

### THE FARM BALANCE SHEET: EXAMPLES FOR LECTURE

#### AAE 320

#### Paul D. Mitchell

Agricultural & Applied Economics



AGRICULTURAL & APPLIED ECONOMICS College of Agricultural & Life Sciences

#### **Balance Sheet Format**

Assets		Liabilities				
Current Assets \$100		Current Liabilities	\$50			
Non-Current Assets \$15		Non-Current Liabilities	\$100			
		Owner Equity	\$100			
Total Assets	\$250	Total Liability and Equity	\$250			

Name: J	lames and Dolly Madison		BA	LANCE		SHEET
Bus Cor Pers	siness nsolidated sonal	A	в	c		Cost Basis Market Based
		March 1, 2019 Beginning Balance	Feb. 29, 20 Ending Balance	020 Net Change		
CURRE	NT ASSETS				CURREN	NT LIABILITIES
1.	Cash & Checking	3,421	37,815	34,394	30.	Accounts Payable
2.	Accounts Receivable	900	-	(900)	31.	Line of Credit and Operation
3.	Prepaid Expenses	-		-	32.	Current Portion of Term
4.	Cash Investment Growing Crops	54,669	54,669	-	33.	Accrued Interest
5.	Marketable Livestock	241,992	241,992		34	Ad Valorem
6.	Stored Crops and Feed	4,860	5.060	200	35	Employee Payroll Withh
7.	Purchased Feed	-	-		36	Income Taxes
8.	Supplies	2.000	2.000		37	Deferred Taxes
9.	Other Current Assets	_,	-,		38	Other Accrued Expense
10.	TOTAL CURRENT FARM ASSETS	307.842	341.536	33.694	39	Other Current Liabilities
	Non-Farm Assets:				40.	TOTAL CURRENT FAR
11.	Savings	28,394	32,590	4,196		Non-farm Liabilities:
12.	Marketable Securities		-	-	41.	Non-Farm Notes & Inter
13.	Other Non-Farm Assets				42.	Other Non-Farm Liabilit
14.	TOTAL CURRENT ASSETS	336,236	374,126	37,890	43.	TOTAL CURRENT LIAE
NON-CU	URRENT ASSETS				NON-CU	RRENT LIABILITIES
15.	Breeding Livestock	116,850	116,850		44.	Notes Payable, non-Rea
16.	Vehicles	133,908	120,518	(13,390)	45.	Notes Payable Real Est
17.	Machinery, Equipment	646,682	704,680	57,998	46.	Deferred Taxes
18.	Investment in Capital Leases	-	-		47.	Other Non-Current Liab
19.	Contracts & Notes Receivable	-	-		48.	TOTAL NON-CURRENT
20.	Investment in Cooperatives	18,000	18,350	350		Non-Farm Liabilities:
21.	Real Estate, Land	1,776,000	1,776,000	-	49.	Non-Farm Notes
22.	Buildings & Improvements	47,000	46,161	(839)	50.	Other Non-Farm Liabilit
23.	Other Non-Current Assets	-	-	-	51.	TOTAL NON-CURRENT
24.	TOTAL NON-CURRENT FARM ASSETS Non-Farm Assets:	2,738,440	2,782,559	44,119	52.	TOTAL LIABILITIES
25.	Cash Value, Life Insurance	14,056	14,914	858	OWNER	EQUITY
26.	Investment in Other Entities	15,000	16,000	1,000	53.	Contributed Capital
27.	Other Non-Farm Assets: House	125,000	123,839	(1,161)	54.	Retained Earnings
28.	TOTAL NON-CURRENT ASSETS	2,892,496	2,937,312	44,816	55.	Total Valuation Equity
					56.	TOTAL EQUITY
29.	TOTAL ASSETS	3,228,732	3,311,438	82,706	57.	TOTAL LIABILITIES & E

#### D Ε F March 1, 2019 Feb. 29, 2020 Beginning Ending Net Change Balance Balance ble --and Operating Notes (68,552) 153,552 85,000 of Term Debt 33,630 60,776 27,146 st 10,035 15,660 5,625 1,647 1,647 roll Withholding --10,350 10,350 0 63,696 63,817 121 Expenses ---Liabilities ---ENT FARM LIABILITIES 272,910 237,250 (35, 660)ilities: es & Interest 15,279 15,167 (112) m Liabilities ---ENT LIABILITIES 288,189 252,417 (35,772) TIES 84,545 non-Real Estate 31,862 116,407 Real Estate 45,344 32,142 (13,202) 442,042 449,757 7,715 rrent Liabilities ---URRENT FARM LIABILITIES 519,248 598,306 79,058 oilities: 93,860 85,533 (8,327) es m Liabilities ---URRENT LIABILITIES 613,108 683,839 70,731 ITIES 901,297 936,256 34,959 apital 93,500 93,500 ings 958,633 1,006,380 47,747 1,275,302 Equity 1,275,302 -2,327,435 2,375,182 47,747 57. TOTAL LIABILITIES & EQUITY 3,228,732 3,311,438 82,706

Date: 8/21/20120

#### Oklahoma State University Example Farm Balance Sheet

http://factsheets.okstate.edu/documents/agec-752-developing-a-balance-sheet/

FINPACK'					1/1/201	7 - Cost &	Slim Jir Market Bala	n Sample nce Sheet
Current Assets		Value	Current Liabilities					Balance
Cash and checking (Schd A)		76,500	Accrued interest					32,658
Prepaid exp. & suppl. (Schd B	)	114,438	Accounts payable and of	ther accrue	d expenses			
Growing crops		-	100 CONTRACTOR					
Accounts receivable		-		Int		P&I		Principal
Hedging accounts (Schd E)		5,650	Current loans (Schd U)	Rate		Due		Balance
Other current assets		-	5thNB-Operating	6.00		-		87,863
			5thNB-Cattle	6.375		-		364,951
Crops (Sohd G) Quantity	Value/Unit							
Com 100,841	3.26/bu.	329,040	Principal due within 12 m	onths on ter	rm liabilities			69,288
Com Silage 959	25.00/ton	23,975						
Alfalfa Hay 40	90.00/ton	3,600						
Soybeans 18,947	9.50/bu.	179,997						
Mkt lvst (Sohd H) No.	Value/Unit							
Finish Beef 550	183.00/cwt.	780,038						
Fotal Current Assets		1,513,237	Total Current Liabilities	5				554,760
ntermediate Assets			Intermediate Liabilitie	s (Schd	V)			
	Cost	Market		Int	Principal	P&I	Principal	Intermed
	Value	Value	Loan	Rate	Balance	Due	Due	Balance
Breeding livestock		-	John Deere Credit-332E	3.25	7,199	7,260	7,004	195
Machinery (Schd J)	725,975	1,099,984	5thNB-Mach.	4.50	102,320	23,348	18,499	83,821
Titled vehicles (Schd K)	81,945	112,159						
Other intermediate assets		-						
Total Intermediate Assets	807,919	1,212,143	Total Intermediate Liab	ilities				84,016
ong Term Assets			Long Term Liabilities	(Schd W	i i			
	Cost	Market		Int	Principal	P&1	Principal	LaTerr
Land (Schd M) Acres	Value	Value	Loan	Rate	Balance	Due	Due	Balance
Home site 15	5.000	37,500	5thNB-Bam	7.50	215,578	32,778	15,692	199,884
SW 80 Ac 80	560,000	560,000	5thNB-SW 80 Ac	5.50	278,450	28,116	11,925	266,525
New 80 Ac 80	660,800	660,800	5thNB-New 80 Ac	4.95	451,767	39,831	16,168	435,599
North Contraction	004 700	F14 070						
Other long term (Solid O)	2 401	2 401						
Total Long Term Assets	1,589,927	1,774,979	Total Long Term Liabili	ities				902,008
Total Farm Assets	3 911 083	4 500 359	Total Farm Liabilities					1 540 79
Personal Assets (Cohol P)	172 504	173,812	Personal Liabilities (Cobd	(X)				28 524
								20,00
							Cost	Marke
			Deferred Liabilities (c)					462,450
			Total Liabilities (d)(e)			201154	1,567,318	2,029,768
			Retained Earnings/Contril	buted Capita	al	[a-d]	2,516,349	
			Market valuation equity			[b-a-c]		128,055
Total Assets (a)(b)	4,083,667	4,674,172	Net Worth			[b-e]		2,644,404

#### University of Minnesota FinPack example

https://extension.umn.edu/farmfinance/balance-sheet

Name Cyclone Farm			DateDecember 31, 2	017
Farm Assets	Cost Value	Market Value	Farm Liabilities	Market Value
Current Assets (cost and market	values are the sa	me)	Current Liabilities	Value
Checking, savings accts.	\$16,665	\$16,665	Accounts payable	\$1,859
Hedging accounts	47,909	47,909	Farm taxes due	4 75
Crops held for sale/feed	489,105	489,105	Current notes and credit lines	340,20
Investment in annual crops	8,680	8,680	Accrued interest - current	3,04
Commercial feed on hand	10,940	10,940	- fixed	19,43
Prepaid expenses			Principal due on notes and contracts	
Market livestock	329,403	329,403	Due in 12 months - fixed	28,670
Supplies on hand	2,000	2,000		
Accounts receivable			Other current liabilities	
Other current assets			Other current liabilities	
a. Total Current Assets	\$904,702	\$904,702	d. Total Current Liabilities	\$397,963
Fixed Assets (cost and market val	ues may differ)		Fixed Liabilities	
Unpaid co-op. distributions	\$28,861	\$28,861	Notes and contracts, principal due beyond	12 months
Invest. in perennial crops	157,500	157,500	- Machinery	\$168,673
Breeding livestock	222,600	222,600	- Land	269,100
Machinery & equipment	255,240	275,000	- Other fixed assets	
Buildings/improvements	138,510	171,000		
Farmland	800,000	1,050,000	Other fixed liabilities	
Farm securities, certificates	13,000	13,000	Other fixed liabilities	
Other fixed assets			·	
b. Total Fixed Assets	\$1,615,711	\$1,917,961	e. Total Fixed Liabilities	\$437,773
c. Total Farm Assets (a + b)	\$2,520,413	\$2,822,663	f. Total Farm Liabilities (d + e)	\$835,736
g. Farm Net Worth (c - f)	\$1,684,677	\$1,986,927		
h. Farm Net Worth Last Year	\$1,665,962	\$1,820,062	Working Capital (a - d)	\$506,739
i. Change in Farm Net Worth (g - h)	\$18,715	\$166,865	Current Asset-to-Debt Ratio (a / d)	2.27
Percent Change in Net Worth (i / h)	1%	9%	Total Debt-to-Asset Ratio (f / c)	30%
Personal Assets (optional)	· ·		Personal Liabilities (optional)	
Bank accounts, cash, savings			Credit card, charge accts., etc.	\$4,562
Automobiles, boats, etc.		\$40,000	Automobile loans	15,000
Household goods, clothing		25,000	Accounts payable, taxes due	
Stocks, bonds, etc.		8,500	Other loans	
Real estate			Real estate, other long-term loans	
Other personal assets			Other personal liabilities	
j. Total Personal Assets		\$73,500	k. Total Personal Liabilities	\$19,562
I. Total Personal Net Worth (j - k)		\$53,938	Personal Debt-to-Asset Ratio (k / j)	27%
m Total Assets Farm & Personal	(c + i)	\$2,896,163	n. Total Liabilities, Farm & Personal (f + k)	\$855,298
in. Total Associa, Farm a Fersonal				

Iowa State University example https://www.extension.iastate.edu/ag dm/wholefarm/html/c3-20.html

### **Asset Valuation Problem**

- Asset Value for <u>Cost Basis</u> balance sheet
  - = purchase cost minus depreciation, or = farm production cost
  - More accurate measure of financial status and collateral for loans
  - Can hide management problems, asset values fluctuate
- Asset Value for <u>Market Basis</u> balance sheet
  - = current market value minus any selling costs
  - Follows accepted accounting practices
  - Equity changes only from retained earnings (profits), so evaluate ability as a farm manager
  - Can misrepresent true value of business

### Market vs Cost Basis

- Three hats that farmers wear
  - Labor, Manager and Investor
  - Texas "ranchers" and oil wells
- Farm Financial Standard Committee says use them both
- Practically only matters for breeding livestock, machinery, equipment, buildings and land
  - When depreciation gets out of whack
  - Long-term gains in land values over time

# **Thought Question**

Suppose you have been a sole proprietor for several years. A potential investor wants to evaluate your business skills before investing a lot of money to expand your farm as a partner. She wants to see your balance sheets and income statements from the last few years.

- Would you use a cost or market basis balance sheet, or both?
- Ceres Partners, Luke Drachenberg





# Straight Line Depreciation Example 1

- \$80,000 machine, use for 4 years with \$20,000 salvage value
- Annual Depreciation = (Cost Salvage Value)/Useful Life

= (\$80,000 - \$20,000)/4 = \$15,000

Year	Beginning Basis	Depreciation	Ending Basis
1	80,000	15,000	65,000
2	65,000	15,000	50,000
3	50,000	15,000	35,000
4	35,000	15,000	20,000

# **Declining Balance**

- Depreciation = constant percentage of the asset's <u>current</u> basis
- Depreciation = Current Basis x R<sub>DB</sub>
- R<sub>DB</sub> = Declining Balance Depreciation Rate
  - $R_{DB} = 2 \times R_{SL}$ , 1.75 ×  $R_{SL}$ , 1.5 ×  $R_{SL}$
  - 200%, 175%, 150% declining balance
- Never hits salvage value or \$0
  - Have to make adjustments or switch to straight line along the way

# **Declining Balance Depreciation Example 2**

- \$80,000 machine, use for 4 years with \$20,000 salvage value
- 200% Declining balance: R<sub>DB</sub> = 2 x 1/Useful Life = 50%

Year	Beginning Basis	Depreciation	Ending Basis
1	80,000	50% x 80,000 = 40,000	40,000
2	40,000	50% x 40,000 = 20,000	20,000
3	20,000	50% x 20,000 = 10,000	10,000
4	10,000	50% x 10,000 = 5,000	5,000

• Hits the \$20,000 salvage value at the end of year 2 by accident

### **Depreciation and Taxes**

- Depreciation a cost of business that deduct from income to reduce amount of taxable income
- Calculate depreciation as a % of <u>initial</u> tax basis, which usually equals initial purchase price
  - % taken from a depreciation table
  - Tax tables assume zero salvage value
  - Tax basis ≠ true value or your book value

#### 1. 3-year property.

- a. Tractor units for over-the-road use.
- b. Any race horse over 2 years old when placed in service before January 1, 2009. (Any race horse placed in service after December 31, 2008, and before January 1, 2021, is treated as 3-year property regardless of the age of the race horse.)
- c. Any other horse (other than a race horse) over 12 years old when placed in service.
- d. Qualified rent-to-own property (defined later).

#### 2. 5-year property.

- a. Automobiles, taxis, buses, and trucks.
- b. Any qualified technological equipment.
- Office machinery (such as typewriters, calculators, and copiers).
- Any property used in research and experimentation.
- e. Breeding cattle and dairy cattle.
- f. Appliances, carpets, furniture, etc., used in a residential rental real estate activity.
- g. Certain geothermal, solar, and wind energy property.
- Any machinery equipment (other than any grain bin, cotton ginning asset, fence, or other land improvement) used in a farming business and placed in service after 2017, in tax years ending

after 2017. The original use of the property must begin with you after 2017.

#### 3. 7-year property.

- a. Office furniture and fixtures (such as desks, files, and safes).
- b. Used agricultural machinery and equipment placed in service after 2017, grain bins, cotton ginning assets, or fences used in a farming business (but no other land improvements).
- c. Railroad track.
- d. Any property that does not have a class life and has not been designated by law as being in any other class.
- e. Certain motorsports entertainment complex property (defined later) placed in service before January 1, 2021.
- f. Any natural gas gathering line placed in service after April 11, 2005. See <u>Natural gas gathering line</u> and electric transmission property, later.

#### 4. 10-year property.

- Vessels, barges, tugs, and similar water transportation equipment.
- b. Any single-purpose agricultural or horticultural structure.
- c. Any tree or vine bearing fruits or nuts.
- d. Qualified small electric meter and qualified smart electric grid system (defined later) placed in service on or after October 3, 2008.

#### Appendix A MACRS Percentage Table Guide General Depreciation System (GDS) Alternative Depreciation System (ADS)

Chart 1. Use this chart to find the correct percentage table to use for any property other than residential rental and nonresidential real property. Use Chart 2 for residential rental and nonresidential real property.

<b>N</b>							
	MACRS System	Depreciation Method	Recovery Period	Convention	Class	Month or Quarter Placed in Service	Table
	GDS	200%	GDS/3, 5, 7, 10 (Nonfarm)	Half-Year	3, 5, 7, 10	Any	A-1
	GDS	200%	GDS/3, 5, 7, 10 (Nonfarm)	Mid-Quarter	3, 5, 7, 10	1st Qtr 2nd Qtr 3rd Qtr 4th Qtr	A-2 A-3 A-4 A-5
	GDS	150%	GDS/3, 5, 7, 10	Half-Year	3, 5, 7, 10	Any	A-14
	GDS	150%	GDS/3, 5, 7, 10	Mid-Quarter	3, 5, 7, 10	1st Qtr 2nd Qtr 3rd Qtr 4th Qtr	A-15 A-16 A-17 A-18
	GDS	150%	GDS/15, 20	Half-Year	15 & 20	Any	A-1
	GDS	150%	GDS/15, 20	Mid-Quarter	15 & 20	1st Qtr 2nd Qtr 3rd Qtr 4th Qtr	A-2 A-3 A-4 A-5

Veer	Depreciation rate for recovery period								
Tear	3-year	5-year	7-year	10-ye	ar	15-y	ear	20-year	
1 2 3 4 5	33.33% 44.45 14.81 7.41	20.00% 32.00 19.20 11.52 11.52	14.29% 24.49 17.49 12.49 8.93	10.00 18.00 14.40 11.52 9.22	0% 0 2 2 2	5.0 9.5 8.5 7.7 6.9	0% 0 5 0 3	3.750% 7.219 6.677 6.177 5.713	
6 7 8 9 10		5.76	8.92 8.93 4.46	7.37 6.55 6.55 6.55	7 5 5 6 5	6.2 5.9 5.9 5.9 5.9	3 0 0 1 0	5.285 4.888 4.522 4.462 4.461	
11 12 13 14 15				3.28	3	5.9 5.9 5.9 5.9 5.9	1 0 1 0 1	4.462 4.461 4.462 4.461 4.462	
16 17					Ye	ear	De	eprecia	
18 19 20						1		33.	
21						2		44.	
				-					

#### Table A-1. 3-, 5-, 7-, 10-, 15-, and 20-Year Property Half-Year Convention

#### **IRS Table A-1 Half-Year Convention: 200% DB**

- Why are there 4 entries for 3-year property, 6 entries for 5-year property, etc.?
- When does it switch to straight-line depreciation?
- Depreciation each year is the <u>Purchase</u>
  <u>Price</u> times the Rate from the table. Notice rates add to 100%, which implies take full value over "tax life" of the asset.

Year	Depreciation Rate	Depreciation	Remaining Basis
1	33.33%	\$3,333	\$6,667
2	44.45%	\$4,445	\$2,222
3	14.81%	\$1,481	\$741
4	7.41%	\$741	\$0

## **Depreciation and Taxes**

- Section 179 of tax code allows you to take 100% of the purchase of <u>some</u> assets in first year
  - Limits on types of assets & total \$ amounts that can be claimed
- Tax deprecation rarely lines up with actual depreciation, so when sell asset for different value than remaining tax basis, file Form 4797
- Form 4797: Depreciation Recapture
  - If sale price > remaining tax basis: claim extra as ordinary income and pay income taxes
  - If sale price < remaining tax basis: claim extra depreciation and reduce ordinary income and income taxes

	<b>1707</b>		Sales of B	usiness Pro	perty			OMB No. 1545-0184
Form	7/3/	(Also Invo	luntary Conve Under Section	ersions and Rec	apture Amount F(b)(2))	S		2019
Depa	rtment of the Treasury		► Attach	to your tax return.	(-/(-//			Attachment
Intern	al Revenue Service	Go to www.i	rs.gov/Form4797	for instructions and	the latest informat	tion.		Sequence No. 27
Nam	e(s) shown on return					Identifying n	umbe	er
1	Enter the gross pr	oceeds from sales or exe	changes reported	to you for 2019 on	Form(s) 1099-B or	1099-S (or		
	substitute statemen	t) that you are including or	n line 2, 10, or 20.	See instructions .			1	
Pa	Sales or E	Exchanges of Proper	ty Used in a T	rade or Busines	ss and Involunta	ary Conver	sions	s From Other
	Than Cas	ualty or Thert-Mos			(a) Depresiation		ther	
2	(a) Description of property	(b) Date acquired (mo., day, yr.)	(c) Date sold (mo., day, yr.)	(d) Gross sales price	allowed or allowable since acquisition	(T) Cost or other basis, plus improvements and expense of sale		(g) Gain or (loss) Subtract (f) from the sum of (d) and (e)
							_	
3	Gain, if any, from Fe	orm 4684, line 39					3	
4	Section 1231 gain f	rom installment sales from	Form 6252, line 2	6 or 37			4	
5	Section 1231 gain of	or (loss) from like-kind excl	nanges from Form	8824			5	
6	Gain, if any, from lir	ne 32, from other than case	ualty or theft .				6	
7	Combine lines 2 thr	ough 6. Enter the gain or (	loss) here and on t	he appropriate line a	s follows		7	
	Partnerships and S corporations. Report the gain or (loss) following the instructions for Form 1065, Schedule K, line 9. Skip lines 8, 9, 11, and 12 below.							
	Individuals, partners, S corporation shareholders, and all others. If line 7 is zero or a loss, enter the amount from							
	line 7 on line 11 below and skip lines 8 and 9. If line 7 is a gain and you didn't have any prior year section 1231 losses, or they were recaptured in an earlier year, enter the gain from line 7 as a long-term capital gain on the Schedule D filed with your return and skip lines 8.9.11 and 12 below.							
8	Nonrecaptured net	8						
0	Subtract line 8 from	line 7. If zero or less ente	ar -0- If line 9 is zo	oro, enter the gain fro	m line 7 on line 12 h	elow If line		
9	9 is more than zero	o, enter the amount from	line 8 on line 12 b	below and enter the	gain from line 9 as	a long-term		
	capital gain on the	Schedule D filed with your	return. See instruc	tions			9	

# Learning Goals

- How to create and read a balance sheet for farm operations
- The difference between a Market Basis and a Cost Basis balance sheet for asset valuation and when to use each one
- Methods used to depreciate assets
  - Straight line and declining balance
- How to depreciate farm assets for tax purposes
  - How to use depreciation tables
  - Section 179 depreciation
  - Depreciation recapture (Form 4797)