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MEGATRENDS MEGATRADE ON THE CONCEPT OF MONEY, LOAN AND INTEREST RATE IN NATIONAL BUDGET BALANCING INSIDE EU BANK CRISIS

SAMK Innovative Business Services
2014
This Thesis studies EBA stress testing methods Basel I to Basel III and the current status of Euro Crisis in 2014. CDO’s or Credit Default Swaps were normal instruments of trade before euro crisis and Stress testing methods have been greatly enhanced to include all scenarios of economy to find out the extent of bad credits in banks. It was concluded in Thesis that euro crisis is much more than just Greek crisis today spread all over Europe and that euro crisis will according by Thesis continue to be a decade long event. In Thesis it was also noted that all problems for euro could have been avoided by more rigorous planning in the formation of euro. Probably then it would have become imminent that intake criteria must be high, for the good of the applicant currency as the euro crisis can not ever take place for an independent currency. It was also noted that China will have a crisis and massive lay-off’s in future. Downsizing Chinese production will mean 200 million reduction in workers.
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1. ON THE CONCEPT OF MONEY, LOAN AND INTEREST RATE

Money does not exist. It can not exist because it is not stable and is valued by a system in order and as of this complicated valuation system before it can be said to exist does not exist.

Also War and Global Megachanges devalue money in an instant so anything this volatile does not exist.

Also on this vein we have in IBS greatly founded that banks create money bubble by outloaning 10 times as much money as they receive, which again speaks for unlogical aspects of money.

And Federal Bank Reserve on only it’s name uphold with today extinct Rockefellers, Astors and Vanderbilts names Dollar. Today Gates.

![Apple stock value](image)

Figure 1. Apple stock value

Of Loan and interest rate. Loan is a promise to pay money on loan, and loans interest rate is a chiasma because the concept of money does lie in the promise that both load and cumulative interest rate will get paid.

On this note I have invented New Natural resources Theory
So this illusion of nonexisting money concept must be uphold at all costs so here we come to EU Eurozone crisis which is upholding nonexisting Euro money concept clinging to desperate means.

New instruments of money are introduced and logically they create new noninvented unknown theories on which rules Markets actually follow.

Figure 2. Wheat futures

Also the pool of unemployment, Global Megatrade, Global Stock Markets New arose Inflation, combined with forced economical low federal interest rates limited materials that need more investments to be viably mined
CO2 problems Draughts affecting Wheat and Corn production
Crimean War and and winter 2015 european natural gas on NATO -- Russia
Figure 3. Example of stock information

Lack of interest to solar energy and my favorite wood chip energy and the all underlying oil price, deepening Class and Wealth abyss and Politics is what I aim to manage in this document

- Megatrade China EU USA Asia
- currencies and underlying currency debts
- Changes from industry into business services and what comes next
- Global Crisis, how to solve them and effects on Economy and currency loans

- What will happen in Global Trade in 2019? What are currencies loan rates in 2019? Which of the list China EU USA Asia will have upper hand in 2019.

- What will happen in Global Trade in 2049? What are currencies loan rates in 2049? Which of the list China EU USA Asia will have upper hand in 2049.

Figure 4. List of U.S. Treasury Bonds
2. CRIMEAN WAR

Ruble have devalued 10% because of Crimean War as well as Moscow stock exchange. The effect to Finnish GDP is said to be 2% of growth lost.

Much of Russia’s national budget is based on sale of oil. Stable level is 100 dollars per barrel. Right now oil price is at 70 dollars. And on top of that there is a wide european trade embargo. On the whole it is clear that economically and PR-wise attack was a clear catastrophe.
3. THE COALITION PARTY STRATEGY AND BUDGETS FOR FINLAND
2015 - 2018

This document briefly visits the Art of National Budgets.
On 25th of February I visited a meeting with prime Minister Katainen
and I was present with 4 TV cameras on European Union Election start.

Most important part is politics of course as money follows the winner.
From the meeting came strategies for Government stratagems.
To be implemented at once.

On general terms it can be said that enterprising country will overcome
problems and emerge a winner. This country can also take risks and loans.
Finland is the only country in EU to have highest AAA+ credit rating.
Because Finland has AAA+ rating would it not be a disastrous to leave
it unused? In the global Megatrends and Megatrade between countries
all possible advantageous assets should be used to maximum.

But Finland has highest and longest possible profile as a country that
sets examples on all levels for others to follow. Let us name this
Finnish Statue of Economical Liberty.

So Finland in European Union is setting an example to all EU countries
to curt loan taking and scythe the public spending foreseen to megatrends.
So this means selling of Finnish national assets to pay out debt.
Again this is counterlogical and is based on Finnish Statue of Economical Liberty
doctrine.

Let us leave Finnish Statue of Economical Liberty aside. At optimal
economical free of historical limitations we can safely estimate
GDP growth to be +4% annually more of which we now produce.

So that alone would pay all national debt, leave Finnish national assets
unsold, and fire more up the Finnish economy. Finnish Statue of Economical Liberty
doctrine costs Finland the national debt amount in ballpark of 30 years.

Also most importantly this would eradicate unemployment and
the continuity problem on pension funds. Again unused money is in pension funds. Should they
be implemented to a moderate risk investing before selling national assets like mad?
4. EUROPEAN BANK SECTOR WILL HAVE NEW CENTRALIZED STABILIZING SYSTEM AND A NEW CRISIS SYSTEM

In Erkki Liikanen’s speech (Suomen Pankki Pääjohtaja Erkki Liikanen Puheenvuoro Euroopasta, Suomen Pankki, 2014) he paraphrases how European Union got formed and basically Finland is haphazardly in as a consequence of early coal and steel union developed into GATT, ETA, EFTA, EEC early membership.

He also nicely describes a mechanism where countries loans are untrusted because banks are untrusted. EU bank crisis came because individual currencies give lots of weapons to fight foreign threats where as trading all these weapons into weak adjoined currency creates EU currency debts and EU bank crises.

a Greek type of debt crisis can not never be created within system that uses individual currency bail-on formulation changes give risk of banks insolvency all along bondholders.

Negative distrust spiral of countries and banks is a serious threat. Basicly financial markets are prone into hysterism, so if a country can not cure banks into health and if banks are not considered healthy the currencies loans and debts become high risk junk bonds overnight.

(Single Resolution mechanism for the Banking Union, ECB, 2014)

EU Bank Recovery and Resolution Directive (BRRD)
Is a co-existing element Single Resolution Mechanism

Single Supervisory Mechanism
Supervisory element of Single Resolution Mechanism; European Central Bank and Single Resolution Board
The single supervisory mechanism (SSM) will be composed of the European Central Bank (ECB) and the supervisory authorities of the member states. It will cover the euro area as well as non-eurozone countries that choose to participate. The ECB will have direct oversight of eurozone banks, although in a differentiated manner and in close cooperation with national supervisory authorities. It will be responsible for the overall functioning of
the SSM.
( Council approves single supervisory mechanism for banking, ECB, 2014 )

Single Resolution Mechanism

REGULATION (EU) No 806/20

establishing uniform rules and a uniform procedure for the resolution of credit institutions and certain investment firms in the framework of a Single Resolution Mechanism and a Single Resolution Fund and amending Regulation (EU) No 1093/2010

( Regulation for Single Resolution Mechanism, ECB, 2014 )

All this is that renaming old institutions and directives, combining them with the old and new side by side, upholding old directives with new directives can not in any way make this an effective and streamlined rapidly acting force
5. STIGLITZ SAYS THAT ALL NATIONAL EURODEBT CRISIS HAPPENED BECAUSE OF INBUILT STRUCTURAL FAULTS ON HOW EURO WAS DEFINED

EU bank crisis came because individual currencies give lots of weapons to fight foreign threats whereas trading all these weapons into weak adjoined currency creates EU currency debts and EU bank crises. Not out of Stiglitz, my own deduction. Basically this is violation of economic laws, that are unbreakable.

Individual currency within use of wise central bank and parliamentary system is almost unbreakable combination.

a Greek type of debt crisis can not never be created within system that uses individual currency ( Joseph Stiglitz: Euroopan tulevaisuus on Musta, 2014, HS )
6. WHY DO POOR COUNTRIES LEND TO RICH COUNTRIES?

Why do poor countries lend to rich countries, World economic Forum, 2014 article displays theories of why emerging economies lend money to advanced economies. In the article three global economy shocks are examined: a credit crunch and a growth slowdown in the Developed country, and a growth slowdown in the Emerging country. The conclusion is that Developed countries behave similarly to standard open-economy models while emerging countries do not obey such rules.

In emerging countries companies savings accumulate in the growth period and when the outlook for banks loan markets get tighter companies in emerging countries react by saving money.

I also agree that I see this increase in savings as a serendipity reaction into banks tightening loan
policies in emerging countries. What I am suggesting is that is this maybe convoluting from Asian most deep mindset? Is it common asian heritage to react into crisis by saving, and companies resort to deepest instincts in the times of uncertainty?

Saving in the dying markets is just postponing the inevitable. In the dying markets there is no regrowth to become making savings meaningful.

What Developing countries should do is to follow megatrends in markets and drastically reduce labor and stump production, but this is very unlike to happen. So actually reaction to save gives false security and postpones reaction time to reduce labor drastically, and this actually hastens the burndown of dying markets and the cardhouse comes down quicker and even with more certainty into wage crunch demise of chinese economy which causally gives a free open market on those western economy companies that have investment on easy purchase. Rate policies are crucial here.
The western economic company must have the big investment loan at low interest rate, hence any policy that keeps interest rates near nil in western countries is crucially vital.

Creation of Chinese Capitalism I see to be in Mao already as Deng Xioping said famously that I do not care if the cat is grey or black if it chases mouse in Cultural Revolution and he must have been given roots of that idea from Mao. Deng met Carter, an unknown peanut farmer, he was shown all U.S.A and rolled in stage coach wearing a cowboy hat. I think it was exactly the opposite and Deng Xioping knew that China at least had a good chance to become a superpower from that visit, and it was Deng Xioping who was faking and fooling; pocketing the stupid yanks and not the other way around.

China is rapidly going into crash-and-burn situation because of oversized companies and vastly oversize production capability and monthly wages costs, a vast size Economical Burn of Rome by Nero never seen in the History of economics
China is rapidly going into economical crash-and-burn never seen in the history of economics.
7. WESTERN COUNTRIES SUNRISE, NEW PHOENIX BEGINNING

Everything goes into a crash in capitalism. If there is one thermodynamical law of economics it is that Everything goes into a crash in capitalism. Capitalism is upswing, and crash, and recession over and over again. So China is going rapidly into a massive crash.

There are no China economic crash-and-burn theories currently, there is a consensus that Chinese economy is going into downswing. Everyone has noticed this but ceased thinking there and not thinking about consequences.

Let us say that China has an active workforce of 1000 million. Chinese economy orders goes into - 20% decline. It means production downsizing of -20%. It means sacking 200 million people.

Chairman Mao might have done it, but not surely former communist who now drives Mercedes.

And for game theory demise for China means open free markets to western countries.
Figure 8. A Symbolic representation of massive rise of economy for European Union countries and USA

Basis of Massive rise of economy for European Union countries and U.S.A. new Phoenix beginning are healthy Bank system that can invest and moreover with lowest possible interest rate.

Basis of capitalism is that with investment injections businesses and corporations can manyfold their production to meet the demand. Boost in GDP can be over ten percent in big European leading edge countries like Britain France Germany and Finland.
8. **TAXATION OF LABOR AS A HINDRANCE FOR ECONOMIC GROWTH**

Coalition Party Kataja said in Parliamentary house that taxation of work is the most sure proof way to make sure economic growth does not happen. Nicely said but is it true? My gut instinct says it is not true.

Proof: Does Taxation hindrance savings on national level?
It can not be proofed.

\[
\frac{ds}{d\tau_r} = \frac{\delta r U'(x^2) + U''(x^2)(1 + r(1 - \tau_r))S}{S}
\]

\[
= \frac{\delta r U'(\lambda^2)[1 - R_R]}{S},
\]

where \( S < 0 \) is the second-order condition for choice of \( s \) and \( R_R \) is the coefficient of relative risk aversion. It can be seen directly from this result that the effect of the interest tax is ambiguous since it has both an income and a substitution effect.

57. This analysis reveals that the theory is unable to predict how taxation will affect saving. It provides a model that can be estimated but the value of the elasticity of savings with respect to the tax rate is ultimately an empirical question.

Figure 9. Example of math on taxation of labor

Deduction is very interesting as it shows a comparison of money with without in daily free use in a lifetime. Very personal way to try to solve this and the deduction seems to be full of holes but I like the outcome. I do agree that it is impossible to show within statistical certainty that taxation slows savings. We do here mean absolute certainty that can not be disputed and I would estimate that it would be impossible to show that taxation does affect saving. Saving should be a fixed percentage on income and that can not be affected

On the real question posed, as I predicted I am absolutely right. It can not be shown that Taxation of Labor inhibits economic growth.
Effect of Taxation of labor, Urbanomics, 2007 says that in other words, the labor supply is elastic among the well-off classes, when faced with falling wages. But when it comes to the very richest, their incomes are so high, that the dent made by the tax on their incomes is so small and the marginal benefit accrued by every additional unit of work done is so high despite the taxes, that they exhibit inelasticity in labor supply when faced with fall in wages.

As it historically was thought that tax on labor will both reduce the amount of labor supplied and the amount of labor demanded, as the wages falls and the cost of labor rises. Consequently, unemployment rises and the economic growth gets affected which today can be shown to be not true at all.

I agree in that taxation of labor is highly gradient factor. So it can be said that over taxation on highest level is detrimental in a way that it makes it more complicated and pricey for entrepreneurs to offer work. This factor has not been shown.

My theory is that for entrepreneurs it becomes more complicated to sell work but this would only lead to perishing of the weak and huge growth to market leaders. So over taxation of labor leads to negative bankruptcies of otherwise viable businesses because banks do not give loans to small businesses and cash register can dry out.

Nothing else can not be said to be statistically shown to affect Economy. To prove my point it was shown that about 50% hairdressing salons in Helsinki went belly up recently because of only a minor slightest upwards change in whole sector work taxation.
9. SWEDISH KRONA CRISIS

Central Bank of Sweden made a slight change into Krona Interest rate and Swedish Krona went into spiralling devaluation? Why?

Answer is rather simple, there never was a crisis, just an journalist invention. and that market change has been reversed back into the state it was before. More over it can be said that in history the situation has been much worse.

Finland went to EU and the price we paid was the demise of the Paper Industry sector. Sweden could devalue Krona on the wishes of paper factories and that was greatly beneficial to the whole country because the trade surplus is the most defining factor of any countries megaconomy and so massive income into country is today, can be said, the most valuable strategic factor for the competition of a country.

Figure 10. Swedish krona exchange rate value

Here we can see that the actual situation of Swedish Krona is on the whole on the better side of things. Swedish forest industries 2009 shows steady rise of Swedish pulp production into 2009, and exactly same trend can be shown here, so the value of Krona was made artificially to
booster Paper sales. When the european market share of Sweden got better the industry
did not need any kind of boosting and the value of Krona was very extremely wisely
changed into strong Krona which devalues National debt on currencies.

“The euro and dollar spiked higher against the krona on the back of the announcement as it’s
been a long time since a major central bank has shocked the market in an environment of
increased central bank transparency,” said Divyang Shah at IFR Markets (Swedish krona slides
after a rate cut, 2014, FT)

Here Financial Times states that the reason was a market shock into abnormal change; so basicly
the Swedish Central Bank themselves caused the chaos on unsuspected interest-rate change. I do
agree wholly. The margins that Central Banks are allowed to use are very narrow. And moreover
any changes must be slow and gradual.
Swedish Central bank Interest Rate change violated many of the rules and so Markets reacted
basically the way Swedish Central Bank initiated. Markets always follow rules;
and here Swedish Central Bank forgot to play by the rules and initiated the chaos,
and the market action they should have forecasted better. So this is a grave mistake
in the analysis procedures. New incompetent analyser? Major fault in the analysis?
Unexperienced director who forgot the silent rules that market can not ever be shocked?
Internal power struggle inside Swedish Central Bank that lead into haphazard decision? I think
the sum of many factors

Figure 11. Swedish krona exchange rate value
Here we can see that the market change has been repaired on itself as the markets got calmer and noticed that the summer crisis was not true.

10. TIME OF NEGATIVE CENTRAL BANK INTEREST RATE

In my Lifetime ECB Central Bank interest rates has never been negative. To me the whole concept is ridiculous.

Why has ECB introduced negative interest rate, ECB, 2014 says that the reason is to counter too low inflation? How? what? And prices are coming up so the actual purchasing power of citizens money is lowering also by higher taxation.

And I am totally right. Negative interest rate is an economic Hydrogen Bomb Clear and present danger into Global Economy.

Firstly the mechanism is plain crazy. And therefore negative interest rate has all possible negative indications and causality.

Negative interest rate has never been tried and no-one should ever get any such idea to try that in Financial Conglomeration level. So severe are the causality on this that I contacted Federal Reserve Bank, Bilderberg group and All Board of Directors of European Central Bank.

It is said that negative interest rate is all cane and no carrot.

Negative interest rate is much more than that. It is an economic H-bomb without any kind of safe fail mechanisms.
11. FINNAIR EAST TRANSIT FLIGHTS

Our eastern neighbor has declared that it will forbid eastern flights.

It will never happen; but could Finnair survive the situation? The answer is no, but what kind of losses could Finnair expect to face.

40% of Finnairs turnover comes via transit flights. We expect 40% loss in transit customers; and 40% rise in fuel costs on those routes.

Finnair has a habit of making several years of losses followed with one good year on which financing can continue. The economical situation is so dire that basically all functions are already outsourced, so there is nothing more to do, if the transit flight ban comes.

Examples of outsourced Finnair functions are domestic flights. Finnair used to flight all domestic flights, but outsourced company Blue was formed; along with their own fleet.

SAS was consolidated into one bigger with danish company and for example Stockholm degraded into a shuttle status that feeds only Copenhagen and Norwegian routes. So Copenhagen became the main international airport. If Finnair merges with SAS Helsinki will become pure transit flight terminal. Saint Petersburg airport poses a severe threat to Finnair if it can take a share of european asian commuters.

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
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<tbody>
<tr>
<td>Turnover</td>
<td>2,400.3</td>
<td>2,449.4</td>
</tr>
<tr>
<td>EBIT Result</td>
<td>-4.8</td>
<td>43.2</td>
</tr>
<tr>
<td>net result after invest</td>
<td>11.0</td>
<td>10.5</td>
</tr>
<tr>
<td>rev current</td>
<td>24,776</td>
<td>23,563</td>
</tr>
<tr>
<td>revenue cargo</td>
<td>3,107</td>
<td>3,029</td>
</tr>
<tr>
<td>rev current</td>
<td>14,158</td>
<td>13,465</td>
</tr>
<tr>
<td>revenue cargo</td>
<td>2,174</td>
<td>2,120</td>
</tr>
<tr>
<td>change in revenue</td>
<td>-10.618</td>
<td>-10.098</td>
</tr>
</tbody>
</table>
change in cargo       -0.933       -0.909 
new net results      ---- 0.551      ---- 0.507  on negative net result after all investment

It seems that Finnair does have stable economy, and does stable profit, that is procentually acceptable.

Unit revenue per passenger is about 7 cents per kilometer. And probably a lot higher in transit routes, which feed the whole company's losses. or under 7 cent profit per kilometer from other routes. So the 7 cents is average gain from all routes. Estimate for current reve There are also loss and profit factors here that we can not estimate.

Conclusions: With open transit lines both 2012 and 2013 show positive result. After transit lines are banned both years go to negative territory net result, so both years would need an investment injection of tens of millions to show acceptable gain per share. And naturally investment injections will not continue forever when the base profit center becomes a steady loss center.

We also estimate that as all stewardess services are already outsourced and employed with lowest possible salary level there is no way to spare ten million from personnel savings actions.

With some reserves I would surely estimate that the hypothetical transit line ban, which I estimate never will happen would be a total death blow to Finnair

Or at least it would need another look into operations that cause losses, and all those would have to be cancelled, and that would cause a heavy blow to turnover, which would about halve, leading to share rapid decline and also be, pun intended crash and burn of Finnair as a company. As a merger after transit line ban the profit from the sell of Finnair would become roughly a third of the price now, as the most profitable part is the transit monopoly.

Finnair company value of stock would become into just one third.

Comment : From the newspaper Finnairs fuel costs are 610m annually. If we take transit flights to be 40% of turnover and with 40% longer route we come to 40% of 610m is 244m of costs in transit flights, and 40% rise in those would make 97.6m rise in losses. Take 97.6m as maximum estimate of Finnair losses we find this calculation to be very conservative but at the right ballpark.
Actual loss would be smaller with price campaigns and further reductions in other non profitable operations; so probable loss would be 40m annually.

With great certainty estimate hypothetical transit line ban, which I estimate never will happen would be a total death blow to Finnair. Finnair company value of stock would become into just one third.

Revenue from transit routes is 28 cents. And that would drop to 4 with longer route. We must notice here that Finnair has the monopoly from transit route.

So the revenue in new situation would be 3 cents per kilometer. Also the cargo losses would be 30%. We can see that about half of the revenue comes from flight operations.

12. COST OF UKRAINE CRISIS TO FINLAND

Russia is 13.9% of foreign trade, export is 9.6%, import is 8.1%. One quarter, 25% of all exports for food items.

Finnair 40m

Outotec has 140m orderbook with Mikheevsky GOK and 100m Russian Copper Co. Fazer exports sweets and chocolates, and just those items imports are blocked. although Fazer has factories in Russia.
S-Ryhmä has 10 Prisma stores in Russia. Their estimate is that trade will decline as trend will be to buy local food.
Valio does not give estimates, they say that milk dry powdered will be sold in global markets.
Valio will be hit the most from Ukraine trade embargo. But Valio Mika Koskinen says that
they are already reacting with sell of right items, and Valio has been able to lift up prices quince in items.
Atria is on heavy competition. Also their losses will be in million category. - 6% stock already 25m write-off from built slaughterhouse close in Moscow.
Stockmann turnover is 65.4m, 25% from food items, and Nora Malin says that Stockmann will replace food items with their out-of-Ukraine-trade-embargo items
Builder SRV took previously +400% rise, and some of it will be hit. Jukka Hienonen says that SRV will take corrective reactions.
Tikkurila says that normal variations of customers are more pronounced.
Vexve Ball valve factory will close

New Prime Minister Alexander Stubb says this will lead to domestic recession 2.0.

But as Valio was given to be the hardest hit, and they are acting to counter strike, it means that talks of recession 2.0 are premature. Overall losses are very moderate and it is unlike we see any kind of avalanche effect. I would put my trust on Board of Directors in each companies market niche that react dynamically to the new situation. Weak ruble hits more.

Cost of Ukraine crisis in Companies EV

<table>
<thead>
<tr>
<th>Company</th>
<th>EV</th>
<th>estimated EV loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valio</td>
<td>22 stockholders not applicable</td>
<td></td>
</tr>
<tr>
<td>Stockmann</td>
<td>1576m</td>
<td>157m</td>
</tr>
<tr>
<td>SRV</td>
<td>406m</td>
<td>20m</td>
</tr>
<tr>
<td>Atria</td>
<td>524.42m</td>
<td>50m</td>
</tr>
<tr>
<td>Tikkurila</td>
<td>926.38m</td>
<td>30m</td>
</tr>
<tr>
<td>S-Ryhmä</td>
<td>not applicable</td>
<td></td>
</tr>
<tr>
<td>Fazer</td>
<td>not applicable</td>
<td></td>
</tr>
</tbody>
</table>

So the total cumulative cost of Ukraine crisis in Helsinki Bourse companies EV value loss would be only 200m, which can easily be considered as nothing. Much of this luck is based of course of the fact that many of these companies are not traded openly in Helsinki Stock market and are privately owned.
13. CHINA EU USA ASIA

( Chinas debt how serious is it, , 2014, Forbes )

2019 Overhand 1st China USA Asia 4th EU

2049 Overhand 1st EU Asia USA 4th China melt-down of debt crisis

EU steady rise with negative Central Bank loan rate that works to an advantage in the really really long run

In the 1970’s there was an manufacturing giant of Hong Kong. For a short time period everything was manufactured in Hong Kong. In the end the demise came and Hong Kong today is all forgotten shooting star.

My deeper economic theory is that Chinese growth will eventually be just a shooting star.

In IBS we have been taught that in capitalism all products have similar life cycle that eventually leads into no sale situation

Similarly China is going to become just a shooting star. The brightness will die out into dark night. All symptoms are visible today. Rising wages and fastly emerged Chinese debt crisis.
14. GOLDMAN SACHS ONE FOURTH CAUSE OF WALL STREET DAYLIGHT ROBBERY OF FANNIE MAE AND FREDDIE MAC

Stress Testing was invented as a result of the Fannie Mae and Freddie Mac $200B Wall Street bright daylight legal robbery. Right now FHFA has settled with 15 banks and current gang that posse has caught is BoA $9.3B seek 13; Jews $3.15B MS $1.25B … So Goldman Sachs was one fourth behind the whole housing bubble burst that nearly destroyed the whole monetary system.

Figure 12. Legal document of JP Morgan’s FHFA pay

Goldman Sachs involvement can mean only that Fannie Mae and Freddie Mac were
considered to be, by every Bank in United States to be blind and deaf and stupid enough to be swindled by selling bonds that we known by issuer to be worthless, hence FHFA can claim fraudulent issuer to pay settlement. Until today of the $200B about $19B has been recovered by FHFA claims, and this can be considered a massive win for Righteousness if that word can be used in Wall Street; meaning that one tenth of Criminal turnover has been given back; out of profits. FHFA must be aware of fraudulent Banks stress test results to demand and settle with that kind of amount that would not trigger another financial crisis.
15. 2014 EBA STRESS TEST RESULTS

2014 Out of 123 banks 24 failed, 14 need still capital
Austria: Oesterreichische Volksbanken
Belgium: AXA Bank Europe, Dexia

Cyprus: Hellenic Bank Public Company

Greece: Eurobank Ergasias, National Bank of Greece

Republic of Ireland: Permanent TSB

Italy: Banca Carige, Monte dei Paschi, Banca Popolare di Milano, Banca Popolare di Vicenza

Portugal: Banco Comercial Portugues

Slovenia: Nova Kreditna Banka Maribor, Nova Ljubljanska Banka

Euro crisis started from Greece, and after half of a decade it has spread to all countries in rich europe. Also the amount of banks has spread from seven banks in one stress test to 24 banks. Right now ailing measures of euro crisis is in hope that rich Germany has money to bail out other countries. We have to remind that euro and EU is a consensus alliance that can break in this crisis.
16. CONCLUSIONS

Political ineffectiveness of EBA stress testing is deep and prevailing. USA crisis was just six months long but in Europe this might last a decade. In 2014 stress testing 24 banks failed stress test in comparison of just 7 in previous years, so the crisis is still brewing in Europe.

EBA has chosen liquidity limit to 6.5 %. But if we have domino effect in european economy and do stress testing after that the actual liquidity limit might be 30%. That would mean 5 times as much money as that what has been collected until today.

EBA gives money to worst banks in Europe; when do we see the first occurrence of fraud?
17. REFERENCES:

Chinas debt how serious it is available at:
http://www.forbes.com/sites/jackperkowski/2014/01/21/chinas-debt-how-serious-is-it/

Council approves single supervisory mechanism for banking available at:

Effect of Taxation of labor available at:

EU Bank Recovery and Resolution Directive BRRD available at:

Joseph Stiglitz: Euroopan tulevaisuus on Musta available at:
http://www.hs.fi/talous/a1409368096188?jako=89495d3151277e634596f464f2df2ee2&ref=og-url

Regulation for Single Resolution Mechanism available at:

Suomen Pankki Pääjohtaja Erkki Liikanen Puheenvuoro Euroopasta available at:
http://www.suomenpankki.fi/fi/suomen_pankki/ajankohtaista/puheet/Pages/140828_EL_puhe.aspx

Single Resolution mechanism for the Banking Union available at:

Swedish forestindustries 2009 available at:
http://www.forestindustries.se/MediaBinaryLoader.axd?MediaArchive_FileID=9a47e1bc-91c1-4352-baeb-5a03c42c60d5

Swedish krona slides after a rate cut available at:

Why do poor countries lend to rich countries available at:
Why ECB has introduced negative interest rate available at:
Basel Committee
Stress testing
for
Eurozone Banking
Institutions
2011

by
Ilkka Saari
Foreword

I was hoping to avoid doing a report for Basel Committee Stress Testing as the subject in itself is way above IBS scope and secondly no report smaller than Thesis would make any justice to the hours I put into Stress Testing.

So I try to make some kind of report in hope that this subject can be revisited in the form of Thesis.

I took this subject as I noticed that most journalist did not have a clue of what they were publishing in this subject.
In this article Goldman Sachs says that 50% of European banks will fail stress testing. Is this true?

How stable are eurozone banks?

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We have to also take into account that in USA only Basel 2.0 stress testing is implemented so in USA banks are trying to avoid stress testing by all possible means.


In this article it is said that the strict implementation of Basel 3.0 stress testing would cease the outloaning for many banks and therefore cause a Recession with this mechanism.
Dexia is the 10th biggest bank in Europe

This Luxembourgian bank failed the Basel 3.0 stress test

How can a bank this large default?

Dexia was saved by the intervention of France, Belgium and Luxembourg

But the stock price estimates clearly that the end is near whatever is done.
This is the horror of defaulting banks and the evaporation of equity
1. Basel Stress testing methodology

Basel stress testing is performed with Basel 2.0, or Basel 2.5 or Basel 3.0 methodology. In USA stress testing is done with Basel 2.0 methodology while in Europe Basel 3.0 is implemented.

Macroeconomical variables of Liquidity condition, industry’s downturn, GDP decline and interest rate spikes are taken into account.

Different scenarios are implemented to banks assets to define Stressed PD, Downturn LGD and Stressed EAD.

- **Stressed PD**: probability of default
- **Downturn LGD**: *downturn* Loss of Given Default
- **Stressed EAD**: exposure at default

---

**Pillar I Credit Risk stress testing**

This is the methodology of the stress testing.
Pillar II Stress testing

Pillar II methodology shows banks assets of economical capital, regulatory capital and book capital are subjected in a plan ie. Stress test crisis scenario, Value at risk is defined and we have market risk, credit risk and operational risks. These values are subjected to changes in Interest Rate, Equity, currency and other changes and then the results of Stress testing are collected.

Definition of Core Tier 1 capital ratio CT1cr

Core Tier Capital definition
Tier 1
(a) Paid-up share capital/common stock
(b) Disclosed reserves

Core Tier 1 capital ratio
is the ratio
between a banking firm's core equity capital and total risk-weighted assets
Stress Tests are studied for five biggest banks.

If they are stable then it can be deducted that the European banking sector is stable.

**BNP Paribas**

- Total assets: €1998bn
- Workforce: 205000
- Revenue 2010: €43.9bn

**Crédit Agricole**

- Total assets: €1731bn
- Workforce: 161280
- Revenue 2010: €34.2bn

**Deutsche Bank**

- Total assets: €1906bn
- Workforce: 102060
- Revenue 2010: €28.6bn
ING Group

Total assets  €1247bn
Workforce  107106
Revenue 2010  €54.9bn

Société Générale

Total assets  €1132bn
Workforce  160700
Revenue 2010  €3.9bn
2. Differences of Basel committee 2.0, 2.5 and 3.0 stress testing

This diagram shows the changes and developments from Basel 2.0 to Basel 3.0

So the stress testing is becoming more and more detailed and taking all possible situations into account.

Notice also how the Basel 2.0 stress testing used in USA is really something that can not be compared in no circumstances to Basel 3.0 stress testing.

Notice that LCR and NSFR are yet to be implemented

LCR = Liquid coverage ratio to be implemented Jan 1st. 2015
NSFR = Net Stable Funding Ratio to be implemented Jan 1st. 2019
3. The S&P ratings after the eurozone crisis

It is easily noted that the credit ratings of all eurozone banks have been in severe decline.

Only few banks have fared somewhat better than worst banks but also the credit ratings for these best banks have been in decline.

Credit ratings materialize with higher interests what will worsen the situation.

So it is not exaggerated to say that lowering of S&P ratings has deepened and created the bank crisis as the actual situation was not so severe to justify this deep rating cuts.

There are many mechanisms in this eurozone crisis that are market driven and have no actual basis. Credit ratings are done more by markets feel and assessment of the situation and not actual stress tests. Credit ratings are changed to appease the markets and give the markets what they want.
4. Market demand of Core Tier 1 capital ratio of 9%

It is very important to notify that Core Tier 1 capital ratio of 9% never was intended to be a demand for Basel stress testing.

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Core Tier 1 capital ratio of 9% demand is purely demanded by markets.
5. Credit default options CDO’s and Credit default Swaps CDS’s

Credit Default Options

Price of CDO is defined by advanced mathematics, but the basic concept is to sort debts with their quality into tranches and then the price of the CDO is calculated by a multiplication of quality times probability of default over all tranches. So CDO is pretty simple instrument that behaves a lot similarly like an option does to stock, but the value of CDO is calculated differently and the use of greeks (volatility, time value …) is not used with CDO’s. Time value is essentially all profit to coupon issuer but the meaning here is to get rid of the toxic debts by packing them together with better valued instruments. As far as I know CDO’s are bought “blind” and no-one tries to value them by calculating their own CDO value and searching for issuer fault. The value to CDO’s is issuer dependent so Bank with reputation can sell CDO’s with better value. It is known what area the debts originate and so reputable debts like german, swiss housing loans are more wanted and so avoided also on this basis. CDO’s can be of assets or mortgages.

In stress testing only CDO’s that are sure to default are calculated in Probability Space Scenario so there is much more inherent risk within Credit Default Options that is counted in. Profits can only amount to interest, but losses can be greater if most adverse improbable scenario occurs.

Credit default swaps and the underlying probabilities that are used to price CDOs

Credit default swap is a bundle of CDOs that can be collected from freely from different coupon issuers.

Credit default swap is inherently more complex than CDO.

Mathematically most demanding calculation is the formation of normative probability spaces so that the value calculation for CDS out of assortment of CDO’s can be performed.

We must notice that all calculations performed with CD’s and CDSs like Baysian, Poisson etc. are all crude approximations of outcome albeit the best possible ones so is also the calculation of normative probability spaces as the correct value comes from the recipe. Usually all definitions come with some kind of estimation of error margins but
not with CDOs or CDSs. I see the reason for this to be that the estimated value can be surprisingly off the real value in that moment, but that kind of does not interest anyone. The real exact value of CDO and CDS comes after maturation and it is accepted with this complicated instruments that the exact value can not be determined in the interim period but that is accepted as it is known to come with the complex and undetermined nature of CDOs and CDSs. It is also impossible to search for errors in value definition of issuer; that can only happen if buyer has sure knowledge that something will enhance the value in future that the issuer is not aware, but that is utmost rarity.

The blindness factor to the buyer only rises exponentially when we move from CDOs to CDSs as it is not even remotely possible to value CDSs to the core issued mortgage.

In stress testing only CDSs that are sure to default are calculated in Probability Space Scenario so there is much more inherent risk within Credit Default Swaps that is counted in. Profits can only amount to interest, but losses can be greater if most adverse improbable scenario occurs.

Ethical aspect of CDSs

Warren Buffett says that simple stock option is immorale instrument that has so much risk in itself so that the monetary system is put into risk simply by the existance of it.

So Credit Default Swaps are simply immoral instruments that should be banned from banking system. The american subprime mortgage crisis ( which is a correct term ) would not exist if it weren’t for the invention of CDSs so I see that CDSs are on the very top of instruments to be banned. US Congress has issued legislatlative actions banning the sell of CDSs in USA.

Also the mechanism that some banking systems loans money to two directions at the same time taking twice the responsibility is illogical and is done only to make possible to instant appearance of money to CDS’s. The definition of CDS should naturally be that the value and money comes out just after maturation and not as a loan before, but naturally that would not be attractive instrument in any way. The correct taking a loan mechanism to create instant money is immoral as no banking institution has enough assets in the world to carry this risk; the CDS issuers are 2 orders of magnitude too small for this.
CDS Options

CDS’s have also CDS options that are very crude and simple forms of options issued based of a calculated estimation of CDS value. CDS options are also called CDSs but their nature is clearly marked with their symbol. I can not see that CDS options would gain any sizable markets ever. Vanilla CDSs are far too complex to need any options. So options to CDSs exist only because there is an option to any instrument so also for CDSs. CDOs do not seem to have options.

Sovereign Credit Default Swaps

What is absolutely frightening is that there is no actual agreement of what a Sovereign Credit Default Swap is. It is said by theory that a currency can not default but I disagree on this heavily, hyperinflation of currency is equivalent to defaulting. So in the article http://ftalphaville.ft.com/blog/2008/12/16/50467/the-mystery-meaning-of-sovereign-cds/ it is discussed why there is a profit to buyer from these instruments in the first place if default is immensely improbable ?

I can not find definite mathematical definition from internet so it is seen that there is no reason to publish it to common people. At first I thought that SCDSs are a package of different debt packaged but that is not a case. SCDS is a package within one sovereign currency that has a credit rating for that sovereign currency and the value is calculated from it.

As for the ethics I said that CDSs are immoral instruments but I see that SCDSs are most needed instruments there is. Actually I would see that the naming Sovereign Credit Default Swaps is most incorrect and therefore the aforementioned disagreement of the definition rises. There is no other instrument like SCDS so the naming should be corrected. SCDS is a simple calculation of currency bond to probability; and SCDOs do not exist.

Risks to banks from currencies

As for Stress testing I find housing risk to be one, but SCDS or more correctly financial risk for banks to be far bigger if the most adverse euro defaulting happens. Many banks have substantial risks in their portfolio from currencies. Many banks have wisely forecasted the risk and avoided long before investing and taking risks in eurozone.
Some of the banks within this study have taken irrational risks in currency markets. It is incomprehensible of why over half of their debt portfolio was from currency risks.

The nature of risks for eurozone banks, Currency risks

A very good example of bank that were in in over their head in risk with currencies is already defaulted and to be soon defaulting Dexia. It is incomprehensible of why over half of their debt portfolio was from currency risks. What were they thinking? Maybe they anticipated losses and tried to solve it by getting deeper into the same sector risk. In a way I too anticipate that SCDSs will become a very lucrative market but they will house a pond of losses before that time arrives; a pond that they now stand on without boots.
How are the sovereign currency loans structured?

Here it is shown that Nordic countries have loaned money to nordic countries. German loaning is a bit more diverse, but basically it is loans to neighboring countries, developing countries, Britain and USA. And Greeks loan to Greeks.

Comparison of CT1cr head to head between Nordic countries and Greece banks is absurd as the probability of default is from almost nil to already happened. This is the single biggest fault of Basel Committee Stress Testing.

European banks have long forecasted the greek problems and have avoided too much exposure to greek loans.
Greek sovereign exposures are shown here by counterparty countries. This also shows that the loan has formed from greek to greek loans.

But this chart could not be more misleading in a sense that we all have to pay the greek loans.

So here even when european banks have avoided greek risk now their government have to take the loan and the corresponding risk.

It is good that the risk goes to the government and not to an individual banks
6. Computer programs for Basel stress testing

European Banking authority performs stress test calculations for European bank sector based on the data they receive in preformatted form from banks.

The competing institution is Moody’s Analytics

They are trying to undermine results of EBA and show that there are errors to boost their business.

There are hundreds of economists working for Moody’s
U.S. MACROECONOMIC OUTLOOK ALTERNATIVE SCENARIOS

THE U.S. MACROECONOMIC OUTLOOK ALTERNATIVE SCENARIOS ARE WRITTEN BY EDWARD FRIEDMAN

1 ➤ Forecast Assumptions

3 ➤ Scenario 1 — Stronger Recovery in 2010

5 ➤ Scenario 2 — Mild Second Recession

7 ➤ Scenario 3 — Deeper Second Recession

9 ➤ Scenario 4 — Complete Collapse, Depression

11 ➤ Scenario 5 — Aborted Recovery, Below-Trend Long-Term Growth

13 ➤ Scenario 6 — Fiscal Crisis, Dollar Crashes, Inflation

This chart shows Moody’s definition of bank stress testing scenarios
7. Results from EBA Stress test

**BNP Paribas**

- Core Tier 1 capital ratio: 9.2%
- French retail mortgages exposure: €152bn
- Sovereign currency loans to Belgium, France, Germany and Italy: ~ €25bn
- Indirect French 10yr Sovereign CDS exposure: €2.6bn

**Crédit Agricole**

- Core Tier 1 capital ratio: 8.2%
- French retail mortgages exposure: €393bn
- Sovereign currency loans only to France: €32bn

**Deutsche Bank**

- Core Tier 1 capital ratio: 8.8%
- German residential mortgages: €107bn
- Sovereign currency loans only to Germany: €26bn
- Direct Italian 15yr Sovereign CDS exposure: €1.2bn
ING Group

Core Tier 1 capital ratio: 9.6%

Nederlander residential mortgages: €142bn
Sovereign currency loans to Nederland, Germany and France: ~ €22bn
Cash loan from customers: €0.5bn

Société Générale

Core Tier 1 capital ratio: 8.1%

French retail mortgages exposure: €121bn
Sovereign currency loans to France, Germany and American: ~ €19bn

Issues stock options to Europe. Derivatives are not counted as a risk, but they are a major risk.

The results show that the Core Tier 1 capital ratio is 9% or is sufficiently near to 9% already.

Banks do not carry major risks from Greece.

Latest developments are that not banks but countries are being credit rated down. This is in line with the findings of this study, it is the countries that carry greek risk, not individual banks.

Société Générale and Deutsche Bank is being reviewed again by 9% demand and also in this study they are noted to be near or slightly under 9% demand.
8. Mathematics and the concept of normalization of probability spaces

The key concept in banks stress testing is the concept of normalization of probability spaces as it is the key to normalize different banking instruments to be valued in the actual bank stress testing.

We have to keep in mind that normalization is just an estimate and approximation for the value of an bank instrument, not the actual value.

But all in all the value given by the normalization of probability spaces is the best estimate and therefore it is used like it is the actual value of banking instrument in different scenarios.

*During my studies for the Module 4 I did go through all the mathematics defining CDO's and CDS's and included are notes on the structure of the derivatives of CDO's and CDS's*

The credit default swap contract is designed to provide protection from a credit event associated with a risky bond. The coupon leg of the CDS pays coupon while there is no credit event. The protection leg of the credit default swap pays only if there is a credit event before maturity of the CDS. At the time of the credit event the protection buyer (=coupon payer) receives par from the protection seller (=coupon receiver) and delivers the bond to the protection seller. On default the coupon leg pays the accrued interest.

Let \( \{T_k\}_{k=1,...,N} \) \( T_0 < \tau < R < t \)

\[
V_{\text{coupon leg}} = E^* \left\{ \sum_{k=1}^{N} \exp \left[ - \int_t^{T_k} r_x \, dx \right] c(T_k - T_{k-1}) 1_{\{T_k > \tau\}} | \mathcal{F}_t \right\} + \]

\[
+ E^* \left\{ \sum_{k=1}^{N} \exp \left[ - \int_t^{\tau} r_x \, dx \right] c(\tau - T_{k-1}) 1_{\{\tau \in [T_{k-1}, T_k]\}} | \mathcal{F}_t \right\}.
\]

\[
V_{\text{protection leg}} = E^* \left( 1_{\{\tau < T_2\}} \exp \left[ - \int_t^{\tau} r_x \, dx \right] (1 - R) | \mathcal{F}_t \right).
\]

*Common_application_of_change_of_measure* and results of the section (T-forward probability...)
\[ E^* \left( \exp \left[ - \int_t^T r_s \, dx \right] 1_{\{t \rightarrow T\}} | \mathcal{F}_t \right) = E^* \left( \exp \left[ - \int_t^T r_s \, dx \right] | \mathcal{F}_t \right) E^T \left( 1_{\{t \rightarrow T\}} | \mathcal{F}_t \right) = P(t, T) Z(t, T) \]

measure):

\[ P(t, T) = E^* \left( \exp \left[ - \int_t^T r_s \, dx \right] | \mathcal{F}_t \right), \]

where we introduced the notation

\[ Z(t, T) = E^T \left( 1_{\{t \rightarrow T\}} | \mathcal{F}_t \right). \]

\{t_p\} \{T, T + \Delta\}

Distribution of Poisson process section):

\[ E^* \left( \exp \left[ - \int_t^T r_s \, dx \right] (\tau - T) 1_{\{t \rightarrow T, T + \Delta\}} \sum_p 1_{\{t_p \in [T, T + \Delta]\}} | \mathcal{F}_t \right) \equiv \]

\[ \equiv E^* \left( \exp \left[ - \int_t^T r_s \, dx \right] (\tau - T) 1_{\{t \in [T, T + \Delta]\}} \sum_p 1_{\{t_p \in [T, T + \Delta]\}} | \mathcal{F}_t \right) \]

change to T-forward measure

\[ \equiv \sum_p E^* \left( \exp \left[ - \int_t^{t_p} r_s \, dx \right] | \mathcal{F}_t \right) E^T \left( (t_p - T) 1_{\{t \rightarrow t_p\}} | \mathcal{F}_t \right) = \]

\[ = \sum_p P(t, t_p) (t_p - T) E^T \left( 1_{\{t \rightarrow t_p\}} - 1_{\{t \rightarrow t_{p+1}\}} | \mathcal{F}_t \right) = \]

\[ = \sum_p P(t, t_p) (t_p - T) (Z(t, t_p) - Z(t, t_{p+1})) \equiv \]

\[ \equiv \int_T^{T + \Delta} P(t, s) (s - T) dZ(t, s) \equiv \]

\[ \equiv \frac{P(t, T) + P(t, T + \Delta)}{2} \Delta (Z(t, T) - Z(t, T + \Delta)). \]

\[ E^* \left( 1_{\{t \rightarrow T\}} \exp \left[ - \int_t^T r_s \, dx \right] (1 - R) | \mathcal{F}_t \right) = \]
At the money CDS coupon

Let us introduce the $c_t$

Based on the relationship

$$0 = \sum_{k=1}^{N} c_t(T_k - T_{k-1})P(t, T_k)Z(t, T_k) +$$

$$+ \left( c_t \frac{T_k - T_{k-1}}{2} - 1 + R_k \right) \frac{P(t, T_k) + P(t, T_{k-1})}{2} (Z(t, T_{k-1}) - Z(t, T_k))$$
\[
\begin{align*}
c_t &= \left\{ \sum_{k=1}^{N} (R_k - 1) \left( P(t, T_k) + P(t, T_{k-1}) \right) \right\} \cdot \\
&\quad \left\{ \sum_{k=1}^{N} (T_k - T_{k-1}) \left( \frac{P(t, T_k) + P(t, T_{k-1})}{4} (Z(t, T_{k-1}) - Z(t, T_k)) + P(t, T_k)Z(t, T_k) \right) \right\}^{-1} \\
&\quad \cdot \left( \int_{t}^{T} r_x dt \right) \cdot \mathcal{F}_t,
\end{align*}
\]

where we introduced the notation
\[
Z(t, T) = E^T(1_{[\tau < T]} | \mathcal{F}_t), \\
\{t_p\} [T, T+\Delta]
\]

Distribution of Poisson process section):
\[
\begin{align*}
&\approx E^s \left( \exp \left[ -\int_t^T r_x dt \right] (T - t) 1_{[\tau < T]} \sum_{p} 1_{[p < \tau \leq p + 1]} | \mathcal{F}_t \right) \text{ change to T-forward measure} \\
&\approx \sum_{p} E^s \left( \exp \left[ -\int_t^T r_x dt \right] | \mathcal{F}_t \right) E^T \left( (T - t) 1_{[p < \tau \leq p + 1]} | \mathcal{F}_t \right) = \\
&= \sum_{p} P(t, t_p) (T - t_p) \mathbb{E}^T \left( 1_{[p < \tau \leq p + 1]} | \mathcal{F}_t \right) = \\
&= \sum_{p} P(t, t_p) (T - t_p) (Z(t, T_p) - Z(t, T_{p+1})) \approx \\
&\approx \int_t^{T+\Delta} P(t, s) (s - T) dZ(t, s) \approx \\
&\approx \frac{P(t, T) + P(t, T+\Delta)}{2} \Delta \left( Z(t, T) - Z(t, T+\Delta) \right).
\end{align*}
\]

\[
E^s \left( 1_{[\tau < T]} \exp \left[ -\int_t^T r_x dt \right] (1 - R) | \mathcal{F}_t \right) =
\]
At the money CDS coupon

Let us introduce the $c_t$

Based on the relationship

$$0 = \sum_{k=1}^N c_t(T_k - T_{k-1}) P(t, T_k) Z(t, T_k) + \left( c_t \frac{T_k - T_{k-1}}{2} - 1 + R_k \right) \frac{P(t, T_k) + P(t, T_{k-1})}{2} (Z(t, T_{k-1}) - Z(t, T_k))$$
\[ c_t = \left\{ \sum_{k=1}^{N} (R_k - 1) \frac{P(t, T_k) + P(t, T_{k-1})}{2} (Z(t, T_{k-1}) - Z(t, T_k)) \right\} \cdot \left\{ \sum_{k=1}^{N} (T_k - T_{k-1}) \left( \frac{P(t, T_k) + P(t, T_{k-1})}{4} (Z(t, T_{k-1}) - Z(t, T_k)) + P(t, T_k)Z(t, T_k) \right) \right\}^{-1} c_t \]

The expression in the numerator is a price of combination of risky annuities. We can use it as a numeraire as long as there is no default. Hence, there exists a probability measure such that the \[ c_t \]

We represent the price of the CDS using the quantity \[ c_t \]

\[ V_{cdh}(t, c) = \sum_{k=1}^{N} (c - c_t)(T_k - T_{k-1})P(t, T_k)Z(t, T_k) + \]
\[ + (c - c_t) \frac{T_k - T_{k-1}}{2} \frac{P(t, T_k) + P(t, T_{k-1})}{2} (Z(t, T_{k-1}) - Z(t, T_k)) \]
\[ R_k c_t \]

Let us introduce the notation

\[ A_t = \sum_{k=1}^{N} (T_k - T_{k-1}) \left( \frac{P(t, T_k) + P(t, T_{k-1})}{4} (Z(t, T_{k-1}) - Z(t, T_k)) + P(t, T_k)Z(t, T_k) \right) \]
\[ * \]

and write the last result as

\[ V_{cdh}(t, c) = 1_{\{c \geq t\}}(c - c_t)A_t. \]

The expression in the numerator is a price of combination of risky annuities. We can use it as a numeraire as long as there is no default. Hence, there exists a probability measure such that the \[ c_t \]

We represent the price of the CDS using the quantity \[ c_t \]

\[ V_{cdh}(t, c) = \sum_{k=1}^{N} (c - c_t)(T_k - T_{k-1})P(t, T_k)Z(t, T_k) + \]
\[ + (c - c_t) \frac{T_k - T_{k-1}}{2} \frac{P(t, T_k) + P(t, T_{k-1})}{2} (Z(t, T_{k-1}) - Z(t, T_k)) \]
\[ R_k c_t \]

Let us introduce the notation
We are considering the right to enter into a given CDS contract at some time in the future (maturity of the option). If the reference name of CDS defaults before the expiration of the option then the option vanishes. Hence, if the spread widens then the option appreciates greatly but also is more likely to vanish. Let

\[ V_{\text{eqh}}(t, c) = 1_{\{ t > t_0 \}} (c - c_t) A_t. \]

**Option on CDS**

*Note: This is not a pure derivative as like an american stock derivative call option. Here is only CDS and a very basic kinda core derivative of the CDS, like only a future price of CDS, options have greeks to devalue them but these papers go sour on their own.*

The value of these are calculated on the probabilities and a calculated estimation of price in some future. Pretty tricky maths as nothing here is definite. Only a spectrum of probabilities. But nevertheless the probabilities give simple calculated value to this option CDS.

We perform the change of measure

\[ V_{\text{op}}(t, c) = E^* \left( \exp \left[ - \int_t^{t_0} r_x dx \right] 1_{\{ t > t_0 \}} (V_{\text{eqh}}(t_0, c))_{+} | \mathcal{F}_t \right) = \]

\[ = E^\ast \left( \exp \left[ - \int_t^{t_0} r_x dx \right] 1_{\{ t > t_0 \}} A_{t_0} (c - c_t)_{+} | \mathcal{F}_t \right). \]

We perform the change of measure

\[ V_{\text{op}}(t, c) = E^\ast \left( \exp \left[ - \int_t^{t_0} r_x dx \right] 1_{\{ t > t_0 \}} A_{t_0} (c - c_t)_{+} | \mathcal{F}_t \right) = \]

\[ = E^\ast \left( \exp \left[ - \int_t^{t_0} r_x dx \right] 1_{\{ t > t_0 \}} A_{t_0} | \mathcal{F}_t \right) E^a \left( (c - c_t)_{+} | \mathcal{F}_t \right) E^a A_{t}\]

*Common application of change of measure*). The existence of such numeraire was discussed before, see (Risky annuity).
At this point we recall from (Risky annuity) that the

$$A_{t_0} \exp \left[ - \int_{t_0}^t r_x dx \right] \exp \left[ - \int_t^{t_0} r_x dx \right] 1_{\{t \geq t_0\}}$$

$$E^* \left( \exp \left[ - \int_{t_0}^t r_x dx \right] 1_{\{t \geq t_0\}} A_{t_0} \mid \mathcal{F}_t \right) = A_t.$$

**Basket Credit derivative.**

Note: According to the transformation

$$V_0 = E(1_{t \leq T} e^{-rT} \mid G_0).$$

This is a transformation. Maybe it is needed to normalize two different probability spaces. After that two instruments can be valued.

But all this is a marginal case. This does not give values as they were calculated before.

This calculates two simple CDS options from same probability space even if they should be calculated different. So this is kind of simplification just to get a value from two different simple CDS options from same probability space.

The best possible evaluation though, given that used expertly and not calculate too nonsimilar simple CDS options

Future: These could be combined into totally different value, like oil price. So the game could be on both at the same time. “Weight” of the combine must be huge.

Are there ways to intentionally devalue these? If the definition of the simple option CDS is sloppy or too open then it could be possible to devalue intentionally to get a handle.

Properly defined simple option CDS can not be intentionally devalued -

Time value addations (Greek) not probable

And this is just a small part of studies I did for CDO and CDS theoretical structures

**But the main conclusion is that similar probability space transformations are needed in stress testing to define values of assets in different scenarios**
9. EBA Stress testing results for Agricultural Bank of Greece

Here is presented a stress test results in entirety

Agricultural Bank of Greece is among the banks that have failed, and it is estimated that they need €240mn funding. Notice how onesided is their loan exposure only to greeks.

### Results of the 2011 EBA EU-wide stress test: Summary

**Name of the bank:** ATEbank

<table>
<thead>
<tr>
<th>Actual results at 31 December 2011</th>
<th>million EUR, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating profit before impairments</td>
<td>209</td>
</tr>
<tr>
<td>Impairment losses on financial and non-financial assets in the banking book</td>
<td>-604</td>
</tr>
<tr>
<td>Risk weighted assets</td>
<td>12,836</td>
</tr>
<tr>
<td>Core Tier 1 capital</td>
<td>792</td>
</tr>
<tr>
<td>Core Tier 1 capital ratio, %</td>
<td>0.3%</td>
</tr>
</tbody>
</table>

**Additional capital needed to reach a 5% Core Tier 1 capital benchmark**

<table>
<thead>
<tr>
<th>Outcomes of the adverse scenario at 31 December 2012, excluding all mitigating actions taken in 2011</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Tier 1 Capital ratio</td>
<td>-6.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outcomes of the adverse scenario at 31 December 2012, including recognised mitigating measures as of 30 April 2011</th>
<th>million EUR, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2yr cumulative operating profit before impairments</td>
<td>608</td>
</tr>
<tr>
<td>2yr cumulative impairment losses on financial and non-financial assets in the banking book</td>
<td>-2,672</td>
</tr>
<tr>
<td>2yr cumulative losses from the stress in the trading book</td>
<td>-16</td>
</tr>
<tr>
<td>of which valuation losses due to sovereign shock</td>
<td>-13</td>
</tr>
<tr>
<td>Risk weighted assets</td>
<td>12,398</td>
</tr>
<tr>
<td>Core Tier 1 Capital</td>
<td>-68</td>
</tr>
<tr>
<td>Core Tier 1 Capital ratio</td>
<td>-0.8%</td>
</tr>
</tbody>
</table>

**Additional capital needed to reach a 5% Core Tier 1 capital benchmark**

| Additional capital needed to reach a 5% Core Tier 1 capital benchmark | 713 |

**Effects from the recognised mitigating measures put in place until 30 April 2011**

- Equity raisings announced and fully committed between 31 December 2010 and 30 April 2011 (Core Tier 1 capital ratio (percentage points of CT1 ratio))
  - 525
- Effect of government support publicly announced and fully committed in period from 31 December 2010 to 30 April 2011 on Core Tier 1 capital ratio (percentage points of CT1 ratio)
  - 0.0
<table>
<thead>
<tr>
<th>Additional taken or planned mitigating measures</th>
<th>Percentage points contributing to capital ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of provisions and/or other reserves (including release of countercyclical provisions)</td>
<td>4.8</td>
</tr>
<tr>
<td>Divestments and other management actions taken by 30 April 2011</td>
<td></td>
</tr>
<tr>
<td>Other disinvestments and restructuring measures, including also future mandatory restructuring not yet approved with the EU Commission under the EU State Aid rules</td>
<td>1.9</td>
</tr>
<tr>
<td>Future planned issuances of common equity instruments (private issuances)</td>
<td></td>
</tr>
<tr>
<td>Future planned government subscriptions of capital instruments (including hybrids)</td>
<td></td>
</tr>
<tr>
<td>Other (existing and future) instruments recognised as appropriate back-stop measures by national supervisory authorities</td>
<td></td>
</tr>
</tbody>
</table>

Supervisory recognised capital ratio after all current and future mitigating actions as of 31 December 2012, %: 6.0%

Notes

(1) The stress test was carried using the EBA common methodology, which includes a static balance sheet assumption and incorporates regulatory transitional floors, where binding (see http://www.eba.europa.eu/EU-wide-stress-testing/2011.aspx for the details on the EBA methodology).

(2) All capital elements and ratios are presented in accordance with the EBA definition of Core Tier 1 capital setup for the purposes of the EU-wide stress test, and therefore may differ from the definitions used by national supervisory authorities and/or reported by institutions in public disclosures.

(3) Neither baseline scenario nor the adverse scenario and results of the stress test should in any way be construed as a bank’s forecast or directly compared to bank’s other published information.

(4) Full static balance sheet assumption excluding any mitigating management actions, mandatory restructuring or capital raisings post 31 December 2010 (all government support measures and capital raisings fully paid in before 31 December 2010 are included).

(5) Effects of capital raisings, government support and mandatory restructuring plans publicly announced and fully committed in period from 31 December 2010 to 30 April 2011, which are incorporated in the Core Tier 1 capital ratio reported as the outcome of the stress test.

(6) The supervisory recognised capital ratio computed on the basis of additional mitigating measures presented in this section. The ratio is based primarily on the EBA definition, but may include other mitigating measures not recognised by the EBA methodology as having impacts in the Core Tier 1 capital, but which are considered by the national supervisory authorities as appropriate mitigating measures for the stressed conditions. Where applicable, such measures are explained in the additional announcements issued by banks/national supervisory authorities. Details of all mitigating measures are presented in the worksheet "3 - Mitigating measures".
Results of the 2011 EBA EU-wide stress test: Aggregate information and evolution of capital (14)

All in million EUR or %

A. Results of the stress test based on the full static balance sheet assumption without any notifying actions, mandatory restructuring or capital raisings post 31 December 2010 (all government support measures fully paid in before 31 December 2010 are included)

<table>
<thead>
<tr>
<th>Capital adequacy</th>
<th>2010</th>
<th>Baseline scenario</th>
<th>Adverse scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk weighted assets</td>
<td>12,836</td>
<td>12,975</td>
<td>12,429</td>
</tr>
<tr>
<td>Common equity according to SCA definition</td>
<td>1.7</td>
<td>1.7</td>
<td>0.98</td>
</tr>
<tr>
<td>of which ordinary shares subscribed by government</td>
<td>501</td>
<td>501</td>
<td>501</td>
</tr>
<tr>
<td>Other existing subscribed government capital (before 31 December 2010)</td>
<td>675</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Core Tier 1 capital (full static balance sheet assumption)</td>
<td>722</td>
<td>147</td>
<td>98</td>
</tr>
<tr>
<td>Core Tier 1 capital ratio (%)</td>
<td>6.3%</td>
<td>1.1%</td>
<td>0.7%</td>
</tr>
</tbody>
</table>

B. Results of the stress test recognising capital issuance and mandatory restructuring plans publicly announced and fully committed before 31 December 2010

<table>
<thead>
<tr>
<th>Capital adequacy</th>
<th>2010</th>
<th>Baseline scenario</th>
<th>Adverse scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk weighted assets</td>
<td>12,836</td>
<td>12,975</td>
<td>12,429</td>
</tr>
<tr>
<td>Core Tier 1 Capital (full static balance sheet assumption)</td>
<td>722</td>
<td>147</td>
<td>98</td>
</tr>
<tr>
<td>Core Tier 1 capital ratio (%)</td>
<td>6.3%</td>
<td>1.1%</td>
<td>0.7%</td>
</tr>
</tbody>
</table>

C. Results of the stress test recognising capital issuance and mandatory restructuring plans publicly announced and fully committed before 30 April 2011

<table>
<thead>
<tr>
<th>Capital adequacy</th>
<th>2010</th>
<th>Baseline scenario</th>
<th>Adverse scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk weighted assets</td>
<td>12,836</td>
<td>12,975</td>
<td>12,429</td>
</tr>
<tr>
<td>Core Tier 1 capital ratio (%)</td>
<td>6.3%</td>
<td>1.1%</td>
<td>0.7%</td>
</tr>
<tr>
<td></td>
<td>2010</td>
<td>Baseline scenario</td>
<td>Adverse scenario</td>
</tr>
<tr>
<td>------------------------</td>
<td>--------</td>
<td>-------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2011</td>
<td>2012</td>
</tr>
<tr>
<td>Net interest income</td>
<td>876</td>
<td>778</td>
<td>742</td>
</tr>
<tr>
<td>Trading income</td>
<td>16</td>
<td>3</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>of which trading losses from stress scenarios</td>
<td>0</td>
<td>0</td>
<td>-8</td>
</tr>
<tr>
<td>of which valuation losses due to sovereign shock</td>
<td>-2</td>
<td>-2</td>
<td></td>
</tr>
<tr>
<td>Other operating income</td>
<td>104</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>Impairments on financial and non-financial assets in the banking book</td>
<td>-204</td>
<td>-1,203</td>
<td>-824</td>
</tr>
<tr>
<td>Operating profit before impairments</td>
<td>209</td>
<td>401</td>
<td>381</td>
</tr>
<tr>
<td>Operating profit after impairments and other losses from the stress</td>
<td>-394</td>
<td>-90</td>
<td>58</td>
</tr>
<tr>
<td>Other income</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Net profit after tax</td>
<td>-440</td>
<td>-401</td>
<td>-46</td>
</tr>
<tr>
<td>of which carried over to capital (retained earnings)</td>
<td>-440</td>
<td>-401</td>
<td>-46</td>
</tr>
<tr>
<td>of which distributed as dividends</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### Additional Information

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>Baseline scenario</th>
<th>Adverse scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2011</td>
<td>2012</td>
</tr>
<tr>
<td>Deferred Tax Assets</td>
<td>442</td>
<td>562</td>
<td>551</td>
</tr>
<tr>
<td>of which stock of provisions for non-defaulted assets</td>
<td>1,705</td>
<td>2,104</td>
<td>3,519</td>
</tr>
<tr>
<td>of which Sovereigns</td>
<td>756</td>
<td>756</td>
<td>750</td>
</tr>
<tr>
<td>of which Institutions</td>
<td>14</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>of which Corporate (excluding Commercial real estate)</td>
<td>301</td>
<td>301</td>
<td>301</td>
</tr>
<tr>
<td>of which Retail (excluding Commercial real estate)</td>
<td>436</td>
<td>436</td>
<td>439</td>
</tr>
<tr>
<td>of which Professional</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>of which Real estate (excluding commercial real estate)</td>
<td>939</td>
<td>1,953</td>
<td>2,369</td>
</tr>
<tr>
<td>of which Commercial real estate</td>
<td>472</td>
<td>808</td>
<td>155</td>
</tr>
<tr>
<td>of which Retail (excluding commercial real estate)</td>
<td>404</td>
<td>801</td>
<td>892</td>
</tr>
<tr>
<td>of which Commercial real estate</td>
<td>46</td>
<td>286</td>
<td>349</td>
</tr>
</tbody>
</table>

### Coverage ratios (%)

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>Baseline scenario</th>
<th>Adverse scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2011</td>
<td>2012</td>
</tr>
<tr>
<td>Corporate (excluding Commercial real estate)</td>
<td>45.1%</td>
<td>62.5%</td>
<td>62.5%</td>
</tr>
<tr>
<td>Retail (excluding Commercial real estate)</td>
<td>25.8%</td>
<td>41.8%</td>
<td>39.4%</td>
</tr>
<tr>
<td>Commercial real estate</td>
<td>11.8%</td>
<td>62.5%</td>
<td>62.5%</td>
</tr>
</tbody>
</table>

### Loan ratios (%)

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>Baseline scenario</th>
<th>Adverse scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2011</td>
<td>2012</td>
</tr>
<tr>
<td>Corporate (excluding Commercial real estate)</td>
<td>1.0%</td>
<td>1.1%</td>
<td>1.2%</td>
</tr>
<tr>
<td>Retail (excluding Commercial real estate)</td>
<td>0.4%</td>
<td>0.4%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Commercial real estate</td>
<td>4.3%</td>
<td>5.4%</td>
<td>6.2%</td>
</tr>
</tbody>
</table>

### Funding cost (bps)

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>Baseline scenario</th>
<th>Adverse scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2011</td>
<td>2012</td>
</tr>
<tr>
<td>Corporate (excluding Commercial real estate)</td>
<td>939</td>
<td>1,953</td>
<td>2,369</td>
</tr>
</tbody>
</table>

D. Other mitigating measures (see Mitigating measures worksheet for details), million EUR
All effects as compared to regulatory aggregates as reported in Section A

<table>
<thead>
<tr>
<th>Baseline scenario</th>
<th>Adverse scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>2012</td>
</tr>
<tr>
<td>A) Use of provisions and/or other reserves (including release of counter cyclical provisions), capital ratio effect ((\text{A}(-)))</td>
<td>600</td>
</tr>
<tr>
<td>B) Investments and other management actions taken by 30 April 2011, capital ratio effect ((\text{B}(-)))</td>
<td></td>
</tr>
<tr>
<td>C) Investments and other business decisions taken by 30 April 2011, capital ratio effect ((\text{C}(-)))</td>
<td></td>
</tr>
<tr>
<td>D) Other investments and restructuring measures, including also further voluntary restructuring not yet approved by the EU Commission under the EU State Aid rules, capital ratio effect ((\text{D}(-)))</td>
<td></td>
</tr>
<tr>
<td>E) Other investments and restructuring measures, including also further mandatory restructuring not yet approved by the EU Commission under the EU State Aid rules, capital ratio effect ((\text{E}(-)))</td>
<td></td>
</tr>
<tr>
<td>F) Future planned issuances of common equity instruments (private issuances), capital ratio effect</td>
<td>235</td>
</tr>
<tr>
<td>G) Future planned government subscriptions of capital instruments (including hybrid), capital ratio effect</td>
<td></td>
</tr>
<tr>
<td>H) Other (existing and future) instruments recognised as appropriate backstop measures by national supervisory authorities, capital ratio effect ((\text{H}(-)))</td>
<td></td>
</tr>
<tr>
<td>I) Other (existing and future) instruments recognised as appropriate backstop measures by national supervisory authorities, capital ratio effect ((\text{I}(-)))</td>
<td></td>
</tr>
<tr>
<td>Risk weighted assets after other mitigating measures ((\text{B}(-)+\text{D}(-)+\text{E}(-)+\text{H}(-)+\text{I}(-)))</td>
<td>12,071</td>
</tr>
<tr>
<td>Capital after other mitigating measures ((\text{A}(-)+\text{B}(-)+\text{C}(-)+\text{D}(-)+\text{E}(-)+\text{F}(-)+\text{G}(-)+\text{H}(-)+\text{I}(-)))</td>
<td>1,345</td>
</tr>
<tr>
<td>Supervisory recognised capital ratio (%)</td>
<td>12.2%</td>
</tr>
</tbody>
</table>

Notes and definitions

(1) The stress test was carried using the EBA common methodology, which includes a static balance sheet assumption (see http://www.eba.europa.eu/EU-wide-stress-testing/2011 for the details on the EBA methodology).

(2) All capital elements and ratios are presented in accordance with the EBA definition of Core Tier 1 capital suitable for the purposes of the EU-wide stress test, and therefore may differ from the definitions used by national supervisory authorities or reported by institutions in public disclosures.

(3) Neither baseline scenario nor the adverse scenario and results of the stress test should in any way be construed as a bank’s forecast or directly compared to banks’ published information.

(4) Regulatory transitional flows are applied where applicable. RWA for credit risk have been calculated in accordance with the EBA methodology assuming an additional mandatory increase at level of RWA, before regulatory transitional flows, for December 2013 for both IRB and STA portfolios.

(5) Banks are required to provide explanations of what ‘Other operating income’ and ‘Other income’ constitutes for.

Composition of ‘Other operating income’ and ‘Other income’—The bank has already devoloped certain disposable assets in a conservative approach, and is expected to record small profits during the process of sell or settlement, according to the restructuring plan of the bank.

Results of the 2011 EBA EU-wide stress test: Composition of capital as at 31 December 2010

<table>
<thead>
<tr>
<th>Situation at December 2010</th>
<th>December 2010</th>
<th>References to COREP reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intra-entity equity</td>
<td>Intra-entity equity</td>
<td>COREP (Core Tier 1 Capital)</td>
</tr>
<tr>
<td>Other capital instruments</td>
<td>Other capital instruments</td>
<td>COREP (Core Tier 1 Capital)</td>
</tr>
<tr>
<td>Debt instruments</td>
<td>Debt instruments</td>
<td>COREP (Core Tier 1 Capital)</td>
</tr>
<tr>
<td>Other capital instruments</td>
<td>Other capital instruments</td>
<td>COREP (Core Tier 1 Capital)</td>
</tr>
<tr>
<td>Difference from benchmark capital threshold (CT15%)</td>
<td>Difference from benchmark capital threshold (CT15%)</td>
<td>COREP (Core Tier 1 Capital)</td>
</tr>
<tr>
<td>Capital Core Tier 1 ((\text{CT15}%))</td>
<td>Capital Core Tier 1 ((\text{CT15}%))</td>
<td>COREP (Core Tier 1 Capital)</td>
</tr>
<tr>
<td>Capital Core Tier 1 + Capital Core Tier 2 ((\text{CT15}%))</td>
<td>Capital Core Tier 1 + Capital Core Tier 2 ((\text{CT15}%))</td>
<td>COREP (Core Tier 1 Capital)</td>
</tr>
</tbody>
</table>

Notes and definitions

(1) Intra-entity equity is calculated as the eligible regulatory capital elements in the group on a fully consolidated basis.
(2) Capital Core Tier 1 is calculated as the sum of Core Tier 1 capital and capital provided in a conservative approach.
(3) Capital Core Tier 2 is calculated as the sum of Core Tier 1 capital and capital provided in a conservative approach.

Calculation of capital ratios for the group-wide adequacy test

<table>
<thead>
<tr>
<th>Baseline scenario</th>
<th>Adverse scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>2012</td>
</tr>
<tr>
<td>A) Use of provisions and/or other reserves (including release of counter cyclical provisions), capital ratio effect ((\text{A}(-)))</td>
<td>600</td>
</tr>
<tr>
<td>B) Investments and other management actions taken by 30 April 2011, capital ratio effect ((\text{B}(-)))</td>
<td></td>
</tr>
<tr>
<td>C) Investments and other business decisions taken by 30 April 2011, capital ratio effect ((\text{C}(-)))</td>
<td></td>
</tr>
<tr>
<td>D) Other investments and restructuring measures, including also further voluntary restructuring not yet approved by the EU Commission under the EU State Aid rules, capital ratio effect ((\text{D}(-)))</td>
<td></td>
</tr>
<tr>
<td>E) Other investments and restructuring measures, including also further mandatory restructuring not yet approved by the EU Commission under the EU State Aid rules, capital ratio effect ((\text{E}(-)))</td>
<td></td>
</tr>
<tr>
<td>F) Future planned issuances of common equity instruments (private issuances), capital ratio effect</td>
<td>235</td>
</tr>
<tr>
<td>G) Future planned government subscriptions of capital instruments (including hybrid), capital ratio effect</td>
<td></td>
</tr>
<tr>
<td>H) Other (existing and future) instruments recognised as appropriate backstop measures by national supervisory authorities, capital ratio effect ((\text{H}(-)))</td>
<td></td>
</tr>
<tr>
<td>I) Other (existing and future) instruments recognised as appropriate backstop measures by national supervisory authorities, capital ratio effect ((\text{I}(-)))</td>
<td></td>
</tr>
<tr>
<td>Risk weighted assets after other mitigating measures ((\text{B}(-)+\text{D}(-)+\text{E}(-)+\text{H}(-)+\text{I}(-)))</td>
<td>12,071</td>
</tr>
<tr>
<td>Capital after other mitigating measures ((\text{A}(-)+\text{B}(-)+\text{C}(-)+\text{D}(-)+\text{E}(-)+\text{F}(-)+\text{G}(-)+\text{H}(-)+\text{I}(-)))</td>
<td>1,345</td>
</tr>
<tr>
<td>Supervisory recognised capital ratio (%)</td>
<td>12.2%</td>
</tr>
</tbody>
</table>
### Use of counter cyclical provisions, divestitures and other management actions

<table>
<thead>
<tr>
<th>Measure</th>
<th>Narrative description</th>
<th>Date of implementation</th>
<th>Impact on capital (in millions EUR)</th>
<th>BIS impact (in millions EUR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Use of provisions and/or other reserves (including write-downs and write-offs)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B) Divestitures and other management action by 30 April 2011</td>
<td></td>
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<tr>
<td>C) Other divestitures and repurchase/restructurings, including also future mandatory recapitalizations not approved by the EU Commission under the EU State Aid rules</td>
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</tbody>
</table>

### Future capital raises and other back-stop measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Narrative description</th>
<th>Date of implementation</th>
<th>Impact on capital (in millions EUR)</th>
<th>BIS impact (in millions EUR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>D) Future planned issuance of common equity (insurance private issuance)</td>
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<tr>
<td>E) Future planned increase in subscription capital (including hybrid)</td>
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</tr>
<tr>
<td>F) Other capital (subscription) instruments recognized as back-stop measures by national regulatory authorities (including hybrids)</td>
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</tbody>
</table>

### Notes and definitions

1. The scale of the measures follows the order of the capital adequacy ratio (CAR) of the bank. If the scale is the same, the capital adequacy ratio most affected is shown.

2. A measure can be reported as fully effective in the month of its implementation.

3. For the range of measures, the capital impact of the lower range of capital adequacy ratio (CAR) is included, the top range can be included within a mark-up of capital requirements in the capital buffer or the core Tier 1 ratio, which was under the EU-wide stress test methodology and which would, in any case, be shown in Section D. If the mark-up is significantly different, the capital adequacy ratio is marked as not compliant in the mark-up.

4. If reported please insert the mark-up (if different) otherwise specified.

---

**Results of the 2011 EBA EU-wide stress test: Overview of mitigating measures**

**Note: The term 'A Bank' refers to a single entity.**
<table>
<thead>
<tr>
<th>Voluntary</th>
<th>Partial</th>
<th>Statistical disclosure obligation</th>
<th>Municipal authority</th>
<th>Regional authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal bonds</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Regional bonds</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Municipal bonds (including municipal real estate)</td>
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<td>4</td>
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<tr>
<td>Regional bonds (including regional real estate)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

**Notes:**
1. Voluntary: Disclosure of selected statistical data on the basis of voluntary disclosure in the 2011 EU-wide communication, and hence not all the data provided.
2. Regional bonds include: the European Union, the Member States, the regional authorities of the Member States, and the regional authorities of the Community.
3. Municipal bonds: The voluntary disclosure of the statistical data is based on the voluntary disclosure of the regional authorities of the Member States.
<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Direct Loss Exposure (assuming non-performing loans and advances)</th>
<th>Internal Position</th>
<th>Direct Loss Exposure (assuming non-performing loans and advances)</th>
<th>Internal Position</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Loan-loss provisions</td>
<td>Other</td>
<td>Net position</td>
<td>Derivatives</td>
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<tr>
<td>Country/Region</td>
<td>Gross Direct Long Positions (accounting value gains from cash positions)</td>
<td>Net Direct Positions</td>
<td>Direct stormed exposure in nominal terms</td>
<td>Direct stormed exposure in the valuation mode</td>
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