What Bernanke doesn't understand about deflation

Bernanke's recent Jackson Hole speech didn't contain one reference to the key force driving the American economy right now: private sector deleveraging. The reason the US economy is not recovering from this crisis is because all sectors of American society took on too much debt during the false boom of the last two decades, and they are now busily getting themselves out of debt any way they can.

Debt reduction is now the real story of the American economy, just as real story behind the apparent free lunch of the last two decades was rising debt. The secret that has completely eluded Bernanke is that aggregate demand is the sum of GDP **plus the change in debt**. So when debt is rising demand exceeds what it could be on the basis of earned incomes alone, and when debt is falling the opposite happens.

I've been banging the drum on this for years now, but it's a hard idea to communicate because it's so alien to the way most economists (and many people) think. For a start, it involves a redefinition of aggregate demand. Most economists are conditioned to think of commodity markets and asset markets as two separate spheres, but my definition lumps them together: aggregate demand is the sum of expenditure on goods and services, PLUS the net amount of money spent buying assets (shares and property) on the secondary markets. This expenditure is financed by the sum of what we earn from productive activities (largely wages and profits) **PLUS** the change in our debt levels. So total demand in the economy is the sum of GDP plus the change in debt.

I've recently developed a simple numerical example that makes this case easier to understand: imagine an economy with a nominal GDP of $1,000 billion which is growing at 10 percent a year, due to an inflation rate of 5 percent and a real growth rate of 5 percent, and in which private debt is $1,250 billion and is growing at 20% a year.

Aggregate private sector demand in this economy—expenditure on all markets, including asset markets—is therefore $1,250 billion: $1,000 billion from expenditure from income (GDP) and $250 billion from the change in debt. At the end of the year, private debt will be $1,500 billion. Expenditure is thus 20 percent above the level that could be financed by income alone.

Now imagine that the following year, the rate of growth of GDP continues at 10 percent, but the rate of growth of debt slows from 20 to 10 percent. GDP will have grown to $1,100 billion, while the increase in private debt this year will be $150 billion—10 percent of the initial $1,500 billion total and therefore $100 billion less than the $250 billion increase the year before.

Aggregate private sector demand in this economy will therefore be $1,250 billion, consisting of $1,100 billion from GDP and $150 billion from rising debt—exactly the same as the year before. But since inflation has been running at 5 percent, aggregate demand will be 5 percent lower than the year before in real terms. So simply stabilising the debt to GDP ratio results in a fall in demand in real terms, and some markets—commodities and/or assets—must take a hit.

Putting this example in a table, we get the following illustration:

Variable/Year	Year 1	Year 2
Nominal GDP	1000	1100
Growth rate of Nominal GDP	10%	10%
Real growth rate	5%	5%
Inflation Rate	5%	5%
Private Debt	1250	1500
Growth rate of Private Debt	20%	10%
Change in Private Debt	250	150
Nominal Aggregate demand (GDP + Change in Debt)	1250	1250

Notice that nominal GDP remains constant across the two years--but this means that real output has to fall, since half of the recorded growth in nominal GDP is inflation. So even stabilising the debt to GDP ratio causes a fall in real aggregate demand. Some markets—whether they're for goods and services or assets like shares and property—have to take a hit, and the economy will go into a recession. It's far worse if debt levels actually fall, but at the same time, that's necessary to wean this example economy off its dependence on debt.

Now let's apply this to the US economy for the last few years, in somewhat more detail. There are some rough edges to the following table—the year to year changes put some figures out of whack, and some change in debt is simply compounding of unpaid interest that doesn't add to aggregate demand—but in the spirit of "I'd rather be roughly right than precisely wrong", at your leisure please work your way through the table below.

Its key point can be grasped just by considering the GDP and the change in debt for the two years 2008 and 2010: in 2007-2008, GDP was $14.3 trillion while the change in private sector debt was $4 trillion, so aggregate private sector demand was $18.3 trillion. In calendar year 2009-10, GDP was $14.5 trillion, but the change in debt was **minus** $1.9 trillion, so that aggregate private sector demand was $12.6 trillion. The turnaround in two years in the change of debt has literally sucked almost $6 trillion out of the US economy.

Variable\Year	2006	2007	2008	2009	2010
GDP	12,915,600	13,611,500	14,337,900	14,347,300	14,453,800
Change in Nominal GDP	6.3%	5.4%	5.3%	0.1%	0.7%
Change in Real GDP	2.7%	2.4%	2.5%	-1.9%	0.1%
Inflation Rate	4.0%	2.1%	4.3%	0.0%	2.6%
Private Debt	33,196,817	36,553,385	40,596,586	42,045,481	40,185,976
Debt Growth Rate	9.6%	10.1%	11.1%	3.6%	-4.4%
Change in Debt	2,914,187	3,356,568	4,043,201	1,448,895	-1,859,505
GDP + Change in Private Debt	15,829,787	16,968,068	18,381,101	15,796,195	12,594,295

Change in Private Aggregate Demand	0.0%	7.2%	8.3%	-14.1%	-20.3%
Government Debt	6,556,391.0	6,893,467.0	7,321,592.0	8,615,051.0	10,167,585.0
Change in Government Debt	478,851.0	337,076.0	428,125.0	1,293,459.0	1,552,534.0
GDP + Change in Total Debt	16,308,638.0	17,305,144.0	18,809,226.0	17,089,654.0	14,146,829.0
Change in Total Aggregate Demand	0.0%	6.1%	8.7%	-9.1%	-17.2%

That sucking sound will continue for many years, because the level of debt that was racked up under Bernanke's watch, and that of his predecessor Alan Greenspan, was truly enormous. In the years from 1987, when Greenspan first rescued the financial system from its own follies, till 2009 when the US hit Peak Debt, the US private sector added $34 trillion in debt. Over the same period, the USA's nominal GDP grew by a mere $9 trillion.

Ignoring this growth in debt—championing it even in the belief that the financial sector was being clever when in fact it was running a disguised Ponzi Scheme—was the greatest failing of the Federal Reserve and its many counterparts around the world.

Though this might beggar belief, there is nothing sinister in Bernanke's failure to realize this: it's a failing that he shares in common with the vast majority of economists. His problem is the theory he learnt in high school and university that he thought was simply "economics"—as if it was the only way one could think about how the economy operated. In reality, it was "Neoclassical economics", which is just one of the many schools of thought within economics. In the same way that Christianity is not the only religion in the world, there are other schools of thought in economics. And just as different religions have different beliefs, so too do schools of thought within economics—only economists tend to call their beliefs "assumptions" because this sounds more scientific than "beliefs".

Let's call a spade a spade: two of the key beliefs of the Neoclassical school of thought are now coming to haunt Bernanke—because they are false. These are that the economy is (almost) always in equilibrium, and that private debt doesn't matter.

One of Bernanke's predecessors who also once believed these two things was Irving Fisher, and just like Bernanke, he was originally utterly flummoxed when the US economy collapsed from prosperity to Depression back in 1930. But ultimately he came around to a different way of thinking that he christened "The Debt Deflation Theory of Great Depressions" (Fisher 1933).

You would think Bernanke, as the alleged expert on the Great Depression—after all, that's one of the main reasons he got the job as Chairman of the Federal Reserve—had read Fisher's papers. And you'd

be right. But the problem is that he didn't understand them—and here we come back to the belief problem. The Great Depression forced Fisher—who was also a Neoclassical economist—to realize that the belief that the economy was always in equilibrium was false. When Bernanke read Fisher, he completely failed to grasp this point. Just as a religious scholar from, for example, the Hindu tradition might completely miss the key points in the Christian Bible, Bernanke didn't even register how important abandoning the belief in equilibrium was to Fisher.

To know this, all you have to do is read Bernanke's summary of Fisher in his **Essays on the Great Depression**:

> The idea of debt-deflation goes back to Irving Fisher (1933). Fisher envisioned a dynamic process in which falling asset and commodity prices created pressure on nominal debtors, forcing them into distress sales of assets, which in turn led to further price declines and financial difficulties. His diagnosis led him to urge President Roosevelt to subordinate exchange-rate considerations to the need for reflation, advice that (ultimately) FDR followed.
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> Fisher's idea was less influential in academic circles, though, because of the counterargument that debt-deflation represented no more than a redistribution from one group (debtors) to another (creditors). Absent implausibly large differences in marginal spending propensities among the groups, it was suggested, pure redistributions should have no significant macroeconomic effects. " (Bernanke 2000, p. 24)

There's no mention of disequilibrium there, and though Bernanke went on to try to develop the concept of debt-deflation, he did so while maintaining the belief in equilibrium. Compare this to Fisher himself on how important disequilibrium really is in the real world:

> We may tentatively assume that, ordinarily and within wide limits, all, or almost all, economic variables tend, in a general way, toward a stable equilibrium… But the exact equilibrium thus sought is seldom reached and never long maintained. New disturbances are, humanly speaking, sure to occur, so that, in actual fact, any variable is almost always above or below the ideal equilibrium…
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> **It is as absurd to assume that, for any long period of time, the variables in the economic organization, or any part of them, will "stay put," in perfect equilibrium, as to assume that the Atlantic Ocean can ever be without a wave.** (Fisher 1933, p. 339)

We might not be in such a pickle now if economics had started to become more of a science and less of a religion by following Fisher's lead, and abandoning key beliefs when reality made a mockery of them. But instead neoclassical economics completely rebuilt its belief system after the Great Depression, and

here we are again, once more experiencing the disconnect between neoclassical beliefs and economic reality.

For the record, here's my "GDP plus change in debt" table for the 1930s, to give us some idea of what the next decade or so might hold if, once again, we repeat the mistakes of our predecessors.

Variable\Year	1929	1930	1931	1932	1933	1934	1935
GDP	103,600	91,200	76,500	58,700	56,400	66,000	73,300
Change in Nominal GDP	6.0%	-12.0%	-16.1%	-23.3%	-3.9%	17.0%	11.1%
Inflation Rate	-1.2%	0.0%	-7.0%	-10.1%	-9.8%	2.3%	3.0%
Private Debt	161,800	161,100	148,400	137,100	127,900	125,300	124,500
Debt Growth Rate	3.7%	-0.4%	-7.9%	-7.6%	-6.7%	-2.0%	-0.6%
Change in Debt	5,700	-700	-12,700	-11,300	-9,200	-2,600	-800
GDP + Change in Private Debt	109,300	90,500	63,800	47,400	47,200	63,400	72,500
Change in Private Aggregate Demand	0.0%	-17.2%	-29.5%	-25.7%	-0.4%	34.3%	14.4%
Government Debt	30,100	31,200	34,500	37,900	40,600	46,300	50,500
Change in Government Debt	-100	1,100	3,300	3,400	2,700	5,700	4,200
GDP + Change in Total Debt	109,200	91,600	67,100	50,800	49,900	69,100	76,700
Change in Total Aggregate Demand	0.0%	-16.1%	-26.7%	-24.3%	-1.8%	38.5%	11.0%

Bernanke, B. S. (2000). Essays on the Great Depression. Princeton, Princeton University Press.
Fisher, I. (1933). "The Debt-Deflation Theory of Great Depressions." Econometrica **1**(4): 337-357.