"Will Atlas Shrug? Can German tax-payers shoulder all the Eurozone's sovereign debt?" The short answer. Yes, they can.

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What happens if Mr. Draghi does whatever it takes to save the Eurozone but it isn't enough to splinter the common currency area?

With interest rates at a self-proclaimed rock bottom the ECB is steadily turning to unconventional monetary policy to combat low inflation and sluggish growth. The ECB has begun to buy covered bonds and it is ready to purchase asset-backed securities. Reuters reports that The ECB also has decided to add corporate bonds to its balance sheet.

However, limiting balance sheet policies to these three asset classes might not create enough buck to give the bang that the Eurozone needs. Hence many investors, including me, think that the ECB is very close to announcing that it will start buying member states' sovereign debt. The ECB has been hesitant about such a step since some think the ECB thereby crosses a line and directly finances government deficits. I think this hesitation will be overcome.

There is nothing in the Lisbon Treaty that prohibits the ECB from purchasing member states' sovereign debt in the secondary market. The ECB's announced, but hitherto unused, Outright Monetary Transaction (OMT) program involves such purchases. Aspects of that program are now being discussed by the European Court of Justice after the German constitutional court in Karlsruhe unprecedentedly ruled that they wanted to hear the European Court of Justices' opinion before they made their final decision. The jury is still out, but in my view the OMT, and by implication larger scale traditional QE, will not be stopped by judges – who are all too aware of what the stakes are. Last week's up-tick in peripheral interest rates brought about through a combination of greater uncertainty about Greek politics and some rather weak German economic data, indicates that the risk of exits from the euro and possibly a complete break-up of the Eurozone are more than a figment in the head of euro-doomsayers. To prohibit the destruction of the Eurozone, the political establishment is prepared to do, as Mr. Draghi proclaimed in London in July 2012, whatever it takes.

Doing whatever it takes is risky, though, as it might not be possible to keep the eurozone intact no matter what the ECB and other Eurozone institutions do.

One way to crystalize the risk is to think through what happens if Mr. Draghi does whatever he can but that his efforts nevertheless falter due to political developments in some of the member states.

We know that Germany, due to its richness and history, is particularly worried about the outcome of large-scale purchases of sovereign bonds. They fear that Germany, through their ownership part of the ECB, takes on too much risk if one or some of the most indebted and politically unstable Eurozone members default on sovereign debt purchased by the ECB.

Hence I focus on the risk that Germany faces if the Eurozone crumbles. And in order to not downplay the risk I single out the worst-case scenario where Germany is the last man standing in the Eurozone and ends up as the sole owner of the ECB's assets and liabilities.

So, suppose the ECB mutualizes all of the current c. €9 trillion sovereign debt in the Eurozone through a full-throttle QE program. Suppose also that the ECB, via purchases in the secondary market, finances all 18 member states' public deficits over the next years.

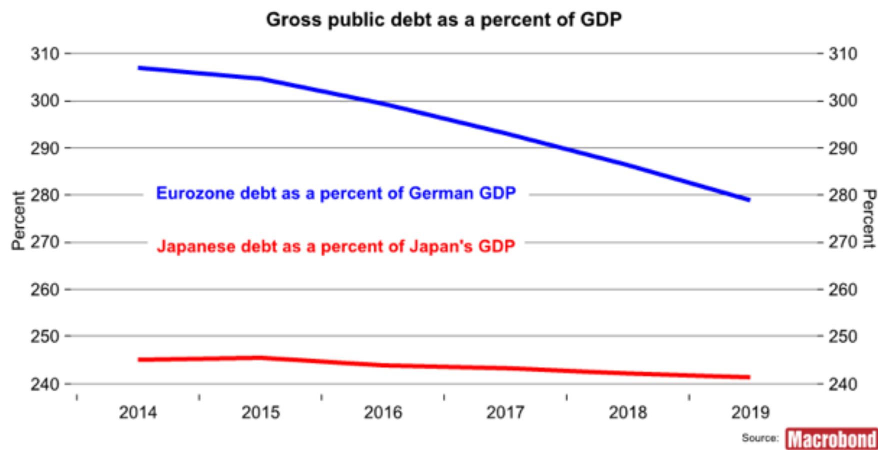
This might be the ultimate solution to the sovereign debt crises, since the ECB converts member states' sovereign debt to mutualized Eurozone debt. One is left with only Eurobonds in the form of ECB deposits, most of which can easily be transformed into marketable ECB interest bearing bills and bonds. In fact, if the Eurozone is meant to last forever, why not swap much of the ECB deposits for ECB perpetuities? With the current interest on long-term debt, the ECB could then lock in very low financing costs. The interest rate on the European Financial Stability Fund bond that matures in 2044 is currently 2.04%. The ECB is hardly a less creditworthy investor than the EFSF.

If it all turns out well, this could be hugely profitable for the Eurozone's public sector, with lower overall sovereign interest expenditures. The sovereigns will pay interest to the ECB, but they will get back much more seigniorage from the ECB than currently is the case. Germany, and other sovereigns, that currently have low interest rates, benefit the most since the private sector would benefit from lower real interest rates, which will spur investments.

The risk though is that subsequent to the bond purchases, one or more Eurozone members exits the Eurozone and defaults on their debt to the ECB. (I also assume for the sake of the argument, which is to illustrate a worst case-scenario, that the National Central Banks default on their debt to the ECB in Frankfurt and do not pick up their share of the assets that have been purchased by the ECB).

Assume, then, that a "Grexit" suddenly spreads like Ebola in Western Africa and that Germany ultimately finds itself to be the sole member of the Eurozone. From the premises above it follows that the Bundesbank morphs with the ECB and that the German Treasury is the debtor of all legacy Eurozone debt. What happens then to Berlin's debt burden?

This chart compares the public debt-to-GDP ratio in Japan with the potential public debt-to-GDP ratio in Germany from 2014 to 2019 if Germany incurs all the gross debt of all the other 17 member states. I've used IMF's October projection for budget balances and debt issuance. The public debt refers to the gross debt of the general government sector. (I ignore the fact that little Lithuania will become a member state of the Eurozone on January 1 2015).



If full-blown QE was finished by Dec. 2014 and the Eurozone shrunk to just Germany during 2015, German public debt would about 304% of GDP at the end of 2015. That's very high, of course, but note that it's not more than 24% higher than what's projected for Japan at the end of next year.

Given current projections of nominal GDP growth and public budget balances in all the member states, the ratio shrinks to 279% at the end of 2019. Note that the debt-to-GDP ratio shrinks more than in Japan. In 2019 the debt-to-GDP ratio of a Germany loaded by 17 ex-Eurozone member state's sovereign debt is just 16% higher than what the IMF currently predicts for Japan at the same date.

The German burden would be substantial, but will it be unbearable? Would picking up the tab after a ECB QE unlimited party has gone off-track also pay for a ticket to Weimar?

I do not think that the debt-load would lead to violent inflation. The fact that Japan's treasury can handle its debt burden with a stable price level and 10-year interest rates at 0.47% suggests that what seems like an exorbitant public debt might not break the sovereign's fiscal neck. Also, doing the arithmetic under plausible assumptions assures that a round of mutualization and then "Germanization" of Eurozone debt need not lead to a German financial meltdown, with an outright German default or high inflation.

Whether the debt burden is bearable depends of course upon the interest expenditures.

Assume that 'ECB QE unlimited' continues until the end of 2019 and that by then Germany has to pick up the bill after a complete Eurozone break-up. What would the interest expenditure be? The gross public debt of Germany is projected to be 75% of its GDP at the end of this year, and the German government is assumed to use about 9.5% of its revenues this year to service the public debt. The German central government's debt has an average maturity of 6.3 years and the average interest rate coupon on the outstanding debt is 2.6%. The current 10-year interest rate is 0.88%, suggesting that the average coupon will fall over time as debt is rolled over. Hence, absent a break-up of the Eurozone, Berlin is heading for lower interest expenditure.

With a QE plus break-up scenario, interest rates expenditure will rise, but by how much?

Assume for the sake of argument that the ECB purchases all the outstanding current local and sovereign debt in the Eurozone before December 31 this year. The purchases are initially financed by emitting deposits that now pay the ECB 0.2% per year. But assume that the ECB converts most of these deposits, which are unnecessary in order to facilitate transactions between banks, into perpetuities which are then sold to the private sector. The ECB can then lock in low nominal interest expenditures forever. Assume that the ECB's balance sheet at the end of 2019 has assets worth €10.4 trillion, of which €1.5 trillion is financed by non-interest bearing currency and €0.4 trillion is financed by what is then zero interest paying deposits. The rest, amounting to €8.5 trillion ECB's liabilities has been converted to ECB perpetuities.

What would be the ECB's interest rate cost?

I mentioned above that an EFSF bond maturing in 2044 currently has an interest rate of 2.04%; that's an indicator. The German 30-year is 1.81%; this is another indicator. Given this, and general long-term expectations of nominal interest rates, one would probably be not totally off the ball-mark if one assumes that by the end of 2019 the annual interest rate cost of the ECB is about €170 billion. That implies an average interest rate on its perpetuities of 2%. This assumption depends crucially upon how fast the ECB absorbs sovereign bonds. The faster ECB ramps up QE, the lower - given the current interest rate level - would be the interest expenditure in 2019. Should markets begin to expect exits, default and Germany is the sole responsible soul in the Eurozone, the interest rate of perpetuities would gradually rise until an eventual break-up.

The IMF projects that German nominal GDP will be $1.45 trillion in 2019 when the ECB's debt, by my assumption, becomes German's debt. Suppose nominal GDP stays the same in 2020. €170 billion amounts to just 11.7% of €1.5 trillion. That is, as a percentage of public revenues, Germany's overall interest expenditure will, given my assumptions, increase from its current level of 9.5% of public revenues to 11.7% of its revenues in 2019 if Germany absorbs the debt of all the other Eurozone members. That should be possible to finance either by a drop in primary expenditure or a hike in tax rates, meaning that the primary surplus could be on track to gradually reduce the debt-to-GDP ratio, which I have assumed is 279% in 2019.

The interest rate cost is highly sensitive to the interest rate obtained when the ECB emits perpetuities.

If the average rate on perpetuities is 3% instead of 4%, and the path of German sovereign nominal revenue is the same as assumed above, then annual interest expenditure will climb to €255 billion, which will amount to 17.6% of Berlin's revenues in 2020. Should the average interest rate be 4%, the ratio then increases to 23.4%. In the current low-interest climate the ECB would have to be very clumsy in order not to lock in an average interest rate on perpetuities that is lower than this limit.

That last number, by the way, is the same number as the share of interest expenditures of Japanese public revenues in 2014, according to the IMF. (Japan has lower revenues compared to GDP than Germany, and the average coupon of the central government's debt, which has a rather long maturity, is currently 1.3%).

So the question is: Why can't Germany do in 2020 what Japan is doing currently? I think it can. A debt service burden of 11.7% of GDP can easily be swallowed. It's much tougher, of course, if interest expenditures rises to 17,6% of 23,4%. Since Germany already has high tax rates, it's unlikely that hiking them further will bring in that much extra tax revenue. Hence if Germany after a Eurozone break-up is geared on reducing its debt load through primary surpluses, an average interest rate coupon of 3%, and especially 4 percent, as opposed to my base case scenario of 2%, would necessitate a serious trimming of the German welfare state. Maybe a leap toward a more liberal and contained German public sector would turn out to be for the good in the long run? One can argue along those lines, but it nevertheless will be a painful economic political adjustment.

To conclude:

- *Assume a "whatever it takes" ECB approach is given the 'green light' but that it all ends in tears with Germany as the only member of the Eurozone after all the other member states default on their ECB debt.*
- *Measured by debt-to-GDP ratios, this will have a huge effect on German finances. But the situation will hardly become unbearable.*
- *For the burden of the debt is all about interest rates. And it should be possible to execute a full-throttle QE program that locks in such low interest rates that Germany can afford to absorb the debt of all the member states of the Eurozone if a Eurozone break-up does eventually happen.*
- *This has been a dive on the dark side of Eurozone debt mutualization. The bright side is that public interest costs are reduced, real interest rates fall and that the Eurozone might finally prosper.*
- *Since there is indeed a bright side and the dark side is really a shade of gray, I think that Mr. Draghi will do whatever it takes and that this will include a potentially unlimited purchase of member zone sovereign debt.*
- *The one premise I have not discussed here, but it is a premise that is easier to fulfill if the ECB does QE, I think, is that member states do not exploit the deep pockets of the ECB and issues even more debt than already projected by the ECB.*