Debt-overhang and ways out

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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?

While debt and looming bankruptcy of governments is the focus of media attention, we will not neglect the fact, that households, banks and companies in many countries acquired too much debt as well and are therefore a source of problems of their own right.

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1 Introduction

The focus of this paper is legacy debt and ways out of it. Why we are in this situation and how we 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 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 happy world, nobody needs to care about debt and crisis: Debt is irrelevant, since each debt has a claim a counterpart and a crisis doesn´t exist in a world of fully 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. We clarify why and when debt is too much, and discuss ways of avoiding outright default.

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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 for today´s situation.

For valuable comments I´m grateful to Jens Barthel, Frank Geilfuß and Andreas Wilms. All remaining shortcomings and mistakes are mine.

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 as well as various aspects of debt, like securitization, gross or net debt, debt insurance, exchange rates, interest rates and risk and present value and maturity.

When talking about entities incurring debt respectively providing credit one should distinguish between different types of borrowers and lenders, since in case of problems with debt the 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-Banks

2.1 Varieties of credit

In general, a credit is a contract that can be shaped by borrower and lender. 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 in 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 in 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.

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 today's 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 different maturities of the bonds 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 in 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 € 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 €). 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 lenders 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

A decrease of debt level results from redemption overshooting deficit only; in other words: A surplus in the current budget is needed.

2.2 Borrowers

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

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 is met by less public awareness – at least in the short 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”).

In order to assess the financial situation of a public body, all debt must be taken into account. However, differing from the accounting rules for private companies a sovereign is not obliged to report on all her debt, as the following examples show: Obligations to future payments, e.g. for pensions or for the environmental damages

from climate change, are not included in today's debt statistics. Investing in public infrastructure using "public-private-partnership" (PPP) lets the private sector do the financing while the public household shows the yearly financial instalment only. This "implicit" debt can exceed "explicit" debt by far (Moog, S. and B. Raffelhüschen, 2011). Furthermore, some tricks or outright accounting fraud of the sovereign might disguise the true amount of debt – Greece being a notorious example.

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 then can suffer high depreciations as a consequence. A special type of credit is loans to students for financing higher education; those loans by private financial institutions tend to be guaranteed by the state to the bank.

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 cost 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 generating credit to private households, other financial institutions, companies and states. By borrowing from depositors and from financial institutions, they increase their business volume and the basis for profit. Banks would like to borrow as much as possible for generating more profit. Since over-leveraged banks can pose a problem to the financial system, their hunger for credit is constrained by regulation.

2.3 Lenders

Lending normally is a commercial activity done for profit: The interest paid by the borrower. In exceptional circumstances, quasi-public bodies do non-for-profit 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, 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 banks 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).

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 (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 levels solvency 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 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 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 areas with different currencies and different jurisdictions, then things can get interesting, as is illustrated in the following example: An Austrian bank gave Euro-denominated credit to families in Hungary, where the currency is Forint – not Euro. The credit was used for financing homes, which provided collateral to the Austrian bank – a seemingly safe business. Two factors might affect this credit contract:

a) A **devaluation** of the Forint against the Euro increases the burden of debt service for the Hungarian borrower; he/she must give more Forint for a given amount of Euros and might over-stretch disposable income. In this case, the loan can become non-performing and the bank needs to depreciate the respective asset in the balance sheet. If there are many cases, the bank might get into financial trouble, because depreciation destroys too much of equity.
Could a credit in Forint instead of Euro have avoided the problem? The Hungarian homeowner would be better off, the bank, however, would have to bear the loss from depreciation. Expecting the Forint to weaken against the Euro it would have made the credit more expensive in order to shift the risk to the customer.
b) A further problem for the bank might arise, when it tries to **enforce** her claims under a foreign jurisdiction. The bank might have little influence on parliamentarian processes in foreign countries and can see her 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).

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 rescheduling or restructuring her "old" debt unilaterally, e.g. by introducing a collective action clause or extending maturity (Panizza, U., 2014:5).

2.4.3 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

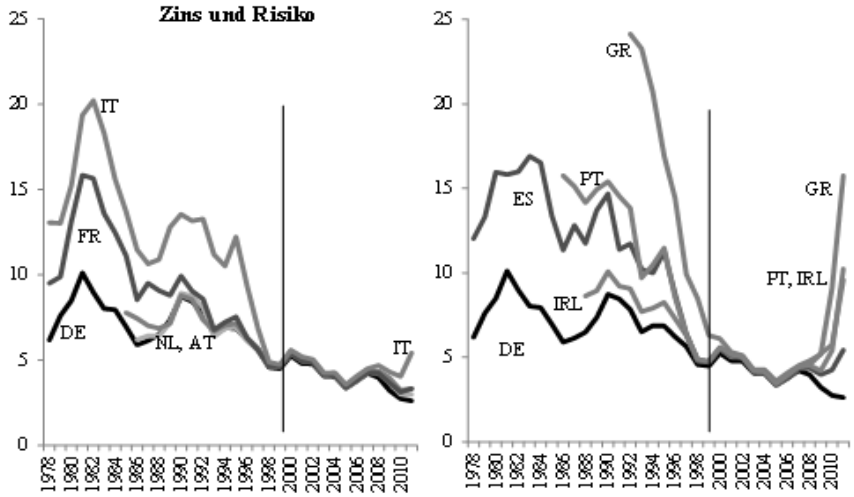
- The exchange rate between the borrowers and the lenders home currency can pose the risk of devaluation; the value of interest and redemption in the lenders currency will decrease.
- Inflation will reduce the real value of future payments, so that the "Fisher-Effect" will lead to an increase of the interest rate by the expected rate of inflation.
- 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 over time significantly – 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 time to maturity, the more unexpected risks can emerge in the future. Therefore, the interest rate rises with the duration of the credit contract.

Lenders want compensation for expected loss: The higher the risk perceived the higher the interest rate to be paid by the borrower. 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 too much into "market prices" of credit.

In sovereign borrowing the spread is the difference in the market rate for credit comparing the „best" country with another country. Recently Germany serves 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. 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" (DeGrauwe, P. and Y. Ji, 2014).



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 model of banks. They work (predominantly) with other people's money. Two debt-

related financial products gained momentum in the origin of the crisis: Debt transformed into securities (securitisation) and insurance of debt against default. Let´s look into those briefly in the following 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 her 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 originating the deal; 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.

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 (2.4.3).

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. 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 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 member´s interest.

The insurance premium asked for in the markets can be taken as an indicator for investor´s perception of risk.

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 of time. 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. 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.

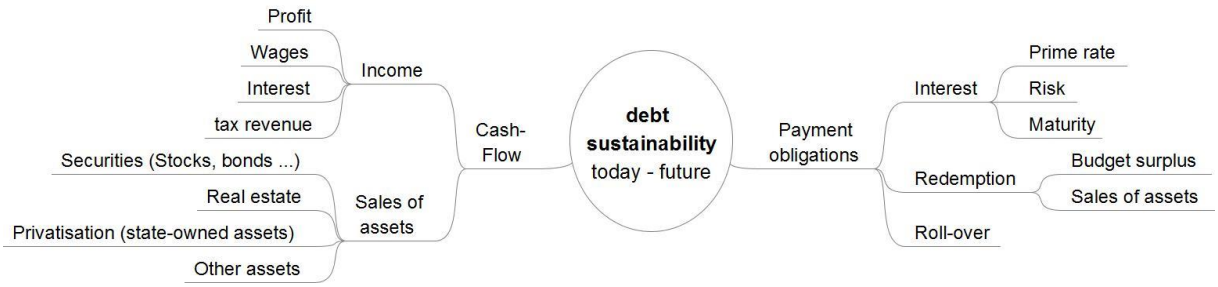
A **“default in disguise”** is the prolongation of a credit into eternity. When a Central Bank played the role of “lender of last resort” and bought non-performing bonds of “her” government, then the government still needs to pay interest and redemption to the Central Bank. Most likely, such a government will not be able to service her 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 as a zombie, but will never be paid back.

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, we try 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 payment obligations in due time, i.e. provide enough cash for paying interest during the loan period and for redeeming principal. 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: She 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 from the passing generation 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.

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, but also the readiness of the borrower to honour payment obligations in full is required for debt sustainability.

Looking into today´s debt levels for assessing debt sustainability is not sufficient: Today´s and future cash flow should be included as well. However, due to lack of data on cash flow the most common indicator used is the "debt-to-income ratio".

3.2.1 Sovereigns

Data on current and future cash flow are not widely available. For assessing the sustainability of **sovereign debt**, the "debt-to-GDP ratio" serves as a (crude) indicator instead. 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". The 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).

Reasons for the ever-growing public debt are not subject of this paper (Brasche, 2013:206-209). It used to be an established consensus that debt above 90% of GDP does have a negative side effect: a decline in growth. The figure was published by Reinhart and Rogoff (2010a) and inspired requests for austerity by 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).

The debt-to-GDP ratio is static and reports on today´s financial situation. From a macroeconomic point of view sustainability might deteriorate in the future, 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 or payment obligations become due in the future, that were not accounted for, e.g. "implicit debt" (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 partly depends on the activities financed by today´s deficit. When a credit is used for

- **consumption** today, then 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 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.

Other approaches for defining and measuring sovereign debt sustainability are the following:

1) Gerken and Kullas (2011:9-21) present an encompassing index. They take a wide variety of variables for future creditworthiness of a sovereign into account and summarise the data into the “CEP-Default-Index”.
2) 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.
3) The European Commission is undertaking a sovereign debt sustainability assessment for 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 undertakes projections as well as sensitivity analysis.

Wyplosz (2011) is sceptical about sustainability assessment, 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.

One could give up on trying to assess sovereign debt sustainability at all. Instead the key 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.

3.2.2 Banks

Generating debt is the core of a bank´s business model: Borrowing foreign assets, e.g. deposits from savers, issuing bank bonds to investors or borrowing short-term in money markets generates the capital that then is lend on to customers at a margin.

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)]
	  ○ Small deposits (< 100 Tsd €)
	  ○ Large deposits (> 100 Tsd €)
	• companies[9)]
	Equity[10)]

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*
© Brasche 2014	

The bank is able to pay back all debt, provided her 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. Regulators require equity as a certain percentage of banks assets, i.e. of loans outstanding. The straightway of computing the safety buffer is taking all assets – regardless of the risk involved in the different loans – and putting those into relation to equity. This ratio is called **leverage**. A more sophisticated approach is "risk weighting": each loan gets a specific risk factor assigned (BIS, 2014:105). If risk is zero, then no equity needs to be provided, if the risk of non-performance is 50%, then equity to the amount of 50% of the loan must be provided, etc. The ratio between risk-weighted assets and capital is called **capital ratio**. The rules are laid down in the "Basel-III regulatory framework" (http://www.bis.org/bcbs/basel3.htm), which is incorporated in the EU-regulations 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). 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 countries 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 fragile financial system. 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 would be a correct assignment of risk, then banks were less inclined to hold those papers and some governments would have even more difficulties in obtaining credit at feasible conditions. As a consequence the fragile situation would deteriorate now. Without proper pricing of risk, however, the stock of sovereign debt in the national banks balance sheets gets higher and higher and might pose even greater problems to the stability of banks in the future.

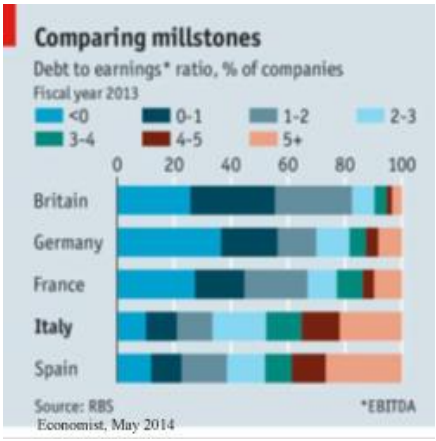
3.2.3 Companies and households

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 tends 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 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).

Some spotlight on the debt-to-earning ratios of companies is given for 2013 in the Economist (graph).



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 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.

Regulations of default aim

- 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 unexpected 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.

2. **Insolvency**: A borrower, even when illiquid, could still be solvent. 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 normaly is based in the assumption, that business activity will continue ("going concern"). With bankruptcy looming, however, assets like goodwill or trademarks must be devalued significantly. Bankruptcy then is 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 in 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 her 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. Default of a sovereign can have economic as well as political causes: A sovereign could refuse to honour her 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 population could resist the transfer of resources to the foreign lenders, especially when this would require painful cuts of social benefits, like food and power subsidies, to the needy.

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 the likely costs and

consequences of a default as compared to the costs and consequences of a rescue operation. The negative consequences of a sovereign default can be:

- **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 made the risk perception of Italy, Spain and France increase, so that the interest rate asked for from those governments increased significantly – turning the countries into problem countries; this is the typical case of a self-fulfilling prophecy.
- **The "bank – sovereign doom loop":** When sovereigns lose access to credit for rollover and deficits, the valuation of bonds traded 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 the population. 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".

Rescuing a sovereign, however, carries some cost and undesirable side effects:

- **"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.

  An example 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. 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.

- **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.

4.3 Problems about banks defaulting

The financial industry is a special sector in a capitalist economy: Providing credit and maintaining the circulation of capital in the economy. Therefore, the risk to the functioning of the financial sector can pose a risk to the whole 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 punished them - instead banks were rescued at the expense of the taxpayer.

Therefore, let´s look into 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 trusting into their assets being safe with the bank. 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 occurs, pushing the bank into bankruptcy. This might not represent a systemic damage in the first place, but contagion of mistrust can spread quickly to other banks and into other countries. Growing pessimism might invoke the negative events predicted: A self-fulfilling prophecy caused by a feedback loop. Saving failing banks is justified by this fear of contagion.

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

a) The collapse of Lehman´s Brothers

Nobody expected Lehman´s to fail – and when Lehman´s went bankrupt in August 2008, then 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) 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 a 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 banks default might weight so heavily on her 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 debt 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 government´s budget in two ways:

- Banks are the main buyers of government bonds. When banks no longer can give credit to the state, then the state might run into financial trouble.
- The rescue effort for national banks overstretched the public resources of Ireland, Spain and Cyprus and triggered a near-default of the respective sovereigns.

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 de-leverage, i.e. reduce the amount of credit granted to customers. 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 expected from a bank´s bankruptcy is the aim of the emerging European Banking Union.

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.

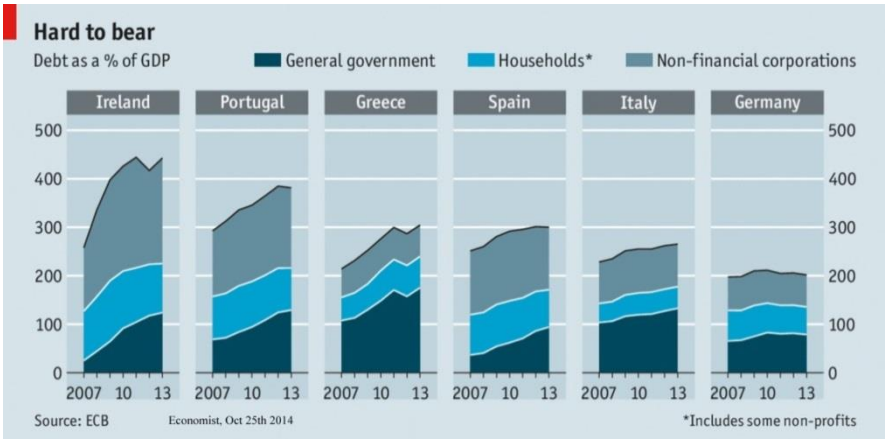
This "relaxed" view holds as long as it is just a few and rather small entities defaulting in the same time. As soon as many and/or large borrowers default, a risk to the stability of the financial system can materialise. Banks might collapse when they suffer too large losses. This is aggravated, when 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 mortgages non-performing, companies defaulting, and consumption and investment decreasing.

Bankruptcy of a large company or problems in an important sector of industry can led to pessimism of consumers and a decrease in aggregate demand, leading 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. The graph gives an impression of this, showing it is not the state alone when it comes to accumulation of debt.



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 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 owners 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 moment 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. A bank run is a well-known example of this herding effect.

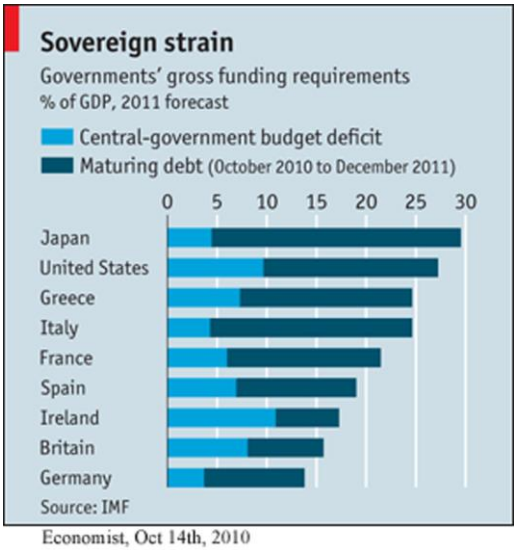
Time can be “bought” by a variety of measures (see below) that involve intervention by public or international authorities. Behind providing more time is the hope for a solution in the future, that is less costly than a default now. In the ongoing financial and economic crisis **time horizons** differ:

- 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. The graph shows the rollover needs of sovereigns to be much higher than the deficit (Economist, Oct 14th, 2010).



Economist, Oct 14th, 2010

2) When current expenditures can´t be covered by current revenue, i.e. when there is a budget deficit, then 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 on behalf of the sovereign in need from international markets. Giving guarantees, passing on credit taken by "good borrowers" or pooling debt are mechanism 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: She 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). 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 her 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 "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 her 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 overspend (deficit) or spend 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 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) emphasis three important aspects, that brought about successful debt reductions in EU countries between 1985 and 2009:

1. Reducing government 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 then 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 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).

- **Resistance** from stakeholders as trade unions or the wider public might prevent the prospective private management from running the then privatised company profitably. 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. Revising figures for future (hoped for) privatisation proceeds into budget plans can reduce the immediate pressure for more budget cuts, but does postpone necessary action further.

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: She can put hands on assets owned by her citizens and force them to shoulder part of the public debt outstanding. There are numerous historic incidents of "financial repression" – even in advanced countries (Reinhart, C. M. and Rogoff, K., 2013).

- The Prussian Empire "convinced" her 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 absolutely safe. Consequently insurance companies and pension funds are lending their customer´s money to the state.
- A **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 also? 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

Companies have two different sources of finance: Capital of the owners of a company (equity) or borrowed capital from other parties (loans, debt). Debt must be serviced (interest, redemption) – regardless of the economic situation of the borrower, while equity is a residuum: The owners must absorb losses and can´t expect a return on equity when business isn´t profitable. For a company it can be attractive, therefore, to convert debt into equity in financially distressed situations. In a **debt-to-equity swap** lenders are "bailed in", i.e. they become owners of the company or bank they lend money to. In the most negative case, an owner loses all equity – the company goes bankrupt. A milder version is, when the business situation picks up again and the value of the shares recovers. A recent example is the turn-around of one of the world´s largest automotive companies, "General Motors". 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.

A special financial product incorporates this changing of sides from lender to owner: **Convertible Contingent Bonds (CoCo).** The lender buys a bond and receives interest as long as the borrowing company is healthy. At maturity the credit is paid back. 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).

Since a state can´t be "owned" under private property rights, a CoCo-like arrangement for **sovereigns** seems impossible. There are some suggestions as well as past experience, however, where sovereign debt can be converted (Mody, A., 2013; Allen, P., Eichengreen, B. and Evans, G., 2014). Sovereign debt could be treated as a contingency claim: Debt from official sources (ECB, ESM, IMF, …) could be written down partly or made payable very far into the future, as soon as a certain trigger is pulled. This could be a debt-to-GDP ratio or the application of a country for official help. The swap would make official credit subordinate to private credit to sovereigns - a breach of existing rules. Legacy debt could be included into such a scheme only, when contracts on this debt are broken. Allen at al. (2014) propose private investors to pay sovereign debt below face value and use this as a "currency" for buying to be privatised assets of the respective government. Both sides could win – depending on the discount on the face value of debt. The authors refer to examples of public debt-to-equity swaps in the environmental field.

The pressing issue of such a procedure remains "moral hazard": If a country can expect to be bailed out anyway, then there is an incentive to borrow more instead of undergoing painful reforms.

5.3.4 "Haircut"

Lenders can agree with the borrower (companies, countries) 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. Those arrangements mostly come with a rescheduling of debt, e.g. a swap of old bonds for new papers with extended maturity and reduced interest rates.

"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 ("Chapter 11"). The loss imposed on a private lender is called **"private sector involvement"** (PSI) in the jargon of finance. An "official sector involvement" (OSI) would be the waiver of public lenders (ESM, ECB, IMF). This could occur when other states or international public organisations did lend to a sovereign. Until now official loans are "senior", i.e. they are exempted from "haircuts".

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 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. 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. The ESM (ch. 6.2.1) makes it obligatory to members of the Eurozone to include CASs into their bonds from 2013 on.

5.3.4.1 Sovereign haircut

A sovereign is defined on different levels and institutional settings, depending on the constitutional arrangements of the 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 degree of independence as well as the obligation to mutual support (bail-out) are different in each nation state.

A historic example for a hefty haircut is the "London Conference 1952" forgiving most of debt to the re-emerging (West-) Germany after WW-II.

The **municipality of Detroit** is bankrupt. One of her large payment obligations is for pensions and health care of her public servants as well as 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, a member of the EU and of the Eurozone, that needed a bailout. 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. Asking private investors for a "voluntary" deletion of claims is called "private sector involvement".

After a haircut the respective country loses trust of investors and access to the capital market. It needs fresh credit for rolling over maturing debt and for keeping the economy and society running. An example from emerging economies is subsidising food and other basic needs for the poor; revolts by deprived populations might otherwise destroy public order and the possibility for future production and earnings. However, even in "advanced" Greece, basic health care no longer is for granted for poorer members of society and political extremism as well as hostility to European integration are growing. A failed state in the southern periphery of the EU will be costly in many aspects; a haircut might be less expensive for the lenders.

5.3.4.2 Haircut for banks

In 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 or suffer loss. A proper cascade of loss bearing would looks like follows:

1. Shareholders are whipped out
2. Creditors lose all non-insured deposits
3. Creditors with insured deposits lose all up to the insured amount
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.

When a country negotiates a haircut, then a loss is incurred on the holders of sovereign bonds; they could run into financial problems by writing-off assets. 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 loans the Cypriot banks lost large amounts of equity and came close to bankruptcy.

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.

In a **temporary moratorium** lenders agree on a suspension of 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 her debt.

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)

Year	Inflation rate						
	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 (see chart). 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" backdoors 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 her mandate, she 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 her 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 (1930s) 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 debt first or inject a large public demand and increasing sovereign debt based on credit first?

The **relation between government 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. Up until now an empirical case for "expansionary austerity" still is missing – the concept might not work as proposed.

The overall effect of austerity very much depends 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. In the same time, government´s 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): Too low deficit spending by governments, especially in a crisis with collapsing private demand, pushed the economy even deeper into recession. The consequence is a decrease in tax revenue and an increase of government 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 **positive multiplier** greater unity that will bring the economy back into full capacity utilisation (Keynes).

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 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, 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 deficits 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 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 persists 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). It is predominantly the educated elite of a country holding positions in those institutions. If the members of the elite are bound to lose from reforms, the process will stall, as can be seen from the elusive fight against tax evasion or the over-manning of the public service in Greece.

When it comes to reforms, social capital 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).

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 in the economy, where spending decisions for the future are taken more freely is crucial.
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 in 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 may be 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 counts 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": She is specialised in Mediterranean agricultural products and is a tourist destination. In those markets, modest incomes only are generated and competition from countries like Spain and Turkey is fierce. The differences in income and unemployment between Greece and Germany can partly be explained by specialisation. The underlying structures can´t be changes 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 is would be a rather long-term effort and need possibly 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 her 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 her 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 her 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 bring 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 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, 2013).

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 side and supporting growth on the other hand side.
- 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 up to 30 years.
- 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, short 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 his full claim. The respective member state can try later, to make the other members pay her 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 Netherlands and Germany fought for restricting liability to each member´s share of capital. However, this restriction might not hold if there will be 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. 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 her 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 comes 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, her 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 is on the conditions imposed centre 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?

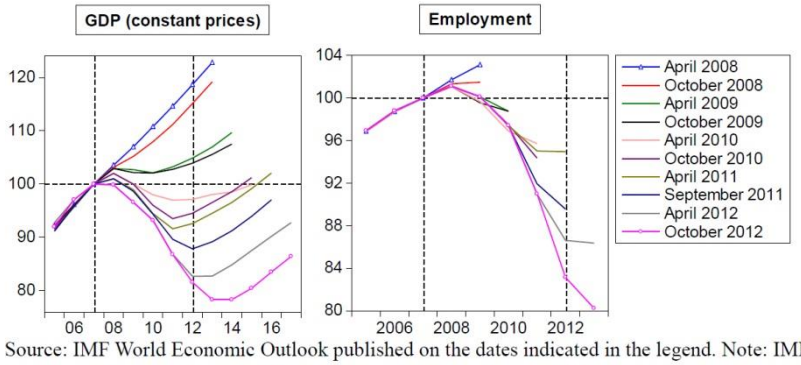
- Do the detailed "to-do-lists" imposed by the Troika on the receiving country violate democratic rights and self-determination?

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 she is illiquid but solvent. An insolvent borrower will not be able to honour her 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): A more realistic, i.e. pessimistic, forecast would reveal the insolvency of borrowers like Greece rendering.

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 point 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 will not service her 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 in the ESM-framework. Other countries (Germany, Finland …) strongly opposed this idea, because they are afraid of the "moral hazard" problem: If others will shoulder the burden of a defaulting loan, then the borrower has no incentive to restrict spending and/or raise revenue.

Eurobonds could overcome moral hazard only, if all Eurozone members have 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 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 in 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 in the concept of Eurobonds:

- Eurobonds would weaken the impetus for reforms in weak countries.
- The rating would go down, since uncontrollable bad risks will 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

We would like to stress, that Eurobonds would be rather a problem then 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 her 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 her obligations: Other members then have to shoulder the bill. Additionally, each member should provide collateral to the fund, e.g. her 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 the economy of countries having too much legacy debt is hoped for.

While more economic expert groups supported this idea, in 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 over 25 years, when they feel, that in this crisis politicians broke promises frequently.
- Up to today, there was no 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 into 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 their 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. Short 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 problems. In 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 her banks. However, the

debt of the Spanish government would grow and it would have to accept "conditionality" coming with the support credit; this is the reason why 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 will ask 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?

The question arising when applying strategies for 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 investors, risk and reward are with the owner´s 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,

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		

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 will manage 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. 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.

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 will be saved in an over-banked market, then 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 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?

The most pressing problem today is legacy debt: The debt burden accumulated over the past decades and due to the recent crisis. There are different scenarios possible in the uncertain future – a forecast is impossible, since there are no "likelihoods" known for upcoming events and triggers. This is hardly bearable for people longing for safety. 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, but can´t do away with legacy debt.

The following paths into the future merit consideration:

1. Chronic prolongation
2. Clean slate
3. Shock and collapse
4. Full solidarity

Ad 1. Continue with a chronic disease

Debt grows rapidly worldwide; monetary policy of cheap credit contributes to this and growth stays weak in most countries. The debt-to-GDP ratio deteriorates further and cheap credit can´t be absorb for productive projects. The next bubble is building up from more and more "unconventional" monetary policy. Social unrest and tension in societies increase. Frustration feeds into international conflicts with the "enemy outside".

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), shifting debt from private into public purses.

Enormous wealth will be wiped out, and the middle class will lose private retirement provisions. Quite a few banks have to be closed as well. This 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 are among many others:

- Radical parties winning a general election and no longer honouring payment obligations and/or breaking up the Eurozone
- A court ruling against the ECB´s OMT-policy
- A prolonged recession pushing major banks into bankruptcy.

Ad 4. Full solidarity

In the EU, there are economically strong and weak members. If the strong countries would be ready to shoulder legacy debt, then they will lose competitiveness, but could dampen the debt problems of the weak countries. This would be bound to a substantial transfer of 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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