BUDGETING & FORECASTING

"Forecasting your Future"

Takin' Care of Business

#2

CPA... Imagine the possibilities!

AICPA

Learning Activity

Financial Planning: *Students create personal budget projections comparing the economic and lifestyle consequences of going to college versus going directly into the workforce from high school.*

Learning Objectives

1. Prepare a financial forecast and budget for the student who enters college after high school and then obtains a job after graduating from college.
2. Prepare a financial forecast and budget for the student who enters the workforce directly from high school.
3. Calculate the budgeted savings or debt each year for each student's scenario as well as the cumulative savings or debt after each year.

Assessment

Students will: (1) determine yearly revenue, expense and savings or debt for 10 years, and (2) determine cumulative savings or debt for each of 10 years.

Academic Standard

"Students understand numbers, relationships among numbers, operations and how they relate to one another." (NCTM)

"Students apply basic mathematical operations to solve problems and use mathematical procedures to solve business problems, such as savings and investments." (NBEA)

Business Skill

Financial Planning: Budgeting and forecasting skills are fundamental to the financial planning process, and to estimating and tracking revenues and expenses for both businesses and individuals. CPAs provide a variety of services, including financial planning, that utilize and interpret financial information.

Procedure

- **Distribute a copy of the Overview to your students** and explain any terms or concepts they are unfamiliar with.
- **Discuss the importance of budgeting and forecasting** to both businesses and individuals.
- **Distribute copies of Activity #2** to the class. Briefly review the Jack and Diane's Tenth Year Class Reunion story line.
- **Students use data** provided in the story to perform the required calculations, and enter them into the worksheet provided (or a spreadsheet application, if you prefer).
- **Each student will:**
  1. Prepare a 10-year **financial forecast** for both Jack and Diane.
  2. Calculate Jack and Diane's **savings** or **debt** and **net worth** on a yearly basis for 10 years.
  3. Write a brief explanation of the effect savings and debt have on Jack and Diane's net worth, and the effect that each might have on his/her lifestyle options in the future.
- **Discuss the results and ask the following questions:**
  1. In what year is the disparity in savings/debt the largest? (Year 4)
  2. In what year does Diane accumulate **savings** equal to that of her high school classmate? (Year 9)
  3. Which student will save $100,000 first? (Diane)
  4. Compare "Year 4" and "Year 10" for both Jack and Diane. What trend do you see developing? (Diane is accumulating greater savings than Jack.)
  5. In addition to understanding how your **net worth** can fluctuate, state your opinion on the value of an education in the long run.

TEACHING-TIPS

Use a spreadsheet application such as Microsoft Excel to complete the activity. Students can apply principles such as formatting, absolute and relative addresses, as well as graphing and charting their results.

For a complete lesson and activity on the services provided by CPAs, see Activity #12, *A Day in the Life.*

Overview

Budgeting is a financial planning tool that requires companies and individuals to estimate and track revenues and expenses. **Revenue** is a generic term used to describe money that is earned and received, or will be received, at a future date. **Expenses** are costs associated with a particular activity that require the payment of cash now or at a future date. When revenues exceed expenses, what remains is **profit**. **Certified Public Accountants (CPAs)** label this profit **net income** because it is income net of expenses — that is, income after deducting expenses. Individuals call such net income a **surplus** or **savings**. In contrast, when expenses exceed revenues, the result is a **loss** or a **debt**. CPAs label this debt **net loss**.

The term **budget** most often refers to revenue and expenses of the current year or the next year. CPAs also prepare budgets for the long term. This activity is called **forecasting**. Most companies prepare forecasts of revenue and expenses for the next three to five years, and in some cases, the next ten years. The process of forecasting revenue and expenses requires CPAs to estimate the rate (percentage) at which revenue and expenses will grow (increase) or decline (decrease).

At the conclusion of every year, a company will report a net income or a net loss — a net **savings** or **debt**, respectively, for individuals. In addition, the company will add this net income or net loss figure to the prior year's net income or net loss amount. The resulting figure, which is an accumulation of a company's revenue and expenses for every year of operation, is termed **retained earnings**. Retained earnings are calculated every year by adding the current year's net income or net loss to last year's retained earnings. The result is a figure that is used by CPAs to describe a company's "worth" or "value" in accounting terms. (Note that net income increases one's "worth" or retained earnings and conversely, a net loss decreases one's "worth" or retained earnings.)

Individuals perform a similar calculation. However, we refer to our "retained earnings" as our total **savings** if we are able to spend less than our income over a number of years and, on the other hand, if we incur a deficit for a number of years, we refer to this as our total **debt**.

Certified Public Accountants provide a variety of **financial planning services** to organizations and individuals. These services include everything from tax planning and financial statement analysis to structuring investment portfolios and executing complex financial transactions.

Activities

Who Will Have More Money in the Bank at the Tenth Year Class Reunion?

PART-1:

Jack and Diane graduate from high school the same year. Jack begins a full-time job, starting at $19,900, and keeps his part-time job (where he earns an additional $1,500 a year). Feeling flush, Jack moves into his own apartment, buys a new car ($400 a month for four years), purchases $1,300 worth of new clothing and goes on a one-week vacation to Florida.

Diane heads to Florida as well — to college, where tuition for the first year is $13,500 and a room in a dormitory costs $7,000. Diane works all 12 weeks of the summer for $350 per week, enters a work-study program at her school, wins a partial scholarship and qualifies for financial aid. In addition, she sells her car for $1,000 and spends the money on clothes ($250 per year).

Use this information to complete Year 1 of the spreadsheet below for both Jack and Diane. Then forecast revenue and expenses over the next three years for each, making the following assumptions:

FOR JACK: Revenue increases 3% each year over the prior year and all expenses, except the car payment, increase 4% each year (over the prior year).

FOR DIANE: Revenue remains constant each year and expenses increase 2% each year.

JACK	1	2	3	4
REVENUE				
Full-time job	$			
Part-time job	$			
Total Revenue	$			
EXPENSES				
Rent	$ 4,800			
Utilities	$ 600			
Food	$ 2,500			
Insurance	$ 200			
Car payment	$			
Car insurance	$ 1,200			
Gasoline	$ 700			
Clothing	$			
Vacation	$ 1,800			
Total Expenses	$			
Savings/(Debt)	$			
Cumulative Savings (Cumulative Debt)	$			

DIANE	1	2	3	4
REVENUE				
Summer Job	$			
Scholarship	$ 1,500			
Financial Aid	$ 6,500			
Work-study Program	$ 2,000			
Sale of Car	$ 1,000			
Total Revenue	$			
EXPENSES				
Tuition	$			
Meal Plan	$ 2,100			
Room & Board	$			
Books	$ 1,000			
Spring Break	$ 500			
Clothing	$			
Total Expenses	$			
Savings/(Debt)	$			
Cumulative Savings (Cumulative Debt)				

PART-2: Diane graduates from college and lands a job with an accounting firm, starting at $35,000 a year. Diane gets her own place, buys a new car, takes a vacation, and can now spend more money on new clothes. Use this information to complete Year 5 of the spreadsheet below for Diane. Then forecast revenue and expenses for both Jack and Diane up to the point they meet again at their tenth-year high school reunion, making the following assumptions:

FOR DIANE: Revenue increases 10% each year over the prior year and all expenses, except the car payment, increase 4% each year over the prior year. Assume that the car payment remains constant and is made for four years, starting with Year 5.

FOR JACK: Same assumptions since graduating from high school.

Jack's Forecast Years 5 Through 10

	5	6	7	8	9	10
REVENUE						
Full-time job	$ 22,398					
Part-time job	$ 1,688					
Total Revenue	$					
EXPENSES						
Rent	$					
Utilities	$					
Food	$					
Insurance	$					
Car payment	$					
Car insurance	$					
Gasoline	$					
Clothing	$					
Vacation	$					
Total Expenses	$					
Savings /(Debt)	$					
Cumulative Savings (Cumulative Debt)	$					

Diane's Forecast Years 5 Through 10

	5	6	7	8	9	10
REVENUE						
	$					
	$					
	$					
EXPENSES						
	$ 6,000					
	$ 700					
	$ 3,000					
	$ 250					
	$ 6,250					
	$ 1,400					
	$ 800					
	$ 2,000					
	$ 2,300					
	$					
	$ 12,300					
	($ 30,231)					

PART-3: Write a brief explanation of the effect savings and debt have on Jack and Diane's **net worth**, and the effect that each might have on their respective lifestyle options in the future.

Answers

For Jack (student entering workforce after graduating from high school)

REVENUE	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10
Full-time job	$19,900	$20,497	$21,112	$21,745	$22,398	$23,070	$23,762	$24,474	$25,209	$25,965
Part-time job	1,500	1,545	1,591	1,639	1,688	1,739	1,791	1,845	1,900	1,957
TOTAL REVENUE	**$21,400**	**$22,042**	**$22,703**	**$23,384**	**$24,086**	**$24,808**	**$25,553**	**$26,319**	**$27,109**	**$27,922**
EXPENSES	**YR 1**	**YR 2**	**YR 3**	**YR 4**	**YR 5**	**YR 6**	**YR 7**	**YR 8**	**YR 9**	**YR 10**
Rent	$4,800	$4,992	$5,192	$5,399	$5,615	$5,840	$6,074	$6,316	$6,569	$6,832
Utilities	600	624	649	675	702	730	759	790	821	854
Food	2,500	2,600	2,704	2,812	2,925	3,042	3,163	3,290	3,421	3,558
Insurance	200	208	216	225	234	243	253	263	274	285
Car payment	4,800	4,800	4,800	4,800	—	—	—	—	—	—
Car insurance	1,200	1,248	1,298	1,350	1,404	1,460	1,518	1,579	1,642	1,708
Gasoline	700	728	757	787	819	852	886	921	958	996
Clothing	1,300	1,352	1,406	1,462	1,521	1,582	1,645	1,711	1,779	1,850
Vacation	1,800	1,872	1,947	2,025	2,106	2,190	2,278	2,369	2,463	2,562
TOTAL EXPENSES	**$17,900**	**$18,424**	**$18,969**	**$19,536**	**$15,325**	**$15,938**	**$16,576**	**$17,239**	**$17,928**	**$18,645**
Savings/(Debt)	**$3,500**	**$3,618**	**$3,734**	**$3,849**	**$8,761**	**$8,870**	**$8,977**	**$9,081**	**$9,181**	**$9,277**
Cumulative Savings/(Debt)	**$3,500**	**$7,118**	**$10,852**	**$14,701**	**$23,462**	**$32,332**	**$41,309**	**$50,390**	**$59,570**	**$68,847**

For Diane (student who earns college degree prior to full-time employment)

REVENUE	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10
Summer jobs	$4,200	$4,200	$4,200	$4,200						
Scholarships	1,500	1,500	1,500	1,500						
Financial aid	6,500	6,500	6,500	6,500						
Work-study program	2,000	2,000	2,000	2,000						
Sale of car	1,000									
Accounting firm					35,000	38,500	42,350	46,585	51,244	56,368
TOTAL REVENUE	**$15,200**	**$14,200**	**$14,200**	**$14,200**	**$35,000**	**$38,500**	**$42,350**	**$46,585**	**$51,244**	**$56,368**
EXPENSES	**YR 1**	**YR 2**	**YR 3**	**YR 4**	**YR 5**	**YR 6**	**YR 7**	**YR 8**	**YR 9**	**YR 10**
Tuition	$13,500	$13,770	$14,045	$14,326						
Meal plan	2,100	2,142	2,185	2,229						
Room & board	7,000	7,140	7,283	7,428						
Books	1,000	1,020	1,040	1,061						
Spring break	500	510	520	531						
Rent					6,000	6,240	6,490	6,749	7,019	7,300
Utilities					700	728	757	787	819	852
Food					3,000	3,120	3,245	3,375	3,510	3,650
Insurance					250	260	270	281	292	304
Car payment					6,250	6,250	6,250	6,250	—	—
Car insurance					1,400	1,456	1,514	1,575	1,638	1,703
Gasoline					800	832	865	900	936	973
Clothing	250	250	250	250	2,000	2,080	2,163	2,250	2,340	2,433
Vacation					2,300	2,392	2,488	2,587	2,691	2,798
TOTAL EXPENSES	**$24,350**	**$24,832**	**$25,324**	**$25,825**	**$22,700**	**$23,358**	**$24,042**	**$24,754**	**$19,244**	**$20,014**
Savings/(Debt)	**($9,150)**	**($10,632)**	**($11,124)**	**($11,625)**	**$12,300**	**$15,142**	**$18,308**	**$21,831**	**$31,999**	**$36,354**
Cumulative Savings/(Debt)	**($9,150)**	**($19,782)**	**($30,906)**	**($42,531)**	**($30,231)**	**($15,089)**	**$3,219**	**$25,050**	**$57,059**	**$93,403**