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**A world in crisis and out of balance:
The magnitude and consequences of some current
imbalances in western economies**

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A world in crisis and out of balance: The magnitude and consequences of some current imbalances in western economies.

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Abstract

This paper provides a brief overview of the major economic imbalances that the world is facing at the moment, looks at some of their repercussions and possible solutions. The material includes the current financial crisis, both from a banking and fiscal viewpoint, this includes problems with high leverage of financial systems, the divide between the real economy and the financial sector and high debt levels. In addition we look at current account mismatches, the looming demographic and pension crisis, income inequality, North-South disparity, ecological issues and more. The paper looks at selected important countries and regions in more detail than others but most of the analysis is based on the western world, as represented in the OECD. The paper paints a picture of a world that is by many measures very unbalanced and although the imbalances can be successfully addressed there are for the most part no easy solutions.

JEL classification: E20, E66, F01

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A financial crisis

The financial crisis that is now affecting most advanced economies was in its early stages, in 2006 and 2007, first and foremost considered a banking crisis. It was often referred to as the subprime loan crisis, based on the role that such loans, originating in the U.S., played in the first stages of the crisis. By 2008 it had however become clear that the crisis had many causes other than these subprime loans and affected the banking systems of several countries, in addition to the U.S.

The crisis took a dramatic turn for the worse in the autumn of 2008. A pivotal event was the collapse of the investment bank Lehman Brothers on September 15th. This sent shockwaves around the world with investors scrambling for safety and liquidity vanishing. The message that the collapse sent was loud and clear – there was less shelter than previously assumed for financial institutions in being large. The boundaries of *too big to fail* status had shifted and nobody knew for sure where they lay. Two weeks later the Irish government, facing an imminent collapse of its financial system, took the extra-ordinary measure of accepting responsibility for most of the debt of the Irish banking sector. A week later Iceland's financial sector collapsed. Several other countries saw individual banks fail that autumn but emergency measures by governments and central banks prevented other countries from experiencing a total collapse of their financial systems, as Iceland had.

The financial turmoil peaked, at least temporarily, in late 2008 but the effects on the real economy were worst the year after. In 2009 the GDP of OECD countries fell by on average 3,5%, with many European countries seeing their GDP drop by 5% or more. The Baltic states were hit particularly hard, with a double digit drop of GDP, in percentages. In most OECD countries however the recovery seemed to start fairly quickly, in 2010 or even the second half of 2009. In 2010 GDP grew by 2,9% in real terms on average within the OECD. Although the financial crisis was obviously not solved, this gave some hope for a V shaped downturn and recovery, with things returning to normal relatively quickly.

Developments in 2011 however quickly undermined the hope for such a speedy recovery. During that year it became clear that the financial crisis was not confined to the banking sector, it was also a very serious fiscal crisis, affecting to a different degree most western countries. Developments in Greece showed the way in this respect. The Greek state, which had been borrowing at rates only a fraction of a percent higher than the German state since adopting the euro and until 2007 saw its access to international financial markets vanish, for all practical purposes. This left the Greek state reliant on the IMF and its EU partners for financing its gigantic fiscal deficit and rolling over government debt. Following in the footsteps of Greece came several other countries in the southern part of the EU, Spain, Portugal and even Italy. All had government finances that were substantially healthier than those of Greece, with much lower deficits and less debt, as a percentage of GDP, but still found it increasingly hard to borrow at reasonable rates in the second half of 2011.

Size of financial system relative to real economy

The list of fundamental imbalances in the global financial system that are the background to the financial crisis is long. The obvious first choice in that list is the size of the financial sector relative to the real economy.

The size of the banking sector is easier to measure than the size of the financial sector as a whole. In the late 19th century the combined balance sheets of banks in the USA was approximately 20% of GDP. In Britain the figure was higher, at about 50%. This changed little until the middle of the 20th century but since then the banking sector has grown much faster than the real economy, leaving it a little under 5 times as large as GDP in the UK and roughly equal to GDP in the USA.¹

The ratio between the size of the banking sector and GDP has been relatively stable in the USA since the 1970's but in Europe banking systems have continued to grow at a much faster pace than GDP. In 13 of the current Eurozone member countries² the banking sector's combined balance sheet was 1,5 times GDP in 1980 but has grown steadily ever since and was 3,15 times GDP in 2009.

Although the trend towards a larger financial sector, relative to the real economy, is more or less universal in Europe, the size differs widely across

¹ See King (2010).

² The OECD does not provide statistics on the size of the banking sector for all member countries and for some of them only for part of the period we look at here. The analysis here is based on OECD data for Austria, Belgium, Estonia, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Slovak Republic, Slovenia and Spain.

countries. The Icelandic banking sector that failed in the autumn of 2008 had grown very rapidly to approximately 10 times GDP.³ The new financial system that was established post-crash in Iceland, based on the domestic operations of its predecessor, is much smaller or a little more than 2 times GDP.

It is probably not surprising that the banking system in Luxembourg is in relative terms by far the largest in Europe, at more than 20 times GDP.

The deeply troubled Irish banking system is by this measure only slightly smaller in relative terms than the Icelandic one was at its peak, or 9 times GDP. This figure is however somewhat misleading as it includes the balance sheets of so-called IFSC institutions, which, although based in Dublin, are not part of the regular Irish banking system and have little ties to the Irish economy beyond the employment that they provide. Without these institutions the Irish banking system measures at approximately 3 times GDP.

After Ireland and Luxembourg, the Netherlands have the largest banking system in the Eurozone in relative terms, at slightly more than 5 times GDP, similar to the UK and Switzerland.

³ The size of the Icelandic banking sector relative to GDP grew significantly during the last year before the crash. The explanation was that as the króna depreciated the foreign assets of the banks were worth ever more in local currency. In October 2007, just before the króna started depreciating at a dramatic pace, the assets of the Icelandic banks had a book value equal to 6,7 times GDP.

In recent years some researchers have tried to estimate the ‘optimal size’ of financial sectors in the sense that it maximizes GDP or its growth. The debate on this is still very much open but it is nevertheless interesting that early indications are that the optimal size may not be much greater than one years’ GDP. This would mean that the U.S. banking system is approximately optimal in size but that most European banking systems are far too big.⁴

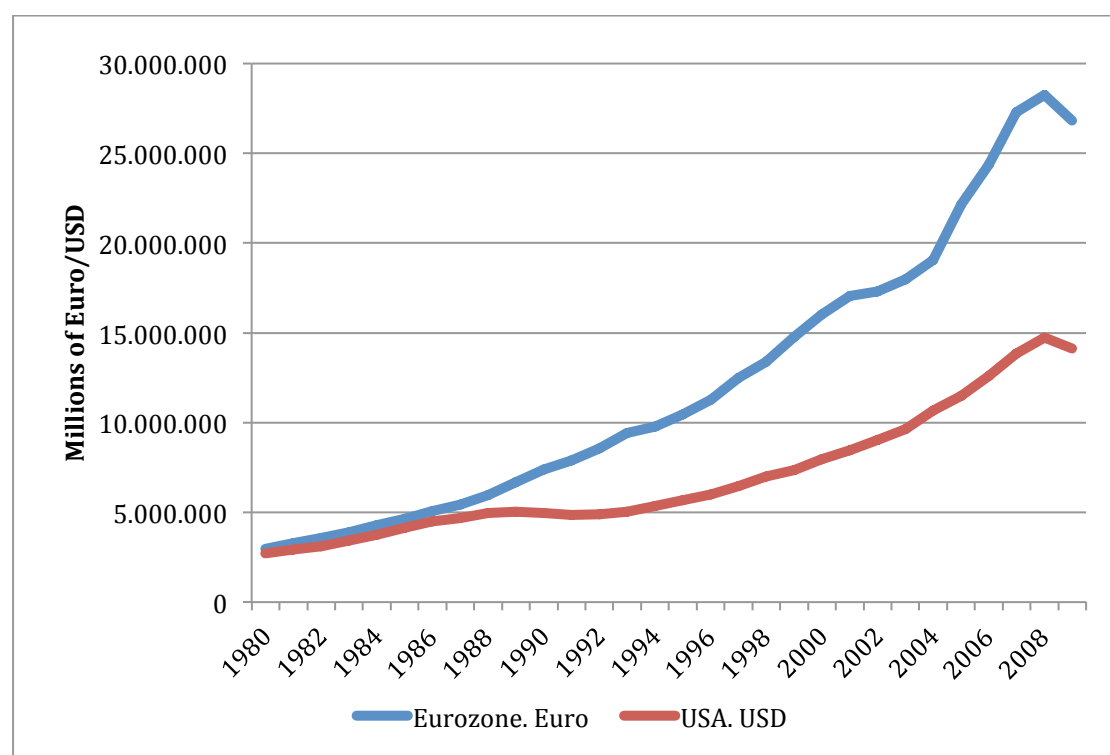


Fig. 1. Total bank assets, Eurozone and USA (in euros and USD respectively). Source OECD.

⁴ See Arcand, Berkes and Panizza (2011) and references therein.

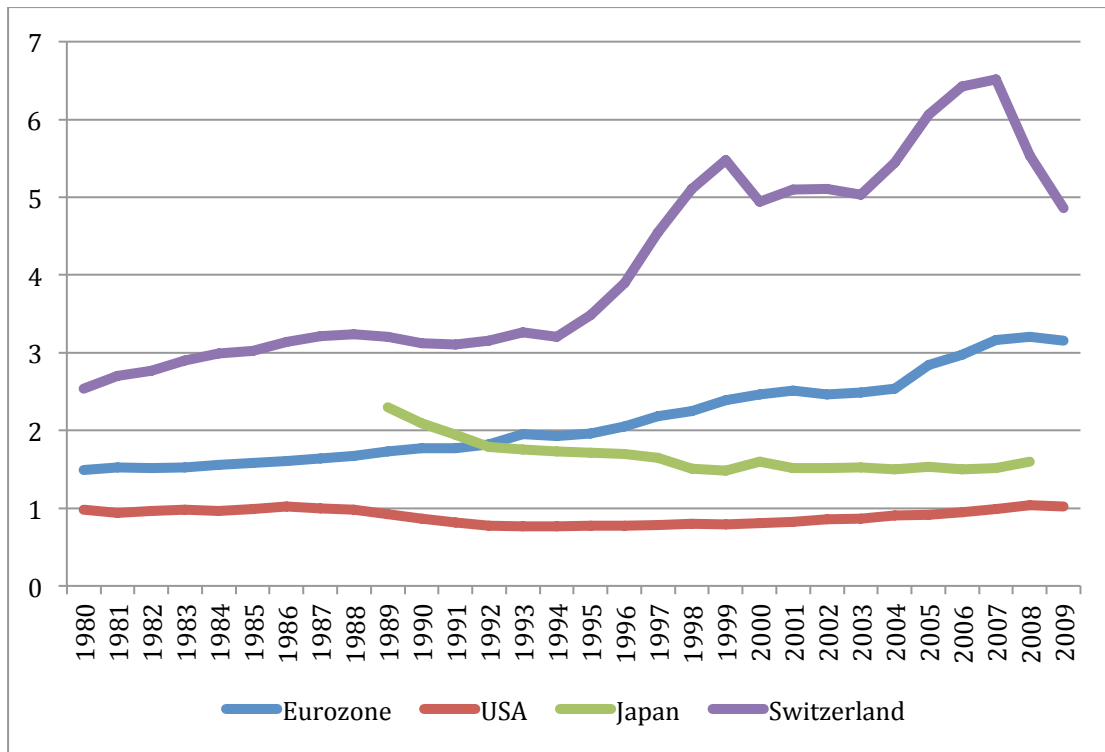


Fig. 2. Bank assets relative to GDP. Source OECD.

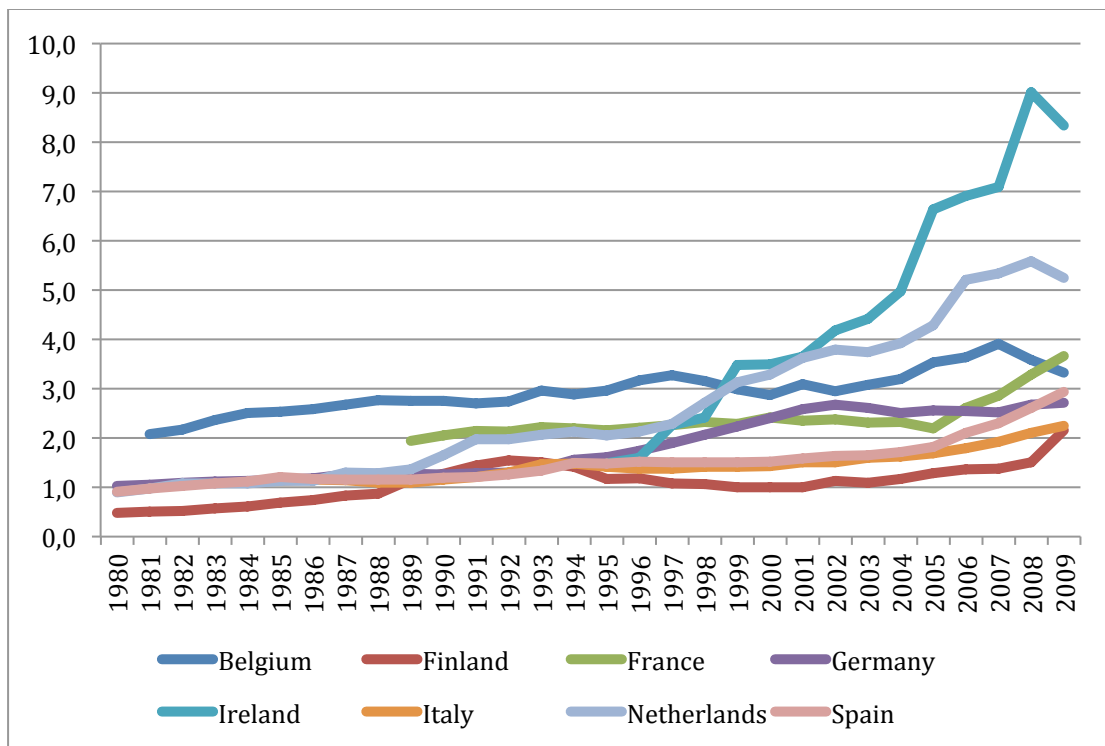


Fig. 3. Bank assets relative to GDP. Source OECD.

Cross-border liabilities

Although European banking systems have grown at a very rapid pace for a long time, this growth is dwarfed by that of cross-border liabilities within the international financial system. The average nominal growth of these liabilities has been a little under 18% per annum since the late 1970's. In nominal dollar terms these liabilities have thus grown by a factor of 40 in less than a quarter of a century. This is staggering growth by any measure. At the end of the second quarter of 2011 the total sum, as estimated by the BIS, stood at USD 30.681 trillion after having peaked at USD 35.104 trillion in 2008.⁵ The current figure is approximately equal to the combined annual GDP of the USA and the EU.

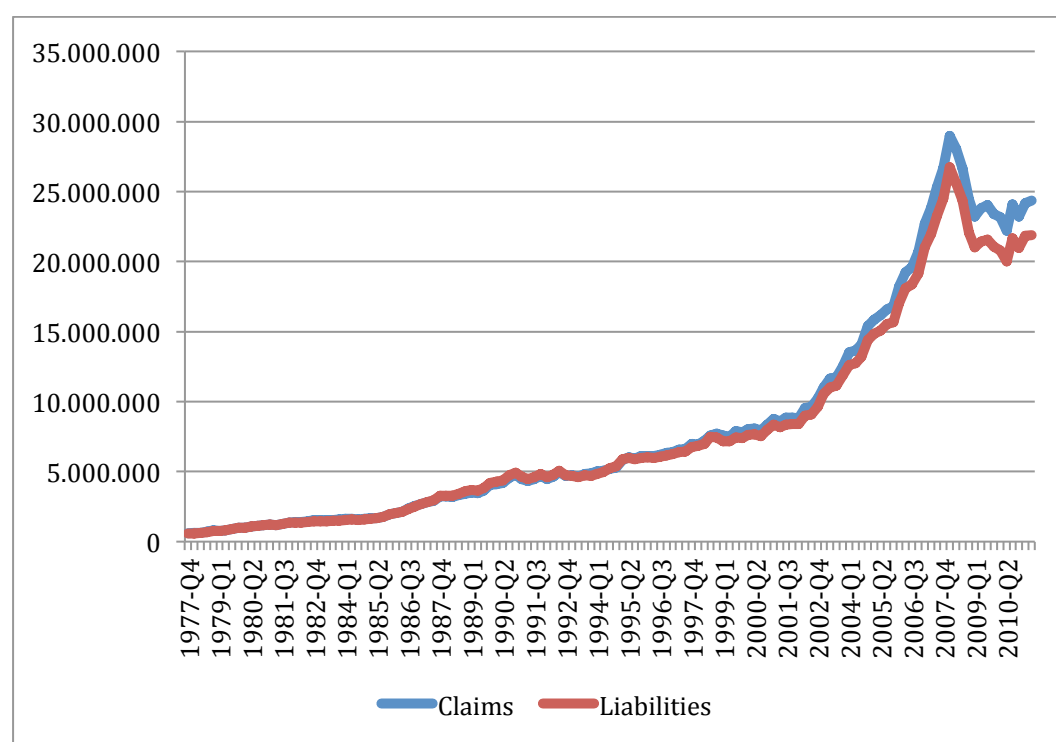


Fig. 4. Cross-border liabilities in the international banking system. Selected countries.⁶ Millions of USD. Source BIS.

⁵ Average of cross-border claims and liabilities. Figures on cross-border liabilities are based on data from BIS.

⁶ The country selection is based on data being available for the whole period. The countries are Austria, Belgium, Canada, Denmark, France, Germany, Ireland,

One obvious effect of these huge cross-border liabilities is that trouble in the financial sector in individual countries has unavoidable domino effects across borders.

From this perspective the Icelandic banking system that collapsed in 2008 may have been small enough to qualify as ‘not too big to fail’. The losses felt by creditors outside Iceland were substantial, probably on the order of magnitude of 60 billion out of total debt of USD 100 billion.⁷ They were however spread widely across many financial institutions and not sufficient to cause systemic problems outside Iceland. The Icelandic economy is however very small by global standards. A similar collapse of a larger financial system would have far more dramatic ripple effects abroad, even if the country of origin had still qualified as small. Ireland is one candidate for such a scenario. The Irish banking system was on the verge of collapse at the same time as the Icelandic one but was, as previously mentioned, kept afloat by a massive inflow of funds from the ECB and an Irish government guarantee.⁸

Italy, Japan, Luxembourg, Netherlands, Sweden, Switzerland, United Kingdom and United States. In 2011 these countries were responsible for 75% of the total claims and liabilities that BIS tracks.

⁷ The final estimate of the losses will not be known until the estates of the collapsed banks have been wound down. Initial estimates were that the estates’ portfolios were worth approximately 5.300 billion ISK post-crash, marked down from a book value of 13.100 billion pre-crash. When the banks collapsed they owed about 12.200 billion, meaning that creditors stood to lose about 6.600 billion ISK or about 60 billion USD at then current exchange rates. Source Hreinsson, Benediktsdóttir and Gunnarsson (2010) and authors’ calculations. Estimates of the recovery from the estates have since improved somewhat.

⁸ Two years later, Ireland, battling twin deficits and with very limited access to international financial markets, received financial support from the IMF and EU’s Financial Stability Fund (EFSF).

Fiscal problems

In the period 1993-2011 the member countries of the OECD as a whole only once balanced their budget, in the year 2000. The surplus in that year was a paltry 0,1% of GDP. The average budget deficit, as a percentage of GDP, was 3,5% of GDP during this period, leading to ever increasing debt levels by the average OECD country. The Eurozone and the United States fared similarly by this measure, with an average deficit of 3,3% and 3,9% of GDP respectively. The recent trend for the U.S. deficit has however been far worse, going from a surplus at the end of the last millennium, during the Clinton presidency, to a double digit (in percent of GDP) deficit since 2009.

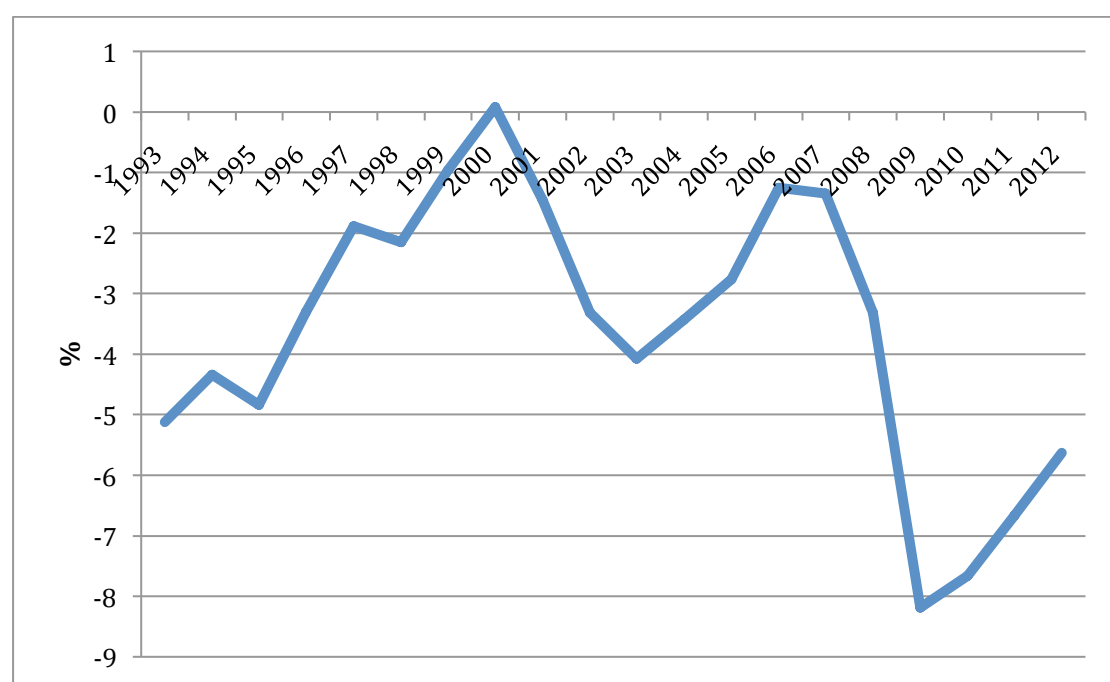


Fig. 5. Average fiscal deficit within the OECD in 1993-2011 as percentage of GDP. Source OECD.

The fiscal problems of Japan are chronic and substantially worse than anywhere else within the OECD, with the exception of Greece, with an average deficit of 6% of GDP in the period we look at. Norway is the only OECD country to have had a

substantial fiscal surplus during this period while Denmark, Estonia, Finland, Luxembourg and New Zealand all had a tiny surplus. All other OECD countries had a deficit on average.

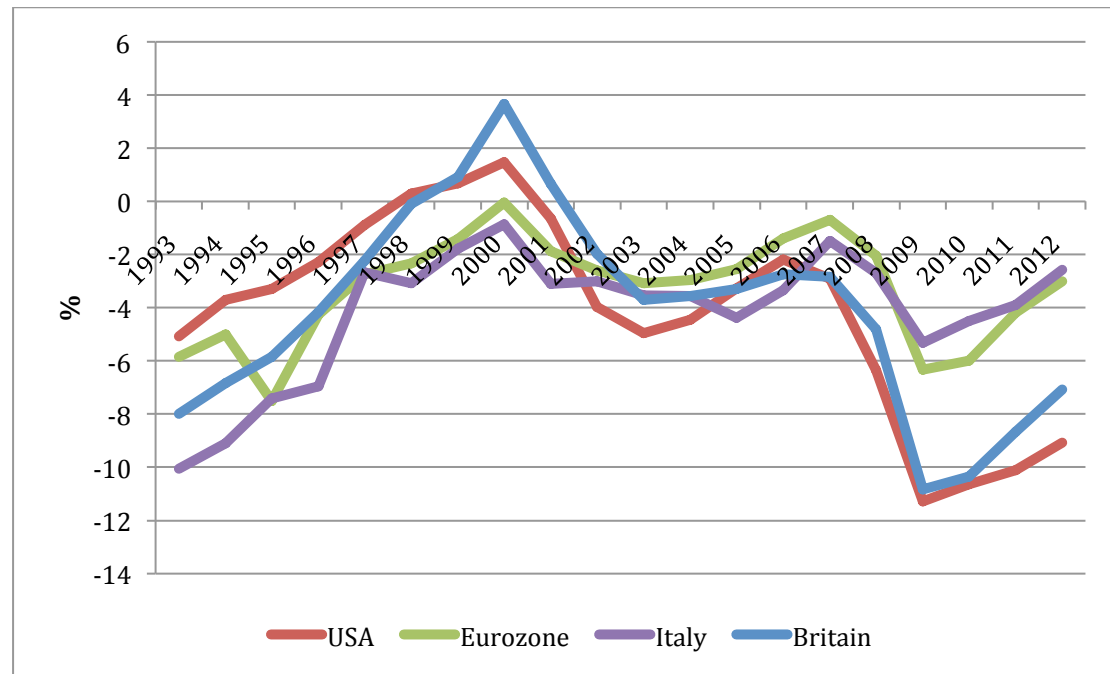


Fig. 6. Fiscal deficit as percentage of GDP, selected OECD countries and the Eurozone, 1993-2011. Source OECD.

Unavoidably, this chronic deficit problem has led to a substantial increase in government debt, both gross and net, as a percentage of GDP. In 2011 the average OECD country had gross debt of slightly more than GDP, at 102%, and net debt⁹ of 62% of GDP.

⁹ Net debt is gross debt minus financial assets. Real assets are not subtracted. It should be kept in mind that all governments also have substantial real assets (infrastructure, government buildings etc.). The debt figures do not take into account all off-balance sheet assets and liabilities, in particular they do not fully take into account underfunded government social security schemes. These liabilities are massive in most western countries due unfavourable demographics.

When it comes to gross and net debt, Japan is an outlier, with gross government debt of more than two times GDP and net debt of about 130% of GDP. Greece and Italy have considerably less gross debt but their net debt is also more than annual GDP. All countries have some gross government debt but several countries have no net government debt. Norway is an outlier within the OECD with the government's financial assets being much larger than gross debt, the difference being more than 160% of annual GDP. This is due to Norway channelling much of the state's substantial revenues from the oil industry into a special fund that is invested outside Norway.

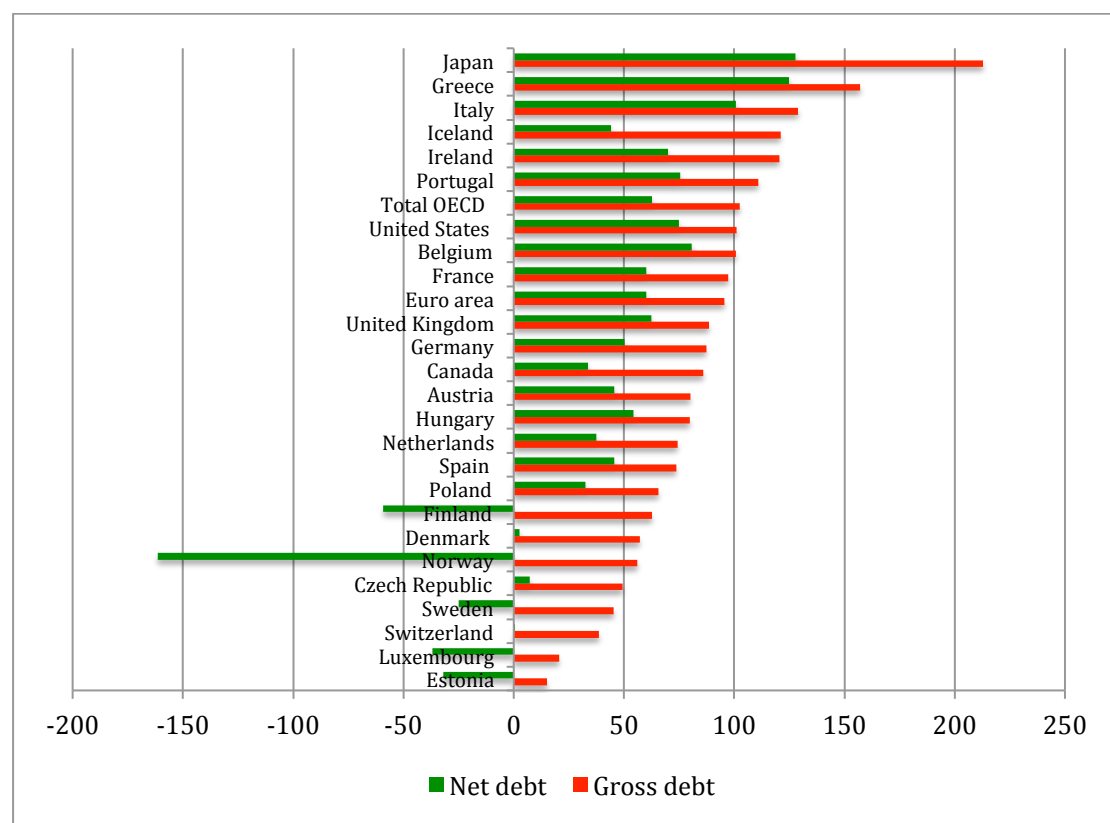


Fig. 7. Net and gross government debt as percentage of GDP in 2011. Source OECD.

It is interesting to note that despite substantial fiscal deficits the average net debt of governments within the OECD held approximately steady at 40% of GDP from 1993 until 2008 but has since grown to the aforementioned 62%. The dramatic increase in this ratio is due to both a substantial increase in fiscal deficits, with the tax base contracting sharply and many governments taking on substantial liabilities to assist the financial sector, but also due to the fall of GDP, especially in the year 2009.

Current account

Although one can never expect all countries to balance their current accounts the extent to which countries have been running huge deficits or surpluses in recent years is quite alarming. By far the largest deficit belongs to the United States, at USD 570 billion in 2011. This deficit has been chronic, usually running at about 5% of GDP in recent years. Inevitably, the United States have been running up debt abroad to finance this, borrowing directly or indirectly from current account surplus countries, such as China, Germany and Japan.

Although the U.S. current account deficit is in dollar terms by far the largest in the world, smaller countries have experienced even larger deficits, as a percentage of GDP. An outlier in this respect is Iceland, which had a staggering deficit of more than 25% of GDP in 2006 and only a little less in 2005 and 2007. This was of course unsustainable and one of the factors that led to the collapse of Iceland's financial system in 2008.

Several Eurozone countries have also experienced substantial current account deficits, in particular the Mediterranean countries, Greece, Spain, Portugal and to a lesser extent Italy and France. The Eurozone as a whole however has been running a substantial current account surplus in most years, with Germany contributing more than any other country to this. In addition the Netherlands, Austria, Finland and Luxembourg have usually had a current account surplus. There are thus substantial imbalances within the Eurozone, with some countries suffering from chronic deficits and others having chronic surpluses. Non Eurozone EU members are likewise a mixed bag in this respect, with the U.K. and Poland and some smaller countries usually running a substantial deficit but Denmark and Sweden a surplus.

Among other OECD countries Japan has until recently stood out with a huge current account surplus. In dollar terms it has usually only been surpassed by Germany but some smaller countries have a larger surplus as a percentage of GDP, in particular Norway and Switzerland. It is interesting that in Japan the government has a chronic deficit problem while the country as a whole has run a current account surplus.¹⁰ This of course means that the Japanese private sector has a very high savings rate, enabling the Japanese government to borrow in the

¹⁰ The Japanese export machine has experienced considerable difficulties lately, in part due to natural disasters, such as the tsunami that struck Japan and floods in Asia that disrupted the supply chain of many Japanese companies. In addition the worldwide downturn in trade has hit Japan worse than many other countries in part due to the nature of Japan's exports and in part due to the appreciation of the yen. As a result, Japan's traditional current account surplus has been dramatically reduced. It however remains to be seen whether this is a temporary phenomenon.

domestic market to finance its deficit. The situation is very different in countries with twin deficits, i.e. both a fiscal deficit and a current account deficit, such as the U.S. The U.S. government however despite this enjoys the same advantage as the Japanese government of being able to borrow mainly in its own currency and at very favourable rates.

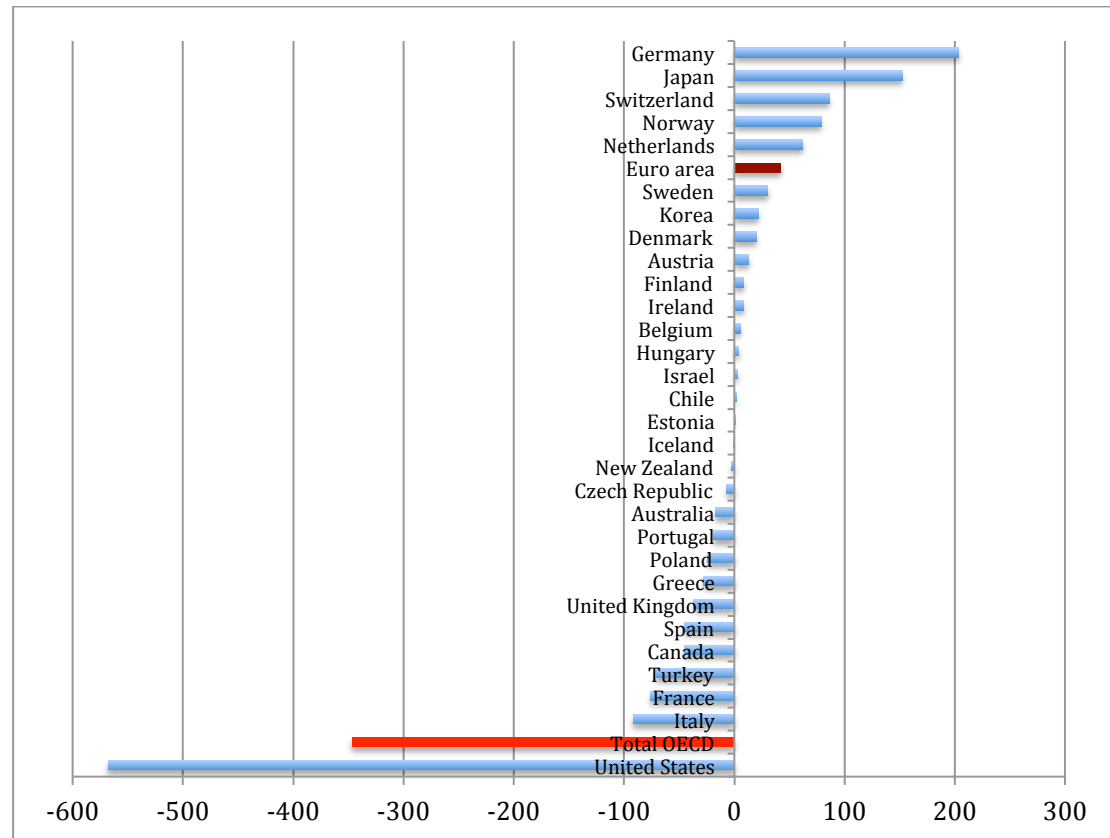


Fig. 8. Current account surpluses/deficits as percentage of GDP in 2011. Source OECD.

Pension systems and demographics

Any analysis of the long-term fiscal health of the public sector has to take into account the impact of changing demographics on pension and welfare systems. With falling birth-rates and increased longevity being the norm in advanced countries it is clear that a higher proportion of resources in these countries will

in the future be needed to support the elderly. In addition to an increased need for pension and welfare payments the cost of healthcare will almost inevitably rise. This trend is only to a small degree offset by a corresponding decline in expenditure on the young, including education.

One measure of the demographic stress is the ratio between on the one hand people of retirement age, aged 65 and older, and on the other hand people of working age, between 20 and 64, often called the dependancy ratio.¹¹ The OECD has projected that this ratio will rise from 22% in the year 2000 to 47% in the year 2050 for the average OECD country. Projections vary considerable across countries, from a little over 70% in Italy, Spain and Japan to about 40% in Mexico, Netherland, Luxembourg, the United States and the Nordic countries with Turkey an outlier with a relatively manageable ratio of 31%. All OECD countries are however expected to see a considerable rise in this ratio.

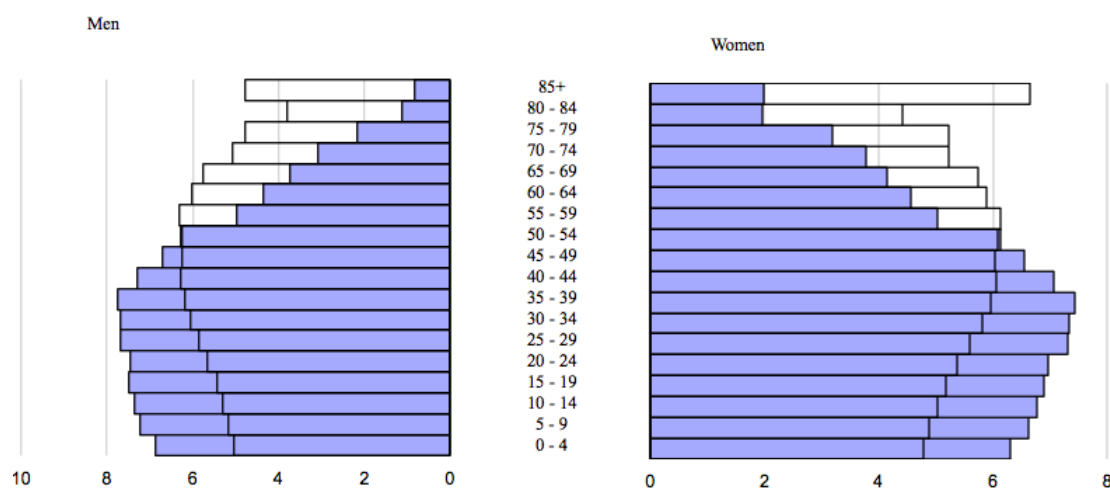
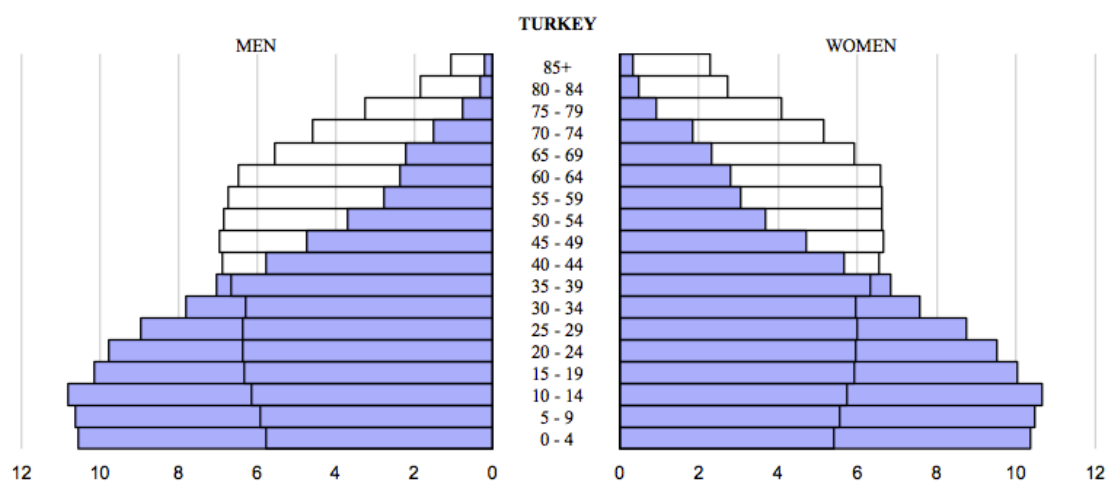
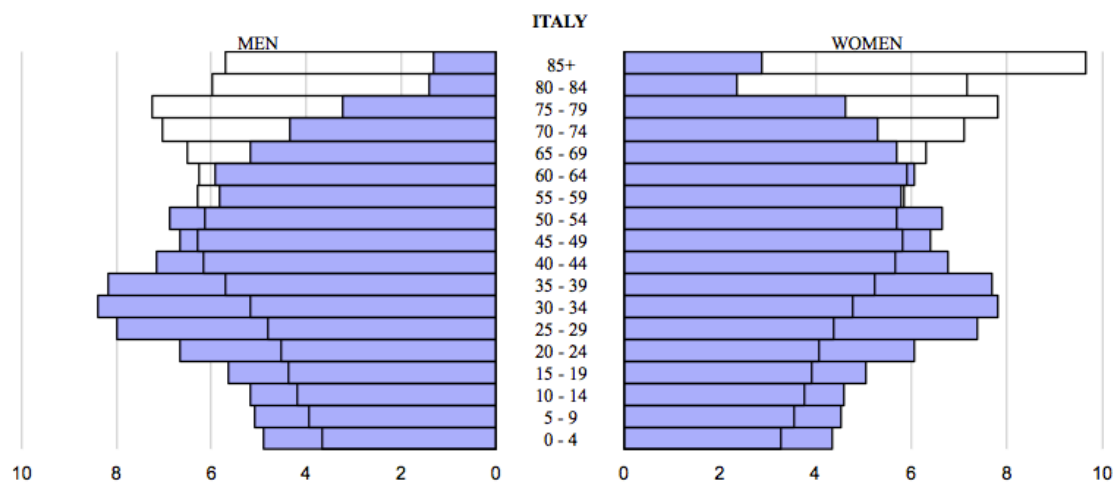
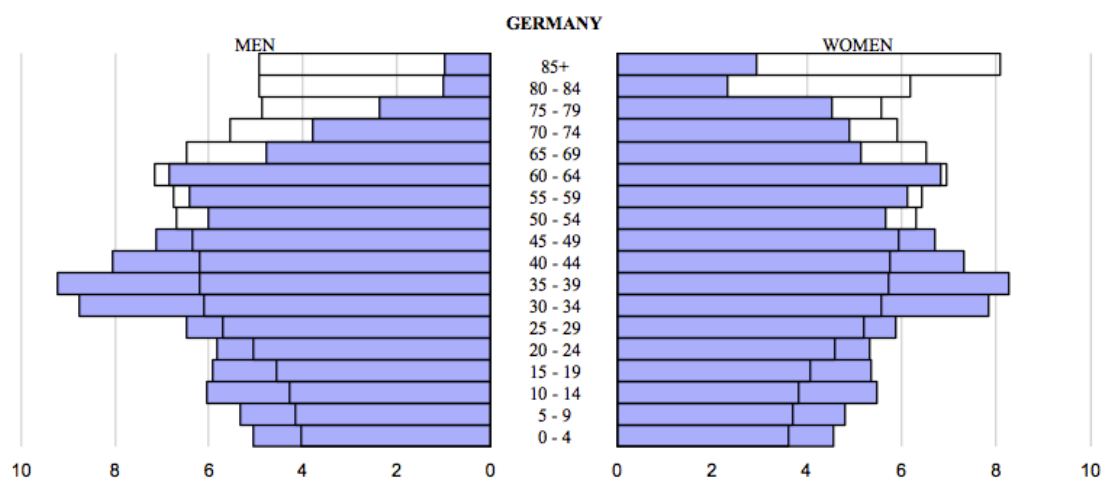


Fig. 9. Population pyramids (% of population by age group), OECD average, 2000 (shaded blue) and projection for 2050 (white). Source OECD.

¹¹ This ratio is a good indicator of demographic stress but far from perfect. The average age at retirement varies over time and across countries, as does the average age when people enter the job market. In addition job market participation rates are not 100% for any cohort, irrespective of age.



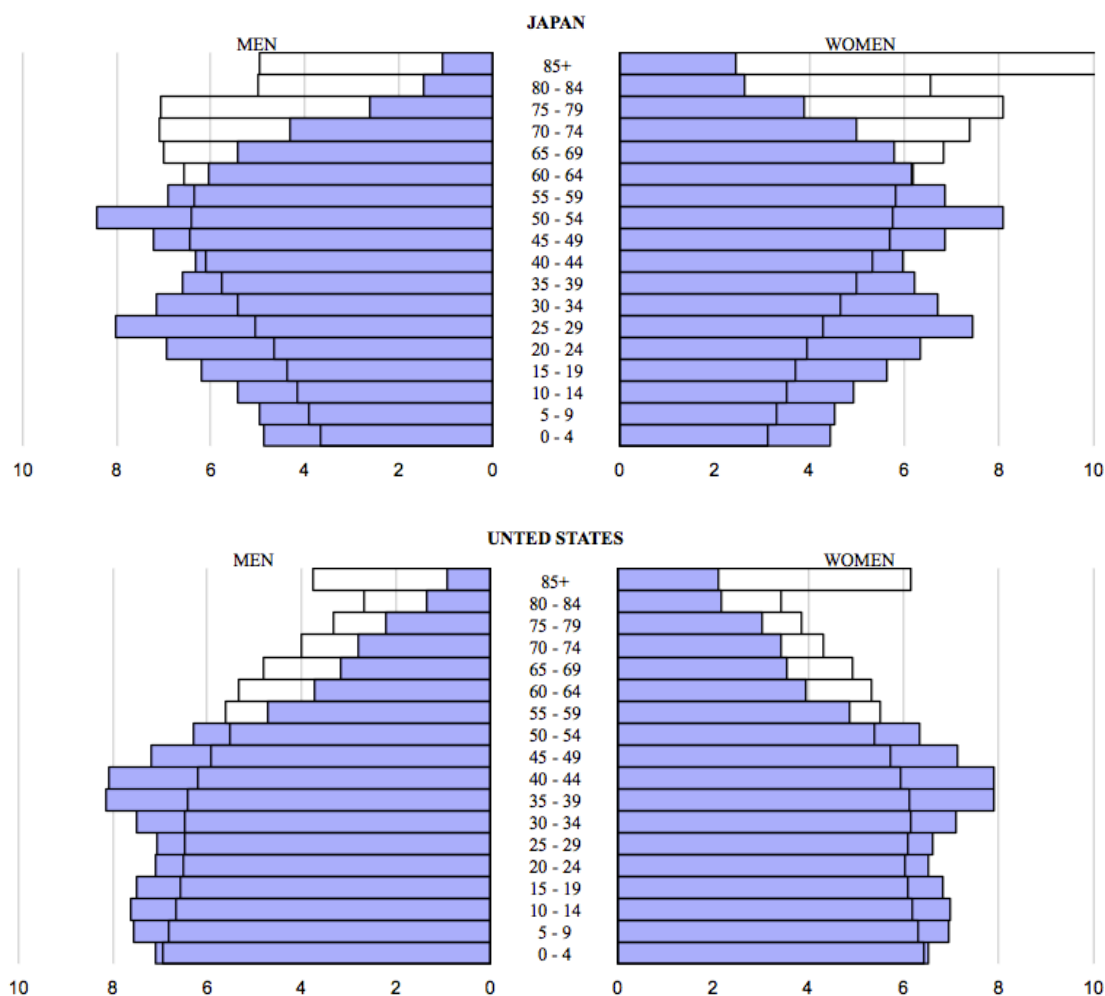


Fig. 10. Population pyramids (% of population by age group). Selected countries, 2000 (shaded blue) and projection for 2050 (white). Source OECD.

The typical OECD government, already running a fiscal deficit and having accumulated substantial public debt, can thus be expected in the decades to come to have to deal with a shrinking tax base (due to a fall in people of working age, at least proportionally) and increased needs for government expenditure (due to a rise in the number of the elderly).

In countries with unfunded (pay-as-you-go) or under-funded pension systems the shift of resources from people of working age to the elderly needs to be brought about by the tax system. This calls for sizeable increases in tax rates

which can be expected to be accompanied by considerable deadweight loss as those taxed try to minimize their tax-bill.

Countries with fully funded and tax-deferred pension systems can on the other hand expect the future fiscal situation of the government to be helped as the ratio of pension payments, that are taxed, to pension fund contributions increases. This gives the government an off-balance sheet asset that will gradually be cashed in as pension payments increase.

The long-run effects of changing demographics on welfare systems are hard to predict with any precision. It is however clear that a rise in the proportion of retirees will stress these systems. To what degree that will be met by tax increases and to what degree by lowering welfare entitlements is however hard to predict.

No matter what kind of pension system a country has, a fall in the proportion of people of working age will mean that productivity has to rise correspondingly, otherwise GDP per capita will fall. This is one reason for expecting significantly slower growth of GDP per capita in advanced economies in the 21st century than these same countries experienced in the second half of the 20th century with much more favourable demographics.

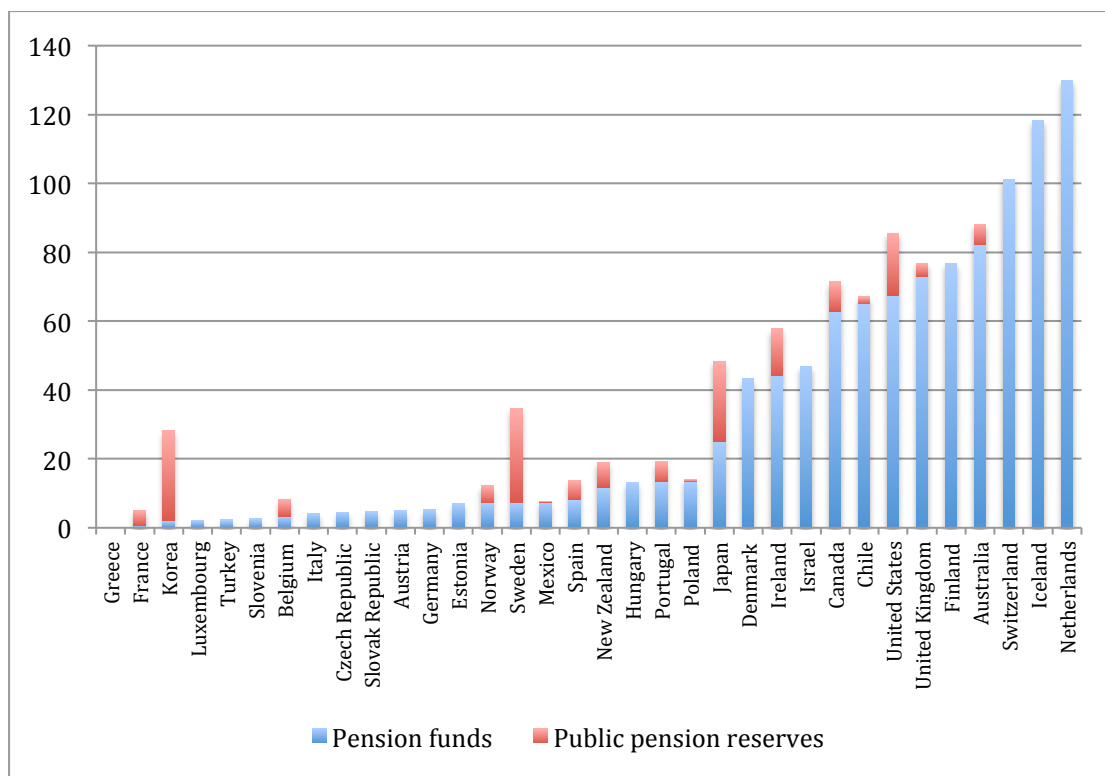


Fig. 11. Pension system funds in 2009, as a proportion of GDP. Source OECD.

Central banks as lenders of last resort

The vital role of central banks as lenders of last resort to financial institutions is now accepted in most countries. Indeed, Bagehot's 19th century rule of central banks responding to liquidity crisis by lending to solvent banks, without limit, against good collateral but at a high interest rate is still considered not only sound policy but essential for the stability of financial systems.

The current crisis has however called for a far greater role for these lenders of last resort than ever before. The balance sheets of the world's major central banks ballooned in the autumn of 2008 and have since kept on growing. The balance sheet of the ECB grew by about a third, from 1,5 to 2,0 trillion euros, in the summer and autumn of 2008. It then fluctuated around 2 trillion euros until

late 2011 when it ballooned again, almost as much as it had three years earlier, and ended up close to 2,7 trillion euros at year-end 2011. For comparison, the balance sheet of the ECB was approximately 0,8 trillion euros when the currency was introduced ten years earlier.

The first period of rapid growth of the ECB balance sheet came in the aftermath of the collapse of Lehman Brothers, which sent international financial markets scrambling for safety, the second as concern over the stability of the Eurozone and the finances of various Eurozone members mounted, leading to a capital flight from the Eurozone and increasing difficulties in selling government backed securities issued by the Eurozone members that were considered high-risk.

The growth of the balance sheet of the U.S. Federal Reserve Bank over this period has been somewhat similar to that of the ECB. The main difference is that the FRB balance sheet grew even faster than that of the ECB in 2008 but less in 2011. In early September 2008, right before the collapse of Lehman Brothers, the FRB balance sheet was 0,9 trillion USD. Two months later it had more than doubled, to 2,2 trillion USD. It changed relatively little in 2009 and in early 2010 but started growing again in late 2010.

The FRB balance sheet was slightly smaller than that of the ECB at year-end 2011 or 2,9 trillion dollars, having grown by 0,5 trillion in 2011. The FRB is highly leveraged, with total capital of only 53,8 billion USD. The ratio of liabilities to equity was thus a little over 50. A comparable ratio for the ECB is somewhat

lower, or a little over 30.¹² The ECB has about 81,5 billion euros in capital and reserves.

The balance sheet of the Bank of England has grown in a similar manner as that of the FRB. At the end of August 2008 it was 93 billion pounds but two months later it had almost trebled, to 266 billion pounds. It has then fluctuated close to that level, growing a bit towards the end of 2011, ending the year at 290 billion pounds.

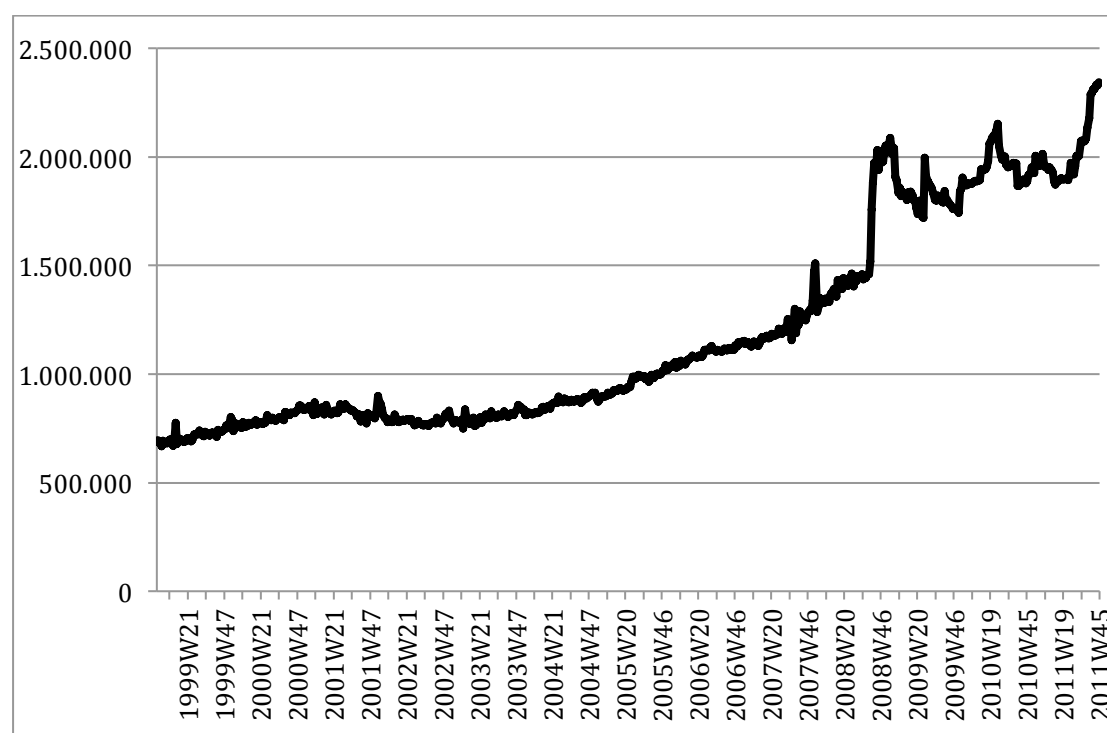


Fig. 12. ECB balance sheet 1999-2011. Millions of euro. Source ECB.

¹² If we only count paid-in capital as reserves, these ratios are far higher for both institutions.

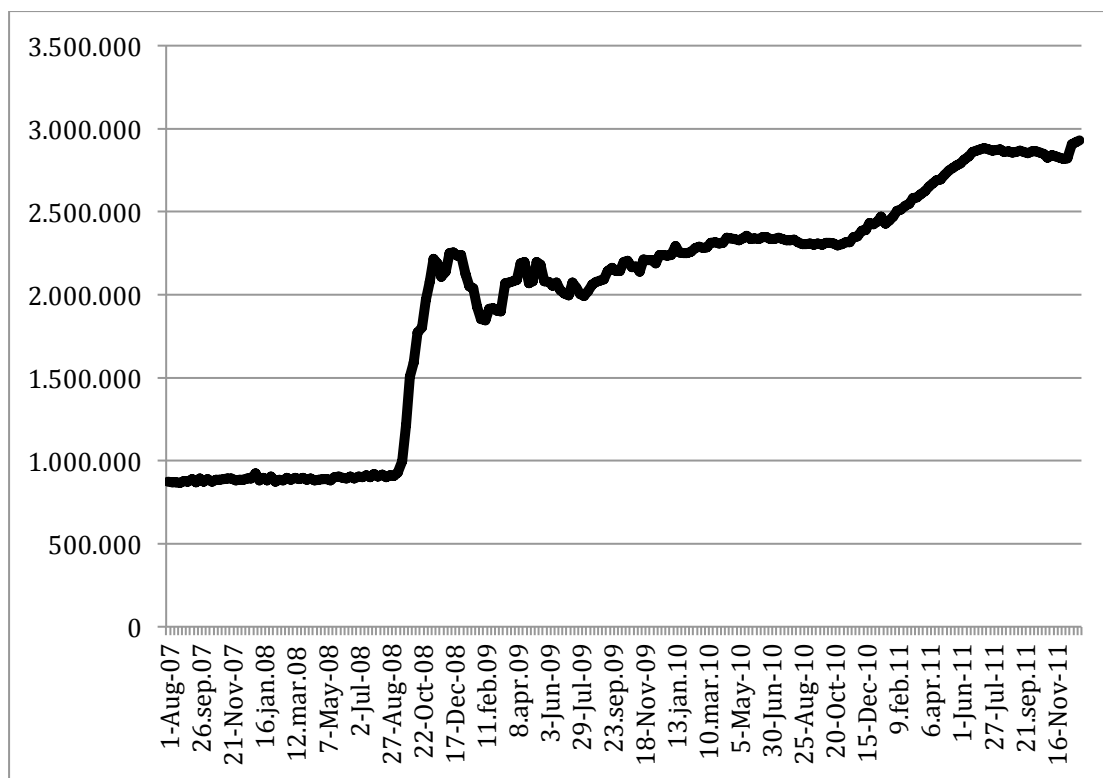


Fig. 13. Federal Reserve balance sheet 2007-2011. Millions of USD. Source FRB.

The far-east: China and Japan

The second and third largest economies in the world (or third and fourth, if we count the EU or Eurozone countries as one), China and Japan, both face great challenges, although mainly different ones. Both are though heavily reliant on exports and have run very large current account surpluses. This makes them particularly exposed to an economic downturn in their main trading partners of Western Europe and the United States.

Japan is a highly developed country with a very high standard of living. This is the result of very impressive growth in the post-war period up until 1990. Despite anaemic growth since then, Japan remains one of the most affluent

countries of the world, with a GDP per capita a little over USD 40.000. The Japanese economy stalled after a spectacular asset price bubble, in real estate and stocks, burst at the end of the 1980's.

The period since the crash of 1990 has seen Japanese government debt grow to dizzying heights, with various costly economic stimulation programs failing to return the economy to robust growth. This enormous debt has until now been financed at extremely favourable rates, with a glut of Japanese savings having few tempting alternatives at home. In addition, Japan has had to deal with great demographic challenges, with very high life expectancy, collapsing birth rates and very large post-war cohorts retiring. The rapidly aging population contributes to the very high savings rate.

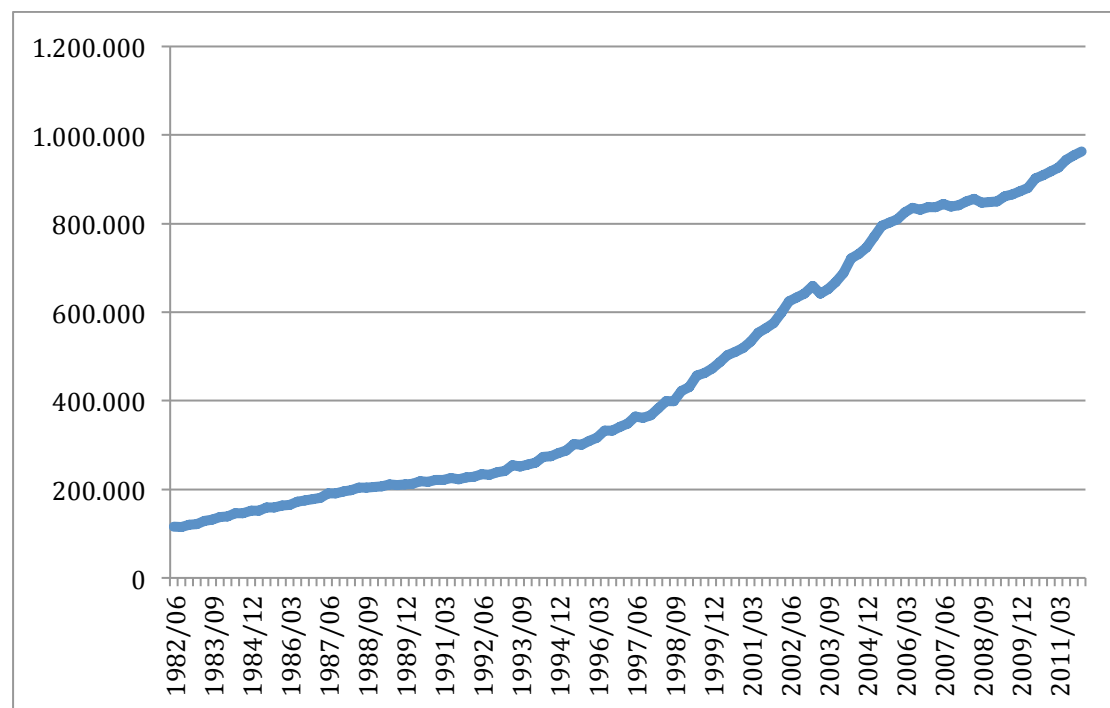


Fig. 14. Japanese central Government debt. Billions of Yen. Source BOJ.

China has a GDP per capita that is between 4 and 5.000 USD, only a little over one tenth of that of Japan. Adjusting for purchasing power, China's GDP per capita increases a bit but it is still one of the poorest countries in the world. It is however very large, with a population of over 1,3 billion. This is twice as large a population as half a century ago, despite the country having taken dramatic steps to reduce population growth, including its controversial one-child policy, first introduced in 1979.

This rapid population growth and internal migration from the rural hinterland to the industrialized eastern part of China has provided a seemingly endless supply of workers for China's factories. Current projections however indicate that China's population may be nearing its peak and may not rise above 1,4 billion. This means that China is facing much less favourable demographic trends in the decades to come than in recent years. There is still however considerable room for rural to urban migration.

China's very impressive growth in recent years has raised some concern over sustainability.¹³ In particular many have questioned the rapidly rising price of real estate in China's boomtowns and the massive investments that have been made in real estate. Others have questioned the stability of China's rather opaque banking system, in part due to its exposure to the real estate sector. Great environmental challenges face such a large and densely populated country growing at breakneck pace and it is not clear how China will successfully meet all of them. In addition, China's political system faces some strain, both from

¹³ See People's Republic of China Sustainability Report (IMF, 2011)

discontent in rural areas and Tibet and due the inherent tension arising from building what is for all practical purposes a capitalist economy in Eastern China in a country under one party rule and a communist banner.

USA

The United States faces some fairly daunting economic challenges. The most obvious ones are massive twin deficits, both the world's largest in dollar terms. For decades, the country has been running a current account deficit that changed its net international investment position from being positive (assets in excess of liabilities) as late as 1985, to being increasingly negative. In 2010, the net international investment position of the United States was negative to the tune of 2.471 billion.

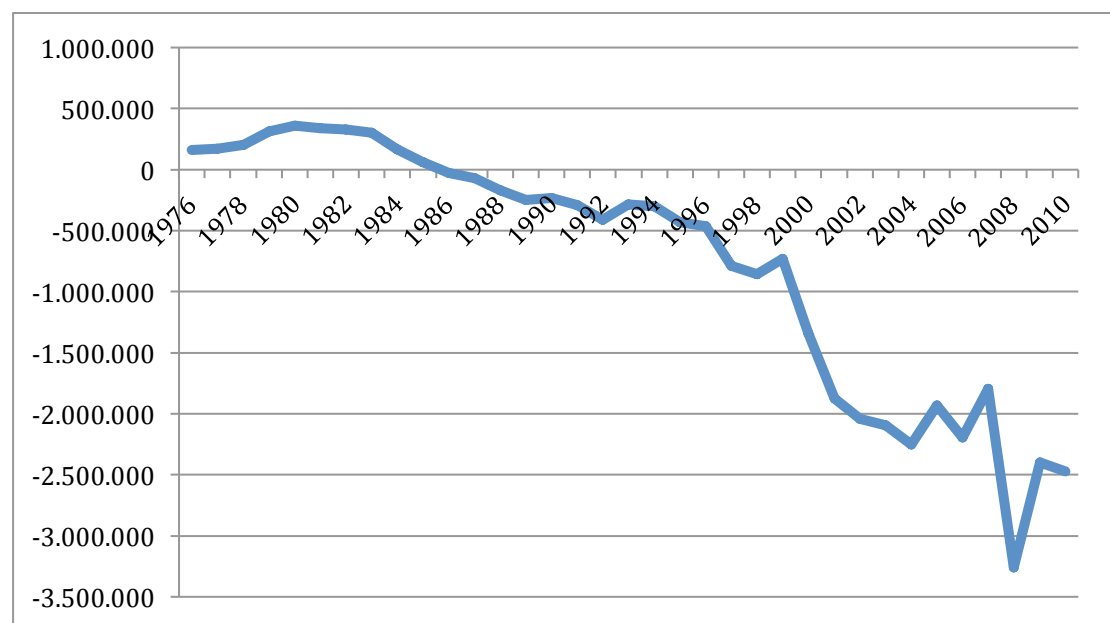


Fig. 15. U.S. Net International Investment Position 1976-2010. Millions of USD. Source BEA.

The U.S. government has also been running a deficit for a long time, with a notable exception of the years 1998-2000, when there was a small fiscal surplus. The fiscal situation took a dramatic turn for the worse after the year 2000. In that year the fiscal surplus was the equivalent of 1,5% of GDP but this had turned into a deficit of 11,3% in 2009, a shift equal to an astonishing 12,8% of GDP in less than a decade. The situation has slightly improved since 2009 but the deficit was still expected to be above 10% of GDP in 2011.

These two deficits mean that the U.S. government cannot rely on domestic savings to finance its deficit, unlike the Japanese government. It must rely on the willingness of foreigners to buy ever-increasing amounts of U.S. government bonds. Until now that has also been the case. In deed with such assets considered a safe haven in times of turmoil, the U.S. government has been able to borrow at unusually favorable terms in recent years, despite a mountain of debt and record deficits. This is one of the economic benefits to the U.S. from issuing the world's principal reserve currency.

Although the demographics of the United States are reasonably healthy and certainly far more favourable than in Japan or Southern-Europe, they do pose a challenge. The very large baby-boom generations of postwar USA have already started retiring and the generations that followed are significantly smaller. The dependancy ratio is therefore inevitably going to rise. The implications of this are made far worse by the structure of the U.S. Social Security system, which is woefully underfunded. The accumulated shortfall is now estimated to be about 16 trillion USD or a little over one year's GDP. To fully finance the Social Security

system may call for tax hikes and cutbacks equalling as much as 15% of GDP according to one study.¹⁴ Others have estimated that the need for fiscal adjustment to deal with the underfunding of Social Security is smaller than this or suggested reducing benefits or raising the retirement age. There is however no doubt that the stress on the finances of the U.S. government due to this will be great for decades.

Adding to the problems due to the Social Security system is the very high and increasing cost of health care in the U.S. The United States has by far the most expensive health care system in the world. The cost has been rising at a rapid rate and is projected to continue rising, both due to ever more expensive services and due to a rise in the number of the elderly, who disproportionally need health care. This exacerbates the effects of shifting demographics in the U.S. on both the growth rate of GDP and the fiscal health of the government.

Although the U.S. economy has been growing and GDP per capita rising in real terms, the purchasing power of low- and middle-income households has been stagnant, more or less since the 1970's. This has been due to a shift in the income distribution of Americans favouring the highest earners, in particular the very rich.

¹⁴ See Batini, Callegari and Guerrerio (2011).

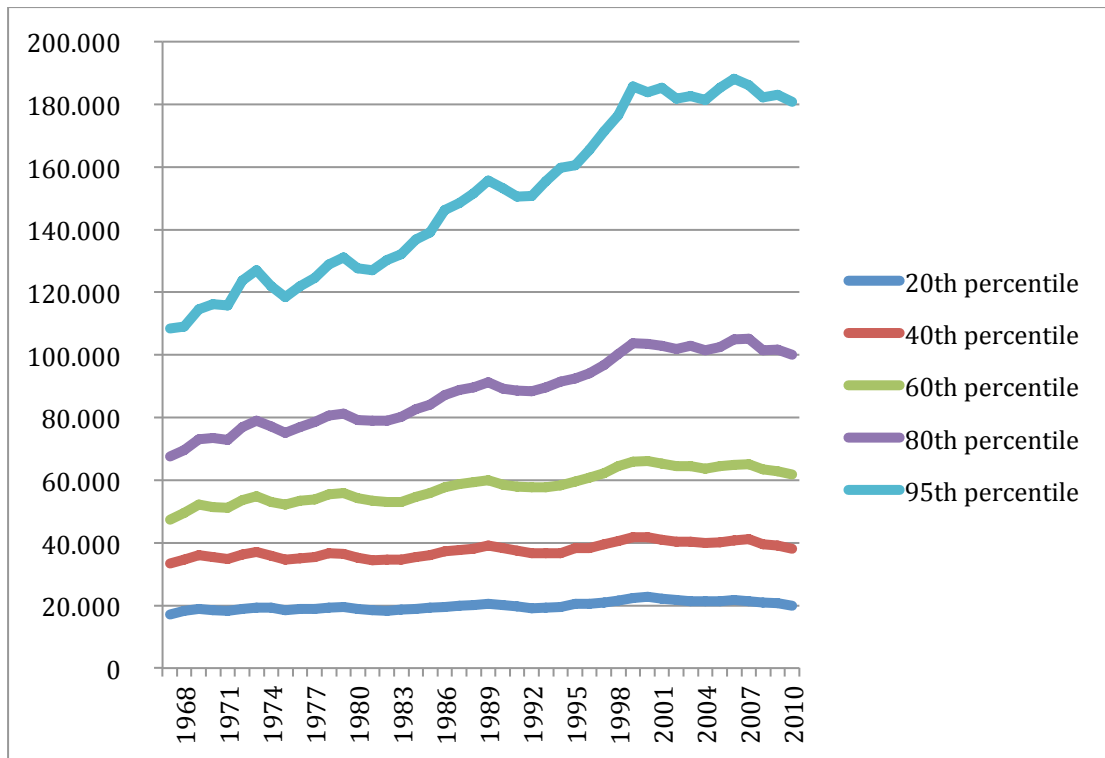


Fig 16. Trends in income for different income groups in the United States. 2010 dollars. Source: U.S. Census Bureau.

Eurozone

The international financial crisis was at first, in 2007-2009, primarily considered a banking crisis. Developments in Europe in 2011, in particular on the southern rim of the Eurozone, however made it increasingly clear that this was also a very serious fiscal crisis.

Several factors contributed to dwindling trust in the ability of these countries to meet their fiscal challenges and thus made it harder for them to meet their financing needs. These include a chronic budget deficit with a corresponding accumulation of debt. This long-standing problem was then made far worse after 2008 when the banking crisis led to a contraction of GDP and a shrinking tax-base, called for increased government expenditure due to rising unemployment

and various stimulus packages that were hastily implemented. Furthermore many western countries took on liabilities or even outright losses from their financial systems, as part of rescue attempts. This meant that gross government debt shot up quite dramatically in 2008 and 2009 and then kept on rising due to fiscal deficits.

This dramatic worsening of the fiscal situation then in many cases led to investor flight from countries deemed especially at risk, raising interest rates on government debt, which inevitably made the fiscal challenge even worse. In the case of Greece, investors priced government bonds as if default was inevitable, a classic case of a self-fulfilling prophecy.

One source of tension within the Eurozone was disagreement over the role of the ECB in the market for bonds issued by member states. By actively purchasing such bonds the bank has virtually unlimited firepower in keeping their yield down and thus lowering the interest burden of the issuers. The bank has been reluctant to do this, claiming that it is not part of the bank's mandate.¹⁵ This stand was backed up by some member states, in particular Germany and other countries, which still had access to international financial markets at relatively good terms.

¹⁵ The reluctance of the ECB to play a role, directly or indirectly, in financing unsustainable fiscal deficits of member countries was at least in part supported by valid arguments. Such financing can undermine a central bank in its attempts at ensuring price stability and create significant moral hazard problems. In addition it can expose the bank to substantial losses should a government default after having received assistance from the central bank.

Reluctance and opposition notwithstanding, the ECB has purchased significant amounts of bonds issued by the weaker Eurozone member states, always in the aftermarket though, so as not to officially provide funding directly to these states. This had an impact on yields on these bonds, pushing them down, at least temporarily. The bank has of course also accepted such bonds as collateral when providing finance to banks, which helps shore up demand for them.

Despite these limited efforts of the ECB to keep yields on members' bonds down, they rose significantly in many cases in 2011. Greece was an outlier of course, but yields on Spanish, Italian and Portuguese bonds rose and were towards the end of 2011 often hovering around 7%.

It is interesting in this respect to compare the yields on Eurozone member bonds to yields on bonds issued by EU members outside the Eurozone, such as Britain, Denmark and Sweden. Although such comparison is difficult since countries differ in many ways it seems clear that when we compare country pairs that have similar fiscal performance and debt, say Sweden (or Denmark) and Finland, or Britain and France, that the Eurozone members (in this case Finland and France) borrow at present at rates that are significantly worse than their counterparts that are not members. At least three different explanations may be suggested for this differential. One is that there is less certainty that the ECB will act as a lender of last resort than there is of a national central bank, issuing its own currency, taking on such a role for its national government should the government find itself in dire straits and be unable to borrow at reasonable rates. Another possible explanation is that investors fear that the cost of helping the weaker

Eurozone members will be prohibitively high for the stronger members, thus dragging down the creditworthiness of the latter. Yet another explanation could be fear of a Eurozone breakup, which would be very costly for all involved and raises the obvious questions of in what currencies holders of government debt would be repaid and how strong those currencies are likely to be.

Fiscal prudence in contracting economies

The dire fiscal situation of many western governments and their shaky access to funding reduces considerably the room that is available for providing an economic stimulus of the Keynesian kind, i.e. increasing government consumption and lowering tax-rates. Indeed, most western governments may be running a deficit, mainly due to a collapse of tax receipts, but they are trying hard to reduce it by cutting expenditure and increasing tax-rates. With the private sector having reduced investments, most dramatically in the housing sector, but also non-residential investment in general, and private consumption being weak, this means that government austerity is exacerbating the drop in private sector demand. The public sector is not acting as the consumer of last resort. The result is unavoidably an output gap, due to insufficient demand.

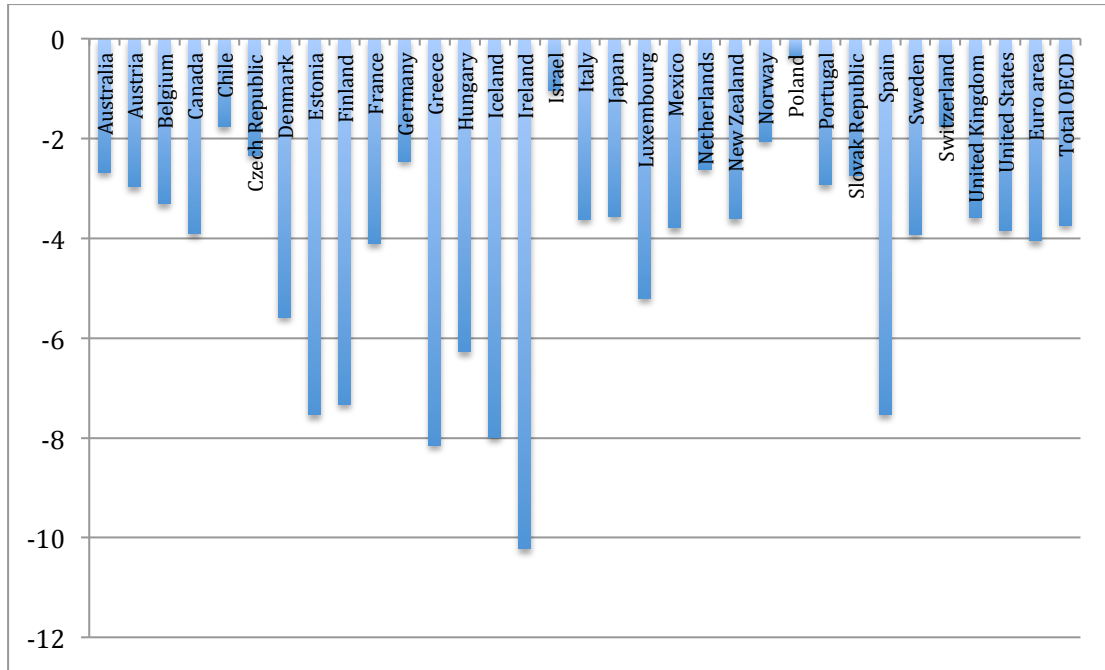


Fig. 17. Output gap in 2010. Percentage of GDP. Source OECD.

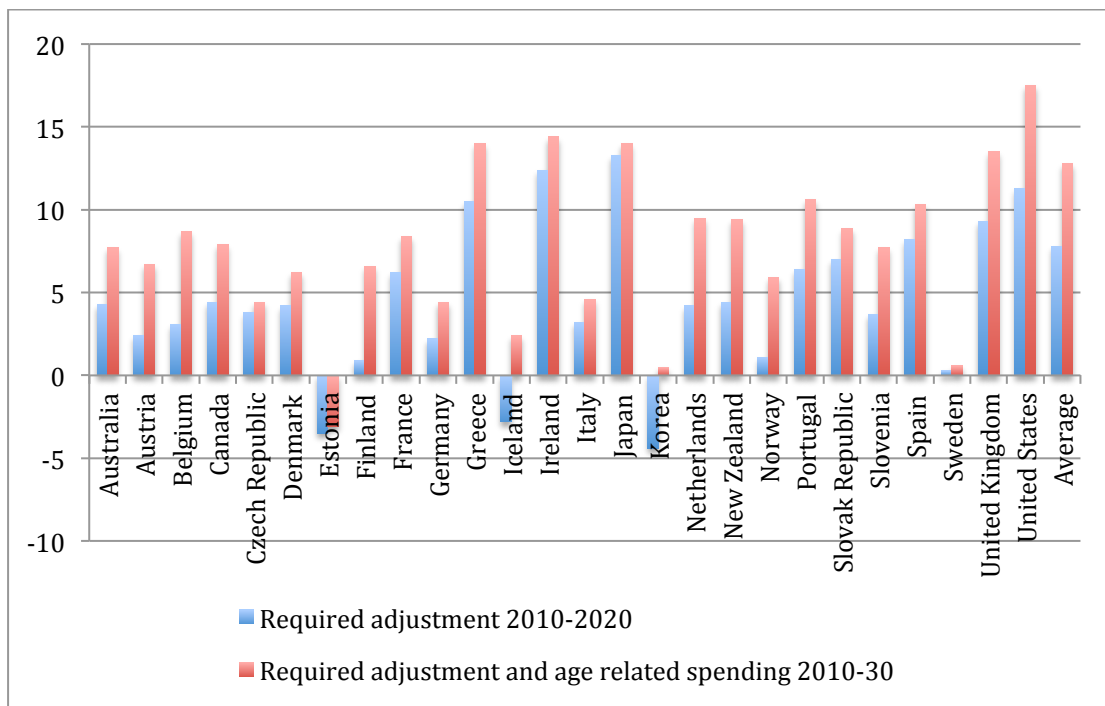


Fig. 18. Fiscal consolidation needed to reach debt target in 2030 in selected advanced economies. Percentage of GDP. Source IMF.¹⁶

¹⁶ See IMF Fiscal Monitor. April 2011. Table 1.5a.

This dilemma may limit the room to maneuver but it does not eliminate it. For one thing, many governments still have access to easy funding in the market and can thus finance temporary stimulus packages, postponing dealing with long-term fiscal challenges until private sector demand has presumably recovered. In Europe this includes Germany and Britain and a handful of smaller countries. The U.S. and Japanese governments likewise have no trouble financing their deficits, despite their enormous size. Whether local politics allow such action is another matter. It would be especially helpful for the global economy if countries with huge current account surpluses, such as Germany and China, would opt for more domestic stimulus, which would increase global demand and especially help prop up demand in countries with current account deficits, such as the Southern-European countries of the EU.

Environmental issues and long-run growth

It is beyond the scope of this article to analyse the various global environmental challenges. It is though necessary to point out that it is beyond (reasonable) dispute that the current rate of resource utilisation is far in excess of what is sustainable in the long run. This inevitably means that long run economic growth on a global scale (growth of world GDP) is only possible if it is based on considerably less resource intensive economic activity. The need for such a shift will curtail economic growth in the 21st century (as will demographic factors, as previously mentioned), making a repeat of the phenomenal and unprecedented growth rates that the world saw in the 19th and 20th centuries unthinkable.

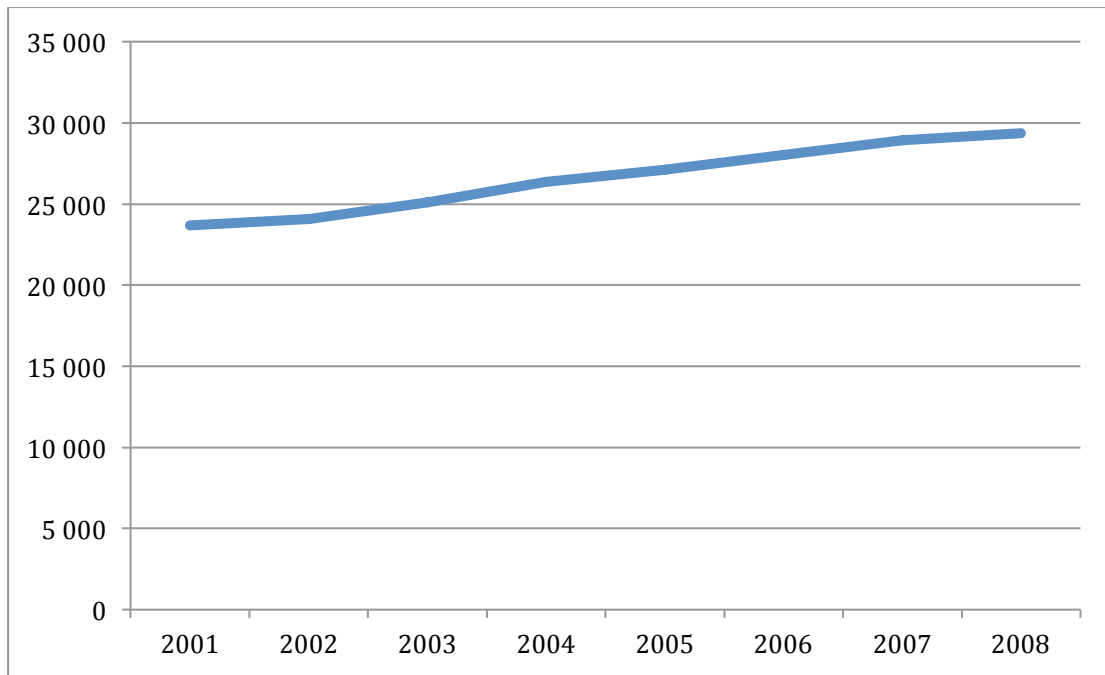


Fig. 19. World CO₂ emission from fuel combustion. Million tons. Source OECD.

North-south divide

The current financial crisis has dealt many countries a heavy blow but it has, fortunately, not greatly affected most of the world's poorest countries. It has disproportionately hit countries with over-sized financial systems and governments that had easy access to global financial markets in the run-up to the crisis. The developing world, with small and simple domestic financial systems and limited access to foreign loans, has mostly been spared. The effect of the crisis has though in some cases at least been channeled to these countries through reduced demand for their exports in developed countries. In the year 2009, world GDP fell by the estimate of the IMF by 0,7%. The GDP of the developing world however grew in that year, by about 3%, while falling by 3,7%

in the developed world. A very high growth rate for China plays a large role here but many smaller developing countries also did quite well in the year 2009.

The long run growth trend has also been higher in the developing world, with world GDP rising by 170% in the period 1980-2010, but the GDP of the developed world rising significantly less, by 113%. This means that the annual growth rate of the developed world (2,7%) was significantly below the global average (3,4%), indicating substantial catching up by the developing world or convergence.

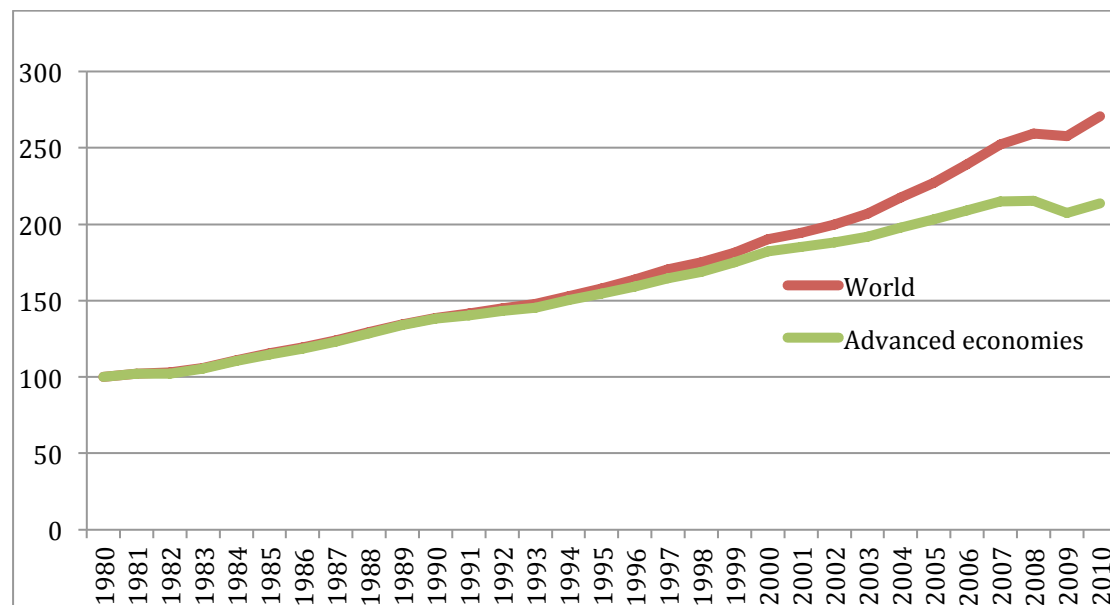


Fig. 20. World GDP 1980-2010. Fixed prices. Index, 1980=100. Source IMF.

Despite this catching up, there is still a great disparity between the standard of living in the developing world and the developed world. GDP per capita varies between about USD 400 where it is lowest, in Congo, to almost USD 100.000 in Qatar. The rich countries of Western Europe, North America, Oceania and a handful of Asian countries are a world apart from the poorest countries of Africa and Asia. Despite overall catching up and a few remarkable stories of very rapid

transition from the developing world to the developed world, such as Singapore, the economic problems of the third world remain monumental.

This of course brings the current financial crisis into perspective, many westerners may be a bit worse off than they were a few years ago, but they are still vastly better off than the poor in the developing world and indeed on average much better off than previous generations in their own country.

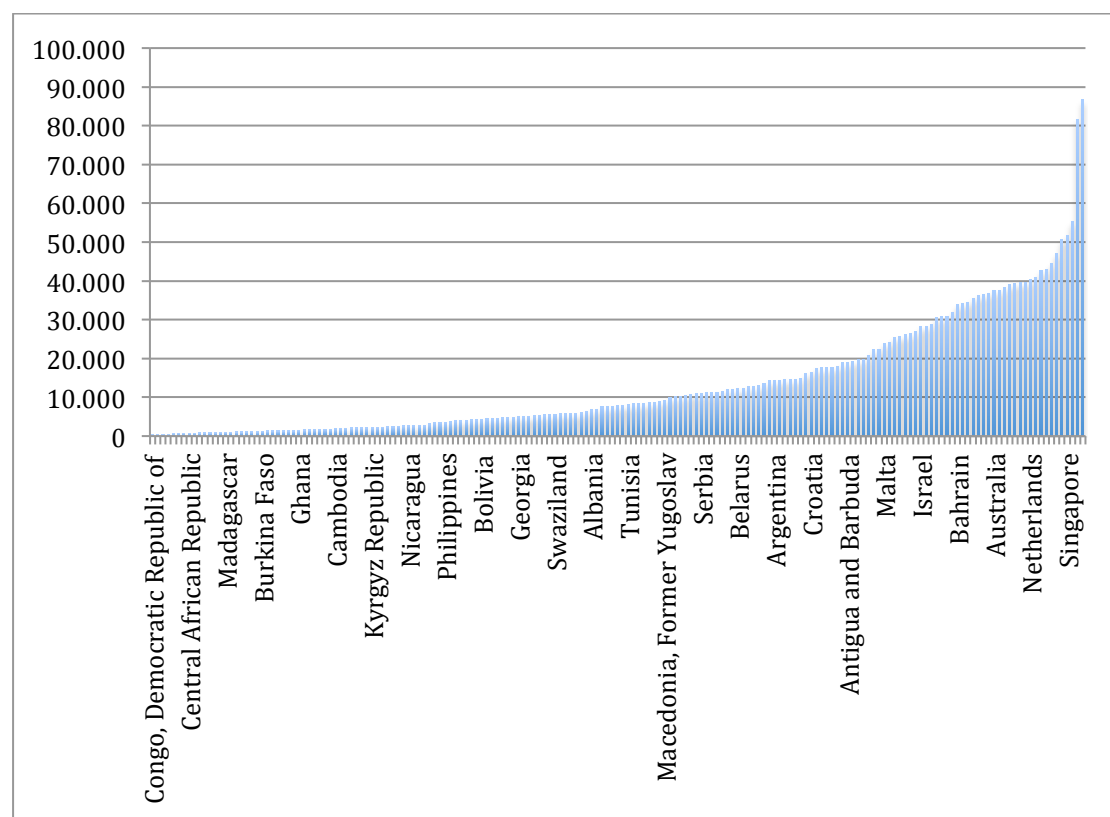


Fig. 21. GDP per capita in 2008 (USD dollars, PPP adjusted). Source IMF.

Household debt

The growth of financial system balance sheets that was outlined earlier has an unavoidable counterpart in the growth of debt carried by borrowers. We have already discussed public debt in some detail but private sector debt is in many cases no less of a worry. In particular there has been growing concern over the effects of substantial and rising household debt on the economy. The debt that households took on in the run-up to the crisis fuelled both household consumption and investments, in particular in housing. If this increase stops or is even reversed, with households deleveraging, this source of demand shrinks. That is certainly part of the explanation for insufficient demand in many developed countries at present.

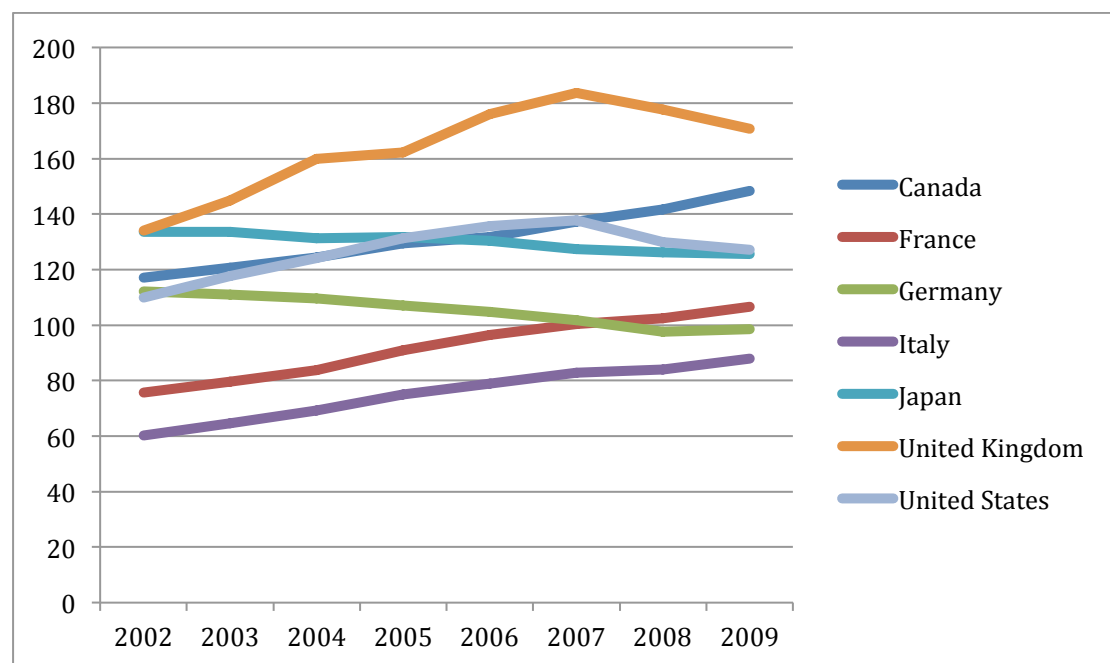


Fig. 22. Household liabilities as percentage of annual disposable income, selected countries. Source OECD.

Dramatic changes in household debt can thus be destabilising, contribute to over-heating when households are adding to their debt to finance consumption

and investment, and contribute to insufficient demand, when households are deleveraging.

One factor in explaining deteriorating household finances is that the housing bubble that expanded in many countries and then burst in many cases left households overextended with little or even negative equity in their homes. Another remnant of the housing price bubble is that many housing markets have significant excess supply hanging over them. This not only adversely affects housing prices but also depresses demand for construction, which is one of the factors holding back demand. Within the OECD, residential construction fell by one third on average between 2005 and 2010 and has not made a significant recovery since then. In the worst cases, such as Ireland and some parts of the U.S. it will take a very long time for the supply glut to be absorbed. In Ireland, residential construction fell by three quarters between 2006 and 2010. An economic crisis will also affect the housing market, even if a housing price bubble plays no role, as can be seen by the numbers from Greece, where residential construction fell between 2006 and 2010 by three fifths or almost as much as in Ireland.

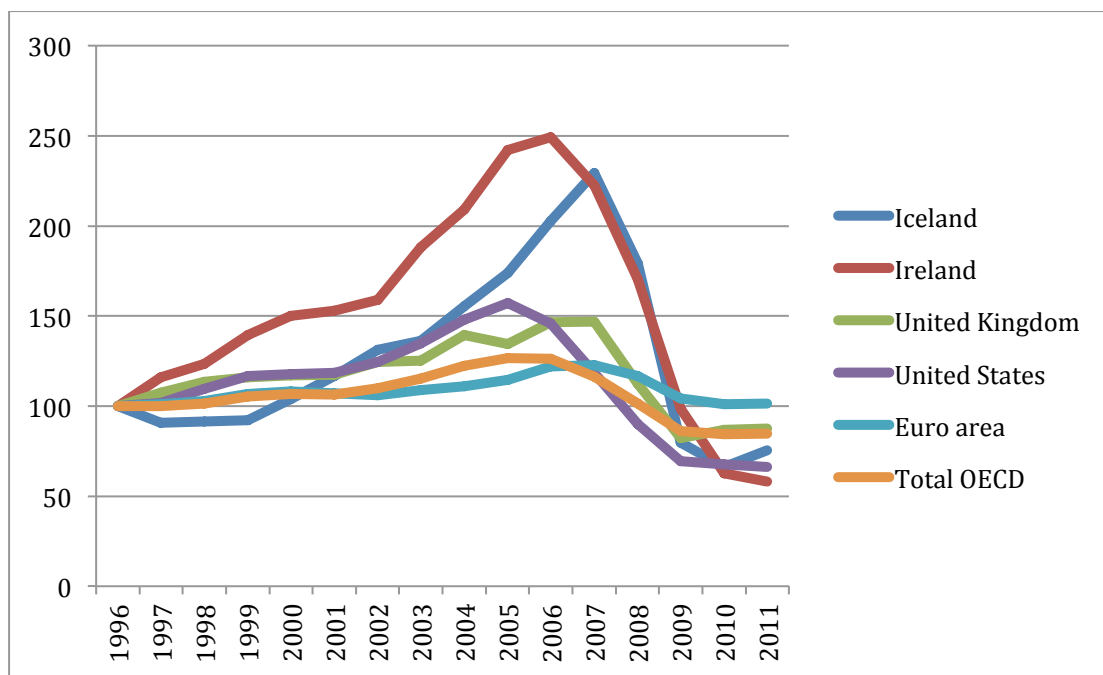


Fig. 23. Residential construction 1996-2011. Selected OECD countries. Index, 1996=100. Source OECD.

Income inequality

The recent economic downturn has brought increased attention to trends in income distribution in many countries. The gap between the richest and poorest citizens has been widening in most developed countries for at least two decades. Income inequality raises both political and economic challenges. It is certainly one factor behind growing social unrest in many western countries in recent years. The economic cost is substantial, with human resources being wasted through unemployment or not developed, leading to entrapment in low-paid, low-skill jobs.

Inequality of what may be called market income, from earnings, self-employment, capital etc., has increased more rapidly than that for net incomes since the mid 1980's in the OECD, although this varies from country to country.

The financial crisis and the rise of the asset price bubble that preceded it certainly had a significant impact here. During the boom times enormous wealth was created, at least on paper, and then much of it destroyed again when the asset price bubble burst. One example of this is the Icelandic stock market. It rose dramatically in the years leading up to the crises and three years in a row by more than 50% in real terms. In the last year of this spectacular rise, 2005, the return to shareholders was higher than the sum of all wages and wage related expenditure in the country. On paper the stock market was thus creating more value than all workers in the country. This was of course not sustainable and all these gains and more were wiped out in 2008 and 2009 when the stock market fell by more than 96% in real terms.

The process is however not so tidy that those that got wealthy from rising asset prices simply lost what they had gained when asset prices declined again. In some cases that is roughly what happened, but others are either better off or worse off than they had been if the asset price bubble had not been generated.¹⁷

¹⁷ Statistics on this are scarce. See Gylfi Magnússon (2010) for an attempt to analyse the effects in Iceland. Anecdotal evidence is however plentiful, with many cases of former high-fliers having either crashed spectacularly (Ireland's Sean Quinn, once the country's richest man and now bankrupt, being a good example) or escaped with at least a portion of their wealth. Many families that took out a mortgage and bought their first house during a housing price bubble have also lost a substantial part of or all the equity that they had initially in this leveraged investment as housing prices have fallen.

In 2005, the richest 10% had on average an income that was 9 times as high as the poorest 10% in OECD countries.¹⁸ There was however great variability within countries, with the ratio being highest, at 27 in Mexico and 17 in Turkey, but around five in Denmark, Sweden and Finland.¹⁹

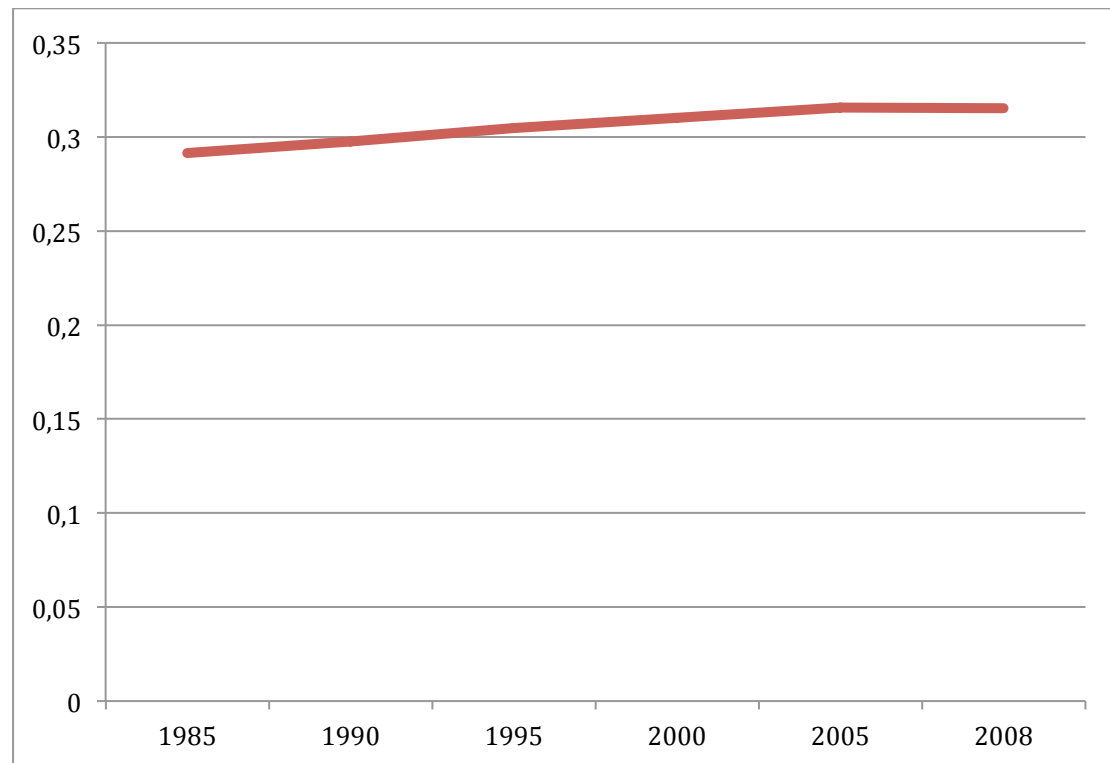


Fig. 24. Trend in average Gini coefficient for disposable income within the OECD. Source OECD.

¹⁸ Numbers on income distribution within the OECD are based on the report *Divided We Stand: Why Inequality Keeps Rising* (OECD, 2011) and publicly available data from the OECD website.

¹⁹ The two other Nordic countries, Norway and Iceland, were significantly less equal than the other three by this measure, with a ratio of 8, and thus only a little under the OECD average. The Gini coefficients for Norway and Iceland are however low and comparable to those for the other Nordic countries.

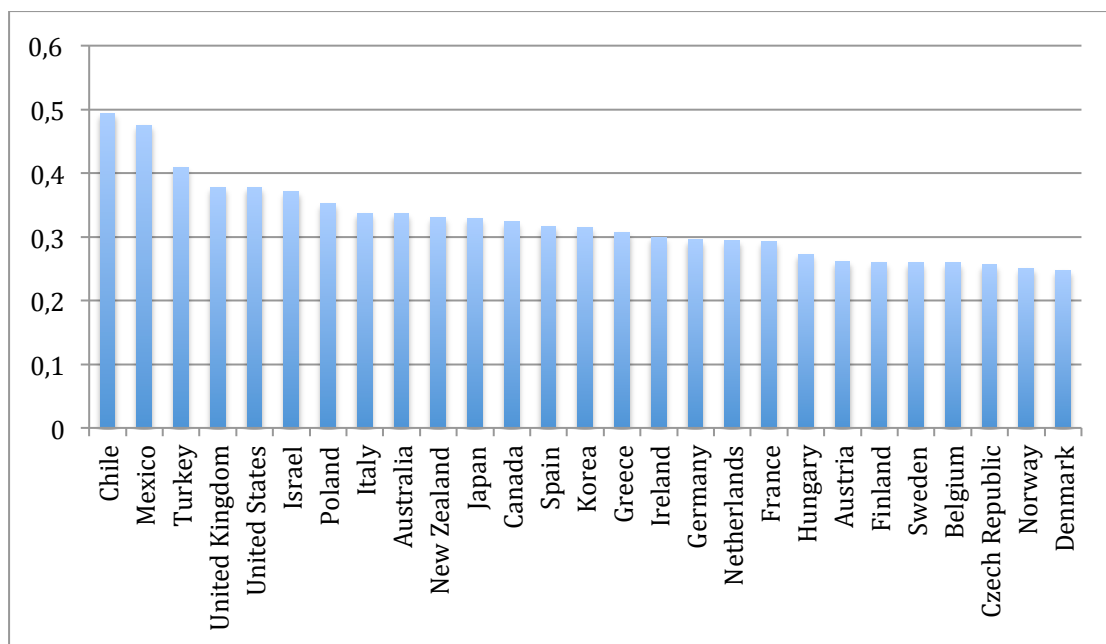


Fig. 25. Gini coefficient for disposable income with the OECD, by country, in 2008. Source OECD.

Way forward

The many global imbalances that have been discussed here for the most part have no simple solutions. In the short run it is most important to stabilize the various financial systems and ensure sufficient financing for governments. If this is done successfully it buys time to deal with the more fundamental long-term challenges. If not, the long-term challenges will have to be addressed along with the consequences of collapsed financial systems and defaulting governments.

Any strategy for stabilizing the current situation must on the one hand provide the needed liquidity that banking systems and governments need and on the other hand provide a reasonably credible plan for solving short- and medium-term challenges. Financial markets run on short-term expectations and any plan that is not considered credible will fail, due to the brutal law of self-fulfilling

prophecies in these markets. We will not try to describe in detail what a short-term stabilization program will look like, beyond the obvious need for providing liquidity to buy time. Instead we will look at needed reforms in the medium and long-term.

Continuing on the current path of ever growing public debt (on and off balance sheet) is not a viable option, no more than any other Ponzi scheme. So, eventually governments that are now running substantial deficits will have to reduce them, at least to the degree that stops the growth of public debt as a percentage of GDP. Reducing a deficit or turning it into a surplus obviously calls for some mixture of a reduction of or slower growth of expenditures and increased tax revenues, through higher tax rates or growth of the tax base. To achieve that takes political will. Whether the political will is there is of course an open question, depending on a variety of factors, both domestic and foreign. For the EU countries, in particular the Eurozone countries, the political dynamics within the EU and the outside pressure for fiscal reform that they generate can be a crucial factor.

History tells us that governments get into financial difficulties quite frequently and government defaults are far from rare.²⁰ Given the alarming debt levels and deficits seen currently it would not be realistic to assume that this crisis will necessarily be solved without one or more country defaulting and having some of its debt written off. In Greece this is more or less a foregone conclusion by

²⁰ For a good historical overview of financial crisis see Reinhart and Rogoff (2009) or Kindleberger and Aliber (2005).

now. History also tells us that it is possible for countries and governments to recover from financial difficulties. Indeed that is what generally happens, sooner or later.

In the long run economic prosperity depends on a variety of factors, in particular the growth of productivity and factor supply. There is little reason to believe that productivity growth will grind to a halt in the western world although it may slow down. This is even less likely to happen in the fast growing sections of developing world. Factor supply is another matter. The aforementioned demographic challenges mean that labor supply will not grow much and may even shrink in many western countries in the decades to come. Environmental factors are even more challenging, with an urgent need for better utilization of scarce resources. In short, the challenge is to make more out of less.

Addressing demographic challenges is one thing, changing demographics is another thing. The options for addressing the challenges include raising the retirement age and in general spending proportionally more resources on the elderly, either through the pension system or the tax and benefit system. There are no easy options here. Neither are there any easy options for changing demographics although birth rates can be affected to some degree by government programs, in particular financial incentives and support for families with children. That of course calls for expenditure in the short run (and the short run is not that short here, to seriously affect demographics such programs would have to run for a long time, even decades) but if they manage to balance demographics in the long run, they will have a beneficial effect on public finances in the long run as well. A side effect, in the short run, is that increased birth rates

presumably reduce the labor force and increase private consumption, thus potentially reducing the output gap.

The imbalance between the real economy and the financial sector cannot be solved without massive deleveraging. Although that would lead to healthier economies eventually, the process would almost certainly be quite difficult, essentially holding back all major sources of domestic demand (investment and both public and private consumption) which could lead to a prolonged period of an output gap, with all that entails, high unemployment, drop in the standard of living and even more trouble for public finances due to a shrinking tax-base. A less painful version would change the debt dynamics of the public sector in a way that does not unduly depress demand in the initial stages, when private sector demand is also depressed. This can at least to a degree be accomplished by focusing on long-run challenges, through reform of pension and health care systems. It may also help to temporarily increase outlays on public sector investments that would otherwise be inevitable later so that they boost aggregate demand when it is badly needed.²¹ In countries where tax-avoidance is a large problem, this would be a good time to forcefully address that, as would attempts to reduce graft and make the public sector more efficient. Again, Greece is here a good example.

²¹ Such a strategy can backfire if the investments are not chosen sensibly and have a reasonable rate of return. Many investments that do not meet this criteria have been made in Japan in the last two decades. They have not done much to return the Japanese economy to growth but have contributed to heavy public sector debt.

In addition to deleveraging the financial sector there is an obvious need to rethink financial regulation in western countries. The financial crisis is in itself sufficient evidence of that. It is however beyond the scope of this paper to go into that subject in detail.²²

Will any of these solutions be implemented? That is of course hard to determine beforehand. It is though in order to keep in mind that open and democratic societies generally eventually solve their problems, even if the road taken, in particular the politics, may not always be pretty. Brinkmanship is part of the game so solutions are often not found and implemented until those involved are staring into the abyss. That may be the case here, decisive action on the financial crisis may not be taken until the last minute. The same may apply to environmental issues, such as global warming.

Finally it is only prudent to point out, that even if global imbalances as depicted here are great and challenging, the global economy and the average global citizen is wealthier now than ever before in the history of mankind. There are thus enormous economic resources that can be applied to these challenges. In addition, most of these resources are in developed countries, the same countries that have been hit hardest by the current financial crisis. A temporary setback in the standard of living in these countries is very far from crippling. We should keep this in mind when we compare the current situation to the depression of

²² There is already a very large and rapidly growing literature on changes needed to the financial sector, both from academics, think-tanks and government bodies. We will not provide an overview here but recommend Acharya and Richardson (2009) and Rajan (2010), especially ch. 8.

the 1930's or other previous crisis, or even if we simply compare the post-crisis standard of living in the western world to the standard of living immediately before the crisis.

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Datasources and abbreviations used

Bank for International Settlements, BIS

Bank of Japan, BOJ

Bureau of Economic Analysis, BEA.

European Central Bank, ECB

Federal Reserve Board, FRB

International Monetary Fund, IMF

Organisation for Economic Co-operation and Development, OECD

United States Census Bureau