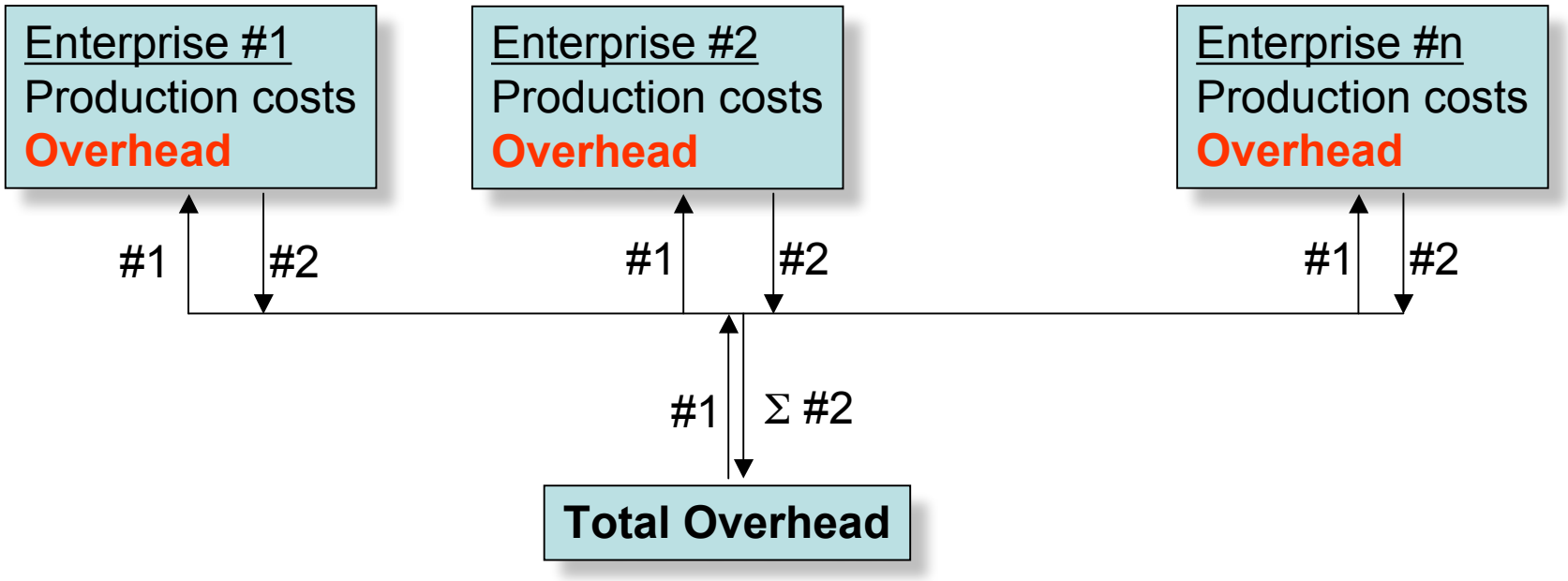
Enterprise Level Analysis Topics

Agribusiness Finance
LESE 306 Fall 2009

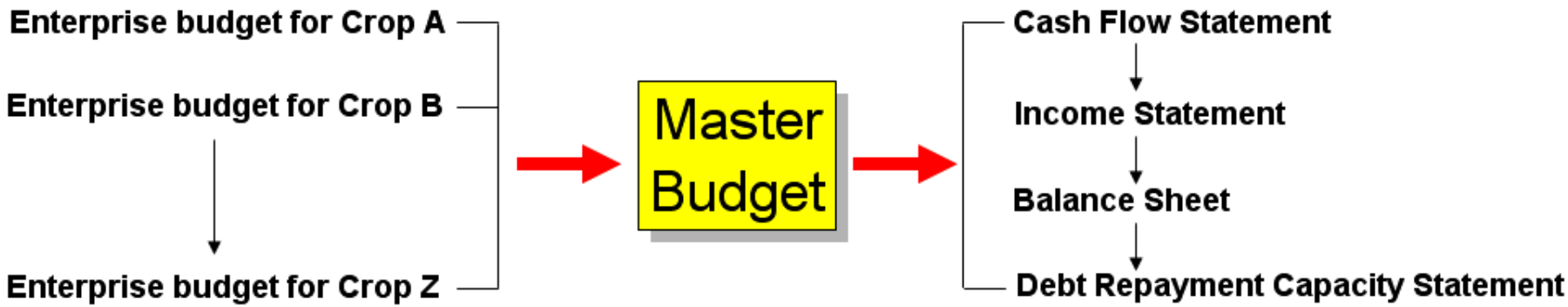
Building up from Enterprise Level



Two approaches:

1. Allocate total overhead using ABC accounting procedures
2. Sum the budgeted overhead at the enterprise level and check for consistency at the firm level (e.g., does Total overhead = Σ overhead$_i$)

Relationship Between Enterprise and Master Budgets



	Unit	Price	Quantity	Amount
Direct Materials:				
Seed	bushel	$1.45	15.0	$21.75
Fertilizer:				
Nitrogen	lb	$0.25	60.0	$15.00
Phosphate	lb	$0.32	40.0	$12.80
Herbicides	acre	$10.00	1.0	$10.00
Custom harvest	acre	$0.14	55.0	$7.70
Custom drying	acre	$13.75	1.0	$13.75
Diesel fuel	gal	$2.10	7.6	$15.96
Gasoline	gal	$2.45	0.9	$2.21
Repair and maintenance	acre	$18.00	1.0	$18.00
Interest on operating capital	acre	$5.10	1.0	$5.10
Crop insurance	acre	$10.14	1.0	$10.14
Total direct expenses				$132.41
Direct Labor:				
Operator labor	hour	$9.00	1.0	$9.00
Hired labor	hour	$8.50	2.0	$17.00
Total direct expenses				$26.00
Overhead:				
Misc administrative overhead	acre	$16.00	1.0	$16.00
Depreciation	acre	$33.00	1.0	$33.00
Total indirect				$49.00
Total expenses per acre				$207.41
Revenue per acre	bu	$2.60	85.0	$221.00
Profit per acre				$13.60

Enterprise #1

Design of an Enterprise budget. Construct budget for all enterprises, multiply times level of activity and compare to ABC approach.

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Breakeven analysis				
Price	bu	$2.44		
Yield	bu		79.8	

Enterprise #1

Calculating Breakeven Price….

$$P_{BE} = TE \div Q$$

	Unit	Price	Quantity	Amount
Direct Materials:				
Seed	bushel	$1.45	15.0	$21.75
Fertilizer:				
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Enterprise #1

Calculating Breakeven Price….

$$P_{BE} = TE \div Q$$
$$= \$2.44$$

Conclusion: Price could fall from $2.60 to $2.44

	Unit	Price	Quantity	Amount
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Yield	bu		79.8	

Enterprise #1

Calculating Breakeven Quantity….

$$Q_{BE} = TE \div P$$

	Unit	Price	Quantity	Amount
Direct Materials:				
Seed	bushel	$1.45	15.0	$21.75
Fertilizer:				
Nitrogen	lb	$0.25	60.0	$15.00
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Breakeven analysis				
Price	bu	$2.44		
Yield	bu		79.8	

Enterprise #1

Calculating Breakeven Quantity….

$$Q_{BE} = TE \div P$$
$$= 79.8$$

Conclusion:
Yield could fall from 85 to 79.8

Enterprise Performance Statistics:

1. Breakeven analysis
2. Rate of return on investment (expenses) per unit for ith product:
   $\mathbf{ROI_i = profit_i \div (VE_i + FE_i)}$
3. Efficiency as measured by the variable expense ratio:
   $\mathbf{VER_i = VE_i \div REV_i}$
4. Profitability as measured by ratio of share of profit relative to share of productive assets required:
   $\mathbf{SPR_i = \{profit_i \div \Sigma profit_i\} \div \{A_i \div \Sigma A_i\}}$

Contribution Analysis

Enterprise	2005	2006	2007	2008
Value of production				
Soybeans	$257,635	$260,830	$264,064	$267,338
Corn	$273,000	$262,681	$252,751	$243,197
None	$0	$0	$0	$0
None	$0	$0	$0	$0
None	$0	$0	$0	$0
Total crop enterprises	$530,635	$523,510	$516,815	$510,536
Fed Cattle	$357,000	$333,152	$310,898	$290,130
None	$0	$0	$0	$0
None	$0	$0	$0	$0
None	$0	$0	$0	$0
None	$0	$0	$0	$0
Total livestock enterprises	$357,000	$333,152	$310,898	$290,130
Total all enterprises	$887,635	$856,663	$827,713	$800,665
Percent share of value of production				
Soybeans	29.02%	30.45%	31.90%	33.39%
Corn	30.76%	30.66%	30.54%	30.37%
	0.00%	0.00%	0.00%	0.00%
	0.00%	0.00%	0.00%	0.00%
	0.00%	0.00%	0.00%	0.00%
Fed Cattle	40.22%	38.89%	37.56%	36.24%
	0.00%	0.00%	0.00%	0.00%
	0.00%	0.00%	0.00%	0.00%
	0.00%	0.00%	0.00%	0.00%
	0.00%	0.00%	0.00%	0.00%
Total	100.00%	100.00%	100.00%	100.00%
Percent share of total costs excluding interest				
Soybeans	30.62%	30.85%	31.08%	31.31%
Corn	30.62%	30.85%	31.08%	31.31%
	0.00%	0.00%	0.00%	0.00%
	0.00%	0.00%	0.00%	0.00%
	0.00%	0.00%	0.00%	0.00%
Fed Cattle	38.76%	38.30%	37.84%	37.39%
	0.00%	0.00%	0.00%	0.00%
	0.00%	0.00%	0.00%	0.00%
	0.00%	0.00%	0.00%	0.00%
	0.00%	0.00%	0.00%	0.00%
Total	100.00%	100.00%	100.00%	100.00%