Thoughts from the FRONTLINE
John Mauldin's free weekly investment and economic newsletter

GDP: A Brief But Affectionate History

JOHN MAULDIN | July 20, 2014

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"Measurement theory shows that strong assumptions are required for certain statistics to provide meaningful information about reality. Measurement theory encourages people to think about the meaning of their data. It encourages critical assessment of the assumptions behind the analysis.

"In 'pure' science, we can form a better, more coherent, and objective picture of the world, based on the information measurement provides. The information allows us to create models of (parts of) the world and formulate laws and theorems. We must then determine (again) by measuring whether these models, hypotheses, theorems, and laws are a valid representation of the world."

– Gauri Shankar Shrestha

"In science, the term *observer effect* refers to changes that the act of observation will make on a phenomenon being observed. This is often the result of instruments that, by necessity, alter the state of what they measure in some manner.

"It was, perhaps, the most unusual episode in the long running duel between the two giants of twentieth century economic thought. During World War Two, John Maynard Keynes and Friedrich Hayek spent all night together, alone, on the roof of the chapel of King's College, Cambridge. Their task was to gaze at the skies and watch for German bombers aiming to pour incendiary bombs upon the picturesque small cities of England….

"Night after night the faculty and students of King's, armed with shovels, took it in turns to man the roof of the ornate Gothic chapel, whose foundation stone was laid by Henry VI in 1441. The fire watchmen of St. Paul's Cathedral in London had discovered that there was no recourse against an exploding bomb, but if an incendiary could be tipped over the edge of the parapet before it set fire to the roof, damage could be kept to a minimum. And so Keynes, just short of sixty years old, and Hayek, aged forty-one, sat and waited for the impending German onslaught, their shovels propped against the limestone balustrade. They were joined by a common fear that they would not emerge brave nor nimble enough to save their venerable stone charge."

– Nicholas Wapshot in *Keynes Hayek: The Clash That Defined Modern Economics*

The problem we have today in economics is that many people, and not a few economists, seem to regard economics as "pure science," as described above by Gauri Shankar Shrestha. If you delve deep into measurement theory, you find that all too often the way in which you measure something determines the results obtained from your experimental model. How you measure the effectiveness of a drug can sometimes determine whether it gets approved – apart from whether it actually does any good. The FDA actually works rather hard at measurement theory.

And if you're using models, as we do in economics, to determine policies that govern nations, your efforts can result in economic misdirection that seems for a time to work but that all too often can lead to a disastrous Endgame. A shortsighted economic policy is not unlike a drug that makes one feel good for a period of time but ultimately leads to further weakness or collapse.

In this week's letter we look at the construction of gross domestic product (GDP). As we will see, GDP is a relatively late-to-the-party statistic, thoroughly malleable in its construction and often quite contentious in its application. Yet the mainstream media regularly releases GDP numbers with the implicit assumption that they are in fact an accurate reflection of the general economy. We shall soon see that GDP is instead a fuzzy reflection of the economy, derived from a model that is continually readjusted in a well-intentioned effort to understand the *scope* of the economy.

GDP is one economic model among several that could serve the purpose, but its use conveniently leads to policies that reflect the thinking of a particular school of economic monetary and fiscal policy advocates.

We all know that in operating a business we need to be able to measure the profits of our company and then adjust our prices and production to make sure that there are enough profits to adequately fund the company. That is a relatively straightforward process, since the amount of money in the bank at the end of the month is a real number.

Hayek Versus Keynes

When most people see the release of the GDP number, they equate the precision of that statistic with the bottom right-hand number in their bank accounts. And news anchors and journalists rarely acknowledge the rather significant caveats that the Bureau of Labor Statistics publishes along with that data.

What we are going to find is that developing the concept of gross domestic product was more than a dry economic and accounting undertaking. At its very core, GDP is John Keynes versus Friedrich Hayek writ large. And their debate explains a great deal of the current tension between those who would make final consumption – or what we call consumer spending – the be-all and end-all of economic policy, and those who feel that productivity and income should instead be the focus. The very act of measuring GDP as we do gives the high and easy intellectual ground to those of the Keynesian persuasion.

Let me hasten to note that I have no problem with the concept or the calculation of GDP in general. It is absolutely a number that we need to have in order to understand the workings of a *part* of the economy. But it is just one tool in the economic toolbox. If the only tool you use to affect (determine, guide – choose your word) economic growth and the creation of jobs is the hammer of GDP, the world ends up being a very strange-looking, rather deformed nail, bent time and time again by the imprecise blows of those wielding the hammer.

GDP is an important concept, perhaps one of the more important that we have looked at in quite a few years. I urge you not to roll your eyes at the attempt to understand yet another dry economic statistic, but instead to look deeply at how the attempt to measure GDP affects everything in our lives.

But before we jump deeper into our topic, let me call your attention to a **Mauldin Circle Member Exclusive. We have now made the Newt Gingrich and Niall Ferguson Strategic Investment Conference videos available.** Two weeks ago we made select presentations from the Strategic Investment Conference, including those of Kyle Bass and David Rosenberg, available to Mauldin Circle members. This week, we are happy to provide even more material from this incredibly informative event. Newt Gingrich and Niall Ferguson were the two highest rated presenters at a conference packed with some of the finest economic and investment minds in the world. Both Newt's insights into the opportunities offered by the remarkable technological evolution underway (and the roadblocks to progress thrown up by our bureaucracies) and Niall's analysis of the monetary and geopolitical "tapering" currently in progress are well worth a watch.

You can access both videos, absolutely free, just by becoming a Mauldin Circle member. In addition to these select videos, you'll get access to summaries and presentations of many more speakers from the conference. In order to join, you must be an accredited investor. 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.

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GDP: A Brief But Affectionate History

The title of this week's letter is taken from the title of a recent book by Diane Coyle. (For economic wonks, she writes an interesting blog at www.enlightenmenteconomics.com.)

GDP: A Brief But Affectionate History is a fascinating 140-page book that I cannot recommend highly enough. This is simply the best book on GDP that I've ever seen. You can read it on a few hours' plane ride or a lazy Sunday afternoon. And Ms. Coyle actually makes a relatively dry subject interesting and at times a page-turner. She has a true gift. (Now that she has conquered the GDP mountain, might I suggest she move on to CPI?)

Ms. Coyle starts with the predecessors to Adam Smith and takes us through the 17th century right up until today with the development of GDP, so we see the ebb and flow of ideas through time. Who knew the early developers of the model did not want to include defense spending, as they saw it as a wasteful, nonproductive activity? Or that Adam Smith thought the inclusion of services in the concept was misleading. "The provision of more services was a cost to the national economy, in his view. A servant was a cost to his employer, and did not create anything. Importantly, money spent on warfare or the interest on government debt was also being used unproductively. The nation's wealth was its stock of physical assets less the national debt. National income was what derived from the national wealth."

(I read this book on my iPad using my Kindle app, an extremely useful tool. As it turns out, if you highlight passages in the book you read [and even make notes and comments], you can go to your Kindle web page and see all the passages you highlighted. I regularly do that now and find it an extremely useful exercise, one that I would suggest to any serious researcher, as notes in a book tend to get buried and lost; and often you just can't quite (at least at my age) remember those connections five or ten years later, especially if you're reading more than a few books a year. Now my notes are in the cloud. Wow. And when I access the notes, I can touch a link to go back to the original passage in the book, making sure I have the context. How cool is that?

I found myself highlighting more than the normal number of passages, as seemingly every page had something I wanted to be able to remember for future use. Just for fun I cut and pasted my highlights into a Word doc and found that they ran to some 15 pages, or more than 10% of the book.)

And while I would suggest you read Coyle's book, I know that many of you don't have the time or inclination, so I'm going to try to summarize the highlights and arguments and quote somewhat freely from the text here and there. (Unless otherwise noted, all quotations below are from the book.)

Will the Real GDP Please Stand Up?

Let me note up front that Ms. Coyle takes us through not just the development of GDP but also the problems inherent in the concept. She delves into its misses and its misfires, some regularly discussed in public circles and a few new to me.

> There is no such entity out there as GDP in the real world, waiting to be measured by economists. It is an abstract idea…. I also ask whether GDP alone is still a good enough measure of economic performance – and conclude not. It is a measure designed for the twentieth-century economy of physical mass production, not for the modern economy of rapid innovation and intangible, increasingly digital, services. How well the economy is doing is always going to be an important part of everyday politics, and we're going to need a better measure of "the economy" than today's GDP.

GDP is a huge undertaking, full of rules, with almost as many exceptions to the rules, changes, fixes, and qualifications, so that, as one Amazon reviewer noted, GDP is in reality so complex there are only a handful of people in the world who fully understand it, and that does not include the commentators and politicians who pontificate about it almost daily. The quarterly release of GDP statistics is more akin to a religious service than anything resembling a scientific study. The awe and breathlessness with which the number is discussed is somewhat amusing to those who understand the sausage-making process that goes into producing the number. Whether the GDP reading is positive or negative, it often changes less in a given quarter than the margin of error in the figure itself, and it can be and generally is revised significantly – often many years later when almost no one is paying attention. When's the last time the mainstream media reported a five-year-old revision?

If you pay someone to mow your lawn and report wages paid, that adds to GDP. If you pay that person under the table, it doesn't. If you pay your maid to clean your house, it adds to GDP. Except if you marry her, then it doesn't. Unless of course she gets access to the credit card, in which case spending probably increases GDP dramatically. In England, sex with your wife does not add to GDP, but sex with a prostitute does – even if it is unreported. Go figure. There are so many jokes and one-liners that I could add to this litany, but I'm going to resist. Okay, just one. Can you imagine the reception if you came home with a blonde hair on your dark suit and your excuse was, "Honey, I was just doing my bit for the national economy. We all have to make sacrifices."

Housekeeping, cleaning, cooking, and other such duties do not get counted in GDP, although without them GDP would suffer significantly. Perhaps that is because when the original discussions about what constituted GDP were underway, "woman's work" was significantly undervalued.

But we are getting ahead of ourselves. Before we discuss how GDP is constructed (and abused), let's take a look at the history of how it came about. It will not surprise most readers to know that governments decided they need to know what the gross domestic product of the country was in order to be able to both tax that productivity and decide about a nation's capabilities to wage (and pay the wages of) war.

Ms. Coyle starts her book with the rather dramatic story of the calculation (or rather the miscalculation) of Greek GDP upon that country's entry into the European Union. The Greek group responsible for creating such numbers worked in a dusty old apartment without any computers and seemingly engaged in little activity. The real work was done by politicians, who did not appear to feel the need to be burdened by anything so aggravating as actual numbers. When the European Commission and the IMF decided to send someone to create an actual statistical agency in Greece, they selected a well-respected Greek economist, who within a year was charged by the Greek government with the crime of betraying the national interest, an offense that theoretically carries a life sentence. Essentially, he was charged for not cooking the books, which the Greeks had perfected as an art form. Evidently, in Greece economics is a full-contact sport, and the "calculation" of GDP had real-world implications for whether the government would get desperately needed money from its Eurozone lenders and for how many government workers would lose their jobs, not to mention the impact it would have on the living standards of millions of Greeks.

> GDP is the way we measure and compare how well or badly countries are doing. But this is not a question of measuring a natural phenomenon like land mass or average temperature to varying degrees of accuracy. GDP is a made-up entity. The [current] concept dates back only to the 1940s….

> According to Benjamin Mitra-Kahn, "*The Wealth of Nations* introduced a new idea of the economy, and through the effort of Adam Smith's students and admirers, it was adopted almost instantly." In Smith's own words: 'There is one sort of labour which adds to the value of the subject upon which it is bestowed: There is another which has no such effect. The former, as it produces a value, may be called productive; the latter, unproductive labour. Thus the labour of a manufacturer adds, generally, to the value of the materials which he works upon, that of his own maintenance, and of his master's profit. The labour of a menial servant, on the contrary, adds to the value of nothing…. A man grows rich by employing a multitude of manufacturers: He grows poor, by maintaining a multitude of menial servants.' The idea of a distinction between productive and unproductive activity, adopted by Adam Smith, dominated economic debate and measurement until the late nineteenth century."

(A side note: Karl Marx agreed with Adam Smith, and up until the collapse of communism in 1989, the Soviet Union's economic statistics ignored service activities. Go figure.)

Simon Kuznets was a Russian-American economist and a true giant in the field. Much of what we regard as economics today was developed under his aegis. Wikipedia notes: "His name is associated with the formation of the modern economic science … as an empirical discipline, the development of statistical methods of research, and the emergence of quantitative economic history. Kuznets is credited with revolutionising econometrics, and **this work is credited with fueling the so-called Keynesian revolution**" (even though Kuznets had significant disagreements with Keynes). Kuznets himself was influenced by Schumpeter, Pigou, and Pareto; and he early on introduced Kondratiev to the West.

Kuznets, when he originally developed an approach for measuring GDP for the American economy, did not want to include expenses on "… armaments, most of the outlays on advertising, a great many of the expenses involved in financial and speculative activities, and much of government activity," including the building of subways, expensive housing, etc.

Such thinking could not stand the scrutiny of politicians, however:

> With this aim, in fact, Kuznets was out of tune with his times. Welfare was a peacetime luxury. This passage [and his early work on GDP] was written in 1937, when his first set of accounts was presented to Congress. Before long, the president would want a way of measuring the economy that did indicate its total capacity to produce but did not show additional government expenditure on armaments as reducing the nation's output. The trouble with the prewar definitions of national income was precisely that, as constructed, they would show the economy shrinking if private output available for consumption declined, even if the government spending required for the war effort was expanding output elsewhere in the economy. The Office of Price Administration and Civilian Supply, established in 1941, found that its recommendation to increase government expenditure in the subsequent year was rejected on this basis. Changing the definition of national income to the concept of GDP, rather than something more like Kuznets's original proposal, overcame this hurdle.

There was a "heated debate between Kuznets and other economists, especially Milton Gilbert of the Commerce Department, about the right approach. The discussions were highly technical, but the underlying issue was profound: what was the meaning of economic growth and why were statisticians measuring it? Gilbert and his colleagues were clear that the aim was to construct a measurement that would be useful to the government in running its fiscal policy."

> The inclusion of business taxes and depreciation [in GNP measured at market prices] resulted in a production measure that was more appropriate for analysis of the war program's burden on the economy. Kuznets was highly skeptical: "He argued that Commerce's method tautologically ensured that fiscal spending would increase measured economic growth regardless of whether it actually benefited individuals' economic welfare." In the policy tussle in Washington, Kuznets lost and wartime realpolitik won. [And that those arguing against Kuznets were heavily influenced by Keynes is rather difficult to deny. –JM]
>
> … This decision was a turning point in the measurement of national income, and it meant that GNP (or later GDP) would be a concept strikingly different from the way the economy had been thought about from the dawn of modern industrial growth in the early eighteenth century until the early twentieth century. For two centuries, "the economy" was the private sector. Government played a small role in economic life, and featured mainly because it looked to raise taxes to pay for wars. Its role expanded steadily over the centuries, however. In Victorian times this began to extend to the provision of other services, those we take for granted now such as roads and water as well as the historic government roles of defense and justice."

Keynes himself, on the other side of the Atlantic, was arguing for an extended role for statistical analysis in government planning. He set forth his case in a 1940 pamphlet called *How to Pay for the War*.

Coyle notes (emphasis mine):

> Crucially, the development of GDP, and specifically its inclusion of government expenditure, winning out over Kuznets's welfare-based approach, **made Keynesian macroeconomic theory the fundamental basis of how governments ran their economies in the postwar era.** The conceptual measurement change enabled a significant change in the part governments were to play in the economy. GDP statistics and Keynesian macroeconomic policy were mutually reinforcing. The story of GDP since 1940 is also the story of macroeconomics. The availability of national accounts statistics made demand management seem not only feasible but also scientific.

Understand what this means. One thing that Paul Krugman and I can agree on (and I say this with utmost confidence) is that we both believe that real economic growth is necessary to get us out of our current situation. (I am sure there are some other things that we could agree on, such as our mutual love for science fiction, but nothing else leaps to mind just yet.)

However, if your measure of economic growth overweights the contribution of government spending to growth and underweights private production by focusing on final consumption, then when you are looking for "policy dials" to turn on the economic control panel in order to increase growth, the dials you reach for will be the two largest ones in your equation for measuring success: final consumption and government spending.

GDP Is a Political Construction

Coyle underlines the inherently political nature of GDP measurement:

> We are now awash with macroeconomic models and forecasts, published by official agencies and central banks, by investment banks, by think tanks and researchers, as well as by commercial forecasters such as DRI's successors. Indeed, the idea of the economy as a machine, regulated by appropriate policy levers, took firm hold….
>
> Debate rages in particular about the multiplier, because the issue of whether extra government spending or tax cuts (a "fiscal stimulus") will boost GDP growth turns on its size. If it is greater than one, a stimulus will help growth, while austerity measures will hurt it. Its actual size is hotly contested among macroeconomists, especially in the context of the present political debate about how much "fiscal stimulus" the government should be applying to get the economy growing faster. **There is an unsurprising alignment in the "multiplier wars" between macroeconomists' answer to the technical question about the size of the multiplier and their political sympathies….**
>
> It will be clear by now that the ambition of measuring national income has a long history, with correspondingly many changes in how people have thought about it. As Richard Stone put it, national income is not a "primary fact" but an "empirical construct": "To ascertain income it is necessary to set up a theory from which income is derived as a concept by postulation and then associate this concept with a certain set of primary facts." **There is no such entity as GDP out there in the real world waiting to be measured by economists. It is an abstract idea, and one that after a half century of international discussion and standard-setting has become extremely complicated.** [emphasis mine]

Today, as Coyle notes, the process of comprehending GDP is somewhat akin to what happens when my kids play a videogame. The basic concepts are simple, but as you master each level and move on to the next, complexity increases almost ad infinitum. There is now an entire international community of statisticians (a surprisingly small one at that) that actually determine what is accepted as statistically relevant to GDP. The first United Nations guide on national accounts was 50 pages. The latest edition has 722.

It should not surprise readers that every few years new rules are created for the figuring of GDP. British statisticians just this year declared the UK economy to be 5% bigger than previously thought. What brought about this magical boost in productivity? There was no discovery of buried treasure hidden away in the vaults of the Bank of England. Instead, statisticians turned to counting the economic contribution of prostitution and illegal drugs (along with a few other odds and ends). If you are borrowing money and your creditworthiness depends on cash flow and your debt-to-GDP ratio, you tend to look for sources of income that weren't previously accounted for.

Did the size of the US economy increase by 3% last summer? According to the statisticians it did. They decided to include music and entertainment and make adjustments to how we deal with investments. These changes were then calculated for all previous years, and suddenly the economy was 3% bigger! Small positive annual changes can add up over 40 years.

GDP has always been a political construction, subject to the ebb and flow of the intellectual and political climate, the need to raise taxes, and the military needs of the day. It is also a tool used to argue for or against income inequality (depending on what country you're in).

GDP is particularly bad at detecting innovation, as George Gilder's powerhouse work *Knowledge and Power* explains. There is a clear consensus emerging in economic circles about that weakness in the formula for calculating GDP, but there is nothing approaching consensus on how you might actually measure the contribution of innovation to GDP. How do you measure the value of Google maps? The voice recognition software that I'm using right now has made me significantly more productive, but how do we measure that?

And somewhat provocatively, there is growing disagreement over the contribution of the financial services sector. Depending on how you measure it, you can even determine that the actual contribution of the financial services sector is negative, although I would not make that argument. But was the contribution of financial services in 2005-2006 as positive as their impact on GDP suggests? Or was it part of the destructive process?

GDP is a financial construct at its heart, a political and philosophical abstraction. It is a necessary part of the management of the country, because, as with any enterprise, if you can't measure it you can't determine if what you are doing is productive. That said, the act of measuring GDP precipitates the observer effect writ large.

But as we will see next week, there are additional (note, I am not saying alternative) ways to measure growth and the size of the economy. Those measures would actually lead to policies more favored by Hayek, as the largest "dials" on the control panel would become productivity and income rather than consumer spending and government.

Conveniently, the Bureau of Economic Analysis will be giving us a new "Hayekian" statistic in its release next Friday. I am looking forward to seeing what this new measure says about the growth of the economy in the first quarter. Stay tuned as next week we ponder the question of "How in the name of all that is righteous and holy could Hayek lose the argument?" His proponents are right to argue that the match was rigged and the judges were bought. If you have a few minutes, watch these two brilliantly done, hilarious, and instructive YouTube videos, here and here. I think you will come away smiling but also gain an understanding of the true terms of the debate. At the end of the day, I keep coming back to how central the arguments between Hayek and Keynes are to almost every economic discussion.

Minneapolis, Vancouver, and Maine

Wasn't it just a few weeks ago that I was talking about how much time I would get to spend at home this summer? Monday I will leave for a day trip to Minneapolis to do an on-site visit with my friend Pat Cox, who writes our *Transformational Technology Alert* letter. It's really an easy trip, and Minneapolis is nice this time of year. Then, as a last-minute thing, I will leave on Thursday evening to spend the weekend with Louis Gave and his friends to celebrate his 40th birthday and christen his new home in Whistler, a few hours north of Vancouver. I always enjoy my time with Louis, as he is one of the most intellectually stimulating thinkers I know and a genuinely nice guy. I'm sure many of my friends will be flying in from around the world as well.

My only problem with Louis is that this is just his 40th birthday. I hadn't even figured out where the restroom was in the economics building when I was 40. I'm not sure what kind of inequality this is, but it just doesn't seem fair. Admittedly, he did grow up with one of the finest French economists this century has seen (and one of the few), his father Charles. That might have been a small advantage. He says he is going to make me do something called rope climbing. It can't be any worse than the hour I spent "boxing" with The Beast this afternoon. It's a good thing I use voice recognition to do this letter, because my arms are too weak to type.

Then I am back for a few days before I leave with my young son Trey to go to Maine for our annual fishing trip at Camp Kotok.

I'm not quite sure how to deal with how pleasant the weather is here in Dallas in July. The highs the last two days have been in the mid-70s. That is some 20°+ below the average high at this time of year.

I spent my days in New York this past week, meeting with my partners in Mauldin Economics (and George Gilder drove down to meet with us) and outlining a new documentary we want to do on Bitcoin. I had extensive meetings with new team members and potential partners who will be part of a major project with me, one I've been working on for several years that is getting close to the point where I can actually talk about it in public.

All in all, this has been a great week, and I expect an even better one next week. New friends, old friends, and a few challenges. I'm curious as to what a ropes course is. And whether someone my age should be doing something like that. I have always been somewhat "coordinationally challenged" (to use a polite term). Since it would be rather bad form for Louis to have his guests come away plastered with bandages or hobbling on crutches, I am going to assume the best. You have a great week.

Your thinking about the *The Road to Serfdom* analyst,

John Mauldin

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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 t otal 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.