

Economics of Swine Production

2. Pig Enterprise Management

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Animal Ag Agent Training

October 15, 2020

Economics of Swine Production

Pig Enterprise Management

How is economics applied to pig enterprise management?

How might non-economist agents and specialists use this info?



**So what is meant here by
Management?**

Example of the Management Process

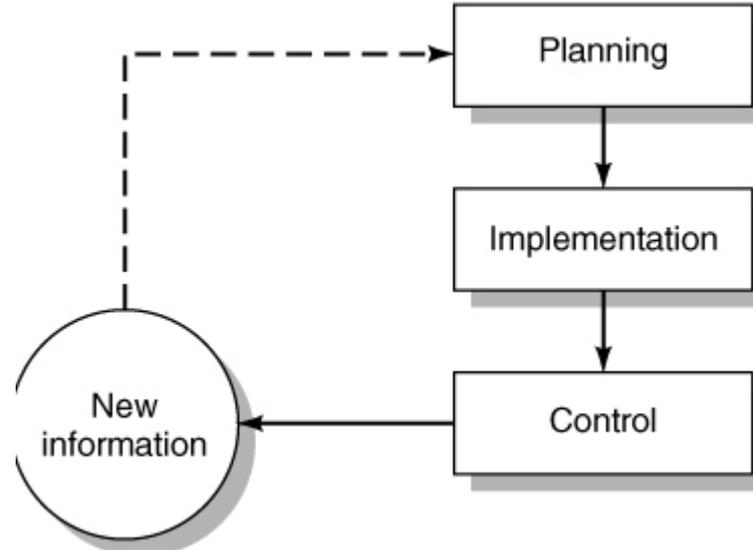
Goal Setting

Information Gathering

Decision-making

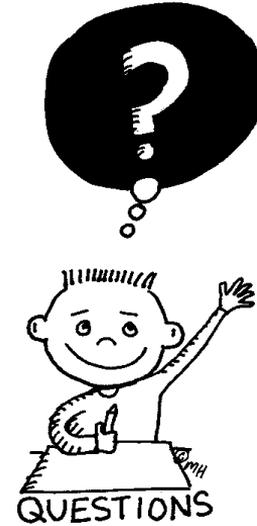
Measurement/Monitoring

Evaluation



Source: TAMU

**So what goals do managers have
for pig production enterprises ?**



Economists model businesses as being managed to maximize profit and manage risk subject to constraints.

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Other goals and constraints may include avoiding bankruptcy, creating employment on the farm, diversifying income across enterprises (crops, other livestock, ...), acquiring assets over time, ...

So how do managers measure economic performance for pig production enterprises ?



Coordinated Financial Statements (basic business management tools)

Cash Flow Statement

Lists cash received and spent over a specific period of time

Balance Sheet or Net Worth Statement

Lists the value of all assets and liabilities (debts) at one point in time

Profit and Loss Statement

Lists all income and costs including changes in assets and debts over a specific period of time

**Our focus today:
Enterprise Budgets**



Coordinated Financial Statements And Enterprise Budgets

Coordinated Financial Statements are typically applied to a whole business (eg. the company)

They can also be applied to a single enterprise.

**The enterprise budget is similar to
a forecast of the profit and loss statement
for a single enterprise**

1. Basic Use of Enterprise Budgets:

a. Project profit or loss for an enterprise for a specific time period

Look at Example 1. Iowa State University Swine Budget

Find ISU Livestock Enterprise Budgets at:

<https://www.extension.iastate.edu/agdm/livestock/html/b1-21.html>

(Presenter reviews “Livestock Enterprise Budgets for Iowa 2020”)

Notable from ISU “Livestock Enterprise Budgets”:

- 1. Definitions of Costs and Data Practices (p.1)**
- 2. Assumed Prices (p.2),**
- 3. Assumed Labor and Feed Ingredient Amounts (p.3)**
- 4. Assumed investments in breeding herd (per sow), buildings and equipment (per space), facilities & equipment (per litter), (p.4)**
- 5. “What if” tables re feed quantities vs p/s/y and costs vs feed ingredient prices (p.5)**
- 6. Enterprise Budgets (farrow to finish, and 3 others), (pages 6 – 9)**
- 7. Table of assumed feed ingredient quantities for various pig purchase weights and market hog weights (p.10)**

Enterprise Budget Structure

Revenue or Income section:

Item, units, quantity sold per period, price, revenue

Operating cost section:

Item, units, quantity purchased per period, price, cost

Fixed Costs section:

Item, quantity used per period, annual charge per unit, cost

Net Returns

Items not listed above, revenue minus costs

Limitations of Enterprise Budgets

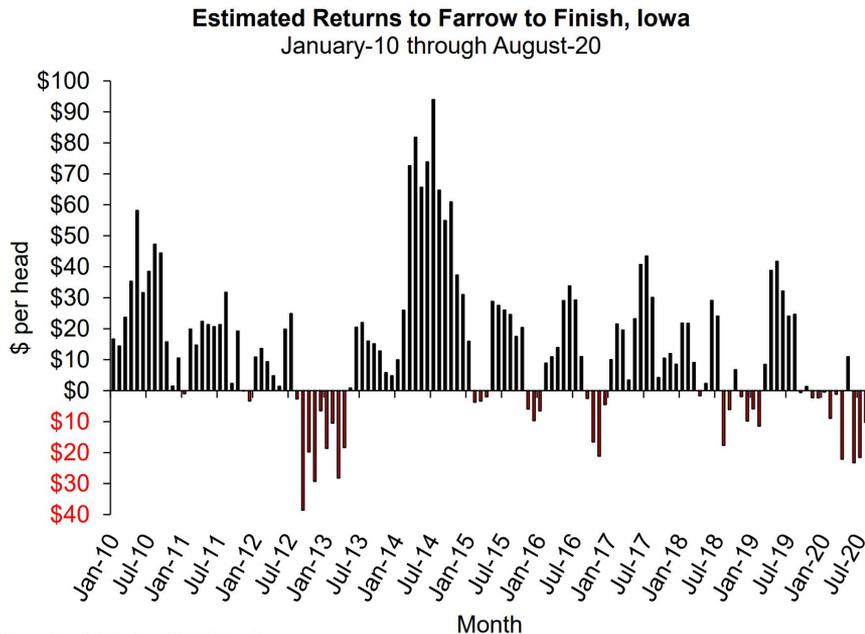
Typically present only one value for each price and quantity;
therefore showing only one of many possible outcomes.

Only includes the revenue and cost items selected by the people who made the budgets; may be missing some items and GIGO.

Tend to be specific for a specific enterprise of a specific type;
multiple budgets are required for various types of an enterprise

Often include blanks for users to enter their values; may or may not be easy to adapt to a different situation.

One by-product of an enterprise budget through time:



Source: Lee Schulz, Iowa State University

Iowa State U.'s cost and returns monthly estimates over decades have become a useful benchmark for US costs and returns.

Look at Example 2. MRKHOG95 Farrow to Finish

This is an example of an extended spreadsheet model that includes an enterprise budget.

Notable from “MRKHOG95”:

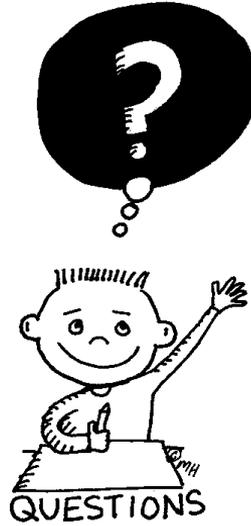
- 1. Allows user input of some production variables (top left)**
- 2. Incorporates production equations into budget cells,**
- 3. Includes what-if tables (bottom left)**
- 4. Includes monthly start-up cash flow and finance (debt) tracking (top right)**
- 5. Includes long term cash flow and finance (debt tracking) bottom right)**
- 6. Allows user to explore effect of changes in production and other assumptions on costs, revenues, and profits.**
- 7. Still limited by assumed values, assumed equations, single outcome of many possible, ...**

Extended spreadsheet models that include an enterprise budget can provide a *powerful basis for partial budgeting*:

... that is, modeling the effect of new management practices, new technology, new market conditions, new policy, diseases, ... on the investment, costs, and returns of various versions of the enterprise.

Find NCSU Ag & Resource Economics Enterprise Budgets at:

<https://cals.ncsu.edu/are-extension/business-planning-and-operations/enterprise-budgets/>



**Where do the numbers in Enterprise Budgets
come from?**

Steps in Building a Budget

1. Define specifically what enterprise you are modeling
2. List all the activities that go into starting and operating the enterprise
3. List all the resources that go into the enterprise
4. List all the products of the enterprise
5. Use best available production information to define the quantities of each input required to produce a quantity of output
6. Use best available prices for each of the resources and products listed
7. Build the budget and state your assumptions

Sources of Data

For existing enterprises, records are the best source of data.

Production records: Breeding, Farrowing, Weaning, ...

Inventory records: Transfers in and out by room; head, Wt., date.

Feed records: Delivered, removed, diet, date, weight, ...

Marketing records: head, weight, price, deductions, culls, ...

Input purchase records: quantity, price, type, use, ..

Manure management and mortality management records:

Contract terms and close out sheets

Financial and tax records, labor records, diaries and QC logs,

Sources of Data (continued)

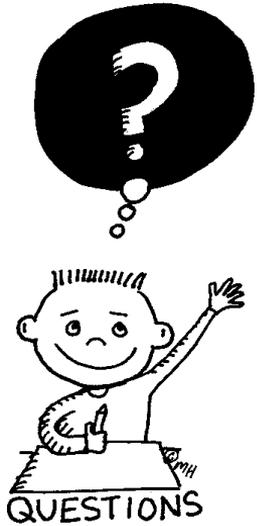
For *non-existing* enterprises,

Data from similar enterprises,

Engineering and biological data from trials and research,

Market data for inputs and products (similar)

Hypothesized values with a higher and lower value demonstrated
(sensitivity analysis of the assumed value)



How do I use enterprise budgets?

Extension budgets are useful as an outline for discussing important revenues and costs for an enterprise.

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Extension budgets can be a basis for discussion of which inputs and products are missing and which production values are right or wrong. (help users understand limitations of budgets and help users modify budgets for their specific situation).

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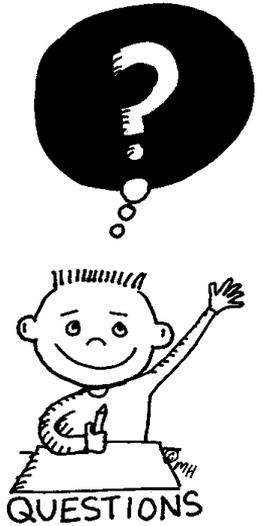
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Enterprise experts can participate in creating, maintaining, and improving budgets and extended models.

**Revenues, costs, investment, and risk
are important economic variables
used to manage enterprises**

**Enterprise budgets are primary tools for applying
economics to pig enterprise management.**



Questions and comments?

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