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## The Numbers Don't Lie, But What Do They Mean?

In order to fully appreciate the impact of computers, you have to remember what life was like before them. In short, you have to be older than 60 – and remember a world where most receipts were handwritten, bankers calculated monthly loans from interest rate books in their desks, and complex mathematical calculations were performed on slide-rules.

It is impossible to overstate the degree that computers have revolutionized the use of numbers in everyday life in the past 50 years. Complex calculations have become commonplace, and lightning fast. Today, the only limit on the ability of computers to process mathematical information is the speed at which data can be entered.

However, for all their processing capacity, the usefulness of computer technology is dependent on a higher order of processing. Human intelligence is required to sift, sort and make sense of the vast array of information now available. And while computer processing continues to expand exponentially (i.e., Moore's Law), it can be argued that our ability to use it effectively is not keeping pace. Rather than providing insight and direction, the additional information is often making it harder to find the right answers.

An illustration of how human intelligence is trailing computer processing can be found in the use of computer programs to project retirement scenarios. Today, in just a few minutes, online calculators can deliver detailed reports that 20 or 30 years ago would have taken a team of math experts several days, or even weeks to produce.

But just because a lot of information can be generated in a hurry, doesn't mean it will actually help you reach your financial objectives. It's not that the math doesn't add up; sometimes the information simply isn't relevant.

### The Monte Carlo model: Great features, but...?

Ask a long-time financial professional to describe the earliest retirement calculators of 20 years ago, and

**To workers I'm just another drone  
To Ma Bell I'm just another phone  
I'm just another statistic on a sheet  
To teachers I'm just another child  
To IRS I'm just another file  
I'm just another consensus on the street.**

*Feel Like a Number by Bob Seger*

the answer usually goes something like this: The advisor met with the client, and together they established several parameters for projecting the future. These variables typically included an annual deposit amount, an estimated rate of return, how many years until retirement, and how many years of estimated retirement. Using these four variables, it was possible to project an accumulation amount that would be available at the onset of retirement, and how long it would last. The next level of sophistication added projections for inflation and taxes, and perhaps included projected Social Security payments as well.

While these variables were believed by both the advisor and client to be realistic, they were nothing more than educated guesses about the future. Further, these early calculations were static – the amounts deposited remained the same each year, as did the rates of return and other factors, like taxes.

To reflect the fluctuating nature of investment performance, computer programmers began in the past decade to build *uncertainty models* into their calculations. Instead of one projected result, these retirement programs attempted to show a range of possible outcomes, and identify which outcomes were most likely to occur. These analytical programs, based on probabilities and incorporating future uncertainties, have infinite variations, but are commonly referred to as Monte Carlo programs.

If you type in the phrase "Monte Carlo calculators for retirement planning," Google will deliver almost

50,000 entries. You can find free customer-friendly calculators provided by the largest financial institutions, or custom-designed models built by academics. Some deliver an answer by filling in a 5-question survey, others require more in-depth participation. Monte Carlo programs are everywhere, and working from the data that is inputted, Monte Carlos can tell you a lot of things.

A Monte Carlo can tell you the historical likelihood of achieving your objectives, usually expressed as a percentage (“historically, you have a 78% chance of reaching your objectives”). It can provide a “date of ruin,” i.e., when your money runs out. It can help you modify your results by changing your variables (adding more money, assuming less investment risk, estimating a lower inflation rate, etc.). In theory, this information should give you some reference points for making your financial decisions. Do you need to save more (or less)? Should you adjust your accumulations for more (or less) risky financial vehicles?

But while this information may be helpful in getting an individual to focus on the task at hand and take action (a good thing), there are several inherent flaws with Monte Carlo calculators.

### Educated Guesses Are Still Guesses

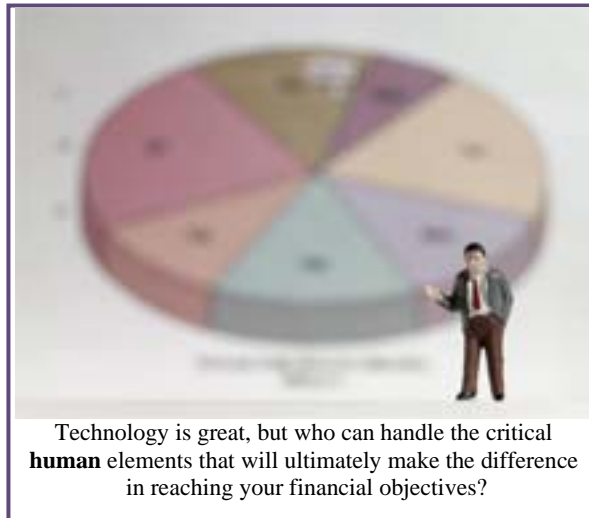
Much of the data that generates a Monte Carlo calculation are guesses. The resulting projections must be guesses as well. The disclaimer at the bottom of a popular online Monte Carlo program candidly acknowledges this:

**IMPORTANT: The projections or other information generated by the (company) Investment Analysis Tool regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. The simulations are based on assumptions. There can be no assurance that the projected or simulated results will be achieved or sustained. The charts present only a range of possible outcomes. Actual results will vary with each use and over time, and such results may be better or worse than the simulated scenarios. Clients should be aware that the potential for loss (or gain) may be greater than demonstrated in the simulations.**

It’s almost like a disclaimer from a psychic hotline: This service is for entertainment purposes only. The numbers generated by the Monte Carlo program might be interesting, but don’t think they are accurate.

### Individual Results Cannot Be Derived From Large Numbers

Monte Carlo projections are based on the statistical histories of large groups of people and investments. These piles of data generate things like probable life expectancies and average rates of return. But you are not a large group, and neither is your money. You are an individual that holds specific financial assets, and as an individual it is impossible for you to replicate the projections a Monte Carlo program might generate. Carl Berdie, CLU, author of “*Insure or Invest: Which is Best?*” in the November 2009 trade publication *Life Insurance Selling* says this distinction between individual results and group averages is another reason Monte Carlo projections miss the mark:



Technology is great, but who can handle the critical human elements that will ultimately make the difference in reaching your financial objectives?

**“It’s impossible to die exactly at your life expectancy. If you plan at age 60 for 20 years of additional life, when you are at age 80 (when 60-year old males are supposed to die), you have a life expectancy of about eight more years. At 88, you have almost five more years to live. Thus the life expectancy model is a moving target that will never be accurate. Life expectancy is based on the law of large numbers and can’t be brought down to the individual level.”**

If the variables used to generate Monte Carlo projections are “moving targets” in constant flux, then constantly fluctuating projections aren’t really worth much. It’s like having a wobbly sight on a gun; you can’t shoot straight if your view of the target is constantly out of focus and shifting.

### Answering The Wrong Questions

James S. Welch, Jr., is a “designer and implementer” of computer software programs with 50 years of experience. He is listed as the principal architect of a free, online, “alternative” retirement calculation program that claims to resolve the shortcomings he sees in Monte Carlo programs. In an article titled, “A critique of Monte Carlo Retirement Calculators,” last updated October 3, 2009, Welch offers this assessment:

The most serious problem is that conventional Monte Carlo retirement calculators answer the wrong question. The retirement question they attempt to answer is:

*When will the money run out?*

The relevant question is:

*How much money can I spend each year so that my money will last a lifetime?*

At first, Welch's comments may seem like a simple matter of semantics. But it also reflects the "sift, sort, and make sense" function that must accompany the processing of information. If the data doesn't answer the right questions, configuring it is a waste of time.

### Making Technology Work For You

In the area of personal finance, computer technology can sometimes be the tail wagging the dog. We get so excited by all the new things we calculate, illustrate and collate that it makes us giddy. But step away from the distraction of eye-catching pie charts and one-page plan summaries updated in real time. Suppose someone told you the best way to prepare for retirement is to make some guesses, evaluate those guesses using averages derived from other peoples' experience, then accept answers to questions you are not asking. Would that make sense? No.

But the problem isn't with the numbers or the calculations. **It's the philosophies and assessment procedures that need to be fine-tuned.**

You don't want to feel like a number. You don't want to project your future on mere guesses. You want strategies that will work for *you*, not ones that have a 75% success ratio with other people. And you want an approach that addresses *your* financial objectives, instead of a pre-determined list. To do those things, you need good sift-sort-and-make-sense intelligence – either from yourself or your trusted advisors.

Today, every financial professional has access to great computer programs. But who can handle the critical human elements that will ultimately make the difference in reaching your financial objectives? It's the human element that determines how well technology works for you.

**WANT TO MAKE TECHNOLOGY WORK FOR YOU? GET THE INTELLIGENCE YOU NEED TO CONTROL THE PROGRAM BY TAPPING INTO OUR "HUMAN RESOURCES." WE HAVE THE PERSPECTIVES TO MAKE SENSE OF THE MATH.**



## Phishers Send Phony IRS Messages

The surge in electronic communication, including financial transactions, has spurred an identity theft activity known as "phishing," where criminals use bogus e-mail messages and phony websites to trick unsuspecting individuals into providing confidential financial information. It is both amazing and scary to see the ingenuity that goes toward the never-ending quest to obtain someone else's name and financial data for fraudulent purposes.

For identity thieves, a Social Security number is a prized piece of information. So while it seems outrageous, some of the most audacious phishing schemes involve the impersonation of government agents. For example, what better way to obtain someone's SSN than to pose as a representative of the Internal Revenue Service? It's not just that the IRS uses your SSN for tax purposes, but many citizens perceive an aura of mystery and dread about the IRS – when they speak, you listen...and obey.

The following is a copy of an e-mail received Wednesday, November 25, 2009. (The recipient's name has been changed). How would you respond?

**Subject: Official "Underreported Income Notice" to taxpayer**  
**Sender: [Internal Revenue Service](#)**  
**Recipient: [johndoe@doecompany.com](mailto:johndoe@doecompany.com)**  
**Date: Wed 09:00**

Taxpayer ID: jdoe-00000100652201US  
Tax Type: INCOME TAX  
Issue: Unreported/Underreported Income (Fraud Application)  
Please review your tax statement on Internal Revenue Service (IRS) website (click on the link below):  
[review tax statement for taxpayer id: jdoe-00000100652201US](#)  
Internal Revenue Service

Even though you're skeptical, your mind races for a moment or two. You ask yourself "Is this legit? Did I really underreport my income? Are they accusing me of fraud?"

When you roll the mouse over the sender's e-mail address, it reads "[mail@irs.gov](mailto:mail@irs.gov)." The official IRS website is [www.irs.gov](http://www.irs.gov), which sure seems the same.

Of course, a little research tells a different story. Starting at the IRS website, there's a special section on phishing scams. A call to an IRS 800 number verifies

that the correspondence is bogus, and the agency requests that the e-mail be forwarded to them. A few minutes later, there's a new message in your in-box, this one from the "real" IRS. It reads:

**Subject:** Phishing Report Received - Thank You  
**Sender:** [phishing@irs.gov](mailto:phishing@irs.gov)  
**Recipient:** [jdoe@doecompany.com](mailto:jdoe@doecompany.com)  
**Date:** Wed 11:40

This is an automatic reply from the Internal Revenue Service (IRS) Online Fraud Detection and Prevention (OFDP) team...

Please note that the IRS does not contact individuals by email. Therefore, if you received an email claiming to be from the IRS it is a phishing attempt and should be reported to us.

Additional information on IRS phishing can be viewed here:  
<http://www.irs.gov/newsroom/article/0,,id=155682,00.html>

Additional information on avoiding phishing scams can be viewed here:  
[http://www.antiphishing.org/consumer\\_recst.html](http://www.antiphishing.org/consumer_recst.html)

...Thank you for your report.  
Regards,

Internal Revenue Service (IRS)  
Online Fraud Detection and Prevention  
(OFDP) [phishing@irs.gov](mailto:phishing@irs.gov)

Just for emphasis, let's repeat the key phrase from the IRS correspondence: **Please note that the IRS does not contact individuals by email.** End of story. You don't need to know anything beyond that to determine if the correspondence is a phishing attempt.

However, there are several sobering conclusions from this information: First, whoever is willing to impersonate the IRS to get personal information has a lot of chutzpah. Even though they know the IRS is aware of their activity, these phishers are still doing it. Second, the activity must be effective, because it wouldn't make sense to risk jail time on something that wasn't paying off. Third, your financial information must be pretty valuable if people are willing to take on such occupational hazards.

The security of your financial data should be a high priority item in your everyday financial activities. A lack of attention to this detail can be hazardous to your financial well-being.

## 5-MINUTE FINANCIAL THOUGHT:

Here's a common paradigm for work & retirement:

1. You work to produce an income.
2. You save some of that income and accumulate a pile of money.
3. When the pile is big enough, you stop working and live off the accumulation.

Here's an alternate paradigm:

4. *You work to produce an income.*
5. *You save some of that income to generate more income right now.*
6. *Over time, your income from savings grows.*
7. *At some point, your only "work" is to continue growing your income from savings.*

What do you think? Do you see the two options as the same thing phrased differently, or do the two approaches reflect distinctly different perspectives and strategies?

## Online Financial Management: Technical assistance recommended

In a very short time electronic communication, specifically the Internet, has effected a sea change in the way people conduct their basic financial transactions. Beginning with direct deposit and automatic withdrawals, then progressing to account transfers and online payments – for everything from utility bills to credit cards – much of our individual financial life is conducted instantly in a paperless environment. We don't have to go to the bank, put the check in the mail, or wait for a monthly statement. Almost everything we want to know about our money, and want to do with it, can be accessed and executed with a computer keystroke.

Taking this blink-of-an-eye technology one step further, a number of businesses have developed online programs to aggregate, organize and update your financial information. Your bank accounts, credit cards, mortgages, investments, insurance policies – even your legal documents – can each be accessed on a unique, password-protected website. Constantly updated, this data can be formatted to provide all sorts of up-to-date consolidated financial information, such as personal

financial statements, performance reports on investments, lists of assets for estate planning, etc.

Some of these management programs are offered by banks and other financial institutions for their customers. Others are independent online ventures marketed to the general public. Depending on the features and/or your customer relationship, the institution offering the management service may or may not charge a fee. Even if you don't pay a fee, understand that every management program has some profit incentives for the provider. In-house programs will attempt to find products that match your financial data ("We noticed you have \$10,000 in your checking account. Have you considered our SuperSavers program?"), while most online programs for the general public are supported by affiliations with retailers and merchants ("Want to maximize your grocery savings at FoodWay? Why not use our in-store SuperSavers program?").

In theory, these tools allow a person to take immediate, accurate financial snapshots of their financial condition at will, and help answer questions like, "Can you afford that big-ticket purchase? Are your investments due for a rebalancing? Did you have positive cash flow this month?" Questions that might take a few days to answer (or often get resolved with little more than a "guesstimate") can be addressed with a high degree of certainty in the time it takes to log in, configure some report variables, and hit "Enter." That's powerful stuff.

Ah yes, but remember the previous paragraph begins with the words "In theory..." The bane of every computer program is user error, also known as "garbage in, garbage out." These financial management programs deliver on their promises only if the information is correctly configured. And in spite of the best intentions of programmers to make their products idiot-proof, the biggest hurdle in making online financial management programs work their magic is getting them set up correctly.

And even the techno-geeks admit this can be a problem. Here are snippets of an online review-and-comment thread regarding a problem of a highly-recommended online financial management program, started by a computer science graduate working in the financial services industry. (Specific company and institutional names have been deleted.)



**Reviewer:** (The program) lets you put transactions in buckets – and naturally it will get a few wrong to start with – but you can set up rules to classify new transactions how you like.

**Comment:** I just tried (the program) and it's not really simple to use.

**Comment:** I tried to setup an account at (the program site). I found out that (my bank) and (investment company) did not support the (program) site/software. What to do, what to do?... could someone suggest another software that is better?

**Comment:** (The program) does support (investment company), you just have to set it up after 8pm EST and before 8am EST, because (investment company) doesn't want the access to slow down the site for others.

Keep in mind this is a program that receives overall positive reviews from the reviewer and many of those commenting. Still, user error is a definite possibility, even for computer- and financially-literate individuals. And the greatest likelihood of user error is right at the beginning; if you don't set it up correctly, the program may not update correctly, and all you'll get is bad information in an instant.

### Getting Technical Assistance

People who really care about their automobiles have always known the value of a good mechanic. And as the personal computer has become a fixture in our lives, many of us have developed our own "tech support," whether it's a friend who works in IT, a local computer company, or even the service department of the big-box retailers. In the same way, the real value of an online financial management program might be the personal assistance that comes with it.

### Financial Technical Assistance

One of the value-added aspects of working with financial professionals can be their assistance in helping you establish and operate an online financial management program. From formatting the accounts and the initial data entry to the generation of regular reports, the knowledgeable assistance and support from a financial specialist can make a big difference in the benefits you receive from online financial management.

## 529 Plan Participation Declines

A November 11, 2009 article in the *Wall Street Journal* titled “529 Plans – More Parents Are Becoming Dropouts” notes diminished participation in what “have been pitched as the ultimate college savings vehicle.”

In brief, 529 accounts allow investors to contribute after-tax dollars into an account that typically offers a range of mutual funds and other investments. Distributions and earnings from the account are tax-free as long as they’re used for higher education. 529 plans are sponsored by states, and their investment options and fees can vary widely.

Why the decline in participation? There are several external factors: Many individuals have experienced a decline in their ability to save, due to unemployment or underemployment; they just don’t have the money to save. In addition, the stock market collapse triggered some high-profile fund implosions, complete with accusations of mismanagement, exorbitant fees and lawsuits.

### The nature of government programs

But the internal design factors of 529 plans may also account for the decline in participation. Like many other government-sponsored savings programs, 529s are singular, stand-alone vehicles that “don’t play well with others” from a financial standpoint. These government sponsored programs create a separate bucket with a new number or acronym – IRA, 401(k), HSA, 529, etc. – and once the money goes into the bucket, it is expected to leave the bucket under very specific circumstances, such as retirement income, medical expenses, or a college education. It is difficult to transfer funds from one



bucket to another, and penalties are assessed for any alternative use of the funds. These restrictions can make it difficult to integrate a government-sponsored plan into the larger financial picture, especially when money is tight.

### A tax benefit, but at what cost?

The principal incentive with government-sponsored savings plans is usually some form of tax break. But as the *Journal* article noted, “in today’s jittery investment environment, some consumers are forgoing the tax benefits of a 529 to retain the flexibility to use the money for whatever they wish.” Tax breaks are legitimate financial incentives, but especially in tight economies, many consumers are finding that **financial flexibility and control** hold a stronger attraction. As Michael Singer, a 49-year-old teacher who recently lost half of his value in a 529 account, told the *Journal*, “Any new money going to my kids’ college education is going into something that I manage myself.”

Material discussed is meant for general illustration and/or informational purposes only and it is not to be construed as tax, legal or investment advice. Although the information has been gathered from sources believed reliable, please note that individual situations can vary, therefore the information should be relied upon when coordinated with individual professional advice.

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