



EJW

ECON JOURNAL WATCH
Scholarly Comments on
Academic Economics

ECON JOURNAL WATCH 9(1)
January 2012: 51-59

EJW-MERCATUS SYMPOSIUM
U.S. SOVEREIGN DEBT CRISIS:
TIPPING-POINT SCENARIOS AND CRASH DYNAMICS

How a Default Might Play Out

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In finance textbooks and in the markets, United States Treasury securities are treated as default-free assets. People assume that under any circumstances, the United States government will pay principal and interest as scheduled. Could this assumption change? If so, what would be the consequences? This essay examines these questions.

From the outset, I should emphasize that at the core of this issue are expectations about future political decisions. Thus, much of what I will be discussing is outside the competence of ... well, anybody, making the exercise highly speculative.

My speculations come together under the following headings:

1. The U.S. government has made a set of promises that it cannot keep.
2. The current level of outstanding debt is a relatively small part of the problem.
3. Therefore, inflation is unlikely to solve the problem.
4. The promises that are most important to change are Social Security and Medicare.
5. It is easy to assemble a blocking coalition against changes.
6. At some point, investors may see default as a realistic possibility. This can quickly produce a crisis, because it would lead to higher interest rates and would force the government to make tough decisions.
7. The resolution of a crisis would likely take the form of a negotiated default, rather than a unilateral default or a one-party political cave-in.

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The U.S. government has made a set of promises that it cannot keep.

In June of 2011, the Congressional Budget Office (2011) published its annual *Long-Term Budget Outlook*. The “alternative fiscal scenario,” which is based not on existing law but instead estimates a continuation of past policy patterns, shows the ratio of debt held by the public to GDP climbing from less than 75 percent today (it was less than 40 percent prior to the financial crisis of 2008) to 187 percent in 2035, with an ever-increasing ratio thereafter.

At such a high ratio of debt to GDP, the fiscal outlook becomes highly dependent on the interest rate. If debt is 180 percent of GDP, then at an average interest rate of 2 percent interest payments will be 3.6 percent of GDP. However, at an average interest rate of 10 percent, interest payments would be 18 percent of GDP. With primary spending (on everything other than interest) of 25 percent of GDP, the higher interest rate scenario would imply total federal government spending of 43 percent of GDP, more than double the historical average.

For expenditures in the year 2035 the CBO projects the following percentages of GDP (in parentheses is the 2011 percentage):

- Social Security: 6.1 percent (4.8)
- Medicare: 6.7 percent (3.7)
- Medicaid and other health care: 3.7 percent (1.9)
- Other non-interest spending: 8.5 percent (12.3)
- Interest 8.9 percent (1.4)

As a percentage of GDP, the obligations under Social Security, Medicare, and other health care programs are projected to rise more than other non-interest spending will fall. Hence, the primary deficit (that part of the deficit that does not include interest payments) will be increasing over the next two decades. A primary deficit cannot increase indefinitely.

The CBO projections indicate that the U.S. government will spend more money than it is likely to obtain in tax revenue, and it thus will be borrowing increasing amounts of money to fund its obligations. Once the interest rate on that borrowing gets to be too high, it will have to stop meeting its obligations. That means either squeezing non-interest spending further, suddenly cutting benefits for Social Security and health care, or suspending payment on its debt instruments.

Imagine that our government announces now that in 2035 it will spend, as the CBO projects, 6.1 percent of GDP on Social Security, 10.4 percent on Medicare, Medicaid, and other health care programs, and 8.9 percent on interest. It is doubtful that the government will be able to find the revenue (taxes plus borrowing) to pay for such spending. An interest-rate spike would make it even

more doubtful. Thus, it is fair to conclude that the U.S. government has made spending promises that it is not in a position to keep.

The current level of outstanding debt is a relatively small part of the problem.

Most of the alarming accumulation of debt is still in the future. As of 2011, debt held by the public amounted to 69 percent of GDP, but CBO projects that this will rise to 187 percent of GDP in 2035. This projection reflects the rise in the primary deficit (driven by Social Security and health programs), higher interest rates as the economy emerges from recession, and higher interest payments in order to service an ever-growing debt. Between 2011 and 2035, these spending categories are projected to rise from 11.8 percent of GDP to 25.4 percent of GDP.

Therefore, inflation is unlikely to work as a solution, even if it were attempted.

For a country that has accumulated a large debt, one option is to reduce the real value of the debt by inflating. If you have incurred a debt of \$1 billion in the past, then paying back the debt in inflated dollars can reduce its real burden.

For the United States today, the inflation option, even if it were tried, would not be so effective. The problem is that the three growing categories of spending are Social Security, health programs, and interest on the debt. All of these tend to rise with inflation. Social Security payments are indexed to consumer prices. Health care reimbursements are tied to prices in health care, which presumably will increase faster as overall inflation rises. And investors in Treasury securities can be expected to demand higher interest rates in response to inflation.

Thus, our situation differs from the end of World War II, when we had accumulated a ratio of debt to GDP of close to 100 percent. At that time, our existing debt burden was high relative to the obligations accrued going forward. Thus, an inflation shock would tend to reduce the real burden of debt by allowing the government to pay back in depreciated dollars. That is much less true today, because so much of the fiscal shortfall is now in forward obligations that will tend to rise with inflation.

The promises that are most important to change are Social Security and Medicare.

With other non-interest spending already projected to decline relative to GDP, the key to reducing the primary deficit will be to make changes to Social Security, Medicare, and other health care spending. These programs are projected by CBO to rise from 10.4 percent of GDP today to 16.5 percent of GDP in 2035.

Over the years, a number of proposals have been made for improving the fiscal health of the Social Security system. These include raising the payroll tax rate, making greater use of means testing, changing the indexing formula so that benefits are linked to prices rather than to wages (which would keep recipients from reaping the gains from productivity increases), and raising the age of eligibility for benefits.

To reduce government spending on health care, some kind of reform is required. Broadly speaking, this could be “top-down” or “bottom-up.” Top-down rationing would involve government officials determining which procedures will be eligible for reimbursement under federal programs. Bottom-up reform would involve converting some or all of these programs to vouchers, with households then determining which medical procedures to forgo, and the government simply reducing the amounts given in vouchers.

It is easy to assemble a blocking coalition against changes, especially in Medicare.

Here, I am making a political assessment. It strikes me that changes to Social Security and Medicare face generic and ideological opposition.

Generic opposition to change comes from those who want to keep the programs as they are. Retirees and people nearing retirement would tend to fall in this category.

Ideological opposition comes from partisans who are willing to see changes to programs, but who reject certain types of changes. For example, on Social Security, Republicans tend to be ideologically opposed to tax increases while Democrats tend to be ideologically opposed to benefit cuts. On Medicare, Republicans tend to be ideologically opposed to top-down rationing, while Democrats tend to be ideologically opposed to bottom-up choice.

There is a significant probability that by combining ideological opposition and generic opposition, a blocking coalition can readily be formed against any proposed changes to these programs. Thus, even though the need for major reform is evident, it might be that, for every major reform, even once the effort is taken up, its political prospect is only slight.

Another alternative that might be considered under threat of default is a tax increase, leaving the entitlement programs more or less as they are. There are two reasons to believe that this also will be politically blocked. First, if entitlement obligations are still projected to grow faster than GDP, then tax increases will not provide a credible long-term solution. Second, if the two political parties are unable to agree on a compromise that combines entitlement cuts with tax increases, it seems even less likely that they would agree on tax increases alone.

At some point, investors may see default as a realistic possibility. This can quickly produce a crisis, because it would lead to higher interest rates and would force the government to make tough decisions.

Interest rates are affected by perceived risk. For example, from 2002 through 2007, the interest rates on debt issued by Freddie Mac and Fannie Mae were generally less than 40 basis points above the interest rates on comparable securities issued by the U.S. Treasury. This allowed the two agencies to borrow at relatively low interest rates and profit from the spread on higher-earning assets.

However, starting in late 2007, investors began to have doubts about the viability of these two entities. They began to demand compensation for the increase in perceived risk, so that by the late summer of 2008 the spread over Treasuries had widened to over 150 basis points.² The higher borrowing costs drastically eroded the profitability of these companies. Had they been fully private enterprises, this would have caused a death spiral, as higher interest costs reduced their financial viability, raising interest costs further, until they would have had to declare bankruptcy. They could survive only with full government support; to minimize the cost of this support the Treasury took the two firms into conservatorship. What this episode illustrates is that a loss of confidence can be quite sudden and quite devastating for an entity that relies heavily on borrowing.

When it comes to risk premiums, a borrower tends to find itself in one of two possible states. In a high-confidence state, creditors have an assessment of the borrower's financial condition that is relatively optimistic and stable. In a low-confidence state, the creditors have pessimistic and falling confidence. As we saw above with the examples of Freddie Mac and Fannie Mae, a low-confidence state becomes self-fulfilling, because high interest costs make it impossible for the borrower to meet all of its obligations.

The transition from a high-confidence state to a low-confidence state is inherently rapid, discontinuous, and impossible to predict in advance. If you knew

2. See James R. Barth, Tong Li, and Triphon Phumiwasana (2008), which also documents the behavior of other interest-rate spreads during the crisis.

that other investors were going to lose confidence next month, then you would try to reduce your credit exposure today. If all investors try to reduce their credit exposure today, then the crisis will be upon us immediately.

The fundamental question about sovereign debt is whether the government will be able to make effective and necessarily drastic changes in a low-confidence state. In a low-confidence state, investors will want to see a credible program to reduce the ratio of debt to GDP. The question will be whether the government has the political strength to make the necessary changes to its budget.³

In the case of sovereign debt, think of the investors as spectators watching a swimmer float down a river toward a waterfall. The spectators believe that if the swimmer changes direction and swims toward shore in time, the swimmer will be safe. If the spectators perceive that the swimmer has passed the point where he can save himself, they will not want to bet that the swimmer survives.

However, suppose that the swimmer's chance to survive depends in part on the spectators' confidence. In that case, guessing the swimmer's fate requires guessing how the other spectators will gauge the swimmer's chances. This is analogous to Keynes' famous depiction of the stock market as a beauty contest in which the challenge is to guess the contestant that other spectators will regard as most beautiful.

At the moment, interest rates on U.S. Treasury securities are low. This fact indicates that investors in U.S. government debt apparently believe that the fiscal swimmer will change direction in time to reach the shore. However, the longer the fiscal swimmer continues toward the waterfall, the greater the risk that investors will change their assessment. Once enough investors become pessimistic, a descent into the waterfall becomes unavoidable.

As long as investors are confident in a government, the government will not default. Instead, the government will exploit investor confidence to borrow whatever it needs to continue functioning. Thus, Japan has been able to continue to borrow, even though its debt to GDP ratio is over 200 percent.

If investors lose confidence in a government, there are two possible outcomes. One is that the government is able to repay its debt and the investors are proven wrong. The other is a default.

To be able to repay its debt after a loss of confidence, a government will require a bailout along with fiscal policy changes. Earlier in 2011, European leaders attempted to use a combination of a bailout and fiscal austerity to resolve the crisis in Greece. Had this approach been successful, investors who thought that Greek debt was too risky to buy would have missed out on an opportunity.

3. For illustrations of this two-state idea, see Kling (2010).

The other possible outcome is a default, which became the de facto outcome for Greece. The bailout and the austerity proved insufficient, and the terms of Greek debt were renegotiated to the detriment of creditors. Those who spurned Greek securities because of risk turned out to have been correct.

Overall, the relationship between government behavior and investor confidence is delicate. The longer the government goes without addressing fiscal sustainability, confidence falls. If confidence suddenly falls, the government no longer can afford its borrowing costs. This can lead to a situation where the government fails its creditors.

What would trigger a sovereign debt crisis for the United States? One scenario might be a situation in which Congress comes close to an agreement to produce a sustainable budget, but it is derailed by an unexpected event. For example, suppose that some key supporters of the agreement suffer surprising defeats in an election. The unraveling of the agreement might be the “last straw” for investors, leading to a rapid loss of confidence.

The resolution of a crisis would likely take the form of a negotiated default, rather than a unilateral default or a one-party political cave-in.

A unilateral default is when the government unilaterally decides to suspend debt repayment or to reschedule its debt. For a government facing a fiscal crisis, unilateral default is not attractive, because it would result in being shunned by investors and international lending institutions. Since a government in crisis is likely to be running a primary deficit, the inability to borrow new money forces exactly the sort of fiscal austerity that the government wishes to avoid.

A negotiated default is a mutual agreement between a government and lenders to write down or reschedule debt. Because it is a mutual agreement, the government may continue to borrow to fund its deficit.

Mutual agreement requires multilateral negotiations. The International Monetary Fund routinely brokers such agreements, and it might also do so for a U.S. crisis. The IMF is likely to negotiate a combination of fiscal austerity measures to be enacted by the government and debt forgiveness to be provided by creditors. Creditors must be satisfied that the IMF has “squeezed” the government as hard as possible, and the government must be satisfied that under the circumstances it has gotten the best deal possible with creditors. The IMF can “sweeten the pot” for both parties by providing loans from its own resources to “facilitate the transition” as the government adjusts its policies and lenders reduce their exposure. The IMF also will act as a sort of “financial control board,” with power to insist that budget actions conform to certain guidelines. This will provide external pressure to overcome the domestic political gridlock.

One way to avoid a negotiated default would be a cave-in by one political party. For example, if interest rates soar, Democrats could agree to immediate spending cuts and restructuring of entitlements. Alternatively, Republicans could agree to immediate significant tax increases.

My assumption is that both parties would prefer a negotiated default to caving in. With a negotiated default, the IMF would produce guidelines for tax and spending policy. The Democrats would have to accept fewer spending cuts than if they were to cave, and the Republicans would have to accept smaller tax increases than if they were to cave. The external guidelines would give both political cover to vote for compromises that would otherwise anger their bases.

Sovereign creditors would be likely to bear most, or even all, of the losses from a debt write-down that occurs as part of a negotiated default. Even so, these creditors would have reason to prefer a negotiated default rather than allow the crisis to worsen. The negotiated default would reduce the uncertainty of the world economic environment. It also would give creditors, via the IMF or financial control board, leverage over U.S. policy.

In a crisis situation, the balance among government austerity measures, debt rescheduling, and IMF lending is determined by relative negotiating strength. When the country in crisis is relatively small, creditors are in a strong position, because the lending resources required to see the government through an austerity program are small relative to the capacity of the IMF. When the country's government is fragile, this paradoxically puts the government in a stronger negotiating position, because the IMF will not want to push for austerity that is so severe that it causes the government to fall.

Let us consider how this would play out in the event of a loss of confidence in the ability of the U.S. to meet its obligations. Under such a scenario, the hole in the U.S. budget is likely to be too large to be filled by an IMF loan. Consequently, creditors will be in a weak negotiating position. If the U.S. government is deadlocked (for example, with different branches of government controlled by different parties and strong partisan divisions, as now, going into the 2012 election), it will be in a strong negotiating position. That is, an IMF proposal for austerity that is too severe may stand little chance of being enacted.

If creditors are in a weak position and the government is in a strong position, then it becomes likely that a negotiated agreement will include some form of debt restructuring. The IMF will force as much austerity on the U.S. fiscal system as the political realities will allow, and the rest of the fiscal gap will be closed by a negotiated default.

It would seem reasonable to suppose that the U.S. would give up some of its sovereignty in the event of default. That is, in order to be able to resume borrowing in international credit markets, the U.S. would have to agree to IMF conditions

going forward. The content of those conditions would be determined by the key lending countries. So, for example, if China wanted the United States to reduce defense spending as a condition for continued lending, the IMF would require lower defense spending as part of the negotiated default agreement.

Indeed, much of global politics and economics would be altered by a negotiated default. United States Treasury securities would lose the status of a “safe haven” asset and the dollar would lose its status as a reserve currency. International investors would seek out some alternative. That might involve gold or real estate or the financial claims issued by other countries. It is difficult to forecast what such a world would be like, other than it would be quite different from the world we live in today.

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