



## **The New Normal of Healthcare Spending**

**By John Mauldin | June 28, 2014**

**GDP Shocker: a Drop of 2.9%!**

**The New Normal of Healthcare Spending**

**Why Healthcare Spending Went Down**

**Muddle Through Economy Redux**

**The Frontiers of Life Extension Science**

**The Strategic Investment Conference Presentations**

**Nantucket, New York City, Maine, and San Antonio**

A rather interesting shockwave came across the newsfeeds this week. I was actually doing a TV interview when the host announced that GDP was down 2.9% for the first quarter. There was not much else I could do but note that that was a really bad, ugly, terrible, not very good number. But I had no real basis, without any facts in front of me, by which to understand why the revision was so extreme. Sure, we were all expecting a pretty large revision, but what we got was the worst decline in five years and the largest downward revision since recordkeeping began. Later, a quick perusal of the data on the BLS website revealed the culprits: exports and healthcare spending.

Last year I was one of the very few who suggested that the implementation of Obamacare could cause a recession (see more below). Such a suggestion was universally dismissed by all right-thinking economists, and for very good reasons based in sound economic theory, I might add. But sometimes the real world neglects to adhere to our models and theories, and that was my concern.

While I doubt we'll see a recession – classically understood as two quarters in a row of negative GDP – this rather large bump in the road offers a number of teaching opportunities. This week's letter will look at the actual numbers; and then, rather than try to spin the numbers to fit some preconceived political agenda, we will examine what actually happened in the spending data and why. And while it may surprise some of you, I actually think a few good things did happen, things I find encouraging.

Anytime I write about healthcare it's controversial, and I expect this letter will be received that way as well. However, as I (and many others) have clearly established, the healthcare system in the United States is massively dysfunctional. We are simply spending too much money on healthcare and are on a path to spending an unsustainable amount of money by the end of the decade. Things are going to change no matter what. The Affordable Care Act (ACA or Obamacare) was one way to try to address the problem. The majority of the country now feels this might not have been the best way, but that really doesn't make any difference. It is going to be the basic law for another three to four years. My job, at least in this letter, is not to discuss policy but

*Thoughts from the Frontline* is a free weekly economics e-letter by best-selling author and renowned financial expert John Mauldin. You can learn more and get your free subscription by visiting [www.mauldineconomics.com](http://www.mauldineconomics.com)

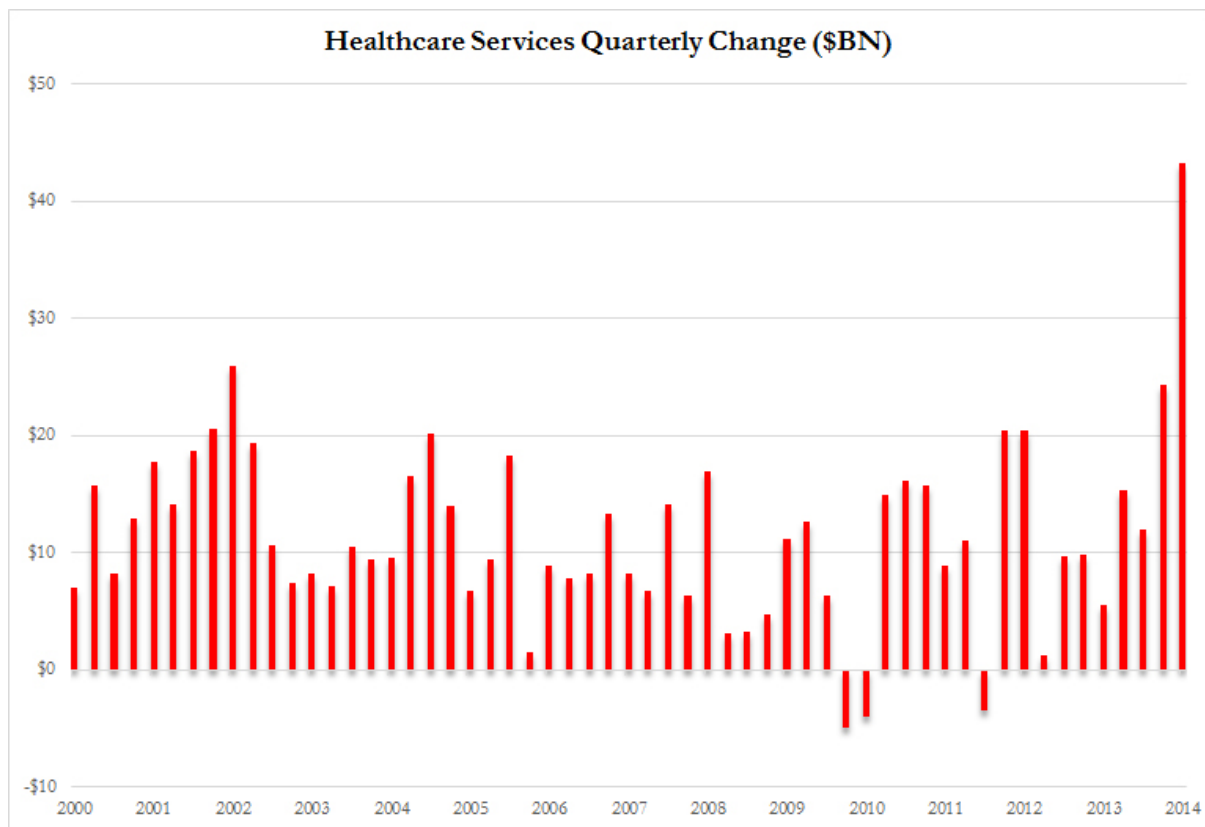
rather the economic effects of the policies we have chosen to implement, and what those effects may mean for our investment portfolios.

### **GDP Shocker: a Drop of 2.9%!**

First, let's look just at the facts as given to us by the BLS. US Q1 GDP Q/Q was revised much lower, to -2.9% on an annualized basis, down from the -1.0% previously reported (which itself was revised lower from the +0.1% initially reported) and well below the expected decline of -1.8%. How did we go from barely positive to down 2.9%?

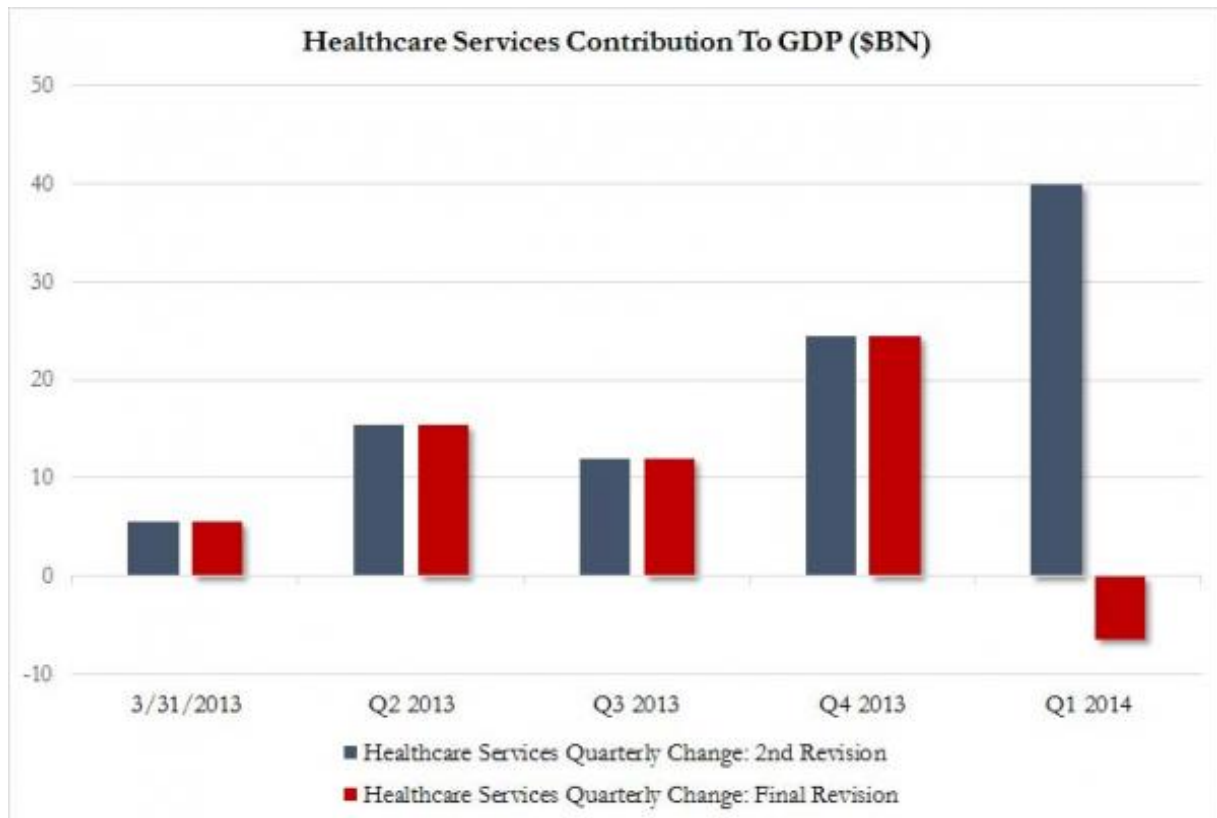
When the BLS gives us its first estimate of previous-quarter GDP, it is forced to use models based on previous trends until the actual data comes in. This is why we get two monthly revisions and in future years will get even further revisions. (Sidebar: don't you wish the US Bureau of Labor Statistics could be as good as their Chinese counterparts? The Chinese *never* have to revise their numbers. Obviously they are very good at this type of thing.)

And we all know that assumptions will sometimes bite you in the derriere. Look at this chart of projected healthcare spending from the original release of first-quarter GDP data in April. Notice that the *projected* spending was almost double what it had been just the previous quarter and over four times the previous year's average. I'm not quite certain how trend models got to that number, but then I'm not a mathematician. In any event, here's the chart, courtesy of [Zero Hedge](#):



*Thoughts from the Frontline* is a free weekly economics e-letter by best-selling author and renowned financial expert John Mauldin. You can learn more and get your free subscription by visiting [www.mauldineconomics.com](http://www.mauldineconomics.com)

Now fast-forward to last week's revision and notice that the healthcare spending number has *dropped* from the previous quarter, not doubled. In fact, it dropped an enormous 6.4%. Rather than contributing 0.62% to GDP as it did in the fourth quarter of 2013, in Q1 2014 it subtracted 0.16% from GDP growth.



Just for the record, here are the actual numbers from the BLS data. Roughly 2/3 of the negative revision in Q1 GDP was from healthcare spending, and the rest was from falling exports and rising imports (from an accounting standpoint, imports are a negative in figuring GDP).

---

## SURPRISE SLIP IN US ECONOMIC GROWTH??? Not really...

---

(Revisions to Real GDP Growth in Q1 2014)

---

	2nd Estimate: Contribution to Growth (%)	3rd Estimate: Contribution to Growth (%)	Difference: 3rd Estimate Minus 2nd Estimate
<b>Real GDP</b>	-1.0%	-2.9%	-1.9%
<b>Personal Consumption Expenditures</b>	2.1%	0.7%	-1.4%
Durable Goods	0.1%	0.1%	0.0%
Nondurable Goods	0.1%	-0.1%	-0.1%
Health Care Services	1.0%	-0.2%	-1.2%
Other Services	0.9%	0.8%	-0.1%
<b>Nonresidential Fixed Investment</b>	-0.2%	-0.1%	0.1%
Structures	-0.2%	-0.2%	0.0%
Equipment	-0.2%	-0.2%	0.0%
Intellectual Property Products	0.2%	0.2%	0.1%
<b>Residential Investment</b>	-0.2%	-0.1%	0.0%
<b>Inventory Investment</b>	-1.6%	-1.7%	-0.1%
<b>Net Exports</b>	-1.0%	-1.5%	-0.6%
Exports	-0.8%	-1.3%	-0.4%
Imports*	-0.1%	-0.3%	-0.2%
<b>Federal Government Purchases</b>	0.1%	0.1%	0.0%
Defense	-0.1%	-0.1%	0.0%
Nondefense	0.2%	0.2%	0.0%
<b>State &amp; Local Government Purchases</b>	-0.2%	-0.2%	0.0%

\*Imports subtract from GDP

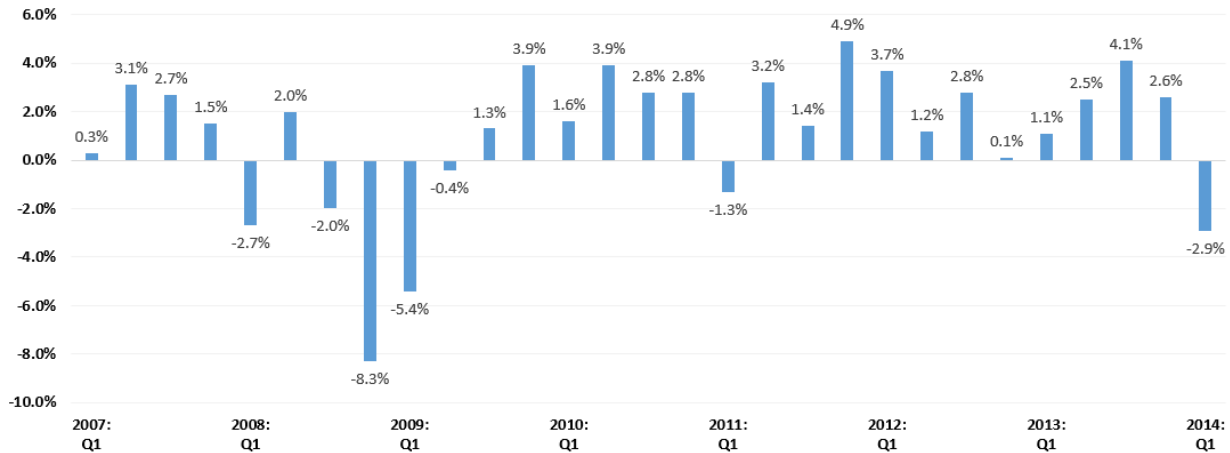
NOTE: Components may not sum due to rounding. All figures expressed at an annualized rate

Data from the Bureau of Economic Analysis, [www.bea.gov](http://www.bea.gov)

Mauldin Economics

I want us to look quickly at two charts to get some historical perspective on growth in the US. The first is GDP quarter by quarter for the last seven years. Notice that only two quarters ago we had a 4.1% positive quarter. During the 19 quarters since the current expansion began in June 2009, the economy has grown at an annual rate of 2.1%, compared to the 4.1% average in every other expansion since 1960.

**US Real GDP Growth, 2007-2014**  
 (% change from prior quarter, annualized)



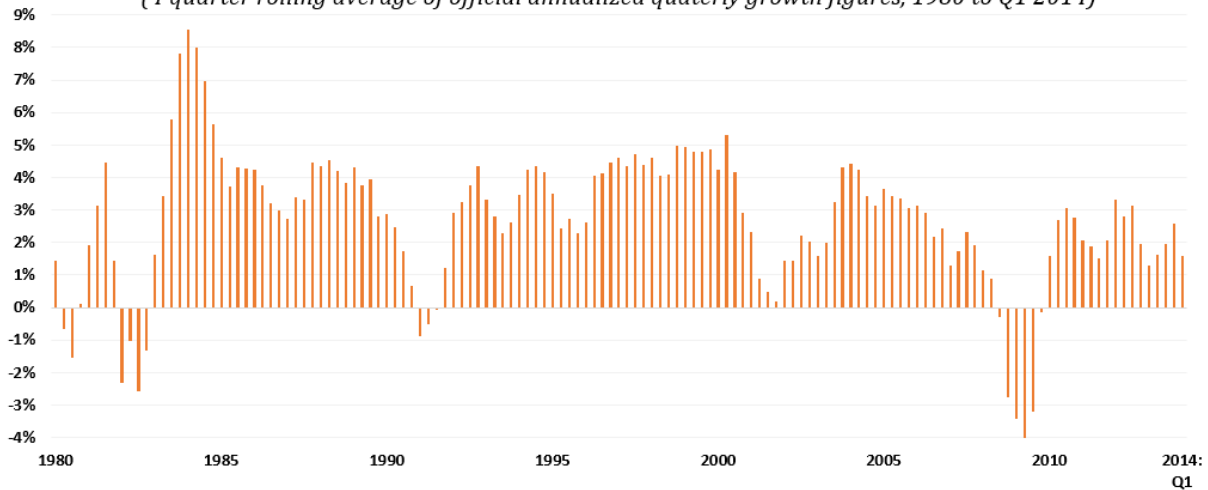
Data from the Bureau of Economic Analysis, [www.bea.gov](http://www.bea.gov)

Mauldin Economics

In fact, rather than the comfortable +3% from 1950 through 2000, growth fell to +1.9% for the entire decade of the aughts and has not risen appreciably above that in the last four years. Here is a chart showing the rolling four-quarter average for GDP growth since 1980. With last quarter's negative revision included, we've only grown 1.6% for the last 12 months. Dude, who stole my productivity?

**US Real GDP Growth Remains Unusually Vulnerable**

(4 quarter rolling average of official annualized quarterly growth figures, 1980 to Q1 2014)



Data from the Bureau of Economic Analysis, [www.bea.gov](http://www.bea.gov)

Mauldin Economics

## The New Normal of Healthcare Spending

On October 6, 2013, I penned a rather lengthy discussion of the economic impact of the Affordable Care Act. I still think it was one of the better pieces I have written. You can read it [here](#). I offered an analysis of what healthcare will look like within a few years. Essentially, we are moving to a three-tiered system. Somewhere between 3 to 5% of people will have what is coming to be known as concierge care, another 20% or so will have what we think of as traditional

*Thoughts from the Frontline* is a free weekly economics e-letter by best-selling author and renowned financial expert John Mauldin. You can learn more and get your free subscription by visiting [www.mauldineconomics.com](http://www.mauldineconomics.com)

insurance, and the remaining 75% will get by with some form of government-mandated and -controlled healthcare (with high deductibles and increasing costs).

I titled the letter I wrote back in October “The Road to a New Medical Order.” *Business Insider*, which posts my letter each week (a surprising number of people think I actually write for them, which is fine by me, I guess) generally tries to come up with impactful and somewhat controversial headlines to attract readers. Their headline over my piece was “Obama Care Will Change Everything – And I Think It Might Cause a Recession.” And yes, buried deep in the article I did write:

When I am asked what keeps me up at night about our economy, my ready answer for the past few months has been the unknown transition costs associated with the ACA. I hope Jack Rivkin is right and that the transition to Obamacare proves to be just another Y2K. I truly believe that healthcare will be significantly better in 10 years, largely due to advances in technology, but also as we streamline our healthcare delivery. So I’m a long-term optimist, though I have to confess that, in the short term, which would be through the last half of 2014, I am quite concerned that dislocating 1 to 2% of the economy could be enough to push us into recession. I have nothing factual to base that on – no inverted yield curve, no evident bubble getting ready to burst – so I will stop far short of a prediction. Let’s just say that these issues need to be right up front on our radar screens. And it wouldn’t hurt to keep our fingers crossed.

Let’s run through a quick summary of my analysis then – which is the same as how I see things today. We are going to reduce the amount of money we spend on healthcare by around 1% of GDP a year for the next four years, or about 5% per year in actual reductions. While right-thinking economists will point out that that money will be spent elsewhere, and they are correct, my concern was – and it is evidently turning out to be pretty correct – that the transition will be messy. I simply do not believe that you can change the “plumbing” of how healthcare dollars are spent, totally change the incentive structure, and demand more service for 20% fewer dollars while reducing the number of workers at hospitals, *without serious short-term dislocations*. Like we saw last quarter.

Will all this wash out over the next few years? Absolutely. We are not on some permanent healthcare spending death march where quarter by quarter healthcare spending will keep dropping. It is just, to borrow a phrase from my friend Mohamed El-Erian, that we are entering into a New Normal of Healthcare Spending. And eventually that money that we are not spending on healthcare will get spent on something else, and those people that are not employed in the healthcare industry will find other jobs or end up taking less pay for doing the same job. But it is the turmoil created in the midst of that process that is going to create some ups and downs in the economy (more on that later).

I have regular conversations with numerous friends about what’s happening in the healthcare world, as I think that is where the real action is. For an economist, this is a wonderful experiment in incentive structures. And if you are an economist worth your salt, you know that economics is all about incentives. Individuals have an incentive to maximize their healthcare services and reduce their actual out-of-pocket expenses. Healthcare businesses have an incentive to

make sure that expenses don't exceed revenues. And the ACA is nothing if it is not an enormous incentive-changing machine.

Jack Rivkin sent me a note yesterday detailing a conversation he had recently with a healthcare provider. (I'll remove names, just in case.)

Had a great 3 hour dinner discussion in Chicago three weeks ago with the head of the ... Hospital. He realizes he's at the bottom of the food chain but is very excited about what is happening. First dinner with him was three years ago when he was just beginning. He's substantially changing the mix of his work force. That includes doctors who are now employees, not independent business folks. He has made the switch to outcomes-oriented medicine and is looking to become his own insurance company where he believes the big ripoff has been taking place. You should hear what he has to say about Blue Cross/Blue Shield and the people running it. He is tired of getting paid for procedures as opposed to outcomes, e.g., [he's] down from using 7 different types of hip replacements to 3, based on those with the best long-term success. The doctors were told you either switch to what we have chosen or find another hospital. Actually "fired" some doctors when the data showed what a high rate of repetition [their] patients had.

That complaint about insurance companies is showing up a lot. Here's a section from a [great little article](#) by Jake Novak at CNBC called "An Obamacare bailout? Insurers already got one!"

Whether the ACA has actually helped more citizens than it's hurt has turned into a partisan war of statistics. That war will be waged for years to come. While I believe the new law will ultimately hurt more people than it helps, I realize those on the other side of the political spectrum will never agree with that assessment.

So let's not have that fruitless argument.

Instead let's focus on something the two major political camps can agree on, even if it is something that will make both of them very angry. Based on the non-partisan, hard numbers, the big winners in Obamacare America are... drumroll please... the insurance companies!

Yes, those greedy, heartless, bureaucratic, and anti-competitive health-insurance companies that President Obama kinda sorta blamed for his mother's death and Republicans blasted for seeking a bailout, and doctors accused of interfering with their medical judgment are all still alive and kicking in the 2014 world of the ACA.

Of course, insurance companies would simply argue that they're playing by the rules and that they're having a really difficult time making profits. Most insurance plans under Obamacare are going to rise significantly in cost later this year or next year.

Again, we find out something about incentives. It should be no surprise that a significant number of people with serious health issues who had no insurance have now signed up for the new healthcare programs. Lanhee Chen on the BloombergView site sees it this way:

At its base, the data show that people insured through the law's exchanges have higher rates of serious medical conditions. Of the enrollees who have seen a doctor or other health-care provider in the first quarter of this year, 27 percent have significant medical problems, including diabetes, cancer, heart trouble and psychiatric conditions. That rate is substantially higher than that for patients in nonexchange market plans over the same period. And it's more than double the rate of those who were able to hold onto their existing individual market insurance plans after President Barack Obama was forced to allow them to keep them.

This outcome should not surprise anyone. The law's one-size-fits-all regulatory regime, which requires insurers to offer coverage to all comers and prohibits pricing of coverage based on an applicant's health status, was bound to increase the number of relatively sicker people purchasing insurance through the exchanges. Moreover, Obama's executive action, which effectively allowed many people who had individual market plans to remain in them through at least 2016, bifurcated the insurance markets such that healthier people remained in the plans they already had, while relatively sicker patients were left to acquire coverage through the Affordable Care Act's exchanges.

Some of the bad risk in the exchanges has been offset by the enrollment of relatively healthy people who acquired coverage because of the law's generous subsidies. Yet the numbers make clear that the exchanges remain a haven for those who may consume more medical services than others. ([Bloomberg](#))

The ACA is going to be enormously contentious, as the rules are conflicting as to how insurers can make up their losses. President Obama would like to do it one way that he thinks is allowed within the rules, but there are many in Congress who think that's a bailout for insurance companies and is against the rules. However it plays out, the ACA is going to cost someone, whether it's taxpayers or those buying insurance, a great deal more money than initially budgeted. And the insurers will continue to be everybody's favorite whipping boy.

As an aside, I find it an enormously intriguing idea that a healthcare hospital group is seriously thinking about setting up its own insurance company. You gotta love America, 100 different experiments going on at once. Some of them are sure to be game changers.

## **Why Healthcare Spending Went Down**

My contacts in hospitals and elsewhere in the healthcare industry confirm that healthcare spending was down dramatically (though perhaps not quite the 6.4% in the data) in the first quarter. These same sources suggest that healthcare spending has rebounded during the second quarter. The first week of June was actually the best week ever for one major healthcare provider, but the overall trend is still for somewhat lower healthcare spending than last year.

*Thoughts from the Frontline* is a free weekly economics e-letter by best-selling author and renowned financial expert John Mauldin. You can learn more and get your free subscription by visiting [www.mauldineconomics.com](http://www.mauldineconomics.com)



So what happened in the first quarter? Evidently, several things. Number one, if you haven't noticed, the deductibles for most of the ACA programs were quite high, often running as much as \$5000 (which, for what it's worth, is the deductible on my own insurance program – buying a lower deductible is significantly more expensive than simply paying the higher deductible. Go figure.)

The high deductibles were a shock to many people who were used to more-traditional health insurance. They postponed some services and started looking for transparency of pricing for the more expensive services. It is no longer uncommon for a patient to ask for a prescription for an MRI that they can take to another provider across the street who will charge them half of what the hospital provider will. If you're paying it out of pocket, you begin to pay attention to what you're paying. I think we should applaud that increase in transparency.

To those points, Dr. Toby Cosgrove, CEO of Cleveland Clinic, recently noted:

The entire healthcare system will have less money coming into it – we are taking costs out, so will all hospitals.... Obamacare is accelerating the process.... but this is due to transparency of costs and consumer[s] with high-deductible plans. This is a huge social experiment involving almost 18% of GDP and 100% of people... this will take four to five years to shake out.”

Further, there were a lot of people who didn't get Obamacare insurance in the first few months and had to wait until March or April for their insurance to kick in. Other people have lost their insurance inexplicably because insurers are losing control of their internal management systems amid all the turmoil. People are postponing what they can until their insurance kicks in or gets reinstated. Apparently, some of this has gotten sorted out in the second quarter, and healthcare spending is on a trajectory to the “new normal,” which may eventually be about 20% less than what we spend today.

### **Muddle Through Economy Redux**

I still think the next shoe to drop may be in the third and fourth quarter when hospitals begin to realize that they have significant cash-flow problems. Estimates are that we have about 10% too many hospitals, and the creative destruction of the new healthcare system is going to relieve us of that excess. Only the strong and well-managed will survive. This is of course going to create turmoil in the whole healthcare employment world, etc., etc.

Further, Obamacare is the largest middle-class tax increase in history. Yes, enrollees are getting healthcare for their additional expenditures, but you get extra government services for an increase in regular taxes. Call it a premium or call it a tax, it still amounts to a reduction in disposable income for individuals and families. Tax increases have a negative effect on the economy equal to roughly three times their actual amount. We have gone over that research numerous times.

And that negative effect doesn't come all at once but is actually spread out over about three

years, so the Obamacare taxes will still be creating a headwind to growth this year and next.

Further, although the president has postponed some of the “features” of the ACA, such as the business mandates, they are going to kick in eventually. We’ve already seen a rather large rise in temporary employment as employers shed full-time employees so they don’t have to cover their insurance. We’re going to see more such unintentional consequences, because that’s just where the incentives are. This will of course create even more headwinds for growth and productivity.

We would have to achieve 3% GDP growth in each of the next three quarters simply to average 2% for 2014. If you go back and look at the chart on US real GDP growth, you will notice that we haven’t grown that consistently since the recovery began in 2009. GDP growth has been rather noisy.

We are at best in a slow-growth Muddle Through economy. And the problem is that consumers are getting hammered from all directions: incomes are roughly flat and core expenses are rising.

Returning to the BLS GDP report, we see that inflation was 1.3% in the first quarter as measured by personal consumption expenditures (PCE). One of the “checks and balances” I like to look at when thinking about PCE is what the Dallas Federal Reserve calls the “trimmed mean PCE inflation rate.” Basically they take all the components of inflation in the PCE (which is the Fed’s preferred measure of inflation) and remove the “outliers” (trimming them off, as it were) to smooth out the noise. And sure enough, when you go back and look at the one-month PCE inflation rates for the first quarter, 1.3% seems to be close enough for government work. But then when you look at the chart of what’s happened since then, you see a rather sharp rise in PCE. If that inflation shows up in the BLS statistics next quarter, in their first measure of Q2 GDP (which we will see in late July), it could reduce overall real GDP growth by about 1%. Just saying.

#### One-month PCE inflation, annual rate

	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14
PCE	2.0	1.2	0.8	2.3	2.4	2.8
PCE excluding food & energy	1.0	1.1	1.0	2.1	2.1	2.0
<b>Trimmed Mean PCE</b>	<b>1.2</b>	<b>1.1</b>	<b>1.2</b>	<b>1.9</b>	<b>2.5</b>	<b>2.5</b>

*Sidebar: It is all well and good for Janet Yellen to talk about how noisy inflation is and therefore ignore it, but in the things that you and I buy there are what economists call “inelastic” items, which means that we have to buy them no matter what the price – things like food and gas and healthcare. We can talk about whether the overall inflation rate for the entire economy is low, but for the mass of consumers in the middle, inflation is running considerably higher than 1.3%.*

All this is to say that while I don’t think the US will fall into an “official recession” next quarter, we are extremely vulnerable to “exogenous shocks.” If either China or Europe has a

*Thoughts from the Frontline* is a free weekly economics e-letter by best-selling author and renowned financial expert John Mauldin. You can learn more and get your free subscription by visiting [www.mauldineconomics.com](http://www.mauldineconomics.com)

serious problem, or the price of oil increases dramatically for this or that geopolitical reason, then, with the economy flying barely above stall speed, it wouldn't take much to push us into a recession. We need to have our antennae up in a world where the biggest bull market seems to be in complacency.

Let's wrap this session up with a cautionary note from my friend Rich Yamarone (aka Darth Vader)

According to the latest data from the Bureau of Economic Analysis, there has never been a time in history that year-over-year gross domestic income has been at its current pace (2.6 percent) without the U.S. economy ultimately falling into recession. That's more than 50 years of history, which is about as good as one could ever hope for in an economic indicator.

Stay tuned.

## **The Frontiers of Life Extension Science**

Since we are on the subject of healthcare, let me throw in an additional "bonus note" that my friend Pat Cox, who writes *Transformational Technology Alert* for Mauldin Economics, sent out to the readers of his free technology updates. Pat and I have regular discussions about the latest discoveries on the very cutting edge of technology and especially biotechnology. This is one of the things that keeps me optimistic, because I think that in 10 to 15 years technology will have totally transformed our healthcare delivery systems and significantly reduced the cost in the system, because we will be healthier and there will be cures for some of the most expensive diseases – we'll actually be fighting back against the ravages of old age. At least that's my hope as I approach my 65<sup>th</sup> birthday in a few months.

So let's look at this fascinating and rather optimistic piece of research that Pat has come across. (More and more, biotechnology is coming to resemble the science fiction that I read.) By the way, if you like what you read, you can subscribe to get his regular updates for free at [this link](#).

By Patrick Cox

In the article below, I discuss work on the frontiers of life-extension science, including the importance of growth differentiation factor 11 (GDF11), and my friendship with the brilliant writer Robert Heinlein.

There's an obscure reference to me in Robert Heinlein's (RAH) book *To Sail Beyond the Sunset*. It came about due to something I said to him in the home he built in Bonny Doon, California. RAH had asked me to write an article about him and his soon-to-be-published book, *The Cat Who Walks Through Walls*, for the Wall Street Journal.

So I chose the wine, and his wife Ginny cooked several meals that day as the conversation

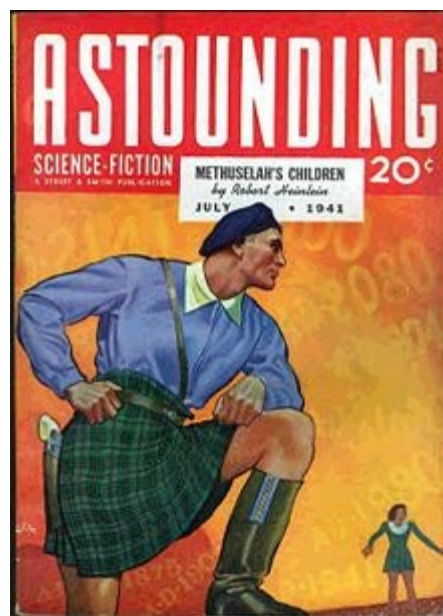
*Thoughts from the Frontline* is a free weekly economics e-letter by best-selling author and renowned financial expert John Mauldin. You can learn more and get your free subscription by visiting [www.mauldineconomics.com](http://www.mauldineconomics.com)

extended into the morning hours. Pixel, the cat that inspired the book title, was there as well. If you're interested, I'm pretty sure the article I wrote can be found online if you search for my and his names.

The Cat Who Walks Through Walls is interesting for several reasons. One is that it may be viewed as a sequel to Heinlein's *The Moon Is a Harsh Mistress*, though it also continues story lines found in *The Number of the Beast*. As such, one of the main characters in the book is Lazarus Long, who first appeared in *Methuselah's Children*. As the name of that book implies, it involves extremely long-lived characters.

Heinlein gave two explanations for his characters' longevity. One was selectively bred genetics. The other was periodic blood transfusions from very young donors.

Of course, we're talking about science fiction, so nobody really believed that young blood could extend lives. If they had, it would have certainly been a simple hypothesis to test. In fact, 73 years after *Methuselah's Children* was serialized in *Astounding Science Fiction*, the experiment was performed last month at the Stanford University School of Medicine – using mice.



Interestingly, the senior author of the Stanford blood study, Tony Wyss-Coray, PhD, noted that the experiment could have been done 20 years ago. Actually, it could have been done long before that. The procedure was relatively simple.

The team gave 18-month-old mice components of blood from 3-month-old mice eight times in 24 days. Then they gave the aged mice a kind of rodent IQ or memory test, which showed significant improvements.

The overview of [the study](#), published in the journal *Nature*, states:

*Thoughts from the Frontline* is a free weekly economics e-letter by best-selling author and renowned financial expert John Mauldin. You can learn more and get your free subscription by visiting [www.mauldineconomics.com](http://www.mauldineconomics.com)

As human lifespan increases, a greater fraction of the population is suffering from age-related cognitive impairments, making it important to elucidate a means to combat the effects of aging. Here we report that exposure of an aged animal to young blood can counteract and reverse pre-existing effects of brain aging at the molecular, structural, functional and cognitive level. Genome-wide microarray analysis of heterochronic parabionts – in which circulatory systems of young and aged animals are connected – identified synaptic plasticity-related transcriptional changes in the hippocampus of aged mice.

In other words, the brains of the older mice given transfusions of plasma (the cell-free portion of blood from the young mice) did not simply perform better, they exhibited physical signs of a reversal of aging. Clearly, this is a pretty big deal. To reiterate the last sentence of the summary: “Our data indicate that exposure of aged mice to young blood late in life is capable of rejuvenating synaptic plasticity and improving cognitive function.”

Many of the stories about the Stanford study focused on the likelihood that specific factors in the young blood responsible for the rejuvenation can probably be isolated and used on their own. A prime suspect is the protein expressed by the growth differentiation factor 11 (GDF11) gene. GDF11 protein production decreases with age; prior research has shown that it has rejuvenating effects in parts of the body other than the brain.

I’ve written several times in my weekly alerts, for example, about the Amy Wagers and Richard Lee Harvard experiment. Reported in *Cell*, it showed that age-related damage to heart muscle in older mice will reverse when GDF11 proteins are transferred from younger mice. This is of enormous interest to researchers because, as you probably know, heart muscle does not normally regenerate in older animals.

It’s not surprising, therefore, that Wyss-Coray is the cofounder of Alkahest, a biotech startup exploring the possibility of commercializing some therapy based on his experiments. I don’t think that Alkahest is likely to be the leader in this field, however.

The reason is that therapies based on the Wyss-Coray experiments would be less than optimal. If you are given an exogenous dose of a naturally occurring protein, it tends to upset the regulatory axis that balances all the interactive and complex forces at work in our bodies.

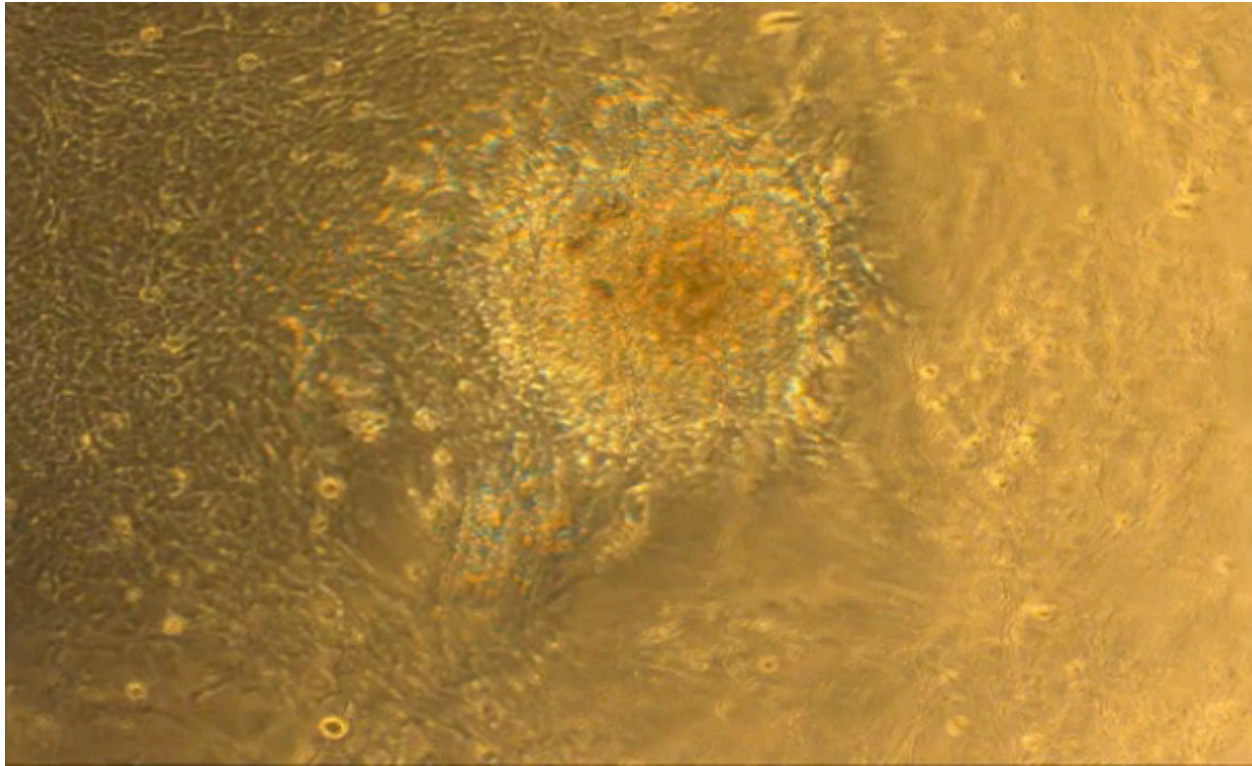
I’m convinced, therefore, that there are better ways to restore rejuvenating GDF11 to youthful levels. One way is to introduce youthful stem cells, engineered from the patient’s own induced pluripotent stem cells (iPSCs), which express GDF11 at high levels.

## Induced Pluripotent Stem Cells

One of the most exciting developments in modern medicine is the creation of induced pluripotent stem (iPS) cells. As it happens, I’ve had skin cells taken from inside my left arm transformed into iPS cells by one of the companies in our portfolio. Those iPS cells are identical to the embryonic stem cells that I came from. Because they have my DNA, there’s no chance of immune rejection, which is one of the advantages they have over cells derived from embryonic

stem cell lines.

My iPS cells were then engineered to become youthful heart muscle cells. Based on animal experiments, we have every reason to believe that those cells would become part of my body and repair any damage that my heart may have suffered. Here's a shot of my youthful cardiomyocytes beating in the lab.



Those same iPSCs, however, could also be engineered to become the type of cell, already developed and patented, that produces high levels of GDF11. Placed into my circulatory system, they would replicate and produce their rejuvenating proteins permanently. This would eliminate the need for periodic transfusion or pills. Another method, owned by a different company in the portfolio, is to put DNA plasmids engineered to express GDF11 into a group of cells so that they permanently produce the protein.

This type of therapy is inevitable. Friends of mine who keep track of high-end anti-aging clinics tell me that extremely wealthy clients are paying for youthful blood transfusions right now. The cost, they tell me, is astronomical. Superior results, however, could be attained using induced pluripotent stem cells or DNA vaccines for far less money.

It's ironic that most ancient cultures and religions seemed to treat young blood as a sacred symbol of power and life. Historically, there are many stories about victors and vampires who drank blood to acquire youth and strength. Ancient instincts were correct, however, in that youthful, healthy blood does have power, as the ancient kings and warlords of mythology believed.

There's a race going on right now to see who delivers that power and life first. As Dr. Wyss-Coray noted in the paper about his experiment, "As human lifespan increases, a greater fraction of the population is suffering from age-related cognitive impairments, making it important to elucidate a means to combat the effects of aging." Personally, I suspect that Alzheimer's and other sources of cognitive impairments will be cured in the next decade. The human desire for increased health and time, however, is limitless, so we'll continue to follow these life-extending biotechnologies closely as they develop.

(To learn more about Pat's *Breakthrough Technology Alert* and other Mauldin Economics publications, click on [this link](#), where you will find an offer to subscribe to all of our publications at a significant discount. This is a permanently low price, and the offer will go away after Monday.)

### **The Strategic Investment Conference Presentations**

The first group of presentations and select videos from the 2014 Strategic Investment Conference is now available! Videos of two of our most popular speakers, Kyle Bass and David Rosenberg, are available, as well as numerous other presentations and summaries. If you are a Mauldin Circle member, you can access the videos by going to [www.altegris.com](http://www.altegris.com) to log in to your "members only" area of the Altegris website. Upon login, click on the "SIC 2014" link in the upper-left corner to view the videos and more. If you have forgotten your login information, simply click "Forgot Login?" and your information will be sent to you.

If you are not already a Mauldin Circle member, the good news is that this program is completely free. In order to join, you must, however, be an accredited investor. Please register [here](#) to be qualified by my partners at Altegris and added to the subscriber roster. Once you register, an Altegris representative will call you to provide access to the videos, presentations, and summaries from selected speakers at our 2014 conference.

### **Nantucket, New York City, Maine, and San Antonio**

What would be considered a normal schedule for me would see me doing all of the above-named cities in less than a month, rather than according to my current travel schedule, which lets me spread them out over three months! I will be in Nantucket at a private conference in the middle of July, then in New York July 13-16. Then, as always, I (along with my son Trey) will be in Grand Lake Stream, Maine, the first Friday in August. I think this will be my eighth annual summer expedition to northern Maine and [Leen's Lodge](#) for David Kotok's big to-do. Then in the middle of September I will join a number of friends and a great roster of speakers at the Casey Research Conference in the Hill Country outside of San Antonio. I'm sure there will be other trips here and there, but I am anticipating being at home a little more for the next few months.

One of the benefits of being home is that I can get into a regular routine at the gym. I and a partner are working with a personal trainer at the gym in our building. His training style is a little different for us and has me doing things that I quite frankly haven't thought about doing in 40 years. Wind sprints, steps, all sorts of novel ways to torture the body and get your heart rate up, and yes, old-fashioned weights now and then. This morning he introduced me to boxing gloves.

*Thoughts from the Frontline* is a free weekly economics e-letter by best-selling author and renowned financial expert John Mauldin. You can learn more and get your free subscription by visiting [www.mauldineconomics.com](http://www.mauldineconomics.com)

The last time I had on boxing gloves, I was a sophomore in high school when our gym coach had us put on gloves and I went into a ring for about three minutes. I took them off with a vow to never touch them again. It was an exhausting three minutes trying to avoid getting pummeled. At least this morning the big brute wasn't hitting back, but it was quite the workout. I really do need to get in better shape.

I'm cooking for a group of friends and family, so I need to hit the send button and get the prime rib started. Have a great week.

Your wishing I could avoid the healthcare system altogether analyst,



John Mauldin

## Share Your Thoughts on This Article

Post a Comment

[Send to a Friend](#) | [Print Article](#) | [View as PDF](#) | [Permissions/Reprints](#) | [Previous Article](#)

*Thoughts From the Frontline* is a free weekly economic e-letter by best-selling author and renowned financial expert, John Mauldin. You can learn more and get your free subscription by visiting <http://www.mauldineconomics.com>.

Please write to [subscribers@mauldineconomics.com](mailto:subscribers@mauldineconomics.com) to inform us of any reproductions, including when and where copy will be reproduced. You must keep the letter intact, from introduction to disclaimers. If you would like to quote brief portions only, please reference <http://www.mauldineconomics.com>.

To subscribe to John Mauldin's e-letter, please click here: <http://www.mauldineconomics.com/subscribe/>

To change your email address, please click here: <http://www.mauldineconomics.com/change-address>

If you would ALSO like changes applied to the Mauldin Circle e-letter, please include your old and new email address along with a note requesting the change for both e-letters and send your request to [compliance@2000wave.com](mailto:compliance@2000wave.com).

To unsubscribe, please refer to the bottom of the email.

*Thoughts From the Frontline* and JohnMauldin.com is not an offering for any investment. It represents only the opinions of John Mauldin and those that he interviews. Any views expressed are provided for information purposes only and should not be construed in any way as an offer, an endorsement, or inducement to invest and is not in any way a testimony of, or associated with, Mauldin's other firms. John Mauldin is the Chairman of Mauldin Economics, LLC. He also is the President of Millennium Wave Advisors, LLC (MWA) which is an investment advisory firm registered with multiple states, President and registered representative of Millennium Wave Securities, LLC, (MWS) member FINRA, SIPC. MWS is also a Commodity Pool Operator (CPO) and a Commodity Trading Advisor (CTA) registered with the CFTC, as well as an Introducing Broker (IB) and NFA Member. Millennium Wave Investments is a

*Thoughts from the Frontline* is a free weekly economics e-letter by best-selling author and renowned financial expert John Mauldin. You can learn more and get your free subscription by visiting [www.mauldineconomics.com](http://www.mauldineconomics.com)



dba of MWA LLC and MWS LLC. This message may contain information that is confidential or privileged and is intended only for the individual or entity named above and does not constitute an offer for or advice about any alternative investment product. Such advice can only be made when accompanied by a prospectus or similar offering document. Past performance is not indicative of future performance. Please make sure to review important disclosures at the end of each article. Mauldin companies may have a marketing relationship with products and services mentioned in this letter for a fee.

Note: Joining the Mauldin Circle is not an offering for any investment. It represents only the opinions of John Mauldin and Millennium Wave Investments. It is intended solely for investors who have registered with Millennium Wave Investments and its partners at [www.MauldinCircle.com](http://www.MauldinCircle.com) or directly related websites. The Mauldin Circle may send out material that is provided on a confidential basis, and subscribers to the Mauldin Circle are not to send this letter to anyone other than their professional investment counselors. Investors should discuss any investment with their personal investment counsel. John Mauldin is the President of Millennium Wave Advisors, LLC (MWA), which is an investment advisory firm registered with multiple states. John Mauldin is a registered representative of Millennium Wave Securities, LLC, (MWS), an FINRA registered broker-dealer. MWS is also a Commodity Pool Operator (CPO) and a Commodity Trading Advisor (CTA) registered with the CFTC, as well as an Introducing Broker (IB). Millennium Wave Investments is a dba of MWA LLC and MWS LLC. Millennium Wave Investments cooperates in the consulting on and marketing of private and non-private investment offerings with other independent firms such as Altegris Investments; Capital Management Group; Absolute Return Partners, LLP; Fynn Capital; Nicola Wealth Management; and Plexus Asset Management. Investment offerings recommended by Mauldin may pay a portion of their fees to these independent firms, who will share 1/3 of those fees with MWS and thus with Mauldin. Any views expressed herein are provided for information purposes only and should not be construed in any way as an offer, an endorsement, or inducement to invest with any CTA, fund, or program mentioned here or elsewhere. Before seeking any advisor's services or making an investment in a fund, investors must read and examine thoroughly the respective disclosure document or offering memorandum. Since these firms and Mauldin receive fees from the funds they recommend/market, they only recommend/market products with which they have been able to negotiate fee arrangements.

PAST RESULTS ARE NOT INDICATIVE OF FUTURE RESULTS. THERE IS RISK OF LOSS AS WELL AS THE OPPORTUNITY FOR GAIN WHEN INVESTING IN MANAGED FUNDS. WHEN CONSIDERING ALTERNATIVE INVESTMENTS, INCLUDING HEDGE FUNDS, YOU SHOULD CONSIDER VARIOUS RISKS INCLUDING THE FACT THAT SOME PRODUCTS: OFTEN ENGAGE IN LEVERAGING AND OTHER SPECULATIVE INVESTMENT PRACTICES THAT MAY INCREASE THE RISK OF INVESTMENT LOSS, CAN BE ILLIQUID, ARE NOT REQUIRED TO PROVIDE PERIODIC PRICING OR VALUATION INFORMATION TO INVESTORS, MAY INVOLVE COMPLEX TAX STRUCTURES AND DELAYS IN DISTRIBUTING IMPORTANT TAX INFORMATION, ARE NOT SUBJECT TO THE SAME REGULATORY REQUIREMENTS AS MUTUAL FUNDS, OFTEN CHARGE HIGH FEES, AND IN MANY CASES THE UNDERLYING INVESTMENTS ARE NOT TRANSPARENT AND ARE KNOWN ONLY TO THE INVESTMENT MANAGER. Alternative investment performance can be volatile. An investor could lose all or a substantial amount of his or her investment. Often, alternative investment fund and account managers have total trading authority over their funds or accounts; the use of a single advisor applying generally similar trading programs could mean lack of diversification and, consequently, higher risk. There is often no secondary market for an investor's interest in alternative investments, and none is expected to develop.

All material presented herein is believed to be reliable but we cannot attest to its accuracy. Opinions expressed in these reports may change without prior notice. John Mauldin and/or the staffs may or may not have investments in any funds cited above as well as economic interest. John Mauldin can be reached at 800-829-7273.

*Thoughts from the Frontline* is a free weekly economics e-letter by best-selling author and renowned financial expert John Mauldin. You can learn more and get your free subscription by visiting [www.mauldineconomics.com](http://www.mauldineconomics.com)