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Investment Strategy

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By Richard Serlin

This is an article I assign to my personal finance 1 students about basic personal investment strategy. It covers all key aspects, and is written for laypeople. However, I assign it only after students have read cover-to-cover Harvard Professor Elizabeth Warren's book, "All Your Worth: The Ultimate Lifetime Money Plan" (with Amelia Warren Tyagi). If you haven't read this book, you can still get a great deal out of the article, but there are some terms and concepts you may not be familiar with.

I do, though, strongly recommend this inexpensive paperback to everyone. I think it is by far the best personal finance book on the market.

Both Professor Warren and I advise people to save ***at least*** 20% of their ***take home*** pay during ***stable normal*** times, but where do you save the 20%+? Do you put it in a savings account? In real estate? In rare coins? In the stock market? Which stocks? and so on. In sum, what should be your investment strategy? But first, let's make sure that we fully understand the recommended strategy of *how much* we should save.

Stable Normal Times

Note that I used the words "stable normal times". Neither Professor Warren, nor I, recommend that you always save at least 20% no matter what. There are certain temporary extenuating circumstances where it makes sense to save less, or even nothing at all. A potential example is the situation most of you are in now, when you are a full time student. As a student your income is unusually low, and completing your education and obtaining a college degree is extremely important to your financial security, wealth, and happiness for your entire life.

Graduating college today is not easy. According to the National Center for Education statistics at the U.S. Department of Education, only 29.2% of the 1997 entering class at the University of Arizona graduated four years later. Only 49.7% graduated after five years, and only 54.7% graduated after six years. And, these numbers are not unusual for public universities[1]. Studies have shown that over the last generation college graduation rates have fallen substantially.[2] There are many reasons for this, but a key one is finances.[3]

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[1] To see the graduation rates at almost any university, click: http://www.graduationwatch.org/select.php.
[2] For example see the August 16th, 2001 CNN.com article, "College graduation rate below 50 percent" at: http://cnnstudentnews.cnn.com/2001/fyi/teachers.ednews/08/15/college.dropout.ap/ .
[3] Two good articles on the reasons for low college graduation rates are; "Colleges urged to change how they treat students", *USA Today*, January 18th, 2005, available at: http://www.usatoday.com/news/education/2005-01-18-colleges-change_x.htm , and "Quitting the books",

Compared to the previous generation, students today work far more hours. Today, according to a recent study by the Higher Education Project of the State Public Interest Research Groups, 74% of *full time* college students work, with 46% working 25 or more hours per week. 20% of college students work 40 or more hours per week. This is two and a half times the percentage that did so in 1987.[4]

Studies have shown that working excessive hours substantially decreases the probability of graduating. It also typically lowers grade point average, and for those who do graduate, it often causes them to graduate substantially later.[5] All of these things hurt lifetime earnings.

Many students simply have to work to pay for school, but I have seen examples of students working full time, while going to school full time, who drive expensive new vehicles. Such a vehicle also requires very expensive insurance as auto insurance is much more expensive for the young. These students could work 10 to 20 hours per week less if they lived near campus and rode a bicycle, substantially increasing their odds of graduating, and most likely the quality of their college experience. For those concerned with the safety of walking or biking home at night, the University offers free rides through its SafeRide program (http://web.asua.arizona.edu/~asua/safe.htm). At a minimum, students should own a used economy car, rather than purchase a new car, if the new car would mean having to work more than 15 hours per week.

If a student relies so much on how prestigious he looks to others that he substantially endangers his college education to drive a new vehicle, I sincerely suggest he read the book "Luxury Fever"[6], and/or seek counseling.

As I have said before in the discussion:

> The desire to look prestigious to others can often cause people to do harmful and dangerous things. Yes, it's great to be seen driving around in a new Lexus. It's fun. But if you let the cost of that fun mean constant financial stress and tragedy, it is unlikely to be worth it.
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> Be proud of the kind of person you are, your unique abilities, and what you have achieved, and try not to over rely on how you look to others. I believe you will be happier if you do so, and less likely to put yourself in a position where you, and your family, will have to live with constant financial stress and perhaps tragedy. (Entry 8.1, Discussion 1, Spring, 2006)

San Diego Union Tribune, April 23rd, 2006, available at: http://www.signonsandiego.com/news/education/20060423-9999-lz1n23books.html .

[4] "Working Life", *U.S. News and World Report*, April 17th, 2006, and *American Demographics*; October, 2000, Vol. 22, Issue 10, page 9.

[5] See, for example, "Get to Work", U.S. News & World Report, April 29th, 2002

[6] By Cornell economist Robert Frank, who also authored the required article, "Our Climb to the Sublime: Don't Go There". Book details: 1999, ISBN: 0691070113, currently the lowest new price found by the www.campusi.com shopping robot is $8.49, new, with shipping included.

Staying in school and graduating is absolutely crucial today. A college degree changes everything. The degree typically adds tremendous security and earning power that is badly need in today's far less secure world. According to the Princeton Review, in today's dollars, a bachelor's degree is, on average, worth more than $2.1 million over 40 years.[7]

Don't make the mistake of thinking that you will not have a problem obtaining a college degree job if you complete several years of college but do not graduate. Exceptions to the degree requirement are rarely made – even if you are only one term away from graduating. This is because ***completing*** a college degree shows employers that you have the responsibility, good sense, and wherewithal to finish something that is important, but difficult and long term.

With a college degree being so important, you don't want to endanger it in order to save 20% of your take home income during your college years. It is almost always better to save nothing if the alternative is to have to work more than 15 hours per week. In fact, with few exceptions it is better to take on student loans as a means to keep your work hours under 15.

While it is true that student loan debt has reached unprecedented and stifling levels, with an average now exceeding $20,000, and in a large percentage of cases it is much higher[8], it is also true that it is far worse to have no college degree in today's world.

Your generation will be graduating with by far the highest level of debt of any in history. Things are very different today from the way they were when your parents graduated college (two excellent books on this are Generation Debt: Why Now Is a Terrible Time to Be Young (2006) and Strapped: Why America's 20- and 30-Somethings Can't Get Ahead 2006)). There are serious concerns about how this will affect your lives and the economic strength and vitality of this country, for example whether starting life with so much debt will stifle the willingness of the young to take risks and innovate.

These are important concerns, and if you do not like the recent direction and policies you are free to vote for change, work for those who promise changes you favor, contribute money, etc. Whether left, right, or somewhere in between, your political views and support are up to you, but, regardless of politics, the reality of the world right now is that many of you will have the unpleasant choice of deciding between graduating with substantial student debt or working heavy hours and risking not graduating at all, or graduating much later.

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[7] http://www.princetonreview.com/college/research/articles/distance/uopg_value.asp

[8] "Generation Debt: Why Now Is a Terrible Time to Be Young" (2006), by Anya Kamenetz, ISBN: 1594489076. Another excellent book on this subject is: "Strapped: Why America's 20- and 30-Somethings Can't Get Ahead" (2006), by Tamara Draut, ISBN: 0385515057. Clicking the links (in newer versions of word you have to hold down the control button while clicking links) will take you to the shopping site www.campusi.com, with the book information already entered, so that the sites robot can search for the lowest prices on new and used copies.

Because it is so dangerous and costly to not have a college degree in today's world, I recommend erring on the side of graduating. If taking out more student loans is the only way to avoid working more than 15 hours per week, with few exceptions it is best to take out the student loans.

So, as we can see, there are some situations where it makes sense to not save at least 20% of your take home pay. In fact, there are some situations, like being a college student, where it may make sense to *negatively* save, that is to save nothing and to take on debt, but these situations are temporary and rare. As soon as things stabilize, and you are at your regular steady income, you should follow Professor Warren's balanced money plan.

Other situations where it may be best to ***temporarily*** stop following the balanced money plan include, the loss of a job, serious illness, and the start of an entrepreneurial venture. An entrepreneurial venture is like going to school in that while you may temporarily stop *direct* saving and investing, the whole venture is an investment. With school you give up income now so that you will get much more income in the future from the increased earning power which comes from your degree (the return on that investment), likewise for an entrepreneurial venture.

Again, once the temporary situation ends, and you are at your regular long term income, you should resume Harvard professor Warren's balanced money plan.

At Least

Note that I used the words "at least" before "20%" in the first sentence of this document. This is the ***minimum*** that you should save during stable normal times, not the precise amount, or the maximum. If your life appears especially risky – even by today's very risky standards – then you should save even more. Of course, at some point you will be saving too much. Suppose an individual followed a 30/1/69 plan (must-haves/wants/savings). This would almost certainly be too extreme. It would almost certainly be self destructive and far beyond what's optimal. The goal is to have the best life, not to save the most money. The vast majority of people would have far more enjoyable and fulfilling lives spending more than a paltry 1% of their take home pay on wants. This simply is not necessary to bring risk and stress to reasonable levels and to reasonably prepare for future family needs and retirement.

While we are all different, that doesn't mean that there are no similarities. There are certain things that are true of the vast majority of Americans, and Professor Warren and I think that one of those things is that it's best to save at least 20% of your take home pay during stable normal times. Whether you should save 20%, 25%, 32%, etc., depends on your unique personality and circumstances. That is something you will have to sit down and think about, and it may be best to periodically change your savings level as you gain more experience with financial planning, or as your circumstances change.

I also cannot stress enough the importance of keeping your must-haves at or below 50%. This, and saving at least 20% of take home pay, are ***the most important pieces of advice***

in this course. And they are closely related. If your must haves are at 70% it will be very difficult to save 20%, because you will have very little to spend on wants, just 10% of your take home pay. You will have to be in a permanent state of relatively inexpensive food and clothing, relatively little entertainment, and essentially just relative basics for yourself and your family. This is hard to maintain for a lifetime, and even if you could, Professor Warren and I believe that the vast majority of people will have happier lives if they don't, and instead follow a balanced money plan.

In addition, if anything goes wrong, and we've seen how much more common it is for something to go seriously wrong today, with little or no social safety net, then you will only have 10% of your income to cut back on to weather the storm. And that 10% is already bare bones.

Because 70% of your income is committed to must-haves, chiefly too expensive a home and vehicles, you will probably have to eliminate new savings, and perhaps eliminate the old savings you had built up.

It is crucial in today's world that you not exceed 50% for your must haves (except perhaps for ***temporary*** extenuating circumstances like completing your college education,).

Must-haves come predominantly from ones home and vehicles. Overspending on one's home and vehicles is the overwhelming personal reason for today's epidemic of financial distress. Professor Warren talks about education as an important reason for overspending on homes, while Professor Frank, in his article "Our Climb To Sublime; Hold On. We Don't Need to Go There", and in his book "Luxury Fever", talks about a dangerous over reliance on looking prestigious to others.

Although I think a desire to live in a better school district is an important motivation to dangerously overspend on a home, I think the evidence shows that people do so far more out of an extremely harmful and unprecedented over reliance on looking prestigious to others, or on a refusal to go below some prestige image that they have built up in their minds as important. Cornell economist and behavioralist Frank provides what I think is very compelling evidence for this in his book.

Keep in mind also that having to move down can inflict severe and long lasting trauma to oneself and one's family. Suppose a family purchases a $400,000 home in a fancy neighborhood, pushing their must-haves to 80% (or even 60%). As we have seen, this is a disaster waiting to happen.

There is a serious risk in today's world that something will go wrong leading to a cycle of debt, that is debt payments are added to an already tight budget; this new monthly expense causes more to have to be borrowed to make ends meet, which causes even higher monthly debt payments, which causes even more to have to be borrowed to make ends meet, and so on, as the family falls deeper and deeper into a debt spiral…eventually the house must be sold, or it is foreclosed on. The family may try to declare bankruptcy to get rid of its crushing debt, but with today's new bankruptcy law this is not guaranteed. It is much more difficult to successfully declare bankruptcy, and even when it can be done, a family may be required to first make court supervised payments to debtors that will leave little left to live on for five years.

At this point the family will have to move. Suppose they sell the home which caused their financial woes before it gets to the point of foreclosure and bankruptcy, and they move into a $200,000 home in a less fancy neighborhood. Here, unfortunately, there will be a human nature tendency to think of this home as low prestige, cheap, or poor because the family had grown accustomed to living in a $400,000 home. This tendency can be resisted, and successfully, but it is better to not put oneself and one's family in this situation in the first place.

Note that even if the new house were a $400,000 house, there would still be this tendency to think of it as low prestige, cheap, or poor, if the family had been accustomed to living in an $800,000 house. If the new house were a 4 million dollar house, then still there would be this tendency to think of it as low prestige, cheap, or poor if the family had been accustomed to living in an 8 million dollar house, and so on.

At the same time, a family moving from a $100,000 home to a $200,000 home will tend to think of that home as high prestige and high quality.

A family moving from a $400,000 home to a $200,000 home will be much less happy with that home than a family moving from a $100,000 home to ***<u>that same</u>*** $200,000 home.

What are the key lessons from this?

1. People, in general, get a lot of happiness from moving up from where they were and a lot of unhappiness from moving down. Thus, people will typically have happier lives if their financial decisions and plans are such that it is likely that they will, overall, steadily move up in life or stay at a fulfilling plateau.

In other words, you want to err on the side of ***<u>not</u>*** moving down. If you're deciding between two homes, one which you think is a little less expensive than is optimal for you and one which you think is a little more expensive than is optimal, all other things equal, it is typically better to go with the one that is a little less expensive than optimal.

Yes, you might get lucky going with the one that is a little more expensive than optimal, but we've seen time and time again in this course how much riskier the world is today. The odds are just too good that you won't get lucky, and you will end up having to move down, and maybe on top of that end up with a foreclosure or bankruptcy *attempt* (again, there's no guarantee today the courts will grant one.).

2. In general, while all of these up, down, prestige, attitudes are typically human nature, they can be resisted, or channeled, in a positive way. Remember, one of the most important and defining characteristics of human nature is intelligence and free will.

It is human nature many mornings to not want to get out of bed early and go to work or school, yet we usually do so because we have the intelligence to realize it is in our best interest and the will to make ourselves do it.

I do not believe that we should eliminate prestige from our lives, and neither does Professor Frank. With few exceptions this is not optimal. What is optimal is to enjoy prestige intelligently, with appropriate moderation. Prestige is analogous to alcohol or ice cream. With appropriate moderation, these things can be very pleasurable and can make our lives better. Used unintelligently, used in excess, they can make our lives much worse, or even destroy our lives.

The key to making prestige a positive in your life is to enjoy the prestige that you *do* have. What do I mean by this? Suppose that you graduate college at age 22 and start a job as a manager at Hewlett Packard paying $40,000/year. After reading up on how to buy and maintain a used car, you purchase a 1998 Mitsubishi Eclipse GS, fully loaded, red with tan leather, in good shape, for $5,000. You have the car professionally detailed with the powerful steam cleaners and buffers which dealers use to make used cars look like new. This costs just $200. You then add high end Bose speakers to the already excellent stereo for $400.

You could:

A) Be very proud of yourself and feel a great deal of prestige for graduating from a major university; less than 1 in 5 people will ever do that. You wear your University of Arizona class ring with pride. You feel good about the fact that your $40,000/year plus benefits is already better compensation at age 22, than many Americans will ever make.

You feel that you have a very nice car. When it came out in 1998 it was one of the nicer cars on the road, with its sports car stance, spoiler, beautiful red paint, and great performance and handling. You were 14 when it came out, and you remember thinking what a nice car this model was, especially the fully loaded GS version *which you now own*. Plus, with the added high end Bose speakers, you are proud that there aren't many better stereos out there.

B) Feel low prestige, because there are so many people who have graduated from more prestigious universities than yours like Harvard and Stanford. There's tens of thousands of people every year who graduate with more prestigious degrees than you. Then there's your income – $40,000. Half the country makes more than that. There's millions of people who make more money than you. There's hundred of thousands who are even your age who make more money than you.

And your car, an 8 year old car! And it's not even a BMW or Mercedes. You can't bear the thought of driving it and being seen in it, so you trade it in for the most expensive car you can get credit for, a 2006 BMW 525i. This pushes your must-haves to 95%. You eat Top Ramen everyday and are saving nothing, but you couldn't bear the thought of driving anything less prestigious. You're still unhappy about driving only a 5 series. You couldn't afford a 7-series, let alone a Mercedes S-class or Jaguar, and a Bentley or Rolls, forget it. You really feel like a low prestige loser knowing that there are so many nicer cars in the world than yours.

Obviously, person A will be far happier. The more of a type A person you are the happier you will be. A type A person focuses on the positive with regard to prestige. He focuses on how much nicer what he has is than what many others have, and enjoys the prestige and accomplishment of that.

So, prestige for him is something that makes his life better, not worse. It gives him a sense of pride and pleasure in what he has achieved. It gives him trophies to look on with satisfaction.

On the other hand, an extreme type B person will never be happy. He will always focus on the fact that there are some people who have more expensive things than he does, and that will make him feel low prestige and unhappy. Even if he graduates from Harvard this will not make him feel better because then he will focus on the fact that many people graduated from Harvard Summa Cum Laude, and many people received masters degrees from Harvard, and all he has is a bachelors degree from Harvard. He will never be happy, and prestige is always something that will bring him unhappiness rather than happiness because he will always focus on the people who have more than him, rather than focusing on the people who haven't achieved as much, and being proud.

On the other hand, a strong type A person will do the opposite, and be much happier. Prestige will be a phenomena which brings him happiness. If he graduates from Pima Community College he will be proud that he has a college degree and many people will never get one. He will display his diploma and look on it with pride and pleasure.

By contrast, nothing will ever be enough to make an extreme type B person feel good about himself. If he drives a top of the line Mercedes, he will be unhappy and feel low prestige because he will focus on the fact that there are people who drive Ferraris and Rolls Royces. He will always focus on those who have more, and he will feel low prestige, rather than focus on those who have less and feel high prestige.

Thus an extreme type B person will always feel low prestige because, unless he's Bill Gates, there will always be someone richer, and the phenomena of prestige will always be something which makes his life less happy.

On the other hand, a strong type A person will get satisfaction and pleasure from the phenomena of prestige, because he will focus on the fact that there are people who have not done as well as him, and there will always be such people, as everyone has some things which are better than those of some others. In addition, everyone has certain ***unique*** good things about him or her self which no one else has, and a type A person will focus on those things, be proud, and feel prestige.

How does this relate to personal finance? It relates in a very important way in that if you can have a type A attitude you will be less likely bring your must-haves to a level which is dangerous and destructive to yourself and your family. You will feel less of a need to buy vehicles and a home which push your must-haves well beyond 50% so that you can feel good about yourself.

So my advice to you is try to be a type A person, if you are not already. Strive to achieve your goals, whatever they are, because this makes life more exciting and fulfilling, but always be proud and feel prestige for what you *have* achieved, and the positive things about your unique abilities and personality.

How to Invest What You Have Saved

Now we get to the initial purpose of this document. We followed some tangents in getting here, but they were important tangents, and related. Although in texts we often see subjects very compartmentalized and separated, this is not always a good idea, as this can lose important understanding of how things are interrelated, how they really work, how one thing leads to another.

But enough digressions, we are now at a good point to discuss how to invest the money which we have saved.

In their investments people want a high average return (average growth rate), but they also want low risk. First, let's be clear on what we mean by some of the terms just mentioned.

If an investment has a 15% return, that means that if we invested $100 in it, a year later our investment would be worth $115. We would gain 15% of our initial investment, that is 15% of $100, or $15.

Now, what is the average return? If in year 1 an investment had a return of 10%, and in year 2 it had a return of 20%, then we would say that its average return (over 2 years) was 15% ; (10% + 20%) / 2 = 15% . Sometimes the term arithmetic average is also used for this.

In their investments people want as high of an average return as possible, but they also typically want as low a risk as possible. What do I mean by this? Consider two investments

- Investment A will pay a 10% return for sure

- Investment B will pay a 120% return 50% of the time, and a *negative* 100% return 50% of the time.

Investment A and investment B both have the same arithmetic average return, 10%, but investment B is much riskier because there is a 50% chance that you will lose 100% of your money, that is to say half the time you will lose everything.

With investment A, on the other hand, there is no chance that you will lose anything. It's very safe. You always get a positive 10% return.

There are cases where people like risk. Many people like lotto tickets where you invest $1 and there is a 99.9999999% chance you will have a return of *negative* 100%, that is you will lose the whole $1, and there is a minute chance that you will have a gigantic return. But, while people may like risk, and enjoy risk, when they are investing $1, it is rare to find someone who desires risk when she is investing her life savings.

When it comes to large amounts of money, people typically don't like risk, or they like only moderate amounts of risk. To get them to take on a riskier investment, that investment must pay a higher average return. For example, consider two investments:

- Investment A will pay a 10% return for sure

- Investment B will pay a 45% return 50% of the time, and a *negative*20% return 50% of the time

Investment B is riskier; there is a 50% chance of losing 20% of your money, while with investment A there is no chance of losing any money – you always get a positive 10% return. But, even being risk averse, you still might take investment A, because ***on average*** it pays more. The average return for investment B is (45% x 50%) + (-20% x 50%) = 12.5%. The average return for investment A is only 10%.

Here we see what is called the risk return trade off. People will take riskier investments if they receive enough of a higher return on average to compensate them for that risk. Some people are very risk averse and will require a much higher average return to induce them to take on a riskier asset. Others are less risk averse. This is a personal preference.

Let me add here that another term for average return is expected return. What will be the return on investment B? We don't know. There is uncertainty involved with this investment; we just know that there is a 50% chance it will end up having a 45% return, and there is a 50% chance that it will end up with a negative 20% return, but this averages out to 12.5%, so it is often said that 12.5% is the expected return.

Diversification

A great way to lower your risk without lowering your average return is to diversify. With diversification you spread your money around many investments, like many different stocks. For example, suppose there are two stocks:

- Stock A, we'll call it Astro Corporation, has a 10% chance of going bankrupt, and you lose 100% of your money (a negative 100% return), and it has a 90% chance of earning a 30% return. This comes out to an average return of 17%.

- Stock B, we'll call it Bright Corporation, also has a 10% chance of going bankrupt, and you lose 100% of your money, and a 90% chance of earning a 30% return, so it has the same average return as stock A, 17%.

Suppose your life savings is $100,000. If you invest all of it in Astro stock, then there is a 10% chance you will lose the whole $100,000, your entire life savings – scary. This is very risky.

At the same time, if you invest all of it in Bright stock, there is also a 10% chance you will lose 100%, your entire life savings.

But what if you diversify? What if you put 50% of your money in Astro stock and 50% of your money in Bright stock? You get the same average return as if you invested all of your money in Astro, or all of your money in Bright, 17%, but your risk is much lower.

Now, in order for you to have the catastrophe of losing all of your money, ***both*** companies would have to go bankrupt at the same time. This is much less likely than the probability that just one will.

If you put all of your money in Astro stock there is a 10% chance of losing it all because there is a 10% chance that Astro will go bankrupt. But if you put only half of it in Astro, and the other half in Bright, then to lose all of your money you not only have to have Astro go bankrupt, you would in addition need to have Bright go bankrupt.

The odds of 2 companies going bankrupt are a lot less than the odds of just one going bankrupt. In fact, the odds of both Astro and Bright going bankrupt at the same time are just 10% of 10%, which is 1%.[9]

Thus, by diversifying to a 50-50 portfolio, you cut your probability of losing all of your money 10 fold! from a 10% chance to a 1% chance.

Now, in fact, if you diversify even better, and spread your money over 500 different stocks, you now need to have all 500 stocks go bankrupt at the same time in order to lose all of your money. The odds of that are next to nothing.

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[9] For the more technically interested, this assumes that the two stocks are statistically independent. For the case where the stocks are correlated, please see a standard first year finance text.

Thus, diversification is a tremendous way to reduce risk, and all respected financial experts and researchers advocate it. There is unanimity on this, although there are disagreements on the best specific ways to go about diversifying.

My research specialization is portfolio strategy (a portfolio is your collection of stocks and/or other assets) so the specifics I will recommend stem from the latest research.

First, when you diversify you want to diversify across industries. If your money is spread around 500 stocks, but all of the stocks are in the computer industry, then if things go bad for the computer industry in general, all 500 stocks will tend to do bad, and you may take a jarring loss.

Instead, if your money is spread around say 50 different industries, then if one does poorly, only about one fiftieth of your money is in it, and the other 49 industries may overall do well.

Now, you may be thinking, 500 stocks, 50 industries, how do I decide which 500 stocks to buy (and I actually recommend more like 5,000)? Isn't that a lot of work to buy all those stocks?

Luckily, there are some respected organizations which have experts who put together excellent diversified portfolios for you, that is they pick the stocks for you. Two of the most notable are Standard and Poors, and Wilshire.

Standard and Poors picks 500 stocks for its "S&P 500" portfolio, and makes these picks know publicly and available to use free of charge, while Wilshire does the same thing with its "Wilshire 5000". This portfolio did at one time contain 5,000 stocks, and thus the name, but now it has over 6,000.

Portfolios, picked by experts, whose composition is made available to the public free of charge, are called indices. So the S&P 500 is an index, and so is the Wilshire 5000. A mutual fund that invests your money in the S&P 500 or the Wilshire 5000 for you is called an "indexed mutual fund". Remember when Professor Warren talked about indexed mutual funds in *All Your Worth* on page 186? Remember the quote from Warren Buffet on that same page, "…the best way to own common stocks is through an indexed mutual fund."? Warren Buffet started with nothing and is now the second richest man in the world. He is one of the most successful stock investors in history.

Like most short quotes and sound bites Mr. Buffet's quote requires proper interpretation. Mr. Buffet himself invests a great deal of his stock money ***not*** in index funds, but he is obviously extremely expert. For the non-expert he is saying that it is best to invest in stocks by having the index fund experts pick your stocks for you, and Professor Warren and I strongly agree with this. The great thing about the index funds is that their experts make their stock picks available to the public free of charge.

If you invest in a non-index mutual fund you have to pay for private managers to pick the stocks, and the fees are substantial. Research has shown that it is *usually* not worth the fees. When *is* it worth the fees? You have to be an expert to really know, and few people will have this expertise. That is why for the laymen, Mr. Buffet, Professor Warren, and I all recommend index funds.

Note that even if you become expert (as a bare minimum a bachelors in finance), it can still take a great deal of time to research and chose stocks well. When I was getting my MBA at the University of Michigan I had a very famous investments professor who said he had his money in index funds. This was because he was just too busy currently with his professorial work to research stocks. Again, we recommend index funds.

Now the question is which index fund. It is still not entirely clear, but current research provides substantial evidence that it is worthwhile to diversify not just among different industries, but among different company sizes. The S&P 500 contains only large companies, but the Wilshire 5000 contains a vast and highly diversified combination of large, medium, and small companies, and I think this gives it the edge.

In addition, while this is again still not completely clear, there is substantial evidence that small and medium stocks, have outperformed, and will persist in outperforming, large ones. And, when there is great deal of them in a highly diversified portfolio, there is substantial evidence that they lower the risk of that portfolio, that is decrease the chance of substantial downward swings in your money.

Thus, again, I give the edge to the Wilshire 5000. It is the vehicle I recommend for investing in stocks. You can invest your money in the Wilshire 5000 through many mutual funds. The funds make their money by charging for overhead and other expenses, so it is important to find an efficiently run fund which charges low expense fees. Two of the mutual fund companies known for having the lowest expenses, the lowest "expense ratios" in industry jargon, are Vanguard and Spartan. I recommend either.

Typically, mutual fund companies don't buy the index, for example the Wilshire 5000, exactly. They may buy more of some of the stocks, less of others. This is to save on the transactions costs of purchasing from an exchange like the New York Stock Exchange. The mutual funds are said to be tracking the index. For example Vanguard offers a "Wilshire 5000 tracking fund". This is fine. The differences between the actual Wilshire 5000 and the Wilshire 5000 tracking fund are minor, and it is worth it to save on transactions fees.

The Wilshire 5000 has over 6,000 stocks and the composition of those stocks is constantly being changed by Wilshire's experts in response to changes in the economy. That involves a lot of buying and selling and therefore a lot of transactions costs. Tracking does much to cut down on those costs.

A Vanguard Wilshire 5000 tracking fund account can be started for as little as $3,000, $1,000 if it is an IRA account. If your 401K does not include a Wilshire 5000 fund, look for a similar fund, one which contains over 1,000 stocks from a diversity of industries and which contains a diversity of company sizes, not just large companies, but also medium and small. Your compay's 401K may offer no single fund like this; in that case I recommend splitting your stock money evenly, 1/3,1/3,1/3, between a diversified large stock fund, a diversified medium stock fund, and a diversified small stock fund. For the large stock fund I recommend the S&P 500. It is a well diversified low expense index fund.

What about other investments? bonds, real estate, rare coins, baseball cards, wheat futures, gold, etc.?

For the vast majority of people the only other one to consider is bonds, specifically U.S. Government guaranteed inflation adjusted bonds, also called TIPs (Treasury Inflation Protected Securities) and iBonds (Inflation Bonds). The other investments simply require a great deal of expertise to do correctly. Without the expertise they are very risky. Most people do not have such expertise, nor time to get it.

In addition, things like rare coins, baseball cards, and other collectibles should be considered more of a leisure pursuit, and be counted as wants spending, not as savings. Savings is something you are likely to draw on in the future for say your children's college or retirement. Are you really going to want to have to sell your prized baseball cards at those times? In fact, such collectibles tend to have low average returns precisely because people will still buy them even when the expected appreciation is low just because it's enjoyable to own and display them.

There is a very famous model in finance called the Capital Asset Pricing Model (CAPM). Its creators won the Nobel Prize in Economics for it. One of the things it shows is that an excellent investment strategy for non-experts is to divide you money between a risk-free investment, namely U.S. Government guaranteed inflation adjusted bonds, and a well diversified portfolio of stocks; again, I recommend the Wilshire 5000.

A person who is playing it safe may put 70% of his money in the risk free bonds and 30% in the Wilshire 5000. A less risk averse person may put only 20% in the bonds and 80% in the Wilshire 5000.

Recall earlier when we discussed the risk return trade off. In general, when taking on riskier investments you can expect to be compensated for their risk with a higher average return. Thus, historically, iBonds have averaged a return of about 3% above inflation, while the Wilshire 5000 has averaged a return of more than 9% above inflation. Inflation has averaged 3%, thus the historic average return of the Wilshire 5000 is more than 12%[10]

[10] There are some technical issues in measuring this, such as the period of time you calculate the average over and geometric versus arithmetic averaging, but this is far beyond the scope of this course. Suffice it to say that a prediction of 12% as the long run future return on the Wilshire 5000 is in the reasonable range.

We can see then that as we have a higher percentage of our money in the iBonds, our money is safer, but on average it will earn a much lower return.

The advice I generally recommend is that when you are in your 20s you should invest 90 to 100 percent of your long term savings in the Wilshire 5000 or a similar stock fund. The average return is much higher and the risk is not that high over the long run. Over many years, there will be time for the ups and downs of the market to move towards evening out, and you will have time to adjust to them, for example cutting back on spending during the downs. As you get older, and richer, you should put an increasing percentage in the iBonds as you have more immediate responsibilities and needs such as your children's college and retirement.

I believe in most cases, however, it is probably best to keep at least 70% in stocks at least until age 55, given their much higher ***average*** return.

Money that you will need soon for something important you should put aside in a completely safe place like iBonds, or a U.S. government guaranteed bank account (please see *All Your Worth*, pages 182-183 for details).

I also agree with Professor Warren that it is a good idea to keep about $1,000 quickly accessible in a bank account for convenience, emergencies, to avoid late fees, and to avoid using credit cards!