The Impact of Inequality on Macroeconomic Dynamics

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I. Introduction

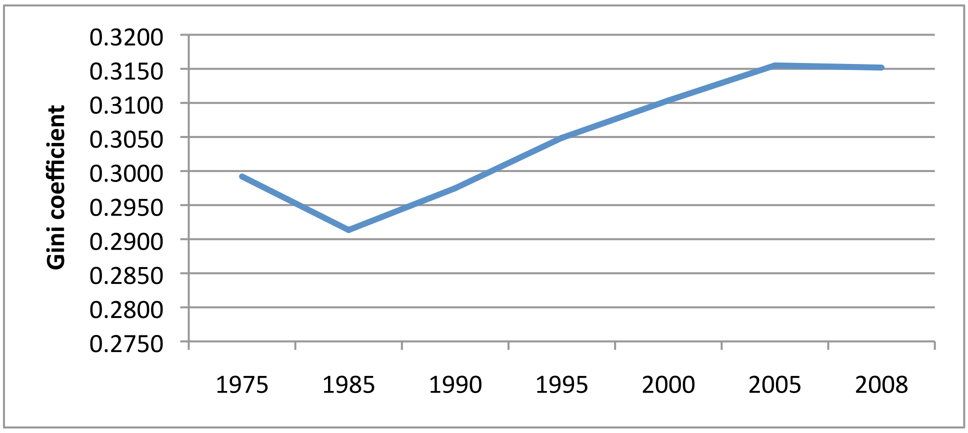
In the last few years the impact of income distribution on macroeconomic dynamics has received growing academic attention. Above all the subprime crisis and the increasing indebtedness of private households in the United States have been attributed to the growing inequality in the United States and attempts to address inequality by broadening access to housing loans and home ownership (Rajan 2010, p. 43, Kumhof and Rancière 2010, Fitoussi and Saraceno 2010). Kumhof et al. (2012) go even further by identifying "a clear empirical and theoretical link" between the increase of inequality over recent decades and deteriorations of countries' current account balances. The most encompassing approach can be found in a paper by Berg and Ostry (2011, p. 16) who show for a large sample of countries that "growth and inequality-reducing policies are like to reinforce one another and help to establish the foundations for a sustainable expansion".

In this paper I will analyze the experience of the more recent period from 1995 to 2005 which is of special interest for the emergence and the explanation of the financial crisis. In addition the focus will be not only on the United States but also on European countries and China. The paper comes to the conclusion that the recipe of the famous post-war German minster for economics, Ludwig Erhard, "Wohlstand für alle" (material well-being for all) is supported by the recent evidence and that policies fostering a more equal distribution provide the best way out of the current crises. However, the wave of "structural reforms" that currently are implemented above all in the European "problem countries" weakens the bargaining power of trade unions and workers and tends to increase income inequality. This will make even more difficult for the world economy to find back to a path of sustainable growth.

II. Stylized facts

In the period from 1985 to 2008 income inequality measured by the Gini coefficient has markedly increased in the OECD area (Chart 1). The increase was especially pronounced in period 1985 to 1995 but it was still rather steep in period from 1995 to 2005 which is in the focus of this paper.

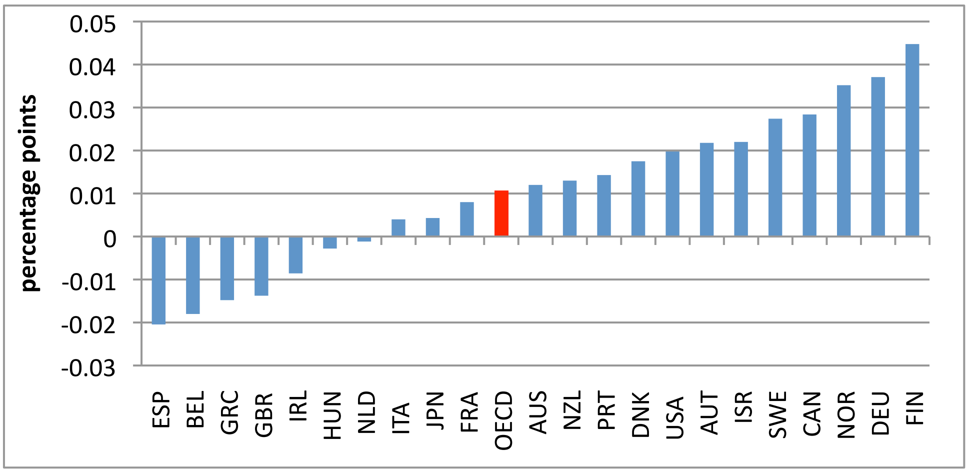
Chart 1: Inequality in the OECD area (Gini coefficient)



Source: OECD, http://dx.doi.org/10.1787/888932535204

Behind this overall trend one can find rather different county specific developments (Chart 2). During the period from 1995 to 2005 inequality has increased most in countries with a traditional "social market economy" model, i.e. in Germany and Austria as well as in the Scandinavian countries. At the same time in Southern Europe as well as in Ireland and the United Kingdom inequality has decreased. This confirms the finding that strong growth reduces inequality (Galbraith 2008, p. 22). The increase in the United States has been above the OECD average, but it was not extremely high.

Chart 2: Change in inequality in the period 1995 to 2005 (Gini coefficient)



Source: OECD, http://dx.doi.org/10.1787/888932535204

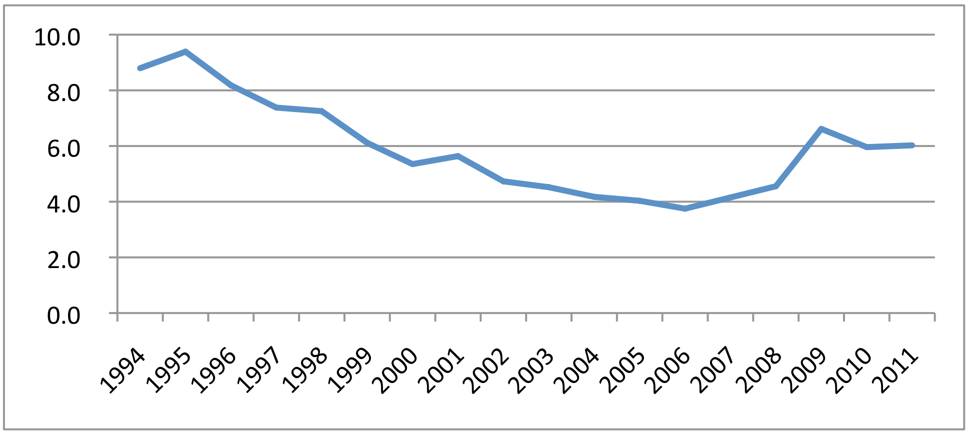
III. The impact inequality on the savings rate

Since many years the impact of an increasing inequality on the savings rate has been discussed controversially. Kumhof et al. (2012) argue:

“The poor and middle class, who are assumed to not have direct access to international capital markets, start to borrow from the rich when they receive a smaller share of aggregate output. The drop in consumption is therefore less than the drop of their income, while consumption (and investment) of the rich increases steeply. The net effect is an increase in domestic demand and therefore a current account deficit.”

At first sight the decline in the savings rate of most OECD countries during the period from 1995 to 2005 seems to support this finding. The non-weighted average OECD household savings rate has declined from 9.4 % in 1995 to only 3.7 % in 2006 (Chart 3).

Chart 3: Savings rate in the OECD area



Source: OECD, Economic Outlook, Statistical Appendix. Non-weighted average.

However, this intuitive outcome is not so easy to explain. Ceteris paribus, rising inequality implies that incomes are transferred from income groups with a low saving rate to income groups with a high savings rate. For Germany based on SOEP data Brenke (2011) shows that the savings rate of the lowest decile is 2.2 % while the top decile has a savings rate of 15.0 %. For the United States Dynan et al. (2004, p. 417) report that the savings rate is “rising significantly from 1 percent for households in the bottom quintile to 24 percent for households in the top quintile. Saving rates are even larger for the richest households: 37 percent for those in the top 1 percent.”

Thus, ceteris paribus a transfer of incomes from low-saving to high saving groups should increase the aggregate saving rate and weaken domestic demand. This has been stated already by Keynes in 1939:

“Since I regard the propensity to consume as being (normally) such as to leave a wide gap between income and consumption as income increases, it naturally follows that the *collective* propensity for the community as a whole may depend (inter alia) on the distribution of incomes within it.” (Keynes 1939, p. 129).

However, it might be also possible that inequality leads to a decline in the aggregate savings rate. This would require that the savings rate of the low-income earners declines so much that the savings of the low-income earners decline more than the increase in the savings of the high-income earners (Table 1). Such an outcome could be justified theoretically by

Duesenberry’ s relative income hypothesis according to which individuals try to imitate the consumption levels of their neighbors

Table 1: Alternative effects of higher inequality on the savings rate

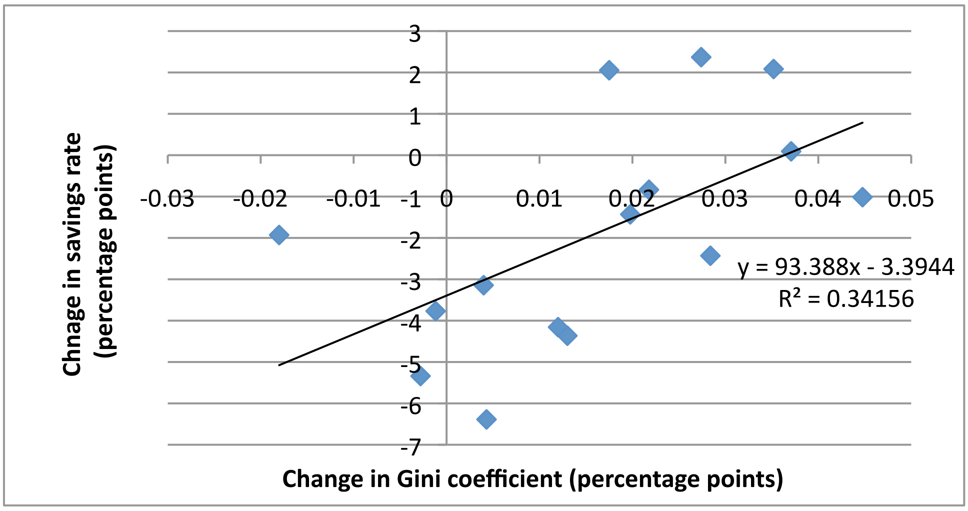
A. Initial income distribution			
	low income	high income	Total
Income	900	100	1000
Savings rate	5.0%	20.0%	6.5%
Savings	45	20	65
Consumption	855	80	935
B. Higher inequality with constant savings rates of the poor and the rich			
	low income	high income	Total
Income	800	200	1000
Savings rate	5.0%	20.0%	8.0%
Savings	40	40	80
Consumption	760	160	920
C. Higher inequality with a lower savings rate of the poor and a constant savings rate of the rich			
	low income	high income	Total
Income	800	200	1000
Savings rate	0.0%	20.0%	4.0%
Savings	0	40	80
Consumption	800	160	960

The theoretical ambiguity is reflected in the literature. There are several studies which find a positive relationship (Cook 1995). Li et al (2004) identify this result for subsamples of OECD countries and Asian countries. Aguiar and Bils (2011) show for the United States that consumption inequality has closely tracked income inequality over the period 1980-2007. In the same vein, Brown (2004) shows that rising private sector wage inequality had a dampening effect on the time path of consumption in the United States between 1978 and 2000.

In contrast, Schmidt-Hebbel and Servén (2000) do not find any consistent effect of income inequality on aggregate saving. Using top income shares Leigh and Posso (2009) come to the same result. But while it is unclear whether a positive relationship exists, no evidence for a negative relationship can be found in the more recent literature. .

The experience of OECD countries in the period between 1995 and 2006 speaks for a positive relationship. While the aggregate savings rate declined in line with a rising inequality, the developments in individual show a positive relationship between the change in the Gini coefficient and the change in the average savings rate in the period 2001 to 2006 compared to the period 1995 to 2000. In the Scandinavian countries with an above average increase in inequality, the savings rate went up (Chart 4). A very strong decline in the savings rate can be observed in Japan and Hungary where inequality has declined.

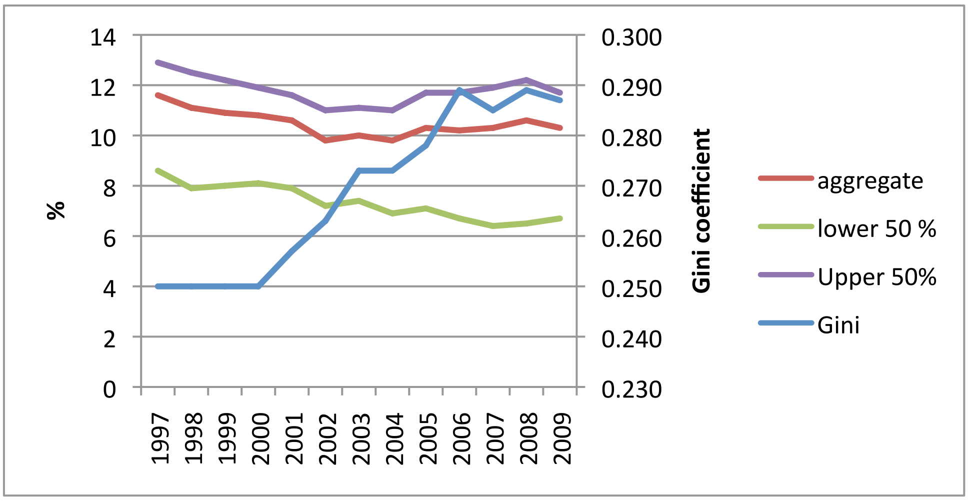
Chart 4: Change in savings rate (average 2001-2006 compared with average 1995-2000) and change in Gini coefficient (1995 and 2005)



Source: OECD, Economic Outlook, Statistical Annex

For Germany, where inequality has increased very strongly, one can see that the savings rate of the low-income group *and* the high income group have declined until 2002. With a growing inequality the savings rate of the high income group rate have increased and more than compensated the continuing decline of the savings rate of the lower 50%.

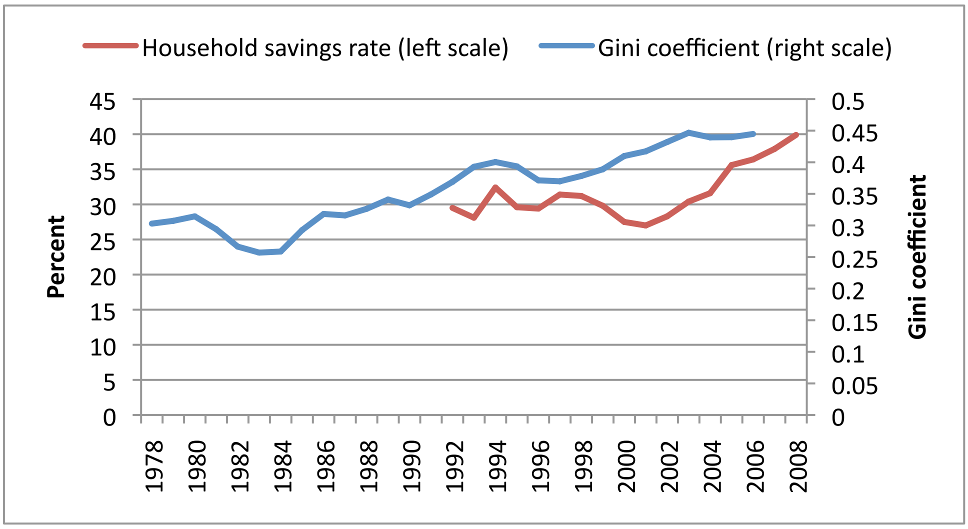
Chart 5: Savings rate in Germany for lower 50 % and upper 50 % of households



Source: Brenke (2011)

A positive impact of inequality on savings can also be found in the case of China (Chart 6). In this country inequality has drastically increased. While the Gini coefficient for the OECD went up from 0.30 in 1975 to 0.32 in 2005, in China it increased from 0.30 in 1978 to 0.45 in 2006. Kumhof et al. (2012, p. 25) explain this positive relationship which contradicts their general hypothesis with market imperfections in China and other emerging market economies which makes is more difficult for the poor and middle class to borrow than in the United States. However, Ma and Yi (2010, p. 19) argue that bank loans to the Chinese household sector have expanded substantially, reaching 15% of the total outstanding bank loans lately from less than 1% in the late 1990s so that the availability of consumer credit does not appear to be a major binding constraint to consumption.

Chart 6: Savings rate and Gini coefficient in China



Sources: Chen et al. (2010) and Ma and Yi (2010). The data for the savings rate are the adjusted data from Ma and Yi which are estimated by allowing for expected inflation and net corporate debt, and on the simplifying assumptions of that change in corporate disposable income is accommodated fully by household disposable income only.

IV. The impact of inequality on growth and the current account

The impact of saving on growth is controversial. Neoclassical growth models emphasize capital accumulation as the source of growth. Thus, higher inequality which increases the saving rate should foster growth because it is assumed that this implies higher capital investment (Foellmi 2011). The opposite view was propagated by Keynes in his General Theory:

"The absurd, though almost universal, idea that an act of individual saving is just as good for effective demand as an act of individual consumption, has been fostered by the fallacy, much more specious than the conclusion derived from it, that an increased desire to hold wealth, being much the same thing as an increased desire to hold investments, must, by increasing the demand for investments, provide a stimulus to their production; so that current investment is promoted by individual saving to the same extent as present consumption is diminished."(Keynes 1973, p. 211).

The different views can be reconciled if one differentiates between different forms of "savings". In national accounts "saving" refers to increase of net wealth (S). This includes an increase in real assets ("investment") as well as in net financial assets (NFA). Thus at the aggregate level

(1) $S = I + \Delta NFA$

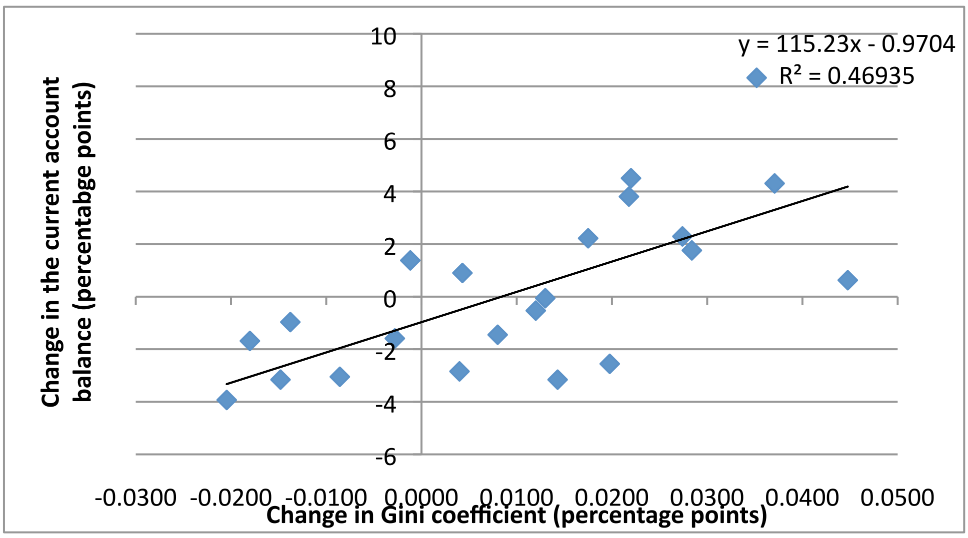
As the increase in net financial assets is identical with a country's current account (CA), equation (1) can also be presented as

(2) $S = I + CA$.

The controversy about the role of saving can be explained with the different meanings of "saving". If saving is regarded as investment there is no doubt that it has a positive impact on growth. If saving is regarded as an increase in net financial investments it has a negative impact on growth, as such savings imply that an individual reduces its consumption expenditures without simultaneously increasing its investment expenditures. This explains the Keynesian view on savings. The negative impact on growth is especially pronounced if financial assets are held in short-term bank deposits.

Thus, if inequality increases savings the impact on growth depends on whether these savings are used for additional investment or for acquiring additional financial assets. In open economies the latter is reflected in the current account balance. A current account surplus is an indication that additional savings have not been fully absorbed for additional investment. If one compares the period 1995 to 2000 with the period 2001 and 2006 one can see that in countries where inequality has increased the current account balance has improved (Chart 7). Thus, the view of Kumhof et al. (2012) based on the period 1980 until 2000 that rising inequality leads to a deterioration of the current account cannot be supported for the more recent past.

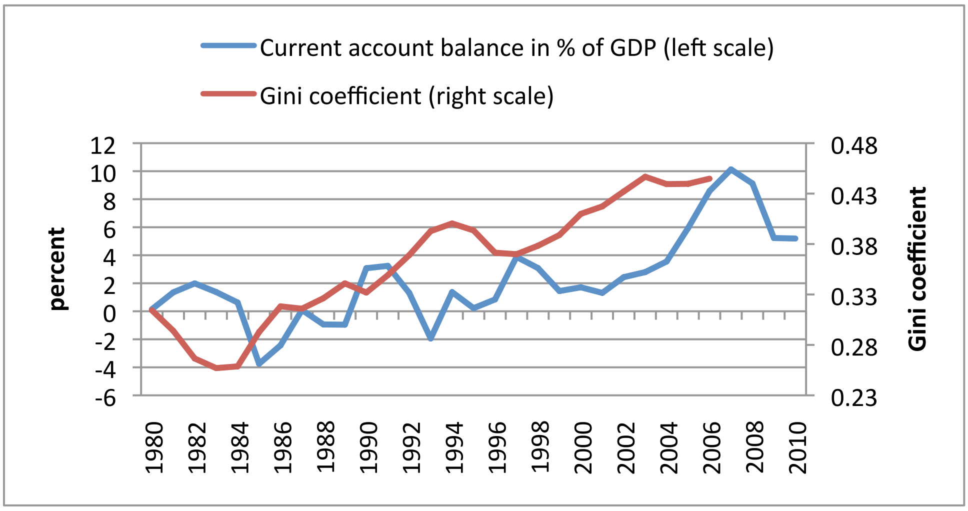
Chart 7: Change in current account balance (in % of GDP) from 1995-2000 to 2001-2006 and change in Gini coefficient in OECD countries



Source: OECD, Economic Outlook, Statistical Annex.

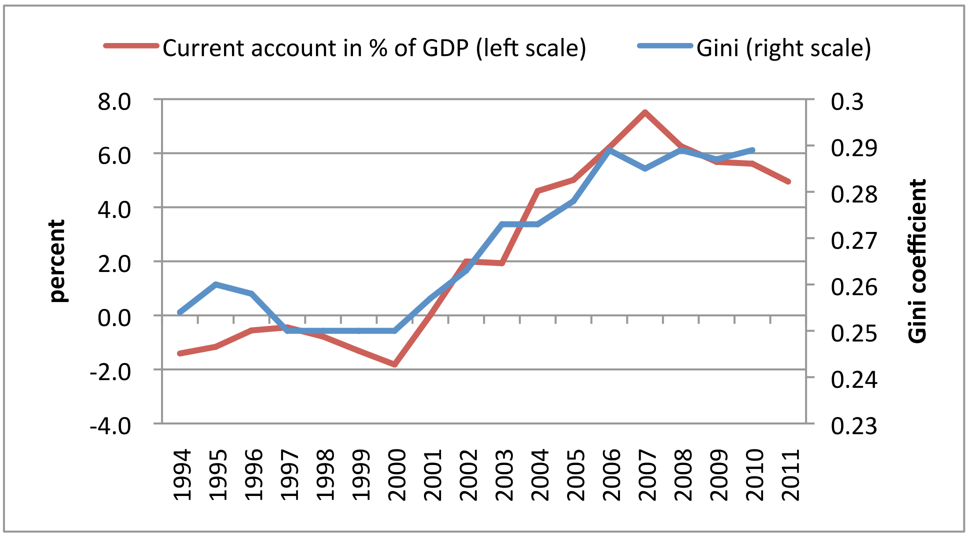
A positive correlation between an increased savings rate and the current account balance can also be found for China (Chart 8). While Kumhof at al. (2012) regard this positive correlation as a specific feature of an emerging market economy, a very similar result can be found for Germany (Chart 9).

Chart 8: Gini coefficient and current account balance in China



Source: OECD and Ma and Yi (2010).

Chart 9: Gini coefficient and current account balance in Germany



Source: Göbel and Grabka (2012), OECD Economic Outlook Statistical Annex

If inequality has a tendency to increase financial savings, its impact on growth should be negative. For the global economy the period between 2001 and 2006 was a phase of very high growth (Chart 10). But this was due to the very dynamic emerging market economies. For the advanced economies one can see that the average growth rate for the period 2001 to 2006 was much lower than in the period 1995 to 2000. Thus, one could to argue that rising inequality had a negative growth effect on mature economies but a positive effect on emerging market economies.

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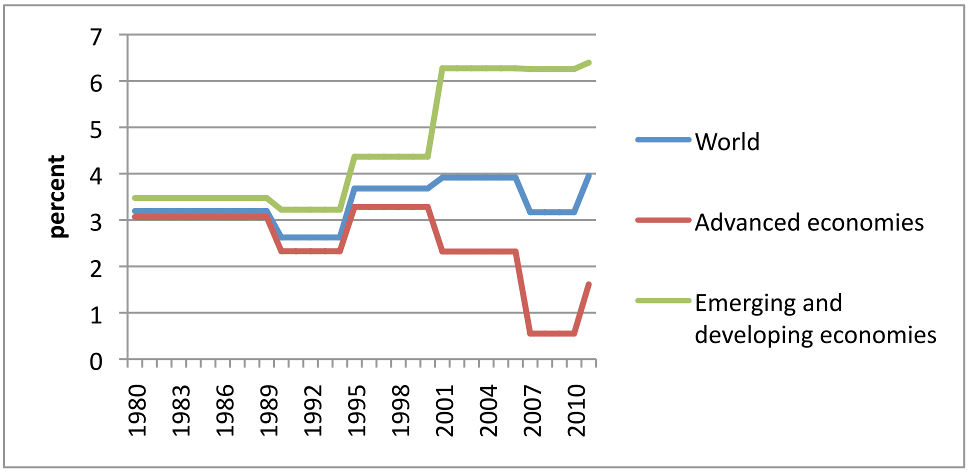
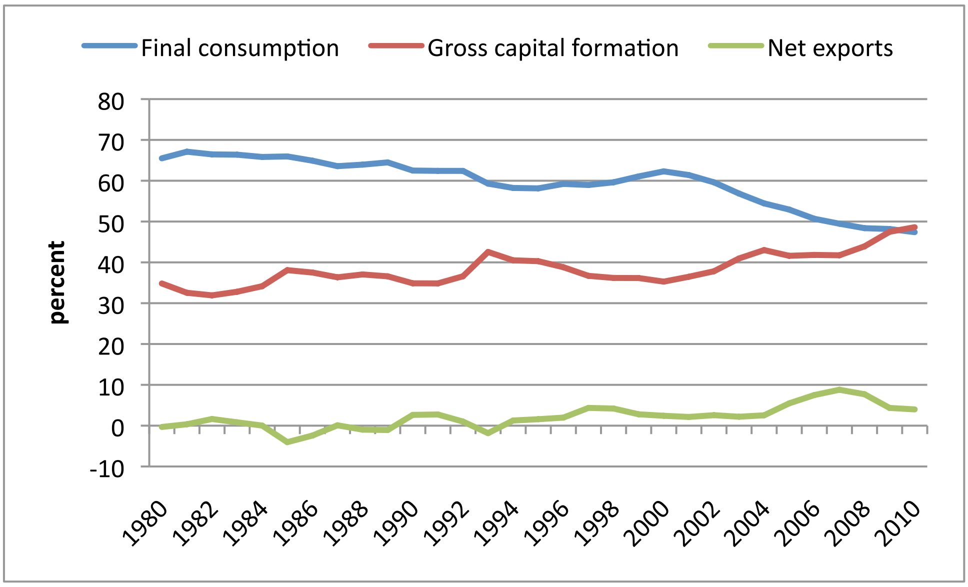
Chart 10: Growth rates (averages) for the world, advanced and emerging market economies



Source: IMF, World Economic Outlook Database

In this respect China is a special case. The growing inequality has led to high savings and an impressive decline in the share of final consumption (private and public) in GDP (Chart 11). But as the savings were mainly for investment they had been growth enhancing. Only in the more recent future a major part of the savings was used for financial savings which have a negative growth effect. Thus, the growth enhancing effect of real savings exceeded the negative growth effect of financial savings.

Chart 11: Composition of final consumption in China (in % of GDP)



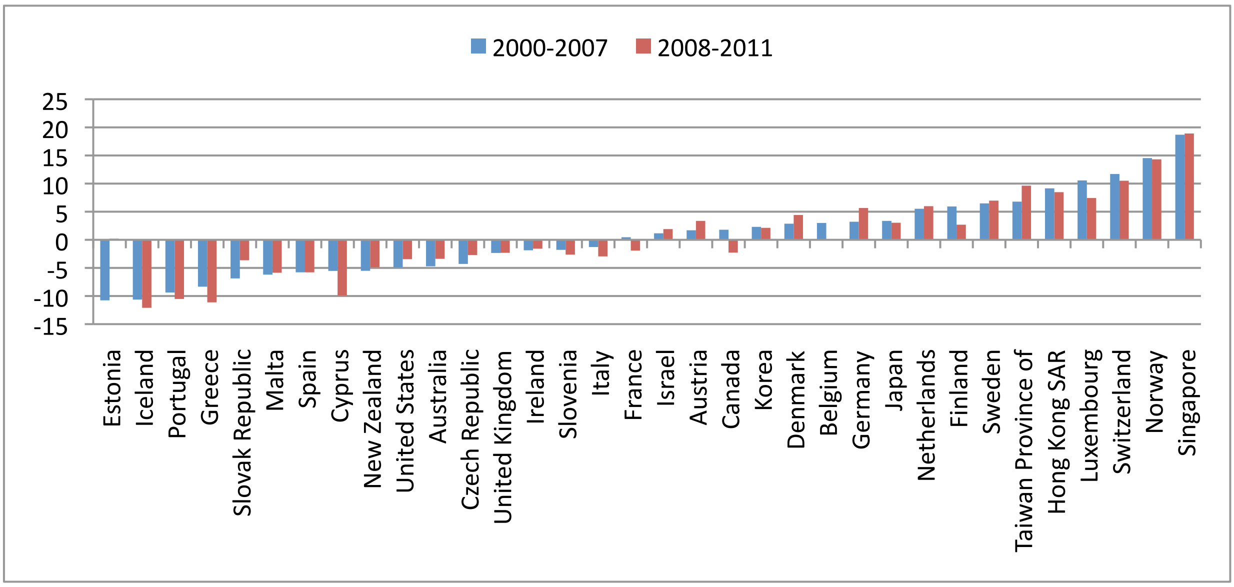
Source: China Statistical Yearbook 2011.

V. The way ahead

Although it is difficult to condense complex developments in simple narrative, the impact of growing inequality on the macroeconomic dynamics can be explained as follows. Ceteris paribus the increase in inequality has led to higher savings rates as incomes were distributed from low-saving to high-saving households. As higher savings are only partially used for additional investments, growing inequality creates a tendency to current account surpluses. However, for the global economy the current account has to be balanced. Thus, in line with the view of Keynes the tendency to current account surpluses reduces the aggregate growth rate. But as in the period 1995 to 2005 savings rates in most OECD countries have declined for other reasons (demographics, increase in household wealth due to rising house prices) and due to the catching-up processes in emerging market economies this tendency has not fully materialized until the outbreak of the crisis in 2007.

Since then, the global picture has changed dramatically. This might be surprising, as the current account imbalances of advanced economies have not changed too much, if one compares the situation before the crisis (2000-2007) with than the situation after the crisis (2008-2011). As chart 12 shows, with few exceptions (Estonia and France) most countries have remained either in a deficit or in a surplus position.

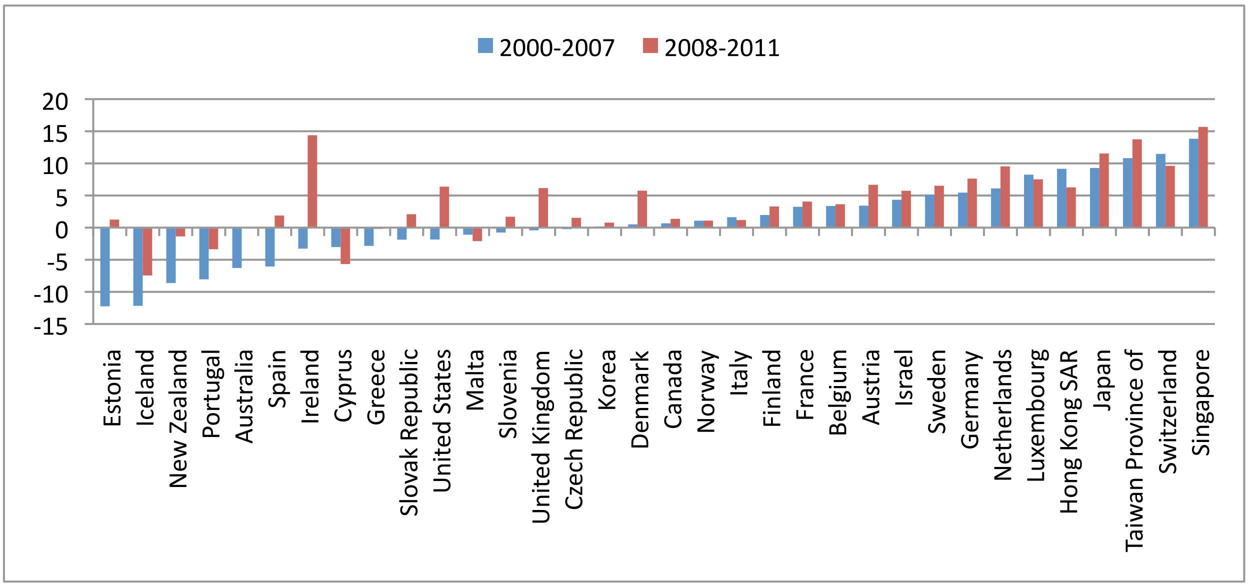
Chart 12: Average current account balance in the years 2000-2007 and 2008-2011 of advanced economies (in % of GDP)



Source: IMF, World Economic Outlook Database

However, if one splits up the aggregate net financial saving which is reflected in current account balances in private sector balances and public sector balances a massive change has occurred. Private financial balances which in many countries had been negative during the period 2000-2007 have turned mostly in the positive range after the crisis (Chart 13). And in many countries where private balances had positive before the crisis the surplus has even increased. In other words, while in the pre-crisis years the overall tendency to financial surpluses of the private sector has been compensated by financial deficits of the private sector because of strong investments in the real estate sector, this equilibrating force is no longer available.

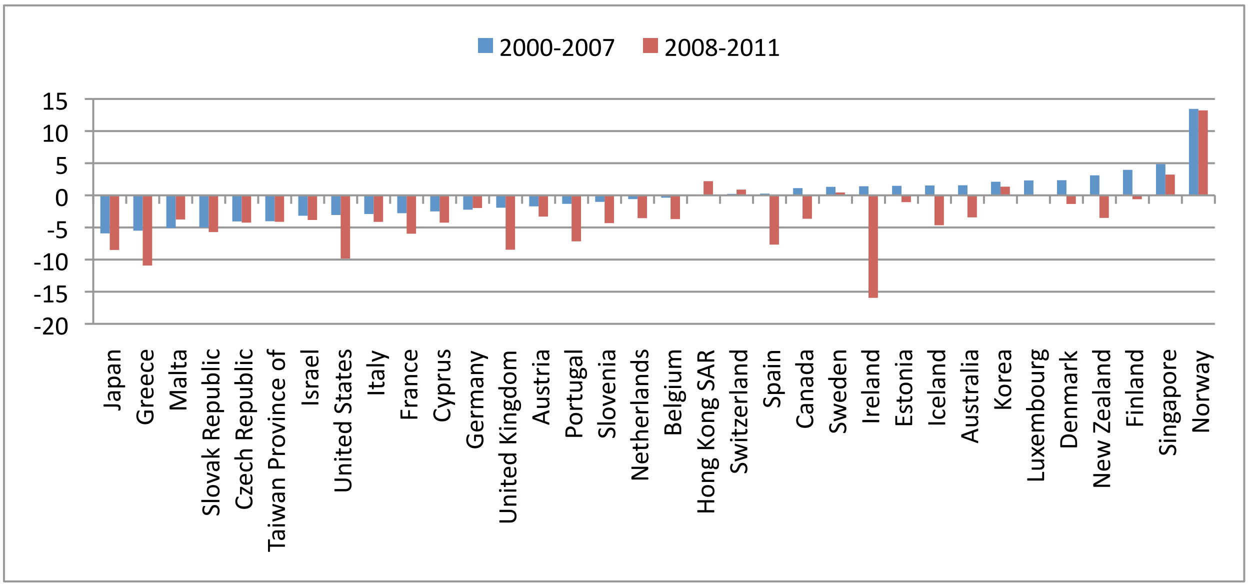
Chart 13: Average financial balances of the private sector in the years 2000-2007 and 2008-2011 (in % of GDP)



Source: IMF, World Economic Outlook Database

As a consequence, fiscal policy had to fill the gap with high fiscal deficits (Chart 13). While in the period 2000-2007 several countries had a positive fiscal balance since then almost all countries have deficits which are in some cases very high.

Chart 14: Average fiscal balances in the years 2000-2007 and 2008-2011 (in % of GDP)



Source: IMF, World Economic Outlook Database

As the public sector is now more and more reaching financial limits, one can no longer count on this stabilizing role. Thus, for the foreseeable future the dampening effects of a growing inequality could become a serious problem for the global economy. A glimmer of hope is the fact that Chinese leaders are now realizing that the future of the economy requires a more equitable income distribution. At the Fifth Session of the Eleventh National People s Congress on March 5, 2012 the Chinese Premier Wen Jiabao declared:

"We will work hard to expand consumer demand. We will move faster to set up a permanent mechanism for boosting consumption. We will vigorously adjust income distribution, increase the incomes of low- and middle-income groups, and enhance people's ability to consume."

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