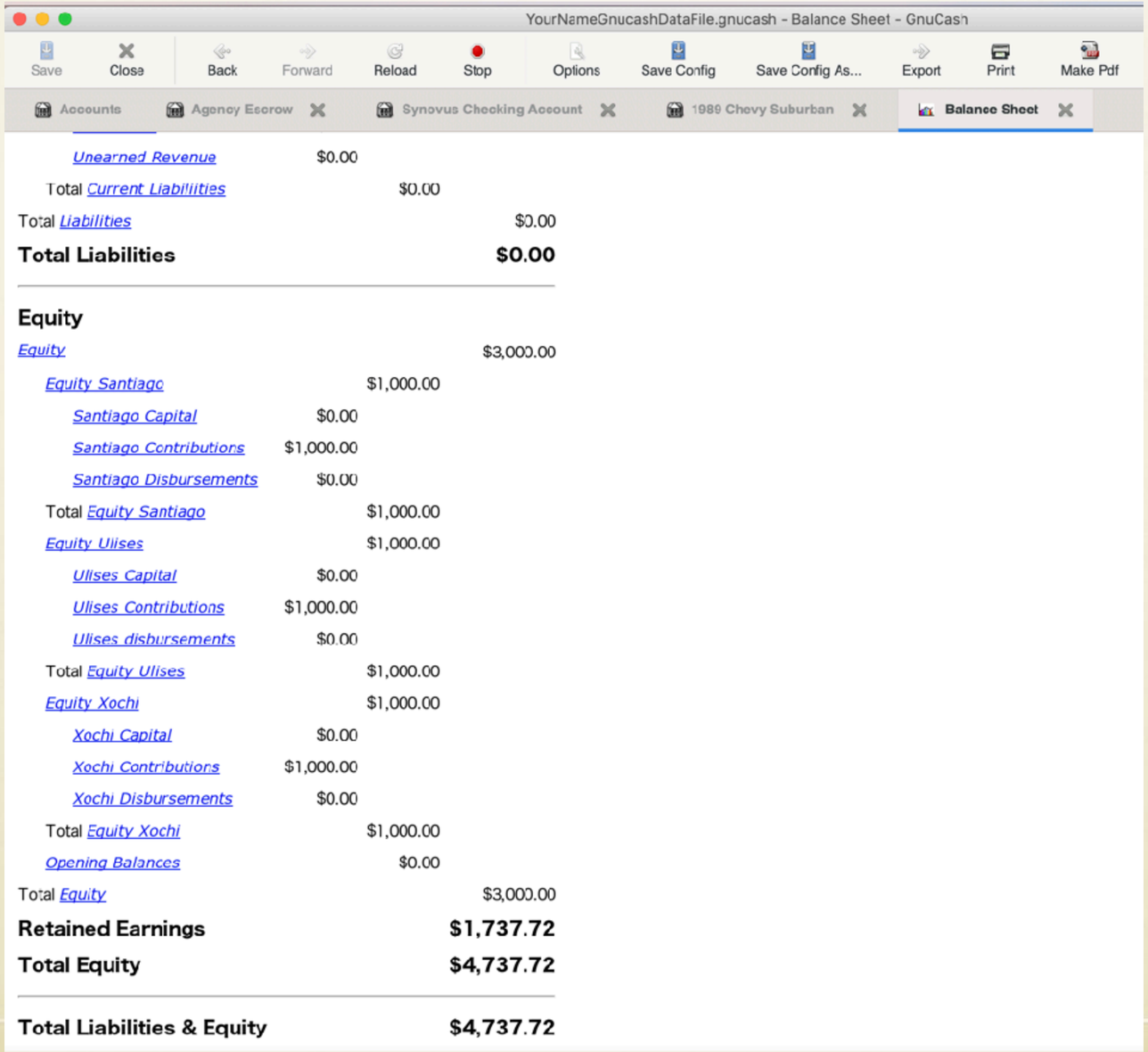
You should end up with this



Liabilities = $0
So Assets = Equity plus retained earnings!


YourNameGnucashDataFile.gnucash - Balance Sheet - GnuCash
Save
Close
Back
Forward
Reload
Stop
Options
Save Config
Save Config As...
Export
Print
Make Pdf
Accounts
Agency Escrow
Synovus Checking Account
1989 Chevy Suburban
Balance Sheet
Balance Sheet 12/31/19
Assets
Assets $4,737.72
Current Assets $2,786.89
Advances Out $0.00
Agency Escrow $0.00
Tour Cash $323.00
Synovus Checking Account $2,463.89
Total Current Assets $2,786.89
Fixed Assets $1,950.83
1989 Chevy Suburban $950.83
PA Equipment $1,000.00
Total Fixed Assets $1,950.83
Total Assets $4,737.72
Total Assets $4,737.72
Liabilities
Liabilities $0.00
Current Liabilities $0.00
Apple Mastercard $0.00
Chase Visa $0.00
Unearned Revenue $0.00
Total Current Liabilities $0.00
Total Liabilities $0.00
Total Liabilities $0.00

GNUCASH 6



Unearned Revenue	$0.00		
Total Current Liabilities		$0.00	
Total Liabilities			$0.00
Total Liabilities			**$0.00**
Equity			
Equity			$3,000.00
Equity Santiago		$1,000.00	
Santiago Capital	$0.00		
Santiago Contributions	$1,000.00		
Santiago Disbursements	$0.00		
Total Equity Santiago		$1,000.00	
Equity Ulises		$1,000.00	
Ulises Capital	$0.00		
Ulises Contributions	$1,000.00		
Ulises disbursements	$0.00		
Total Equity Ulises		$1,000.00	
Equity Xochi		$1,000.00	
Xochi Capital	$0.00		
Xochi Contributions	$1,000.00		
Xochi Disbursements	$0.00		
Total Equity Xochi		$1,000.00	
Opening Balances		$0.00	
Total Equity			$3,000.00
Retained Earnings			**$1,737.72**
Total Equity			**$4,737.72**
Total Liabilities & Equity			**$4,737.72**

Profit & Loss For Period Covering 01/01/19 to 12/31/19

Revenues

Income			$4,467.89
Recorded Music Income		$2,967.89	
Bandcamp-Digital	$2,967.89		
Bandcamp-Vinyl	$0.00		
Tour Sales -Vinyl	$0.00		
Total Recorded Music Income		$2,967.89	
Touring Income		$1,500.00	
Performance Fees	$1,500.00		
Total Touring Income		$1,500.00	
Total Income			$4,467.89
Total Revenue			**$4,467.89**

Expenses

Expenses			$2,730.17
Recording Expenses		$2,309.00	
Engineering and Studio Fees	$1,500.00		
Tape	$809.00		
Total Recording Expenses		$2,309.00	
Touring Expenses		$421.17	
Agency Commission	$150.00		
Fuel	$100.00		
Lodging	$50.00		
Music Supplies	$27.00		
Vehicle Depreciation	$49.17		

Bandcamp-Vinyl	$0.00		
Tour Sales -Vinyl	$0.00		
Total Recorded Music Income		$2,967.89	
Touring Income		$1,500.00	
Performance Fees	$1,500.00		
Total Touring Income		$1,500.00	
Total Income			$4,467.89
Total Revenue			**$4,467.89**

Expenses

Expenses			$2,730.17
Recording Expenses		$2,309.00	
Engineering and Studio Fees	$1,500.00		
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Lodging	$50.00		
Music Supplies	$27.00		
Vehicle Depreciation	$49.17		
Vehicle Repairs	$45.00		
Total Touring Expenses		$421.17	
Total Expenses			$2,730.17
Total Expenses			**$2,730.17**
Net Income for Period			$1,737.72

Account Summary 12/31/19

Code	Account title	Balance
	Assets	$4,737.72
	Current Assets	$2,786.89
	Advances Out	$0.00
	Agency Escrow	$0.00
	Tour Cash	$323.00
	Synovus Checking Account	$2,463.89
	Total *Current Assets*	$2,786.89
	Fixed Assets	$1,950.83
	1989 Chevy Suburban	$950.83
	PA Equipment	$1,000.00
	Total *Fixed Assets*	$1,950.83
	Total *Assets*	$4,737.72
	Liabilities	$0.00
	Current Liabilities	$0.00
	Apple Mastercard	$0.00
	Chase Visa	$0.00
	Unearned Revenue	$0.00
	Total *Current Liabilities*	$0.00
	Total *Liabilities*	$0.00
	Income	$4,467.89
	Recorded Music Income	$2,967.89
	Bandcamp-Digital	$2,967.89
	Bandcamp-Vinyl	$0.00
	Tour Sales -Vinyl	$0.00
	Total *Recorded Music Income*	$2,967.89
	Touring Income	$1,500.00

Total *Touring Income*	$1,500.00
Total *Income*	$4,467.89
Expenses	$2,730.17
Recording Expenses	$2,309.00
Engineering and Studio Fees	$1,500.00
Tape	$809.00
Total *Recording Expenses*	$2,309.00
Touring Expenses	$421.17
Agency Commission	$150.00
Fuel	$100.00
Lodging	$50.00
Music Supplies	$27.00
Vehicle Depreciation	$49.17
Vehicle Repairs	$45.00
Total *Touring Expenses*	$421.17
Total *Expenses*	$2,730.17
Equity	$3,000.00
Equity Santiago	$1,000.00
Santiago Capital	$0.00
Santiago Contributions	$1,000.00
Santiago Disbursements	$0.00
Total *Equity Santiago*	$1,000.00
Equity Ulises	$1,000.00
Ulises Capital	$0.00
Ulises Contributions	$1,000.00
Ulises disbursements	$0.00
Total *Equity Ulises*	$1,000.00
Equity Xochi	$1,000.00

Gnucash 6

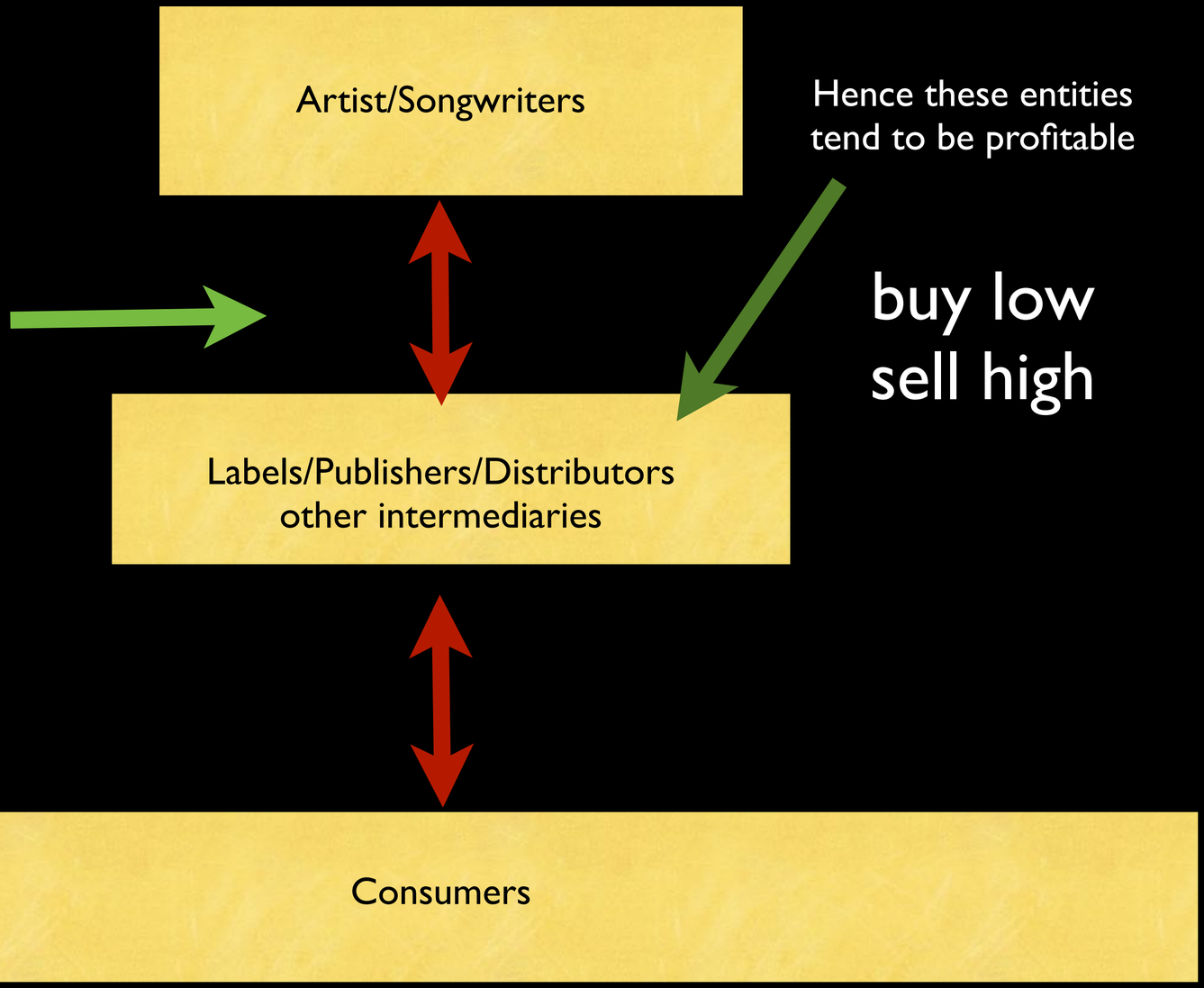
Total *Expenses*	$2,730.17
Equity	$3,000.00
Equity Santiago	$1,000.00
Santiago Capital	$0.00
Santiago Contributions	$1,000.00
Santiago Disbursements	$0.00
Total *Equity Santiago*	$1,000.00
Equity Ulises	$1,000.00
Ulises Capital	$0.00
Ulises Contributions	$1,000.00
Ulises disbursements	$0.00
Total *Equity Ulises*	$1,000.00
Equity Xochi	$1,000.00
Xochi Capital	$0.00
Xochi Contributions	$1,000.00
Xochi Disbursements	$0.00
Total *Equity Xochi*	$1,000.00
Opening Balances	$0.00
Total *Equity*	$3,000.00

Secret Reason Labels, Publishers and other Aggregators of Songs and Recordings are Profitable: *Behavioral Economics*



Secret Reason: Behavioral Economics

Because artists and songwriters on average are risk averse to gains they underprice their recordings and songs



Not everyone needs to be irrational for market to be distorted

(On average and over the long term)
Due to a quirk of human nature, specifically something called *Risk Averse/Risk Seeking Inversion* and the related theory *Prospect Theory* artists sell their songs, sound recordings and services for too little. Or looked at another way, record labels, publishers and other aggregators of rights are able to purchase songs, sound recordings and services at a prices below the real value.

“Buy low, sell high”

Behavioral Economics

The problem with *homo economicus*

Useful notion but begins to fall apart under closer scrutiny.

Many ways people behave irrationally. But for our purposes people behave irrationally when it comes to risking money, protecting themselves against remote risks, and selling their music and songs.

“Behavioral Economics”

Homo Economicus

Homo economicus, or Economic human, is the concept in some economic theories of humans as rational and narrowly self-interested actors who have the ability to make judgments toward their subjectively defined ends.

Homo Economicus would use expected value and other mathematical formulas to evaluate the true value of album. In previous example *Homo Economicus* would only sell their album for $100,000 or more.

"Classical Economics"

Demonstration

Simplified Music Business Model

1/10 chance of your album being a hit.
If your album is a hit you win $1,000,000
Expected value implies your album is “worth” $100,000
“Rational price”

How to calculate expected value.

Suppose random variable X can take value x1 with probability p1, value
probability p2, and so on, up to value xk with probability pk. Then the ex
random variable X is defined as

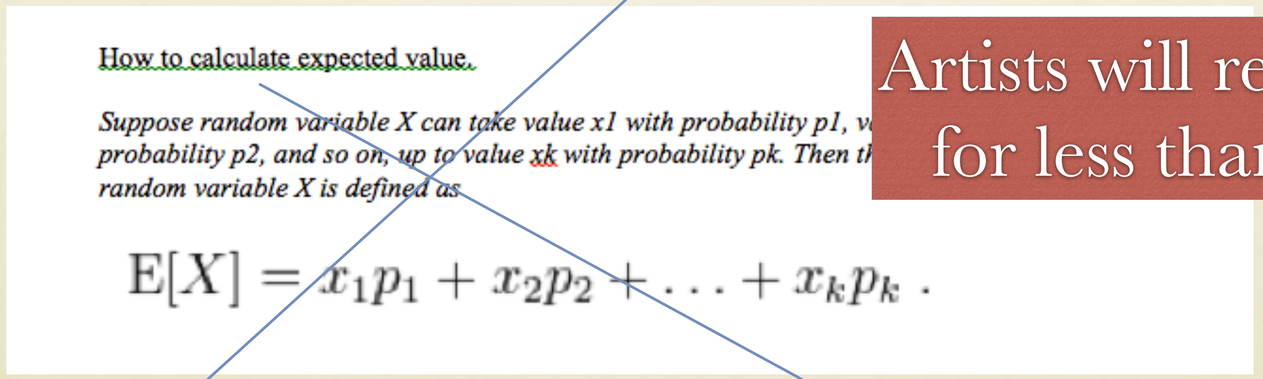
$$\mathrm{E}[X] = x_1 p_1 + x_2 p_2 + \ldots + x_k p_k \ .$$

Homo Economicus only will sell album for $100k or more.

Record labels on average buy albums for less than $100,000
"Irrational price"

Why?

People behave irrationally when faced with uncertain outcomes: Behavioral economics



Artists will reliably sell for less than $100k

The evolution of how we modeled how humans behave in the economic realm.

1.Expected Value- (the real value)
2.Expected Utility
==== rational/irrational======
3. Risk seeking/risk averse inversion
4. Prospect theory.

Irrational pricing in last two cases

Example

Example 1.

You have 1 in 10 chance of winning $100. The other 9 chances you win zero.

$$E[X] = \$100 \cdot \frac{1}{10} + \$0 \cdot \frac{9}{10} = \$10 + \$0 = \$10$$

Example 2.

Roll one dice. You win $1 for a 1. $2 for a 2 etc etc.
Probability for each event is 1 in 6 or 1/6.

$$E[X] = \$1 \cdot \frac{1}{6} + \$2 \cdot \frac{1}{6} + \$3 \cdot \frac{1}{6} + \$4 \cdot \frac{1}{6} + \$5 \cdot \frac{1}{6} + \$6 \cdot \frac{1}{6}$$

E [x] = 3.5

Rational humans would only play this game if they paid less than$3.50 a turn



Normal roulette.
35:1 payout
38:1 odds
expected return on $1 is $0.94

Homo Economicus would not play

But casinos are full of people playing roulette so something is wrong

Why doesn’t this work to model human behavior?

First assumption: Everyone can do the math.

Second assumption: Everyone cares about the “real” value.

Everyone? even if 10% can’t do the math or don’t care about true value it can distorts the overall market price

Record Company
"I'll give you $60,000 for your record"

1 in 10 chance
$1,000,000
EV=$100,000

Most artists:

"Great I'll take it"

Why?
Bad at math?
Want to be in show business?
Risk averse when it comes to gains, wants the sure bet $60k
vs 1 in 10 chance of $1,000,000?

Solution: Expected Utility

Playing the lottery is irrational
from pure financial perspective

But playing the lottery is fun
or to some people it's fun.
It provides something of value beyond monetary compensation.
This transaction has some "Utility" for one of the participants
therefore it is rational

Replace "playing the lottery" with playing in a band and
selling your recordings to record label. It's fun to be in show business.

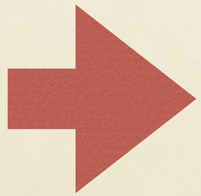
Through the lens of Expected Utility

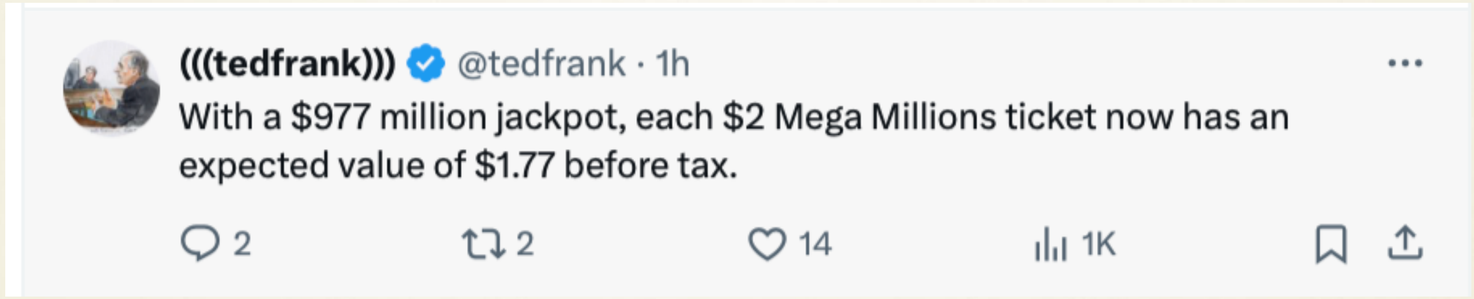
1 in 10 chance
$1,000,000
EV=$100,000

Record Deal

$$$ Money $$$ $60,000

+

Utility  Other good stuff Equivalent to $40,000



$2 = $1.77 + Possibly change my life forever

This model suggests
difference between “rational
price” and “irrational price” is expected utility

By assigning a kind of value to utility this theory
makes the irrational economic choice
rational again

“Risk Seeking/Risk Averse Inversion”

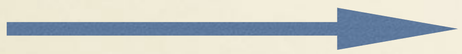
But when examined more closely theory of expected utility didn’t quite work to model individual economic behavior and markets

psychologists noticed strange yet consistent variations
depending on whether it was a gain or loss
the degree of uncertainty and other variations

Risk Seeking Risk Averse
Inversion

General Ortiz on Tour

$11 a day for rental car insurance



Loss of vehicle $30,000

Risk seeking behavior

towards risk, away from “sure bet”

(Caveat: some people will not behave this way)

Risk Seeking Risk Averse
Inversion

General Ortiz
$60,000 advance
Put out album yourself and 1/10 chance to make $1,000,000
(EV or rational price is $100,000)

Risk averse behavior

Away from risk , towards sure bet
though the “sure bet” is below the expected value

(Caveat: some people will not behave this way)

Prospect Theory Kahneman and Taversky
put it all together and measure this irrationality very precisely

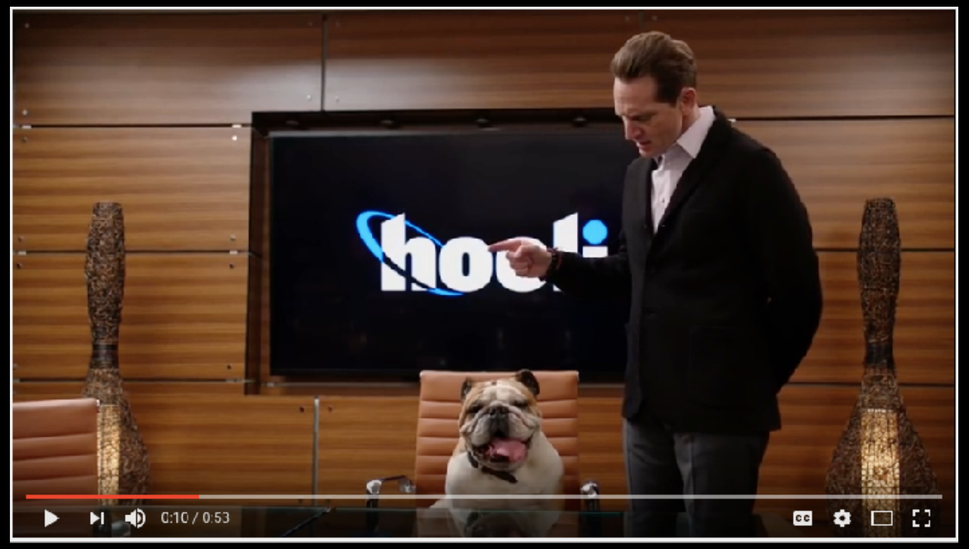
One very important result of Kahneman and Tversky work is demonstrating that people's attitudes toward risks concerning gains may be quite different from their attitudes toward risks concerning losses. For example, when given a choice between getting $1000 with certainty or having a 50% chance of getting $2500 they may well choose the certain $1000 in preference to the uncertain chance of getting $2500 even though the mathematical expectation of the uncertain option is $1250. This is a perfectly reasonable attitude that is described as risk-aversion. But Kahneman and Tversky found that the same people when confronted with a certain loss of $1000 versus a 50% chance of no loss or a $2500 loss do often choose the risky alternative. This is called risk-seeking behavior. This is not necessarily irrational but it is important for analysts to recognize the asymmetry of human choices.



(Caveat: some people will not behave this way)

(**Still irrational in strictly financial mathematical sense**)

Prospect theory





illustrated
by
HBO
Silicon Valley
Gavin Belson
Peter Gregory

GAVIN BELSON: I'll give you three million dollars for it right now!

RICHARD HENDRICKS (Into Phone): Ah, Gavin Belson just offered me three million dollars for Pied Piper.

PETER GREGORY: I'm prepared to give you three hundred thousand dollars

RICHARD HENDRIX: Peter Gregory just offered me 300 um…(into phone) Did you say thousand dollars?

PETER GREGORY: For 10 percent of your company…

GAVIN BELSON: I'll give you 4 million!

PETER GREGORY: 200 for 5 percent…

RICHARD HENDRIX: Huh… you just went down

PETER GREGORY: No, you're still valued at four million dollars.
But you own ninety-five percent of a potential billion-dollar company.

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Risk Averse
personality takes this

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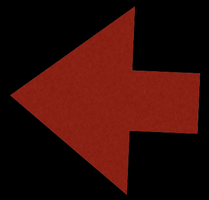
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Risk Seeking
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Reframing. Frames it as a "winning the lottery" type event. Appeals to Hendricks risk seeking nature.

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Prospect theory helps explain this

Risk Seeking Risk Averse Inversion

In general

we are risk seeking towards losses
we are risk averse towards gains

Because we are risk averse towards gains…

GAVIN BELSON: I'll give you 4 million! 3.5 million!

PETER GREGORY: 200 for 5 percent…



We may prefer this deal even though it is lower real value

Richard Hendricks of Pied Piper
Risk Averse? or Risk Seeking?



Risk Seeking

Expected Value

Model human behavior using strict mathematical calculation we did for payout on games of chance flipping coins, playing roulette and rolling dice.

Expected Utility

Model human behavior using an adjustment to expected value that takes into account the “utility” of the transaction to the buyer.

Risk seeking / Risk Averse Inversion adjustments.

Model human behavior to take into account they are (on average) risk averse when it comes to gains (take the cash up front) but risk seeking when it comes to losses (take the risk and cross your fingers).

Prospect Theory

A more robust model of the Risk Seeking/Risk Averse Inversion,. Models human behavior towards risk/reward on a continuous curve. Better explains how humans (on average) switch from being risk seeking to risk averse.

The evolution of how we modeled how humans behave in the economic realm.

rational

1. Expected Value
2. Expected Utility



By giving a value to "utility" human behavior mathematically rational

==========

irrrational

3. Risk seeking/risk aversion inversion
4. Prospect theory.

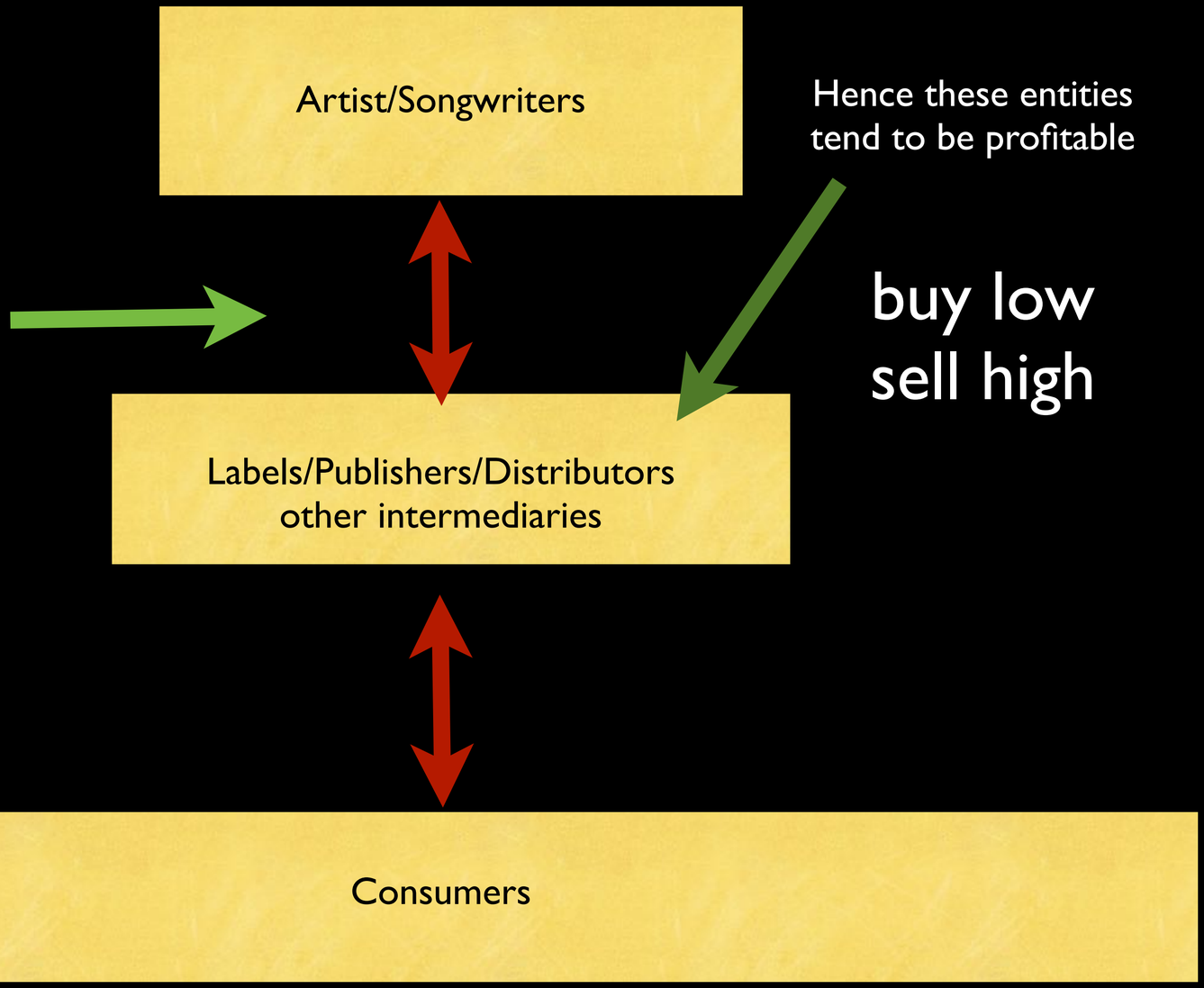
(On average and over the long term)
Due to a quirk of human nature, specifically something called *Risk Averse/Risk/Seeking Inversion* and the related theory *Prospect Theory* artists sell their songs, sound recordings and services for too little. Or looked at another way, record labels, publishers and other aggregators of rights are able to purchase songs, sound recordings and services at a prices below the real value.

“Buy low, sell high”

Behavioral Economics

Secret Reason: Behavioral Economics

Because artists and songwriters on average are risk averse to gains they underprice their recordings and songs



Not everyone needs to be irrational for market to be distorted

As a result?

Generally songwriters and recording artists will price their future earnings cheaper than reasonable PV calculations

Even when their income streams are quite steady!

Record companies and publishing companies become large pools of“underpriced” bets.

This is one of the “secret reasons” labels tend to be profitable

Wouldn't record label executives be irrational as well?
Maybe… but they are playing a different game.
It's "framed" differently.
Behavioral economic effects play out differently.

Record company has advantage of playing the game
over and over again.

Law of large numbers.
odds are in their favor
eventually this is reflected in payout
intuitively understood

Law of Large Numbers

Example 1.

You have 1 in 10 chance of winning $100. The other 9 chances you win zero.

$$E[X] = \$100 \cdot \frac{1}{10} + \$0 \cdot \frac{9}{10} = \$10 + \$0 = \$10$$

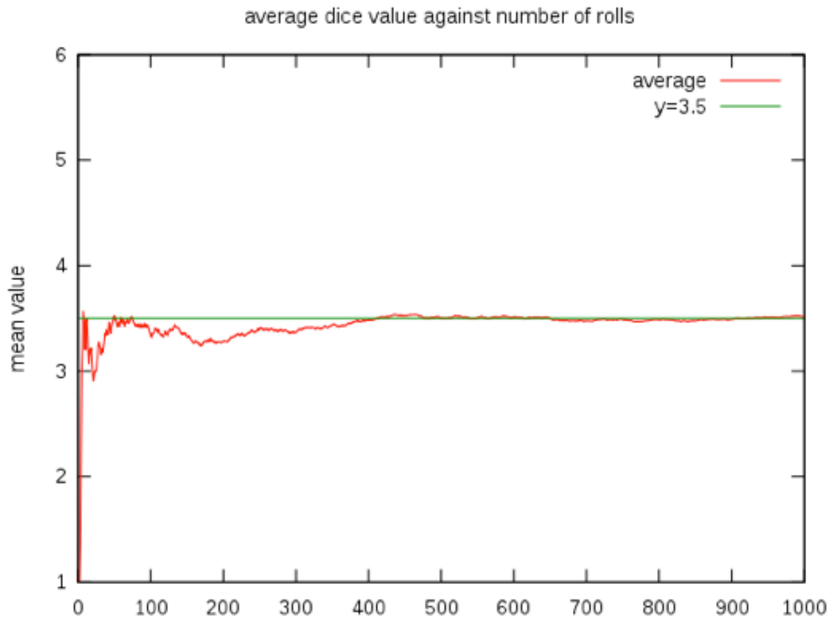
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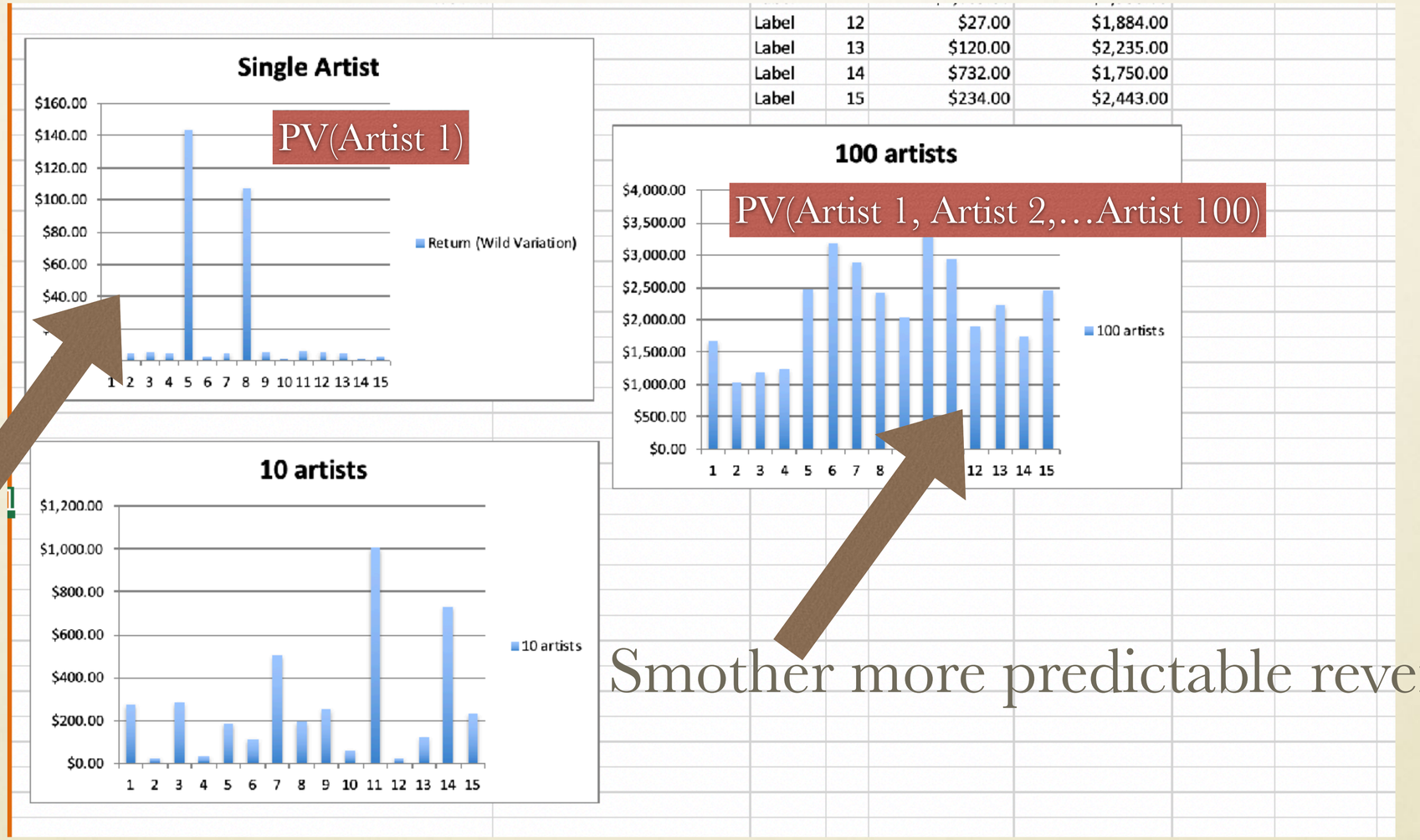
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E [x] = 3.5

Law of large numbers from wikipedia



How are they playing different games?



Revenue choppy

Smother more predictable revenue

<see spreadsheet>

Answer the ELC Question