



GRADUATE FINANCES

*For IEs starting out in the world,
your first six months pave the way to your future*

BY KEVIN DREVIK

IN 2007, I STARTED TEACHING AS AN ADJUNCT PROFESSOR, partly to provide some business world lessons for the university's seniors. This included, at times, some financial advice for engineering graduates to use when they started their first jobs.

I kept in touch with my graduates and was shocked to find out how little they knew about basic personal finance, like the Medicare payments subtracted from their paycheck. Before graduation, they had been exposed to a great deal of information on resumes, networking and interviewing skills — but almost nothing on personal finances. May is prime time for industrial engineering graduates to start bringing their analytical education to the real world. It would behoove them to apply those research skills to learning about the financial and benefits decisions they will make in the near future.

I am not a professional money manager or HR representative. This information comes from personal experiences and extensive reading. Use your critical thinking skills and seek a range of opinions to make informed decisions.

Day 1 on the job

On your first day, you'll meet with human resources representatives and sign a variety of forms. Some of these involve work (noncompete clauses, etc.), but most involve your pay and benefits. Let's walk through some of them:

W-4: This federal government form determines the amount of federal, state and local/city taxes withdrawn from your paycheck before you see any money. The W-4 has directions on the back for determining how many deductions to take. The higher the number of deductions, the less money the government takes. You can change this any time. If you are unsure, just put "2" down for the number of exemptions (add one for your spouse and for each child if you have them). Monitor the taxes next year to see if your number was correct. Adjust as necessary.

401(k)/403(b): Most companies and many government bodies use a "defined contribution" form of retirement savings versus old-time pension systems. The primary method used is the 401(k) for private businesses or the 403(b) for government workers, such as teachers. They are very similar. The general idea is that you put away a portion of your salary every year, and over time (30 to 40 years) it grows into a pot large enough to support you in your retirement. To encourage you, government and businesses have combined to provide some incentives like pre-tax money and matching funds.

Pre-tax money: You get to invest money in your 401(k)/403(b) before it is taxed. Instead of the government taking away 30 percent in taxes, leaving you 70 cents to invest,

you can put the whole dollar away for your retirement.

Matching funds: Most companies and government entities match a percentage of your initial deposits, say, dollar for dollar for the first 4 percent of your salary that you invest. This means that if you deposit \$4 in your retirement account, they also will deposit \$4. This free money means an instantaneous 100 percent return. You would be foolish to turn this down.

In the end, it's up to you to save for your retirement. The biggest advantage you have over other more experienced engineers is that you have time. Money that you invest now will have decades to grow and increase. If you put it off until later, you can never make it up. I didn't really start putting more than 4 percent into my 401(k) until my mid-30s. I estimated that I would have twice as much money for retirement if I had started fresh out of college.

Medical benefits: You may be tempted to defer medical benefits and not have anything taken out for insurance. This is a major mistake. Even though you feel healthy and young, all you need is one snowboarding, paragliding or "insert crazy sport injury here" to wipe you out. Pay for your medical insurance; that is why it's called "insurance."

Payday

Now the fun begins. After two to three weeks on the job, you'll get your first paycheck. Congratulations, you're now a functional adult who contributes to society (and to the federal, state and local governments). Now you find out what money you have available to pay the bills, save and live on. It's basic math, so for engineers it should be a cinch. Let's take an example of a student who provided information for Figure 1.

The graduate's starting salary of \$50,000 works out to \$1,923.08 every two weeks. The following deductions were made:

- **Federal tax:** The student put down "2" on the W-4 form. Based on the 2010 IRS code, the withdrawal was \$243.51. Because the student graduated in May, the salary was only for seven months, so the \$243.51 may be too much for 2010. Depending on how much the student could deduct in taxes for student loans, this number could be reduced.
- **OASDI Tax (Social Security):** Typically 6.2 percent of every person's salary to pay for the retirement benefits of current retirees (your grandparents). In this case, it was \$119.23.
- **Medicare:** Typically 1.45 percent of your salary to pay for retiree health benefits. In this case, \$27.88.
- **State tax:** Some states also have an income tax. In this student's case (Pennsylvania), it came to 3.1 percent, or \$59.62.
- **City tax:** Some cities also have income tax. In this student's case (Philadelphia), it's pretty high at 4 percent, or \$76.92.

- Unemployment: Everyone pays into the unemployment insurance fund of their state to pay benefits for the jobless.
- 401(k) (retirement): In addition, the student contributed 4 percent to a 401(k) because the company matched this amount. By putting in \$76.92 every two weeks, the student received an additional \$76.92 from his company.

With all the deductions and 401(k) money taken out, the graduate was left with \$1,317.48 every two weeks, roughly two-thirds of the paycheck. This works out to roughly \$2,854.54 a month, calculated by multiplying \$1317.48 by 26 paychecks a year, then dividing that total by 12 months. This amount is what the student starts off with for budgeting.

Your first budget

The transition from college to work often means an explosion of available funds. Budget may be a bad word for many, but you need some idea of what you're spending and where, or you'll quickly run out of money. Before budgeting, define your short-term and long-term financial goals. You have to know where you are going before you can figure out how to get there.

Examples of some short-term goals, which typically fall into the three- to six-month time frame:

- Get an emergency fund of \$1,000 into a savings account.
- Get transportation (car, bike, scooter, bus pass) for getting to work.

- Get a place to live outside of your parent's basement.
- Determine your initial lifestyle (What can I afford? How will I live?).
- Pay off all credit card debt.

Examples of some longer-term goals, which typically range from one to five years:

- Fully fund your emergency fund so it equals three to six months of your wages.
- Pay off student loan debt (or a significant chunk of it).
- Bring your 401(k) savings up to 10 percent of your salary.
- Save for new car, home, etc.

When budgeting, it is wise to remember the advice of Ben Stein, who doubles as a comedian and economist. To answer the question "Don't I have the right to enjoy the same things others seem to have?" Stein answered: "The bitter truth is that you're only entitled to have what an honest accounting says you can afford. The 20s is a vital decade, because your pay is going to go up dramatically. Don't blow it by pretending you are someone you are not."

For decades, some basic equations were used for personal finance. Many were dropped during the "go-go" 1990s and 2000s. Adhere to them for your emotional well-being.

- Never spend more than 25 percent of your take-home pay on rent. If you make \$3,000 a month, don't pay more than \$750 a month. If necessary, get a roommate.
- Never pay more than 28 percent of your take-home pay for a mortgage, and no more than 36 percent for your total debts (home, car, credit cards, student loan, etc.). For \$3,000 a month, don't take out debts requiring you to pay more than \$1,080 a month.
- Never buy a house more than twice your annual salary. If you and your spouse make a total of \$95,000 a year, don't buy a house for more than \$190,000. The banks will try to loan you more, but don't do it. Not only will you be stretched to make payments, but you'll be living in a more expensive neighborhood and have to spend more to "keep up with the Joneses."
- At least 10 percent of what you make is yours to keep. Often, this is called paying yourself first. Strive to take 10 percent of your take-home wages off the top and put it away (into 401(k), savings, etc.). Automate it so it goes straight into savings and investments. This is the most important part of this entire article. Follow this for a less stressful life.

IN THE MONEY

Paycheck (two weeks)		
Base salary		\$ 1,923.08
Taxes		
Federal tax	\$ (243.51)	
OASDI tax (Social Security)	\$ (119.23)	
Medicare	\$ (27.88)	
State tax	\$ (59.62)	
City tax	\$ (76.92)	
Unemployment	\$ (1.51)	\$ (528.67)
Deductions		
401(k) percentage 4%		\$ (76.92)
		\$ 1,317.48
Monthly income		\$ 2,854.54

Figure 1. A paycheck analysis for a graduate's first earnings

graduate finances

Basic budget models

Budget models range from simple to complex.

One of the simplest is the three-step budget. The first step is to destroy your credit cards. Then you invest 20 percent of your income and live on the remaining 80 percent. So if you earn \$3,000 each month, you invest \$600 and live off the remaining \$2,400.

Author Elizabeth Warren advocates the “all your worth,” or 50/30/20 budget. She recommends spending 50 percent of your money on the “must haves” such as housing, utilities, food, insurance, minimum loan payments, etc. The next 30 percent gets spent on your “wants,” items that include vacations, gifts, entertainment, clothing and eating out. The remaining 20 percent goes into savings and debt repayment.

Richard Jenkins, former editor-in-chief of MSN Money, advocates the “60 percent solution.” Commit 60 percent of your take-home salary for committed expenses (food, shelter, insurance and clothing). Use 10 percent for irregular expenses (restaurants, video games, hobbies and vacations.) Long-term debt, such as student loans and credit cards, take another 10 percent, with another 10 percent for long-term savings and retirement (401(k), IRAs). The last 10 percent is for fun.

Once you have an idea of your budget, strive mightily to automate it. Get money sent directly from your account to pay bills and go to savings. If you don't see it, you won't be tempted to spend it.

Debt

“The temptation to spend in your 20s is almost overwhelming. Wise is the young adult who doesn't fall into this trap.”

— Ben Stein (again)

Debt is a two-edged sword. It can greatly aid a person throughout life, enabling people to improve their position if used wisely. It makes sense to borrow for something that will increase in value, such as your student loan and a home. The education should enable you to earn more, and the home will increase in value over time.

However, if used unwisely, debt can destroy you, personally and professionally. For a short time, you can live high and enjoy all manner of things, but then you will have to spend an inordinate amount of time repaying for these items. It doesn't make sense to borrow money to purchase depreciating assets like a car, clothes and furniture. Instead of using credit for these items, save for them. If you are forced to use credit to purchase them, it means you can't afford them. Any short-term loans should be used for something necessary and arranged in such a way that the repayment can be accomplished quickly.

FURTHER READING AND RESOURCES

- *The Millionaire Next Door* by Thomas Stanley and William Danko; Taylor Trade Publishing; re-issued 2010
- *The Total Money Makeover* by Dave Ramsey; Thomas Nelson; 2009
- *The Wall Street Journal Guide to Starting your Financial Life* by Karen Blumenthal; Three Rivers Press; 2009
- *Yes, You Can Get a Financial Life* by Ben Stein and Phil DeMuth; New Beginnings Press; 2008
- Ben Stein and Phil DeMuth (www.stein-demuth.com)
- Studenomics (<http://studenomics.com>)
- Student Loan Consolidator (www.studentloanconsolidator.com)
- Get Rich Slowly (www.getrichslowly.org/blog)
- The Graduates Guide (www.thegraduatesguide.com)
- Internal Revenue Service Tax Topics (www.irs.gov/taxtopics/tc456.html)

The student loan is a common debt for those coming out of school. Once you graduate, look into consolidating the debt. Research websites and books to find information to help make a decision. My preference would be to extend it out to 25 years, but make every effort to pay extra and get it done in 10 years or less. Aim to be rid of it by the time you hit 30. Many people write off some or all of the interest for student loans on taxes.

If possible, avoid car loans. Pay cash for a clunker and drive it until it dies while saving the payments you would have made. Then transfer to a slightly better clunker. Work your way up to a new car. Many millionaires claim that buying used cars helped them accumulate their first million dollars. (See the book *Millionaire Next Door*.) Follow their advice. If you must take a loan, pay it off in three years or less.

Credit cards are the bane of life for all adults. You can really mess up your finances with these. You will have a lot of cash coming in from your new job — take advantage of this and try to erase your debt within the first year. It's impossible to have a financial life that makes sense while you're throwing 25 percent interest into the maw of the credit industry month after month. You can keep a card or two around, but always pay

THE NUMBERS COUNT

FICO score	720-850	700-719	675-699	620-674	560-619	500-559
30-year mortgage rates	6.0%	6.1%	6.7%	7.8%	8.9%	9.5%
Four-year auto loan	5.1%	5.9%	8.0%	10.5%	14.4%	15.8%

Source: Suzie Orman's *The Money Book for the Young, Fabulous & Broke*

Figure 2. Credit worthiness (FICO scores) has a significant impact on how high an interest rate you'll pay on loans.

them off at the end of the month. Never keep a balance.

Another aspect of debt is your FICO score. This grade of your credit worthiness determines if or how much you pay for credit. No, you are not done with grades after graduation.

A company called the Fair Isaac Corp. creates a FICO score, which affects what interest rates you pay for debt. Some companies use the score during the hiring process. The scores are based on reports from three credit reporting agencies. These agencies get information from people who extend you credit, be they landlords, credit card companies or the holder of your student loan. Fair Isaac takes the three reports and builds a FICO score for you, which goes up (good) or down (bad) based on how you pay your bills.

Depending on your FICO score, you'll pay more for cars, homes or credit cards. Figure 2 shows the huge interest rate swings depending on whether you have good or bad credit. To get a higher FICO score, pay your bills on time. Better yet, automate them so that you do not forget.

Investing

Many people get hung up on how complicated "investing" is. It's not. Investing is just a plan. You follow it to get where you are going, just like a map. If you put all your money in a savings account that earns 0.5 percent interest, that is investing. If you use your savings to buy mint-condition comic books, that is investing.

Most 401(k) and 403(b) plans have a wide variety of mutual funds you can stick your money in. Here we get into the realm of opinion. Luckily, most companies also bring around an investment guide once or twice a year to talk with employees about their goals and investment options. You can take their advice, do your research and make your own decisions, or hire a professional money manager.

One suggestion is to invest in index funds, which track a market index. For them, you don't "beat the market," but

you also don't "lose to the market" either. Instead, you do as well as the average. Since 80 percent of mutual funds do not perform up to the market, your index fund only has to make average gains to beat 80 percent of the other funds.

The plan

The following list is what I would do if I was starting out. But remember that you new IEs have been trained for four years to do research and make informed decisions, so take this with a grain of salt.

- If single, put down "2" when filling out the W-4 form for deductions (add more if you're married and/or have children). In the new year, figure out how much you were overcharged for taxes, and change your W-4 so that you are not sending any money to the government that you don't owe.
- Invest in your 401(k) or 403(b) immediately, up to the matching level. Since you're young, you have plenty of time to deal with the ups and downs of the market, so invest 100 percent in stocks. Put 60 percent in an S&P index fund and 40 percent in a foreign stock fund. Once you hit your 30s, do your research and switch if you want.
- Figure out your budget from your first paycheck using one of the methods shown (I prefer the 60/10/10/10/10 method).
- Use additional funds from your "investment" 10 percent in the budget above to build a cash cushion of at least one month's pay for emergencies.
- Consolidate your student loan. Make minimum payments until you have built your emergency fund, then see if you can increase.
- Every year, take at least 1 percent of your 3 percent or more pay increase and put it into your 401(k) or 403(b). This way, you will be investing 10 percent of your income before you turn 30.
- Work to get out of debt fast.
- Do more reading. Other writers have a lot more information for you.
- Enjoy life. Adulthood is great, and it only gets better. ~

Kevin Drevik is a senior manager for LG-USA's distribution department, an engineering and supply chain adjunct professor for Philadelphia University and IIE regional vice president for the Northeast Region. He graduated from the U.S. Military Academy at West Point in 1986 and served in Germany and Iraq (Operation Desert Storm). He has worked at multiple companies, including CVS, QVC, Office Depot and Dorman Inc. He has a master's degree in engineering management from the New Jersey Institute of Technology.