

# Personal Finance 101

## A Design Pattern for a Lifetime of Wealth

Aaron Stevens  
27 April 2009

1

## Questions

- Why should we care?
- What is wealth, and who is wealthy?
- What are income, savings, and consumption?
- What is debt? What about good debt versus bad debt?
- How much to save/consume?
- How to save? Where to save? What to invest in?
- Where to learn more?

2

## Why should we care?

*How does money make you feel?*

"Annual income twenty pounds, annual expenditure nineteen six, result happiness. Annual income twenty pounds, annual expenditure twenty pound ought and six, result misery."

-- **Charles Dickens**

3

## It's About Happiness

Whether your rich or your poor, it's good to have money. -- Jewish proverb

- Money will not make you happy.
- People who don't have enough money tend to be more anxious about money.
- Anxiety about money will make you unhappy.

4

## What is Wealth?

Wealth is a measure of an accumulation.

Who is wealthy?

One who is happy with what he has.

-- Pirkei Avot (Ethics of our Fathers, Jewish Mishnah)

5

## Who is Wealthy?

We measure financial wealth by net worth.

- Assets: what you own
- Liabilities: what you owe
- $ASSETS - LIABILITIES = NET\ WORTH$

Who is financially wealthy?

- About 3.5% of American households are millionaires: a net worth of over \$1,000,000.
- Financial Independence: the ability to fund basic living expenses *without work forever*.

6

## Who is Wealthy?

Who are the wealthy? It might surprise you:

- Generally a married couple; male age 57; 3 kids.
- Most are first-generation (or self made) wealthy; very few instantly wealthy millionaires.
- Many are small business owners in dull-normal businesses – welding, paving, engine repair.
- Own ordinary houses in middle-class neighborhoods; don't drive flashy cars.

*What do the wealthy know and do differently from those are not wealthy?*

7

## What the Wealthy Know?

The wealthy know the difference between assets and liabilities, and accumulate the former.

- Assets have value because they generate cash inflows to you.
- Liabilities generate cash outflows from you.

*How to accumulate assets?*

8

# The Fundamental Equation

Individuals in an economy earn money (income), and select how much to consume (spend).

Savings is how much is left over after consumption.

$$\text{INCOME} = \text{CONSUMPTION} + \text{SAVINGS}$$

At the end of each month/year:

- Not enough money: net savings  $< 0$ , called a deficit
- Money left over: net savings  $> 0$ , called a surplus

9

# Borrowing and Lending

Those who spend more than they earn need to borrow the deficit from somewhere.

Those who have surplus money lend (rent) it to the people who have a deficit.

- The "lender" rents out money to the "borrower."
- Interest is the "rental fee" charged for borrowing/lending money.

Example:

- Bob borrows \$1000 from Alice, and agrees to pay \$1100 back next year.
- Alice gets \$1100 back next year, having earned \$100 profit on the loan.
- This \$100 profit is called interest, the rental fee for money.

10

# Compound Interest

Example: lending at 10% per year.

Lend \$1000 the first year, earn \$100.

Lend \$1100 the second year, earn \$110.

Lend \$1210 the second year, earn \$121.

This is called compounding.

11

# Compound Interest

Effect of Compound Interest on Capital

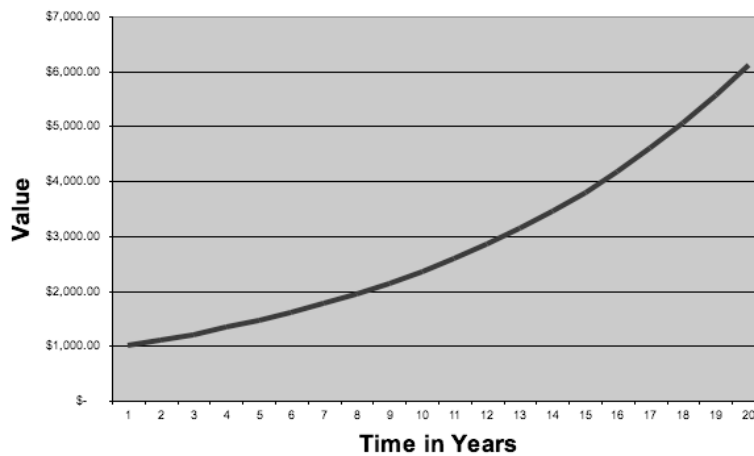


Chart: \$1000 invested at 10%, compounded annually. 12

# Compound Interest

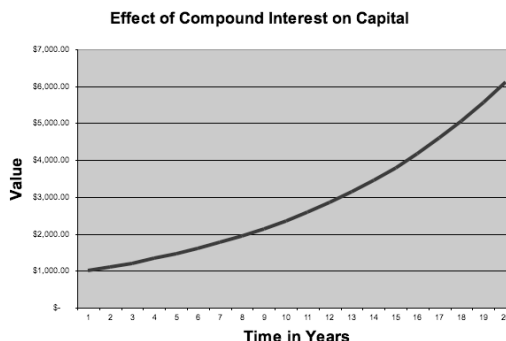
Consider the implications over time:

Lenders earn more interest

Borrowers pay more interest

This is a mathematical certainty.

Over time serial  
lenders get richer  
and serial borrowers  
get poorer



13

## Example: Credit Card Debt

Credit cards make purchases convenient, but charge rates of about 18% per year.

Most people do not pay the full balance each month.

Example:

Suppose you've accumulated a credit card debt of \$10,000.

It costs \$1,800.00 per year in interest payments just to keep it current. *Who gets that money?*

The average American household has about \$9,900 of credit card debt. (I know, median is less than average.)

Source: [http://www.cardtrak.com/news/2007/6/1/Card\\_Debt](http://www.cardtrak.com/news/2007/6/1/Card_Debt)

14

## Example: Credit Card Debt

Example:

Suppose you've accumulated a credit card debt of \$10,000. It costs \$1,800.00 per year in interest payments just to keep it current.

*How long does this take to pay off?*

If you stop using the card now, never charge another thing, and make the minimum payment each month, it will take about 22 years to pay off.

- The total of payments will be about \$19,800.
- The original \$10,000 debt will cost you about \$9,800 in interest.

*What does this mean?*

15

## Example: Credit Card Debt

Credit card companies don't want you to ever pay off the balance: that would reduce their cash inflows!

Over the long run:

- Credit card debt balance tends to increase
  - payments less than new charges
- Interest charges increase in proportion to debt balance
  - more and more of income goes to pay for past consumption
- Borrowers get poorer over time

16

## Effect on Standard of Living

Debtors pay interest on their loans.

- Everything costs more with debt!

Paying interest means less cash available for one's needs and wants.

- Debt reduces one's future consumption to pay for past consumption.
- The more debt you accumulate, the lower your future standard of living.

17

## What about "Good Debt"?

*What is a "good" debt?*

A "good" debt should increase your future cash inflows (or reduce future cash outflows).

Student loans?

Home mortgage loans?

Investment loans?

All debt involves risk, and no debt is clearly good.

18

## Lender or Borrower?

“Neither a borrower nor a lender be;  
For loan oft loses both itself and friend,  
And borrowing dulls the edge of  
husbandry.” – Polonius, in Hamlet

*What can we learn from this?*

- So long as you don’t lend to friends, lending will work out well in your favor.
- Borrowing will indeed make you poorer.

19

## How to Become Wealthy

Becoming wealthy is actually simple.

Here’s a design pattern for it:

- Create a monthly surplus by spending less than you earn.
- Lend (invest) this surplus money.
  - Paying off debt is the most important investment you can make.
- Over the long run, compounding will make you wealthy.

20

## Frugality

Frugality is the practice of using restraint in acquiring and using resources.

- Live simply (less stuff, more fun)
- Delay gratification (and spending)

Result: monthly surplus

21

## On the Value of Frugality

“Without frugality none can be rich, and with it very few would be poor.”

-- Samuel Johnson

“A man may, if he knows not how to save as he gets, keep his nose all his life to the grindstone, and die not worth a grout at last.”

-- Benjamin Franklin

22

## How to Have a Surplus

It's really hard to have money left over at the end of the month. Most people have month left over at the end of the money.

The key is to set aside the left-over money at the beginning of the month – and then go spend the rest.

This is called paying yourself first.

23

## How to Have a Surplus

Example:

Income: \$3000 per month

Set aside 20% for savings (\$600)

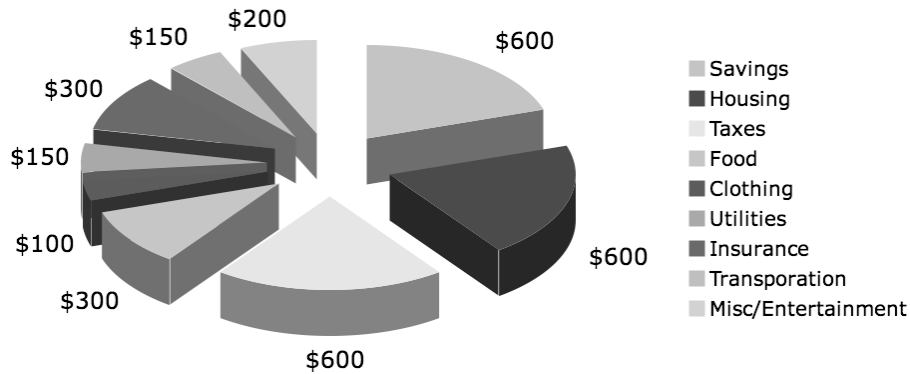
Disposable Income: \$2400 per month

Now make \$2400 stretch to the end of the month. You can do it!

At each pay check, do the savings first, before the spending.

24

### Monthly Outflows for a \$3000/month Income



Yes, you can live on \$2400/month.  
Want to spend more on eating out? Spend less on transportation or clothing.  
These are the choices you need to make.

25

## Three Kinds of Savings

Everyone needs to have 3 kinds of savings:

- Emergency Savings: to keep you afloat when the shit hits the fan.
- Retirement Savings: so you can quit working and enjoy the rest of your life.
- Savings for Major Purchases: to buy stuff you need and want.

26

## Build an Emergency Fund

Everyone needs some near-cash savings.

- This money will cover your living expenses in case of emergency.
  - Job loss, medical emergency
  - when you get fed up at a job you hate and you want to tell your boss to go to hell.
- You need enough for 6 months of expenses.
- Build it up by putting aside 10% of your income per month until you have enough.
- Put this savings in a money market account.

27

## Saving for a Post-Work Life

Uncle Sam wants you to be rich!

Two choices for how to do this:

- Pay no taxes on deferred earnings; pay taxes only when you withdraw at retirement.
  - 401k/403b, traditional IRA
- Invest after-tax money now, and never pay taxes at withdrawal time (on principal or earnings)
  - Roth 401k/403b, Roth IRA

28

## Saving for a Post-Work Life

At work: you need to sign up for the 401k plan on the first day on the job.

- It's opt-in, not automatic.

Not at work:

- Open a Roth IRA at [www.vanguard.com](http://www.vanguard.com).

Contribute 10% of your pre-tax income.

- Invest this money 50/50 in:
  - A low-cost stock index mutual fund.
  - A TIPS (Treasury Inflation Protected Securities) mutual fund.

29

## Major Purpose Savings

To buy large items, e.g. cars, vacations, houses, you should set aside money in advance.

- For example, set aside \$500 a month toward buying your next car/vacation/house.
- Amount to save depends on what you want, and when you want it.

*Why not just get a loan?*

30

## Why Not Just Get a Loan?

Why not just get a loan – car loan, vacation loan, credit card loan, student loan – for whatever I want right now?

*Because everything costs more when you borrow for it.*

31

## Financial Independence

So long as you receive someone's money (parents, employers, lenders), they get to vote how you live.

Financial independence is being self-sufficient – not relying on anyone for your basic needs or wants

- being in control of your life
- making your own way in the world
- without answering to anyone

32

# A Plan for Financial Independence

## Assumptions:

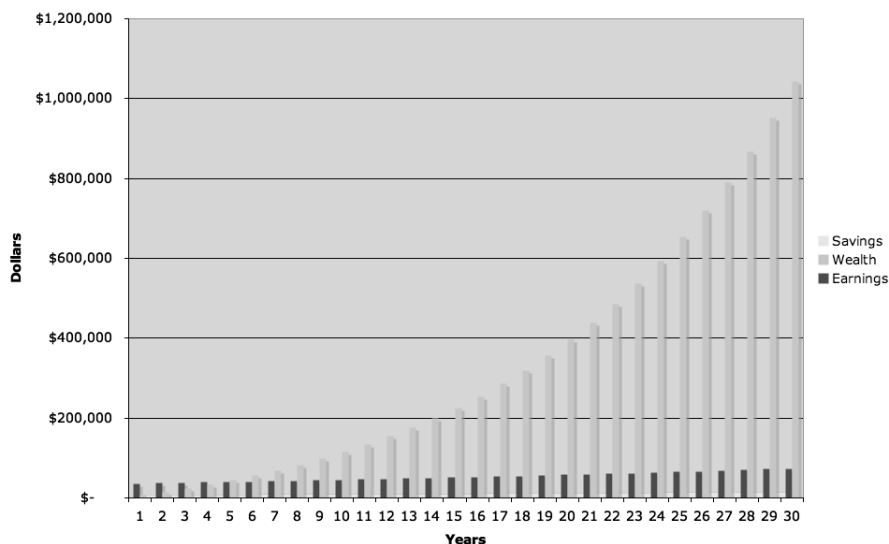
- Starting Income: \$36,000 per year
- Annual Raises of 2.5%
- Monthly Surplus/Savings: 20% of income
- Rate of return: 8%
- Accumulated Wealth after 30 years: \$1,000,000.

These are fairly conservative assumptions.

- With higher income, greater savings rate, or better returns, you could become a millionaire much sooner.

33

Earnings - Savings - Wealth



## Assumptions:

- Starting Income \$3000/month, raises of 2.5% per year
- Savings Rate: 20% of gross income -- starting at \$600/month
- Rate of return: 8% per year

34

## Specific Recommendations

- Put 10% of your income into a Roth IRA or 401k/403b plan. Put it on automatic pilot.
- Build an emergency fund for 6 months of expenses. Save 10% of your income.
  - Put this in a money-market account.
- Once you've got your emergency fund in place, save that 10% toward major purchases.
- Spend the other 80% however you wish.
- Avoid debt which reduces your future consumption.

35

## Where to Stash your Cash?

Vanguard Group ([www.vanguard.com](http://www.vanguard.com))

- offers Roth IRAs, mutual funds, brokerage accounts, money market funds, etc.
- is a mutually-owned mutual-fund and brokerage services company
- has the lowest costs (fees) and the best customer service in the industry

36

## Caution: Investment Fees

- Some firms charge fees (“sales load”) of 6% to buy mutual funds. You don’t get any better results, you just pay more.
- You don’t need a broker.
  - ALL brokers and most “financial advisors” get paid by sales commissions, and cannot have your best interest at heart.

37

## Where to Get Help?

Don’t let anyone else “manage your money.” Learn how to do it yourself, and get advice when you need it.

If you need financial advice, look for a NAPFA advisor.

- National Association of Personal Financial Advisors is a professional organization.
- Work for flat-fee rate, not sales commissions.

Also: CPA/CFP’s, specialist attorneys.

38

## Good Reading

*The Only Investment Guide you'll Ever Need*  
Andrew Tobias

*On My Own Two Feet: a Modern Girl's Guide to Personal Finance*  
Manisha Thakor and Sharon Kedar

*Yes, You Can Get A Financial Life*  
Ben Stein and Phil DeMuth

*Spend 'Til The End*  
Lawrence Kotlikoff and Scott Burns

*A Random Walk Down Wall Street*  
Burton Malkiel

39

## Good Reading

*The Millionaire Next Door:  
the Surprising Secrets of America's Wealthy*  
Thomas Stanley and William D. Danko

*The Overspent American*  
Juliet Schorr

*The Student Loan Scam*  
Alan Michael Collinge

40