Structure and Functioning of the Global Economic System

Sovereign Debt Reduction Strategies

Lecture 8

1. Official Bailouts (Concerted Lending)

- The defining feature of a problem debtor is its inability to borrow on a voluntary basis —— its lack of normal access to international capital markets.
- The essence of the concerted lending strategy followed during the Third-World debt crisis of the 1980s has been to substitute non—market sources of finance for the normal ones: to use a combination of official lending and *involuntary* lending from existing creditors to supply debtor nations with sufficient foreign exchange to service their debts.
- To many observers this strategy has seemed absurd. After all, what sense does it make to lend still more to countries that already owe more than they are expected to repay? (This has been an oft-heard objection by some commentators regarding the Greek adjustment programme).

Liquidity vs Solvency (1)

- The rationale is often stated in terms of the distinction between liquidity and solvency: a country is asserted to be worth lending to if it is solvent (i.e. it is expected to be able to repay its debt eventually) but not liquid (lacks the cash to service its debt on a current basis).
- However, if it were known that a country were solvent, it would be able to borrow on a voluntary basis, and there would be no liquidity problem.
- The liquidity problem arises precisely because there is a possibility that the country will not be able fully to repay its debt -- specifically, because there is a sufficiently large possibility of non-payment that the expected present value of repayment is less than the debt already outstanding.
- Why, then, should creditors lend still more to such a country? Because, while incomplete payment is possible, it is not ***certain***.

Liquidity vs Solvency (2)

- Suppose that a country might be able eventually to make payments equal in present value to its outstanding debt, but that the risk of non-payment is sufficiently large that it cannot borrow on a voluntary basis.
- Then the country will either have to meet its obligations out of current resources or, if this is impossible, default immediately.
- It may therefore be in the creditors' interest to postpone at least part of a country's obligations, avoiding a current default and preserving at least the possibility of a favorable outcome later on.

Dealing with the Problem

- A country's obligations can be postponed by **rescheduling of principal** - a standard procedure. However, for heavily indebted countries this is not enough, since even the interest payments exceed what they can reasonably be expected to pay out of current resources (i.e. the Greek case) Thus there is a need to postpone interest obligations as well.
- Such a postponement could be achieved directly, through **interest capitalization**, but this is usually opposed strongly by creditors because it makes the process excessively automatic (and perhaps also excessively transparent).
- A common alternative has been to get existing creditors to provide **new loans** that cover a fraction of interest payments, effectively deferring interest obligations. This is the process of "involuntary" or "concerted" lending.

Concerted Lending (1)

- Suppose that creditors believe that if no concerted lending is undertaken, a country will be forced into a disorderly default in which creditors will receive only a fraction ***(1-d)*** of the nominal value of their claims.
- Suppose also that they believe that a sufficiently large program of concerted lending -— say lending ***L*** euros -- will reduce the expected loss from ***d*** to ***d*.***
- Can such a program produce a net gain for the creditors?
- Note that each additional euro lent as part of the concerted lending program is lent at an expected loss of ***d*.***
- However, the program increases the value of existing debt by ***(d-d*)D***, where ***D*** is the initial stock of debt outstanding.
- Thus, the benefits of the program to creditors exceed its cost as long as ***d*L < (d—d*)D***, or as long as ***L/D < (d—d*)/d*.***

Concerted Lending (2)

Thus, if ***L/D < (d—d*)/d* ,*** it would be in the interest of the creditors to provide fresh loans.

An example

- *Suppose that **d = 0.5** , and **d*=0.25**.*
- *Then, it is in the interest of creditors to pursue such a program as long as*
  L/D < (0.5—0.25)/0.25 , or L/D < 1 .
- *This implies that creditors will be willing to increase their exposure (i.e. to provide fresh loans) by as much as the initial stock of debt !!!*
- *In the Greek case (circa 2010), this would imply **fresh** loans up to almost **300** bl. euros.*

Concerted Lending (3)

The condition ***L/D < (d—d*)/d**** lays bare some common fallacies regarding the "folly" of lending to problem debtors…

- It is sometimes claimed that the existence of a secondary market discount on debt (i.e. ***d>0***) means that new money should not be put in. It only means that such new money will not be provided voluntarily -- but that is by definition true of a problem debtor.
- It is also therefore not true that unwillingness of lenders other than the existing creditors to provide funds is an argument against provision of new money by the creditors.
- It is also not true that the export of capital by domestic residents, is an argument against provision of new money by the creditors.

Concerted Lending (4)

- Note that the **gains from concerted lending are collective**, because by lending enough to avoid immediate default creditors raise the value of the claims they already have.
- However, looked at in isolation, each new loan is made at a loss. Thus nobody who is not already a creditor of the problem country will be willing to lend, and even **existing creditors will lack an individual incentive to lend**.
- We therefore have the familiar free-rider problem, in which lending may be in everyone's collective interest but fails to take place because no individual finds it in her interest.
- The process of concerted lending, with creditors negotiating collectively, with pressure from creditor central banks and international agencies, and with the not-too-implicit threat by countries to declare moratorium if new money is not provided, is designed to overcome this free rider problem.

Concerted Lending (5)

Objections to the strategy of concerted lending.

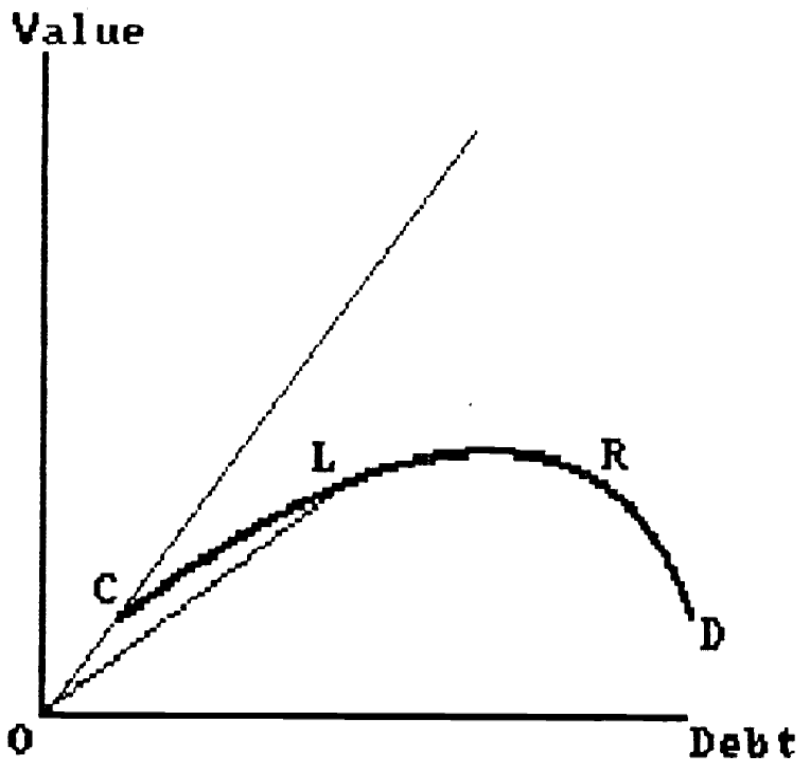
- It puts heavily indebted countries deeper into debt. However, concerted lending can be followed by faster growth, so it is possible for nominal debt to grow yet for a country to become more creditworthy over time.
- However, it is possible that a heavily indebted country may grow at a lower rate than before the crisis – and this reduction in the growth rate may be due to the debt burden itself.
- This raises the possibility that the insistence of creditors on maintaining the full extent of their claims on debtor nations may be self—defeating, reducing their expected repayment below what might be achieved through a settlement that reduces countries' debt burden.

Debt Forgiveness (1)

- A reduction in the debt burden of highly indebted countries, rather than financing that simply postpones debt repayment, might be to everyone's advantage.
- When a country's obligations exceed the amount it is likely to be able to pay, these obligations act like a high marginal tax rate on the country: if it succeeds in doing better than expected, the main benefits will accrue, not to the country, but to its creditors.
- This fact discourages the country from doing well at two levels.
- First, the government of a country will be less likely to be willing to take painful or politically unpalatable measures to improve economic performance if the benefits are likely to go to foreign creditors in any case.
- Second, the burden of the national debt may fall on domestic residents through taxation, and importantly through taxation of capital - thus, the overhang of debt acts as a deterrent to investment.

Debt Forgiveness (2)

The Debt Relief Laffer Curve (DRLC)



At low levels of debt (up to point ***C***) debt may be expected to be fully repaid, so that the ***DRLC*** lies along the 45 degree line. At higher levels of debt, the possibility of non-payment grows, and the expected payment traces out the ***CLRD*** curve. At a point such as ***L,*** the ratio of expected payment to debt is measured by the slope of the ***OL*** ray; ignoring risk and transaction costs, this approximates the secondary market price of debt. At high enough debt levels, the disincentive effects may be large enough so that the curve turns down. Debt forgiveness at a point like ***R*** is beneficial to both debtor and creditor.

Debt Forgiveness (3)

Implications of the ***DRLC***

- Arguments that debt relief is in everyone's interest are, in effect, arguments that countries are on the wrong side of the DRLC.
- The existence of secondary market discounts does not imply that debt forgiveness benefits both debtor and creditor.

Obviously, it is very hard to know at which side of the ***DRLC*** a highly indebted country is on…

Debt Forgiveness (4)
An Example

	Good state	Bad state
Face value	$D = 100$	
Probability of state	$\frac{1}{3}$	$\frac{2}{3}$
Paymets to creditors	100	25
Expected repayment to creditors	50	
Secondary market price of debt	0.50	

The secondary market price is equal to the ratio of expected repayment to the face value of debt.

We consider now that 20 units of D are unilaterally forgiven, and that still the country can pay only 25 units to the creditors in the bad state, and 80 (=100-20) units in the good state.

Debt Forgiveness (5)

	Good state	Bad state
Initial face value	$D = 100$	
Face value after debt forgiveness	$D = 80$	
Probability of state	$\frac{1}{3}$	$\frac{2}{3}$
Payments to creditors	80	25
Expected payment to creditors	43.33	
Secondary market price of debt	0.54	

- Debt forgiveness leads to a loss of 6.67 (=50-43.33) units for the creditors – thus, they would not unilaterally agree to it. The problem is that in this situation, debt forgiveness does not improve the debtor's capacity to pay in the bad state. It simply makes the debtor country's life easy in the good state, which is precisely the one in which it can afford to pay back.

Debt Forgiveness (6)

- In the previous example, debt forgiveness does not happen. Creditors prefer the status quo.
- However, in reality, creditors sometimes do agree to forgive debt. For example, at the G-7 Economic Summit held in Cologne, Germany, in June 1999, creditor countries launched a program, dubbed the Cologne Initiative, aimed at reducing the debt burden of the so-called Highly Indebted Poor Countries (HIPCs).
- Can it ever be in the interest of the creditors to forgive debt? Yes, if there is *debt overhang,* i.e. the probability of repayment is lower the higher is the level debt.

Debt Forgiveness (7)

	Good state	Bad state
Initial face value	$D = 100$	
Face value after debt forgiveness	$D = 80$	
Probability of state	$\frac{1}{2}$	$\frac{1}{2}$
Payments to creditors	80	25
Expected payment to creditors	52.50	
Secondary market price of debt	0.66	

The case above considers a rise in the probability of the good state due to debt forgiveness from 1/3 to 1/2.

- As a result, expected payments to creditors rise (from 50) to 52.5.
- Debtors would also benefit because in case the good state occurs, they have to pay 20 less than in the absence of the debt reduction scheme.
- **Both** debtors and creditors gain (this an illustration of the case of being on the falling part of the ***DRLC***)**.**

Third- Party Debt Buybacks (1)

A debt reduction scheme often considered by multinational organizations is third-party debt buybacks. Suppose, e.g., that the World Bank announces that it will buy 75 units of (face value) debt in the secondary market, and it will forgive that debt.

- Following this announcement, the secondary price will jump from 0.50 to 1 (since, even if the bad state occurs the country will be able to pay the face value of the remaining debt).
- Creditors gain: they receive 75 from the World Bank and 25 from the country (versus 50 if no buyback took place).
- Debtors gain: their expected payments drop from 50 to 25.
- The World Bank pays 75, 50 of which go to creditors and 25 to debtors.
- This type of debt buyback is very expensive.

Own-Debt Buybacks (1)

- Sometimes problem debtors accumulate substantial foreign exchange reserves, while others could possibly choose to run large enough trade surpluses to do the same (so as to meet their debt obligations).
- However, at the same time, the debts of these countries continue to trade at substantial discounts, reflecting doubts about the willingness or ability of the countries to continue to achieve such favourable trade performance.
- This raises an obvious possibility for reducing countries' debt through voluntary action rather than concerted debt forgiveness, i.e. to let debtors buy back their own debt on the secondary market, and the effect will be to reduce debt even net of foreign exchange reserves, because of the discount at which the debt sells.
- Is this a sensible policy?

Own-Debt Buybacks (2)

Legally debtors are normally prohibited from repurchasing their own debt at a discount for two reasons:

- First, there is the issue of seniority. Use of (scarce) reserves to repurchase debt may reduce the debtor's ability to repay the remaining debt, and existing creditors are entitled to first claim on whatever repayment the debtor is in fact able to make.
- Second, there is a moral hazard problem: allowing debtors to buy back their debt at a discount rewards the least reliable, who therefore have the lowest secondary prices. (However, conditionality could be applied to the granting of permission for buybacks, thus alleviating the moral hazard problem.)

Own-Debt Buybacks (3)

- Assume a country that owes its creditors €100, and which, as before, has uncertain prospects of repayment.
- There are two possibilities: a "bad" state in which the country can generate only €20 of foreign exchange, and a "good" state in which it can generate €110.
- Assume also that the country has foreign exchange reserves of €5.
- Probability of the bad state is 2/3, and 1/3 of the good state.
- If there is no debt buyback, then expected repayment is €50, and the secondary price on the country's debt is 0.50.
- At a secondary market price of 0.5, the foreign exchange reserves can be used to buy back €10 of debt, reducing the outstanding debt to €90.
- The creditors who sold out will receive € 5, whatever happens.
- Those who did not, will receive €20 in the bad state (because the foreign exchange reserves are now gone) and €90 in the good state.

Own-Debt Buybacks (4)

- Payments to the creditors are 5 in either state (the value of debt sold off in the secondary market) plus 20 in the bad state, plus 90 in the good state, implying expected payments of 48.33.
- The buyback reduces the expected total payment to the creditors. The effect of a buyback in this case would be to lower the price of debt on the secondary market, and make the creditors worse off.
- This is because the buyback reduces the net contribution of the country in the good state, when it could repay its whole debt but now gets to pay less, while it has no effect in the bad state.
- So the debtor country gains at creditors' expense.
- If a country's ability to pay is not affected by a buyback, then the buyback reduces the net payments by a country when it can pay and produces no gains for creditors when it cannot.

Own-Debt Buybacks (5)

- The only way that this result could be reversed is if the buyback improves the country's ability to pay by a sufficient amount to offset this negative effect.
- The incentive effects indeed work in that direction.
- In the bad state the creditors take whatever the country can give.
- In the good state the country gets to keep any excess above its debt. Since the country's foreign exchange earnings are 110 and its reserves 5, while its debt is only 100, in the absence of a buyback it gets to keep 15 in the good state.
- After the buyback its reserves are gone, but its debt is reduced to 90, so in the good state it gets to keep 20. This greater gain in the good state should provide a greater incentive for the country to pursue adjustment policies, to invest, i.e. things that can increase its future ability to pay.

Own-Debt Buybacks (6)

- The creditors may, then, benefit from a buyback, but only if the increased probability of the good state is enough to outweigh the loss of their rights to share in the good fortune if it comes.
- But this is exactly the condition that we saw was necessary for creditors to benefit from debt forgiveness.
- So in fact it is only in the interest of creditors to allow buybacks of debt on the secondary market when the debtor country is on the wrong side of the *DRLC*.

Own-Debt Buybacks (7)

- The equivalence between debt buybacks and debt forgiveness can be seen in the context of our numerical example.
- Suppose that instead of allowing the country to buy back part of its debt, the creditors had instead simply reduced the face value of outstanding claims from 100 to 95.
- Then the aggregate payments to creditors would be the same as in the buyback case: 25 in the bad state, 95 in the good.
- Also, in the good state the country would have the same amount of foreign exchange left over: earnings of 110, less debt of 95, plus reserves of 5 , i.e. it would have 20, and the incentive to increase the probability of the good state would be the same.
- Thus, allowing buyback on the secondary market will benefit creditors if and only if debt forgiveness would do the same.
- This suggests that creditors will not easily agree to buybacks unless they are convinced that debt forgiveness is definitely desirable.

Debt Swaps (1)

- Debt swaps involve the issuance of new debt with seniority over the old debt (securitization). The new debt is then used to retire old debt.
- It is important that the new debt be made senior to the existing debt, i.e. at the time of servicing and paying the debt, the new debt is served first.
- Suppose now that the government issues 25 units of new debt with the characteristic that the new debt has seniority over the old debt. The new debt is default free, since even if the bad state occurs, the government has 25, which suffices to pay back the new debt.
- This implies that the debtor government is able to introduce the new debt at par, i.e., the price of new debt is unity.
- In the bad state, all of the debtor resources are devoted to paying back the new debt, and the government will default on the totality of the outstanding old debt if the bad state occurs.

Debt Swaps (2)

- Let D_0 denote the outstanding stock of old debt after the swap.
- Holders of this debt receive payments in the amount D_0 in the good state and 0 in the bad state. So expected payments on the outstanding old debt equal to $1/3\times D_0 + 2/3\times 0 = 1/3\times D_0$.
- The secondary market price of the outstanding old debt is the ratio of the expected payments to the face value, or $(1/3 \times Do)/Do = 1/3$.
- Thus, the price of old debt declines from 0.5 to 0.33.
- At this price, the government can use the 25 euros raised by floating new debt to retire, or swap, 25/0.33 = 75 units of old debt. As a result, after the swap the outstanding amount of old debt falls from 100 to 25, that is, $D_0 = 25$.
- Who benefits from this swap?

Debt Swaps (3)

- In the absence of a swap, the debtor has expected payments of 50.
- With the swap, the debtor has expected payments of 8.33(= 25 × 1/3 + 0 × 2/3) to holders of old debt and 25 to holders of new debt – a total of 33.33.
- So the government gains 16.67=50-33.33 by implementing the swap.
- Creditors see their receipts fall from 50 before the swap to 33.33 after the swap (25 from the new debt and 8.33 from the old debt).
- Thus, it is in the interest of creditors to agree to debt swaps (as in the case of debt buybacks on the secondary market) only when the debtor country is on the wrong side of the *DRLC* (i.e. only when the probability of the good state increases).

Debt-Equity Swaps (1)

- Another market-based scheme for debt reduction is for creditors to sell debt at some discount in return for local currency that must be invested in equity.
- It is usually claimed that such swaps solve many problems at once, i.e. they provide a source of capital inflow and cancel countries' external obligations.
- In fact, a debt-equity swap neither provides a capital inflow nor cancels a country's obligations.
- The foreign investor does not bring foreign exchange to the country, since it is the country's own debt that is presented to the central bank; thus there is no capital inflow.
- The country's obligations are not cancelled; the foreigners acquire an equity claim on the country to replace their previous claim – i.e. the country exchanges a new kind of liability for some of its existing liabilities.

Debt Equity Swaps (2)

- Important question: can such an exchange lead to a net reduction in the country's external obligations by harnessing the discount in the secondary market?
- Note that a debt—equity swap is a kind of securitization: the country can capture the secondary market discount to the extent that the new claims are regarded as senior to the old.
- While debt-equity swaps are at a fundamental level a kind of securitization, the fact that the assets involved are so different introduces two other considerations that do not arise in securitization schemes involving issue of bonds.

Debt Equity Swaps (3)

- First, exchanging a debt for equity should have a favorable effect on a country's timing of obligations.
- This is because whereas even a rescheduled debt requires a country to make a stream of payments that is flat in nominal terms, an equity claim on a country will normally provide a stream of repatriated earnings that rises over time with both growth and inflation, and that is therefore lower at the beginning, higher later.
- Thus converting debt to equity can serve the same purpose that concerted lending is supposed to serve, of postponing payment to a time when the country is presumed likely to be more able to make it. An ideal debt-equity swap would clearly loosen the short-run liquidity constraint on a problem debtor.

Debt Equity Swaps (4)

- Second, in practice, it is possible for debt-equity swaps to worsen the immediate foreign exchange position of countries.
- The most extreme case is that of *"round-tripping"*; i.e. after swapping debt for equity, an investor then sells the equity and withdraws the proceeds from the country. In this case the debt-equity swap ends up being in effect a use of foreign exchange reserves to buy back debt on the secondary market.
- Note also that even if round—tripping does not occur, debt-equity swaps can still consume foreign exchange on net, e.g. if a foreign firm uses a debt—equity swap to carry out an investment that it would have undertaken anyway. Had it carried out the investment without a swap, it would have brought foreign exchange to the central bank to exchange for local currency with which to make the investment. When it does the swap instead, this foreign exchange inflow fails to occur.

The Greek Debt Swap of 2012 (1)

- The face value of Greek government debt outstanding at the time was around € 350 bn, of which €206 bn were held by private creditors and the rest by official sector entities.
- The deal involved the swap of privately held debt that included three key elements: a write down of the face value, a reduction in interest rates, and an increase in maturities.
- The debt swap took the form of an exchange of €465 of new bonds for each €1,000 of old bonds outstanding. The €465 of new debt was composed of €150 of bonds issued and guaranteed by the EFSF and €315 of bonds issued by the Greek government.
- The new bonds will start paying interest for the first time in 2023.
- Greece committed to continue to service its debt.
- Strict conditionality was attached in the form of a new law according to which any tax revenue must first be used to service the debt before it could fund any other government expenditures.

The Greek Debt Swap of 2012 (2)

- € 177 bn of the privately held old debt was issued under Greek law, and the remainder, € 29 bn under foreign law.
- The Greek government passed a law that bound all private bond holders of debt issued under Greek law to the bond-swap if more than two-thirds of them consented to it.
- Faced with the alternative of outright default by Greece, most private creditors quickly agreed to the swap and thus the debt-swap was applied to the entire €177 bn of debt outstanding issued under Greek law.
- Private holders of €20 bn of Greek government bonds issued under foreign law also chose to participate in the debt swap.
- Of the €206 bn of Greek debt held by the private sector, €197 bn was exchanged for new debt with a face value of €92 bn. That is, the debt swap resulted in a debt write down of € 105 bn and €9 bn remain in the hands of opportunistic holdouts.

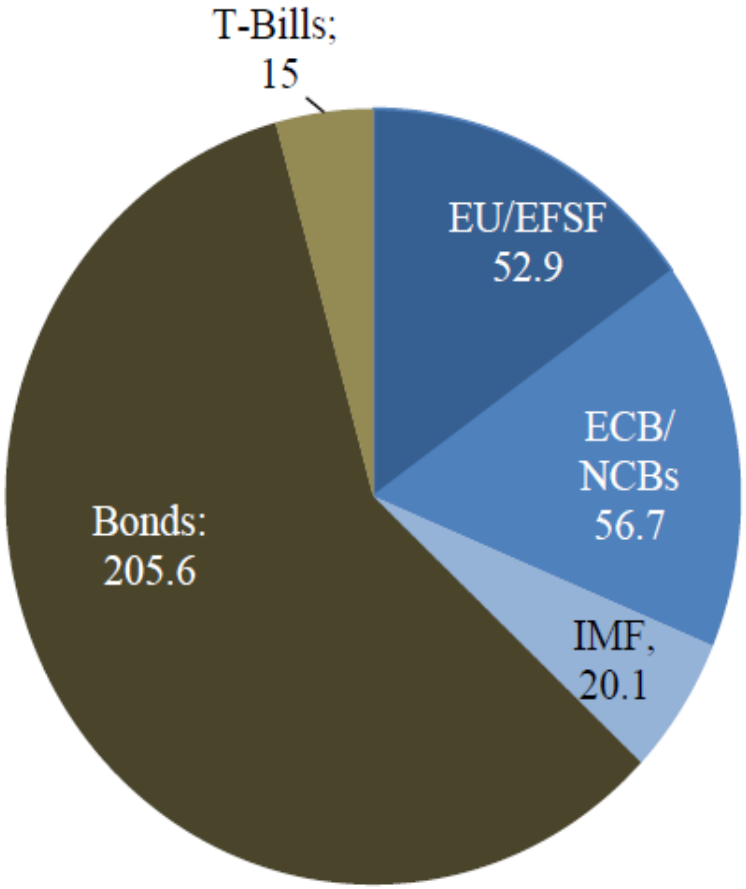
The Greek Voluntary Debt Buyback of December 2012 (1)

- This involved the buyback of Greek sovereign bonds issued only 9 months earlier.
- From the perspective Eurozone leaders, the appeal of this proposal was that it allowed a face value reduction of Greek debt without requiring an unpopular nominal write down on the official debt.
- The buyback used €11.3 bn in EFSF financing to retire €31.9 bn of debt, thus reducing the face value of Greece's debt by €20.6 bn.
- It was declared a success, and cleared the way for the next installments of EFSF and IMF disbursements.
- At the same time, the average price at which Greece had bought back its debt, 34 cents per Euro of face value, had increased by over 20 per cent since the buyback was announced in late November.
- Were the buyback's benefits appropriated by the creditors, in the form of a higher market value of debt, rather than by Greece?

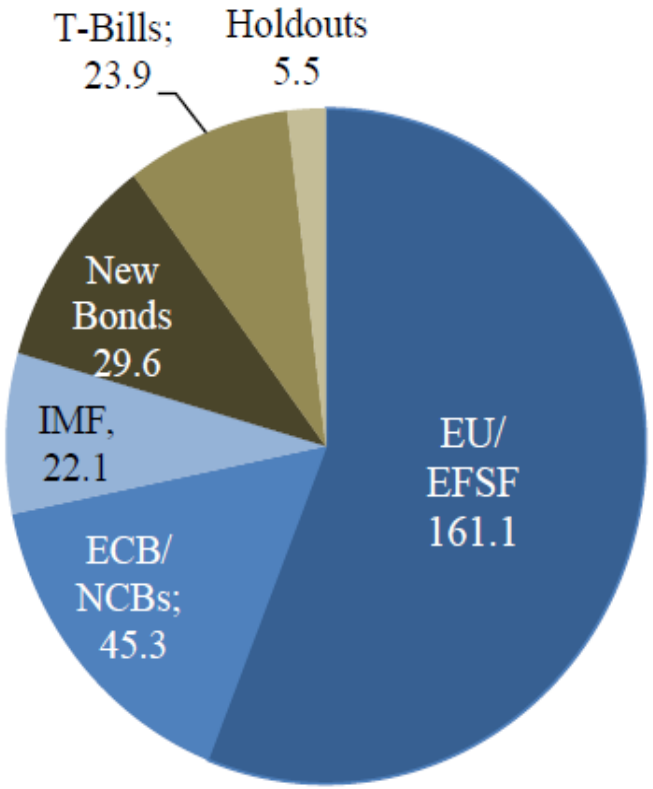
The Greek Voluntary Debt Buyback of December 2012 (2)

- If debtors expect the debt to decline as a result of the buyback, they will no longer be willing to sell at the initial price, because this no longer reflects the true value of the debt.
- Thus, “negotiated buybacks”, which cap the extent of the price rise (or try to lock in the pre-announcement price), are always preferable to voluntary buybacks (from the perspective of debt reduction).
- Using reasonable values about the “*pre-buyback price*”, as well as the discount rates for EFSF debt service flows, it is more likely that the market value of Greece’s total debt to have fallen, rather than risen, as a result of the buyback.

Change in composition of Greek sovereign debt



February 2012:
Before debt exchange



December 2012:
After debt exchange and buyback