Who am I?

• Assistant Professor
  – Food and Resource Economics @ UF
  – Teaching and Extension appointment
  – Graduate of UC Davis ag-econ

• Avid computer nerd

• Frisbee and badminton enthusiast
What do I do at UF?

• Teaching (70%)
  – International Ag Marketing (Masters + Undergrad)
  – Ag Finance (Masters + Undergrad)

• Extension (30%)
  – Farm financial training
  – H-2A guest worker program research and education
Recordkeeping

HOW TO ORGANIZE YOUR FINANCIAL RECORDS
Key Concepts

• Why should you keep records?

• How should you keep records?

• What records should you keep?

• How can records improve your business?
Why is Recordkeeping Important?

• Let’s brainstorm some reasons why recordkeeping is important!
  
  – Required for taxes, loans, and programs
  – Required to construct financial statements
  – Helps track major expenses and budget
  – Can be used to forecast
  – Demonstrates financial responsibility
Discussion

• *How do you currently (or plan to) keep your records?*

• *Why is recordkeeping especially important for agriculture?*
How to Keep Records

• You need a **system** (ideally electronic) and **methodology** to keep proper records
  – **QuickBooks**, Quicken, Wave, Bookkeeper
  – Excel, LibreOffice (free)
  – Ledger

• Stuffing receipts into a box is a start, but it’s not **efficient**
QuickBooks

- [https://www.youtube.com/watch?v=yWgqKULQ7YE](https://www.youtube.com/watch?v=yWgqKULQ7YE)
QuickBooks Trial

1. Go to course website: https://fred.ifas.ufl.edu/growingyourbusiness profits/

2. Navigate to Session 1 – Recordkeeping
   Download QuickBooks 18 Trial

3. Double-click to install
QuickBooks Setup

Intuit QuickBooks Enterprise 30-day Free Trial

3 ways to get started

✈️ I want to see a sample Company File.  
Learn to add and change data in a sample company file.

✈️ I’m ready to create my own Company File.  
Use EasyStep Interview to create a company file and customize it for your business.

✈️ I want to open an existing Company File.  
Please make a copy of your existing company file for use during your trial period.

Your trial expires in 29 DAYS

BUY NOW

Call 800-450-8469 to speak with an Enterprise specialist

Accountants and Proadvisors Call 888-666-7917
Example - Bills
<table>
<thead>
<tr>
<th>Business Transaction</th>
<th>Cash Customers (Pay at time of sale)</th>
<th>Credit Customers (Pay after the sale date)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>QuickBooks Transaction</td>
<td>Accounting Entry</td>
</tr>
<tr>
<td>Estimate (Optional)</td>
<td>Not Usually Used</td>
<td>Non-posting entry used to record estimates (bids) for Customers or Jobs</td>
</tr>
<tr>
<td>Sales Order (Optional)</td>
<td>Not Usually Used</td>
<td>Non-posting entry used to record customer orders</td>
</tr>
<tr>
<td>Recording a Sale</td>
<td>Create Sales Receipts</td>
<td>Increase (debit) Undeposited Funds, increase (credit) income account</td>
</tr>
<tr>
<td>Receiving Money in Payment of an Invoice</td>
<td>No additional action is required on the sales form.</td>
<td>Increase (debit) Undeposited Funds, decrease (credit) Accounts Receivable</td>
</tr>
<tr>
<td>Depositing Money in the Bank</td>
<td>Record Deposits</td>
<td>Decrease (credit) Undeposited Funds, increase (debit) bank account</td>
</tr>
</tbody>
</table>
Generating Financial Statements

• QuickBooks can help you file taxes and generate important financial statements

• On the top toolbar, locate “Reports”
  – Reports -> Report Center
  – Profit and Loss statement (income statement)
  – Balance Sheet (net worth statement)
  – Statement of Cash Flows
Need More Practice?

• QuickBooks provides tutorials: https://quickbooks.intuit.com/tutorials/

• Textbooks and courses available online

• Can contact me for additional materials
Discussion

- What are the pros and cons of different recordkeeping programs?

- Which do (will) you use?
How to Keep Records

• Once you have chosen a system, you need to ensure that you **backup your data**
  – Flash drives
  – External hard drives
  – The “cloud”

• Keep receipts electronically and with a filing system
  – Cheap **receipt scanners** are a great resource
How to Keep Records
Recordkeeping Tips

• *Group records by category*
  – Try using the [IRS Schedule F](https://www.irs.gov/businesses/small-businesses-self-employed/irs-schedule-f) to group expenses, it will make doing your taxes easier in the future
  – *Accrual* vs cash accounting

• *Keep track of both personal and business records*
  – Keep business and personal expenses separate
  – Separate records by operation
Recordkeeping Tips

• Records are easily misplaced or entered incorrectly
  – Check if a group of expenses matches the total
  – Compare similar expenses between years

• Recordkeeping is like doing the dishes or taking out the trash – if you leave it for too long it will be a mess
Summary of Recordkeeping

- [https://www.youtube.com/watch?v=2SiZOzwcnA8](https://www.youtube.com/watch?v=2SiZOzwcnA8)
Discussion

• *What do you use your financial records for?*

  – Data *vs* information
Using Records to Improve Business

• *Records are the foundation* to running any business efficiently

  – Historical analysis
    • Graphing (visual) and averaging
  – Financial statements *(tomorrow morning)*
  – Forecasting *(next)*
    • Cash flow *(tomorrow afternoon)*
    • Budgeting
Crude Oil Futures Price Quotes

WTI (NYMEX) Price
End of day Commodity Futures Price Quotes for Crude Oil WTI (NYMEX)
Forecasting

“Setting a low bar helps us to consistently exceed our expectations.”
Key Concepts

• Calculating and interpreting forecasts
  – Qualitative and Quantitative Forecasting

• Using forecasting predictions to make business decisions

• Identifying forecasting issues
Forecasting Techniques

• **Qualitative Forecasting**
  – What do you think will happen in the future?
  – You are already probably an expert in qualitative forecasting

• **Delphi Method**
  – System for refining expert opinions
  – Experts forecast the future, then revise their forecasts based on what other experts said
Activity

• Let’s see if we can use the expertise in this room to forecast crude oil prices!

• **Step 1**: Write down what you think crude oil will be trading at one year from now

• **Step 2**: Compare and revise answers
Wisdom of the Crowd

- https://www.youtube.com/watch?v=iOucwX7Z1HU
Wisdom of the Crowd

• Tests consistently show that a large group’s aggregated answers to estimation problems outperform individual guesses

• Marbles in a jar

• Exceptions exist, but it’s valuable to consult your peers in general
Quantitative Forecasting

• How can we use mathematical techniques to forecast the future?

• Let’s focus on the most simple methods
  – Naïve approach
  – Average approach
  – Introduction to more advanced techniques
Naïve Approach

• Simplest approach, but often very accurate

• Forecast = last observed value
  $Y_t = Y_{t-1}$

• It is 75° today, so I expect 75° tomorrow
• It was 75° last year, so I expect 75° this year
Naïve Approach

• Advantages
  – Most recent information is often the most accurate
  – Simple to execute

• Disadvantages
  – Ignores other historical data
  – Easily influenced by outliers
Average Approach

• Average historical data to predict the future

• Forecast = average of previous observations
  \[ Y_t = \frac{(Y_{t-1} + Y_{t-2} + \ldots + Y_{t-n})}{N} \]

• **Weighted average** – some observations more important than others

• **Olympic average** – exclude outliers
More Advanced Techniques

• Incorporate a trend
  – Is production increasing every year by a predictable amount?

• Seasonality
  – Are prices low in the summer and high in the winter?

• Time series regression – extremely advanced
Variance

• *How accurate (variable) is a forecast?*

• 5-year production: 100, 99, 100, 101, 100
  – Can reasonably forecast 100 next year

• 5-year production: 100, 50, 150, 0, 200
  – Is 100 a reasonable forecast?
Variance and Standard Deviation

- **Variance** is a mathematical representation of variability
- **Standard deviation** is basically the same thing

\[
\text{VAR}(R) = \sigma^2 = \frac{\sum_{i=1}^{T} (R_i - \bar{R})^2}{T - 1}
\]

\[
\text{SD}(R) = \sigma = \sqrt{\text{VAR}(R)}
\]
Normal Distribution

Probability

-3\sigma | -2\sigma | -1\sigma | 0 | +1\sigma | +2\sigma | +3\sigma
-49.1% | -28.8% | -8.5% | 11.8% | 32.1% | 52.4% | 72.7%

68% | 95% | >99%
Precision vs Accuracy

- Low accuracy, low precision
- Low accuracy, high precision
- High accuracy, low precision
- High accuracy, high precision
Precision vs Accuracy

• Qualitative forecasts are typically more accurate because they incorporate all available information.

• Quantitative forecasts are typically more precise because they fully utilize specific information.
Summary

• **Qualitative forecasting** is basically guessing the future
  – Can be improved by consulting others

• **Quantitative forecasting** uses data to predict the future
  – Numerous methods and pitfalls
Budgeting

BUDGETING & FINANCES
Household Budgeting

• Now that we have:
  – Financial records
  – Forecasts for future spending/income

• Let’s plan how to spend our money efficiently
What is Budgeting?

• Budgeting is **not** like a “diet” or a bad word

• Budgeting is **proactive**, not reactive

• Budgeting enables you to *get more out of your money*
How to Budget

• Start by estimating the money you have available to spend

• Prioritize expenses

• Leave a little wiggle room
Using a Budget

• Compare your expected expenses to actual spending

• Did you overestimate? Underestimate?

• Practice makes perfect
Budgeting Mistakes

As a Psychic I made Considerable fame and fortune. With tremendous Success I predicted big and small events alike...

Look they are towing your car away.

oh! I knew they would do that.
Potential Pitfalls

• Business can be highly volatile
  – *Don’t count your chickens before they hatch*
  – Save money today so you can spend it tomorrow

• Most people are optimistic
  – *Hope for the best, plan for the worst*

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