Debt-overhang and ways out

Ulrich Brasche* (brasche@fh-brandenburg.de)

Comments welcome

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Abstract

The focus of this paper is legacy debt and ways out of it. It introduces credit, debt and financial stress as a basis for understanding the ongoing financial crisis as well as solutions discussed in politics and media. We clarify why and when debt is too much, and discuss ways of avoiding outright default.

The main questions are

- What are the basics of debt and related financial problems?
- How much debt is too much?
- Why and when is default a problem to all of us?
- Is there a way out of the current debt crisis?

Debt and looming bankruptcy of governments is the focus of media attention, while in the same time households, banks and companies acquired too much debt as well and pose therefore a problem of their own right.

** Prof. Dr. Ulrich Brasche, Economics / European Integration,*
FH Brandenburg, Brandenburg/Havel, Germany

1 Introduction

The focus of this paper is legacy debt and ways out of it. Why Europe is in this situation and how it could avoid it in the future is not the subject here.

Credit and debt are useful instruments for shifting income over time. A **borrower** can invest or consume now and pay back later from future cash flow:

- A typical **family** will have saved enough for buying a home when the parents are at the end of their career – obviously too late, so borrowing bridges time
- A **government** wants to provide long-lasting infrastructure to society now and pay back from current tax revenue during the life span of the infra-structure
- A **company** needs to buy equipment and pay for expenses at the start of production i.e. before it earned a return on this investment.

A different motivation for taking credit is **speculation in assets**. When e.g. house prices, the gold price or the stock market are supposed to go up in the future, then credit is taken for speculating on future gains in valuation of the assets. In times of very low interest rates, it could be lucrative to take on new, cheap debt for financing instead of using existing, high yielding assets.

The other side of the coin of each credit is somebody who wants to save. A household, company or state might want to save some of today´s earnings or tax revenue for later use and **lend on** those not yet used resources by generating a **credit** for a limited span of time and for an interest.

The simple story of savers (supply of capital) meeting investors (demand for capital) dominates economics textbooks: Both sides of the capital market are in equilibrium brought about by the price of credit, the interest rate. In this simple view, the capital market is working perfectly and all decisions are taken based on economic rationality. In such a world, nobody needs to worry about debt and crisis:

- Debt is irrelevant, since each debt has a claim as a counterpart and
- a crisis doesn´t exist in a world of full information.

The real world, however, shows problems arising from an overload of debt that could lead to default. The consequences and side effects of default can reach far beyond the individual borrower-lender relation and damage the financial system as well as the real economy for a long time.

This paper introduces credit, debt and financial stress as a basis for understanding the ongoing financial crisis as well as solutions discussed in politics and media. The author discusses why and when debt might be too much as well as ways out of legacy debt avoiding outright default.

The main questions are

- What are the basics of debt and related financial problems?
- How much debt is too much?
- Why and when is default a problem to the financial system and consequently to all of us?
- Is there a way out of the current debt crisis?

Debt and looming bankruptcy of governments is the focus of media attention, while in the same time households, banks and companies in many countries acquired too much debt as well and pose therefore a problem of their own right.

The paper is structured as follows. In chapter 2 credit and debt will be introduced and further aspects like gross debt, foreign creditors or securitisation will be explained. In chapter 3 cash flow and sustainability of debt are discussed. The distinction between illiquidity and insolvency as well as the consequences of default are discussed for different types of borrowers in chapter 4. General strategies for ways out of over-indebtedness are introduced (chapter 5), and institutions and measures for supporting sovereigns (chapter 6) and saving banks (chapter 7) are discussed. The concluding chapter 8 reflects ways out of legacy debt from today´s perspective.

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2 Credit and debt

Borrowers, lenders and financial institutions are entangled in a web of financial relations. A problem of one of the nodes in the net or an interrupt of one of the connections can have repercussions through the whole system and can cause a systemic breakdown. A brief sketch of this network and its nodes and relations will follow. Borrowers and lenders will be the subject and various aspects of debt, like securitization, gross or net debt, debt insurance, exchange rates, interest rates and risk, present value and maturity will be discussed.

When talking about entities incurring debt respectively providing credit one should distinguish between different types of borrowers and lenders, since solutions and damages can differ. The following groups are important borrowers:

- Public entities
    - Sovereigns, i.e. central and federal states with their own power of raising taxes
    - Municipalities as subordinate public entities
- Private households

- Non-financial companies, i.e. any company except banks, insurances, etc.
- Financial institutions
    - Banks
    - Non-banking financial institutions, shadow banks

2.1 Varieties of credit

In general, a credit is a contract that can be shaped by borrower and lender. In case the credit is arranged for within a regulated financial institution, e.g. a bank or the bond market, than the two parties must act within the framework set by the respective regulation.

The common features of a credit contract are

- **Principal, i.e. a nominal, or face, value**. The amount pledged to the borrower by the lender.
- **Interest rate**. A percentage of the credit outstanding to be paid to the lender each year; the interest rate is the price of a credit.
- **Redemption**. The instalments for paying back interest and face value. It could be a lump sum at the end of the credit period or any other agreement. With real estate credit a mortgage is common: A fixed amount instalment per month carries interest and redemption. If there is not enough cash flow available to redeem at the end, then the credit needs to be rolled over.
- **Maturity**. Amount of time, after which the credit must be paid back. At maturity the borrower needs access to financial means for redeeming or rolling over the credit. If the borrower can´t pay at this moment, then bankruptcy due to illiquidity occurs.

Credit contracts come in countless varieties. The most common varieties are bank credits, bonds and collateralised, or asset backed, credit.

Banks grant **credits** to individual households and companies. The conditions for credit are determined by risk assessment – a rather costly procedure. The contract normally is held by the bank to maturity.

Companies, banks and sovereigns are emitting **bonds**. This is a credit contract featuring four specifications:

- A nominal amount of credit (principal).
- A nominal fixed interest rate per year (coupon payment) on the credit´s principal, resulting in a fix amount of interest payment per year.
- A defined period of time to maturity.
- The promise to redeem the principal at maturity.
- Some bond contracts give the claim out of this bond a “junior” or “senior” status. In case the borrower goes bankrupt, the bond holder agrees upon stepping back from his claims in favour of other bond holders (junior) or is assigned preferential treatment against other claimants (senior). Taking on more risk as a “junior” will be compensated for by higher interest rates.

A bond can be traded in the financial markets before it matures. The current price of the bond, called present value, depends on the remaining time to maturity and on the discount rate applied. Since a bond involves payments over time, each payment must be discounted to net present value.

The interest payment in relation to the current value of a bond results in a profit rate of this asset. The valuation of the bond in the financial markets changes over time:

- If the risk of non-performance increases or the interest rate in the markets increases, then the value of the bond decreases – and vice versa.
- If the average profit rate in the financial market goes up, then the valuation of a bond goes down, since it carries the previous, i.e. lower, interest payment only – and vice versa.

Bonds – valuation, interest rates and yield			
	Emission	Interest rate (markets) …	
		Increases	Decreases
Principal €	100,00 €	100,00 €	100,00 €
Interest rate % (coupon)	5,0 %	5,0 %	5,0 %
Interest payment €	5,00 €	5,00 €	5,00 €
Valuation €	100,00 €	83,33 €	125,00 €
Interest rate (markets) %	5,0 %	6,0 %	4,0 %
Yield (bond) %	5,0 %	6,0 %	4,0 %

The table shows a stylised change in the valuation of a bond. In the simplified example, we don´t take differences in maturities or risk profiles into account. A bond that has many years to reach maturity will react stronger to a change of the market rate than a short-term bond.

Let´s assume, a bond is emitted at par, i.e. at face value (100,00 €) while the interest rate due is nominally 5,0 %. This bond is sold and bought at this moment in the financial markets at a price of 100,00 €. This valuation results in a yield of 5,0 %, i.e. the current average interest rate of the financial markets (5,00 € / 100,00 €). How would a change in the overall market interest rate affect the valuation of this bond? If the market rate increases – let´s say to 6,0 %, then this bond still generates 5,00 € of interest payment and yields 5,0 % only. In order to give at least the new average yield of 6,0 % to this bond, it must sell for a lower price of 83,33 € (5,00 € / 83,33 € = 0,06; i.e. 6,0%). Therefore, an investor buying this bond for 100,00 € when it was first brought to the markets (emission) lost 16,67 € due to an increase in the average interest rate in the markets. In analogy, the valuation of this bond will go up, when the average interest rate goes down.

Some types of credit come with **collateral** attached. E.g. in financing real estate, the bank can seize the house in case of the mortgage not being serviced according to the

contract. Some credits given by financial institutions to other financial institutions require collateral: Assets – normally securities – must be deposited with the lender. In case the value of the securities declines in the financial markets, the lender has the right to ask for additional assets in order to reach the previous level of value of collateral (margin call). If additional assets can´t be provided, then the total credit outstanding can be called in prematurely. This mechanism makes perfect sense from an individual lender´s point of view. From a macro perspective, however, it can bring about instability to the complete financial system in times of declining asset valuations.

In a borrower´s budget, a credit and resulting debt show up according to the following definitions.

- A credit is a flow, showing the inflow of borrowed financial means over a period of time.
- Debt is a stock of accumulated credit, not yet paid back; stocks are measured at a point of time.

(1) Deficit = Gross credit – redemption; where gross credit > redemption
(2) Surplus = Gross credit – redemption; where gross credit < redemption
(3) $Debt_{t1}$ = $debt_{t0}$ + gross credit – redemption

The amount of debt decreases over time if redemption overshoots gross credit in a period. This is the way to reducing an existing debt level.

The need for credit arises when the payment obligations in a period overshoot revenue, e.g. expenditures being larger than income. A second need for credit can arise when an existing amount of debt matures and must be redeemed. In this case, the borrower could honour his obligations in two ways:

1. A **surplus in the budget**, i.e. revenue exceeding expenditures, is available and large enough for paying down the mature slice of debt. In such a case, the overall debt burden decreases and this periods expenditures will be smaller than income. In a macroeconomic perspective from a standard "Keynesian Cross"-model this will have a contractionary effect on the economy.
2. The maturing slice of debt is **"rolled over"** by prolongation with the same lender or by borrowing in the financial markets. For rolling over debt, the borrower needs access to financial markets, in other words he must be credit worthy. If prospective lenders are in doubt about their loans ever coming back in full and in time, than they will raise the interest rate requested from this borrower in order to compensate for the expected loss. This might render "fresh" credit not sustainable to the borrower. In extreme cases, the borrower will no longer find lenders: He will lose access to financial markets and go bankrupt, consequently.

2.2 Borrowers

The motivation and sources of credit are different for each group of borrowers.

Sovereigns are composed of different levels: The central government, special public bodies in charge of financing social security (unemployment benefits, health care, pensions) and local or regional authorities (municipalities) with limited sovereignty. Each nation sets and distributes tasks and budgets between different levels of public authority. Concerning the financial position of a sovereign, some general aspects will be touched here.

The **central government** decides on taxation as well as on spending. In case spending exceeds tax revenue, a deficit is at the discretion of the parliament. Funds for **social security** mostly come from tax money and from contributions made by people eligible to benefits. Spending is based on the number of people falling into a category of eligibility, e.g. the development in the labour market raising or decreasing the number of the jobless or the ageing societies with an increased need for old age provisions. Parliamentarians decide upon the scope and „generosity" of social benefits; they tend not to react to an expected future lack of revenues quickly. The reason is political sensitivity of the electorate towards spending cuts - especially in the social domain. Cutting investment into infrastructure or basic research, however is met by less public awareness – at least in the time span of an election cycle.

Municipalities mostly have less political power over the assignment of their tasks and resources, however, they need to find the means for fulfilling their obligations. It depends on the respective national legislation whether a municipality has the right to borrow. E.g., US-American cities went bankrupt repeatedly and the central state didn´t bail them out. (New York, Detroit, see: ECONOMIST March 2014: „The battle of Detroit").

Private households can accumulate debt for consumption, mostly for covering credit card expenses or for buying consumer durables, e.g. cars. The largest share of debt is incurred for financing the owner-occupied house or flat. The main source of credit are banks or special mortgage institutions (Saving and Loans Associations). A mortgage to a private household is subject to assessment of creditworthiness by the lender, and the house provides collateral. As long as the real estate market stays at least stable, this seems to be a risk free business for the lender. In case a household is forced to a "fire sale" of the house, it would experience a decrease in value; banks can suffer high depreciations consequently.

Non-financial companies borrow for covering running costs or paying for investment. The financial mix of equity and debt is decided upon according to profit maximisation: If additional finance costs less than the additional profit earned, then more debt is taken on. Small- and medium-sized companies go to local banks for credit predominantly. Large companies do have a variety of global sources of finance (shares, commercial bonds, bank credit) and can bypass commercial banks more easily.

Financial institutions (banks, shadow banks, insurance companies, etc.) are the hubs in finance. They have three main activities

1. Intermediation between savers and investors, matching risk averse, short-term savings with risky long-term investment (maturity and risk transformation)
2. Creation of credit to private households, other financial institutions, companies and states by borrowing from depositors and from other financial institutions. Furthermore banks can create credit "out of thin air", i.e. without having to resort to borrowing from other sources (ch. 2.3).
3. Banks are the main source of liquidity and the dominant clearing platform for payments.

2.3 Lenders

Lending in the "Western world" is a commercial activity done for profit and charging a price: The interest paid by the borrower. In exceptional circumstances, quasi-public bodies do not-for-profit, but not cost free, lending. This type of lending is providing liquidity to sovereigns in case of a crisis. Examples are the "lender-of-last-resort" function of a central bank or credit given by the IMF or the ESM.

One source of credit for various borrowers is **private households** saving part of their current income for future use. They fill their bank deposit, contribute to pension plans, etc. Even grandma´s modest savings account represents a credit to the bank. This fact is recognisable as soon as a bank defaults and can´t pay back the deposit. A deposit insurance, as introduced EU-wide, pretends to guarantee at least the first 100.000 € of a bank account.

Companies hold short-term cash reserves as part of their day-to-day financial operations and other liquid assets in line with their investment strategy. Those financial assets are offered to borrowers via financial intermediaries for earning interest until being used.

Financial institutions, especially banks, are the most important source of lending. The well-known role of banks is intermediation between lenders and borrowers, e.g. between risk averse and short-term deposits and risk taking investors engaging in long-term commitment. The largest, however rarely discussed, source is credit generated by banks "out of thin air". Granting a credit to a customer creates two entries in the bank´s accounts: The promise to pay an amount to the customer (liability) and the obligation of the customer to pay interest and redemption to the bank (asset). By this double entry, new credit is going into circulation (Ryan-Collins, J., T. Greenham, R. Werner and A. Jackson, 2011; McLeay, M., A. Radia and R. Thomas, 2014; Deutsche Bundesbank, 2012d:72; Sigurjónsson, F., 2015:20-37; Ib Ravn, 2015).

Pension funds manage large amounts of wealth on behalf of their customers. They must invest long-term and generate a guaranteed return on investment for fulfilling their contractual obligations towards their customers. According to their business

model, insurance companies should invest into safe investments only, but due to the extremely low margin in financial markets today, they now feel forced to step into investments, like infrastructure, as well. In fields like water, energy, toll roads and other projects, the long-term stability of returns depends on the projects profitability as well as on reliability of the political partner. The Channel-Tunnel between France and Great Britain and the A1-motorway in Germany were not successful businesswise.

A **state** might be in the position of holding long-term assets on behalf of the population, e.g. oil exporting nations or countries with a large trade surplus need to store wealth (profitably) for future generations. **Sovereign wealth funds** invest in the global financial markets, among other assets into government and commercial bonds.

2.4 Debt – the basics

The following chapter gives some information on characteristics of debt, like gross or net debt, foreign or national credit relation, and the effect of prolongation of maturity on present values of debt. Those aspects play an important role in the ongoing debt crisis.

2.4.1 Gross or net

Debt is an amount of money borrowed and not yet paid back. However, when is the amount of debt too large, so that lenders are afraid of a default? Before addressing this question one needs to specify the amount of debt at stake. Gross debt is the amount that must be serviced by the borrower while net debt describes the amount of debt remaining when all assets in the hands of the borrower are used for paying off existing debt (Gross debt minus assets = net debt). When assets offset gross debt, then even a large amount of debt not necessarily poses a financial problem: Despite high debt-to-income levels solvency (ch. 4.1) is given.

Examples:

- A private household might have a gross debt of 200.000 € and at the same time live in their own home with a market value of 250.000 €. The net worth of this household is positive (+50.000 €).
- Japan has a public gross debt of approx. 238% of GDP (2012); at the same time, the Japanese state owns financial assets worth 133% of GDP (IMF World Economic Outlook 2013, Tab. A8). So the public net worth of Japan is negative (105% of GDP) – but not as dramatic as it sounds in gross value.
- Greece has a gross public debt of approx. 160% of GDP (2012). The media reported on oil fields in the Greek continental shelf at the same time - so this country might become a rich oil producer within the next decades. In the light of those geological treasures, Greece might be able to service its debt in the future since it has a positive net worth. Forgiving debt now might be premature then.

Data on assets are available for individual companies and households only, while there are no reliable statistics on the value of the assets owned by a state or a country; e.g. the market value of historic sites or of treasures in public museums are not known. That is why most of the data on public debt are covering gross debt only.

There are some tricky issues involved in using assets for paying off debt. The valuation of assets might deteriorate quickly in a crisis, like the stocks of a company in trouble or the value of real estate after the burst of a bubble. Some assets might not be liquidated easily or timely, e.g. mineral resources, pieces of art or publicly owned companies. Even if publicly owned assets could be sold in the market, the population might resist the fire sales of national treasures, e.g. publicly owned companies or beautiful islands.

2.4.2 Implicit debt

When measuring debt in order to assess whether there might be too much of it, one needs to know the “true” figures. Therefore, the need for reliable statistics arises. Private companies and banks are obliged to report their financial status according to national or international frameworks for financial accounting. Sovereigns should report following rules agreed upon for international comparison.

Despite those rules and obligations, the figures not necessarily report the true situation. The most obvious way of misleading is “to cook the books”, i.e. a deliberate forgery. Such accounting fraud scandals happened e.g. in the ENRON or PARMALAT cases and had wide repercussions in international stock markets. Sovereigns as well violate the reporting rules, Greece being the most notorious example (European Commission, 2010a).

While outright fraud can receive wide media coverage, the more pressing under-reporting of debt happens legally in the sovereign´s budget. Differing from the accounting rules for private companies a sovereign is not obliged to report on obligations to future payments. There are various sources of future payment obligations:

- Paying for pensions and health care in an ageing society
- Repairing damages incurred from pollution or climate change
- Investing into neglected and decaying infrastructure
- Investing into public infrastructure in a “public-private-partnership” (PPP) lets the private sector do the financing while the public household reports and pays yearly financial instalment. Those payment obligations can stretch over decades into the future.

The not reported future obligations are called "implicit debt”. The amount can exceed reported debt by far (Moog, S. and B. Raffelhüschen, 2011; Lejour, A. M., Lukkezen, J., Veenendaal, P., 2011).

2.4.3 Foreign or national

Borrowers and lenders might agree on a credit contract in their home currency, e.g. a lender from Germany grants a credit to a German borrower denominated in Euro. In this case, neither the exchange rate nor differing jurisdictions can complicate the situation. If, however, both sides live in countries with different currencies and different jurisdictions, then things can get interesting, as is illustrated in the following examples. Austrian and Swiss banks gave credit to families in Hungary and Poland. The credit contract was agreed upon in the currency of the lender, i.e. Euro or Swiss Franken, while the currency of the borrowers is Forint or Swoty. The motivation for cross-border credit was expansion of markets on the banks´ side and low interest rates on the borrowers´ side. The credit was used for financing homes, which provided collateral to the banks – a seemingly safe business. Two factors made those credit contracts look less pleasant after a while:

a) A **devaluation** of the Forint against the Euro increased the burden of debt service for the Hungarian borrower; the household must give more Forint for a given amount of Euros and might over-stretch disposable income. Besides the hardship this might impose on individual families, there is a macroeconomic effect to be expected: More of the income diverted into paying down debt (to foreign creditors) reduces the level of current overall spending. Consequently, the business cycle is negatively affected. A strong **revaluation** of the Swiss Franken in spring 2015 had the same effect. Due to fluctuations in the exchange rate, the loan can become non-performing and the banks need to depreciate the respective asset in the balance sheet. If there are many such cases, the banks might get into financial trouble, because too much of equity is destroyed. Could a credit in Forint instead of Euro or Swiss Franken have avoided the problem? The borrower would be unaffected by exchange rate fluctuations, while the banks would have to bear the loss. Expecting the borrowers´ currency to weaken against the lenders´ currency would have made the credit more expensive in the first place, because the banks would have tried to shift the risk to the customers.
b) A further problem for the banks arises, when they try to **enforce** claims under a foreign jurisdiction. The bank might have little influence on parliamentarian processes in foreign countries and can see its position weakened. This materialised in Hungary when the parliament passed a law that transferred all Euro-credits into Forint at a not so favourable rate to the foreign lender ("Landesbanken: Teurer …", 2014; "Ungarn bittet …", 2014). In Poland, similar ideas were discussed. Political pressure might lead to a shift of the burden of exchange rate fluctuations away from the borrower to the foreign creditor.

An interesting case is Italy. This country has one of the highest debt-to-GDP ratios in Europe. Nearly all of it was issued under Italian law and is held by Italians. This gives the government the opportunity of restructuring its "old" debt unilaterally, e.g. by introducing a collective action clause, extending maturity or impose capital

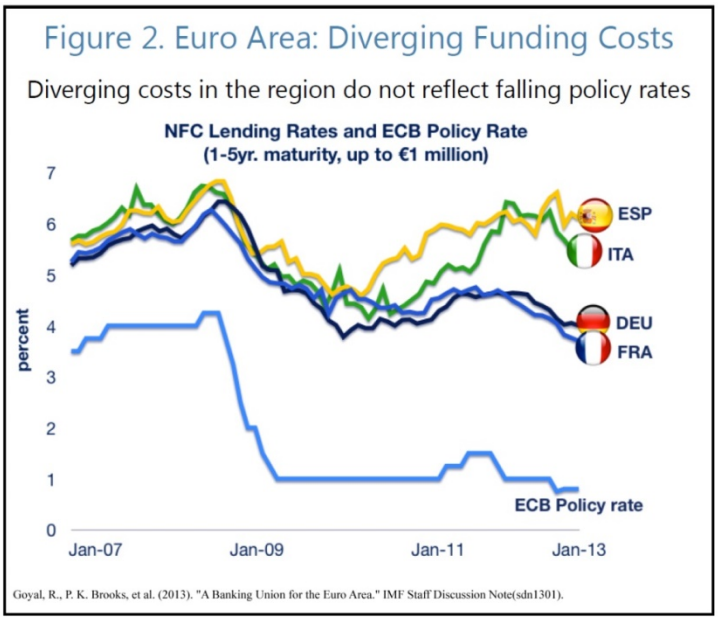
controls in order to prevent savers and investors to flee the country (Panizza, U., 2014:5).

2.4.4 Interest rates and risk

The price banks charge for credit to their customers is made up out of two main elements: The **prime rate**, i.e. the interest rate banks have to pay to the central bank for getting hands on central bank money. The second element is **risk premium**, i.e. the likelihood of the borrower not to honour payment obligations in full. The higher the expected loss the higher the interest rate asked for. The **market rate** reflects the prime rate plus the risk of the respective borrower.

There are different sources of risk in a credit

- The exchange rate between the borrowers and the lenders home currency can pose the risk of devaluation; the value of interest and redemption in the lenders currency will decrease.
- Inflation will reduce the real value of future payments, so that the "Fisher-Effect" will lead to an increase of the interest rate by the expected rate of inflation (Krugman, P. and R. Wells, 2013)
- Default will stop all further payments and deprive the lender (of a part) of the asset.
- The valuation of a tradable debt security, e.g. a bond, in the financial markets can change significantly over time – above and below nominal value. If a bond is held to maturity, then the face value will be paid back and valuation doesn´t play a role. If however, the debt related security needs to be sold or must be reported in a financial statement (balance sheet etc.), then it must be priced at current market rates. If this rate is lower than before, then depreciation can result in a loss of equity.
- The longer the time to maturity, the more unexpected risks can emerge in the future. Therefore, normally the interest rate rises with the duration of the credit contract.

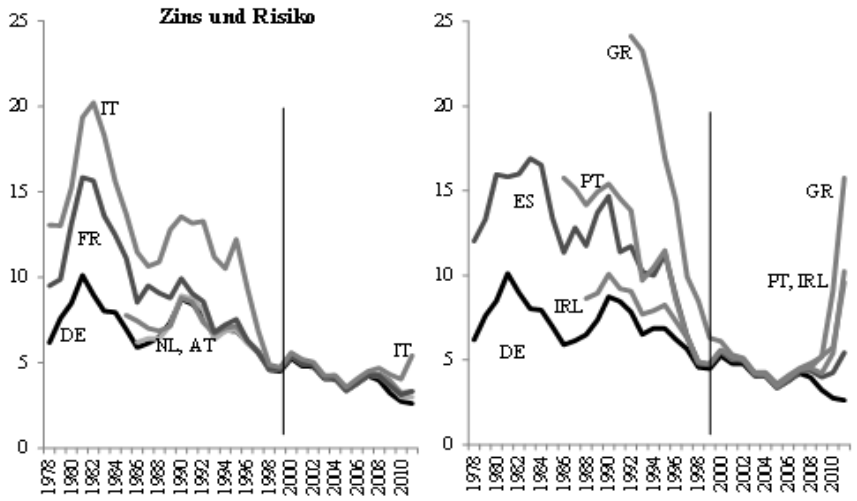


The graph shows the large spread between the ECB´s interest rate and the cost of credit to non-financial companies (NFC) in selected countries. Despite the low refinancing costs for banks, credit is more expensive, because in some countries risk is perceived as being high.

Lenders want compensation for expected loss: The higher the risk perceived, the higher the premium to be paid by the borrower on top of the average market interest rate for credit. If financial markets were "rational", the price of credit would always reflect the risk correctly. This would imply that any (state´s) interference into the market-based interest rate would distort market signals and misguide the allocation of credit. The financial markets however, are not (always) rational, so that we can´t trust market prices of credit to reflect "fair value" all the time.

The spread is the difference in the market rate for credit comparing the „best" country with another country. Recently Germany has served as the benchmark. After the introduction of the Euro, a significant mis-pricing of the sovereign risk happened: "Southern periphery" countries paid the same low interest rate "northern" countries had to pay. After the financial crisis broke out, the spread widened again and there might even have been an overshooting reaction of financial markets asking for extremely high interest rates for some countries. The spread narrowed again in 2012 after the speech of Draghi, the ECB´s president, promising "to do what ever it takes" to save the Euro (Draghi, M., 2012).

Lower interest rates for countries from the southern periphery, however, are not the result of an improved competitiveness, but of the promise of the ECB to act as "lender of last resort". This is the promise to provide liquidity to an illiquid sovereign in financial distress (Buiter, W. and E. Rahbari, 2012; DeGrauwe, P. and Y. Ji, 2014; Fuertes, A.-M., E. Kalotychou, et al., 2015).



EUROSTAT-Datenbank (27.12.2012), EMU convergence criterion bond yields [irt_lt_mcby_a]

Brasche (2013) Europäische Integration

2.5 Credit and debt as financial product

Creating and trading credit and debt as well as debt related products is the business of banks. They work (predominantly) with other people's money or with credit they generated "out of thin air" (see ch. 2.3). Two debt-related financial products gained momentum in the origin of the crisis: Individual debt contracts transformed into securities (securitisation) and insurance of debt against default. Let´s look into those briefly in the following sub-chapters.

2.5.1 Debt securitisation

The traditional banking business can be described as "originate and hold", where the bank generates a credit and keeps this as an asset in its accounts until maturity. The portfolio of all credit contracts represents a claim of the bank on future payments (interest and redemption) against the customers. At the same time, however, all those assets carry a certain risk, since the promised stream of future payments might not materialise in full: When borrowers default, the bank has to make up for the loss by providing equity. The maximum amount of business a bank can do is limited by the regulatory "capital ratio", i.e. the ratio between assets and equity (see 3.2.2). For a bank it might be lucrative not to hold a loan contract until maturity but to "originate and distribute" those contracts, in other words: Selling those claims on to investors. For this purpose, the conversion of many single contracts into a tradable security (securitisation) is used. In the end, the claims against borrowers are sold to the global financial markets and are cleared from the balance sheet of the bank where the deal originated. The bank then has room again for generating new credits based on the same amount of equity. This "financial innovation" dispersed the risk from loans all over the capitalist world. The risk seemed to be low, since many of the packaged credits were backed by collateral, e.g. by real estate in the case of mortgages (mortgage backed securities MBS). Other credit packages, like student

loans and credit card overdraft are not collateralised but mixed into the portfolio anyway, making the risk of default for the whole package intransparent. The senior tranches of those new financial products received a very positive rating from the leading rating agencies: A judgement that proved grossly wrong and probably distorted by vested interests (Gaillard, N., 2014).

2.5.2 Insurance against default

Every lender runs a certain risk of losing part or all of the loans outstanding. This risk can be taken into account in different ways:

1. Market pricing of risk

The higher the risk, the higher the interest rate asked for by the lender. The extra revenue from higher interest income is meant to make up for the expected loss (2.4.4).

2. Insurance against default

An insurance sheltering against the expected loss is offered in financial markets: Credit Default Swaps (CDS); the CDS spread is the insurance premium paid to the insurer. CDS are traded in the financial market without being tied necessarily to a specific credit. The total amount of CDS circulating in the financial markets could be manifold larger than the credit volume insured. This can be compared to people buying a fire insurance for a house they don´t own and receive compensation in case the house burns down (Hanke, T., 2010). The structure and volume of the CDS market is not transparent. There is no encompassing documentation on who bought and who sold how large an amount of insurance contracts on what credit. Therefore, it is not known in advance who will have to pay out how much in compensation in case of a partial or full default - called a „credit event". Due to this lack of transparency, there is the possibility that financial institutions might break down under the default of a major borrower in case of a credit event.

When Greece was close to a "haircut", i.e. a partial default, this uncertainty concerning CDS popped up. In order to calm down emerging panic the upcoming haircut was named “voluntary”. By intention, a credit event was not invoked and CDS payments did not become due. The power of (not) declaring default of a credit is with ISDA (International Swaps and Derivatives Association, Inc.), an association of financial institutions. They might tweak their judgement according to their members´ interest.

The insurance premium asked for in the markets can be taken as an indicator for investor´s perception of risk. The assessment of risk includes the likelihood of default as well as the expectation of an eventual bail-out by third parties – the taxpayer for example.

2.5.3 Extended maturity and present value

A credit carries the claim on future payments: Interest and redemption. The present value of a credit is derived from discounting all future payments to today´s value.

For the lender a credit given is an asset, because he can expect a steam of payments (interest, redemption) in the future. The recent value of this asset can be of importance for the lender in several aspects:

- Assets must be included into accounting statements like balance sheets at current market value ("pricing to market").
- Assets can serve as collateral, when the lender is borrowing from other parties.
- Assets can be sold in the financial markets for generating cash flow for the lender.

Therefore, an unexpected change in the current value of credit outstanding might have severe consequences for the lender. How could the value decrease?

The present value of a credit depends on two factors: Discount rate and maturity. The further away into the future a payment is and the higher the discount factor is the lower is the present value of a given amount of credit. This explains how a bondholder is affected by an unexpected extension of maturity.

If a borrower can´t pay, he will default on the loan. One alternative to default is rescheduling payments in an arrangement with the lenders: Stretch payments over a longer period. Recent examples are Greek government bonds held by European institutions (ESFS, ESM, and ECB). In a first step, maturity was extended from 15 to 30 years and a further prolongation up to 50 years is discussed (Herrmann, F. and D. Lenz, 2014). At first glance, the lender just needs patience and confidence – no assets lost so far. The concept of present value, however, does reveal a significant loss: When maturity is extended, the present value decreases and the lender must depreciate the current asset in the balance sheet („pricing to market"). This lowers equity and can lead to a precarious balance sheet or even to an outright default of the lender.

A **"default in disguise"** is the prolongation of a credit into eternity. In case, a Central Bank plays the role of "lender of last resort" and buys non-performing bonds of the government in financial markets, then the government has access to liquidity but still needs to pay interest and redemption on those bonds – in this case it must pay to the Central Bank. Most likely, such a government will not be able to service its debt in the future. If the Central Bank prolongs the bond indefinitely and grants new credit for paying interest due, then the credit might live on in the books of the central bank as a zombie, but will never be paid back.

Such a situation emerged with the "Third rescue package for Greece" in 2015. The Greek government owns large amounts of debt to public lenders like ESM, IMF and ECB as well as to individual member states of the Eurozone. Those lenders are not allowed by regulation to forgive debt and it was politically a taboo subject for the respective governments to confront their electorate with the message of lost credit. In the same time the IMF raised the issue of debt sustainability and demanded a outright haircut in favour of Greece. The political compromise was to grant an even longer grace period (years without payment of interest or redemption) as well as a further prolongation of maturity. The financial effect is the same as a haircut, while

the message to the less well informed public is “Greece must pay – however a bit later”.

3 Limits to debt

Debt is a useful financial instrument – up to a limit. Too much of it will cause problems for borrowers and lenders. In the following chapter, the author tries to find indicators for an acceptable limit of debt. Using cash flow and payment obligations as main variables heavily draws on the work of Hyman Minsky (1992), who developed a theory of “inherently instable financial markets”.

3.1 Payment obligations and cash flow

The borrower must fulfil all debt-related payment obligations in due time, i.e. provide enough cash for paying interest during the loan period and for redeeming principal at maturity. The payment obligations of a borrower might encompass more than one credit contract. Each single loan has its own interest rate and maturity. Over time, each single credit contract expires and needs a rollover – unless the borrower has a surplus in this year´s budget and pays back the maturing part of total debt. A rollover will be arranged for at current credit market conditions and under current risk assessment. If at the time of rollover, the market rate for credit is higher and/or the risk assigned to the borrower seems to be higher than before, then the rolled-over credit will carry a higher price tag. Consequently, the payment obligations will increase despite the debt volume staying constant. This happened e.g. to Greece when the cost of borrowing spiked for short time from average European levels to over 40% interest rate.

Cash flow is needed for servicing debt in time and in full; it can originate from

- current income (salaries, profit, interest, rent, tax revenue)
- the proceeds of selling assets (real estate, shares, gold, etc.).

Different groups of borrowers do have different sources for generating cash flow.

Sovereigns can rely on tax revenue from nationals. The amount of cash flow depends on the tax base, the tax rate as well as on the proportion of tax evasion. National parliaments decide on taxation and can increase revenue within certain limits. A sovereign by definition can´t be insolvent: It could negotiate a prolongation of maturity and pay from future tax revenue. Economic growth and the political acceptance of taxation put a limit to the cash hunger of a sovereign. A second source of cash flow is privatisation of publicly owned assets like companies, gold reserves, land, licences to mining resources, etc. (see ch. 5.3.2.1).

Non-financial companies generate cash flow from selling goods and services. Issuing new shares is an option for companies listed in the stock market; this is a promising strategy in times of booming stock markets only. Splitting up a company and offering parts for sale to investors generate cash flow and can be a profitable strategy ("back to core competencies") as well as a sign of financial problems.

The cash flow of **private households** mainly is generated from working, pensions or return from financial investment. For some inheriting assets can play a role, especially in post-WW-II countries in Europe. A further option in a distressed financial situation is selling the family´s home. This happened in post-real-estate-bubble countries (Ireland, Spain and USA), resulting in homelessness as well as in a further depression of house prices due to an increase of supply.

Financial institutions have earnings from their business as a regular source of cash flow. They can generate further cash flow from taking credit in financial markets - as long as they are trusted borrowers. Being short of liquidity results in a loss of trust and therefore deprives the respective financial institution of its foundations.

3.2 Debt sustainability

Debt is sustainable as long as current cash flow can guarantee current debt service and expected future cash flow seems to be large enough for covering future payment obligations. Not only financial means and wealth, but also the willingness of the borrower to honour payment obligations is required for debt sustainability. Looking into today´s debt levels and cash flow for assessing debt sustainability is not sufficient: The future cash flow is relevant as well. Due to lack of data on cash flow, income is used instead. The most common indicator is the "debt-to-income ratio".

3.2.1 Assessing sovereign debt

Assessing the sustainability of **sovereign debt** isn´t a matter of simple calculation. In academia as well as in the political environment one finds four different approaches for identifying the sustainable maximum of sovereign deficit and debt:

- In the **Stability and Growth Pact** of the EU a deficit of more than 3% of GDP per year and a debt level of more than 60% is "forbidden". These thresholds are arbitrary limits; rumour has it that an anonymous civil servant invented the 3%-limit in Paris when preparing an internal paper for

his boss in the negotiations of the “Maastricht Treaty” on deficit and debt limits (Schubert, C., 2013).

- It used to be an established consensus that debt above 90% of GDP does have a negative **effect on growth**. The figure was published by Reinhart and Rogoff (2010a) and inspired requests for austerity by the IMF, the “Troika” and some national governments. Later the research findings were questioned from two sides: Firstly, the data and the analysis were discovered to be faulty (Herndon, T., M. Ash and R. Pollin, 2014). A second line of critique suggested a reverse causation: Low growth causes high debt (Lof, M. and T. Malinen, 2014).
- Other approaches for defining and measuring sovereign debt sustainability construct **indicators**:
    - Gerken and Kullas (2011:9-21) take a wide variety of variables for future creditworthiness of a sovereign into account and summarise the data into the “CEP-Default-Index”.
    - Deutsche Bank Research takes the premium for credit default insurance (CDS) as an indicator of the probability of default. The judgement of markets includes expectations of bail-out by taxpayers – no risk from debt only.
    - The European Commission is assessing a sovereign debt sustainability of all EU member states twice a year. The methodology (Berti, K. and G. Carone, 2014) tries to capture a wide range of influencing factors and includes projections as well as sensitivity analysis.
- A **radical approach** suggests to give up on any exercise of computing sustainability, since assumptions on future events, payments, valuations, etc. must be made. Those future variables, however, can´t be predicted reliably. Forecasts of future growth and tax revenue could be politically influenced, when a positive result is needed for justifying “rescue operations” by international organisations like IMF or ECB. Instead, the key to sustainability is trust: As long as lenders trust into the sovereign´s readiness and/or ability to pay, they will grant new credit. When trust evaporates, however, sustainability of any debt level is gone (Wyplosz, 2011). This line of reasoning can be stressed for the lender-of-last-resort function of a central bank: If a sovereign can be rely on liquidity provided by the central bank any time and in unlimited amounts, bankruptcy can´t occur and financial market will always trust into this sovereign – regardless of the debt levels.

The debt-to-GDP ratio is a static indicator and reports on today´s financial situation. The development of sustainability in the **future** however depends on some more factors. It might deteriorate, when

- the future cash flow decreases, e.g. because proceeds from privatisation are exhausted or the economic growth rate decreases or even turns negative;
- the amount of debt increases faster than cash flow, e.g. a country runs a deficit larger than the rate of economic growth;

- payment obligations become due in the future, that were not accounted for, e.g. “implicit debt” (ch.2.4.2) (Eckefeldt, P., C. Schwierz, et al., 2014);
- the debt service increases faster than cash flow, e.g. because an increase in the interest rate makes rollover more expensive.

The **future** debt sustainability depends as well on the activities financed by today´s deficit. When a credit is used for

- **consumption** today, then the future potential for generating cash flow is not increased – unless we assume that a deficit triggered a multiplier process according to the theory of Keynes. Examples are the spending by the Greek government for the over-sized and under-performing public service, deficit-enhancing early retirement in Germany, etc.
- investment into **productive capacity**, then future cash flow might increase due to this investment. Examples are deficit financed spending for education, research and innovation or for productivity-enhancing infrastructure.
- investment into **speculative financial products** or into existing assets like real estate, then the production potential for future cash flow will not be improved. Examples are investment of “dumb German money” into failed projects like Spanish real estate, US-American asset backed securities (ABS, “toxic papers”) or the accumulation of investment into shipping capacity by some specialised banks.

3.2.2 Over-leveraged banks

Generating debt is the core of a bank´s business model. They have three sources for generating credit

a) Borrowing, e.g. by taking in deposits from savers or by issuing bank bonds to investors
b) borrowing short-term in inter-bank money markets
c) generating credit “out of thin air” by granting a credit to a customer and in the same time incurring the obligation to pay out this amount to the customer (For more see ch. 2.3).

Stylised bank´s balance sheet	
Assets[1)]	**Liabilities**[6)]
Cash[2)] Assets held for speculation[3)] Credit to[4)] • banks • states • households • companies Other assets owned by the bank[5)]	Borrowing from • financial institutions (banks, etc.)[7)] • households[8)] o Small deposits (< 100 Tsd €) o Large deposits (> 100 Tsd €) • companies[9)] Equity[10)] • Tier-1 • Tier-2
Footnotes: *1) Wealth owned by the bank* *2) Central bank money* *3) Banks buy financial assets with their own money for selling them at a higher price later (proprietary trading)* *4) Credit given to customers generate a claim for future payments against the borrower* *5) Real estate, etc.*	***Footnotes (cont.):*** *6) Financial means that must be given back to the owners by the bank some day* *7) Banks borrow from financial markets for doing business based on credit* *8) Deposits of savers; up to 100 Tsd. € are insured against default of the bank by the deposit insurance in the EU* *9) Liquid means not used in the moment for investment and cash accounts* *10) Capital given by the owners of the bank; absorbing losses and profits (Tier-1) and Tier-2, i.e. capital, that can be converted into equity upon request of the bank (CoCos, etc.)*

The bank is able to pay back all debt, provided its customers pay back the credit granted in full and in due time. Since some borrowers will default on their credits, a bank must provide equity for covering the loss on the asset side of the balance sheet. Regulators require equity as a certain percentage of banks assets, i.e. of loans outstanding. Since any loss will materialise in the future, the adequate amount of a risk buffer involves a guess on its likely size. This "guess work" is done in the framework of risk assessment models in banks under the general supervision of the regulatory bodies.

The maximum risk ratio allowed under regulation can be specified in two ways:

1. **Leverage ratio:** All assets, i.e. loans outstanding, of the bank are taken into the calculation.

All assets – regardless of the risk involved in the different loans – and put into relation to the risk buffer available, i.e. first-quality equity ("Tier 1"). A ceiling for leverage will be introduced under the new regulatory framework for banks.

2. **Capital ratio:** Each asset in the bank´s portfolio loan gets a specific risk factor assigned (BIS, 2014:105).

If risk for an asset is zero, then no equity needs to be provided. In case the risk of non-performance for a loan is 50%, then equity to the amount of 50% of the loan must be provided as a risk buffer. The ratio between all risk-weighted assets (RWA) and equity is called **capital ratio**. The bank must hold equity of at least 8% of risk-weighted assets.

The rules are laid down in the "Basel-III regulatory framework"[1], which is incorporated in the EU-regulations (CRD IV/CRR) as well. In this risk weighting much discretion is involved: Banks used to apply risk assessment models that were much too "optimistic" (BIS, 2014:104) – by purpose. The lower the risk assumed, the larger the amount of credit generated based on a given amount of equity.

Assessing debt sustainability of banks is a complex endeavour depending on the assumptions made for future economic developments and shocks. In stress tests, supervising authorities describe different scenarios and assess whether a country´s main financial institutions might survive under worst-case conditions. The specification of stress scenarios is a highly political task: Assuming severe shocks results in the prediction of a financial system, that might be fragile under the conditions assumed. If the regulators want the banks to be prepared for such shocks, then banks must ask shareholders for more equity as a safety buffer. At the same time, the publication of the results of a pessimistic scenario can trigger a self-fulfilling prophecy: Lenders to banks might pull out as a reaction to negative expectations and by doing so generate the fragility of banks.

A special issue is the risk assignment to sovereign bonds. The official regulation calls those bonds risk free, while history shows many sovereign defaults. Banks holding those bonds do not need equity for covering losses. If there were a correct assignment of risk, then banks would be less inclined to hold those papers and some governments would have even more difficulties in obtaining credit at feasible conditions. Consequently, the fragile situation would deteriorate now. Without proper pricing of risk, however, the stock of sovereign debt in the national bank´s balance sheets gets higher and higher and might pose even greater problems to the stability of banks in the future.

3.2.3 Companies and households

The overall debt sustainability of companies and households is mainly affected by the business cycle and the development of the prices of assets used as collateral for credit. In a boom, the number of people in employment as well as the average wages tend to go up, so that current income can cover payment obligations – vice versa for a recession. In analogy, the financial situation of companies tends to be good in a boom, because customers buy more and have better paying habits.

For some debt, the lender asks for collateral, e.g. the house in a mortgage arrangement. As long as house prices increase or stay stable at least, a defaulting homeowner can honour payment obligations by selling the house. After the burst of

[1] http://www.bis.org/bcbs/basel3.htm

a speculative housing bubble however, the house might no longer cover the loan outstanding – the borrower is in negative equity ("under water").

After a long period of prosperity, companies and households might be over-leveraged, because they took on too much debt in good times – expecting the boom to go on forever. This is the mechanism for repeated financial crisis events as described by Minsky (1986, 1992).

4 Default on debt

4.1 Illiquidity, insolvency and procedures

A borrower might default on debt and stop honouring debt service. This can happen in different situations and can have different meanings for both sides involved: A lender can lose all claims immediately or might recover part of it after a long time only. The borrower might get rid of all payment obligations instantaneously and have a fresh start in business; otherwise, he might carry on the burden being deprived of trust and access to credit for the rest of his live. The outcome of a default mainly depends on national law regulating details and procedures of default of households and companies. Rules for default of a bank are now in the making for the EU within the framework of the European banking union while there are no defined procedures for the default of a sovereign.

Regulation of default aims

- at a "fair" distribution of losses ("pari passu"), where no lender can rush for the largest junk of remaining assets of the defaulting borrower and no borrower can misuse default for getting rid of debt easily.
- to organise an "orderly" process all parties affected can rely on, so that panic can be avoided.
- at preventing contagion and spill over of mistrust, fear and panic into other countries or other sectors of the economy.

The regulations on default address different parties differently (see the following chapters).

Two different constellations are called a default: Illiquidity and insolvency.

1. **Illiquidity**: The liquid means for servicing debt are not available in the right amount in due time. The reason for illiquidity could be a miscalculation of payment streams, where an expected inflow doesn´t materialise or the outflows were unexpectedly large. Illiquidity is not an economically fatal situation, as long as creditworthiness is given. The amount due will easily be converted into a (short-term) credit. Bankruptcy can be avoided if additional credit is available. Creditworthiness is given as long as the

borrower holds sufficient, even if non-liquid, assets and/or there is trust into the ability of the borrower to generate enough cash flow in the future.

2. **Insolvency**: As long as the value of all assets of a borrower is larger than the amount of all debt he has a positive net worth. When the net worth is negative, selling the borrowers assets will not cover all claims of the lenders. This is – in general terms - the state of insolvency. For staying solvent, not only the level of debt is crucial but also the development of the valuation of the assets. A downturn in the stock markets, a crash of the price for real estate, the devaluation of a currency or the bankruptcy of a major bank can severely impair the value of assets. Furthermore, the valuation of assets is normally based on the assumption that business activity will continue ("going concern"). With bankruptcy looming, however, assets like goodwill or trademarks must be devalued significantly. Insolvency is then looming even for entities without excessive debt.

The consequences in case of default of a specific borrower are unknown. Often, experience serves as a template for expected future events. Stressing the pessimistic side however can be done deliberately in order to press others into some lenience or into paying for a rescue operation. This can even reach the state of "bail-out blackmail": The defaulting unit using dark future scenarios for obtaining fresh funds and better conditions (Mayer, T., 2010). Two examples from recent history are:

- The collapse of the medium-sized investment bank Lehman´s in autumn 2008 in USA triggered a freeze in the money markets and brought the world financial system to the brink of disaster. In the following years, the taxpayer at high cost and a probably unfair distribution of losses saved banks in other countries, like Ireland and Spain, because a second "Lehman event" was to be avoided at any price.
- The default of relatively small countries like Greece and Cyprus was averted at the expenses of private investors ("voluntary" haircut) and by putting even larger amounts of public money at stake, because contagion might have spread to large European members, like Spain, Italy and France.

4.2 Problems about sovereign default

4.2.1 When sovereigns don´t pay

There is a long history of sovereign default (Kindleberger, C. P. and R. Z. Aliber, 2011; Reinhart, C. M. and K. S. Rogoff, 2009) – not paying is a regular, for some countries a repeated, event. When an instalment is due, there might at this moment no means be available: A classic illiquidity. A creditworthy sovereign always could borrow for covering a period of expected illiquidity, so that illiquidity will not materialise. A lack of trust and creditworthiness however will cut the country off from financial markets and might make it illiquid.

According to the standard definition of insolvency, an excess of debt over assets describes the status of insolvency. However, can a country be insolvent at all? There

are two reasons, why a sovereign can stay solvent – at least in the long run. First, future tax revenue can cover all payment obligations. Secondly, every country has some assets like state-owned companies, natural resources, land or other treasures. All those sources could be sold for generating cash flow.

A recent case is the discovery of mineable resources that might generate large, but unknown revenues for the state in the future. Gas reserve off the coast of bankrupt Cyprus and oil near Crete might make those countries much better off in the (near) future. A default or haircut seems premature and might deprive lenders from a likely recovery of their claims in the future. Italy has Europe´s second largest reserves of oil and gas, however, resistance from local groups prevented Italy from generating cash flow out of this ("Erdöl und …, 2014)

Since the definitions of illiquidity and insolvency as developed for private companies are not fully applicable to sovereigns, we speak about sovereign default instead. The default of a sovereign can have economic as well as political causes: A sovereign could refuse to honour its payment obligations, because politicians as well as the wider public perceive the claim as "not fair" and resist paying. Some examples illustrate this situation:

- Reparations required from Germany after First World War were putting too high a burden on the war torn country and it was a hyperinflation that rendered all debt worthless.
- Argentina defaulted again in Nov 2001 on sovereign debt and the market value for those loans dropped to a fraction of face value. Most lenders to Argentina agreed upon a "haircut", while some hedge funds bought those nearly worthless bonds and are now claiming full payment from Argentina. They won a court case, but the Argentinian government – supported by public opinion – refuse to honour the "unfair" claims of the so called "vulture funds" (see CAC, ch. 5.3.4).
- The Spanish far-left opposition party, Podemos, "suggests non-payment of ´illegitimate´ parts of public debt", like similar parties do in other European member states (Economist, Aug 16th 2014).
- The Greek government held a referendum in july 2015 on the conditions for financial support ("Austerity"). Those conditions were rejected by 61% of voters. Furthermore, an expert´s report on behalf of the Greek parliament named the already accumulated debt burden "… a direct infringement on the fundamental human rights of the residents of Greece. … Greece should not pay this debt because it is illegal, illegitimate, and odious" (Truth Committee on Public Debt, 2015:3).

The population could resist the transfer of resources to the foreign lenders, especially when this would require painful cuts of social benefits, like food, health care and power subsidies.

4.2.2 Should sovereign default be avoided?

Intervention by the national government or foreign countries or institutions like IMF could try to avoid a sovereign default. The question is to what extent support to a sovereign in distress should go. The answer depends on two aspects: First, the likely costs and consequences of a default as compared to the conditions and consequences of a rescue operation. Secondly, support to a bankrupt sovereign involves shifting around the burden of default and support between different players involved. The measures taken reflect the power of the players as well as skills and stamina during negotiations. A parallel could be drawn to a poker game – the analytical methods can be derived from game theory.

The expected or likely negative consequences of a sovereign default will guide the position in negotiations. They include e.g.:

- **Fear and panic in financial markets leading to contagion:** When investors see a country at the brink of financial collapse they might expect more countries to follow soon. A massive flight of capital out of the country affected as well as out of "similar" – but still healthy – countries might start. E.g., the financial collapse of Greece and Cyprus increased the risk perception of Italy, Spain and France, so that the interest rate asked for from those governments increased significantly – turning the countries into problem countries; this is the typical case of contagion and self-fulfilling prophecy.
- **The "bank – sovereign doom loop":** When sovereigns lose access to credit for rollover and deficits, the valuation of bonds in the financial markets will fall close to zero and lenders, i.e. mostly financial institutions, will lose their assets. Some might then not survive the depreciation of assets and go bankrupt – incurring more losses on their lenders. This was the case, e.g. when the state of Cyprus defaulted and Greek commercial banks had to write down large holdings of Cypriote government bonds. The Greek government trying to rescue Greek banks got even deeper into debt therefore.
- **Damage to the fabric of society:** The sovereign provides important public goods (security, social support, health care, etc.). A bankruptcy will deprive the state from access to credit so that the delivery of public goods is interrupted and hardship imposed especially on the vulnerable parts of society. This might result in a breakdown of public order and the rise of radical parties. The cost of a default will be especially high for nationals and other countries, if the defaulting country turns into a "failed state".
- **"Moral hazard":** National parliaments and governments take the decisions on the state´s budget (taxation and spending), while the consequences of a public default are spilling over into other countries. In other words, the power to decide and the obligation to tackle the consequences are not in the same hands. This is a classic "moral hazard" constellation, where reckless spending can please the national electorate and stabilise the incumbents in

power, but other countries taxpayers must shoulder the burden without having a say on spending.

- **Unfair burden sharing:** Cost of rescuing a defaulting sovereign might be spreads to many stakeholders, e.g. banks, pension funds, international organisations and taxpayers. The contributions might be imposed on the population of the respective country as well as on entities in foreign countries. Burden sharing might hit rich people as well as poor people, present generations and/or future generations. One of the hotly debated issues is, whether there are "guilty culprits" to the problem, which should carry the loss they inflicted: Bankers and "lazy Southerners" are taken as scapegoats in populist debates. While fairness is a highly subjective concept, assessing a proposed burden sharing for a sovereign default as fair and balanced helps in decision and implementation: A population resisting an "unfair" burden might block the process, e.g. in Iceland.

The costs of a default could be larger than the costs of rescuing the borrower. However, the assessment depends on the assumptions made for the scenarios used.

An example for a mixture of feared of dangers of default is Greece, where the most prosperous sector of industry, sea transports, boasts an exemption from taxation in the constitution and outright tax fraud is widespread in all strata of society. Clientilism, cronyism and corruption made the public sector grow out of proportion and publicly regulated or publicly owned sectors of the economy are inefficient (Klemm, U.-D. and W. Schultheiß, Eds., 2015; Richter, H. A., 2012). A change of this culture meets stiff resistance from stakeholders while further credits from foreign sources are taken for granted. Not to let Greece default and leave the Euro was a political decision based partly on the fear of contagion – a card Greece can and does play.

4.3 Problems about banks defaulting

The financial industry is a special sector in a capitalist economy: Providing credit and maintaining the circulation of liquidity and capital in the economy. Therefore, the risk to the functioning of the financial sector can pose a risk to the economic system. Consequently, a bank in financial distress can´t as easily be sent into bankruptcy as, e.g. a chocolate factory. This point of view is in stark contrast to a public sentiment that tends to blame banks and bankers for the financial crisis and wants to punish them - instead banks were rescued at the taxpayers´ expense.

Therefore, let´s look into some reasons for (not) letting a bank fail.

Systemic risk and interconnectedness

Banks form a tightly knit net of business relations between financial institutions, sovereigns, companies and households. If one entity within this web loses trust of partners resp. into partners, then it will stop doing business-as-usual. Consequently, the flow of credit is interrupted. Parts of this web can be blocked or even destroyed, and the whole system of financial relation and institutions could collapse.

Fear, panic and contagion

The foundation of banking is trust: Depositors and other lenders to the bank trust that their assets are safe with the bank. Tight regulation of banks including mechanism like collateral and deposit insurance are meant to support this trust. As soon as trust into a specific bank evaporates, deposits are withdrawn quickly and credit dries up: A bank run (herding effect) occurs and pushes the bank into bankruptcy. This might not represent a systemic damage in the first place, but mistrust can spread quickly to other banks and into other countries (contagion). Growing pessimism might invoke the negative events predicted: A self-fulfilling prophecy caused by a feedback loop. Saving a failing bank can be justified when it aims to stem contagion.

There are some examples for fear and contagion in recent history:

a) The collapse of Lehman Brothers

Nobody expected the US-American investment bank Lehman´s to fail – and when Lehman´s went bankrupt in August 2008, every bank seemed to be the next candidate. Consequently, the interbank money market became shock-frozen and the financial bloodstream came to a standstill: The end to capitalism as we know it. When panic was spreading to German depositors, the German heads of government (Merkel and Steinbrück, 2008) faced the media in October 2008, promising to guarantee all private deposits. This promise calmed down nerves, despite not being credible at all: The amount of money in the banks was overshooting the capacity of deposit insurance and government budget by far.

b) Mistrust into Dubai spreading to Greece; Italy, and beyond

The rich Dubai Emirate planned for the restructuring of a debt it had guaranteed. The idea that the debt of an oil-rich country might be restructured led to pessimism of investors concerning the solidity of other countries as well. In just a few days Greek 10-year borrowing rates rose by 100 basis points (Brender, A., F. Pisani and E. Gagna, 2013:90).

c) Bulgarian banks

A recent example (June/July 2014) of spreading fear is Bulgarian banks. Rumours about looming problems with a bank were spread via social media from anonymous sources. This triggered a bank run and forced the authorities to intervene by declaring the banks being safe.

“Too entangled to fail” (TETF)

Banks are large customers of banks: They borrow and lend among each other’s, mostly in short term contracts. Interbank operations make up for a significant share of their business. Especially the interbank market is based on trust between banks. A sudden loss of trust can freeze the interbank money market and bring the complete financial system and the whole economy to a standstill.

Since the consequences of a bank defaulting are unknown, nearly any bank is given the status of "too entangled to fail".

“Too big to fail" (TBTF) – or too big to be rescued

If a bank is large, then the damage from this bank´s default might weight so heavily on its lenders and the repercussions in the financial sector and real economy might be too large to be absorbed – a systemic risk emerges. A relatively small bank could be wound down without major disturbances to other parts of the economy.

When the ongoing crisis broke out, governments rescued banks by injecting large amounts of capital thereby putting a burden on today´s and future taxpayers. When a state pretends to take strong measures and keep a failing bank afloat, then the respective sovereign must be large enough for shouldering the burden reliably. In some countries, the total volume of the financial industry is large compared to the size of the GDP; a rescue of failing banks by the state seems not to be feasible (Iceland, Switzerland, Ireland, Great Britain). Banks are then too big to be rescued – and the danger of panic and contagion can´t be tackled.

TETF, TBTF and moral hazard

The need to save banks from collapse in order to save the whole system from breakdown – might this be really a real or just a perceived danger – generates the standard situation of “moral hazard”. Banks run high risks, expecting profits to be converted into bonuses to the staff and profit to the shareholders while losses must be borne by society, i.e. today´s and future taxpayers. This resembles the “bail-out blackmail” mentioned for countries running high debt (4.2.2). Big and entangled investment banks have an implicit guarantee from the state: They will be rescued – probably at any price. This leads to a better rating of those banks and cheaper financing costs; this is a distortion of markets in favour of already large banks (Greens, T., EFA, et al., 2013). A side effect of this implicit guarantee is the incentive for banks to become even larger and to take on even higher risk, since the return from risky business can be privatised, while a loss has to be covered by the state. (Ratnovski, L., L. Laeven and H. Tong, 2014).

The “bank – sovereign doom loop”

In most countries, the public budget and the banks are “joint at the hips” (Mody, A. and D. Sandri, 2012). Therefore, problems of banks might spill over into governments´ budget and vice versa:

- Banks are the main buyers of government bonds. When banks no longer can give “risk free” credit to the state, then the state might run into financial trouble. Sovereigns give an implicit guarantee to save banks – especially large and “systemically relevant” banks. A loss of this implicit safety net makes refinancing more expensive for banks, as was demonstrated by a downgrade of Deutsche Bank´s rating after the introduction of the banking union in the EU (Afflatet, N., 2015; Denk, O., S. Schich, et al., 2015).
- The rescue effort for national banks overstretched the public resources of Ireland, Spain and Cyprus and triggered a near-default of the respective sovereigns. Consequently, they had to accept “rescue offers” from ESM and IMF.

The seemingly risk-free sovereign borrower

Financial markets are expected to reflect risk of non-performance of a borrower properly, so that the interest rate is adjusted for risk. In contrast to this dogma, there is one group of borrowers that are declared risk-free – against empirical evidence. This privileged group is sovereign borrowers. A bank holding a bond of "her" sovereign or of any EU-member´s sovereign is allowed by regulation not to provide equity as a risk buffer for this credit, since a zero risk of default can be assigned to those bonds. This regulatory privilege of government´s debt will be given up after 2017 and will be replaced by an external risk assessment done by rating agencies or by bank´s internal risk assessment procedures (BIS, 2013:10-12). Assigning a (higher) risk factor to government bonds will result in higher interest rates for those bonds, i.e. in higher credit costs for the sovereign. Abolishing the regulatory privilege of sovereign bonds is expected to make the financial system more resilient (Deutsche Bundesbank, 2014:95-105; Schäfer, D. and D. Meyland, 2015; BIS, 2015a:113).

Credit crunch

Every business needs credit for staying operational. Banks are the main channel for credit, especially for small and medium-sized companies. Banks with too high a risk in their balance sheet must deleverage, i.e. reduce the amount of credit granted to customers (ch. 3.2.2). Therefore, they will not rollover debt and restrict new credits – even to economically healthy companies. Non-financial companies are deprived of access to finance; the consequences might be a slowdown of their business activities or even a default. Those problems can spill over to suppliers and other banks, when the companies can no longer service their payment obligations. Consequently economic growth and income goes down, depressing tax revenue further.

Conclusion

There is no simple conclusion for or against a bank´s rescue by the state. Minimising the damage done to society by a bank´s uncontrolled bankruptcy and a "fair" burden sharing is the aim of the European Banking Union (Veron, N., 2015; Hellwig, M., 2014).

4.4 Problems about households or companies defaulting

If a household or a company can´t pay back a credit, this seems to be a microeconomic phenomenon without implications for the financial or economic system as such. Letting a failed company close and leave the market is a constitutional element of a competition-based market economy.

This "relaxed" view holds as long as it is just a few and rather small entities defaulting at the same time. As soon as many and/or large borrowers default, a risk to the stability of the financial system can materialise. Banks might collapse when

they suffer too large losses. This is aggravated, when banks are highly exposed to one field of business. Some examples show this effect:

- The German HSH-Nordbank, doing a lot of financing for shipbuilding, suffers severely from the cyclicality of this business.
- Savings and Loan Associations in the USA were heavily involved in fix-term mortgages in times of low interest rates and went bankrupt when their cost of refinancing increased. This led to a major crisis in the US-American financial industry.
- The end to a speculative housing bubble made the over-sized construction industry shrink. The number of jobs in construction and related industries decreased and banks suffered from non-performing mortgages, from defaulting companies, and decreasing consumption and investment.

Bankruptcy of a large company or problems in an important sector of industry can lead to pessimism of consumers and via a decrease in aggregate demand, lead into a recession.

5 Ways out of debt

The reason for writing about debt is the recent development of public and private debt in the European Union. The debt burden of some countries no longer seems to be sustainable. Reasons for the ever-growing public debt are not subject of this paper (Panizza, U., F. Sturzenegger, et al., 2009; Brasche, 2013:206-209).

A longterm view (Schularick, M., 2014:195) shows growing debt-to-GDP levels, when public and private debt increased after 2nd WW in the major industrial countries significantly.

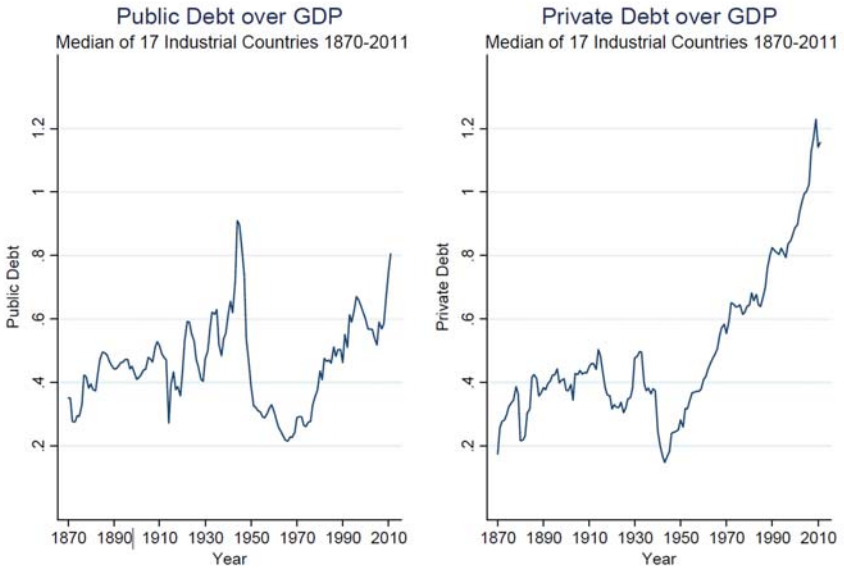


Figure 2 Public and Private Debt since 1870

Schularick, M. (2014). "Public and Private Debt: The Historical Record (1870-2010)." German Economic Review 15(1)

As an illustration for the recent debt situation, the table shows public and private of selected countries of the Eurozone for the years 2002 and 2013. The year 2002 represents a year close to but after the burst of the internet bubble (2000/2001) and the most recent data (2013) show the situation five years after the burst of the financial bubble. Private debt is debt held by households and non-financial companies, while governments hold public debt. The countries can tentatively be grouped into three categories:

a) "Benchmark" countries that are taken as role models because they weathered the crisis fairly well so far (Austria, Germany, Netherlands)
b) Large countries of the Eurozone, that are perceived as "candidates" for debt related problems (France, Italy)
c) Four of the countries that were technically bankrupt and had to apply for support from diverse "rescue umbrellas" (Greece, Spain, Portugal Ireland).

Debt as % of GDP, 2002, 2013 selected countries						
	public		private		total	
	2002	2013	2002	2013	2002	2013
Austria	66	81	122	126	189	207
Germany	59	76	122	104	181	180
Netherlands	48	69	210	230	257	299
France	57	91	103	137	161	228
Italy	102	128	83	119	185	247
Greece	98	175	65	136	163	310
Spain	51	92	117	172	168	264
Portugal	56	125	156	203	212	328
Ireland	31	116	138	270	169	386
Source: Eurostat database, Feb 9th, 2015, tpsgo, tipspd20 ("Macroeconomic Imbalance Procedure").						

Nearly all countries saw total debt increase between 2002 and 2013, the exemption being Germany, where a rising public debt was nearly compensated for by a decline in private debt. While the focus of public debate is on debt of the state, it is private debt that accumulate in most of the countries listed in the table to high levels. Since it is banks granting credit to public and private borrowers, the sheer amount of debt can endanger the stability of the financial system. The size of debt – relative to GDP – of supposedly "solid" countries (Netherlands, Austria) was not smaller in 2002 than of the later "crisis countries" Spain and Ireland. It was the burst of the real estate speculation that made the debt ration explode.

When debt is too much for being sustainable, in the short and/or in the long run, then outright default is the consequence. In order to postpone or avoid default, a variety of approaches could be taken (cf. Pâris, P. and C. Wyplosz, 2013). In this chapter some of the measures will be discussed. In the real world, a combination might be applied as result of negotiations.

In capitalist societies with private ownership of capital, the owner has the right to decide how to invest capital and therefore must face the positive as well as the negative outcome of the investment decision. Reality however is diverse: Some investors manage to be saved from bankruptcy, using taxpayer´s money (**"bail out"**) instead of being asked to accept the loss (**"bail in"**). If the bankruptcy would impose high cost on society, a bail out of investors could be a wise decision. However, powerful players might have the opportunity of shifting their loss into public pockets. Designing and enforcing "good rules" for ways out of debt problems is an intellectual as well as a political challenge.

5.1 Buying time

A borrower might be in financial trouble just in a specific situation. This typically is a situation of illiquidity, when payment instalments due can´t be made, but after

some time the borrower might be able to solve the problem. An agreement between lender and borrower can bridge the time until liquidity is given again. The aim of buying time is to give the borrower the chance to continue with a given debt burden without defaulting.

Time can be needed for

- bridging a temporary illiquidity of a solvent entity, e.g. a sovereign suffering a sharp downturn in tax revenue in a recession.
- riding out times of panicky markets until they calm down to a "fair" valuation of assets again.
- implementing solutions that need long time for making an impact, like "structural reforms", investment in education/retraining, changing corrupt behaviour in institutions.
- softening the social impact of reforms on weak members of society.
- a turn-around of a company, e.g. by implementing a new business model.

Time in a financially distressed situation rarely isn´t granted by market decisions: Each single lender will pull out of a financial risk as quickly as possible – probably even at a "haircut". This individually rational move will produce a financial collapse of the borrower as a self-fulfilling prophecy. When all individuals e.g. withdraw their deposits from their bank accounts, than the bank can´t provide enough liquidity for fulfilling all calls for cash in the same time. Consequently the bank is bankrupt from due to the "bank run".

Time can be "bought" by a variety of measures (see below) that involve intervention by public or international authorities. Behind providing more time is the hope for a solution in the future, that is less costly than a default now. In the ongoing financial and economic crisis **time horizons** differ:

- Closing a failing bank without causing a bank run and capital flight must be done as a surprise move over a weekend,
- Extending the maturity of loans might stretch the redemption up to fifty years,
- Structural reforms and the development of new fields of business in a country might need a decade before positive results can be seen.

5.2 Make credit accessible (again)

Access to the financial markets for new credit is needed in two situations

1) When an existing loan reaches maturity and the borrower can´t redeem principal, because there is not enough cash flow, then the loan must be rolled over. Fresh credit is replacing matured debt; the overall debt burden doesn´t grow by this. The order of magnitude of finance for rollover

depends on the maturity structure of debt: Short-term debt tends to be cheaper, but needs frequent access to credit.

2) When current expenditures can´t be covered by current revenue, i.e. when there isn´t a surplus in the budget, then new credit is needed for bridging the gap. The stock of debt grows by the fresh credit.

If the financial markets lost trust into the prospective borrower, then credit will not be offered or at high interest rates only; increasing interest rates, however, will render some investment unprofitable. Regardless whether financial markets assess the borrower correctly or whether there is panic and overshooting reaction, default from illiquidity is the consequence. In the case of credit to households and private companies, the markets decide, while credit to sovereigns is a political issue: In case of a looming default, some public sources might be available.

Two lines of public support are discussed and/or applied in the ongoing crisis (see following chapters for details):

1) **Credit from "friends"** (IMF, ESM, Eurobonds etc.): Those activities have in common that (still) creditworthy international organisations or a group of countries are using their creditworthiness for acquiring credit from international markets on behalf of the sovereign in need. Giving guarantees, passing on credit taken by "good borrowers" or pooling debt are mechanisms for sharing creditworthiness. This can lead to mutualisation of credit risk and debt (ch. 6.2).

2) The only source of unlimited and nearly free liquidity to a sovereign is the central bank: It could "print money" and pass it on to the sovereign by buying government bonds, even if nobody else is prepared to lend any more. This is the **"Lender of last resort"** function of a central bank. Supporters of this approach point out that a sovereign having this backstop can´t become illiquid, so that financial markets will go on borrowing to this sovereign. When a sovereign can´t become illiquid, then the risk premium on sovereign debt tends to stay low – easing the cost of borrowing for the sovereign. This backstop keeps investors from panicking (DeGrauwe, P., 2011a; Wyplosz, C., 2013; Gorton, G. B. and A. Metrick, 2013; Illing, G. and P. König, 2014; Buiter, W. and E. Rahbari, 2012). In the Euro-Zone, however, the European Treaty forbids the direct financing of sovereigns via ECB credit. Therefore, a country having adopted the Euro is not in command of its own currency and can become illiquid. This can explain why the interest rates for the British government stay lower than e.g. for the Spanish government, despite the fact that the public budget of Spain was in better shape than the British one was. In the course of the unfolding crisis, the legal barriers were abolished step-by-step by a so called "unconventional" monetary policy of the ECB.

When we assume for a moment that financial markets would be "efficient", then a high price for credit correctly reflects the lack of creditworthiness of the prospective borrower. Access to cheaper credit – made possible by policy intervention - is a

distortion of market signals. The theory of **"moral hazard"** predicts that a borrower will change its behaviour in case of this "help from friends": The receiving countries might be less rigorous when it comes to cutting spending, collecting taxes and doing painful “structural reforms”. The reduction of deficit and debt will be less successful in the future.

In order to stem "moral hazard" all help comes "under conditionality". The conditions made require specified cuts in public spending and a variety of measures for increasing tax revenue. A procedure of tight supervision of conformity with conditionality is installed for the future: Inspection of experts from the lenders´ organisation travel the country and do the controlling. The “Troika” composed of ECB, EU-Commission and IMF is a recent example.

5.3 Decrease debt levels

When debt levels become unsustainably high, one solution could be the reduction of the amount of debt. How could debt be brought down to lower levels? Five strategies are available, as briefly discussed in the following chapters.

5.3.1 Budget surplus

A borrower, who wants to pay back part of his debt, needs a **surplus** in the current budget, i.e. current income must not be overspent (deficit) or spent in total (balanced budget), but some income must be saved. In principle, a surplus can be achieved by increasing income and/or by reducing expenditures. In the case of a sovereign, the increase of GDP is the most desirable route, while an increase in taxation might meet political resistance as well as produce negative growth effects. Parliament could decide quickly on a cut in government´s spending; political resistance and negative growth effects, however, are for granted, then. Switching economic growth into higher gear isn´t at the discretion of governments.

To stop debt spiralling out of proportion the deficit must be smaller than zero: A surplus in the budget is needed, so that means for redemption are available. This can bring down the debt burden, as long as the growth rate stays positive. The application of the simple accounting truth feels painful when applied to deficit- and debt-ridden countries, because a budget surplus involves a cut in previous (over-) spending. The Greek example shows this clearly:

- A hidden budget deficit of up to 15% helped the economy to catch up economically with European peers and delivered the feeling of prosperity and high employment.
- The financial crisis forced Greece to reduce the deficit in steps down to 5%. Greece was not “saving” yet, but just reducing the over-spending. A severe recession with a shrinking GDP caused high unemployment and cuts in income and pensions; this did hit especially the vulnerable strata of society. The combination of negative growth and deficit caused the debt-to-GDP

ratio to increase further – contrary to the intended improvement of debt sustainability.

The process of austerity – if successful at all – takes quite some years. Experience with budget consolidation shows the limits of this approach. Mauro (2011) found countries cutting deficits via spending cuts as well as via tax increases successfully. He stresses the crucial role of growth in this process and points at the especially adverse effects of negative growth. Functional institutions and widespread public support are needed as well. Nickel, Rother and Zimmermann (2010) emphasize three important aspects, that brought about successful debt reductions in EU countries between 1985 and 2009:

1. Reducing government´s expenditure, in particular, cuts in social benefits and public wages,
2. Real GDP growth helps countries to grow their way out of indebtedness,
3. Consolidation as a reaction to high debt servicing costs imposed by suspicious markets.

Barrios, Langedijk and Pench (2010) found the following steps as crucial for successful budget consolidation between 1970 and 2008:

- Repair the banking sector damaged by a financial crisis
- Take the country-specific situation into account (pre-crisis debt level, growth rate, etc.)
- Cut public expenditure rather than raise taxes.
- Devaluation of the exchange rate is of lesser importance.

A budget surplus over quite some years is required for reducing high debt levels. Eichengreen and Panizza (2014), however, are sceptical about this solution working for EU countries. If the European member states aim at reaching the “legal” debt-to-GDP ratio (60%) in the year 2030, some need very high budget surpluses per year between 2020 and 2030 (5.6% Ireland, 6.6% Italy, 5.9% Portugal, 4.0% Spain, 7.2% Greece). They find this goal to be too ambitious, because

- a surplus invites political pressure for extra spending
- spending cuts restrict growth and “automatic stabilisers” are blocked
- a recession and low growth depress tax revenue.

Analysing past experience in OECD countries (1974 and 2013) they find only a few episodes of large surplus (> 4%) maintained over ten consecutive years. Some of the most successful countries were in special circumstances, that can´t be replicated for today´s crisis countries. Those findings justify no optimism regarding the strategy of budget surplus for reducing debt burden.

5.3.2 One-off extra cash flow

When debt service is too high in relation to cash flow, then a reduction of gross debt is an option. This involves the liquidation of existing assets for paying back some debt. Those assets not necessarily are property of the borrower already, but the borrower could find a way of expropriating some asset holders. In the following chapters, two options will be introduced:

1. Sovereigns selling public property to private investors (privatisation)
2. Sovereigns imposing a more or less “voluntary donation” on their citizens (Capital levy)

Those one-off measures can´t be repeated. The amount of assets depends on the respective circumstances and situation as well as on the distribution of power and influence between the various stakeholders involved.

5.3.2.1 Privatisation

Selling assets of a sovereign, e.g. publicly owned companies or other treasures, to private investors is called **privatisation**. The proceeds can be used for paying back parts of public debt. The concept of privatisation for generating cash flow has some limitations, however:

- **Market prices**: When a sovereign wants to sell e.g. the rail transportation system, this public company might have been subject to long neglect already and will not carry an attractive price tag.
- **Timing**: Selling under time pressure (“fire sales”) gives the state a weak bargaining position.
- **Business environment:** Publicly owned companies might not yield the price hoped for, because conditions for business are not favourable, e.g. running a former public company in Greece under Greek labour law and against stiff resistance from trade unions in a depressed economy and in a tense political climate.
- **Public interest:** Some publicly owned enterprises provide “public goods”, "services of general interest" as well as services based on networks (e.g. security, water, public transportation, health care, education). Those types of goods and services can´t be produced in a pure market environment – if at all – due to market failure (Brasche, U., 2013:125-130, 139-149). A careful and intelligent regulatory framework is needed, when privatisation is taken into consideration. A faulty regulation can result in negative consequences to business and society, as is demonstrated in the case of British Rail (Weidauer, M., 2005). The public prefers certain industries to stay in the hands of the state, since it mistrusts markets.

The Greek case clearly shows that without a strong commitment in society and a functional public administration, privatisation can´t work.

Even when a privatisation deal is done, this is a **one-off** relief only and prospective profits from assets sold can no longer augment the public budget.

5.3.2.2 Capital levy and financial repression

A sovereign has a unique option in situations of financial distress: It can put hands on assets owned by its citizens and force them to shoulder part of the public debt. Reinhart and Sbrancia (2011:4) classify two main strands of financial repression:

1. Caps or ceilings on interest rates and
2. Creation and maintenance of a captive domestic audience that facilitated directed credit to the government.

There are numerous historic incidents of "financial repression" (Reinhart, C. M. and Rogoff, K., 2013) – even in advanced countries:

- The Prussian Empire "convinced" its citizens to contribute to financing of the war by donating gold and other treasures and receiving replicas made from cast iron as an icon of patriotism ("Gold gab ich für Eisen").
- The Hungarian government nationalised private pension funds and promised to honour all pension claims accumulated so far from the sovereign´s future tax revenue ("Hungarian pensions …", 2010).
- An elegant and indirect version of channelling private capital into the pockets of the state is regulation of private insurance companies and pension funds. By law those financial institutions are forced to hold major parts of the accumulated wealth in risk-free assets; this is meant to protect customers. In the next step, gilt-edged government bonds are declared to be safe. Consequently, insurance companies and pension funds are lending their customers´ money to the state giving this sovereign privileged access to finance.

An **one-off capital levy** imposed on taxpayers by law aims at generating extra revenue for paying back part of sovereign debt (Deutsche Bundesbank, 2014c:52-54; Bach, S., 2012). The details of such a levy decide whether it will be perceived as "fair": Are the rich citizens paying most, or does the levy hit modest wealth as well? The constitutional protection of private property can put (tight) limits on levies and taxes for the "rich".

In the rather closed financial world of the system of Bretton Woods "financial repression" helped to reduce debt-to-GDP ratios (Reinhart, C. M. and Sbrancia, M. B., 2011); this is no longer feasible in globally open financial markets. In times when the state is expected to grab private wealth, the well-to-do citizens tend to transfer mobile assets out of the jurisdiction of their sovereign. This happened e.g. in Greece and Cyprus. The outflow of capital can be stopped only if effective cross-border controls, including internet based transfer, are in place. Those controls, however, are against the rules of the European Single Market´s freedom of movement of capital.

5.3.3 Debt-to-equity swap

Financing can be done with two different types of capital: Capital of the owners (**equity**) or borrowed capital from other parties (**credit**). Both types are marked by an important distinction regarding economic success or failure.

- Equity has no guaranteed return: When the operation financed isn´t profitable, then the owner doesn´t receive a return but loses part or all of equity instead. Any profit is the owner´s income.
- Credit must be serviced (interest and redemption), even in a financially distressed situation. The lender is not participating in the risk (profit or loss) and consequently not reacting to the state of the operation financed. The pressure to service debt could even trigger bankruptcy of a borrower.

When a borrower is in trouble financially, it could be useful for both sides, to convert debt into equity **(debt-to-equity swap)** in financially distressed situations. The borrower can try to regain his ability to service (remaining) debt and the lender changes his stance from creditor to (part-) owner (**bail in**).

Why should a lender agree into a bail in? A first glance a lender holds a contract and is entitled to receiving interest and redemption. He could enforce the credit contract in the courts. This possibility is use less however, when the borrower is close to bankruptcy. In such a situation, the lender might accept a bail in. In the most negative case, i.e. when the borrower finally goes bankrupt, he will lose the concerted claims (equity). When the financial situation of the borrower improves in the future, then the value of the equity might increase and will make up for the amount outstanding. In brief: The lender is connected to the financial success of the borrower.

The side effect is an increase of the cost of borrowing, since the lender will ask for a risk premium in the credit contract. If the shift of risk to the lender would be free of extra cost, than moral hazard would prevail. The borrower would run higher risk, since he could expect to bail in the lender easily.

A recent example for a private sector bail in is one of the world´s largest automotive companies: “General Motors”. Numerous problems, encompassing a he debt burden, brought this company into bankruptcy. A majority of creditors agreed to swap the non-performing credit for a stake in a reorganised company, accepting a large haircut. Now GM is profitable again and an increase of its share price might diminish the loss from the haircut (Goolsbee, A. and A. B. Krueger, 2015).

There are “hybrid” financial products incorporating a change of sides from lender to owner. In the case of **Convertible Contingent Bonds (CoCos)** the lender buys a bond and receives interest as long as the borrower is healthy. At maturity, the credit is paid back as agreed upon in the contract. In case of a predefined trigger point, however, the borrower is entitled to convert this bond into equity. Consequently, the lender is becoming an owner and must absorb losses of the borrower in a position inferior to other creditors. Those instruments are becoming increasingly popular

with banks, despite recent financial problems ("´Coco´ bonds …", 2014; Avdjiev, S., A. Kartasheva, et al., 2013).

Since a state can´t be owned under private property rights, a bail in for **sovereigns** seems impossible at first glance. There are some suggestions as well as experience, however, where sovereign debt can be made conditional or converted (Mody, A., 2013; Allen, P., Eichengreen, B. and Evans, G., 2014; Barr, D., O. Bush, et al., 2014; Fratzscher, M., C. Große Steffen, et al., 2014). Sovereign debt could be linked to the economic success of the debtor country, e.g. to

- a maximum debt-to-GDP ratio,
- a minimum growth rate of GDP (indexed bonds),
- an export surplus,
- the official declaration of financial distress as shown by the application for help (IMF, ESM …).

Under such an arrangement, the lenders are interested in the economic prosperity of the borrowing country. Any of those arrangements will make borrower and lender sharing the fruit of economic progress. The incentive to perform well economically might be higher for the borrower, if a share of success can be used for the own population instead of handing it all over to the lenders (Krugman, P., 1988).

Debt of sovereigns from the EU was perceived as absolutely default save. Consequently, debt contracts didn´t contain elements for a bail in. Since the crisis hit in 2008, a number of European governments came close to bankruptcy, so that an option to bail in lenders would be helpful. A bail in of public lenders (ECB, ESM, ESFS) would make official credit subordinate to private credit. Legacy debt could be included into such a scheme only, when existing contracts on this debt are changed or broken.

A special case is the financing of **private household´s housing by mortgages**. This is a lending agreement between the household and the bank. The household owes the amount borrowed, regardless of the development of house prices and income. If many households default on their credits, then the banks might run into trouble and might ask for a bail out by the taxpayer. According to conventional wisdom, the damage done to society from a collapse of the financial system seems to be higher than the cost for the bail out. Mian and Sufi (2014) suggest a new type of financing of houses for overcoming this problem. The principal of the mortgage will be reduced when a trigger point is reaches – e.g. a predefined fall in house prices and will recover with house prices later. Furthermore, if the homeowner will be able to sell the home with a profit, a predefined share of the profit will go to the bank. So both sides have the incentive to join such an agreement.

5.3.4 Cutting down debt (Haircut)

Lenders can agree with the borrower on a reduction of the amount of debt owed **(haircut)**. By lowering the debt burden, the borrower might not go bankrupt and might recover in the future. Lenders hope to regain at least part of their assets later – instead of a full loss now. Because of a haircut, capital might shy away from the

borrower and cut him off from capital markets for quite some years; at least the future borrowing costs will increase.

Haircuts can be arranged for between private companies or banks and private lenders as well as between sovereigns (countries, municipalities) and private lenders. They can be "voluntary", based on negotiations only, or compulsory, based on a legal enforcement like the US-American bankruptcy laws. The loss imposed on a private lender is called **private sector involvement** (PSI). An **official sector involvement** (OSI) would be the waiver of public lenders (ESFS, ESM, ECB, IMF). Until now official loans are "senior", i.e. they are exempted from haircuts and must be serviced first.

A haircut involves the loss of assets of the lender. If the lender is obliged to report on his accounts, than a depreciation of assets is required in the balance sheet. This could overstretch the lenders equity and cause bankruptcy – possibly triggering further losses along the chain of financial ties. Furthermore a haircut can be interpreted as a "credit event" and trigger claims on credit default insurances (CDS) (ch. 2.5.2).

5.3.4.1 Sovereign haircut

A sovereign is defined on different levels and institutional settings, depending on the constitutional arrangements of the respective nation: The lowest level is the local sovereign (municipality), the next is the federal state and the top level the central state. Additionally special entities can be part of a sovereign´s budget: The public social security insurances (health care, unemployment, public pension). The degrees of independence between vertical and horizontal levels of the state as well as the obligation to mutual support (bail out) are different in each nation state, as the following examples demonstrate:

- In Germany, e.g. the 16 federal states (Bundesländer) do share a system of mutual financial transfers. A Bundesland can´t go bankrupt and municipalities enjoy very limited budget autonomy only. In case of high debt, a municipality is taken under the higher level´s budget control.
- In the USA, each of the 51 states is responsible for balancing her budget. Some states or municipalities went bankrupt without bail out from the central government.
- The member states of the EU do have their own budgets and the treaty contains a strict no-bailout-clause. They shall respect joint fiscal policy goals of the Community, specially, the ceilings on debt and deficit. In fact, however, under the looming breakdown of the Euro a variety of mutual financial transfers evolved.

When a public body is no longer able to service her debt and a bail out isn´t possible, then a haircut is a solution, as is shown in the bankruptcy of Detroit: One of its large payment obligations is for pensions and health care of its public servants as well as servicing a high debt burden. A significant cut of both will be enforceable under US-American bankruptcy law. "In order to shed much of its $18 billion debt, Detroit proposes giving unsecured bondholders, including holders of general

obligation debt, 20 cents on each dollar. Pensions will be cut, too. General pensioners will receive only 66% of their monthly pension" ("Detroit's bankruptcy …", 2014).

Among the numerous **sovereign** haircuts, the recent **Greek** case is remarkable, since it is an advanced economy and a member of the EU and of the Eurozone, which needed a bail out. In the past, mostly emerging economies needed a reduction of debt. In March 2012, private investors had to accept a haircut of up to 65% of their claims, while the sovereign creditors to Greece (IMF, ECB) are not allowed to accept a haircut.

Even if an agreement on a haircut is reached with a majority of lenders, some claimants might **hold out** and demand the full payment at maturity. This currently is the case between Argentina and some hedge funds. The funds bought Argentinian debt when the price was very low and asked for full payment, even after the majority of lenders had agreed to a haircut. The hedge funds won a court ruling in their favour, because the "small print" in the bond contracts Argentina signed, could not force them to agree to the haircut ("Argenina´s debt …, 2015). In order to avoid the hold out problem, bond contracts must have a **Collective action clause** (CAC), stating that a majority of all bondholders can force the minority to agree to a haircut (IMF Staff, 2014a:7-9). The ESM (ch. 6.2.1) makes it obligatory to members of the Eurozone to include CASs into their bonds from 2013 on.

After a haircut, the respective country loses trust of investors and access to the capital market. It needs fresh credit for rolling over remaining debt and for keeping the economy and society running. Examples for ongoing urgent spending needs are subsidies for food, energy and health care for the poor; revolts by a deprived and hungry population might destroy public order and the possibility for future production and earnings - and consequently render future debt service impossible.

A historic example for a hefty haircut is the "London Conference 1952" forgiving a large part of debt to the re-emerging (West-) Germany after WW-II (Guinnane, T. W., 2004). Some developing countries defaulted in the 1990s. Consequently, their debt was rescheduled, encompassing a partial haircut. For an overview over debt restructuring measures for Russia (1980), Argentina (2001) and Greece (2010) see Canuto, O., B. Pinto, et al., 2013. Krugman (1988) points out that haircut and other debt relief serves as an incentive for the borrower to undergo painful reforms and to strive for economic success. Otherwise, all fruit of budget cuts and privatisation would go to the creditor.

The spillover from a sovereign haircut might be substantial: Banks are the main holders of sovereign bonds. A haircut might impose huge depreciations of assets on their balance sheet and bring the bank under water. A recent example are Cypriot banks, which held large amounts of Greek public debt: When private investors agreed "voluntarily" upon a hefty haircut on their Greek sovereign bonds, the Cypriot banks came close to bankruptcy.

5.3.4.2 Haircut for banks

Before and during the financial crisis, many **commercial banks** borrowed heavily from various sources (savers, other banks or financial institutions) for generating business. This is shown on the right hand side of the balance sheet as liabilities. When the credits they gave (see assets on the left hand side of the balance sheet) become non-performing, banks must correct the value of the respective credit in the financial statement. This depreciation absorbs the bank´s equity and can bring the institution down. One solution could be to attract more shareholders. In a distressed situation, however, the share price is low and investors shy away from the bank. The sovereign might not be able or willing, to inject more capital into the bank. The only solution is, to get rid of liabilities. This is where the shareholders and creditors to the bank are asked to shoulder a partial or total loss of their assets. The basic rule for distribution of losses should be that investors have to face the consequences of their decisions: Cash in gains in good times and suffer loss in bad times. Accordingly, a proper cascade of loss bearing would looks like follows:

1. Shareholders are whipped out totally
2. Creditors lose all non-insured deposits
3. Creditors with insured deposits lose all up to the insured amount, e.g. all deposits exceeding 100 Tsd. € per account.
4. Fiscal backstop: Taxpayers have to shoulder not yet covered losses

This sequencing is an ideal assignment of liabilities; in the past, it often was the taxpayer bearing the largest burden. Within the framework of the emerging European Banking Union (Bremus, F. and Lambert, C., 2014) the cascade outlined above will be made obligatory in European financial regulation.

5.4 Decrease debt service

When a given amount of debt can´t be serviced, then a rescheduling of debt service is an option. Debt service encompasses interest payments as well as redemption. By lowering the current payment obligations default can be avoided – at least for some time. The following variations are applicable

- Through a **grace period** (temporary moratorium), lenders agree on a suspension of debt service payments for a certain time and hope for a recovery of the borrower during this grace period.
- An **extension of maturity** stretches payments over a longer period, so that the yearly instalments can be smaller.
- When the original **interest rate is reduced,** instalments are getting smaller and, hopefully, manageable by the borrower.

Each of those options results in a loss incurred on the lender. In a decrease of interest rates revenue is foregone, while the extension of maturity or a moratorium decrease the present value of a loan outstanding (see ch. 2.5.3). The lender might agree to one or a combination of those options because the alternative, an outright

default with a total loss of all claims outstanding, might be even less attractive. Hope prevails that over time the distressed borrower will be able again to honour his debt.

A recent example for a grossly diminished debt service is Greece. The creditors agreed upon

- lowering the interest rate far below a market rate,
- refunding interest income derived from government-to-government loans to the borrower,
- postponing redemption for a grace period of seven years.

This made the share of GDP that had to be devoted to debt service bearable (Alcidi, C. and A. Giovannini, 2015; Gros, D., 2015a). The side effect of a moratorium on redemption is, that a haircut during this grace period doesn´t lower payment obligations, since no obligations on principal are to be fulfilled. This effect rendered the Greek government´s request for a haircut useless.

5.5 Inflate debt away

In an inflationary environment all nominal values tend to grow – so does nominal income. The adjustment of payment obligations and financial claims partly depends on power of the market participants. Compensation for inflation can be obtained by all players with some bargaining power, e.g. workers organised in trade unions, while weaker parts of society (pensioners, students, recipients of social benefits) might suffer a loss in real income. This adjustment covers new contracts only – previously signed credit arrangements stay nominally unchanged, unless the contract contains an "index clause".

When income grows nominally, while "old" nominal debt stays unchanged, then the burden of debt service gets lighter. Even if all borrowers fulfil their credit obligations the lenders receive less in real, inflation adjusted terms („Paying back with inflated money"). The table shows the significance of inflation for the reduction of real values over time. The inflation target of the ECB for stable money ("close to, but under 2,0%") will reduce the nominal value by 18% after 10 years and by 25% after 15 years. All entities with debt, e.g. households buying a family home or governments running persistent deficits, do profit from this effect.

5.2 The impact of inflation on the purchasing power of money

(decrease in the purchasing power of money after x years at a given inflation rate, in percentages)

	Inflation rate						
Year	1.0	2.0	3.0	4.0	5.0	10.0	20.0
1	1.0	2.0	2.9	3.8	4.8	9.1	16.7
2	2.0	3.9	5.7	7.5	9.3	17.4	30.6
3	2.9	5.8	8.5	11.1	13.6	24.9	42.1
4	3.9	7.6	11.2	14.5	17.7	31.7	51.8
5	4.9	9.4	13.7	17.8	21.6	37.9	59.8
6	5.8	11.2	16.3	21.0	25.4	43.6	66.5
7	6.7	12.9	18.7	24.0	28.9	48.7	72.1
8	7.7	14.7	21.1	26.9	32.3	53.3	76.7
9	8.6	16.3	23.4	29.7	35.5	57.6	80.6
10	9.5	18.0	25.6	32.4	38.6	61.4	83.8
15	13.9	25.7	35.8	44.5	51.9	76.1	93.5
20	18.0	32.7	44.6	54.4	62.3	85.1	97.4
25	22.0	39.0	52.2	62.5	70.5	90.8	99.0
30	25.8	44.8	58.8	69.2	76.9	94.3	99.6

Source: ECB calculations.

Indebted governments could feel tempted to accept or even to "produce" inflation. Independent central banks are seen as guardians of the currency´s value.

Inflation was and is a plague in emerging and advanced economies. Some periods of very high inflation wiped out German money based assets three times between 1918 and 1945. This is engraved into the collective memory of Germans and explains the preference for tight monetary policy. Inflation isn´t dead, despite the flat price level we see today. Major advanced countries suffered spells of high inflation between 1960 and 1990. Emerging economies show extreme price level increases in 2014 (e.g. Russia 7,5%; Turkey 9,0%; India 8,4%; Venezuela 64,4%).

From a macroeconomic perspective, inflation can have different impacts: From destroying the money based capitalist system to being a helpful mechanism for melting down an unsustainable level of private and public debt. The likelihood of default decreases because the debt service gets easier in an inflationary environment.

The real value of financial claims is reduced by inflation while the nominal value stays untouched. This is an "elegant" way of avoiding outright default of borrowers with all its nasty side effects, e.g. a breakdown of the financial system. In the ongoing crisis, this "elegant" backdoor seems not to open up: There is des-inflation or even deflation rather than inflation - especially in countries that try an "internal devaluation" by reducing production cost, wages and consumer prices. The European Central Bank is pumping large amounts of liquidity into the economy, but growth and inflation don´t pick up again. Even when inflation might be an option, the ECB has the mandate of fighting a price level increase above 2%-points/year. Provided the ECB will still stick to its mandate, it must fight inflation – not accommodate real decrease of debt.

5.6 Growth for cash flow

5.6.1 Austerity or fiscal stimulus

5.6.1.1 Growth or consolidation first?

Instead of reducing payment obligations, the borrower could try to increase cash flow for fulfilling payment obligations. The main sources of additional cash flow are:

- Growth of GDP generating higher income for private households, companies and the sovereign,
- Proceeds from the sales of assets, i.e. from privatisation in the case of a sovereign borrower.

How to achieve higher growth? This question is subject to an undecided controversy. After the Great Depression (1930´s) the concept of Keynes prevailed: The state should kick-start the economy out of a depression by spending more – based on sovereign borrowing ("deficit spending"). This ground breaking idea evolved into a policy of fine-tuning the business cycle – especially in recessions - via demand management. In the mid-1970s with rising inflation and stagnating growth ("Stag-Flation") the concept of the governments, managing the business cycle came to an end. The next approach put emphasis on the self-regulation of the markets and proposed to provide a favourable environment for doing business instead ("Supply-side policy"). Elements of this approach are "small government" (low taxes, de-regulation, privatisation) and the dominance of markets in all areas (goods, services, capital, and labour), as well as low levels of sovereign debt. The crisis starting in 2008 brought the demand management concept back into discussion, however, the old controversy still is alive in the recent debate on **"austerity or growth"** (Neheider, S. and L. Schuknecht, 2013; DeGrauwe, P. and Y. Ji, 2013). It is about the question of how to restart growth in the crisis: Cut government´s debt first or inject a large public demand and increasing sovereign debt based on credit first?

The **relation between government´s debt and economic growth** is controversial. One side stresses that too much debt damages the creditworthiness of a sovereign, so that she must pay too high interest rates or is even cut off from financial markets. The proposed way out is **austerity**, i.e. a cut in government spending until a budget surplus makes a cut of debt possible. The hope is for an expansionary effect to happen, when trust into the country is regained and overall optimism makes private investors and consumers expand their economic activities again. This position goes against the conventional insight into **negative multipliers** resulting from a cut in demand. Until now an empirical case for "expansionary austerity" is still missing – the concept might not work as proposed. (Streeck, 2014:156; Boyer, 2012)

The overall effect of austerity depends very much on the development of economic growth. If growth stays low or even turns negative, then the GDP might shrink and the debt-to-GDP ratio deteriorates unintendedly. At the same time, government

spending can´t be downscaled as much as planned, because social problems from unemployment need to be addressed. This is the case with Greece, where due to severe budget cuts the economy shrank for six consecutive years, so that the debt-to-GDP ratio exploded from 90% to 160%. Even the IMF took a more cautionary position towards too much and to fast debt reduction (Batini, N., G. Callegari, et al., 2012).

The opposing view stresses a **reverse causation between debt and growth** (Lof, M. and T. Malinen, 2014): Spending by governments, which was too low, pushed the economy even deeper into recession. This aggravated the crisis, since private demand collapsed at the same time. The consequence is a decrease in tax revenue and an increase of government´s spending for unemployment benefits. It would have been better to accept sovereign debt as an economically sound compensation of a decreasing private demand. Even more debt should be accepted for a **large fiscal stimulus**. The hope is for an expansionary effect based on a large **positive multiplier** á la Keynes that will bring the economy back into full capacity utilisation.

Behind the headlines about austerity a conflict about the distribution of losses from the burst of a speculative bubble is hidden. Austerity redirects resources from the borrower to the lender: More of current income for debt service, than for the needs of the population. Growth as a concept would require more of the resources – even fresh credit – for restarting the economy and financing social needs (Streeck, 2014:156). New political movements from the fringes of the political spectrum with their refusal to pay "too much" for debt service demonstrate the political character of the concepts "austerity versus growth".

5.6.1.2 Analysis before action

Picking the right strategy depends on the point-of-view concerning the root cause of the economic problems. Four aspects need attention:

1. **Size of stimulus and lack of credit**

In times when uncertainty prevails among investors and consumers, monetary policy can´t overcome the "flight to cash", because additional and cheap credit will end up in the "liquidity trap" – not in additional demand. The lack of demand from private players then must be compensated for by government´s deficit spending (Skidelsky, R., 2009; 2014). Full employment is obtainable as soon as capacity utilisation reaches 100% again. Pushing up demand will do the trick. The applicability of this theory – based on Keynes – ends, when the size of the stimulus needed is larger than the access to credit for the respective country allows for. Countries running a high deficit "in good times" and having accumulated high debt already tend to lose creditworthiness. "Deficit spending" without credit is impossible. Some of the countries hit by financial crisis (Greece, Ireland, Spain, and Cyprus) have their public budgets wrecked from saving their banks and therefore lack the financial means for a large stimulus. Even in the USA a political consensus for an even higher deficit couldn´t be reached, so that the fiscal stimulus was too small to lift the economy out of recession, according e.g. to P. Krugman and Skidelsky (2014).

Critical voices challenging the wisdom of austerity in a recession must answer two questions

1. Who is prepared and able to give credit and at what interest rate when the likelihood of default is high?
2. How can the problem of moral hazard be avoided when the sovereign might shy away from tough spending cuts at home and take even more foreign savings and/or "solidarity money" instead?

In the European law, there are some legal limits to credit and debt enshrined and in national law of all EU members states a reduction of debt is required ("European Compact"). Therefore, the political and legal framework in the EU goes against huge deficit spending activities.

2. Lack of and/or obsolete capacity

"Deficit spending" might be the right choice when the productive capacity (i.e. physical capital stock) in an economy is not fully utilised. In this situation, additional demand can be satisfied by re-running idle capacity. Unemployment, however, might persist because there is not enough capacity available for giving everybody a job. This situation can occur after the burst of a speculative bubble: In USA, Spain and Ireland the construction industry provided many jobs during the credit driven surge in housing. After 2008 the volume of construction decreased significantly and workers can´t easily switch to some other profession – even if there were job vacancies to fill, let´s say in biotechnology. A similar situation holds for jobs in the financial industry.

An increase in labour supply from immigration or a growing population could contribute to a lack of capacity as well. Investment into additional capacity is necessary. After the burst of a bubble, in high debt and in an environment of uncertainty, however, private investors and banks will not venture to expand.

Furthermore, in some countries the "old business model" is obsolete or at least, locking this county into less lucrative fields of activity. How can, e.g. Greece, generate attractive income in the future beyond the established but exhausted areas agriculture, tourism and shipping? The turn-around of the economy needs time and resources for innovation under "trial-and-error". European or national bureaucrats do hardly have an advantage when it comes to picking the winning business fields of the future.

3. Deficient institutions

The ongoing crisis is not just a very deep recession with extremely low capacity utilisation. It revealed weaknesses in industrial structures and in many parts of the society. Reforms are needed that touch the interests of special, well organised, groups and require an overhaul of many fields of social and economic institutions and policies. Different groups in society – powerful and weak ones, must shoulder the adjustment costs. Dramatically pronounced was the need for reform in the so called "transformation countries" of the former "Eastern bloc". The "peripheral" members of the EU are under hard pressure as well. Institutions like government and

parliament, administration and the legal system are tantamount for an orderly process of change. Deficient institutions lead e.g. to long procedures in courts, weak implementation of tax laws, high levels of corruption and an underperforming educational system (Huemer, S., B. Scheubel and F. Walch, 2013). In the "Southern Eurozone" the quality of governance is lacking significantly behind the "Core Eurozone" (Gros, D., 2011; Böwer, U., V. Michou, et al., 2014; Beblavý, M. (2015).

The position of a country against the performance and situation of other countries is evaluated in benchmarking exercises (World Economic Forum (WEF), 2015; World Bank, 2015). Again, it is crisis countries, e.g. Greece, showing an inferior rank and performance when it comes to "Ease of doing business".

It is predominantly the educated elite of a country holding positions in decision making institutions of a democracy as well as in influential interest groups. If the members of the elite are bound to lose from reforms, the process will stall, as can be seen e.g. from the elusive fight against tax evasion, the over-manning of the public service and the protection of selected markets of professionals in Greece (Eleftheriadis, P., 2014).

Example: Road transportation services in Greece

Access to the market for road transportation services is restricted by licenses in Greece. The number of licences is too small, so that the price for transportation services is higher than in comparable countries. Selling a licence upon retirement is the pension scheme for owner-operated lorries. When the Greek government tried to open the market, the value of the licence would have fallen drastically; this resulted in fierce resistance from lorry operators, which set up blockades all over the country, damaging the important tourist business.

When it comes to reforms, social capital (Putnam) in a society is crucial. It encompasses trust into the state´s institutions, readiness to sacrifice individual advantages for the public good and a climate of cooperation between government, trade unions and employer´s associations. Countries with large social capital can implement reforms faster and more successfully. The German system of co-decision is an example for cooperative structures, while France demonstrates the problems of rather hostile industrial relations (Dustmann, C. et al., 2014). Countries with good institutions, low corruption, adequate levels of competition and better education systems typically perform better than countries without such features (OECD, 2014d).

4. Debt-deleverage and balance sheet recessions

For an economic recovery based on private investment and consumption three conditions must be met:

1. A sentiment of optimism for the future, where spending and investment decisions are taken, is starting a self-fulfilling prophecy ("Business cycles are about psychology").
2. Companies and households must be ready to expand based on credit instead of hoarding cash and saving.

3. The financial industry must have room in the balance sheet for the generation and handling of additional credit.

While the first condition might materialise after a while, the second condition is blocked by a burden of private debt and the third by too many non-performing loans in the books of commercial banks plus steeper regulatory requirements for equity ("Basel-III"). Companies and households will go on paying back part of their debt burden instead of taking on new (net) credit while banks might reduce their credit volume – even to healthy customers ("credit crunch"). In macroeconomic terms, the effect is contractionary, since overall demand stays flat or even shrinks. The ongoing recession or the – at best - sluggish growth are the result of **debt-deleverage** (Fisher, I., 1933; Koo, R., 2008; Keen, S., 2011). The macroeconomic effect of all individuals bringing their balance sheets back to "normal" after the burst of a debt bubble is a **balance sheet recession** (Koo, 2008). Expansion will not start, before balance sheets are cleared of too high debt – regardless how this might be achieved.

5.6.1.3 Conclusion

There is no simple choice between the two polar positions "austerity versus growth". Bringing debt levels and deficits down is necessary and at the same time, simply pumping more borrowed demand into dysfunctional structures is not a sustainable strategy. For each country and each time span a specific analysis and strategy is needed. It is open, however, whether enough time and credit can be found, and whether the stakeholders in a country are ready to implement reforms.

A populist debate blames the mentality of "the Germans" for an obsession with budget consolidation beyond economic logic ("The German …", 2014). Contrary to this simplistic view, the German population feels like being dragged into paying for other countries, because they seem to shy away from budget cuts at German cost.

5.6.2 Export surplus

Additional cash flow could come from an increase in exports. The challenge is to become more competitive internationally. Members of the Eurozone can´t use the most common tool for supporting their exports: Devaluation of the currency. This seems to be a disadvantage of being member of the currency union – and leaving the union seems to be recommended. This reasoning, however, is not fully convincing, since the relation between exchange rate and exports is more complex. A closer look at the variables influencing export performance reveals three explained factors:

1. Price competitiveness of the exporting firms in a country in the world market
2. Boom in the business cycle of the receiving country triggering additional demand for imports
3. Match between the specialisation of the exporting country and the specific needs of the importing country.

Ad 1. Increase export by improving (price) competitiveness

If a product is sold via price competition, then cutting production costs is an option for lowering prices. Labour cost per unit of output („Unit labour cost“) can be lowered by cutting wages per hour or by increasing the output per hour worked, i.e. by increasing labour productivity. Wage cuts are not popular, and can lead to a frustrated workforce and social unrest; both will depress productivity. An increase of productivity needs investment into modern equipment, more skills and training as well as a reorganisation of production processes. This is time consuming and requires a consensus in society between politics, trade unions and employers. One more option for gaining price competitiveness on foreign markets quickly is devaluation of the currency. This cure has some nasty side effects however: Imports of raw material and intermediate goods get more expensive, cancelling out part of the gains. Furthermore, foreign holders of national currency suffer a loss of assets according to the rate of devaluation and consequently the interest rates must go up in order to stem a flight of capital. Increasing interest rates however tend to dampen credit based consumption as well as investment. Last, not least the advantage from devaluation covers up other reasons for a lack of competitiveness and postpones necessary but maybe painful structural reforms.

In some product markets, lowering prices would not support more exports. This holds for products, that are not very much price sensitive. Instead, it is quality, after-sales-service and image that count more. The same applies to unique and customised products, e.g. premium cars and machinery.

Ad 2. Boom in the customer countries

The development of demand in the destination country might be more important than the prices of the exported goods. When the business cycle is in recession, then the purchasing power of consumers is low and producers tend to invest less. In this situation lower prices will not increase exports by much - and vice versa (Deutsche Bundesbank, 1997a). Examples are the market for efficient, small and low-margin cars, that are sold mostly in depressed Southern European countries and the market for high-margin premium cars: The world´s largest market for those cars now is booming China. Producers that are specialised in the currently depressed markets have little or no leverage by lowering prices.

Ad 3. Specialisation and structural match

The match between demand and supply helps to understand export performance. Examples are transformation countries (CEEC, China, Russia); they need machinery and transportation equipment for (re-) building their stock of productive capital. They buy those goods not predominantly based on lowest prices but on high quality of after-sales-services. By historical incidence, Germany is specialised in the type of products, those countries need. In those market segments, a high value is added and highly skilled labour is needed, so relatively high income is earned. Greece has a different "business model": It is specialised in Mediterranean agricultural products, is a tourist destination and is home to – non-tay-paying – shipping magnates. In those markets, modest incomes only are generated and competition from countries like Spain, Turkey and Northern Africa is fierce. The differences in income and unemployment between Greece and Germany can partly be explained by

specialisation. The underlying structures can´t be changed quickly - if at all. Greece is locked-in into an inferior economic structure.

Conclusion

"More exports" isn´t an easy route out of debt, because it is not at the discretion of governments to export more. Even if an export strategy could be politically feasible, it would be a rather long-term effort and would require a structural and institutional overhaul of the country.

6 Institutions supporting sovereigns

The bankruptcy of a company is covered by legal procedure in national law. There is no standard procedure in place, however, for the default of a sovereign (CIEPR, Ed., 2013). Instead, the International Monetary Fund (IMF) is in charge of handling sovereign bankruptcy of one of its members on a case-by-case base. In the context of the financial crisis in the EU, some ad-hoc measures were taken and a new institutional framework is emerging: The European Stability Mechanism (ESM); other measures of debt mutualisation (Euro-Bonds, redemption fund, etc.) are discussed. Furthermore, the ECB gradually but significantly is extending the interpretation of its mandate by providing cheap and abundant credit to debt-ridden sovereigns and banks under the pretext of doing monetary policy.

6.1 International Monetary Fund and "Clubs"

The International Monetary Fund (IMF) was founded for supporting its member states in cases of balance of payment problems in a US-Dollar based system of fixed exchange rates. In a sovereign´s bankruptcy "credit under conditionality" is provided, when financial markets no longer lend to the respective state. This follows the idea of an illiquid country in need of two things: Credit and reforms. The underlying assumption is that bad governance, bad economic policy and bad luck brought a country into financial trouble and that after some time and under painful policy corrections the financial problems can be overcome. Since painful changes in policy aren´t implemented easily by incumbent governments, the Fund imposes those policies as a condition for help ("conditionality"). The IMF is not allowed by its statutes to lend to insolvent member countries, because in this case it would be clear from the beginning that the credit would be lost. The same holds, if the forecasts aren´t "promising", i.e. the expected future economic situation of the recipient country might not allow for servicing and paying back the IMF-loan.

The IMF takes action only, when the problems are obvious already and the country applies for support. This tends to be too little too late. Furthermore, there is a lack of legal provisions, which could enforce a haircut and other measures against the will of private creditors as well as against public creditors to the country (IMF, Central

Bank, other governments). This gives “holdouts” an incentive not to agree on a “private sector involvement” (PSI). Therefore, the IMF debates to setup rules for sovereign debt restructuring. There is no agreement between all the funds members, so far, on such rules (Krueger, A. O., 2002; IMF, Ed., 2013).

Critique of harsh austerity measures hitting especially the poor and hampering future growth prospects emerged (Cavanagh, J., M. Arruda, et al.,1994; Stiglitz, J., 2004), so that the fund softened the approach. In the Greek “rescue operation”, the Fund pleads for less harsh austerity requirements, while the EU tends to take a tough stance.

The global integration of capital markets brings about a dense and diffuse net of global borrower-lender-relations using a great variety of instruments and regulations. This complexity tends to be a problem, when sovereigns are in need of debt rescheduling:

- There is no encompassing documentation on who did lend how much in what currency, under what legal conditions and with what maturity.
- It is not known, by how much individual lenders are involved in the respective country and whether they could survive a significant haircut without major spill over effects.

One aim of rules for an orderly bankruptcy is the fair distribution of losses to all lenders involved. In case of a sovereign bankruptcy a forum is needed, where all lenders come together, exchange information and negotiate a joint agreement for rescheduling debt. For non-performing lending between public institutions and states, the **„Paris Club“** provides a platform. It is an informal association of countries. The Club holds meetings and exchanges information, but rescheduling is negotiated under the umbrella of the IMF. The debt normally results from state guarantees for trade deals or from credits granted for economic development. Rescheduling of private lending, e.g. borrowing of the sovereign in international financial markets, is debated in the **“London Club” (**Deutsche Bundesbank, 2013b).

Conclusion

While the IMF is a useful organisation for liquidity problems of sovereigns, it has neither a mandate nor instruments, when it comes to

- tackling or preventing financial problems early – best, before they emerge.
- solving the trade-off between austerity imposed by conditionality on the one hand and supporting growth on the other hand.
- dealing with insolvency problem of sovereigns.
- reducing existing debt.

6.2 Mutualisation of debt

Some members of the EU, respectively of the Eurozone, face difficulties servicing existing debt and gaining access to fresh credit under manageable conditions, while other member states are in better shape financially. Those differences became pronounced by the financial crisis. One strategy of financial support is mutualisation of old and/or new debt. The common denominator is "shared creditworthiness". The liability for borrowed capital is shared between "strong" and "weak" member states. There are several instruments for mutualisation discussed – some are installed already.

6.2.1 „Rescue Umbrellas" (EFSF, ESM)

When the financial crisis erupted in the Eurozone, it took the institutions of the EU by surprise. There was no mechanism in place in the established European Treaties for providing support by the European Community. To agree on a set of support instruments and to enshrine those in a re-written treaty, signed and ratified by all member states, would have been too time consuming – the problems needed a rapid response. The work around unanimity was setting up a company in Luxembourg (EFSF) for providing guarantees for the borrowing of countries in financial problems. In parallel the members of the Eurozone worked out an intergovernmental "Treaty establishing a European Stability Mechanism" (ESM); this treaty is outside of the framework of the European Treaties. The ESM is a permanent International Financial Institution (IFI) under public international law. The ESM´s Board of Governors, i.e. the members finance ministers, takes the important decisions with unanimity. In case of voting with qualified majority, 80% of votes are needed for consent, while each member has votes equal to the number of shares allocated to it in the authorised capital stock of the ESM (ESM-Treaty, Article 4 (7)).

The ESM´s instruments are

- Precautionary credit lines, i.e. the right of the recipient country to call in a certain amount of credit without delay.
- Loans with a maturity of up to 30 years – or even longer.
- Financial assistance to recapitalise banks, channelled through the sovereign´s budget, i.e. increasing the sovereigns public debt. After the planned "European Banking Union" being operational, the ESM will have the right to recapitalise banks directly – lowering the debt burden of the sovereign.
- Buying member´s sovereign bonds in primary and secondary markets.

Conditions for the support granted are not market based, but close to the interest rates, the ESM has to pay, plus some overhead for management. This makes credit available at a very favourable price to financially distressed sovereigns.

The receiving members must commit to a strict programme of reform and budget discipline ("conditionality") and is under supervision of the "Troika", i.e. a group from IMF, ECB and European Commission.

The ESM has a capital of 700 billion €, contributed by the member states in proportion to their economic size, i.e. according to their share in the ECB. The maximum amount of credits to be generated on this capital ("fire power") is 500 billion €, while the remaining 200 are held back as a equity-like buffer in case a credit granted does not perform.

The ESM generates capital by emitting bonds in the international financial markets. The price of borrowing depends on the creditworthiness of the mix of members; e.g. in December 2012, shortly after the ESM had started, a rating agency downgraded the ESM, because its second largest member, France, was downgraded. In the design phase of ESM some members wanted to install a "joint and several liability" clause. According to this rule, every single member is liable for the whole amount of all credit taken. An investor could make one of the many member states pay its full claim. The respective member state can try later, to make the other members pay their parts. However, what would happen, in case some members of the ESM run into financial difficulties and can´t shoulder their fair share? The other members must pay. Since members like Italy, France, Belgium were, and still are, in tense financial and economic situations, countries like The Netherlands and Germany fought for restricting liability to each member´s share of capital. However, this restriction might not hold if there was a severe financial crisis again. At least in those circumstances a full mutualisation of ESM´s debt will happen.

In September 2014, a very interesting discussion emerged in the media (Gammelin, C. and C. Hulverscheidt, 2014): Shouldn´t the capital of ESM be used for financing some other European investment projects, as long as some capital is left in the moment? The president of the European Commission, Juncker, as well as the president of the European Parliament, Schultz, are reported in media as supporters of this idea. This is one more example of the "common pool problem", where an existing pot of money always evokes some ideas on more public spending – especially when the resources come from third parties (Eichengreen, B., R. Feldman, et al. , 2011:16). The text of the ESM-treaty (Article 8 (3)) clearly forbids such a use of the ESM´s capital, and a change of the treaty needs unanimity. Political pressure might lead to a way around.

Troika (ECB + European Commission + IMF)

Mostly emerging economies used to be recipients of support from the IMF, while developed "rich" countries were the donors of credit via the fund. This picture changed with the financial crisis hitting even some member states of the club of (relatively) rich countries: The European Union. When some European countries were at the brink of collapse in 2010, the EU didn´t shoulder the rescue effort alone. It invited the IMF into the Troika, i.e. a group formed of representatives from IMF, ECB and EU-Commission. The official rational for involving IMF was its outstanding expertise in those situations as well as the funds available. A hidden goal might have been, to include the "bad guy" into the implementation of

conditionality, because EU-members showed repeatedly a soft stance when it came to imposing tough rules on the fiscal conduct of other members.

The Troika pays regular visits to countries under ESM-support and enforces conditionality even at high cost to society. While the Troika has no formal right to decide, its assessments and negotiations lay the ground for lending decisions taken by the ESM. The Troika became a hated visitor to Greece and drew much of the frustration of the population ("Greece's troubles …", 2014). The criticism on the conditions imposed centres around the debate on austerity:

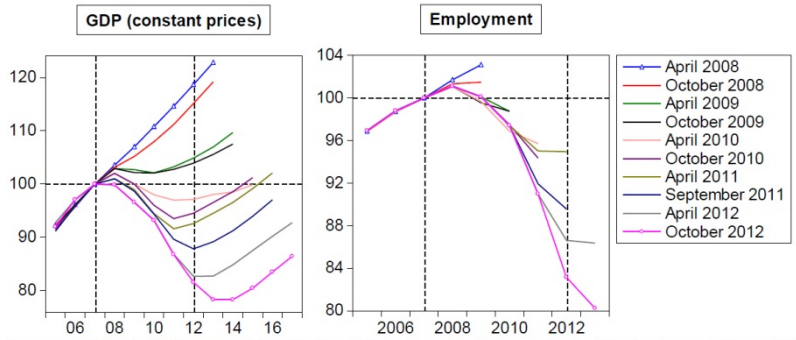
- Are cuts economically wise in times of a recession at all?
- Is the burden sharing between different groups in the society fair and balanced?
- Do the detailed "to-do-lists" imposed by the Troika on the receiving country violate democratic rights and self-determination?

Behind the national pride shown, there might be hidden some rent-seeking of special interest groups, that are pressed to give up economic advantages.

Deliberate over-optimism in forecasting

Support should go to a sovereign only if it is illiquid but solvent. An insolvent borrower will not be able to honour his debt – credit then is involuntarily converted into a grant. The Eurozone countries under the "rescue umbrellas" have large amounts of their debt shifted to public lenders (IMF, ECB, ESM). Public lenders, however, are not allowed to support insolvent countries. This might be one reason, why in the growth forecasts of the IMF for the next years a persistent "strategic over-optimism" can be identified (Graph by Darvas, 2012): A more realistic, i.e. pessimistic, forecast would reveal the insolvency of borrowers like Greece rendering. A general trend to over-optimism in forecasts of budget deficits was found by Frankel (2011).

Figure 1: GDP and employment outlooks for Greece, as projected by the IMF at different dates (2007=100)



Source: IMF World Economic Outlook published on the dates indicated in the legend. Note: IMF publishes GDP projections five years ahead, while employment projections are published only for two years ahead. The two vertical lines indicate 2007 and 2012, respectively. GDP is measured in constant prices.

Darvas, Z. (2012), The Greek debt trap: an escape plan, BRUEGEL policy contribution (19): 1-22.

Critical aspects of ESM

Some of the critical points in the ESM framework are

- The pooling of creditworthiness of "strong" to "weak" borrowers can undermine the credit rating of the "strong" countries and increase their credit costs.
- In case a crisis country does not service its credit in full, the strong countries will have to shoulder the bill, regardless of what the rules say.
- Pressure on weak countries to reform does softens, since they now can go on borrowing without having to demonstrate as much budget consolidation as without ESM.
- The ESM sometimes is titled an insurance, all members could benefit from some day. Since risk of sovereign default is asymmetrically distributed among member states, it might be just a specific group of members benefiting.
- For large countries like Italy and France, the obtainable support from ESM would be far too little; this framework will end, when one of those countries gets deeper into financial problems. A significant increase of the "fire power" of the ESM would require a positive vote of the Deutsche Bundestag for more German support to crisis countries. France and Italy are "too big to fail" and "to big to be rescued" in the same time – a dilemma without a solution.

An early assessment of the EU-IMF assistance programmes to Greece, Ireland and Portugal show a rather mixed and sober outcome (Pisani-Ferry, J., A. Sapir, et al., 2013).

6.2.2 Eurobonds

Some EU-countries suffered a steep increase of the price of credit and consequently lost access to financial markets. A much discussed but not (yet) installed instrument in this situation could be Eurobonds. Those bonds would be emitted not by a single sovereign but by a group of Euro-countries. The bonds would carry **"joint and several liability"**, i.e. each member would be liable for the whole amount of bonds. So the economically strong members provide implicitly guarantee for the weak members. Each country can get new credit at an average interest rate. The hope is that enough strong countries are member of the club for achieving a low interest rate.

This sounds like a good idea to Eurozone members with a large banking industry (Luxembourg) or with debt problems (Italy, Greece). Eurobonds would provide access to (unlimited) credit without the burdensome conditionality imposed by the ESM-framework. Other countries (Germany, Finland …) strongly opposed this idea, because they were afraid of the "moral hazard" problem: If shouldered the burden of a defaulting loan, then the borrower wouldn´t have any incentive to restrict spending and/or raise revenue.

Eurobonds could overcome moral hazard only, if all Eurozone members had the power to reign in the fiscal conduct of other member states. This was tried by the

"Stability and Growth Pact" of the Maastricht treaty (1992) and by consecutive amendments and new procedures ("Fiscal Compact"). However, overspending and a lack of reform go on and no foreign government can do something about it within the EU framework. If all fiscal power (public spending, taxation) as well as economic policy would be transferred to the supranational level ("community method"), moral hazard could be stopped. Only a wise and powerful government in Brussels – without taking care about being re-elected – would be in the position of reducing sovereign spending and starting necessary structural reforms for more innovation and growth. In other words: Moral hazard might be overcome in a centralised European dictatorship, only. A complete transfer of power to a supranational power is not what a majority of European citizens wants at the moment. A transfer of powers without consent of citizens would destroy democracy in the EU.

Besides the problems with democratic legitimation, there are more downsides to the concept of Eurobonds:

- Eurobonds would weaken the impetus for reforms in weak countries.
- The rating would go down, since uncontrollable bad risks would be included; S&P even announced to give "Junk-Status" ("Ratingagentur S&P …, 2011). This would increase credit cost significantly for all countries, hereby aggravating the debt sustainability problems.
- A Eurobond would result in borrowing cost somewhere between the best and the weakest members. Consequently, borrowing costs for today´s crisis countries would be lower, compared to facing the capital markets on their own feet. This would open the door to more deficit and debt for the weak members, due to moral hazard.

Conclusion

Eurobonds would be rather a problem than a solution. The opposition from the stronger European economies is justified based on experience with the (failed) implementation of fiscal rules in the EU so far.

6.2.3 Redemption Fund

Many countries entered the Euro with an already high debt burden, while others accumulated huge amounts of debt as fallout of the financial crisis. This legacy of debt overhang now stands in the way of a economic recovery. The German Council of Economic Advisers developed a proposal of temporary debt mutualisation for this overhang of "old" debt: The **"Redemption Fund and Pact"** (DRF/P). For an overview of this idea as well as for further sources see Tumpel-Gugerell, G., Ed. (2014). The idea in short is as follows:

- A financial organisation, the fund, owned by Eurozone member states, would issue joint bonds in the global financial markets; this would be guaranteed "joint and several", i.e. by all Eurozone members to the investors. Therefore, access to credit might be easy and relatively cheap for

the fund, since at least some creditworthy countries are members of the fund.

- The fund uses the credit acquired for buying "old" debt of the members, until the respective member reaches the "legal" debt-to-GDP threshold of 60%. Therefore, each member no longer must take care of refinancing the debt overhang. Since creditworthiness will improve, the danger of default is banned as well.
- In the same time, each member country is committed to paying back its part of debt to the fund over the next 20-25 years. For being able to fulfil this obligation, each member must reduce deficits and achieve a surplus ("Redemption Pact").
- A mutualisation of debt will occur in case a country isn´t ready or able to honour its obligations: Other members then have to shoulder the bill. Additionally, each member should provide collateral to the fund, e.g. its national central banks currency and gold reserves.
- The fund should not provide an unlimited mechanism of debt mutualisation, but shall be a temporary institution, to be closed after 25 years and restrict itself to "old" debt in excess of 60% of GDP.

This mutualisation of debt is an alternative to a collapse of some Eurozone members. A restart of the economy of countries having too much legacy debt is hoped for.

While more economic expert groups supported this idea, at the same time others raised severe objections:

- The legal framework for such a fund isn´t there in the EU and will not be agreed upon easily and quickly.
- How can citizens trust an agreement to be binding for over 25 years, when they feel that in this crisis politicians broke promises frequently.
- Up to today, there hasn´t been any international power strong enough to reign in national fiscal policy. Pacts and limits on spending and deficits are violated without consequences. Why should this change in the proposed fund?
- Moral hazard is inherent in debt mutualisation. If it can´t be overcome, the solvent members of the fund will end up with the bill.

Conclusion

The concept tackles the core of the problem. However, in the European political arena there is no consensus on such a fund – partly because citizens of Germany and other countries don´t trust the long-term ability and willingness of some debtor countries to stick to the pact.

7 Saving Banks

Many **commercial banks** held large amounts of assets of dubious value, e.g. sovereign bonds of technically bankrupt countries or claims against other financially distressed borrowers. A bank is forced by regulation to price the assets according to current market value. Consequently, a fall in value triggers the depreciation of the respective assets in the balance sheet – wiping out part of the bank´s equity. Before the crisis, banks showed a very risky asset-to-equity ratio, so that a few percentage points of depreciation were enough for pushing the bank over the limits. When the real estate markets collapsed, many banks – especially in Ireland and Spain – ended up with huge portfolios of non-performing loans. In the crisis, it became conventional wisdom that the default of a bank must be avoided – even at a high price to the taxpayer. The rationale behind this credo is fear of panic and contagion.

Additionally to reported losses and looming bankruptcies, there is fear of more undisclosed problems popping up in the balance sheets of the financial sector. This uncertainty destroys trust in the interbank market and restricts lending capacity of the financial industry to businesses.

In order to prevent the collapse of banks and to get the flow of credit into the real economy going again, the balance sheets of banks need to be repaired, using two strategies:

1. **Re-Capitalisation:** Raise more equity in order to refill the depleted stock or to enlarge the safety buffer against "toxic assets" or give guarantees for credit.
2. **"Bad Bank":** Clean the balance sheet by moving "toxic assets" out of the institution into some extra entity, called bad bank.

7.1 Recapitalisation

When there is not enough equity for covering losses, then the bank could try to find more investors for its shares, so that the depleted stock of equity is refilled. Offering shares of a bank in trouble, however, might not work at all, or at a very low share price only. In the USA the government "convinced" large banks into mergers and acquisitions, where strong financial institutes had to take weak candidates on board. Furthermore, the government offered all major banks a partial nationalisation of the institutes. As an owner, the government had influence on the banks strategy and business conduct. Shortly after the crisis started (2008), the US-American government forced healthy and ailing banks to accept additional public capital support. The portfolio of bank shares held by the state contained mixed risks, so the total risk for the taxpayer was lower than in case of nationalising failing banks only. The American taxpayer became owner of a slice of the financial sector, when the price of the shares was low. After a consolidation of the financial industry, the government recovered part of the cost of banking rescue operations by selling the

then revalued shares. German banks strongly resisted a forced recapitalisation in 2011 (“Der Gegenspieler”, Handelsblatt 14.10.2011). Germany set up a public fund (SoFFin) for recapitalising banks. The capital was given as “silent participation” or guarantee predominantly, i.e. the state didn´t have a say in day-to-day business. A bail-in of owners and investors wasn´t implemented. In the case of “Commerzbank”, the shareholder still received a relatively good price for their shares in a bankrupt bank and bondholders were not bailed-in.

The Spanish financial industry was in severe trouble. At the same time, the Spanish government was forced to reduce deficit and debt. A recapitalisation of the Spanish banks would have forced the state to take on more debt. Financial support from European sources (ESM) can´t be used for recapitalising banks directly. The loans are granted to the state, and the state passes it on to its banks. If the Spanish state would had recapitalised banks based on ESM support

- the debt of the Spanish government would grow and
- it would have had to accept “conditionality” coming with the support credit.

In order to avoid these consequences, Spain was reluctant for quite some time to accept “help”. After the full implementation of the European Banking Union only, the ESM will have the mandate of giving capital to banks directly.

7.2 “Bad Bank”

Since risky asset and non-performing loans in a bank´s portfolio will not find a buyer in the market at an acceptable price, a publicly owned institution must take those “toxic assets” on board: A “Bad Bank”. This financial institution doesn´t do normal banking business and consequently, doesn´t need to fulfil banking regulations on minimum equity endowment. A transfer of assets at a negotiated price will clean the balance sheet of the bank. The difference between the value of the assets in the accounts of the bank and the transfer price received from the “Bad Bank” must be depreciated; in case this asks for more equity than the bank has left, a recapitalisation must go with the transfer.

The intended effects of bad banks are twofold: A revitalisation of the financial industry and a later recovery of part of the assets parked in the “Bad Bank”. A “Bad Bank” will step in when the price of the “toxic assets” is very low. The valuation could go up again, when the respective market recovers after some time. However, this is not for granted and the price could go down even further.

In Germany, bad banks are trying to balance instantaneous support with a long-term participation of investors and the taxpayer in the future profit or loss of the “Bad Bank´s” assets (Deutsche Bundesbank, 2009:54-57). With the full implementation of the European Banking Union, a new mechanism for banking rescue for all participating EU member states will come into force.

7.3 Who pays for saving banks?

Total financial crisis aid amounts used by aid instrument as a % of 2012 GDP		
	2008-2012 recapitalisation and asset relief	2012 Outstandig guarantees and liquidity measures
Ireland	40,0%	51,5%
Greece	19,2%	33,6%
Belgium	10,7%	12,2%
Cyprus	10,1%	12,6%
Spain	8,4%	7,2%
United Kingdom	6,5%	2,9%
Portugal	6,0%	10,1%
Luxembourg	5,9%	4,5%
Germany	5,5%	0,4%
Denmark	4,4%	0,5%
Latvia	4,3%	3,0%
Netherlands	4,0%	3,5%
Austria	3,2%	3,8%
Slovenia	2,1%	0,6%
France	1,3%	2,6%
Italy	0,4%	5,5%
Hungary	0,2%	0%
Sweden	0,2%	1,1%
Bulgaria	0%	0%
Czech Republic	0%	0%
Estonia	0%	0%
Lithuania	0%	0%
Malta	0%	0%
Poland	0%	0%
Romania	0%	0%
Slovakia	0%	0%
Finland	0%	0%
Total EU-27	**4,6%**	**4,1%**
Source: http://ec.europa.eu/competition/state_aid/scoreboard/financial_economic_crisis_aid_en.html		

The question arising from saving banks: Who has to shoulder the loss and must pay for the clean-up? In a capitalist economy with private property and individual decision-making by owners and in,vestors, risk and reward are with the owners and investors. Consequently, they should accept the negative outcome of their decisions. In contrast to this norm, various powerful stakeholders can influence the distribution of losses in the financial crisis. In the recent past, the state bailed out banks, without bailing in owners completely, first. Dübel (2013) tried to find out, whether creditors to Greek, Cypriot and Spanish banks were bailed in properly. He found long delays in bailing in, so that creditors had time enough to rearrange their holdings and shift losses to the taxpayer.

Most European countries invested a substantial share of GDP into ailing banks for recapitalisation (4,6% of GDP) and for guarantees (4,1% of GDP) (see table). An over-proportionally high commitment comes from the “crisis countries” (Ireland, Greece), while even “core EU countries” (Germany, Austria, Netherlands) are heavily involved. Being a member of the Eurozone or having high public debt doesn´t play a role when it comes to saving banks. In the case of a guarantee, the public support could be recovered, in case the bank manages without.

The Irish case

Irish banks had built up a huge speculative bubble in real estate. This bubble imploded as part of the financial crisis and Irish banks were technically bankrupt. Rumour has it that the Irish state was pressed into saving the over-sized Irish banking industry (“PRESS RELEASE: 6 November 2014 - ECB publishes letters from 2010 on Ireland", 2014). Putting pressure on Ireland behind the scenes were

the governments of Germany and France, because banks from those countries were heavily involved in Irish real estate financing via Irish banks. The rescue of the Irish banking industry minimised the loss to the foreign lenders but will absorb large amounts of Irish taxpayer´s money and put a burden on the next generations, since the "rescue money" is based on credit the Irish state took on.

This is an example of shielding the investor and making the wider public pay.

7.4 Conclusion

The wider public didn´t accept the recent bail-out of banks. Some disliked the "unfair" shift of burden away from the owners and investors to the taxpayer. Others see the banks and bankers as scapegoats of the crisis and would like to see them punished.

Beyond populism and issues of fairness, there is moral hazard involved in saving banks: If investors and owners can hope to privatise profit and socialise losses, they will continue taking too much risk.

If every bank is saved in an over-banked market, there is not enough business volume for all banks. Consequently, banks will run higher risks, in order to have the chance of higher profit. If Europe is overbanked, as ESRB thinks (ESRB's Advisory Scientific Committee, 2014), then closing some ailing banks would be better for the health of the complete financial industry.

It isn´t easy to assess, whether it would have been cheaper for the taxpayer to let the banks fail. In case of contagion and a breakdown of major parts of the financial industry, the fallout to society might have been more severe. In order to design a more stable financial system for the future, many suggestions are discussed and measures taken. Those issues will not be subject of this paper.

8 Is there a way out?

There are two pressing problem to be tackled today: Built a more resilient international financial system and handle legacy debt. For the latter there are different scenarios possible in an uncertain future – a forecast is impossible, since there are no "likelihoods" known for upcoming events and triggers. Politicians tend to please voters by promising solutions, however, there is no "silver bullet" available. Measures taken now, e.g. stricter regulation (Basel-III) and new institutional frameworks (European Banking Union) are aiming at the next crisis of the same type, but can´t do away with legacy debt.

Any future handling of the situation will be the result of negotiations between creditors, debtors and different stakeholders. The creditors hope for avoiding unpleasant side effects of a default as well as a total, immediate loss of claims, while

the debtors try to find a way between being cut of capital for quite a while on the one side and having to shoulder the burden of debt in total and for decades.

It all boils down to facing bad investment decisions of the past, where the creditors granted non-performing loans. The struggle is about shifting as much of the loss as possible onto the other side of the game without hurting the own position too much.

The following paths into the future could materialise – a forecast of the most probable scenario is neither intended nor feasible:

1. Kicking the can down the road
2. Clean slate
3. Shock and collapse
4. Full mutualisation ("solidarity")

Ad 1. Kicking the can down the road

Debt keeps on growing rapidly worldwide while inflation and growth stay flat. Monetary policy of abundant cheap credit contributes to an increase in overall debt. The debt-to-GDP ratio deteriorates further and cheap credit can´t be absorbed for productive projects, since governments reached the limits and already over-leveraged banks must scale down risk and business volume. The next bubble is building up from more and more "unconventional" monetary policy generating cheap credit. Social unrest and tension in societies increase. Frustration feeds into violence, emergence of radical parties. International conflicts with the "enemy outside" could be abused for diverting energy away from nationally unsolved problems.

Ad 2. Do away with debt – restart with a clean slate

In order to end debt-deleverage of sovereigns, private households and companies and in order to repair balance sheets of banks, a drastic haircut is needed. This could come in varieties, e.g. ´elegant´ haircuts (prolongation of debt to eternity) or shifting debt from private into public purses. The ECB and ESM will hold large amounts of "sovereign junk bonds"; the senior status of ECB and ESM has to be given up and the taboo of financing sovereigns via ECB will be broken.

Enormous wealth will be wiped out in haircuts, and the middle class will lose private retirement provisions. Quite a few banks have will close as well. The haircut will lay open the fact that many of today´s financial assets are worthless anyway, since the borrower will never be able to pay interest and redemption. The hope is that the turbulences from failing banks and companies can be overcome in a short time span.

Ad 3. Shock and collapse

Many sovereigns, banks and private households are still in a tense financial situation. A single event could trigger fear and contagion with the consequence of a collapse of the system. On the list of shocks are among many others:

- Radical parties winning a general election and no longer honouring payment obligations and/or breaking up the Eurozone in an chaotic default

- Countries leaving the Euro or even the EU and thereby triggering the collapse of the Eurozone
- A prolonged recession pushing major banks into bankruptcy
- A political crisis from "outside" will absorb the problem solving capacity of economies and societies and reintroduce national agendas instead of common solutions.

Ad 4. Full mutualisation ("solidarity")

In the EU, there are economically strong and weak members. If the strong countries were ready to shoulder legacy debt, they would lose competitiveness but could dampen the debt problems of the weak countries. This would involve a substantial transfer of resources and power to a supranational level ("Fiscal Union"; "United States of Europe"). The hope behind this concept is that the combined economic strength is sufficient to pull the whole group back from the brink of collapse. The political will of the populations, however, for such a deepening is not given – at least not now. If some "European elites" would push this concept trough in a future moment of distress, the reaction in the wider public is not foreseeable.

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