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Faculty of Economics and Management
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Diploma Thesis

The impact of current economic crisis on Czech economy

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Declaration

I hereby declare that I have worked on my Diploma thesis titled “The impact of current economic crisis on Czech economy” solely and completely on my own and that I have marked all quotations in the text. The literature and other material I have used are mentioned in the Bibliography section of the thesis.

In Prague on 22nd March 2011

.....
Michal Zeman

Acknowledgment

I would like to thank especially to my supervisor Ing. Mansoor Maitah, Ph.D. et Ph.D. for his very valuable advices, comments and the time which he devoted to me and I am greatly indebted to him.

Důsledky současné ekonomické krize v české ekonomice

The impact of current economic crisis on Czech economy

Summary

As the title suggests the diploma thesis deals with the consequences of the economic crisis on the Czech Republic's economy. The first, theoretical part provides the background for understanding the circumstances which caused that initially United States' crisis quickly spread all over the financial world and led to the economic crisis affecting the whole world, including the Czech Republic.

The practical part comprises of two chapters which are focused on the analysis of public finance in the Czech Republic over the time period 2008 to 2010 and their long-term sustainability. Each year is analyzed separately in order to show the impacts of crisis and counter-crisis measures approved by the government on revenues and expenditures of public budgets. The first chapter strives to draw a conclusion that Czech government faces many challenges in the coming future and the fiscal consolidation is a must (especially when the government failed to pursue the fiscal consolidation in years of rapid growth) because the budget balance has deteriorated significantly during the analyzed time period.

The second chapter of analytical part deals with the problems of the long-term sustainability of public finance which are caused by ever-increasing costs associated with quick population ageing. The effect of demographic change does not have only several social consequences but also significant economic consequences caused by the reduction in the working age and an increase in the government expenditure.

Keywords

Economic crisis, public finance, public budgets, national accounts, fiscal consolidation, long-term sustainability, pension reform

Resumé

Jak již vyplívá z názvu, diplomová práce se zabývá následky ekonomické krize na ekonomiku České Republiky. První, teoretická část poskytuje pozadí pro pochopení okolností, které způsobily, že původně Americká krize se rychle rozšířila do celého finančního světa a vedla ke krizi ekonomické, která ovlivnila celý svět, Českou Republiku nevyjímaje.

Praktická část se skládá ze dvou kapitol, které jsou zaměřené na analýzu veřejných financí v České Republice v období od roku 2008 do roku 2010 a jejich dlouhodobou udržitelnost. Každý rok je analyzovaný odděleně k tomu, aby ukázal vliv krize a protikrizových opatření schválených vládou na příjmy a výdaje veřejných rozpočtů. První kapitola se snaží dospět k závěru že, Česká vláda čelí několika výzvám v blízké budoucnosti a konkrétně fiskální konsolidace se jeví jako nezbytná (zvláště když vláda selhala v prosazování fiskální konsolidace během roků silného růstu), protože rozpočtový schodek se velmi výrazně zhoršil během analyzovaného období.

Druhá kapitola analytické části se věnuje problémům dlouhodobé udržitelnosti veřejných financí, které jsou způsobeny stále rostoucími náklady spojenými s rychlým populačním stárnutím. Účinek demografických změn nemá totiž pouze sociální následky, ale také významné ekonomické důsledky vyplývající ze snížení práce schopné populace a zvýšení vládních výdajů.

Klíčová slova

Ekonomická krize, veřejné finance, veřejné rozpočty, národní účty, fiskální konsolidace, dlouhodobá udržitelnost, penzijní reforma

Content

Summary	7
Keywords	7
Resumé	7
Klíčová slova	8
1 Introduction	10
2 Objectives of thesis and methodology	12
3 Description of causes of crisis	13
3.1 Demystifying of mortgage meltdown.....	13
3.2 Development of home prices in the pre-crisis era.....	22
3.3 Damages scorecard.....	26
4 Analysis of the economic crisis in the Czech Republic from the perspective of public finance over the period 2008-2010	33
4.1 Analysis of year 2008.....	39
4.1.1 Public budgets - cash flows.....	41
4.1.2 Government sector - national accounts.....	45
4.1.3 International comparison.....	48
4.2 Analysis of year 2009.....	53
4.2.1 Public budgets - cash flows.....	54
4.2.2 Government sector - national accounts.....	58
4.2.3 International comparison.....	61
4.3 Analysis of year 2010.....	66
4.3.1 Government sector - national accounts.....	69
4.3.2 International comparison.....	70
5 Sustainability of the public finance in the long-term horizon	72
5.1 Demographic projections in the Czech Republic over the years to 2060.....	72
5.1.1 Population ageing.....	73
5.1.2 Labor productivity and its impact on the GDP growth.....	75
5.1.3 Fiscal implications of population ageing.....	75
5.2 Pension reform.....	77
5.2.1 Critical assessment of the proposed pension reform, pros and cons of the system.....	80
5.3 Fiscal sustainability of public finance from the EU's point of view.....	82
6 Conclusion	84
7 Bibliography	87
8 Appendices	93

1 Introduction

The economic crisis that began in 2008 was very different from the multitude that had preceded it during the previous decades, because this crisis had a ‘‘Made in USA’’ label. Unlike the previous crisis that had been contained within the United States, this one soon turned global. For many people the crisis has not come as a surprise because there were many signs which indicated that something wrong was going to happen in the economy. A deregulated market was awash of liquidity, very low interest rate, a global real estate bubble (not only in the USA, but also in Spain, Ireland, the United Kingdom and other countries), and ever-increasing subprime lending contributed to the deadly combination.

The crisis which started as local soon became global because approximately a quarter of U.S. mortgages had gone abroad. (Stiglitz, 2010) First, the United States exported its deregulatory philosophy which caused that so many foreigners have bought so many of its toxic assets. Second, the United States also exported its recession. However, this was not the only channel which caused that the crisis became global. Other channels which helped to spread the crisis were the fact that the United States are still the largest economy in the world and also the interconnection of global financial markets played its role.

As the crisis worsened in the United States and Europe, other countries from different corners of the world started to suffer from the collapse in global demand. This was also a case of the Czech Republic. The Czech Republic was both mainly affected by a decline in foreign demand for exports, and by the effects of destabilization from other countries in the region of the middle Europe. On the other side, the advantage of Czech economy was stable banking sector, domestic banks which did not invest, except of minor exceptions, to securities linked to the United States real estate market, and low external debt and public finance and current account deficit.

However, the analysis of public finance in the diploma thesis will show that good condition of public budgets was to certain extent only an outcome of high economic growth in previous years when the Czech economy was operating at a peak. The crisis has

only unveiled the truth that current model of public finance based on the idea that by decreasing taxes it is possible to stimulate the economic growth of the country which will contribute to higher tax collections is not sustainable, especially during the period of economic recession.

The aim of the first, theoretical part, is to outline the reasons which triggered ‘the Great Recession’, clearly the worst downturn since the Great Depression. The facts are gradually presented as the crisis of subprime mortgages was evolving to mortgage, credit and financial crisis, followed by an economic crisis and worldwide recession.

The practical part starting with the fourth chapter, analyzes the consequences of economic crisis on public finance in the Czech Republic over the time period 2008-2010. Each year is analyzed separately in order to show impacts of the crisis on revenues and expenditures of public budgets. It is very important to do the analysis year by year because not only the crisis influenced the balance of public budgets, but also counter-crisis measures approved by the government. Furthermore, the inability of government to pursue the fiscal consolidation in years of high economic growth and approval of several laws affecting the revenues’ side of budget led to the deficit.

The following fifth chapter is extremely important. I pay attention to the long-term sustainability of public finance and the threats posed by quickly ageing population. I would like to come to the conclusion that without any further adjustments to current pension system, the fiscal consequences would be enormous. The pension system needs to be reformed because extending the retirement age, increasing social security contributions or imposing another tax is a solution for short time period, but it will not work in the longer time period.

2 Objectives of thesis and methodology

The primary goal of the thesis strives to analyze the possible consequences of economic crisis on public finance in the Czech Republic over the time period 2008-2010 and whether the current model of public finance is sustainable in the long-term horizon.

The theoretical part covers the literature overview which provides a background for understanding the reasons which triggered the worst economic crisis since the Great Depression in 1930s. The aim of this part is to outline the situation prior to the crisis and examine the underlying problems which caused the global impact of the crisis.

In the analytical part of the thesis, I would like to stress three important objectives.

Firstly, each year is analyzed separately in order to show impacts of the crisis on revenues and expenditures of public budgets. It is very important to do the analysis year by year because not only the crisis influenced the balance of public budgets, but also counter-crisis measures approved by the government.

Secondly, I want to point out that failure of the Czech government to pursue fiscal consolidation during the years of high economic growth together with very questionable tax reform worsened the impacts of crisis on public finance.

Thirdly, I pay attention to the long-term sustainability of public finance and the threats posed by quickly ageing population. Diploma thesis strives to draw a conclusion that without any further adjustments to the current pension system, the fiscal consequences would be enormous.

During elaboration of my diploma thesis I have used the following research methods. The theoretical part is mainly based on the literature review. It provides an overview of relevant published articles, research reports and books on the topic of diploma thesis. In the analytical part I have used method of analysis of relevant documents and method of comparison. The formulation of summary and conclusion is based on the synthesis method.

3 Description of causes of crisis

“What was different about this crisis from the multitude that had preceded it during the last quarter century was that this crisis bore a ‘Made in the USA’ label. And while previous crises had been contained, this ‘Made in the USA’ crisis spread quickly around the world.” (Stiglitz, 2010, p.1)

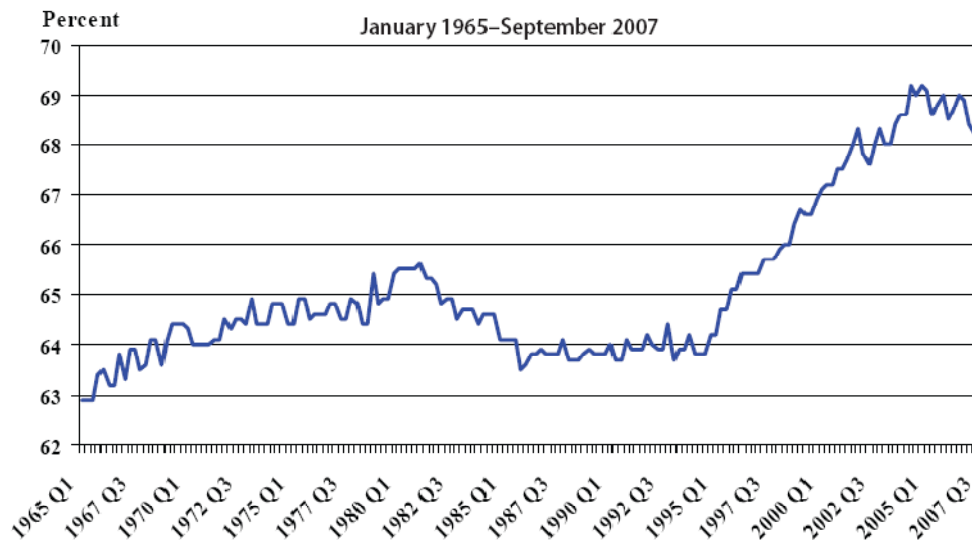
3.1 Demystifying of mortgage meltdown

“The superior man understands what is right; the inferior man understands what will sell.” Confucius

To understand how all types of exotic subprime mortgages and their derivatives spread all over the global financial system and how they contributed to mortgage and credit crisis, we need to analyze the situation prior to the crisis.

For generations, the mortgage market has efficiently and successfully provided credit to millions of families, enabling them to achieve the American dream of owning their own homes. Homeownership rate was record high in the second quarter 2004, amounting to **69.2%**. See the figure 1.1.1 below which shows us the development of homeownership rate in the U.S. between years 1965 and 2007.

Figure 3.1.1: Homeownership rate in the U.S.



Source: Barth, et al, 2008

However, this number was achieved by the credit boom and the growth of subprime mortgages which meant that many families or individuals who were less creditworthy were provided with greater opportunities to purchase homes. (Barth, et al, 2009) Furthermore, record low interest rates which prevailed between years 2001 and 2004 contributed to this situation as well.

In the past, the traditional lenders, depository banks¹, accounted for the major part of the mortgage underwriting. These traditional lenders were well regulated by both the Federal Reserve and the Federal Deposit Insurance Corporation (FDIC). These banks are typically run in a very conservative and purposeful fashion.

Based on these characteristics, traditional lending is focused on borrowers who could put a large down payment, had good income and credit histories, and could service the debt easily. These were the prime borrowers and they tended to make safe bets for lenders.

Over time, other participants got increasingly involved in the home loan industry. Some of them specialized on home buyers who did not quite meet the standards required by the major banks. These borrowers we can call as subprime borrowers. They can be described by those characteristics: their credit scores are not as strong, their down payments are smaller, and their income is not too high.

In the old days, this group of borrowers was a small niche market that was serviced by a few firms. Given the inability of subprime borrowers to get a prime loan, along with the increased risk of default due to the weaker ratios, these lenders were able to charge a premium for their services.

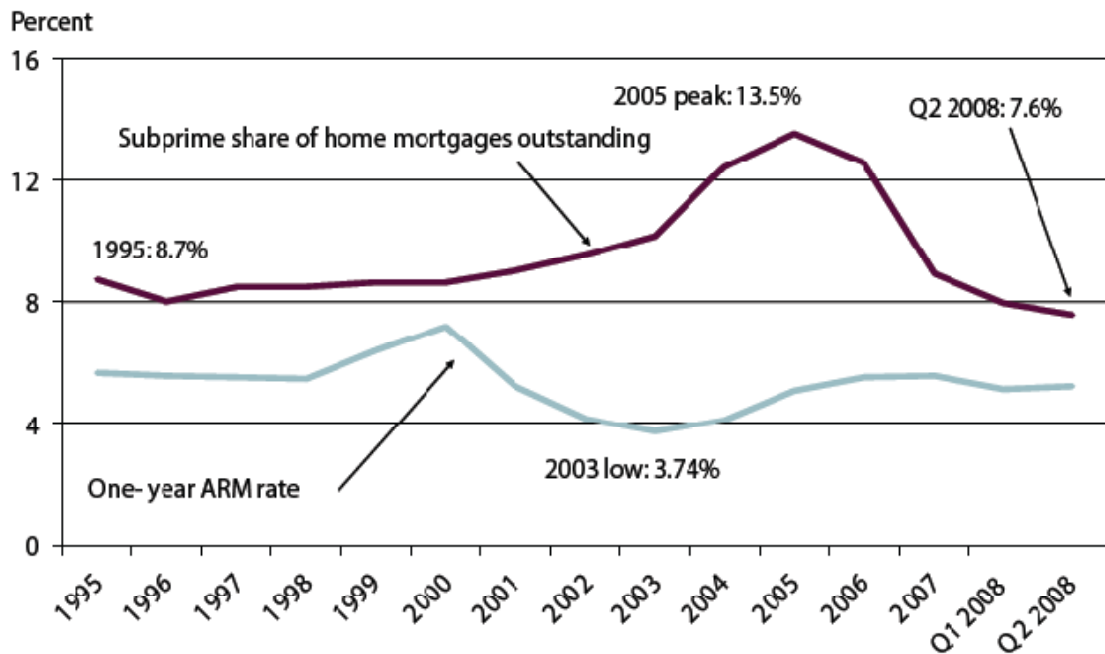
The majority of large and well known banks did not involve themselves in the subprime lending. The reasons are obvious: it was too messy and too many defaults were present. It simply did not correspond with their risk strategy.

However, starting in the early 2000s, conservative lending became unfashionable and aggressive risk taking appeared. Fiscal prudence was replaced by irresponsible lending. It soon reached a point when also the traditional banks replaced the garden-variety mortgages with jungle-variety loans. (Ritholz, 2009)

¹ Depository bank is a bank that keeps assets or securities on behalf of a client. All retail banks are depository banks, because they hold money for account holders. (Investopedia, 2010)

See the Figure 3.1.2 which shows us the rapid growth of subprime mortgages before a big decline.

Figure 3.1.2: The subprime share of home mortgages



Source: Barth, et al, 2009

In the new era of banking, “lend to securitize” became the industry’s standard operating procedure.

One of banking’s major changes prior to the crisis was the rise of the nondepository mortgage originator. These lenders used independent brokers to promote and push their products to the potential clients. They were the prime salespeople of the subprime adjustable-rate mortgage (ARM)². (Barry, 2009) In 1987, there were only 7,000 U.S. mortgage brokers, but this number increased to 53,000 by 2006. Their share of mortgage originators increased from 20 percent in 1987 to 68 percent in 2003 before declining to 58 percent in 2006. Speaking about subprime share of total originations, it was less than 5 percent in 1994, and then increased to 13 percent in 2000, and even more in years 2005

² “A type of mortgage in which the interest rate paid on the outstanding balance varies according to a specific benchmark. The initial interest rate is normally fixed for a period of time after which it is reset periodically, often every month. The interest rate paid by the borrower will be based on a benchmark plus an additional spread, called an ARM margin.”

An adjustable rate mortgage is also known as a "variable-rate mortgage" or a "floating-rate mortgage". (Investopedia, 2010)

and 2006. In these years the share of subprime originations in respect to total represented 20 percent. The share of subprime originations packed into Mortgage Backed Securities (MBS) grew from 31.6 percent to 80.5 percent during the same time period. See Figure 3.1.3 below (Barth, et al, 2008)

Figure 3.1.3: Growing Importance of Subprime and Securitization of Home Mortgage Originations 1994-2006

Year	Total Originations (\$US Billions)	Prime Market Share of Total (%)	Subprime Market Share of Total (%)	Subprime MBS Market Share of Total (%)	Share of Subprime MBS of Subprime Originations (%)
1994	773,0	94,0	4,5	1,4	31,6
1995	639,0	86,9	10,2	2,9	28,4
1996	785,0	83,2	12,3	4,5	36,4
1997	859,0	78,3	14,5	7,3	50,0
1998	1450,0	84,0	10,3	5,7	55,1
1999	1310,0	83,2	12,2	4,6	37,9
2000	1048,0	81,5	13,2	5,3	40,5
2001	2215,0	87,9	7,8	4,3	55,2
2002	2885,0	88,4	7,4	4,2	57,1
2003	3945,0	86,5	8,4	5,1	61,0
2004	2920,0	68,1	18,2	13,7	75,7
2005	3120,0	62,4	21,3	16,3	76,3
2006	2980,0	63,7	20,1	16,2	80,5

Source: Author's depiction based on data from Barth, et al, 2008

There is one significant difference between the traditional banks and these firms. They had no depositors to provide them with a capital base. These firms started with seed money, but once they ran out of them, they could not write more loans. Therefore, in order to stay in the business, they had to move the existing paper off their balance sheets and replace it with a new capital. Hence, they had to sell the mortgages they underwrote as soon as possible. Luckily, they found many willing buyers on the Wall Street, who wanted to purchase these loans for securitization purposes.

Due to the fact that the demand from Wall Street for mortgages to securitize was increasing, the originators of mortgages were obviously eager to satisfy it. However, they were abdicating all the lending standards. This was very different from the way the traditional banks used to operate in the past.

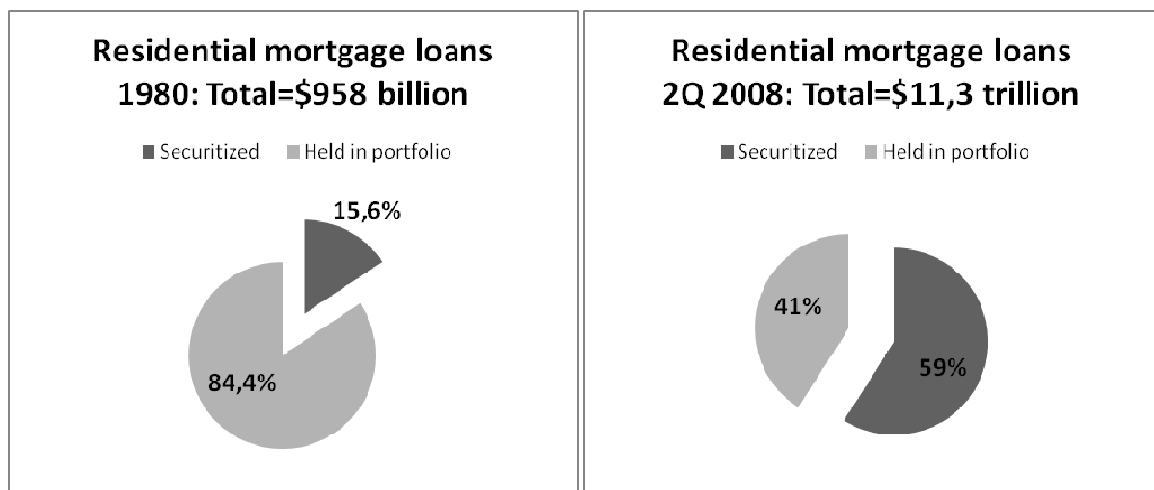
When a traditionally depository bank originated a mortgage, it assumed that it would hold on to the loan for a full time period. Depository banks didn't intent to resell

them; rather they wanted to guard these loans against the default and thus being profitable. (Barry, 2009) This process is known as *originate-to-hold model*. (Barth, et al, 2009)

Whereas, lend-to-securitize originators did their business in other way. They were paid according to the volume and not the quality of their loans. Furthermore, they didn't need to find a buyer who was good for the whole life of the loan, but somebody who would not default before the securitization process was complete. They needed the borrowers who would not default within 90 days that was the time how long the procedure of selling off and repackaging the loans as residential mortgage-backed securities (RMBSs)³ took. It meant that mortgage originators didn't have to find somebody who would carry the debt for the decades; they only needed to worry about that three month!!! (Barry, 2009) This process is known as *originate-to-distribute model*. (Barth, et al, 2009)

In the Figure 3.1.4 below, we can see how the mortgage model switched from originate-to-hold to originate-to-distribute model between years 1998 and 2 quarter 2008.

Figure 3.1.4: Switch from originate-to-hold to originate-to-distribute model



Source: Author's depiction based on data from Barth, Yago, 2008

³ "A type of security whose cash flows come from residential debt such as mortgages, home-equity loans and subprime mortgages. This is a type of mortgage-backed securities that focuses on residential instead of commercial debt.

Holder of an RMBS receive interest and principal payments that come from the holders of the residential debt. The RMBS comprises a large amount of pooled residential mortgages." (Investopedia, 2010)

This shift to the originate-to-distribute model relied on the ability to sell MBS to investors. And main rating agencies (Standard & Poor's, Moody's, and Fitch) played a crucial role in evaluating these securities. As of November 2008, triple-A rated securities represented 29 to 45 percent of all rated fixed-income securities (percentage depends on which agency did the rating) that were issued between January 1, 2000 and September 30, 2008, and are still outstanding. More than 90 percent of securities were rated investment grade by the major rating agencies. Speaking about ratings of MBS, between years 2005 and 2007 more than half of them rated as investment grade were downgraded. Even more interesting is that securities rated AAA were downgraded as well within three years period (approximately one in six). See the Figure 3.1.5 below.

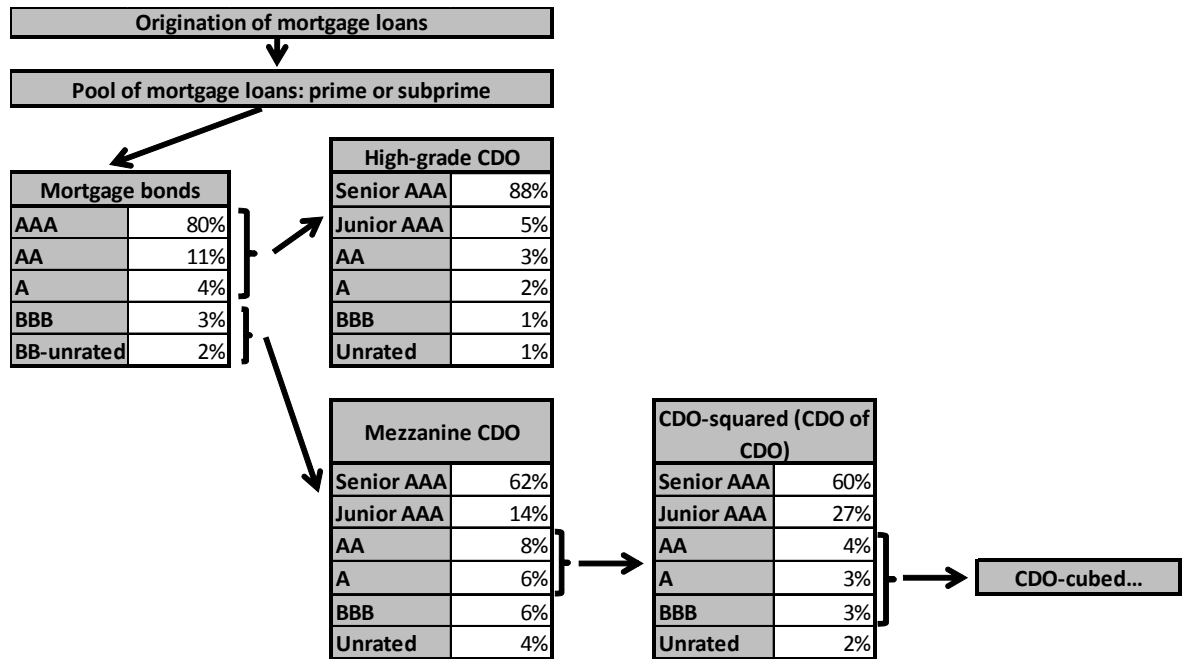
Figure 3.1.5: 56 percent of MBSs issued from 2005 to 2007 were eventually downgraded

S&P	Total	Downgraded	Downgraded as a percentage of total
AAA	1032	156	15,1
AA(+/-)	3495	1330	38,1
A(+/-)	2983	1886	63,2
BBB(+/-)	2954	2248	76,1
BB(+/-)	789	683	86,6
B(+/-)	8	7	87,5
Total	11261	6310	56

Source: Author's depiction based on data from Barth, 2009

Other problem was that rating agencies were creating new complex investment vehicles which were created from modification of earlier securities (Figure 3.1.6). It meant that what used to be triple-A was not triple-A anymore. (Barth, 2009)

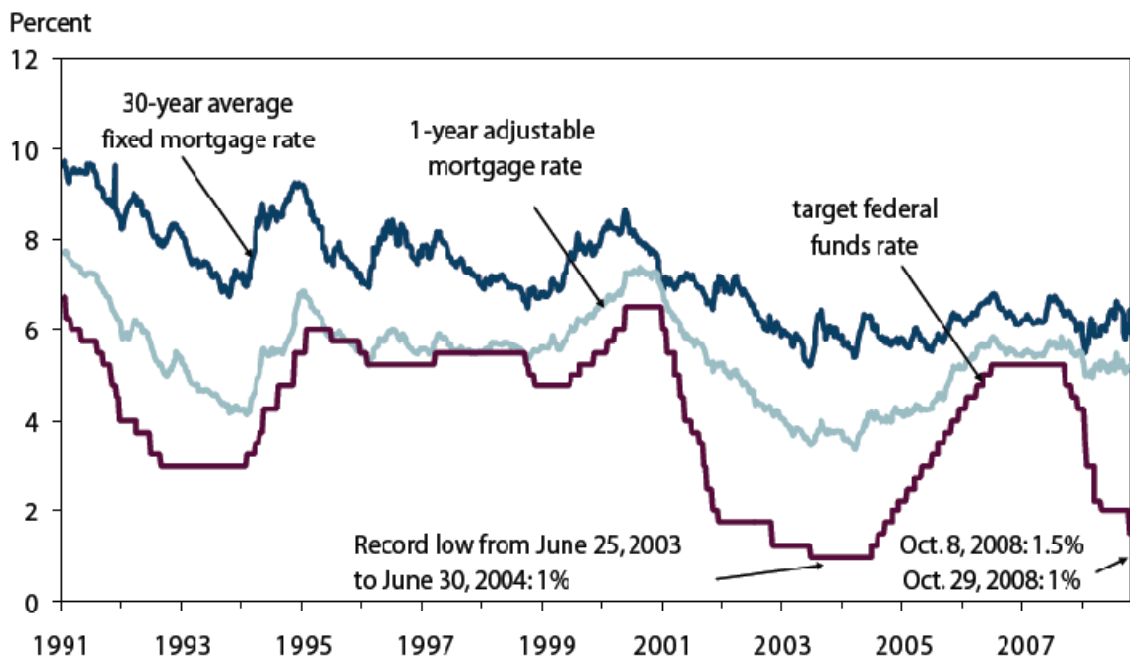
Figure 3.1.6: Multilayered mortgage products create a new one with higher ratings



Source: Author's depiction based on data from Barth, 2009

Another reason which contributed to the record homeownership rate was the record low interest rates that prevailed between years 2001 and 2004. See Figure 3.1.7.

Figure 3.1.7: Federal funds rate vs. rates on fixed and adjustable mortgages



Source: Barth, et al, 2009

During that time period Federal Reserve took steps to combat the 2001 recession and prevent deflation. Whether the FED lowered the interest rates too much and for too long is not a matter of this chapter, however it will be examine in the latter chapters.

Due to the low interest rate environment many home buyers decided to take adjustable rate mortgages (ARMs) over fixed-rate mortgages (FRMs). At the beginning, the ARMs offered advantages for both sides. Lenders could shift the interest rate risk to the borrowers, whilst many borrowers happily took this risk in exchange for initial lower payments that made the purchasing of home more affordable. (Barth, et al, 2009)

However, as Mara Der Hovanesian from BusinessWeek magazine pointed out, ‘‘the option adjustable rate mortgage (ARM) might be the riskiest and most complicated home loan product ever created. With its temptingly low minimum payments, the option ARM brought a whole new group of buyers into the housing market, extending the boom longer than it could have otherwise lasted, especially in the hottest markets. Suddenly, almost anyone could afford a home - or so they thought. The option ARM's low payments are only temporary. And the less a borrower chooses to pay now, the more is tacked onto the balance.’’ (Hovanesian, 2006)

The main problem associated with ARMs is that many of them are resetting at much higher payment schedules. And because the home prices have leveled off, borrowers cannot count on rising equity to bail them out. Furthermore, usually steep penalties prevent them from refinancing. (Hovanesian, 2006)

George McCarthy, a housing economist at New York Ford Foundation, described it very aptly: The option ARM is "like the neutron bomb, it's going to kill all the people but leave the houses standing." (Barry, 2009)

However, banks were aware of potential problems with foreclosures of these loans and therefore they did one thing. They sold some of their option ARMs off to Wall Street, where these loans were packaged with other, better loans and re-sold them to investors. Around \$182 billion of the option ARMs written in years 2004 and 2005 and further \$83 billion in year 2006 have been sold, repackaged, rated by debt-agencies and pushed to investors as mortgage-backed securities. Moreover, banks sold some unknown amount directly to hedge funds or other big investors with appetites for risk.

The rest of these option ARMs remained on the accounts of lenders where they generated for some period of time generated huge profits.

That is mainly due to the GAAP (generally accepted accounting principles), because banks can count as revenue the highest amount of ARM payment, even when the borrowers makes only the minimum payments as the majority of these loans holders did. It means that banks claims future revenue now, boosting the earnings per share. However, the problem of this so-called accrual accounting in the case of banks is that they cannot be sure they will eventually get the money back from their borrowers.

All the reasons described above contributed to the initial demand for mortgages but we have to mention one more reason. Thanks to the evaluation software, mortgage applications were processed in numbers never before possible. Computers replaced what was before a human judgment process. This automation system permitted rapid processing of bad credit risks, but it as the sloppiness and violation of the bank's own internal procedures that allowed even more bad loans to be underwritten. Loans were written to people with low FICO⁴ scores, on properties which had high loan-to-value (LTV)⁵ ratios and least but not last documentation was often very poorly filled. This entirely new category was called no-doc loans or liar loans.

In the chart below we can find examples of traditional loans and some of the exotic loans invented by the mortgage originators which Alan Greenspan called as "innovations". Predatory lending was other term which was used to describe these most egregious loans.

⁴ "A type of credit score that makes up a substantial portion of the credit report that lenders use to assess an applicant's credit risk and whether to extend a loan. Using mathematical models, the FICO score takes into account various factors in each of these five areas to determine credit risk: payment history, current level of indebtedness, types of credit used and length of credit history, and new credit." (Investopedia, 2010)

⁵ "A lending risk assessment ratio that financial institutions and others lenders examine before approving a mortgage. Typically, assessments with high LTV ratios are generally seen as higher risk and, therefore, if the mortgage is accepted, the loan will generally cost the borrower more to borrow or he or she will need to purchase mortgage insurance. Calculated as: mortgage amount/ appraised value of the property" (Investopedia, 2010)

Mortgage types:

30-year fixed: the traditional mortgage; fixed rate

2/28 ARM: An adjustable- rate mortgage that came with a fixed, two-year teaser rate. After the two years had elapsed, the mortgage would reset as much as 300 basis point above the prior teaser rate. These loans were mostly offered to subprime borrowers characterized with low FICO scores and modest income. This allowed even bigger mortgages to be written, since the first 24 payments were very low.

Interest only: mortgage payments were reduced dramatically by not paying back any of the principal.

Piggyback loan: This loan let a borrower take out an equity loans against the property to be used for a down payment.

Reverse amortization: Each month, the total outstanding amount owed went up.

Liar loans: No income verification was needed.

No money down: Mortgage that required 0% down payment.

High loan to value: A mortgage loan of up to 120% of the property's value, versus the traditional 80%.

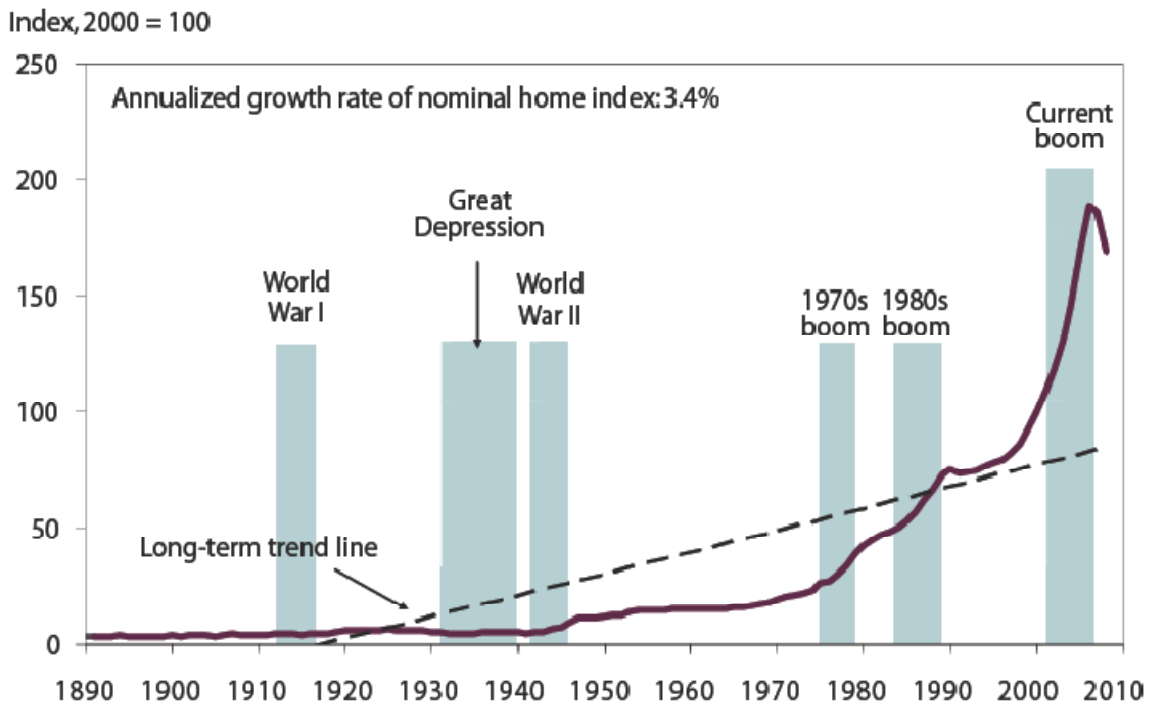
NINJA loan: No income, no job or assets. (Ritholtz, 2009)

3.2 Development of home prices in the pre-crisis era

‘Ignorance more frequently begets confidence than does knowledge’ Charles Darwin

The demand for residential real estate seemed to be almost insatiable. During the 1990s average annual rate was rising less than 3 percent, whilst between years 2000 and 2006, home prices jumped nationally by an average of nearly 9 percent and even more in overheated regions. (Barth, 2009) Figure 3.2.1 shows us that the recent run-up in home price was extraordinary.

Figure 3.2.1: Recent run-up of nominal home prices (1890-2Q 2008)



Source: Barth, 2009

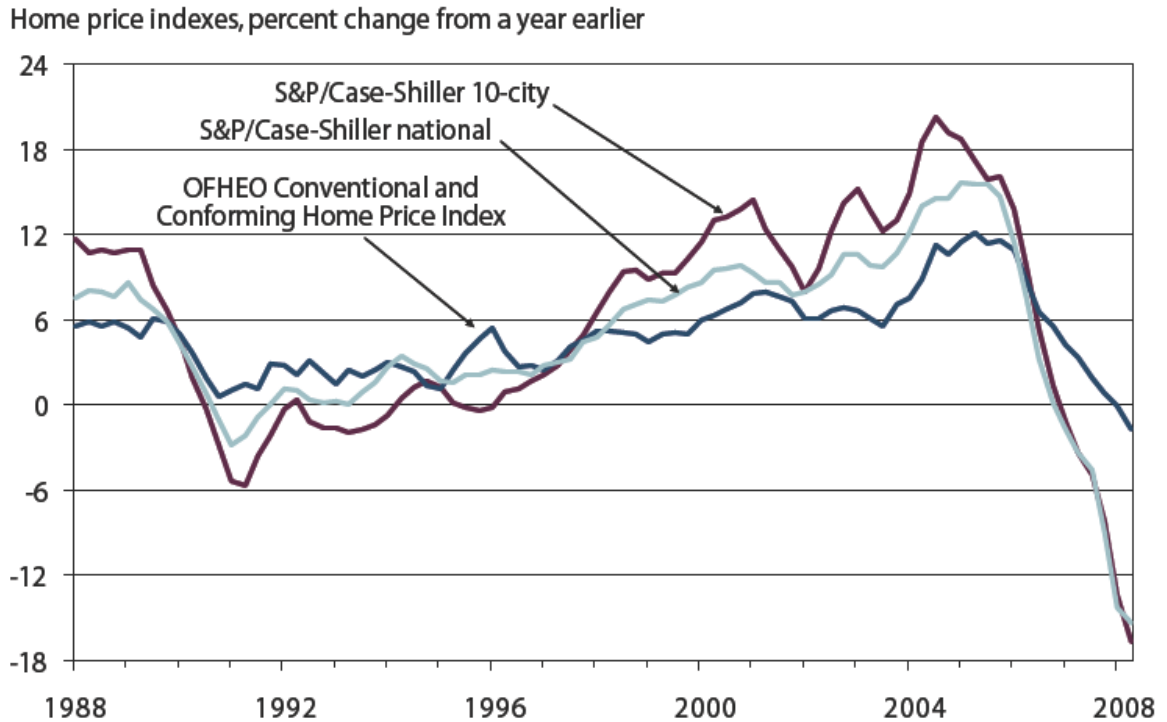
Note: The annualized growth rate is a geometrical mean.

Median home prices rose sharply relative to median household income, showing that borrowers were stretching further and further in order to buy properties, and rent-to-price ratios declined steeply. Median sales prices of new homes grew by 46.7 percent from \$169,000 in year 2000 to \$247,900 in year 2007 before a sharp decline of 12.6 percent in 2009 comparing to 2007. Median income increased between years 2006 and 2007 by only 19.6 percent from \$41,990 to \$50,233. (Own calculation based on data from U.S. Census Bureau, 2010)

By mid-2007 it was clear that housing market had been experiencing very difficult times. The most obvious sign was a long and steep growth of home prices in previous years and subsequent decline as we can see from Figure 3.2.2 which depicts S&P Case Shiller home price indices⁶, the leading measure of U.S. home prices, and one regulatory (OFHEO) home price index.

⁶ The S&P/Case-Shiller National U.S. Home Price Index tracks the value of single-family housing within the United States. The index is a composite of single-family home price indices for the nine U.S. Census divisions and is calculated quarterly.

Figure 3.2.2: The beginning of home prices collapse



Source: Barth, 2009

In the Figure 1.2.3 below are depicted the index levels for 10- City Composite and 20- City Composite indices⁷. As of April 2009, average home prices across the United States are back to their mid 2003 levels. From their peak of second quarter of year 2003, the 10- City Composite is down 33.6% and 20- City Composite is down 32,6%. Comparing the date from relative peaks-through-April 2009, only Dallas suffered one point digit decline, 9.6% from its peak in June 2007. The rest of all 20 metro areas were in double digits declines from their peaks, with 10 metro areas posting declines of greater than 30% and Phoenix and Las Vegas even greater of 50%. Phoenix was the worst performer with 54.1% from its peak in June 2006. (Standard & Poor's Press Release, 2009)

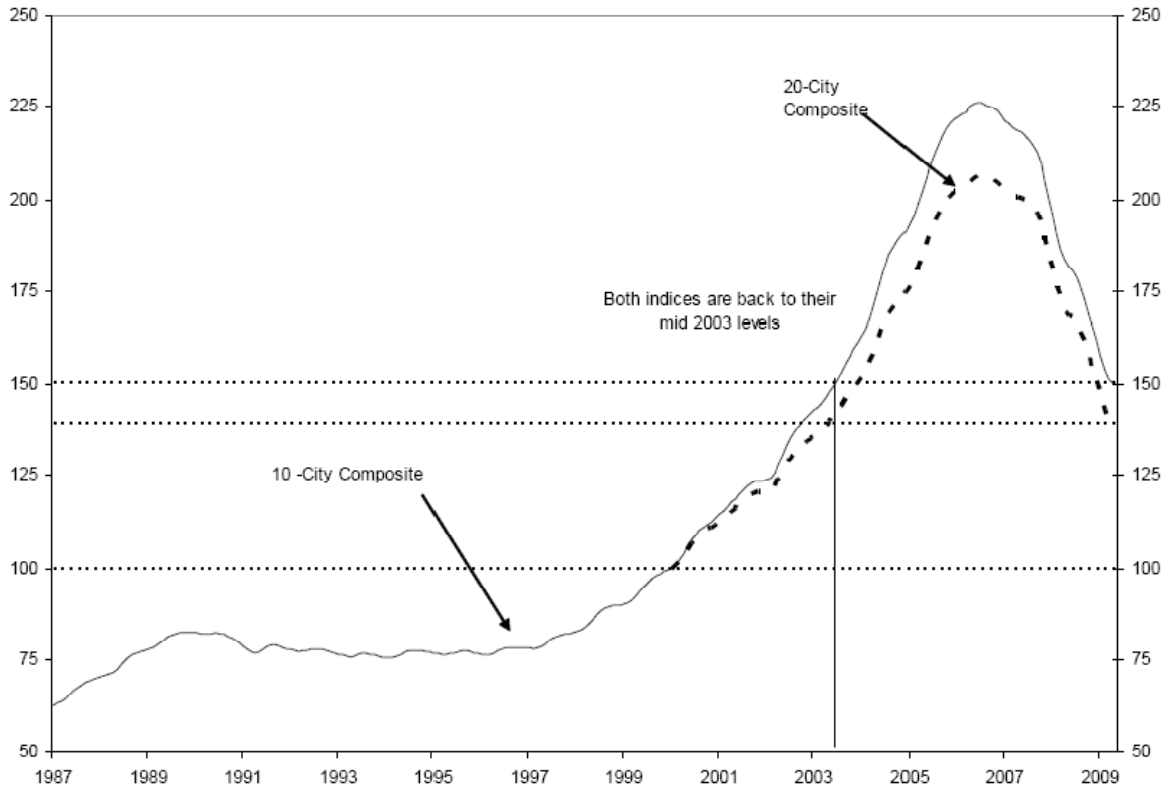
The S&P/Case-Shiller Composite of 10 Home Price Index is a value-weighted average of the 10 original metro area indices.

⁷ The S&P/Case-Shiller Composite of 10 Home Price Index is a value-weighted average of the 10 original metro area indices.

The S&P/Case-Shiller Composite of 20 Home Price Index is a value-weighted average of the 20 metro area indices.

The indices have a base value of 100 in January 2000; thus, for example, a current index value of 150 translates to a 50% appreciation rate since January 2000 for a typical home located within the subject market.

Figure 3.2.3: S&P/Case-Schiller Home Price Indices



Source: Standard & Poor's Press Release, 2009

Falling prices had many consequences for the home buyers. Many homeowners, especially those who bought a property near the end of the boom, found themselves underwater. It means that they owned more than their home's value. Other problematic group was borrowers with ARMs mortgages because they were unable to refinance before their rates reset.

As a result, foreclosures rates rose sharply, especially in overheated regions as California, Nevada, Arizona and Florida. One-third of homes sold between the third quarter of 2007 and the second quarter of 2008 were sold at a loss. There were 1.3 million foreclosures between the third quarter of 2006 and second quarter of 2008. Other problem was that in many neighborhoods, empty properties sat neglected, which drove prices of nearby homes further down.

Rate of foreclosures on subprime loans originated increased each year beginning in 2003. For loans originated in year 2006, rate of foreclosures was unbelievable 5.5 percent just six months from the origination. (Barth, 2009)

3.3 Damages scorecard

‘No private bank should be allowed to think of itself as too big to fail.’ William Safire

The financial crisis began to spread more widely in August 2007 when two internal Bear Sterns hedge funds collapsed (caused by heavy investment in subprime-related securities). These troubles spread to major Wall Street firms such as Merrill Lynch, JPMorgan Chase, Citigroup and Goldman Sachs which had loaned the firms money. This would prove to be the tip of the iceberg for the coming worldwide financial crisis and the end for the company with a long history of surviving the Great Depression, two world wars, the 1987 crash, the Long-Term Capital Management fall, and last but not least the 2000 dot-com tech wreck.

Bear Sterns was the biggest underwriter and trader of mortgage-backed securities on Wall Street. This investment bank was overexposed to mortgage-backed securities and this alone was a significant factor which contributed in its demise. Bear Sterns heavily invested in subprime and Alt-A mortgages which were going bad at an increasing pace. Further, lost of confidence and rumors of possible bankruptcy contributed to the fall of the bank as well. As soon as the firm’s problems became public, many of its main brokerage clients such as Citadel Investment Group, PIMCO decided to pull their capital out in order to protect themselves from possible fall. More brokerage clients were pulling out capital and therefore Bear Stern’s liquidity pool went from \$18.1 billion on March 10, 2008 to \$2 billion by March 13, 2008. (Ritholz, 2009)

At the end, with bankruptcy looming, Bear Sterns was acquired by JPMorgan for only \$2 dollar a share, whilst a one year ago, a share was trading around \$170 dollars. As a part of the transaction, JPMorgan Chase assumed the risk of the first billion dollars of the \$30 billion of Bear Sterns’ most risky assets. The Federal Reserve Bank of New York guaranteed the remaining \$29 billion. (Goldstein, 2008)

After Bear’s bailout, the question of who might be next overleveraged firm that has similarly bad assets and has equivalent risk exposure was hanging in the air on Wall Street. The obvious answer was Lehman Brothers. Two days after JPMorgan Chase and Fed bailed out Bear Sterns; there were a lot of concerns about Lehman, presented by almost

20% decline of stock price. On September 15, 2008 Lehman Brothers, the fourth largest investment bank at time of its collapse, filed for bankruptcy. Lehman had \$639 billion in assets and \$619 billion in debt, which accounted for the largest bankruptcy in the United States, far exceeding previous bankrupt companies such as WorldCom and Enron. Lehman's collapse was one of the factors which greatly intensified the 2008 crisis and contributed to the evaporation of close to \$10 trillion in market capitalization global equity markets in October 2008, the biggest monthly decline in the history.

Lehman's problem was not only its exposure to subprime mortgages and Alt-A loans (made to borrowers without a full documentation) but also its very high degree of leverage (the ratio of total assets to shareholders equity), which was 31 in 2007. And when you want to run lots of leverage as in this case, you would better hope nothing goes wrong, because there is not a lot of room for error. Lehman Brothers huge portfolio of mortgage securities made it very sensitive to any deterioration of conditions on the market.

After its first loss of \$2.8 billion for a second-quarter in June 2007, the firm tried to raise further money from investors (through issuance of preferred stock that was convertible into Lehman shares at a 32% premium to its price at the time), boost its liquidity pool, reduced its exposure to residential and commercial mortgages, and reduce the leverage from 31 to 25.

However, these measures were perceived by investors as not very significant and more importantly too late. On September 15, Lehman filed for bankruptcy, which caused loss of \$46 billion of its market value. The collapse of the bank served as the catalyst for the purchase of another investment bank Merrill Lynch by Bank of America in an emergency deal which was done the same day on September, 15. (Case Study: The Collapse of Lehman Brothers, 2010)

In the same month, before Lehman Brothers went bankrupt and Merrill Lynch was overtaken by Bank of America, Fannie Mae and Freddie Mac were put into conservatorship on September 7, 2008. Both Fannie Mae and Freddie Mac were government-sponsored enterprises (GSE)⁸, which purchase and guarantee mortgages

⁸ Privately held corporations with public purposes created by the U.S. Congress to reduce the cost of capital for certain borrowing sectors of the economy. (Investopedia, 2010)

through the secondary mortgage market; however they did not originate or service mortgages. In short, they facilitate the flow of money from Wall Street to Main Street.

The problem was that they grew very large in terms of assets and mortgage-backed securities (MBSs) issued. Their funding advantage on the market allowed them to massively purchase and invest in mortgages and mortgage-backed securities, with lower capital requirements comparing to other financial institutions and banks on the market. Furthermore, both companies were enormously highly leveraged. Leverage ratios of Freddie Mac and Fannie Mae were 67.9 and 21.5 respectively in June 2008. With such a thin capital rations, any significant decline in the value of their assets could seriously endanger their capital.

In the middle of 2007, housing market has been experiencing very difficult times. More details can be found in the previous subchapter. And it is a simple fact that when home prices are not rising, there is a higher risk of mortgage default. In 2007 Fannie Mae and Freddie Mac began to experience large losses on their retained portfolios, mainly Alt-A mortgages and subprime investments. Later in 2008, Federal Housing Finance Agency (FHFA) decided that both enterprises would be soon insolvent and on September 6, they were put into conservatorship. (Nielsen, 2010)

Before the end of the month, the Treasury Department guaranteed money market funds, the Securities and Exchange Commission (SEC) banned short-selling, the Troubled Assets Relief Program (TARP) was unveiled, Goldman Sachs and Morgan Stanley were converted to commercial banks, and Washington Mutual was taken over by JPMorgan Chase. Then there was American International Group (AIG).

Market capitalization of AIG, the world's biggest insurer, was \$217 billion in 2007. Although AIG had many divisions, basically it consisted from two companies: one was insurer company, the other was a structured products firm. The first one was well regulated by each state's insurance commission, well reserved in case of any loss, and also a member of few firms rated a triple-A credit rating. The other one was a completely different company: AIG's Financial Products (FP) division (AIGFP). It was actually a giant hedge fund, which bet primarily on derivatives. The unit's revenue rose to \$3.26 billion in 2005 from \$737 million in 1999. Further, the operating income as a part of AIG's overall operating income rose from 4.2% in 1999 to 17.5% in 2005. There was not any great secret

behind making this money. FP undertook an enormous amount of risk. In September 2008, FP exposure to swap contracts was \$2.7 trillion, made with over 2,000 counterparties via 50,000 trades. The chances of having to pay out on this insurance were very unlikely, at least according to the Tom Savage, the president of FP. AIG believed that it would not have to cover defaults. Of if did, only a small fragment of its CDS. However, as soon as rate of foreclosures rose to very high levels, AIG had to pay out what it promised to cover. The AIGFP ended with a loss around \$25 billion. (Ritholz, 2009)

AIG was in state of insolvency and therefore, government of the United States decided to step in in order to save company from ending belly up. AIG was saved by the government while other companies were not, simply because AIG was considered too big to fail. The Federal Reserve issued a loan worth \$85 billion to AIG in exchange for 79,9% of the company's equity. Later, the Federal Reserve and the Treasury Department pumped up more money into the company, with the total bill of \$150 billion, making it one of the biggest single bailout beneficiaries. (Gethard, 2010)

We can conclude that behind all these bankruptcies and bailouts stand more or less same reasons. I would use a summary written by Barry Ritholz in his book *Bailout Nation*:

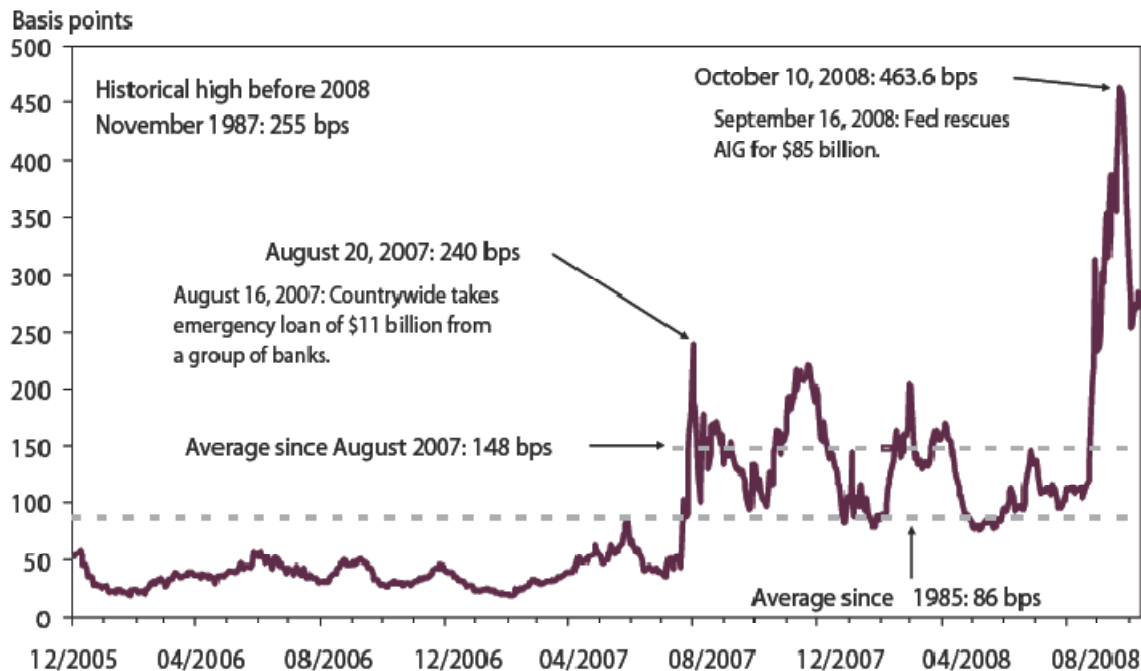
- Massive use of leverage
- Excessive risk taking
- Abuse of lax regulation
- Off-balance-sheet accounting
- Inappropriate risk management
- Shortsighted and greedy incentives
- Interconnectedness and complexity that screams “systematic risk” to any policy maker within earshot (Ritholz, 2009, p.209)

It should come as no surprise that many investors were becoming increasingly concerned about declining assets value and the exposure of other financial institutions to risky subprime-related securities. This situation on Wall Street soon broke out into a credit crunch. The spread between LIBOR⁹ and the overnight index swap rate¹⁰ and the TED

⁹ An interest rate at which banks can borrow funds, in marketable size, from other banks in the London interbank market. The LIBOR is fixed on a daily basis by the British Bankers' Association. The LIBOR is

spread¹¹, both indicators of availability of credit, jumped significantly in July 2007 and remained much higher than their normal levels are. See Figure 3.3.1

Figure 3.3.1: Widening TED spread- Spread between three-month LIBOR and T-bill rate (daily, October 31, 2005- October, 31, 2008)



Source: Barth, et al, 2009

Even the yield spread between state and local government bonds and ten-year Treasury bonds increased to 10%, its highest level since year 1970. Overall tightening of access to the credit on the market has reduced the supply of credit available to state and local government as well, which resulted in shortfalls.

derived from a filtered average of the world's most creditworthy banks' interbank deposit rates for larger loans with maturities between overnight and one full year.

The LIBOR is the world's most widely used benchmark for short-term interest rates. It's important because it is the rate at which the world's most preferred borrowers are able to borrow money. It is also the rate upon which rates for less preferred borrowers are based. (Investopedia Web site, 2010)

¹⁰ An interest rate swap involving the overnight rate being exchanged for some fixed interest rate. Ibid

¹¹ The price difference between three-month futures contracts for U.S. Treasuries and three-month contracts for Eurodollars having identical expiration months.

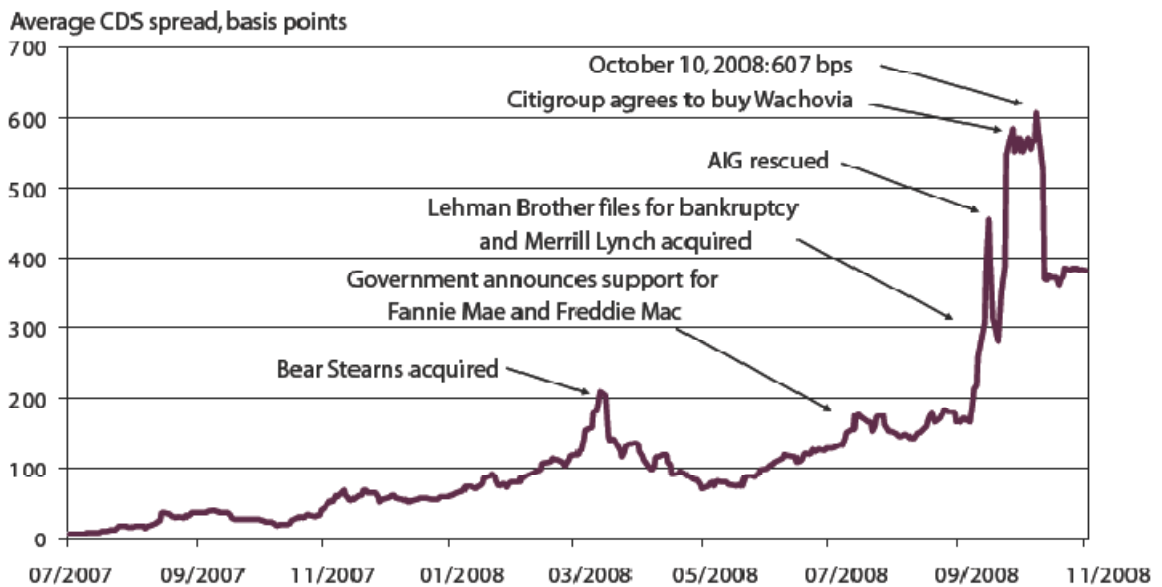
The Ted spread can be used as an indicator of credit risk. This is because U.S. T-bills are considered risk free while the rate associated with the Eurodollar futures is thought to reflect the credit ratings of corporate borrowers. Ibid

The total amount of commercial paper declined by \$366 billion from September 10, 2008 to October 22, 2008; which further demonstrates the credit crunch and its implications beyond the financial sector.

Furthermore, problems occurred even in money market funds, which purpose is to provide investors with a safe place to invest easily accessible cash-equivalents assets characterized as low-risk, low return investments. Between September 10, 2008 and October 22, 2008 investors withdrew their money from money market funds from twelve of the top twenty institutions. During this time period, the Reserve Primary Fund experienced a massive level of withdrawals of \$24.8 billion, nearly half of its assets.

Except of all these reasons discussed above, there was another factor which contributed to the decrease of confidence on the market. The unregulated market for credit default swaps (CDS)¹². During year 2008 CDS spreads widened not only for banks, but much more for travel and leisure industry, closely following by automobiles and parts industry (Figure 3.3.2).

Figure 3.3.2: Counterparty risk (daily, July 2007- October 31, 2008)



Source: Barth, et al, 2009 based on data from Datastream, Milken Institute

Note: Credit Derivatives Research (CDR) Counterparty Risk Index averages the market spreads of the credit default swaps of fifteen major credit derivatives dealers, including ABN Amro, Bank of America, BNP

¹² A swap designed to transfer the credit exposure of fixed income products between parties. The buyer of a credit swap receives credit protection, whereas the seller of the swap guarantees the credit worthiness of the product. By doing this, the risk of default is transferred from the holder of the fixed income security to the seller of the swap. (Investopedia, 2010)

Paribas, Barclays Bank, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs Group, HSBC, Lehman Brothers, JPMorgan Chase, Merrill Lynch, Morgan Stanley, UBS, and Wachovia.

The notional amount of CDS increased between years 2001 and 2007 from less than \$1trillion to more than \$62 trillion, before contracting to \$47 trillion on October 31, 2008 caused by industry's own effort to eliminate CDS, and auctions and settlements of Fannie Mae, Freddie Mac, and Lehman Brothers contracts.

After the failure of investment bank Lehman Brothers and Federal Reserve bailout of AIG in September 2008, concerns increased about the counterparty risk and more than ever before, interest grew in establishing a clearing house. Main reason was to reduce the notional amount of contracts to levels which actually corresponds to the risk exposure of the sellers. On October 31, 2008 the Depository Trust & Clearing Corporation (DTCC) announced that it will publish aggregate market data from its Trade Information Warehouse (worldwide registry on credit derivatives). This step was done in order to decrease market concern about the transparency. (Barth, et al, 2009)

4 Analysis of the economic crisis in the Czech Republic from the perspective of public finance over the period 2008-2010

Crisis of subprime mortgages, followed by mortgage, credit and financial crisis has not affected the banking sector in the Czech Republic and the economy as significantly as the other countries of Europe.

The Czech Republic was both mainly affected by a decline in foreign demand for exports, and by the effects of destabilization from other countries in the region of the middle Europe. It was resulting from the uncertainty regarding the sustainability of financing the deficit and debt. The advantage of the Czech Republic in comparison to other countries in the region was:

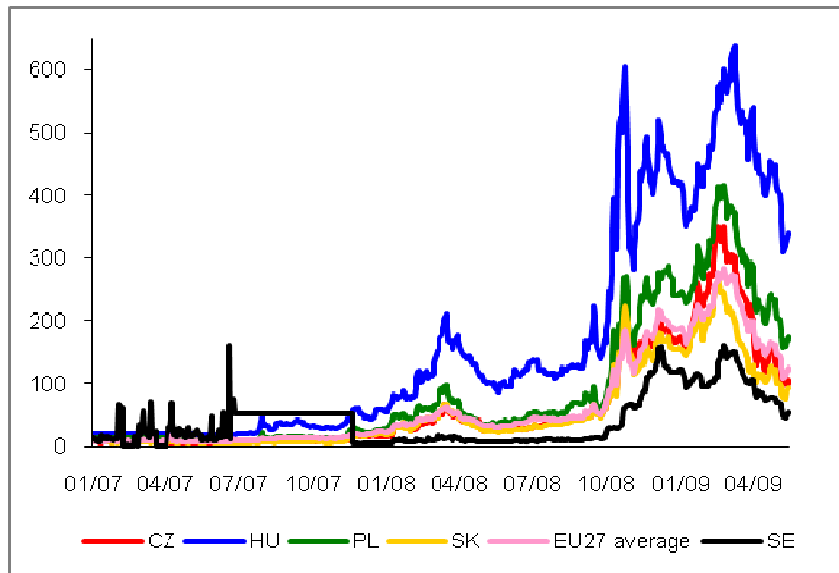
- stable banking sector;
- domestic banks which did not invest, except of minor exceptions, to securities linked to the United States real estate market;
- no significant exposures to troubled assets of foreign well-known banks and banking institutions;
- low external debt and public finance and current account deficit.

At the end of year 2008, there was a certain stabilization and thanks to the fact that the Czech Republic still does not have a current European currency Euro, depreciation of currency partially mitigate the impacts to the real economy. Further, growth of the production gap and the decline of commodity prices on world markets have almost stopped the effect of currency depreciation on the inflation, which remained very low and stable.

In the first half of year 2009, the nervousness on the financial markets increased, which resulted in the short term to not distinguishing the countries and economies in the region. The status of the countries of Central and Eastern Europe was mostly affected by situation in the most troubled countries, including non-EU countries such as Ukraine and Turkey. During that time period, respected international financial and business media and analysts made the situation even worse. They wrote evidently false information about the Czech Republic that Czech households have majority of loans and mortgages in foreign currencies such as Euro or Swiss francs and that depreciated currency could cause the same

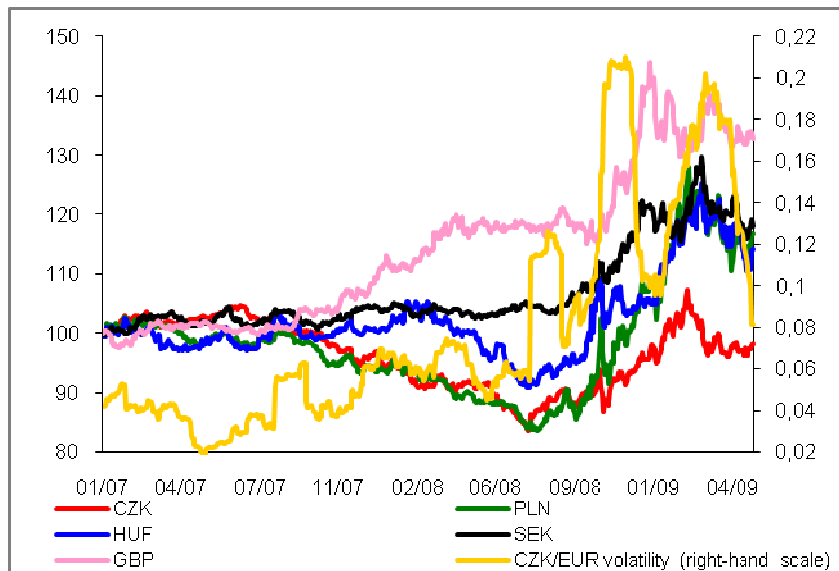
situation as rapidly decreasing forint in Hungary. This led to an increase in spreads on government bonds (see Figure 4.1), outflow of capital and depreciation of currency (see Figure 4.2).

Figure 4.1: Credit default spreads for selected European governments



Source: CNB Financial Stability Report 2008/2009, 2009

Figure 4.2: Exchange rates of selected currencies against Euro (1st January 2007=100)



Source: CNB Financial Stability Report 2008/2009, 2009

However, as a result of coordinated actions of several central banks in the region (Czech National Bank including) and the national governments, the situation has stabilized in the middle of April 2009.

“Crisis”, or it should be better to use economic recession, fully entered the Czech Republic at the beginning of year 2009. It was finally when Mirek Topolánek’s government stopped pretending that the Czech Republic is a ‘safe inland’ in the heart of the Europe as they did for the whole previous year and they started acting. In the first half of the January, Prime Minister Mirek Topolánek founded the government’s National Economic Council known as NERV which consists of respected and reputable persons from business, academic sphere and policy. The main purpose of this advisory board was to assist the government to find the most appropriate form of economic reforms and measures which would help to moderate the effects of economic recession.

It is important to realize that the financial and economic crisis or recession in the Czech Republic has been brought in from outside= it is an imported crisis for the Czech Republic as well as for other countries in the region. It applies to both a decline in foreign demand for Czech exports and the effects of perception of instability in the region. The ability of Czech industry to limit the impacts of worldwide sales crisis is limited due to the strong relation of Czech industry on exports and its dependence on development in foreign markets. The majority of Czech export is made up from:

- machinery and transportation equipment – 53.7% of export
- manufactured goods – 19.5% of export
- miscellaneous manufactured articles- 10.7% of export

From the territorial point of view, 85.2% of the Czech Republic’s total export goes to the EU. The biggest trading partners of the Czech Republic in terms of the total external trade are the closest neighboring countries: Germany (28.7% of total external trade and 61.8% of external trade from neighboring countries), followed by Slovakia (7.4%), Austria (4.2%) and Poland (6.2%).(Statistická ročenka České republiky 2009, 2009)

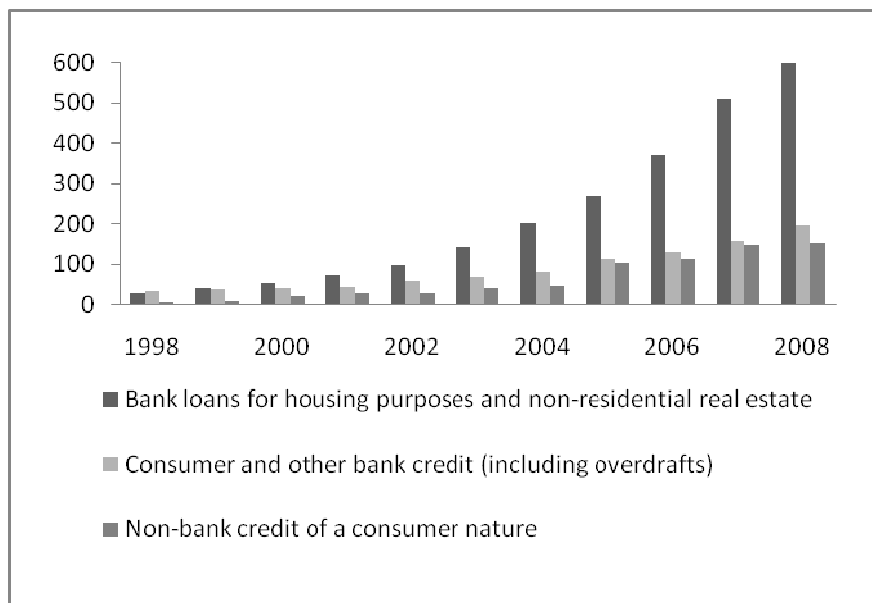
Therefore, a recovery of the Czech economy, which can be characterized as small and open, will depend on the recovery and growth in the world trade and especially on the demand from neighboring countries.

Furthermore, expectations of some analysts at the beginning of year 2009 that the crisis would only affect the real economy and not the banking sector were evidently misleading. Potential problems and risks in the financial sector concerning years 2008 and 2009 could be found in several areas.

Firstly, at the end of year 2008, the economic slowdown started to affect the household sector. High growth rate of household debts seen in the previous years slowed down as a consequence of worsening of household's solvency due to the deteriorating conditions on the labor market and increased uncertainty regarding future household incomes. Despite the fact that the credit growth was decreasing during year 2008, total household debts increased to approximately CZK 950 bn at the end of 2008.

From the total amount of debt, about 65% were house purchase loans, followed by bank consumer credit (around 20%) and non-bank loans (app. 15%) accounting for the rest (see Figure 4.3). (CNB Financial Stability Report 2008/2009, 2009)

Figure 4.3: Bank and non/bank credit to households (CZK billions)



Source: CNB Financial Stability Report 2008/2009, 2009

The main problems of indebtedness of households are ever-increasing amount of mortgage loans, which signal one thing, that this increase is also partly caused by low-income households. Especially those people in lower income brackets are the first one to be hit by economic recession.

During years 2008 and 2009, the falling income and not decreasing debt interest costs lead to lower financial reserves of households and caused the default rate to rise. According to the microeconomic simulation undertaken by the Czech National Bank, roughly 6.5% of families with the mortgage loans (1.6% of the whole population) would not be able to repay their debts in the *Baseline Scenario*¹³. However, taking into the account more pessimistic scenarios, around 13% of families (3.3% of population) could experience the problems with repaying of their debts (*Return of Recession scenario*) and even 20% of families (5% of population) in the *Loss of Confidence scenario*. (CNB Financial Stability Report 2009/2010, 2010)

For further information concerning the impacts of the economic downturn on household balance sheets, see Financial Stability Report 2009/2010 published by the Czech National Bank.

Secondly, investment banking was affected by the crisis as well, even though in the Czech Republic is not so developed as abroad. Willingness of banks to lend money during the second half of year 2008 and 2009 was very limited.

Neither the development of the Czech banking sector was without the problems. Almost all biggest Czech banks are in the hands of foreign banking institutions. All these foreign banks without exceptions were and still are affected by the global economic crisis, very often asking for state aid due to the huge losses in its speculative trading of various securities and therefore they either directly or indirectly affected their Czech affiliates. Several domestic banks have already reduced the credit lines of their clients and increased the interest rate. All of this is happening despite the fact that Central Bank has decreased the key interest rate. These steps which are leading to the restriction of the access to the credit will only make the situation worse. In these conditions, the ability of companies to finance their operating activities is very limited and leads to more expensive production.

¹³ See Annex 1 for further description of scenarios.

Further, domestic companies are forced to increase the value of collateral for loans and to tie further their even now limited capital. Financial institutions were also not willing to provide leasing and various forms of installment plans, because of the shortage of capital.

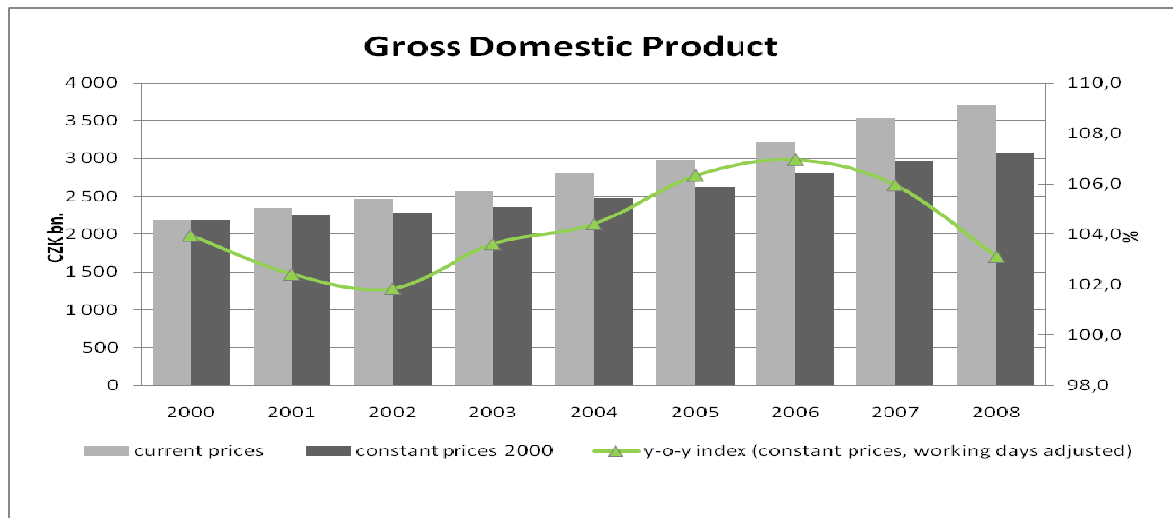
To sum it up, aforementioned reasons have caused that financial institutions suppressed its activities and tightened the conditions of providing credit.

4.1 Analysis of year 2008

Year 2008 is a great starting point in the analysis of consequences of economic recession on the Czech economy and public finance because two simultaneous things have happened. It was not only the year when the **crisis was knocking on the doors of the Czech Republic**, but also an **“innovative” tax system** from workshop of at that time ruling coalition ODS-KDU/ČSL-SZ has begun to act. This new tax system was approved as the part of so-called reform of public finance which was produced in year 2007 by a coalition of ODS-KDU/ČSL-SZ in order to reduce and combat with ever-increasing deficit and debt.

After two years of high economic growth, the output of Czech economy has slowed down in year 2008 as a consequence of global financial and economic problems. Gross domestic product (GDP) increased in real terms (in constant prices) by **3.2% compared to 6.0% and 6.8%** in years 2007, and 2006 respectively. In comparison with other economies from EU27, the pace of GDP growth in the Czech Republic was still high. Total result for year 2008 was significantly affected by very low growth dynamics of GDP in the last quartet of year. While GDP was increasing in the first three quarters by 4.3 percent on average, in the fourth quarter the year-on-year growth was **only 0.2 percent**. This development illustrates the decline in real economies of our main trading partners. In the fourth quarter of year 2008, seasonally adjusted growth was negative 0.9 percent.

Figure 4.1: GDP between years 2000 (base year) -2008



Source: Modified graph from Czech Statistical Office (CZSO), 2009

Pace of GDP growth in year 2008 was slower than potential product and positive production gap was therefore narrowing. For the whole year was positive 1.7 percent, whereas in the last quarter was already negative. Year-on-year growth of potential product is estimated between 4.0% and 4.5%, but from this pace of the growth it is clear that it won't be better. The growth of potential product was caused by overall productivity of production factors which contribution in growth of potential product has decreased by 0.5 percentage point to 2.7 percentage points.

In the expenditure structure of GDP growth a major change occurred during year 2008. In first three quarters the main source of GDP growth was foreign trade which has risen on year-on-year basis by 4.3%. However, in the last quarter the Czech economy has been already hit by the downturn of the world economies and the contribution of foreign trade on GDP growth was negative 1.9 percentage point. The main growth factor and positive contributor of 1.3 percentage point were household expenditures on the final consumption. Contribution of gross capital was negative 0.4 percent caused by decrease in inventories, whereas gross fixed capital contributed by positive 0.7 percentage point. Development of investments was badly affected by decrease in investments into the real estate sector which was already experiencing a drop in demand.

Gross Value Added (GVA) grew in year 2008 by **3.6%** in real terms. The biggest contributor was trade with 1.7 percentage point, followed by manufacturing industry with 1.1 percentage point which was affected in the last quarter of the year by slowdown of world economy. Contribution of manufacturing industry was negative 0.8 percentage point in the 4th quarter.

Growth of nominal GDP, which is essential for calculations of tax revenues, was **5.0 %**. (Návrh státního závěrečného účtu České Republiky za rok 2008, 2008)

4.1.1 Public budgets - cash flows¹⁴

Public budget deficit for year 2008 amounted to **CZK 16.2 billion**, and was thus by CZK 63.7 billion less than previously approved in budget documentation. Total deficit was **0.4% of GDP** (further discussed below). These figures represent the 4th best results of deficit since year 1996 when public budget have moved to deficit financing. Better results were achieved by almost all segments of the public budgets.

The state budget deficit net of financial operations (CZK 1.6 billion) and the reserve and state guarantee funds impact (CZK 60.4 bn) was **CZK 78.7 bn** in year 2008 and was thus worse by CZK 13.1 billion than in the budget documentation for year 2008. However, commonly published state budget deficit in year 2008 is not adjusted for these transfers and therefore ended at **CZK 20 billion**. (Návrh státního závěrečného účtu České Republiky za rok 2008, 2008)

It is important to mention that these better results which are usually published are not outcomes of better economy!!!

The main reason of these low deficit figures is that **money from reserve funds and funds of state guarantees saved in previous years, amounting to CZK 60.4 billion, were included in revenues**. Actually, state budget deficit after adjusting for these transfers was **CZK 80.4 billion** (CZK 31.8 billion higher compared to year 2007) and deficit of public budget was **CZK 76.6 billion**. Therefore, if we eliminate the effects of the transfers on the budgets, then public finance in year 2008 ended with deficit of **2.1% of GDP** (taking into account nominal GDP growth of 5%).

To better understand the consequences of these figures, let's imagine how high would have to be a GDP growth in order to cover public finance expenditure by public finance revenue?¹⁵

¹⁴ Data are reported on the cash flows methodology, which corresponds to the grouping of revenue and expenditure transactions and necessary methodological adjustments. Government statistics is based on the sum of single components of public budgets with subsequent consolidation of revenue and expenditure to avoid interaction between the components of the government. Management of the public budgets records revenue and expenditure transactions relating to the state budget, incl. National Fund and from year 2006 also revenue from privatization, off-budgetary funds, public health insurance and municipal authorities units. (Návrh státního závěrečného účtu České Republiky za rok 2008, 2008)

According to the calculations of Martin Fassmann (2009), the main macroeconomic analyst from Czech-Moravian Confederation of the Trade Union (ČMKOS), GDP would have to grow in nominal terms by further 5.7% in 2008, i.e. CZK 211 bn, to ensure a null deficit of public finance. It means that nominal economic growth in the Czech Republic would have to be 11% during year 2008 to not have the public budgets in deficit. Vice versa, any economic growth lower than 11% would automatically cause public finance deficit.

Revenue of public budgets

Total revenues were exceeded by CZK 20.4 bn compared to the predictions due to the higher revenues (CZK 23.8 bn) from privatization than previously anticipated. The growth dynamics of revenues was only 7.5% in year 2008, which is about the half of the 11.6% growth in year 2007. The main reason for non-fulfillment of anticipated revenues were significantly lower subsidies from EU and lower collection of taxes.

Total tax revenues were **CZK 2.2 billion lower** compared to budget documentation as a consequence of the economic crisis in the last quarter of year 2008 and subsequent decrease in domestic demand. However, there was an unexpected drop in the collection of VAT and excise tax of CZK 17.4 bn and CZK 9.5 bn respectively. It should be pointed out that this decrease in the tax collection was achieved even though the **average tax rate increased!!!** This shortfall in indirect taxes in the budget was offset by higher than expected revenues from personal income taxes (expectations exceeded by CZK 8.9 bn) and revenues from corporate income taxes (by 13.4 bn). (Návrh státního závěrečného účtu České Republiky za rok 2008, 2008)

The flaw in the reform is based on the fact that reduction in indirect taxes, insurance payments and budget deficit associated with this cut would be replaced by increased tax receipts from taxation on consumption (VAT and excise taxes). Unfortunately, it can be seen from the figures for year 2008 that indirect taxes will not compensate this. Further, higher revenues from corporate income tax were achieved mainly based on the positive economic results from previous year. Taking into

¹⁵ Condition is that tax system would stay same (the calculation is based on the value of not harmonized wide tax-to-GDP ratio which is 36%).

consideration, that during slowing or stopping of economic growth this compensator will not be available, the revenue side of the budget can experience significant problems.

Expenditure of public budgets

Total expenditures of public budgets were **CZK 43.2 bn lower** than anticipated. The **growth** of expenditures was **5.8%** on year-on-year basis, however the growth dynamics was 1.6 percentage point slower compared to the revenues. The most significant savings occurred at the subsidies to other enterprises and investment transfers to non-financial public enterprises.

The main parts of the expenditures are still subsidies and other current transfers, even though their growth slowed down in year 2008 and was only 2.8%. More than 40% of total expenditures are transfers to inhabitants, including non-profit organizations. These transfers decreased by 5.3%, i.e. CZK 32.8 bn caused mainly by austerity measures in social sphere. The highest proportions (about three quarters of the state budget) between these transfers are **mandatory spending**.

Development of state budget deficit influenced development of public budgets which had insufficient funds available so the debt **grew by CZK 97.6 bn** in year 2008. The debt was at the end of year **CZK 1070.70 billion**, i.e. **28.9% of GDP**, compared to year 2007 increased by 1.3 percentage point. (Návrh státního závěrečného účtu České Republiky za rok 2008, 2008)

Balances of public budgets

Public budget deficit for year 2008 amounted to **CZK 16.2 billion**, i.e. 0.4% of GDP. However, total debt net of reserve and state guarantee funds impact (CZK 60.4 bn) was **CZK 76.6 bn!!!**

Current balance, one of the conditions for healthy public finance, improved by **CZK 22.5 bn** compared to year 2007 and ended in a surplus of CZK 107.2 bn, i.e. 2.9% of GDP.

Another indicator which can be used to assess the public finance is primary deficit, which is calculated as deficit net of expenditure related to the interest from debt of public budgets. The logic behind this is that these expenses are results of policies from previous years. Balance of primary deficit improved by **CZK 15 bn**, i.e. **0.4% of GDP** and after a

long period ended in surplus of CZK 8.8 bn. (Návrh státního závěrečného účtu České Republiky za rok 2008, 2008)

The balance of public budgets net of financial operations¹⁶ totaled **CZK -39.1 billion**, i.e. **-1.1% of GDP**. The balance for fiscal targeting¹⁷ was **CZK -36.8 billion**, i.e. **-1.0% of GDP**. In both cases the balances developed better than originally anticipated in the draft Czech Republic State Budget Act documentation for year 2008.

The balance improved compared to the budget documentation despite the fact that tax revenues were not fully achieved. The main reasons for better results are savings on the expenditure side. (Fiskální výhled České Republiky, 2009)

Debt of public budgets

The debt was at the end of year **CZK 1070.70 billion**, i.e. **28.9% of GDP**, compared to year 2007 increased by 1.3 percentage point

The main reason for ever-increasing debt is the deficit of state budget (the share of the state debt in 2008 stood at 91.5% of total debt and therefore has the biggest impact on the development of debt). Consolidated state debt¹⁸ was **CZK 979.5 bn** and **increased** compared to previous year **by 11%**.

Debt of municipal authorities units was **CZK 94.7 bn** and it represents an increase of 4.3% compared to year 2007.

Off-budgetary funds have used up to now mainly their own source of funds and therefore, their share in the total debt is only minor. However, there is the possibility that the funds will run out of their financial resources and they will have to finance their deficits with loans or other financial means as State agricultural intervention fund and State environmental fund did in year 2008.

¹⁶ Financial operations are: loans provided and their repayments as well as revenues from privatisation. The cash flow balance of public budgets net of these items better depicts the financial situation for public budgets, because these financial operations represent only the change in the structure of financial assets. (Fiskální výhled České Republiky, 2009)

¹⁷ From balance for fiscal targeting are excluded so-called "net lending" (including privatization revenues), transformation costs (operations of state established institutions that manage low-quality assets taken over from other entities), operations of National Fund and EU revenues and EU outlays, which would influence the results of given year for time discrepancy between receipt of payments from EU and their drawing. (Návrh státního závěrečného účtu České Republiky za rok 2008, 2008)

¹⁸ The consolidate state debt is lowered by emission of state bonds, which were bought thanks to the resources from so-called Nuclear account, Reserve account for pension reform, and Clearing account for management of Treasury liquidity. (Návrh státního závěrečného účtu České Republiky za rok 2008, 2009)

Health insurance companies did not contribute to the total debt significantly. See the Figure 4.1.1.1 below.

Figure 4.1.1.1: Debt structure and its development

	Gross consolidated debt of public budgets (CZK bn)			Share of GDP in %		
	2006	2007	2008*	2006	2007	2008*
Gross consolidated debt of PB	877,7	973,2	1070,7	27,3	27,6	28,9
State debt (consolidated)	794,1	882,3	979,5	24,7	25,0	26,4
Debt of off-budgetary funds	0,6	3,8	0,7	0,0	0,1	0,0
Debt of public health insurance	0,2	0,0	0,1	0,0	0,0	0,0
Debt of municipal authorities units	88,9	90,8	94,7	2,8	2,6	2,6

*preliminary data

Source: Návrh státního závěrečného účtu České Republiky za rok 2008, 2009

Compared with other countries in the EU, the debt level in the Czech Republic is not significant (more information can be found in the section International comparison). However, there is a big question mark about the future development, because till now the growth of the debt was mainly mitigated by the revenues from privatization, which influence is gradually diminishing as the privatization process comes to the end. (Návrh státního závěrečného účtu České Republiky za rok 2008, 2008)

4.1.2 Government sector – national accounts¹⁹

The general government balance amounted to **CZK -54 bn**, i.e. **-1.5% of GDP**.

General government revenues

General government revenues increased by **2.3%** in comparison to year 2007 and it amounted to **CZK 1,517.5 bn**, which is **40.9% of GDP**. There is an evident decreasing trend of the revenue's share in GDP. Several reasons contributed to the moderate growth of

¹⁹ “In the European System of Accounts (ESA95, paragraph 2.68) the ‘general government’ sector is defined as containing ‘all institutional units which are other non-market producers whose output is intended for individual and collective consumption, and mainly financed by compulsory payments made by units belonging to other sectors, and/or all institutional units principally engaged in the redistribution of national income and wealth’.

By convention, the general government sector includes all public corporations that are not able to cover at least 50 % of their costs by sales and are therefore considered non-market producers.” (European economic statistics, 2009)

the revenues but the most important were a group of reforms approved in year 2007 concerning the tax and social insurance collections. Namely:

- The personal income (PIT) and corporate income (CIT) tax were adjusted.
- Upper limits for social contribution
- Decrease of taxes was partly compensated on the revenues side by an increase in the reduced VAT rate.
- Introduction of energy taxes. (Fiskální výhled České Republiky, 2009)

Therefore, a low growth in general government revenues was mainly caused by a significant decline in the growth dynamics of tax and social insurance contribution (these make up 90% of long-term revenues).

Below are estimated the effects of these reforms and their impact on the revenues. In year 2008 the 1st phase of reforms was launched with focus on establishing a flat tax on income tax of individuals (replacement of previous progressive scheme) and increasing the reduced tax rate of VAT (Value Added Tax) on basic necessities on 9% and cap on income subject to social and security contributions at four times the average wage. In late 2009, this ceiling was raised to six times the average wage from 2010, as part of the government's fiscal consolidation package. Further, a tax rate on corporate income was reduced (CIT dropped from 24% in 2007 to 21% in 2008).

During the approval of ‘reform package’, the tax cuts were approved also for coming years 2009 and 2010 without any evaluation of effects of previous changes in tax system and with no respect to possible future developments. It was decided in year 2007, that corporate tax rate would be 21% in year 2008, 20% in year 2009 and 19% in year 2010. It was also decided that social security contributions paid by employers in year 2009 would be reduced by 1 percentage point and by further 0.9 percentage points in year 2010. If we add that in year 2008 it was also decided to reduce by year 2009 social insurance by further 1.5 percentage point (this time for employees) and at the beginning of year 2009 by even further 1.5 percentage point as a part of counter-crisis package, the future state of insurance system and public finance was uncertain and in danger of deficit.

These decreases in insurance, calculated by Martin Fassmann (2009), mean more than **CZK 70 billion losses** in insurance income in comparison of year 2007 with 2010. It is important to mention that these collections are the safest form of income in the state budget.

Except of these changes in the tax system, government revenues were also affected by the ongoing economic crisis which was mainly evident in the last quarter of year 2008 when the year-on-year economic growth rate slowed down substantially (only 0.2% growth of GDP). The effects of the slower growth and pessimistic expectations about the future mainly affected VAT revenues which are based on consumption. Further, the effects of the crisis in the last quarter could be already seen in the lower revenues of CIT.

General government expenditures

General government expenditures grew by **4.3 %** to **CZK 1,569.6 bn** compared to year 2007. The expenditures as well as revenues were both affected by the set of reforms approved in 2007, particularly:

- Slowdown in the growth of social transfers.
- Accelerating growth in government investments.

On the expenditure side, unlike revenues side, the economic crisis has not yet had any effects and implications on the budget. (Fiskální výhled České Republiky, říjen 2009, 2009)

General government balance

The general government balance amounted to **CZK -54 bn**, i.e. **-1.5% of GDP**. This result was mainly influenced by the central government balance which was **CZK -80.4 bn**, while two other subsectors, local governments and social security funds, ended in a surplus of **CZK 28.2 bn**.

Compared to the estimated results from October 2008, the deficit was higher by almost CZK 7 bn. Even though the deficit as a part of the GDP was higher compared to the previous year (-1% of GDP in year 2007 according to the Fiscal Outlook of the Czech Republic from October 2008, data based on estimates from Czech Statistical Office), it was

still in the limit of 3% for fulfilling the Maastricht convergence criteria. (Fiskální výhled České Republiky, říjen 2009, 2009)

General government debt

In 2008, the general government debt was approximately **CZK 1,105 bn**, i.e. **30% of GDP**. Compared to year 2007, the absolute debt increased by CZK 81 bn, which is a little bit more than the deficit in 2008. In this case, there occurred an accumulation of general government financial assets.

The central government subsector accounts for the majority of the debt, followed by the local government sector, which contribution is moderate. An indebtedness rate of social security funds is from the long term perspective negligible. (Fiskální výhled České Republiky, říjen 2009, 2009)

Figure 4.1.2.1: General government debt

	2004	2005	2006	2007	2008	2009
General government debt	30,1	29,7	29,4	29,0	30,0	35,3
Central government debt	27,8	27,2	26,9	26,6	27,5	32,7
Local government debt	2,6	2,7	2,7	2,5	2,5	2,7
Social security fund debt	0,0	0,0	0,0	0,0	0,0	0,0

Source: Fiskální výhled České Republiky, říjen 2009, 2009

4.1.3 International comparison

Government expenditure²⁰

Total general government expenditure in the EU amounted to **46.8% of GDP** in year 2008. Focusing on 2000 and 2008 period, total government expenditure peaked in year 2003 for both EU and euro area (EA16), with a steady decrease till year 2007. A substantial change was recorded between years **2007 and 2008** when total government expenditure experienced **an increase by 1.1 percentage points of GDP** in the EU27 and by **0.6 percentage points** in the EA16 (see the Figure 4.1.3.1 below).

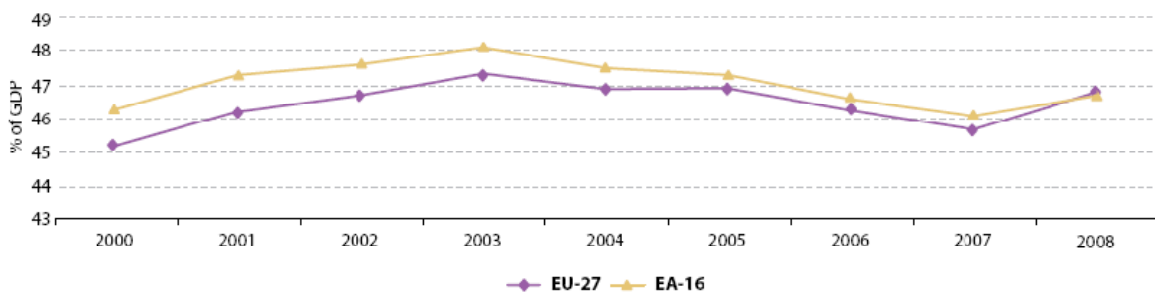
²⁰ Formal definition according to ESA95: see Box 1.

Box 1: Government revenue and expenditure definition according to ESA95

Government revenue as the sum of:	Government expenditure as the sum of:
-sales consisting of market output, output for own final use and payments for other non-market output, -taxes on production and imports -other subsidies on production receivable property income -current taxes on income, wealth, etc. -social contributions -other current transfers -capital transfers	-intermediate consumption -gross capital formation -compensation of employees, payable -other taxes on production -subsidies payable -property income paid (including interest) -current taxes on income, wealth, etc. -social benefits other than social transfers in kind -social transfers in kind related to expenditure on products supplied to households via market producers -other current transfers payable -adjustment for the change in net equity of households in pension funds reserves -capital transfers payable -acquisitions less disposals of non-financial non-produced assets (public investment spending)
By convention, internal transactions inside the general government sector, i.e. between different sub-sectors or between different general government units belonging to the same sub-sector, related to property income, other than current transfers and capital transfers, are excluded from government revenue and expenditure.	

Source: Author's depiction based on data from European economic statistics, 2009

Figure 4.1.3.1: Total general government expenditure in the EU and in the euro area between years 2000-2008



Source: European economic statistics, 2009

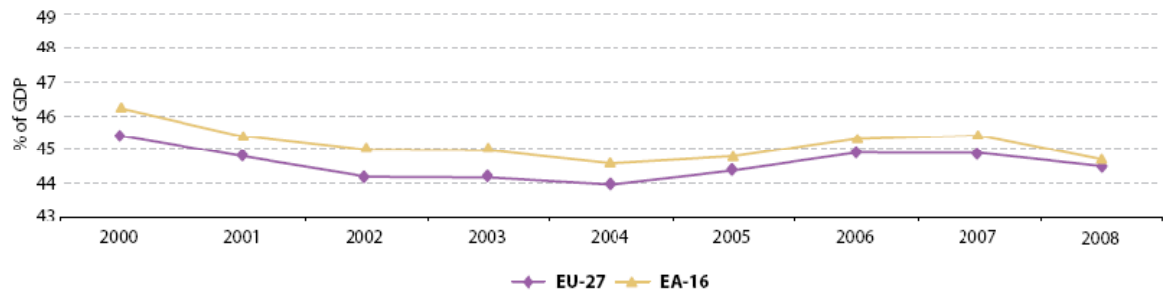
Compared to the situation in year 2007, all except of three countries either maintained or increase their level of government expenditure. The worst performers were Estonia and Ireland with increases of 5.4% and 5.3% of GDP respectively. However, these countries had previously very low levels of government expenditure on GDP; therefore this increase over years 2007 and 2008 is not so important.

On the other side, the best performers in case of decreasing the total government revenues were Bulgaria with a sharp decrease of 4.1 percentage points, followed by **the Czech Republic** and Germany which reported a **decrease of 0.2** and 0.3 percentage points of GDP respectively.

Government revenue²¹

Total general government revenue in the EU stood at **44.5% of GDP** in 2008, i.e. a drop of **0.4 percentage points of GDP** from the level of year 2007.

Figure 4.1.3.2: Total general government revenue in the EU and in the euro area between years 2000-2008



Source: European economic statistics, 2009

The development of revenue was mainly influenced by two main components of government revenue: taxes and social contribution. Doing an inter-country comparison, member states can be grouped into four categories based on the evolution of revenue's change on GDP.

1. Countries with higher total general government revenue as a percentage of GDP in comparison to the EU average and where the share of the total revenue as a percentage of GDP fell over years 2007-2008: France, Italy, Cyprus and Sweden.
2. Countries with total revenue above the EU average in 2008 and where the share of total revenue has either remained same or increased since 2007: Belgium, Denmark, Hungary, the Netherlands, Austria and Finland.
3. Countries that recorded total revenue below the EU average and the share of total revenue as a percentage of GDP has fallen since 2007: Bulgaria, **the Czech Republic**, Germany, Estonia, Ireland, Greece, Spain (the biggest fall-4.4 percentage points), Poland, Romania and Slovenia.
4. The rest of the countries had total revenue below the EU average and its share as a percentage of GDP has increased between years 2007 and 2008.

²¹ See the formal definition in Box 1.

General government balance

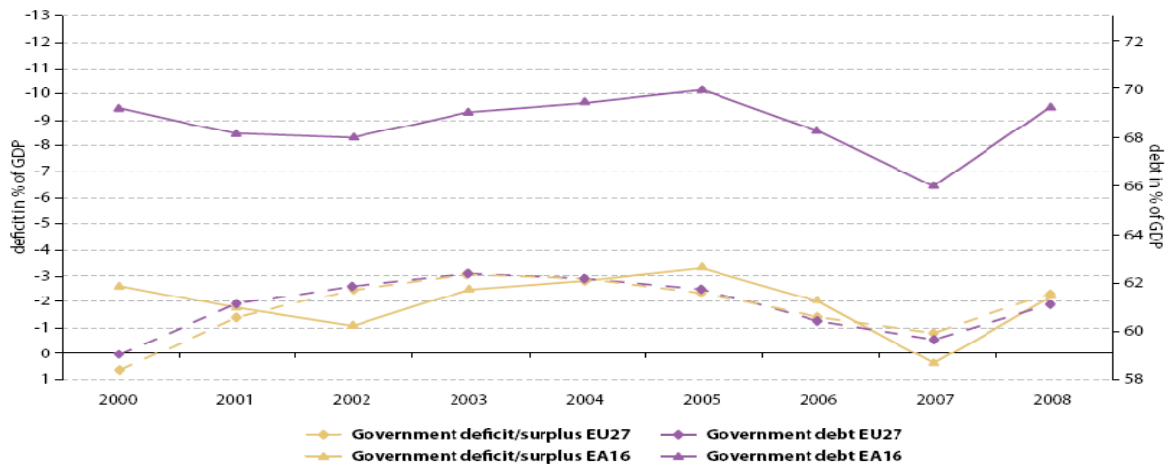
The general government balance of the EU-27 countries was **-2.3% of GDP** in year 2008, thus it worsened by 1.5 percentage point compared to year 2007. The reason for deteriorating balance was worldwide crisis. **The Czech Republic** with its current balance of **1.5% of GDP** was below the EU-27 average.

In 2008 the largest government deficits as a percentage of GDP were in Ireland (7.1%), the United Kingdom (5.5%), Romania (5.4%), Greece (5.0%), Malta (4.7%) and others such as Latvia, Poland, Spain, France, Hungary, Lithuania, and Estonia which have deficits between 3% and 4%. All Member States were able to cover their government expenditure from their revenue (not included are interest on public debt and gross fixed capital consumption- public investments) except of Ireland and the United Kingdom.

General government debt

General government debt approximately reflects the development of the budget deficits in the long term as can be seen from the Figure.

Figure 4.3.3: Development of EU27 and euro area EA16 public balance (scale inverted) and debt between years 2000-2008



Source: European economic statistics, 2009

Government debt which was decreasing between years 2005 and 2007, falling to 58.7% of GDP in the EU-27, experienced a rapid growth to 61.5% between years 2007 and 2008. In the euro area the situation was even worse, debt was 69.3% of GDP in 2008.

In the **Czech Republic** the situation is relatively good compared to other member states. The debt was **29.8%** in 2008 and it means that the Czech Republic could easily meet the Maastricht convergence criteria²². Other countries with lower government debt to GDP ratio (below 30%), were Bulgaria, the Baltic States, Slovenia, Slovakia, Romania and Luxemburg.

The best performers in case of low government debt to GDP ratio were Estonia (4.8% the lowest figure in the whole EU27), Romania (13.6%), Bulgaria (14.1%), and Luxemburg (14.7%).

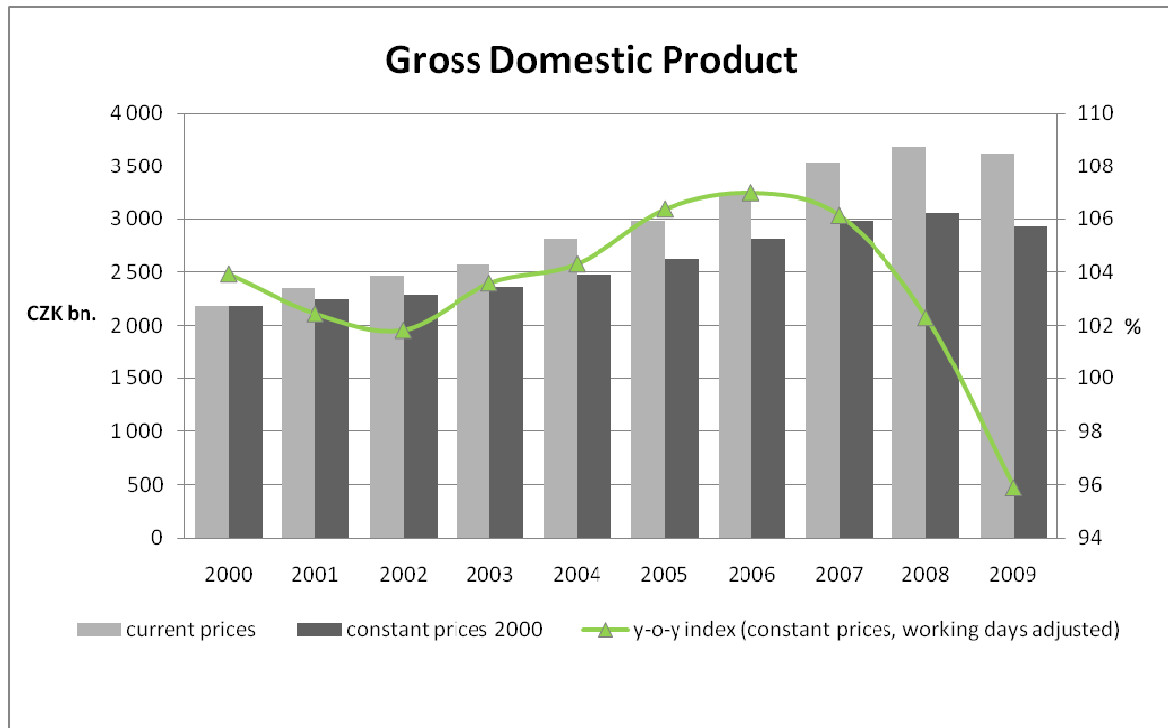
Countries with the highest indebtedness in the EU-27 were Italy (105.8%) whose early output would not be sufficient to cover the public debt, Belgium (89.6%) and Greece (97.6%). (European economic statistics, 2009, 2009)

²² “The fiscal framework of the European economic and monetary union (the Protocol on the Excessive Deficit Procedure annexed to the Maastricht Treaty) requires sound public finances based on the following criteria: -negative public balance (deficit) not exceeding 3% of GDP
-public debt not exceeding 60% of GDP” (European economic statistics 2010, p. 68, 2011)

4.2 Analysis of year 2009

After three years of high consecutive economic growth, the Czech economy slowed down in year 2008 and GDP in year 2009 decreased by 4.2% in real terms. Although the economy of EU-27 experienced a decline of the same magnitude, 4.2%, as the economy of the Czech Republic, the impacts on the economy are expected to be higher compared to the EU-27. The main reason which stands behind this expectation is that GDP has been growing faster in the Czech Republic prior to the decline (between years 2007 and 2008 GDP expressed in real terms amounted to +6.8% and +6% respectively compared to +3.3% and 3% growth in EU-27). Furthermore, looking on the difference in dynamics of GDP between years 2007 (last year of the boom) and year 2009, in case of the GDP of Czech economy it was 10.2 percentage point compared to 7.2 percentage point in EU.

Figure 4.2.1: GDP between years 2000 (base year) -2009



Source: Modified graph from Czech Statistical Office, 2009

Year-on-year decrease of real GDP in year 2009 led to a negative production gap, estimated to -4.25% of potential product. The growth of the potential product was below 3% and was affected by the crisis as well. In the previous years the growth was caused

mainly by overall productivity of production factors. Its contribution to the growth of potential product decreased to 1.6 percentage point in year 2009.

The main contributors to the decline of real GDP were overall productivity of production factors (2.5 percentage point), employment (0.6 percentage point) and indicator of working hours per unit of employment (2.0 percentage point). On the contrary, capital had impact against the decline of real GDP.

From the perspective of expenditure, decline of GDP was mainly influenced by production of gross capital (negative 4.6 p.p., caused by year-on-year decrease of inventories) and external trade (negative 0.5 p.p.). Positive effects on GDP had government expenditure on final consumption (positive 0.8 percentage point).

GVA decreased by 4.6% in year 2009 mainly caused by problems in manufacturing industry (effects of economic recession). Other reasons causing a decline of GVA were trade and finance.

Decline of nominal GDP, which is essential for calculations of tax revenues, was **1.7 %**. (Návrh státního závěrečného účtu České Republiky za rok 2009, 2009)

4.2.1 Public budgets - cash flows²³

The impacts of financial crisis are the main reasons of significant economic downturn which was not previously predicted by the Ministry of Finance. It is hard to believe that in the Draft of the Czech Republic State Budget for 2009 was predicted that the GDP would grow in year 2009 by 4.8% and the state budget deficit would be only CZK 38 bn. Apparently, these data did not take into the account the real possibility of economic growth. Especially during year 2008 when even those most obstinate accepted that the Czech Republic would not be a safe inland in the world wide crisis and that the recession would hit the Czech economy as well (GDP in the fourth quarter of year 2008 grew by only 0.2% on year-on-year basis compared to grow of 4.3% on average in the previous three quarters).

According to the Draft the results of public budgets are ‘negatively affected not only by wrong predictions of effects of the crisis on the Czech economy, but also the

²³ Data are presented according to new statistical standard called Government Finance Statistics Manual 2001 (GFS 2001). The main differences between the new and old statistical standard are specified in the methodical box in Annex 2.

impacts of approved counter-crisis measures, which increase the deficit for almost CZK 100 bn.

In year 2009, the balance on year-on-year basis significantly worsened by CZK 208.3 bn and the **deficit** reached **CZK 249.1 bn**, i.e. **6.9% of GDP**. In comparison to the approved budget documentation for 2009, the deficit was about CZK 214 bn higher!!! That is the worst deficit of public budgets in the entire history of the Czech Republic.

The state budget deficit reached **CZK 221.5 bn**, i.e. CZK 187.5 bn more than was previously approved. At the same time the state budget deficit was also CZK 143.4 bn higher compared to 2008. (Návrh státního závěrečného účtu České Republiky za rok 2009, 2009)

However, not only the decline in GDP affected the state budget deficit, but also further reduction in tax rates system. With effect from year 2009, social insurance contributions by employers as well as employees are reduced by 1 percentage point and 1.5 percentage points respectively. It is not necessary to mention that this loss have negative impact on revenues from social insurance, concretely more than CZK 30 bn. Influence on the rise of the public finance deficit is in this case reduced by an increase in the physical person income tax and the responsibility of employers to pay the sickness benefit in the first 14 days of employees illness. Other change was reduction of corporate income tax by 2 percentage points. (Ekonomická krize – pohled odborů III, 2009)

The public budgets deficit for fiscal targeting was **CZK 231.2 bn**, i.e. **6.4% of GDP**. The debt of public budgets was CZK 1,254 bn, i.e. 34.6% and compared to year 2008, the deficit grew by 5.5 percentage points. (Fiskální výhled České Republiky, říjen 2010, 2010)

Revenue of public budgets

Revenues were **CZK 183.6 bn lower** compared to the expectations, which did not account for the coming recession and negative impacts of counter-crisis measures. Year-on-year growth of total revenue was slower compared to the previous year. While the revenue grew in year 2008 by 6.4% compared to the previous year, in 2009 revenue

significantly dropped by 6.4%. The main reasons are lower collection of taxes and social insurance.

Total tax revenue (including insurance on social security and health care) were **CZK 205.4 bn lower** than expected in the Draft of State Budget for year 2009, i.e. **9.4% decline** compared to 2008 and dynamics dropped significantly by 13.6 percentage points. It was caused mainly by lower collection of direct taxes (CZK 100 bn difference compared to the expectations) and also VAT and excise tax (nearly CZK 47 bn).

Collection of corporate income tax was also lower by CZK 66.2 bn compared to the previous year. (Návrh státního závěrečného účtu České Republiky za rok 2009, 2010)

Expenditure of public budgets

Total expenditure of public budgets were **CZK 30.3 bn higher** than expected, i.e. **7.5% increase** compared to previous year. The main part of expenditure is still subsidies and other current transfers, which in 2009 contributed to the growth of 8.3%. Further, social benefits increased by 7.4%, which corresponds to the amount of CZK 45.8 bn (these expenditure are primarily implemented by the state budget and health insurance companies and their share in GDP increased on 18.3%). However, the biggest share, approximately $\frac{3}{4}$, of these transfers are mandatory expenditure. The main problem concerning the high share of mandatory expenditure on transfers is that other public expenditure which could be used more productively are reduced and therefore the possibility of other fiscal policy is limited. (Návrh státního závěrečného účtu České Republiky za rok 2009, 2010)

Balance of public budgets

Balance of public budgets was significantly worse than in 2008 and ended with the deficit of **CZK 249.1 bn**, i.e. **6.9% of GDP**. All parts of public budgets worsened and especially **the deficit of state budget which increased six times!!!** Moreover, local expenditures and public health companies which used to operate in surplus changed to run deficit figures in 2009. Aforementioned state of balance of public budgets is caused by, previously many times mentioned, reasons such as negative development of revenue's side of public budgets as a consequence of economic downturn and counter-crisis packages. Further, outlays side is burdened by mandatory expenditure and already running expenditure programs of state funds.

Balance of net cash flow from operating activities, one of the conditions for healthy public finance, worsened by CZK 199 bn compared to year 2008. As can be seen from the Figure 4.2.1.1 below, net cash flow from operating activities ended in the deficit of **CZK 160 bn**. This is an enormous drop from previous surplus of CZK 38.9 bn in 2008.

Figure 4.2.1.1: Development of balances in CZK billion, %GDP between 2007-2009

	2007	2008	2009*	2007	2008	2009*
Net cash flow from operating activities	30,5	38,9	-160	0,9	1,1	-4,4
Balance of primary deficit	-8,8	7,2	-195,9	-0,2	0,2	-5,4

*preliminary data

Source: Návrh státního závěrečného účtu České Republiky za rok 2009, 2010

Another indicator which can be used to assess the public finance is primary deficit, which is calculated as deficit net of expenditure related to the interest from debt of public budgets. The logic behind this is that these expenses are results of policies from previous years. Balance of primary deficit significantly **worsened by CZK 203.1 bn**, i.e. **5.6% of GDP** and ended in **deficit of CZK 195.9 bn** as can be seen from the figure above.

Balance for fiscal targeting ended in **deficit of CZK 231.2 bn** and was approximately six times higher compared to the year 2008 when the balance was CZK - 38.5 bn. (Návrh státního závěrečného účtu České Republiky za rok 2009, 2010)

Debt of public budgets

Year-on-year growth dynamics of public budget debt increased significantly. In 2009 the **debt amounted to CZK 1,254 bn**, i.e. **34.6% of GDP** which mean that between years 2008 and 2009, the **debt grew by 17.1%**. The main reason for ever-increasing debt is the deficit of state budget (the share of the state debt in 2009 stood at 92.25% of total debt and therefore has the biggest impact on the development of debt). It means that consolidated state debt²⁴ was **CZK 1,155.9 bn** and increased compared to previous year by 18%.

Debt of municipal authorities units was **CZK 100 bn** and it represents an increase of 5.6% compared to year 2008.

²⁴ The consolidate state debt is lowered by emission of state bonds, which were bought thanks to the resources from so-called Nuclear account, Reserve account for pension reform, and Clearing account for management of Treasury liquidity. (Návrh státního závěrečného účtu České Republiky za rok 2009, 2010)

Off-budgetary funds have used up to now mainly their own source of funds and therefore, their share in the total debt is only minor. However, there is the possibility that the funds will run out of their financial resources and they will have to finance their deficits with loans or other financial means as State agricultural intervention fund did in year 2009.

Health insurance companies did not contributed to the total debt significantly. See the figure below. (Návrh státního závěrečného účtu České Republiky za rok 2009, 2010)

Figure 4.2.1.2: Debt structure and its development

	Gross consolidated debt of public budgets (CZK bn)			Share of GDP in %		
	2007	2008	2009*	2007	2008	2009*
Gross consolidated debt of PB	973,2	1070,8	1254,0	27,5	29,0	34,6
State debt (consolidated)	882,3	979,6	1155,9	25,0	26,6	31,9
Debt of off-budgetary funds	3,8	0,7	1,1	0,1	0,0	0,0
Debt of public health insurance	0,0	0,1	0,0	0,0	0,0	0,0
Debt of municipal authorities units	90,8	94,7	100,0	2,6	2,6	2,8

*preliminary data

Source: Návrh státního závěrečného účtu České Republiky za rok 2009, 2010

4.2.2 Government sector - national accounts

In 2009, the general government balance stood at **CZK -210.3 bn**, which represented **-5.8% of GDP**.

General government revenues

Compared to year 2008, general government revenues decreased by approximately **1.8%** to **CZK 1456.3 bn**, i.e. **40.1% GDP**. The most significant factor which caused the decline of revenues was economic crisis which hit the Czech Republic in the full force in 2009. Total tax revenues, including social security, which account for 90% of total revenues, experienced a **drop of 4.5%**. The most affected by the crisis was collection of corporate income tax, which **decreased** by more than **14%** compared to previous year. But not only had the crisis played its role, also legislative changes negatively influenced the collection of this tax. Social security contributions dropped by **6.6%**, mainly caused by counter-crisis measures and decrease of assessment bases. Personal income tax recorded a **decrease** of revenues in comparison with previous year by almost **3.7%** due to the decline

in wages and salaries in the Czech economy. VAT experienced a very low decline of **0.5%**, while the excise taxes grew by **9%** mainly thanks to the effect of 2007 increase in excise taxes on tobacco products. (Fiskální výhled České Republiky říjen 2010, 2010)

General government expenditure

General government expenditures increased by **5.2%** compared to year 2008 and ended at **45.9% of GDP**. Further, general government expenditures grew as a proportion of GDP by significant 3 percentage points. Social benefits increased compared to previous year 2008 by **6.6%** and that is an evident effect of the rising unemployment during the year as a consequence of the crisis in the Czech economy. General government outlays for interest increased by **incredible 20% in 2009!!!** This can be a serious problem, because the outlays for debt financing can force out other expenditure of government sector. Also the development of the interest rate can play an important role because it can either increase or decrease the cost of debt financing and therefore can have serious impact on the balance.

The forces against the growth dynamics of general government expenditure were units of the assigned carbon dioxide allowances. Their sale during the year represented approximately CZK 13 bn which helped to improve the deficit in year 2009.

Not surprisingly, the biggest impact on the balance had central government institutions subsector, mainly represented by the state budget. However, other subsectors as health insurance companies and local budgets worsened as well (by more than CZK 33 bn in total). (Fiskální výhled České Republiky říjen 2010, 2010)

General government debt

Debt of general government sector amounted to **CZK 1,282 bn** (16% increased compared to previous year), i.e. **35.3% of GDP**. (Fiskální výhled České Republiky říjen 2010, 2010)

Figure 4.2.2.1: General government debt between years 2004-2009

	2004	2005	2006	2007	2008	2009
General government debt	30,1	29,7	29,4	29,0	30,0	35,3
Central government debt	27,8	27,2	26,9	26,6	27,5	32,7
Local government debt	2,6	2,7	2,7	2,5	2,5	2,7
Social security fund debt	0,0	0,0	0,0	0,0	0,0	0,0

Source: Fiskální výhled České Republiky říjen 2010, 2010

General government balance

In 2009, the general government balance stood at **CZK -210.3 bn**, which represented **-5.8% of GDP**.

The total deficit of general government was greatly influenced by the measures which were implemented in order to mitigate the effects of the economic crisis in the Czech Republic. These measures represented almost one-third (CZK 78.5 bn) in the total deficit. (Fiskální výhled České Republiky červen 2010, 2010). See the Figure 4.2.2.2

Figure 4.2.2.2: Overview of government measures in the National Counter-Crisis Plan and their impacts on the general government budgets in 2009 (annual basis).

Measures			
I. Realised and approved measure	Rev.	Exp.	(R-E)
1. Integration of resources from reserve funds		-1,5	1,5
2. Increase in guarantees to small and medium-sized enterprise	-0,5		-0,5
3. Support of agriculture entrepreneurs		2,3	-2,3
4. Increase in the Program of Countryside Development		0,3	-0,3
5. Investments in R&D above the framework approved by the state budget		0,3	-0,3
6. Increase in investments into traffic infrastructure		7,2	-7,2
7. Increase in public sector wages	0,4	2,7	-2,3
8. Increase in expenditures on direct payments - co- financing		1,0	-1
9. Decrease in the social security contribution paid by employees by 1. p. p.	-18,4		-18,4
10. Decrease in the rate of the CIT	-6		-6,0
11. Increase in the base capital of the Czech Export Bank			0,0
12. Increase in the insurance coverage of the Export Guarantee and Insurance Corporation (EGAP)			0,0
13. Change of the law on the insurance of a state-supported export			0,0
14. Fiscal impuls of a support of R&D		1,9	-1,9
15. Decrease in advance payments on income taxes			0,0
16. Broadening of the VAT deduction on personal vehicles	-2,4		-2,4
17. Abolition of advances for taxpayers with less than 5 employees		1,0	-1,0
18. Reductions for employers on SSC and the contribution for the state employment policy	-18,0		-18,0
19. Faster depreciation in the 1st and 2nd depreciation group	-9,4		-9,4
20. Subsidy programme of an energy buildings' demandingness reduction		0,0	0,0
21. Boost of the subsidy programme "PANEL"		0,6	-0,6
22. Expenditure increase in the provision of transport services		2,0	-2,0
23. Decrease of VAT on selected services	-6,4		-6,4
Total			-78,5
II. Measures so far not approved or not realised			
1. Guarantee and a support of small and medium-sized enterprises' credits		2,1	-2,1
Total			-2,1

Note: Impacts of the stated measures are calculated according to ESA 95 methodology.

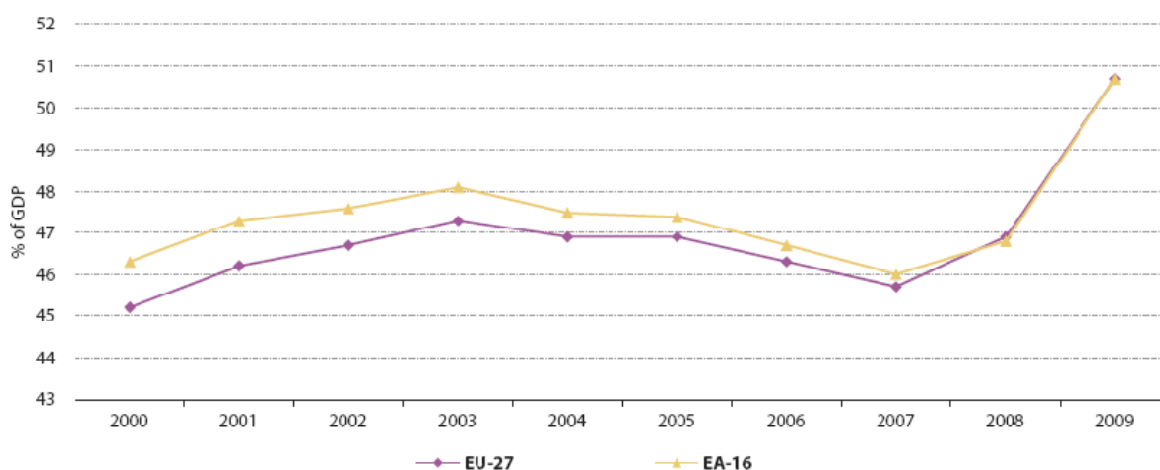
Source: Fiskální výhled České Republiky květen 2009, 2009

4.2.3 International comparison

Government expenditure

Total general government expenditure was **50.7% of GDP** both in the EU and in the euro area (EA-16) in year 2009. Focusing on the period between years 2000 and 2009, the ratio of total government expenditure to GDP grew in the EU, reaching a peak in 2003 and then slowing down up to 2007 as can be seen from the Figure 4.2.3.1. From 2007, the ratio increased again, by approximately 1 percentage point between 2007 and 2008 and then between 2008 and 2009 by significant 4 percentage points. These figures are not surprising because the national governments were either trying to reduce the effects of the crisis by various fiscal stimuli or they were bailing out the banking sector. In the euro area, the development of the ratio was more or less the same.

Figure 4.2.3.1: Total general government expenditure over the period 2000-2009



Source: European economic statistics 2010, 2011

The biggest part of the government expenditure, **42.8%** of the total EU in 2009, was represented by **redistribution of income** in cash or in kind, followed by **22%** spent on the **compensation of employees** and **13.6%** on **intermediate consumption**. Other significant expenditures were interest on borrowing and rent paid by the governments, 5.2%, while public investment spending²⁵ accounted for 5.7%.

Member States which recorded the largest total government expenditure as a share of GDP were Denmark (58.7%), followed by Finland (56.1%), Sweden (55.8%) and

²⁵ Acquisitions less disposals of fixed assets gross of consumption of fixed capital.

France (55.6%). On the other side, countries with the lowest ratio of government expenditure to GDP, slightly over 40%, were represented by Romania, Bulgaria and Slovakia.

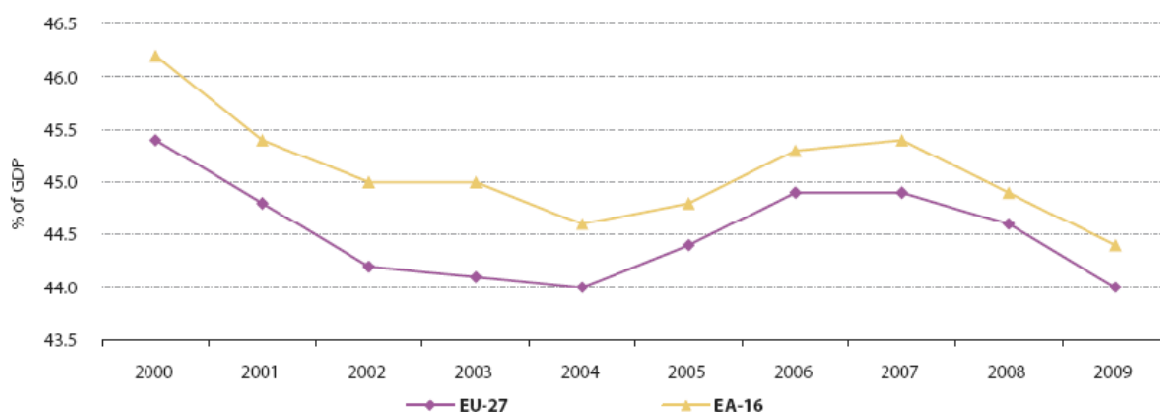
General government expenditure in **the Czech Republic** was below both EU-27 and EA-17 average and accounted for **45.9% of GDP**, i.e. 5.2% increase compared to year 2008.

Comparing the ratios with year 2008, all countries except one (Malta) experienced an increase in the government expenditure. The media change among the EU countries was 3.8 percentage points. (European economic statistics 2010, 2011)

Government revenue

In 2009, total general government revenue accounted for **44% of GDP**. In comparison with 2007, revenue **decreased by 1 percentage point**. Looking on the Figure 4.2.3.2 which depicts the total government revenue over the period 2000-2009, the ratio decreased from 45.4% in 2000 to the same level as in 2009, 44%. It was also the lowest level during this time period. From 2004 to 2007 there was an upward trend, with the peak in 2006 when the ratio stood at 44.9%. Development of the ratio of total government revenue to GDP in the euro area had the same trend.

Figure 4.2.3.2: Total general government revenue over the period 2000-2009



Source: European economic statistics 2010, 2011

Largest proportions of government revenue in 2009 were collected in form of taxes (57.6%) and social contributions (32.3%). Taxes on production and imports were approximately 29%, followed by taxes on income and wealth which accounted for 27.7%

on average of total government revenue. The remainder of the revenue came from sales of products and services by government (app. 5.5%), rents and interests received (property income), and current and capital transfers (2.1%).

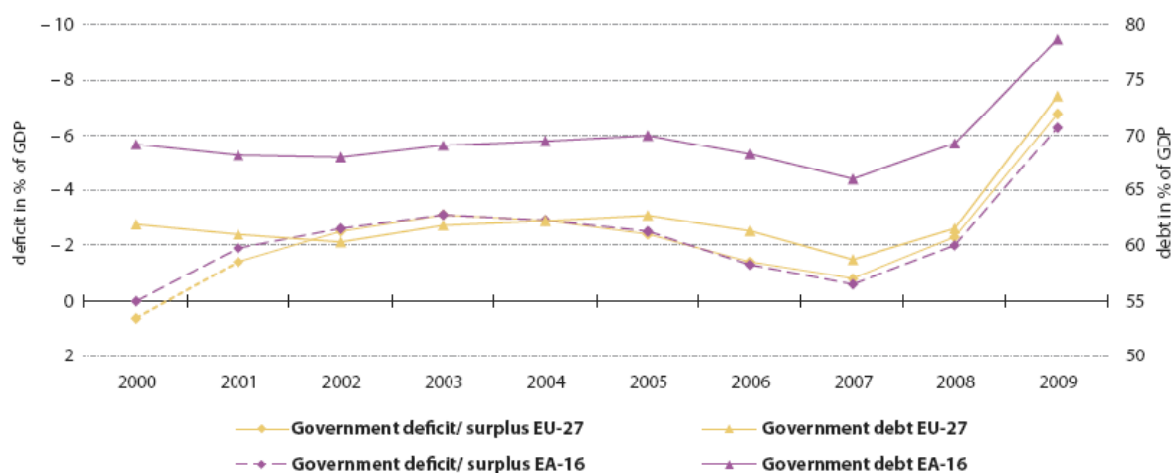
During 2009, eleven Member States had total general government revenue above the EU-27 level, as a GDP ratio. The largest revenue recorded Denmark (55.8%), closely followed by Sweden (55.7%). Contrary, Ireland, Spain, Latvia, Lithuania, Romania and Slovakia had general government revenue to GDP ratio of less than 35%. The ratio decreased in 15 Member States and the largest declines were recorded in Cyprus (- 3.2 percentage points), Spain, Bulgaria, Greece, and Poland. On the other side, several countries also experienced a growth in revenue. For instance, revenue ratio of Estonia increased by 6.5%, followed by Slovenia, Slovakia, and Luxemburg (more than 1 percentage point growth).

In the Czech Republic, general government revenue was **40.1% of GDP**. (European economic statistics 2010, 2011)

General government balance

Looking on the Figure 4.2.3.3 on the next page, which depicts EU-27 and euro area public balance and debt between years 2000-2009, we can see that the general government balance was **in deficit almost for the entire period**. Only year when EU-27 and EA-16 achieved a surplus in government balance was 2000 (a slight surplus of 0.6% in case of EU-27 and zero in EA-16). From the second half of year 2000, the deficit was increasing till 2003 when it increased above the Maastricht reference value of 3% of GDP. Then, over the period 2003-2007, it decreased by roughly 2.3 percentage points. However, with the coming crisis, the state of the government balance has deteriorated. Deficit increased again between years 2007 and 2008, but stayed below the level of 3% important for fulfilling the Maastricht criterions. In contrast to previous year, in 2009 deficit in the EU-27 experienced a sharp increase of 4.5 percentage points to 6.8% of GDP. In the EA-16 the government deficit to GDP ratio was up from 2% to 6.3% of GDP.

Figure 4.2.3.3: Development of EU-27 and EA-16 public balance (scale inverted) and debt between years 2000-2009



Source: European economic statistics 2010, 2011

Deficit as a percentage of GDP worsened in all countries of the EU except of Estonia and Malta. Further, the deficit ratios of the Member States which were above the target reference value of 3% increased very dramatically from 11 in year 2008 to 22 in 2009!!! The largest government deficits were not surprisingly listed by Ireland (-14.3%), Greece (-13.6%), the United Kingdom (-11.5%), Spain (-11.2%), Portugal (-9.4%), Latvia (-9.0%), and Lithuania and Romania (both below 9.0%). Also except of Norway which retained the government surplus even in 2009 (9.7% of GDP), the rest of the countries which run surpluses in previous year turned into deficit. Five of them had deficits below the reference value (Sweden, Luxemburg, Estonia, Finland and Denmark), while three countries exceeded the limit (Germany, the Netherlands, and Cyprus).

The Czech Republic with its deficit at **5.8% of GDP** was below the EU-27 average. (European economic statistics 2010, 2011)

General government debt

General government debt in the EU-27 was decreasing between 2005 and 2007, reaching 58.7% in 2007. However, from these good results sufficient for meeting the Maastricht reference value of 60% of GDP, debt significantly increased over the period 2007 and 2008 (61.5%). **In 2009**, the government debt grew even more in the EU-27, reaching **73.6% of GDP**. In the euro are, the development of the government debt had the same trend but debt increased to higher level of **78.7% of GDP in 2009**.

Countries with the highest indebtedness in the European Union were Italy (115.8%), Greece which government debt ratio increased from 97.6% in 2008 to 115.8% in 2009, Belgium (96.7%), and Member States which had the ratio between 80% and 60% (Hungary, France, Portugal, Germany, Malta, United Kingdom, Austria, Ireland and the Netherlands). The biggest increases were recorded by Ireland (20.1 percentage points), followed by Latvia (16.6 pp), the United Kingdom (16.1 pp) and Greece (15.9 pp). Contrary, countries with the lowest ratios of government debt to GDP were Estonia (7.2%), Luxemburg (14.5%), Bulgaria (14.8%), Romania (23.7%), and Lithuania (29.3%).

As measured by its general government debt, **the Czech Republic** is below the EU-27 average. Nevertheless, the growth dynamics of the debt was increasing significantly in the previous years and it is definitely worrying. For instance, between years 2008 and 2009 the debt of general government sector increased by 16% and amounted to 35.4% of GDP. On the other side, it was still well below the 60% of GDP which is important for fulfilling the Maastricht convergence criteria.

Compared to year 2008, when only Ireland and the United Kingdom were unable to cover their expenditure except interest on public debt and gross fixed capital formation (public investments) from their revenue, in 2009 nine more countries had similar problem (Belgium, Greece, Spain, France, Latvia, Lithuania, Portugal, Romania and Slovakia). The rest of the Member States experienced a worsening of their primary balance before interest on public debt and public investments. (European economic statistics 2010, 2011)

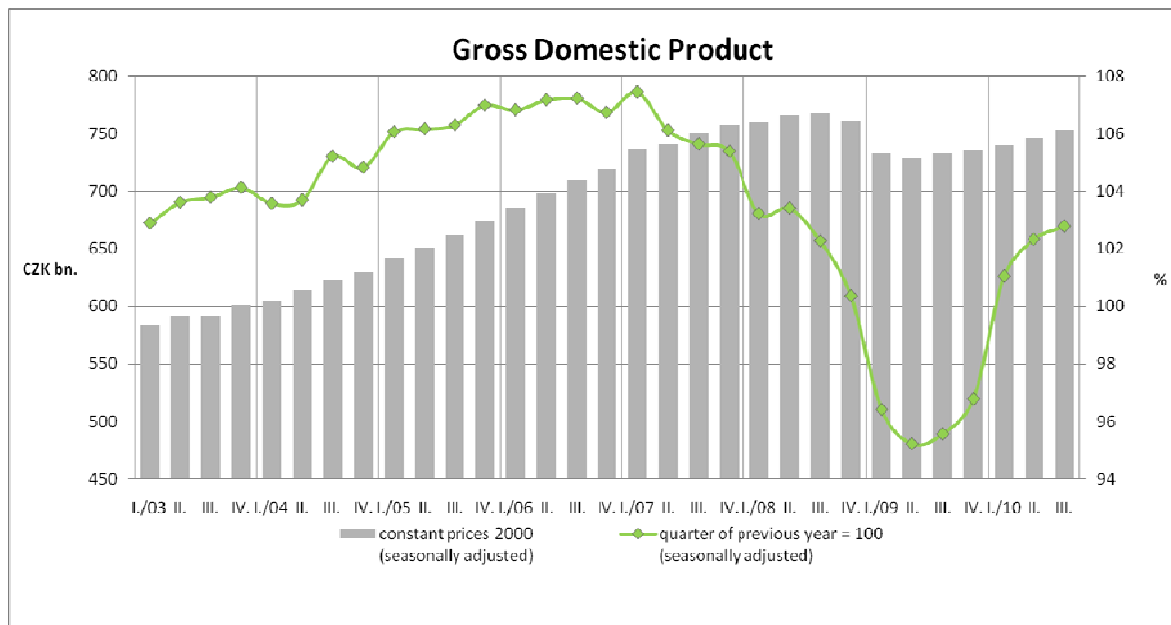
4.3 Analysis of year 2010

In 2009, the Czech Republic's public finance ended in very unfavorable situation after several years of apparent improvements. It is already quite obvious that their temporary improvement in the previous years was mainly caused by economy's cyclical development (the Czech economy reached its peak in 2007) and not the outcome of reforms which were being implemented since 2006. These reforms were far from sufficient and in certain cases they were even worsening the situation of the public finance. Especially, several steps from counter-crisis package which were affecting the revenue side of the public budgets and which further deteriorated the public budgets balance.

Nevertheless, data for first three quarters of year 2010 shows evident signs that the Czech economy is coming out of the recession. In the third quarter 2010, gross domestic product (GDP) adjusted for price, seasonal and calendar effects **increased by 2.8%** on year-on-year basis. The GDP development was contributed to primary industries in manufacturing, market services and trade. Compared to 2Q, the GDP increased by 1.0%.

In the quarter-on-quarter comparison GDP has been already growing for five consecutive quarters. Compared to the bottom of the economy in the second quarter 2009, GDP has been higher in the third quarter by 3.3%.

Figure 4.3.1: GDP development at constant prices between 1Q 2003- 3Q 2010



Source: Modified graph from Český statistický úřad, 2011

Gross value added (GVA) in third quarter **grew by 3.7%** in real terms on year-on-year basis and was mainly affected by following industries: manufacturing (growth by 10.7%), market services (+7.0%), and trade (+5.3%). *Manufacturing* was mainly driven by manufacture of motor vehicles, trailers and semi trailers, mechanical engineering, and manufacture of electrical and optical equipment. In case of *trade*, wholesale trade was the biggest contributor of the growth.

In comparison with the preceding quarter, GVA increased by 1.5%.

The main individual demand component of GDP that contributed to the growth in third quarter of 2010 was **capital formation**.

Final consumption expenditure was 0.7% bigger compared to the same quarter in the previous year and accounted for 0.5 percentage increase of GDP. Surplus was created by households that increased expenditure, year-on-year, by 1.2%, while general government expenditure fell by 0.5% on y-o-y.

Y-o-y growth of *gross capital formation* by 14.4% contributed to GDP growth by 3.1 pp. The growth in the third quarter was the highest in three years period and was partially caused, among other factors, by investments to photovoltaic.

Positive balance of external trade decreased by CZK 22.9 bn in current prices compared to the same quarter in previous year (GDP negatively affected by 0.9 pp).

Nominal GDP **increased by 2.5%** in third quarter, y-o-y, to **CZK 925.4 bn**. (National accounts and quarterly GDP preliminary estimate, 2011)

Estimations of data for GDP in fourth quarter are not yet available (will be released by Czech statistical office on 15th February 2011) and therefore we will look on the predictions of GDP for the whole year 2010.

According to the macroeconomic forecast of so-called Colloquium²⁶, which last round took place in November 2010, real growth of GDP for year 2010 was expected 2.2% on average. See the Figure 4.3.2. Comparing the forecasts of other institutions with the

²⁶ Macroeconomic frameworks of the State budget and the Budgetary outlook and MoF forecast are on regular basis compared with the results of macroeconomic forecasts of important relevant institutions (Atlantic, Bank of America Merrill Lynch, CERGE-EI, ČNB, ČSOB, Generali PPF Asset Management, ING, Komerční banka, MF ČR, MPO, MPSV, Patria, Raiffeisen, Union of Czech and Moravian Production Co-operatives, UniCredit, IMF and OECD).

Ministry of Finance, the results did not differ considerably and even the GDP average estimations were same as MoF prediction.

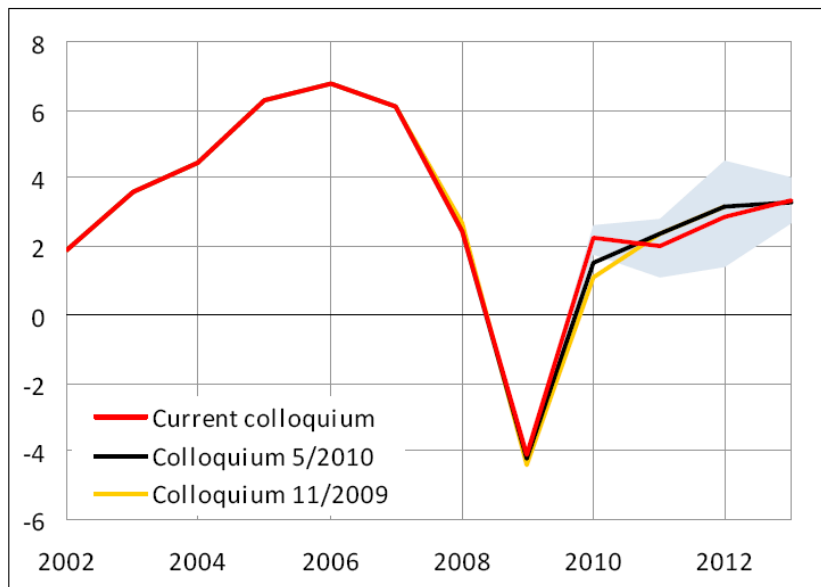
Figure 4.3.2: GDP predictions for 2010

		2010			
		<i>min.</i>	<i>average</i>	<i>max.</i>	<i>MoF CR</i>
Gross domestic products	<i>in %</i>	1,8	2,2	2,7	2,2

Source: Author's depiction based on data from Survey of macroeconomic forecast, 2010

However, compared to the previous expectations, GDP growth is expected to be stronger for 2010 as can be seen in the Figure 4.3.3 below. Moreover, according to the Macroeconomic forecast published in January, 2011, GDP is expected to rise to 2.5% instead of 2.2% previously forecasted by MoF. This change in the prediction is mainly based on probable increase in gross capital formation related to replenishing inventories and to certain extent, household consumption. (Survey of macroeconomic forecast, 2010; Macroeconomic forecast Czech Republic, January 2011)

Figure 4.3.3: Gross domestic product (real growth in %)



Source: Survey of macroeconomic forecast- MoF, 2010

4.3.1 Government sector - national accounts

State budget deficit for first three quarters of 2010 stood at **CZK 99.6 bn** and it was **the biggest general government balance in the history of the Czech Republic**. It was primarily caused by rising expenditure in favor of revenue. Nevertheless, it should be mentioned that the deficit is also greatly influenced by extraordinary measures taken by the government in 2009 in order to combat the economic recession in the Czech Republic and to reduce its effects on the state finance (billions of CZK in 2009 were transferred from Reserve Funds to non-tax revenue of budget). (Vývoj české ekonomiky 3. čtvrtletí 2010, 2010)

According to the Ministry of Finance, general government deficit for 2010 is estimated to be **CZK 176.6 bn**, i.e. **4.8% of GDP**. Compared to the previous estimate released by MoF in October, GDP improved by CZK 13 bn (previously, GDP estimate stood at 5.1% of GDP). This adjustment in the forecast is due to positive developments on the financial markets and the decline in the risk premium for the Czech Republic which is reflected in lower general government outlays for interest, 1.2% of GDP (interest rates dropped in all issued maturities on the yield curve for government bonds).

The debt of general government is expected to be **38.9% of GDP** and it is still well below Maastricht convergence criteria. (Fiskální výhled České Republiky, říjen 2010, 2010)

General government revenue

Total tax revenue (including insurance on social security and health care) rose to **3.8%** in the third quarter from 3.5% in the second quarter. Compared to the previous year, **tax revenue were higher by CZK 23.3 bn**. However, the main contributors were VAT and excise taxes (influenced by legislative measures, in particular boosting VAT and excise taxes on mineral fuels, tobacco products and beer) which accounted for CZK 16.6 bn.

Growth dynamics of corporate income tax collection slowed down, 5.5% for three quarters (i.e. + CZK 3.6 bn, y-o-y), after very promising growth of 10.9% in the first quarter of 2010 (+ CZK 5.8 bn). Physical person income tax grew by only 2%, because the improvements on the labor market haven't contributed to the wage level yet. (Vývoj české ekonomiky 3. čtvrtletí 2010, 2010)

General government expenditure

General government expenditure **increased** in third quarter by **CZK 31.4 bn** (+3.9%) compared to the same time period in 2009 and failed to maintain the positive trend of their reduction (+ CZK 8.9 bn, year-on-year, in the 2Q, i.e. +1.5%). This deterioration was not only caused by rise in the current expenditure (+2.8%), but also capital expenditure which increased by 13.5% (CZK 21 bn increase for 3Q, year-on-year).

State employees' wages were reduced by 0.5% and social security benefits grew by only 0.8% (i.e. CZK 2.5 bn), while municipal budgets increased by 20.6%, y-o-y, and social security and health funds increased by 8.6%, y-o-y. These expenditures accounted for CZK 23 bn. (Vývoj české ekonomiky 3. čtvrtletí 2010, 2010)

4.3.2 International comparison

European economy is proceeding in recovery in the second half of year 2010 in spite of the presence of high uncertainty. Despite the fact that the presence of recovery signals in the GDP is more than evident, the recent crisis contributed to the deterioration of the public finance in the Member States during 2009 and therefore the sustainability of the present economic recovery cannot be confirmed. Taking into the account the GDP figures for third quarter of 2010, the slowdown in the economic output is present.

According to the newest data released by Eurostat, **GDP increased by 0.3%** in the euro states (**EA-16**) and by **0.5% in the EU-27** during the third quarter of year 2010 compared to previous quarter. The growth rates for both zones were +1.0% in the second quarter of 2010. Seasonally adjusted GDP grew by 1.9% in the euro area and 2.2% in the EU-27 in the third quarter 2010 comparison with the same quarter a year ago.

Member States which recorded the highest GDP growth in 3Q of 2010, quarter-on-quarter, were Sweden (+2.1%), Luxemburg (+1.5%) and Poland (+1.3%).

The main individual demand components of GDP contributed disproportionately to the growth in the third quarter of 2010. *Household final consumption expenditure* rose by 0.1% in the EA-16 and by 0.2% in the EU-27, compared to +0.2% and 0.3% in the previous quarter respectively. *Gross fixed capital formation* decreased by 0.3% in the euro area while increased by 0.3% in the EU-27 (after 2.0% and 2.3% in 2Q respectively). *Exports* slowed down in 3Q to positive 1.9% in both zones while in the previous quarter exports rose by 4.4% in the EA-16 and 4.1% in the European Union. *Imports* improved by

1.5% in the euro area and 1.7% in the EU-27 (after +4.3% and 3.9%). (Eurostatistics-data for short-term economic analysis, 2011)

Total general government expenditure in the **EU-27 amounted to 50.7% of GDP** in the third quarter of 2010, i.e. a drop of 0.7 percentage point compared to previous quarter. Compared to the 3Q of 2009, government expenditure rose by 0.7 percentage point.

Total general government revenue in the **European Union stood at 44.4% of GDP** in the third quarter, staying same as in the previous two quarters and experienced a drop of 0.1% of GDP, quarter-on-quarter.

General government balance of the **EU-27 Member States was -6.2% of GDP** in the third quarter of 2011, thus it **worsened by substantial 0.8 percentage point**, quarter-on-quarter. Compared to the previous quarter, deficit decreased by 0.3 percentage point of GDP. Based on these data, we can come to the conclusion that national governments of the Member States are still not able to consolidate their public finance and to decrease their deficit.

General government debt in the euro area (EA-16) is steadily increasing from year 2007 and first three quarters of year 2010 were not an exception. In the 3Q of 2010, **government debt accounted for 82.7% of GDP**, i.e. **4.4 percentage points increased** quarter-on-quarter and 0.2 increase compared to the previous quarter. (Statistics Pocket Book, February 2011)

5 Sustainability of the public finance in the long-term horizon

Development of the public finance in the previous years has raised many questions. Probably, the most serious one is their sustainability in the long-term period based on the current model. At a certain degree of simplification, the current model of public finance is based on the idea that by decreasing taxes – especially direct taxes (income and property tax), but also decreasing tax quota, it is possible to stimulate the economic growth of the country (this is based on the concept of Laffer curve). Lower tax level should be compensated by growing economic growth which should contribute to higher tax collections. Further, to decrease public budgets deficit, the most important way of doing it is to restrict excessive expenditure, mainly the so-called mandatory expenditures.

Taking into consideration the current state of the public finance, it is already quite obvious that this approach of decreasing the deficits is not successful. It is not possible to blame only the current economic crisis and the crisis-related fiscal expansions, which without any doubt further deteriorate the deficits, but also the past development played its substantial role. It is important to realize that the future development will be affected by decisions and actions that have been made in recent years.

However, aging of the Czech Republic's population poses the most serious problem concerning the sustainability of the Czech Republic' public finance. The reason is that as the share of working age in population falls, but the share of old increases, economy is faced with lower economic growth and higher costs associated with providing services to elderly people. An elderly population needs support in the form of healthcare services, long-term care and especially pensions which accounts for the most significant budget item. This change in demography puts pressure on the state of public finance.

5.1 Demographic projections in the Czech Republic over the years to 2060

The effect of demographic change (increase in life expectancy, fall in fertility rates) does not have only several social consequences but also significant economic consequences caused by the reduction in the working age and an increase in the government expenditure.

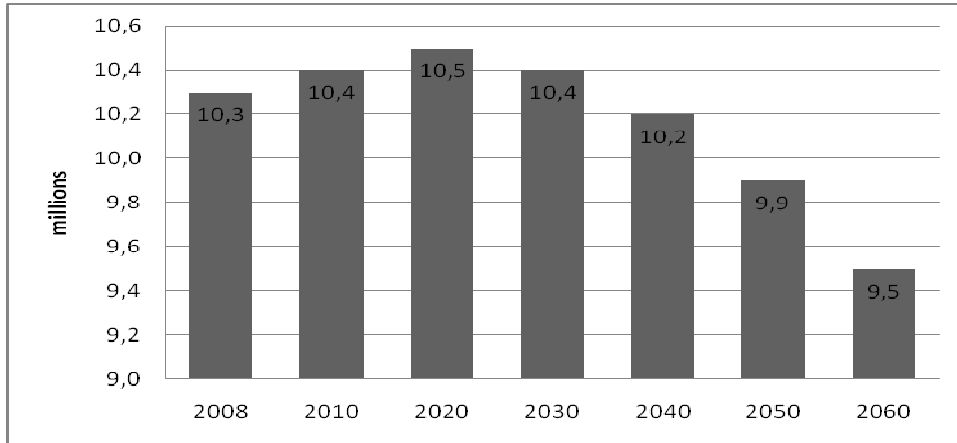
5.1.1 Population ageing

The fertility rate in the Czech Republic, defined as the average number of births per woman, is projected to slightly increase from 1.3 in 2008 to 1.5 in 2060. However, the fertility rate is still below the population replacement rate of 2.1 (the fertility rate that keeps the population constant) and is also below the average of the Member States. Together with the figures for **life expectancy at birth** which are projected to increase from 80.2 (2008) to 87.8 (2060) in case of women and from 73.9 (2008) to 83.2 (2060) in case of men, it is quite obvious that the population in the Czech Republic is set to age further and it brings also the associated costs needed for aging population.

Third factor of population projection which needs to be considered is **migration**. The problems associated with the migration flows are their difficult predictability and their dependence on the socio-economic situation not only in the Czech Republic but also in the migration countries. Another important determinant which could either allows greater or lower level of migration is administrative procedures. In the Czech Republic the net annual migration flow as a percentage of total population stood at 0.2% in 2008 and is projected to be the same level in 2060. Due to the fact that the socio-economic development is hard to predict over a long time period, to address the problem of decreasing labor force, an appropriate migration policy focused on decreasing administrative barriers seems to be the easiest solution which can be implemented. (European Commission - Sustainability Report 2009, 2010)

Aforementioned reasons have significant impacts on the **age structure of the Czech Republic population** and the population is projected to dramatically change in the coming decades. Even though the overall size of the population is projected to slightly increase from current approximately 10.4 million to 10.5 million in 2020, thereafter a steady decline occurs and the population is expected to shrink to 9.5 million in 2060 (see Figure 5.1.1.1). This decline accounts for 9.8% drop from the peak level in 2020. (The 2009 ageing report: underlying assumptions and projection methodologies, 2008)

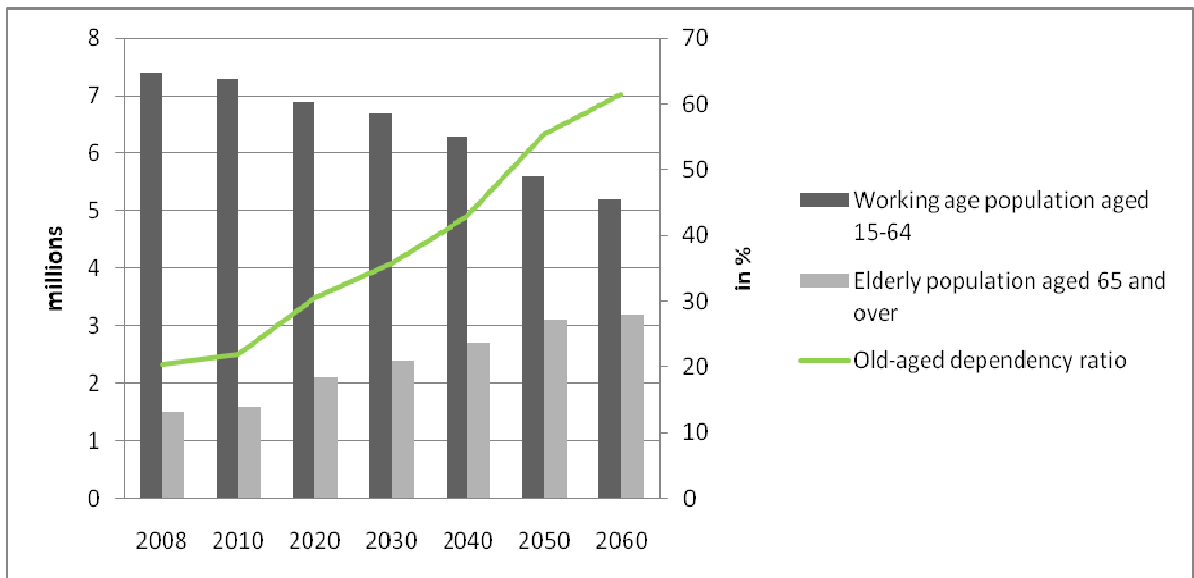
Figure 5.1.1.1: Projection of total population



Source: Author's graph based on data from The 2009 Ageing Report: Underlying Assumptions and Projection Methodologies, 2008

The old-age dependency ratio, which is defined as the population aged 65 or over as a percentage of the population aged between 15 and 64, is projected to increase from 20.6% in 2008 to 61.4% in 2060. Hence, the dependency ratio is projected to roughly triple by 2060 (see Figure 5.1.1.2). It means that there would be a shift from having 5 working-age people for every person aged 65 or over (basically all retired people) to ratio of approximately 1.6 to 1.

Figure 5.1.1.2: Different trends among age-groups over the time period of 2008-2060



Author's graph based on data from The 2009 Ageing Report: Underlying Assumptions and Projection Methodologies, 2008

Taking into the consideration the data for the whole European Union to illustrate the point that the situation in the Czech Republic is not an exemption and the trend is the similar as in the EU, the old-age dependency ratio is projected to increase to 54% in 2060 (from 25% in 2007). Vice versa, the number of individuals aged 15 to 64 is expected to shrink to 283.3 million by 2060. However, simply comparing the dependency ratios, it is quite obvious that the situation in the Czech Republic is more serious than in the rest of the European Union. (Sustainability Report 2009, 2010; The 2009 Ageing Report: Underlying Assumptions and Projection Methodologies, 2008)

5.1.2 Labor productivity and its impact on the GDP growth

An ageing of the population also affects the economic growth which is determined by the increase of population in production as well as the increase in their productivity. As soon as the share of economically active population decreases, the only factor which then can contribute to the growth is the productivity.

There can be distinguished basically two time periods based on the forecast by European Commission for potential economic growth in the Czech Republic from 2007 to 2060. In the first time period which covers years 2007 to 2020, the forecast for potential GDP growth is 4%, of which 0.4% is due to forecast increase in labor input (total hours worked, annual average growth rates). Thereafter, the drop in the working age population (steadily decreasing from 2021 to 2060) will impact the GDP growth and the remaining source of the economic growth will be labor productivity.

However, the productivity in the long-term period is projected to decrease (labor productivity growth is expected to converge to a very long-term average in the EU of 1.75% per annum) and together with the drop of labor inputs, GDP growth rate would decline substantially. (The 2009 Ageing Report: Underlying Assumptions and Projection Methodologies, 2008)

5.1.3 Fiscal implications of population ageing

The fiscal impact of ageing population (increased government expenditure due to age-related transfers and provision of various services) is forecasted to incur higher costs in the future with the accelerating growing trend.

To have a complete picture of the population ageing impacts it is necessary to not only analyze the pension spending and health care costs which are almost certain to drive up the expenditure but also education expenditure and unemployment related benefits which may rather improve the balance as a consequence of low fertility rates.

Pension spending accounted to roughly 7.1% of GDP (compared to 9.4% in 2009) in the Czech Republic in 2010 and is expected to increase by 4 percentage points from 2010 to 2060, which makes the public pension expenditure the main part of age-related expenditures. The main reason of unsustainability of pension spending in the long-term period is that more people are going to retire and spend in retirement (caused by increase in longevity). (Sustainability Report 2009, 2010; Basic Indicators of Labor and Social Protection 2009, 2010) More information about pension spending and pension reform can be found in the next chapter.

Health care spending is the second expenditure category which has the biggest impact after the pension spending and is affected by the population ageing as well (elderly people consume the biggest portion of health services). In the Czech Republic the public expenditure on health care are projected to grow by 2 percentage points from current 6.4% of GDP in 2010 over 50 years time period. The main factor contributing to increasing healthcare costs is an increase in the living standards which drives the demand for not only the quality but also the quantity of the care provided by the government. (Sustainability Report 2009, 2010) According to the so-called Bezděk's report, the expenditure associated with the health care spending may be even higher if the growth of average health expenditure per head will be equal to the growth rate of GDP per capita. (V. Bezděk, K. Dybczak, A. Krejdl, 2004)

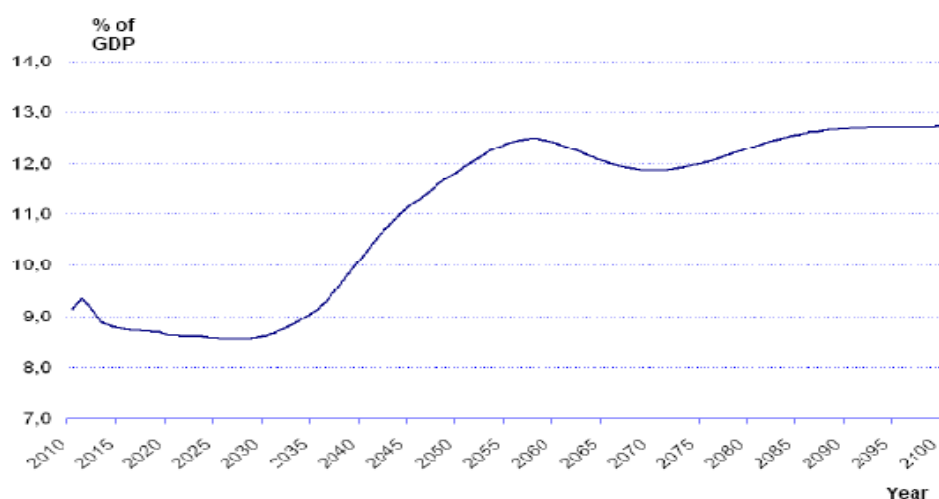
Public expenditure on education unlike healthcare and pension spending is forecasted to decrease slightly over the fifty years period. Together with unemployment benefit expenditure, aforementioned expenditures are projected to remain same as in year 2010, i.e. 3.3% of GDP. This is explained by the change in the demographics that in the future the school-aged children will account for a declining portion of the Czech Republic's population. Aside from demographic factors, which should actually lower the

expenditures for education, factors such as lower efficiency or improvements in quality partially offset this decrease. (Sustainability Report 2009, 2010)

5.2 Pension reform

The main problem of the current Czech pension system²⁷ is that the first state pension pillar (PAYG) is non-sustainable in its current form and parameters and results in long-term deficit of approximately 4% of GDP on annual base. Currently, 1.8 contributors of social security insurance accounts for 1 pensioner and this ratio is expected to further deteriorate- it is estimated that this indicator would be around 1.2 in 2050. Without any further adjustments to PAYG, the expenditures on the first pillar will be steadily increasing (see Figure 5.2.1).

Figure 5.2.1: Expenditure of first pillar



Source: Základní varianta vývoje PAYG, 2010

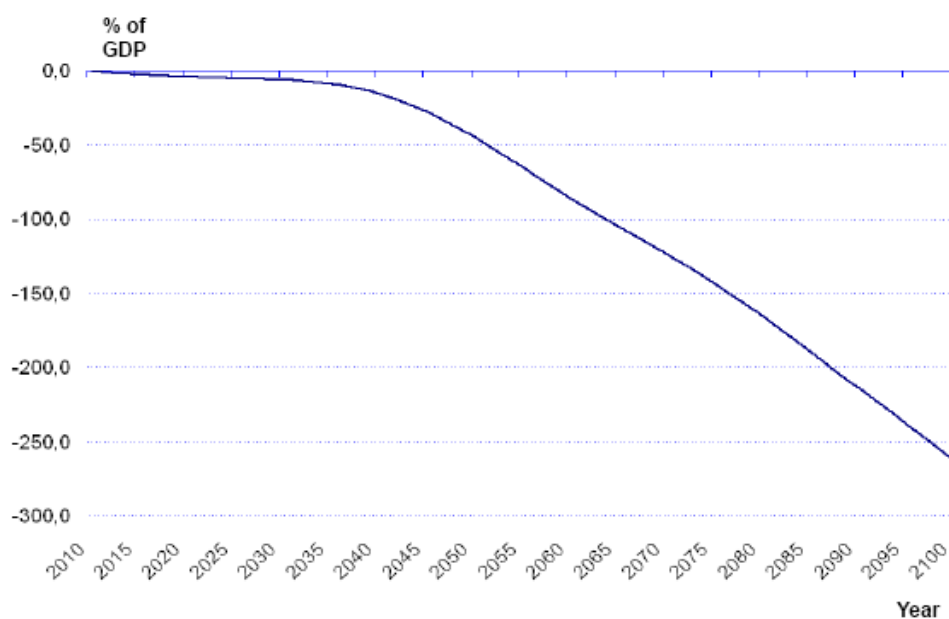
Note: Based on the condition that legislative form of PAYG remains same as on 1st January 2010.

²⁷ The current Czech pension system is **based on two pillars. The first one** is characterized by a state-run, mandatory, defined benefit **pay-as-you-go (PAYG) pillar (first pillar)** that provides old-age, disability and survivor pension (regulated by the Act. No. 155/1955 Coll., Pension Insurance Act as amended). The PAYG pension benefits are financed by a pension contribution levied on the gross wage of employees and also a certain part of the profits of self-employed people. The PAYG scheme is either directly (financing gaps between revenues and expenditure) or indirectly (acknowledging noncontributory periods for the calculation of pensions- e.g. maternity leave) subsidized by state. Preliminary figures for year 2010 show that the **pension system ended in a deficit of approximately CZK 32 bn!!!**

The second scheme is voluntary supplementary pension insurance with state contribution that is considered to be a **second pillar** (regulated by the Act No. 42/1994 Coll., State-Contributory Supplementary Pension Insurance Act as amended). It is characterized as individual saving for old age based on the capital financing. The effect of this scheme on income of pensioners is insignificant compared to the basic obligatory pension insurance. (Basic Indicators of Labor and Social Protection 2009, 2010)

PAYG will without any further adjustments deteriorate from annual deficit of roughly 1% of GDP in 2035 to 4% in 2050. It means that one third of expenditure on pensions will not be covered by insurance. Total accumulated debt of PAYG will exceed 50% of GDP in 2050 and 100% of GDP in 2065 (see Figure 5.2.2). (Závěrečná zpráva PES, 2010)

Figure 5.2.2: Accumulated debt of first pillar



Source: Základní varianta vývoje PAYG, 2010

Note: Based on the condition that legislative form of PAYG remains same as on 1st January 2010.

In order to provide a greater diversification and especially fiscal sustainability in the long-term horizon, government finally, after many years of previous discussion, approved parameters of pension reform (final version of the reform will be presented to government for approval on 23rd February 2011). The most important changes of pension system reform which should ensure the stability of the system in the future are analyzed below.

The reform will include **the possibility of a voluntary opt-out clause** in form of taking out 3% of social security insurance and put them on private individual accounts of pension funds on condition of additional payment of at least 2% of basis for calculating social security contribution. The loss of revenue from social security insurance is expected to be financed by increased revenue from unified VAT.

The first proposal took into the consideration that **Value Added Tax will rise to 20%** except of a few exceptions such as bread, milk, vegetable or fishes. According to the Ministry of Finance Miroslav Kalousek, the increased VAT was supposed to collect extra CZK 58 bn. This money should be used to pay for failures in the current system and also as compensation to socially weak citizens. At the same time, government wanted to reduce by 1.8% social contributions paid by companies for their employees. Even after this a few billion would leave and they were supposed to be stored on a special retirement account. However, after several days of severe discussion the government coalition withdrew its original plans for the unification of VAT on 20% and agreed on the **compromise of 17.5%**. Further, the unified VAT implementation will be postponed for one year. From 1st January 2012 the reduced rate of VAT will still exist in form of 14% for one year and the basic 20% VAT rate will remain unchanged. Starting 1st January 2013, all rates without exception will unite to 17.5%. Another change is that new proposal does not include reduction of social security contribution paid by companies (government will save approximately CZK 20 bn).

The new VAT rate will generate roughly CZK 26 to 27 bn in next year; in 2013 roughly CZK 4 bn less, i.e. around CZK 22 bn.

Access to voluntary opt-out will be possible and provided to people younger than 35 years old (their decision is irreversible). People who will be at the time of the law come into effect older than 35, will have the opportunity to decide whether to participate in opt-out or not till 31st December 2012.

People will be able to save in four types of pension funds. These funds will differ according to the yield from money invested and the risk exposure. The more risky the fund, the higher the yield and higher the pension. For those who prefer safe investments, there will be a possibility to invest in only Czech government bonds (generally perceived less risky than for example stocks).

Furthermore, the ministers also approved **the so-called small pension reform** (is expected to take effect from the end of September 2011). The main principle is that people who pay more into the pension system will have higher pensions. On the contrary, the middle-income people will end with slightly lower pensions. Government was forced to implement higher merit pension system by the decision of Constitutional Court.

Other important legislative changes have tightened the eligibility requirements for receiving a public pension; mainly by increasing the retirement age and also restricting the access to early retirement schemes (see Figure 5.2.3).

Figure 5.2.3: The most significant legislative changes adopted over the period 2008-2010

Main legislative changes in pension area	
2008	
Change of Pension Insurance Act - the Act No. 178/2008 Coll.	
	Pensions are increased if the price increases at least by 5% (compared to 10% in previous years)
	The valorizing of pensions was performed twice times in 2008.
2009	
Gradual increase of retirement age.	
	The age limit for entitlement to pension is increased by 2 calendar months for men and 4 calendar month for women for each calendar year.
	Up to 65 years for men, childless women, and women with 1 children.
	Up to 64 for women with 2 children.
	Up to 63 for women with 3 children.
	Up to 62 for women with at least 4 children.
Gradual extension of the required period of insurance for entitlement to old-age pension.	
	From 25 to 35 years, including non-contributory period.
	Or 30 years without non-contributory period.
2010	
Three stages of invalidity were introduced (cancelation of previous full and partially disability pensions).	

Source: Author's table based on data from Basic Indicators of Labor and Social Protection 2009, 2010

5.2.1 Critical assessment of the proposed pension reform, pros and cons of the system

It is important to realize that in the situation of the Czech Republic (extending length of life, baby-boomers=so-called Husákovy děti are going to retire in a few years), it is necessary to reduce the sensitivity of the pension system on the demographic development!!! This can be achieved by introducing the opt-out clause. The advantage of this system, which is going to be implemented in the Czech Republic, is that it is not influenced by the adverse effect of demographic development of the population. It means that it will strengthen the stability of the system in the future. On the contrary, this system

of pension financing is without any doubt exposed to investment risk (Nevertheless, as mentioned by Dušek and Kopečni (2008) the PAYG system is not risk-free either. The rules of the pension system can be changed several times depending on the demographic, economic or political shocks. This so-called policy risk can cause that the contributions actually paid and the benefits actually received by a worker will substantially differ from what he/she was promised based on the pension legislation). But according to the proposed reform it will be possible to save in four types of funds, while one of them will eliminate the exposure to the risk by investing solely into Czech government bonds (lower expected return compared to more risky investments into stocks and bonds).

Other advantages are an increase in the merit of the system, fairer distribution of inter-generation burden in time, and certain increase in equivalence.

It is understandable that there is no perfect pension system and therefore any reform has also its weaknesses. First of all, the change of the pension system and the implementation of the opt-out (capital funded pillar) will cause drop in the revenues of pension insurance, which must be covered from the state budget. The lost of the revenue is expected to be finance from VAT, which will unify on 17.5%. This will convert the part of the implicit debt of the system to the explicit one and so called transition costs will occur. Transformation costs and the resulting debt will represent the major expenses in establishing the new system (According to the study of Dušek and Jánký (2011) from IDEA- Institute for Democracy and Economic Analysis, taking out 3% of social insurance to pension funds will reduce the revenues of budget for almost CZK 18 bn= transformation costs)²⁸.

Another direct expense is concerning universal system for managing individual asset accounts and communication with investment companies and annuity providers.

Last but not least, the public support of the reform is also a problem. Today's opinion on the reform is quite problematic because citizens are not satisfied with the amount of the income, but on the other hand, any attempt to do something with the situation fails to satisfy the citizens as well. One of the explanations is the perception of the pension system which is very strongly rooted in the past as a result of the socialistic redistribution when individuals were dependent on the state and they were not forced to

²⁸It is based on the assumption that 50% of people will use the opportunity to transfer 3% of their earnings into pension funds.

save money for their retirement other than by a pension contribution levied on the their gross wage.

Therefore, it is very important to explain the pension reform to the population in advance, so that people are aware of the coming changes and they can prepare for the new situation. Furthermore, to stress the importance of voluntary saving in excess of mandatory pension system in order to keep the living standards after they retire.

5.3 Fiscal sustainability of public finance from the EU's point of view

Last part of the sustainability chapter analyzes the long term fiscal sustainability of public finance from the EU's point of view. Right from the beginning it is important to mention that there is not any exactly defined definition of a sustainable fiscal position. In general, sustainable position involves a debt level which is not too high to not cover the interest payments. Hence, the sustainability of public finance is the ability of government to finance the costs of debt with future revenues.

However, the European Commission has come up with **two sustainability gap indicators S1 and S2** which are commonly used in the EU to measure the sustainability of the Member States. These two indicators are in contrast to traditional ones which usually characterize the fiscal situation of a country especially from the short time period. These commonly used indicators are share of public debt to GDP, share of external debt to export, share of public debt to public expenditures etc.

Both S1 and S2 indicators express the size of the permanent budget adjustment which is needed to ensure that the public budget constraints are fulfilled.

Permanent fiscal consolidation S1 expresses by how many percent of GDP (from the given year) is necessary to either increase taxes or decrease expenditure, that the government debt at the end of projected horizon will be 60% of GDP.

Permanent fiscal consolidation S2 expresses the level of necessary fiscal effort needed to meet intertemporal budgetary constrain on the government in order to achieve the equality of discounted revenue and expenditure for an indefinite time horizon. Special attention is paid to additional expenditure arising from an ageing population together with the initial conditions of public finance that are used to calculate S1 and S2 indicators.

The sustainability analysis puts the Czech Republic to the category of countries which are endangered with high long-term risk. The Czech Republic has a sustainability gap S1 of 5.3% and S2 of 7.4% of GDP, which is slightly below the EU average of 5.4% and above the EU average of 6.5% of GDP respectively. The reason is relatively low level of public debt which is used in calculation of first indicator, but it is not used for indicator S2. Concerning the sustainability gap S2, the Czech Republic in other words needs to improve its structural primary balance by 7.4% of GDP.

One of the measures which can improve the long-term sustainability of public finance is aforementioned pension reform which is necessary to decrease the budgetary impact of ageing population. Moreover, further reforms to social security system (except of public pension reform, also health care system) needs to be promoted. (European Commission - Sustainability Report 2009, 2009)

6 Conclusion

The Czech economy was both mainly affected by a decline in foreign demand for exports, and by the effect of destabilization from other countries in the region of Central and Eastern Europe. It was resulting from the uncertainty regarding the sustainability of financing the deficit and debt.

Firstly, it is important to realize that the economy of Czech Republic, characterized as small and open, is fully integrated in the international markets and depends strongly on exporting goods and services and is therefore very vulnerable to any global trade demand shocks. Secondly, financial and economic crisis in the Czech Republic has been brought in from outside. It is an imported crisis and therefore the ability of Czech industry to limit the impacts of drop in worldwide sales was limited due to the strong relation of Czech industry on exports and its dependence on development on foreign markets.

Crisis fully entered the Czech economy in the fourth quarter of year 2008, when after two years of high economic growth the economy has slowed down as a consequence of downturn of the world economies.

To mitigate the impacts of crisis, Czech government adopted a range of fiscal stimuli (as a part of Counter-crisis plan) in the first half of year 2009. These stimuli were aimed at the supply side of the economy, because any stimulation of aggregate demand by using fiscal policy would be nonsense in open economy of Czech Republic (fiscal stimuli would probably increase demand for imports=deterioration of Balance of Payments and higher government expenditure would partially crowd out private investments). Counter-crisis plan was mainly focused on decreasing the social security contributions paid by both employees and employers, broadening of VAT reduction on personal vehicles, faster depreciation and supporting export activities by further extending possibility of export loan and guarantees.

The total deficit of general government was greatly influenced by these measures and represented almost one-third (CZK 78.5 bn) in the total deficit. Without any doubt these measures slightly mitigated the effects of economic crisis in the Czech Republic, but they could not significantly change the economic development as the real recovery depended on upturn in world and especially euro zone trade. Together with the effect of

automatic stabilizers (increased social benefits), budget balance has significantly deteriorated.

But not only counter-crisis measures had impact on public finance, also reform of tax system contributed to the budget deficit. This new tax system was approved as the part of so-called reform of public finance in order to reduce and combat with ever-increasing deficit and debt.

However, according to my personal opinion, the main flaw of the reform was based on the fact that reduction in indirect taxes, insurance payments and budget deficit associated with this cut would be replaced by increased tax receipts from taxation on consumption (VAT and excise taxes). Unfortunately, looking on the figures for years 2008 and 2009, indirect taxes did not compensate this. Further, higher revenues from corporate income tax in 2008 were achieved mainly based on the positive economic results from previous year. Taking into consideration, that during negative or very low economic growth in the Czech Republic during 2009 this compensator was not available, the revenue side of the budget was significantly affected by this.

Despite the fact that the Czech economy was coming out of the recession in 2010, government recorded the biggest general government balance in the entire history of the Czech Republic. Nevertheless, it should be mentioned that the deficit is also greatly influenced by extraordinary measures taken by the government in 2009 and 2010 in order to combat the economic recession in the Czech Republic and to reduce its effects on the state finance (billions of CZK in 2009 were transferred from Reserve Funds to non-tax revenue of budget).

The Czech Republic's public finance ended in very unfavorable situation after several years of apparent improvements. It is already quite obvious that their temporary improvement in the previous years was mainly caused by economy's cyclical development (the Czech economy reached its peak in 2007) and not the outcome of reforms which were being implemented since 2006.

Future prospects of public finance have raised many questions. I think that probably the most serious one is their sustainability in the long-term period based on the current

model. At a certain degree of simplification, the current model of public finance is based on the idea that by decreasing taxes – especially direct taxes (income and property tax), but also decreasing tax quota, it is possible to stimulate the economic growth of the country (this is based on the concept of Laffer curve). Lower tax level should be compensated by growing economic growth which should contribute to higher tax collections. Further, to decrease public budgets deficit, the most important way of doing it is to restrict excessive expenditure, mainly the so-called mandatory expenditures.

If I take into consideration the current state of the public finance, it is already quite obvious that this approach of decreasing the deficits is not successful. It is not possible to blame only the current economic crisis and the crisis-related fiscal expansions, which without any doubt further deteriorated the deficits, but also the past development played its substantial role. It is important to realize that the future development will be affected by decisions and actions that have been made in recent years.

However, aging of the Czech Republic's population poses the most serious problem concerning the sustainability of the Czech Republic' public finance. The reason is that as the share of working age in population falls, but the share of old increases, economy is faced with lower economic growth and higher costs associated with providing services to elderly people. An elderly population needs support in the form of healthcare services, long-term care and especially pensions which accounts for the most significant budget item.

Czech government addresses this issue by pension reform and introduction of opt-out clause which should mitigate the demographic changes and its pressure on the state of public finance. It is definitely a good step because implementation of this system should lead to higher stability of the system in the future and also should not be affected by the adverse effect of demographic development of the population.

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8 Appendices

Annex 1 - Alternative economic scenarios

These scenarios forecast possible variants of future macroeconomic development together with identified risks.

Baseline Scenario

The Baseline Scenario predicts a gradual recovery of the real economy, which will be temporarily interrupted in the second half of 2010 and renewed in the second half of year 2011. Further, the scenario predicts that monetary-relevant inflation will return to the inflation target from below over the entire forecast period. The exchange rate will be stable with a modest appreciation in 2011 and short-term interest rates will gradually increase.

Return of Recession

The Return of Recession scenario is characterized by longer-lasting W-shaped recession. The drop in domestic GDP will be caused by a greater weakening of external demand. Domestic corporations and households will be affected by mainly decrease in their income, reflected in a decline of investment and consumption. The exchange rate will remain stable and due to the very weak inflationary pressures, short-term interest rates will be at very low levels. However, increased financial market sensitivity to foreign and domestic fiscal risk will prevent a decline in long-term interest rates as well as rates on client loans.

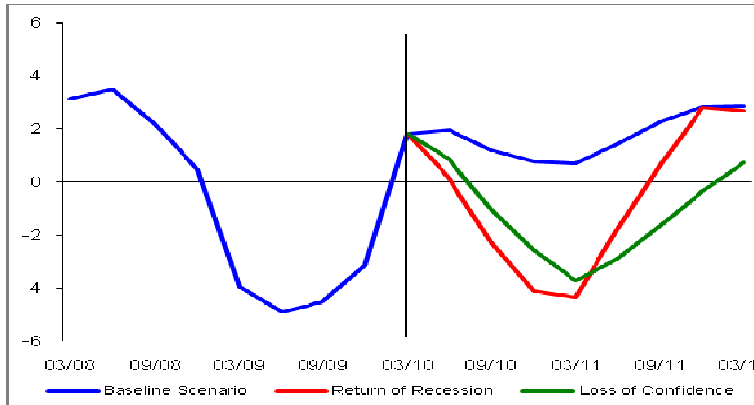
Loss of Confidence

The Loss of Confidence scenario is characterized as a combination of weak economic growth and adverse developments in the financial markets and subsequently also in the financial sector. The Czech economy will be in a strong recession which will further deteriorate the state of the public budgets. Increasing concerns about the sustainability of public finance will create a negative reaction from the financial markets which will lead to a loss of investor confidence. As a consequence of this loss, the yields demanded on the Czech government bonds will increase and the Czech currency will depreciate. This will cause an increase in potential inflationary pressures, to which monetary policy-makers will raise the short-term interest rates. Further, the client's interest rates will rise as well and together with unfavorable situation on the labor market and decreasing income will be

reflected in a rise of corporate and household defaults. The property market situation will significantly deteriorate.

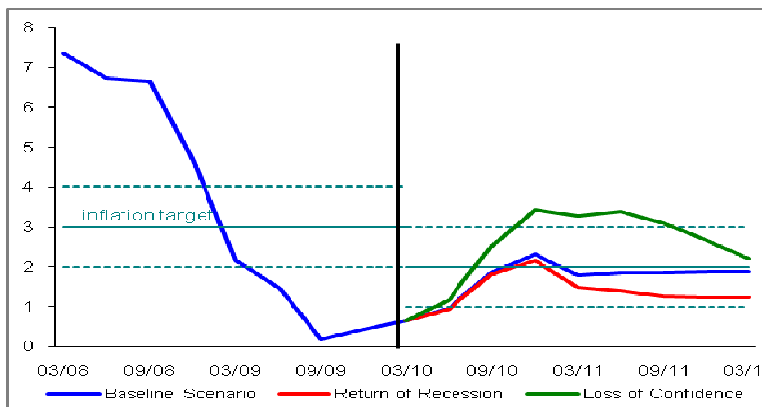
A weak economic recovery will start towards the end of 2011. (CNB Financial Stability Report 2009/2010, p.31-32, 2010)

Alternative scenario: real GDP growth (%)



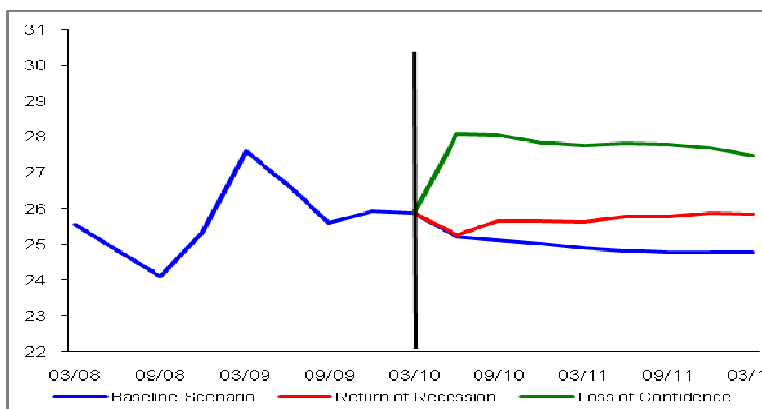
Source: CNB Financial Stability Report 2009/2010, 2010

Alternative scenario: Inflation (%)



Source: CNB Financial Stability Report 2009/2010, 2010

Alternative scenario: exchange rate (CZK/EUR)



Source: CNB Financial Stability Report 2009/2010, 2010

Annex 2

Methodological changes from the 1986 GFS (Government Finance Statistics) system

1. Coverage

General government sector is defined on the basis of institutional units as opposed to the coverage of the 1986 GFS which was defined on the functional basis.

2. Basis of recording economic events

Flows are recorded on an accrual basis, which means that flows are recorded at the time economic value is created, transformed, exchanged, transferred, or extinguished.

In the 1986 GFS system, transactions are recorded when cash is received or paid.

Furthermore, non-monetary transactions are fully integrated in the revised GFS system, while in the 1986 GFS, only selected nonmonetary transactions were recorded as memorandum items.

3. Valuation

Flows as well as assets and liabilities and net worth are valued at current market prices in the revised 2001 GFS system, with a provision for recording the nominal value of debt securities as memorandum item. This is different to the old 1986 GFS system, where debt securities are valued at the amount the government is obliged to pay when the debt matures (differs from both the nominal and the current value).

4. Balance sheets

In the revised GFS 2001 system, complete balance sheets include all stocks of financial assets, nonfinancial assets, liabilities, and net worth. The 1986 GFS system included only stocks of certain debt liabilities.

5. Integration of flows and stocks

The comprehensive recording of transactions and other economic flows permits a full integration of flows and stocks and the reconciliation of differences between the opening and closing balance sheets.

6. The analytical framework

In the GFS 2001 system several new balancing items are introduced. Newly, the difference between revenue and expense is a balancing item, the net operating balance, which measures the change in net worth resulting from transactions.

All transactions involving the acquisition of or disposal of financial assets are treated as financial transactions, and net lending/borrowing is a balancing item defined as the net acquisition of all financial assets less the net incurrence of all liabilities from transactions.
(Government Finance Statistics Manual 2001, p. 4, 2001)