

Belke, Ansgar; Gros, Daniel

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## Global liquidity, world savings glut and global policy coordination

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# Discussion Papers

# 973

Ansgar Belke • Daniel Gros

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DIW Berlin  
German Institute for Economic Research  
Mohrenstr. 58  
10117 Berlin  
Tel. +49 (30) 897 89-0  
Fax +49 (30) 897 89-200  
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# Global Liquidity, World Savings Glut and Global Policy Coordination\*

by

**Ansgar Belke<sup>‡</sup> and Daniel Gros<sup>†</sup>**

<sup>‡</sup> University of Duisburg-Essen and DIW Berlin

<sup>†</sup> Centre for European Policy Studies (CEPS), Brussels

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## **Abstract**

The global imbalances of the 2000s and the recent global financial crisis are intimately connected. Both originate in the combination of economic policies adopted by the two key economies, the US and China. Global financial markets served as a transmission belt, both during the boom as during the bust. In the US, the interaction among the Fed's monetary stance, global real interest rates, distorted incentives in credit markets, and financial innovation created the mix of conditions which first drove growth, but then made the US the epicenter of the global financial crisis. Exchange rate and other economic policies followed by emerging markets such as China and the oil-exporting countries contributed to the US ability to borrow cheaply abroad and thereby finance its unsustainable housing bubble during the upswing.

But we find that the key drivers of asset prices are global liquidity conditions. Central banks flooded the markets with ample liquidity. Mopping up this excess liquidity will be one major task for central banks worldwide, which needs to be done in a coordinated fashion. Moreover, our analysis has shown that liquidity will first show up in asset price inflation and only later in consumer goods inflation. This renders it difficult for central bank to exit from their current very expansive monetary policy stance if they continue to focus only on price stability.

*JEL Codes:* E21, E43, E52, F32, F42, Q43

*Keywords:* Asset prices; China; current account adjustment; global liquidity; oil prices; savings glut; monetary policy; policy coordination

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## **Introduction**

Against the background of steadily increasing global liquidity since the beginning of the century in most industrial countries as well as in numerous emerging market economies with a dollar peg, especially China, broad money growth has been running well ahead of nominal GDP. Surprisingly enough, for a long time, consumer price inflation has remained largely unaffected by the strong monetary dynamics in many regions in the world. Over the same time period, however, many countries have experienced sharp but sequential booms in asset prices, such as commodity, real estate or share prices.<sup>1</sup>

Between 2001 and 2007, for instance, house prices increased by 40 to 60 percent in a number of OECD countries, the CRB commodity price index surged by 84 percent in the same period, and stock prices more than doubled in nearly all major markets from 2003 to 2007. A similar evolution can be found for oil prices. The oil price was still low in 2001, but the next six years saw a steady increase that tripled the price by the middle of 2007. Subsequently, oil prices continued to rise sharply reaching an all-time high on July 3, 2008, only to be followed by an even more spectacular price collapse.<sup>2</sup> Around the turn-of-year 2008-09, the oil price started to rebound and has now reached values of around \$75 which is about twice as much as at the beginning of 2009. Many observers feel that the sequential increase of asset prices is the result of liquidity spillovers to certain asset markets.<sup>3</sup>

From a monetary policy perspective, the different price dynamics of assets and goods prices in recent years raises the question as to whether the money-inflation nexus has been changed (thereby calling into question the close long-term relationship between monetary and goods price developments that was observed in the past) or whether effects

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<sup>1</sup> See G. Schnabl and A. Hoffmann, "Monetary Policy, Vagabonding Liquidity and Bursting Bubbles in New and Emerging Markets – An Overinvestment View," CESifo Working Paper 2100, Munich, 2007.

<sup>2</sup> See J.D. Hamilton, "Understanding Crude Oil Prices," Department of Economics, University of California, San Diego, December 6, 2008, 1.

<sup>3</sup> See R. Adalid and C. Detken, Liquidity Shocks and Asset Price Boom/Bust Cycles. ECB Working Paper 732, European Central Bank, Frankfurt/Main, 2007; and C. Greiber and R. Setzer "Money and Housing: Evidence for the Euro Area and the US," Deutsche Bundesbank Discussion Paper Series 1: Economic Studies 07/12, Frankfurt/Main, 2007.

from previous policy actions are still in the pipeline.<sup>4</sup> But before we turn to some more details of the empirical stylized facts and the issue of global policy coordination, we will take a closer look at the so-called “savings glut” and the role of the OPEC countries and China therein. The purpose of this paper is to illustrate the mechanism by which higher oil prices might lead to lower interest rates by using a simple model that takes into account the global external savings equilibrium. This simple model has interesting implications for how one views the huge US current account deficit and how the emergence of China’s savings surplus and oil supply shocks impact the global economy. We show that the new equilibrium is located at a lower interest rate but also at a lower growth rate than without the China effect. Moreover, we argue in this paper that the lower real interest rates resulting from excess OPEC savings have facilitated the adjustment to the subprime crisis. Finally, international liquidity spillover effects may occur regardless of the exchange rate system. Hence, the need for more global policy coordination might arise.

### **The Global Savings Glut**

The oil price has shown pronounced swings since the beginning of the new millennium. Thus, oil producers have reaped enormous windfall profits from record oil prices. However, what is less well known and less widely reported is that oil producers also tend to save a sizable proportion of their gains.<sup>5</sup> This fact has one clear implication: an increase in the oil price leads to an increase in the global supply of savings, and hence, at

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<sup>4</sup>The main emphasis in these kinds of studies is on globally aggregated variables, which implies that they do not explicitly deal with spillovers of global liquidity to national variables. The main motivation for this way of proceeding is related to recent research according to which inflation appears to be a global phenomenon. So far, the relationship between money growth, different categories of asset prices and goods prices has been little studied in an international context. Only recently have a number of authors suggested specific interactions of global liquidity with global consumer price and asset price inflation. See K. Baks, and C.F. Kramer, “Global Liquidity and Asset Prices: Measurement, Implications, and Spillovers,” IMF Working Papers 99/168, International Monetary Fund, Washington, D.C., 1999; J.M. Sousa and A. Zaghini, “Global Monetary Policy Shocks in the G5: A SVAR Approach,” CFS Working Paper 2006/30, Frankfurt/Main, and R. Rueffer and L. Stracca, “What Is Global Excess Liquidity, and Does It Matter?” ECB Working Paper 696, European Central Bank, Frankfurt/Main, 2006.

<sup>5</sup> See M. Higgins, T. Klitgaard, R. Lerman, “Recycling Petrodollars,” *Current Issues in Economics and Finance* 12, no. 9, Federal Reserve Bank of New York, December 2006, and IMF, “Oil Prices and Global Imbalances,” Chapter II, *World Economic Outlook*, International Monetary Fund, Washington, D.C., April 2006, 75.

least potentially, also to lower interest rates.<sup>6</sup> The reason for the emergence of this surplus is quite simple: ever-rising oil prices transfer wealth from oil-consuming countries to oil-producing countries, and oil-producing countries have a higher propensity to save out of current income.

That savings from oil producers can have an important impact on the global supply of savings is clear from the raw numbers displayed in Table 1 which summarizes changes in current accounts corresponding to changes in savings and investment balances. The current account position of emerging and developing countries improved by almost \$670 billion between 2001 and 2008, while the current account position of the other countries/regions listed in the table deteriorated by some \$500 billion. Within the latter group, the current account position of Japan rose until 2007 while that of the euro area deteriorated from 2004 on. Thus, increases in the current account surpluses of emerging and developing countries and Japan financed to a large degree the increase in the current account deficits of other countries.

In general, the savings glut in the emerging market economies was in large part due to policies that they put in place when the global economy started to recover from the 2000-01 recession.<sup>7</sup> Since it was spurred by monetary and fiscal stimulus in the US, some call it the liquidity glut. The rise in the international supply of savings from emerging market economies (EMEs) combined with a fall in investment in OECD countries pushed real interest rates to record lows. The deflation scare that emerged from the combination of the bursting of the stock market bubble and the shocks that ensued from the corporate scandals and geopolitical events, along with the entry of China and India into the world trading system, the WTO, provoked in response a policy of aggressive lowering of nominal and real interest rates. An initial savings glut thus became a liquidity glut.

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<sup>6</sup> See B. Broadbent and K. Daly, "The Savings Glut, the Return on Capital and the Rise in Risk Aversion," Global Economics Paper 185, Goldman Sachs Global Economics – Commodities and Strategy Research, New York et al, 2009.

<sup>7</sup> See B. Bernanke, "The Global Saving Glut and the U.S. Current Account Deficit," Homer Jones Lecture, St. Louis, Missouri, April 14, 2005; and B. Bernanke, "Global Imbalances: Recent Developments and Prospects," Bundesbank Lecture, Berlin, 2007.



*Table 1: Current account balances, 2001-2009 (\$ billion)*

|   | 2001    | 2002     | 2003     | 2004     | 2005     | 2006     | 2007     | 2008     | 2009     |
|---|---------|----------|----------|----------|----------|----------|----------|----------|----------|
|   | -       |          |          |          |          |          |          |          |          |
| US                                      | 384.701 | -461.271 | -523.413 | -624.999 | -728.994 | -788.115 | -731.214 | -673.266 | -393.25  |
| Japan                                   | 87.794  | 112.607  | 136.238  | 172.07   | 165.69   | 170.437  | 210.967  | 157.079  | 76.363   |
| Euro area                               | 6.612   | 47.825   | 42.951   | 116.968  | 40.947   | 31.526   | 20.439   | -95.506  | -133.769 |
| UK                                      | -30.386 | -28.009  | -29.92   | -46.161  | -59.511  | -82.975  | -80.722  | -45.392  | -40.73   |
| CEECs                                   | -10.439 | -16.924  | -28.998  | -48.61   | -54.734  | -82.52   | -122.079 | -142.193 | -59.366  |
| Emerging and<br>developing<br>economies | 46.639  | 83.19    | 151.271  | 226.086  | 447.763  | 630.632  | 633.403  | 714.44   | 262.438  |
| China                                   | 17.405  | 35.422   | 45.875   | 68.659   | 160.818  | 253.268  | 371.833  | 440.011  | 496.569  |
| CIS*                                    | 33      | 30.3     | 35.7     | 63.5     | 87.5     | 96.2     | 70.9     | 108.7    | 0.6      |
| Middle East                             | 40.442  | 29.893   | 57.466   | 97.073   | 201.345  | 252.868  | 254.112  | 341.62   | -10.155  |
| Western<br>Hemisphere                   | -53.902 | -16.185  | 9,30     | 22.051   | 35.502   | 47.673   | 13.376   | -28.293  | -77.252  |
| Asian NICs                              | 48      | 55.7     | 81       | 83.5     | 80.2     | 90       | 103.6    | 76.2     | 91       |
| Developing<br>Asia                      | 36.613  | 64.757   | 82.423   | 89.276   | 162.277  | 282.38   | 406.466  | 422.377  | 481.328  |

*Source:* IMF (2009), World Economic Outlook Database.

\* Mongolia, which is not a member of the Commonwealth of Independent States, is included in this group for reasons of geography and similarities in economic structure. Data for 2009 are based on IMF forecasts.

China adopted policies that increased its savings and restrained investment to try to keep the renminbi's large real depreciation after 2002 – a depreciation that reflected the dollar's depreciation – from leading to an unwanted rise in inflation.<sup>8</sup> The governments of the oil-exporting economies opted to save most of the oil windfall – at least initially.<sup>9</sup> Those policies intersected with distorted incentives in the US and European financial sector – the incentives that made private banks and shadow banks willing to take on the risk of lending to ever-more indebted households (a risk that most emerging market central banks did not want to take) – and laid the foundation for trouble.<sup>10</sup>

On the whole, thus, savings rates rose substantially in the emerging economies from 2002 to 2007, although it is quite unusual for Asia and the oil exporters to show large surpluses at the same time.<sup>11</sup> The net result was that the global economy prior to the crisis was characterized by high levels of both savings and investment in Asia and the oil exporters and by high levels of consumption and low levels of savings in the US. Moreover, the major advanced economies began to run large current account deficits.<sup>12</sup>

### **Box 1 - A Simple Model of an Oil-based Global Savings Glut**

A simple model is just meant to illustrate a general idea, which should hold up in more sophisticated models such as, for instance, the New Open Economy Macro model.<sup>13</sup> The main result is that, provided oil prices stay high, an ex ante savings surplus in which surplus countries offer more savings than needed by deficit countries emerges. That should lead to lower global real interest rates (and/or higher asset prices – depending on the way petrodollars are recycled). Hence, the incipient excess of global savings over investment puts downward pressure on real interest rates which supports investment demand in oil importers and weakens incentives to save in oil exporters.<sup>14</sup> We feel legitimized to make the argument that high oil prices may have just saved the world economy from the intensifying credit

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<sup>8</sup> See J.R. Faria, A.V. Mollick, P.H. Albuquerque, M. León-Ledesma, “The Effect of Oil Price on China's Exports,” *China Economic Review* 20 (2009), 793-805, for a theoretical model which explains the positive correlation between Chinese exports and the oil price which makes the savings glut self-sustaining.

<sup>9</sup> See M. Higgins, T. Klitgaard, R. Lerman, op. cit., 5.

<sup>10</sup> See M. Obstfeld, K. Rogoff, “Global Imbalances and the Financial Crisis – Products of Common Causes,” CEPR Discussion Paper 7606, Centre for Economic Policy Research, London, December 2009.

<sup>11</sup> See, for instance, B. Bernanke, op. cit. In 1998, the fall in oil prices helped Asia and hurt the oil exporters; in 2000, the rise in oil prices helped the oil exporters and hurt Asia. And way back in 1980, Asia ran a deficit that helped offset the oil exporters' surplus.

<sup>12</sup> See B. Broadbent and K. Daly, op. cit., 5.

<sup>13</sup> See A. Belke, D. Gros, “A Simple Model of an Oil Based Global Savings Glut – The ‘China Factor’ and the OPEC Cartel,” DIW Discussion Papers 911, Deutsches Institut fuer Wirtschaftsforschung (DIW), Berlin, July 2009.

<sup>14</sup> See IMF (2006), op. cit., 81.

squeeze for a while. At least this view was valid until oil prices started to decline in mid-2008. But how so?

The global economy has been hit by two shocks: the subprime lending crisis and high oil prices. The latter have faded into the background as prices had stabilized near record levels around the turn-of-year 2007-08. But it would be a mistake to underestimate their importance at that time. The recent surge in oil prices has made a rebalancing of the global economy more difficult, but it might in fact have facilitated the adjustment to the subprime credit crisis.

The core of the issue is simple: oil producers tend to save about half of their windfall gains from higher oil prices. If, for instance at the turn-of-year 2007-08 the oil price had stayed around \$90 a barrel, oil producers would have increased their current account surpluses by \$200 bn-\$300 bn a year. However, the question in such a scenario always is: who is willing and able to run the corresponding deficits? Apart from the US, there are only two regions large enough to contemplate a shift in the external position of this order of magnitude: the euro area and Asia (Japan and China).

The euro area would have had no problem running a current account deficit of \$200 bn-\$300 bn (at exchange rates prevailing around the turn-of-year 2007-08, \$300bn would amount to €200 bn, or about 2.5 per cent of euro area gross domestic product). In an ideal world, this could have been achieved if domestic demand remained strong in the face of a strong euro. It seems, however, that domestic demand in the euro area is already weakening and is unresponsive to efforts to influence it with either monetary or fiscal policy. Furthermore, the European market for public debt is fragmented, and so are the markets for European covered-bonds. In reality, the size of the biggest euro market, the German one, is less than one fifth of the US one. This suggests that, up to now at least, the euro area has not been playing in the same league as the United States as far as providing the liquid and safe assets demanded by the reserve accumulating authorities is concerned. One of the issues for the coming years is to find out if this could change.

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<sup>15</sup> See M. Obstfeld and K. Rogoff, *op. cit.*, 7.

<sup>16</sup> See W.D. Angell, "Commodity Prices and Monetary Policy: What Have We Learned?" *Cato Journal* 12 (1992), 185-192.

<sup>17</sup> See R.B. Barsky and L. Kilian, "Do We Really Know that Oil Caused the Great Stagflation? A Monetary Alternative," in *NBER Macroeconomics Annual* (May 2002), eds. B. Bernanke, and K. Rogoff, 137-183; J.A. Frankel, "The Effect of Monetary Policy on Real Commodity Prices," in *Asset Prices and Monetary Policy*, ed. John Campbell (University of Chicago Press, 2008), 291-327; and J.D. Hamilton, "Causes and Consequences of the Oil Shock of 2007-08," NBER Working Paper 15002, National Bureau of Economic Research, Cambridge/MA., 2008, 42ff.

Asia, especially China, has until recently been determined to continue export-led growth (and is already preparing itself for the next post-crisis export boom). The Chinese authorities will not be able to defer a substantial appreciation of the renminbi forever. A real appreciation is already happening via higher inflation in China, but this is a relatively slow process. It may take years before Chinese policymakers throw in the towel. Meanwhile, the most that can be expected is a reduction in the pace of increase of its current account surplus.

On the whole, the lower real interest rates resulting from excess OPEC savings should have facilitated the adjustment to the subprime crisis. This is because excess savings from the oil exporters keep real interest rates low and push asset prices back up. In other words, the oil producing nations have generated far more income than they spend and thus have excess savings. The excess savings will be lent out to or used to buy assets from countries willing to live beyond their means, i.e., to run a current account deficit. Since the world economy has been weighed down once again by tightening credit conditions that have emerged from the subprime mess, this injection of excess savings has provided the needed infusion of funding to keep the world economy going. But why is our analysis still relevant today although oil prices have come down significantly in the meantime and are only moderately increasing again?

One argument is that the next bubble is already looming on the horizon and the pattern described in the paper can reproduce itself. For instance, it is far from unrealistic that the current level of global excess liquidity will sooner or later again feed into higher oil and other asset prices after the velocity of money will have increased again.<sup>15</sup> At least, this is implied by the debate among economists, which has been taking place over the last three decades, about the role of asset or commodity (and especially oil) prices in setting monetary policy.<sup>16</sup> For instance, monetary fluctuations help to trace the historical pattern of the movements of prices of oil and other commodities.<sup>17</sup>

Second, the issues addressed above could be analyzed in just the opposite direction with signs reversed for a scenario of relatively low oil prices as, for instance, prevailing since the midst of 2008.

### **The Global Perspective of Monetary Transmission**

Both with respect to global inflation and global liquidity performance, available evidence is strong that the global rather than national perspective is more important when the monetary

transmission mechanism has to be identified and interpreted.<sup>18</sup> Considering the development of global liquidity over time, the question is often raised whether and to what extent global factors are responsible for it.

A few studies investigate this aspect for the G7 countries and conclude that around 50 percent of the variance of a narrow monetary aggregate can be traced to one common global factor such as the expansionary monetary policy stance of the Bank of Japan during the last few years,<sup>19</sup> which has been characterized by a significant accumulation of foreign reserves and by extremely low interest rates – at some time even approaching zero. By means of carry trades, financial investors took up loans in Japan and invested the proceeds in currencies with higher interest rates. This kind of capital transaction has impacts on the development of monetary aggregates far beyond the special case of Japan and national borders in general.<sup>20</sup>

An additional argument in favor of focusing on global instead of national liquidity is that national monetary aggregates have become more difficult to interpret due to the huge increase in international capital flows. Simply accounting for the external sources of money growth and then mechanically correcting for cross-border portfolio flows or M&A activity, on the presumption of their likely less relevant direct effects on consumer prices, is not a sufficient reaction.<sup>21</sup>

The concept of “global liquidity” has attracted growing attention in the empirical literature in recent years.<sup>22</sup> There is empirical evidence of the existence of a global business cycle.<sup>23</sup> Since house prices largely move pro-cyclically, this is one major common force that drives house prices all over the world. Another point is, if there are arbitrage relationships between house

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<sup>18</sup> For instance, M. Ciccarelli and B. Mojon “Global Inflation,” ECB Working Paper 537, Frankfurt/Main, 2005, find that deviations of national inflation from global inflation are corrected over time. Similarly, Borio and Filardo argue that the traditional way of modelling inflation is too country-centred and a global approach is more adequate. See, C.E.V Borio and A. Filardo, “Globalisation and Inflation: New Cross-Country Evidence on the Global Determinants of Domestic Inflation,” BIS Working Papers 227, Basle, 2007.

<sup>19</sup> See R. Rueffer and L. Stracca, op. cit., 4.

<sup>20</sup> See G. Schnabl and A. Hoffmann, op. cit., 3.

<sup>21</sup> Instead, these transactions have to be investigated with respect to their information content and potential wealth effects on residents’ income and on asset prices which might backfire to goods prices as well. See L. Papademos, “The Effects of Globalisation on Inflation, Liquidity and Monetary Policy,” (speech at the conference on the “International Dimensions of Monetary Policy” organized by the National Bureau of Economic Research, S’Agar`o, Girona, June 11, 2007), 4; and G. Pepper, and M. Olivier, *The Liquidity Theory of Asset Prices* (Wiley Finance, 2006). J.V. Giese and C.K. Tuxen stress the fact that in today’s linked financial markets shifts in the money supply in one country may be absorbed by demand elsewhere, but simultaneous shifts in major economies may have significant effects on worldwide asset and goods price inflation. See J.V. Giese and C.K. Tuxen, “Global Liquidity, Asset Prices and Monetary Policy: Evidence from Cointegrated VAR Models,” (Unpublished Working Paper, University of Oxford, Nuffield College and University of Copenhagen, Department of Economics, 2007).

<sup>22</sup> See IMF, “What is Global Liquidity?” *World Economic Outlook Globalization and Inequality*, Chapter I, (October 2007, Washington, D.C.), 34-37.

<sup>23</sup> See F. Canova, M. Ciccarelli, E. Ortega, “Similarities and Convergence in G-7 Cycles,” *Journal of Monetary Economics*, 54, no. 3 (2007), 850-878.

prices and globally traded securities (shares), global factors (such as the global stock market crash) that affect these securities should influence those prices as well.<sup>24</sup>

### **Global Liquidity and Asset Prices - Stylized Facts**

To illustrate the development of global liquidity for the pre-crisis period from 1984 to 2006, Figure 2 constructed by us shows global monetary aggregates in absolute and relative terms as well as the inverse of income velocity of money.<sup>25</sup> All three series find themselves above their time trend since about 2001 when monetary policymakers turned to a more expansionary policy in the course of the rapid downturn in stock markets and a number of further shocks such as 9/11. Money growth remained strong throughout the last years of our sample period, as indicated by the persistent growth of the ratio of nominal money to nominal GDP – a measure which we apply in the remaining part of this paper as our indicator of ‘excess liquidity.’<sup>26</sup> Overall, it seems clear at first glance that global liquidity has indeed been at a high level before the crisis started and that the term ‘excess liquidity’ can be justified rather easily.

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<sup>24</sup> See K. Baks and C.F. Kramer, op. cit.; R. Rueffer and L. Stracca, op. cit.; J.M. Sousa and A. Zaghini, op. cit., J.V. Giese and C.K. Tuxen, op. cit.

<sup>25</sup> In their empirical analysis of the transmission process of global liquidity to house and other asset prices, Belke, Orth and Setzer (2009) make use of quarterly time series ranging from Q1-1984 to Q4-2006 for the United States, the euro area, Japan, the United Kingdom, Canada, South Korea, Australia, Switzerland, Sweden, Norway, and Denmark. Hence, in their analysis, 72.2 percent of the world GDP in 2006 and presumably a considerably larger share of the global financial markets are represented.<sup>25</sup> They select a broad monetary aggregate such as M3 for each of the countries to derive a global measure of liquidity. They start with aggregating the country-specific time series to produce a global series, strictly following the guidelines provided by Beyer et al. (2000) and applied by Giese and Tuxen (2007) in the same context. See A. Belke, W. Orth and R. Setzer, “Liquidity and the Dynamic Pattern of Asset Price Adjustment: A Global View,” DIW Discussion Papers 933, Deutsches Institut fuer Wirtschaftsforschung (DIW), Berlin, October 2009, forthcoming in *Journal of Banking and Finance*; A. Beyer, J.A. Doornik and D.F. Hendry, “Constructing Historical Euro-zone Data,” *Economic Journal* 111, 308-327, and Giese and Tuxen, op. cit., 10.

<sup>26</sup> See, for instance, R. Rueffer and L. Stracca, op. cit., 4.

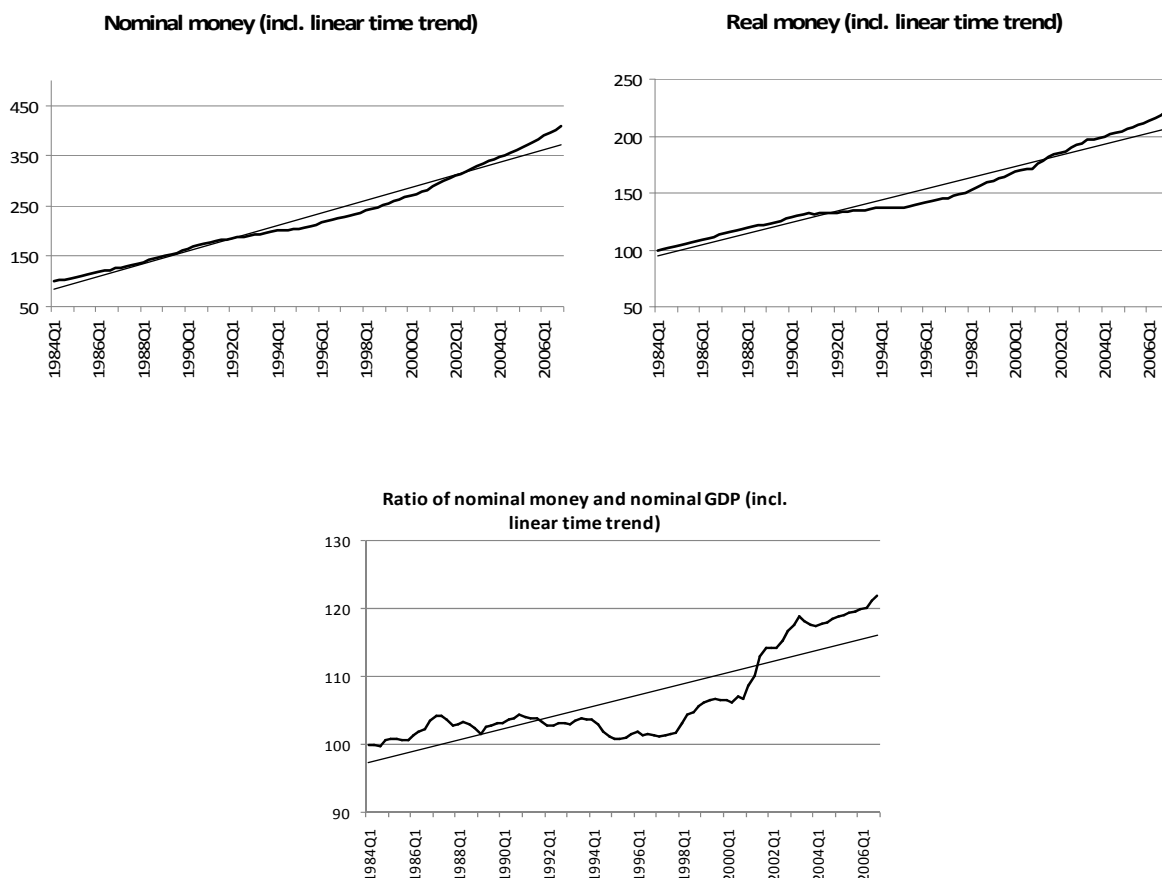


Figure 1: Global liquidity since 1984

Global short-term interest rates were at a historically low level from 2002 to 2005, since the monetary policy stance was extremely loose during this period. Interestingly, the global time series show that the recent years of global excess liquidity are accompanied by strong price increases in both housing and commodity markets.<sup>27</sup> Apparently, abundant global liquidity contributed to the bull market in the real estate sector. Following the downturn in the housing market triggered by the subprime crisis, money balances then began flowing largely into commodity markets putting upward pressure on commodity prices. As various robustness checks come up with almost no changes in the results, we feel legitimized to draw some conclusions about the issue of international policy coordination in the presence of a savings glut which has become a global liquidity glut.<sup>28</sup>

<sup>27</sup> The ongoing discussion about the linkage of global excess liquidity and asset price inflation is not at least based on this phenomenon. In a separate econometric analysis, Belke, Orth and Setzer (2009) investigate the causal connection of global liquidity and asset and commodity price inflation in a more formal econometric framework. Their results provide some interesting interpretations for the post-2001 period. See A. Belke, W. Orth, and R. Setzer, op. cit., 11.

<sup>28</sup> The robustness checks can be found in A. Belke, W. Orth, and R. Setzer, op. cit., 11.

### **Global Savings, Global Liquidity and International Policy Coordination**

Until the crisis started in late 2007, it was widely assumed that the global economy was best served if all countries ‘put their own house in order,’ which, in turn, was taken to mean that inflation had to be kept low and public finances under control. This approach was clearly not appropriate. It permitted an accumulation of massive imbalances both at the international level (US versus China) and within the financial system (in the EU and the US).

Effective policy coordination can arise only if the participants exchange commitments. Major economies will undertake policy changes that are not directly in the (perceived) national interest only if an important partner promises a quid pro quo. Unfortunately it seems that there is very little the US or the EU could offer China in return for the abandonment of the currency peg which they demand so insistently.

The key ‘imbalance’ and feature driving the global economy and financial markets over the last decade has been the US deficit and the Chinese surplus. Up to now, the crisis has led to a considerable reduction of both. But it is not certain what will happen once the global economy recovers (and whether it can recover at all without this feature).

The fact that global liquidity is the main driver of asset prices suggests that there are important spillovers from national monetary policy. Both the US Federal Reserve and the ECB thus have an important joint responsibility for global financial stability. Our research suggests that the US determines about 40 percent of global liquidity conditions and the euro area another 30 percent (Japan only 15 percent).<sup>29</sup> Unfortunately, however, there is little coordination between the two (and with Japan). Though the US Federal Reserve and ECB are in constant contact regarding policy planning and evaluation of the state of financial markets, it seems that there is no coordination in terms of actual policy measures. The mandate of both institutions is defined in purely domestic terms. Moreover, both institutions seem reluctant to acknowledge that they are responsible for global liquidity conditions. There is thus a danger that new excess liquidity will be generated as central banks on both sides of the Atlantic try to stimulate their economies with ultra low interest rates.

There is ample evidence that excessive liquidity creation in OECD countries (and especially the US and the euro area) fostered the asset price and credit bubble which led to the present crisis. Now, it seems that both central banks are trying the same way out of the crisis: namely ultra loose monetary policy. So will the past be repeated?

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<sup>29</sup> See A. Belke and A. Rees, “The Importance of Global Shocks for National Policymakers Rising Challenges for Central Banks,” DIW Discussion Papers 922, Deutsches Institut fuer Wirtschaftsforschung (DIW), Berlin, September 2009.



## New Players on the Global Economic Scene and Money Growth

The future might look quite different from the past for one simple reason: the emergence of new players on the global economic scene – the so-called emerging markets in general and China in particular. Figures 2 to 5 clearly show that the emerging markets (i.e. the BRICs) experienced an extremely high (broad) money growth in the past five to 10 years, at least as compared with the G-3 countries and as far as the annual percent change in broad money (measured as M2 for the US and M3 for the other countries) is concerned.<sup>30</sup> For the emerging markets, the latter index took average values between 15 and 20 percent and for China even higher empirical realizations in the more recent past, i.e. the last two years. In contrast, broad money growth in the G-3 went down significantly in the wake of the financial crisis although base money growth was still high due to the lowering of the velocity of money and lower credit growth especially in the euro area. Hence, money growth in the world (with 0.6 being the share of the G-3 and 0.4 representing the share of the BRICs) has been around double as high as in the G-3.

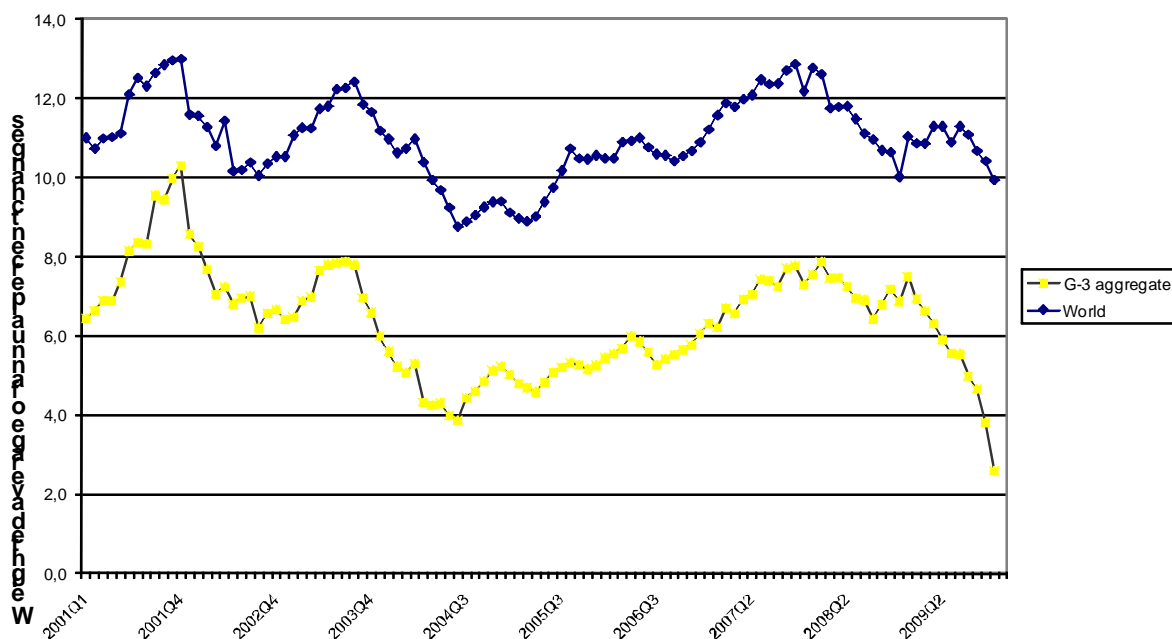


Figure 2: Money growth in the G-3

<sup>30</sup> Data are taken from Datastream.

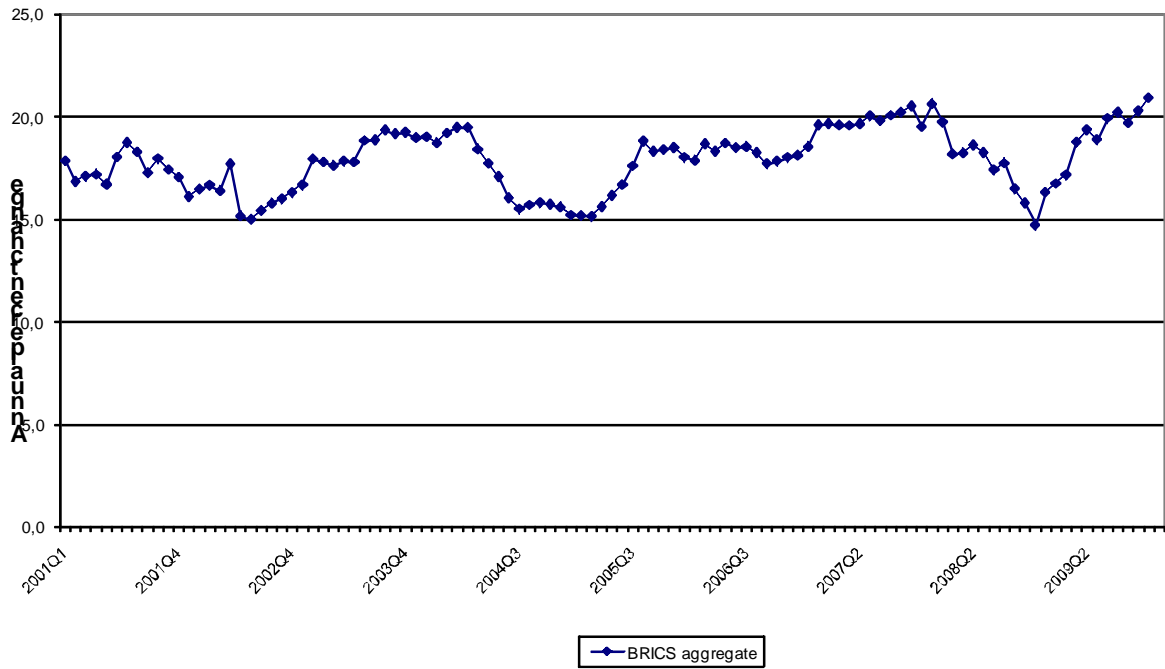


Figure 3: Money growth in the BRICS

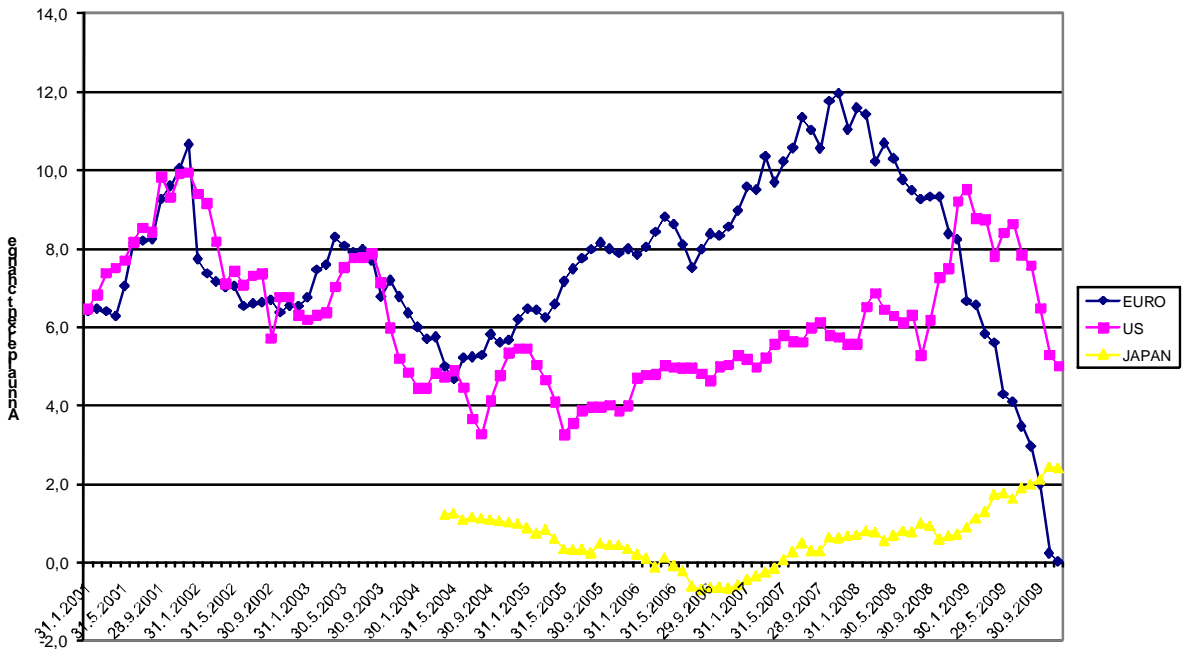


Figure 4: Money growth among the G-3

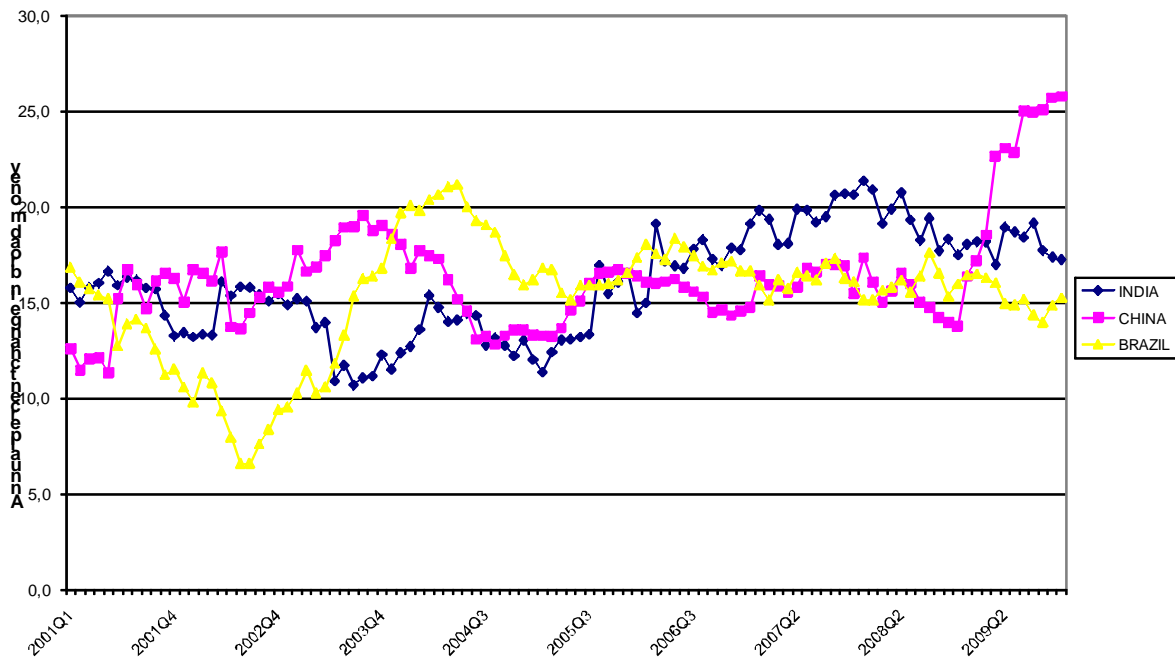


Figure 5: Money growth among the BRICs

The presence of emerging markets, and among them especially the BRICs, thus raises new issues for monetary policy coordination. The first point is simply that going forward with trans-Atlantic coordination (or even coordination among the now defunct G-7 in general) might no longer be sufficient as the weight of the EMEs in the global economy is rising.

### Emergence of the BRICs and Global Excess Liquidity

One way to illustrate the importance of the new players on the economic scene is to consider what would be an appropriate measure of global liquidity today. Using GDP at purchasing power parity to weight different economies would give the following weights for the G-3 (US, euro, Japan): 0.40, 0.30 and 0.16.<sup>31</sup> And for the BRICs, this group will account for about 27 percent of global GDP (going by IMF predictions). Hence we feel legitimized to suppose that the “world” would correspond to 60 percent G-3 and 40 percent BRICs.

Moreover, liquidity expands at a very rapid pace in most BRICs but is contracting in most OECD countries. A simple comparison of global indicators derived for the BRICs and the G-3 separately shows the differences in terms of growth rates of global excess money, i.e. global broad money growth minus global nominal GDP growth (Table 2).

<sup>31</sup> As is implicit also in A. Belke, W. Orth, and R. Setzer, op. cit., 11.

| <b>BRICs</b>  |             |       |              |
|---------------|-------------|-------|--------------|
|               | Nominal GDP | Money | Excess money |
| Average 01-07 | 14,2        | 17,9  | 3,7          |
| 2008          | 7,2         | 16,3  | 9,1          |
| 2009          | 10,9        | 20,9  | 10,0         |

| <b>G-3</b>    |             |       |              |
|---------------|-------------|-------|--------------|
|               | Nominal GDP | Money | Excess money |
| Average 01-07 | 3,8         | 5,9   | 2,1          |
| 2008          | -1,2        | 7,5   | 8,7          |
| 2009          | 0,2         | 2,8   | 2,6          |

| <b>World</b>  |             |       |              |
|---------------|-------------|-------|--------------|
|               | Nominal GDP | Money | Excess money |
| Average 01-07 | 8,0         | 10,7  | 2,7          |
| 2008          | 2,2         | 11,1  | 8,9          |
| 2009          | 4,5         | 10,1  | 5,6          |

*Table 2: Global indicator of excess money – G-3 versus BRICs*

In 2009, the growth of excess liquidity in BRICs was nearly four times as high as in the G-3 economies whereas it was only nearly two times as high on average in the years 2001 to 2007 and almost corresponded with the very high growth of excess liquidity in the G-3 in 2008. However, one caveat in this context might be that the renminbi is not yet fully convertible and, hence, the spillover of excess liquidity in China into global financial markets may perhaps be limited.

In Figures 6 and 7, we plot the supply of and the demand for excess liquidity for the G-11.<sup>32</sup> For the former we use a liquidity indicator, i.e. the index of global liquidity (again based on broad money aggregates) divided by index of nominal GDP. We approximate the latter with the Chicago Board Options Exchange Volatility Index (VIX), a popular measure of the implied volatility of S&P 500 index options. A high value corresponds to a more volatile market and therefore more costly options, which can be used to defray risk from this volatility by selling options. It is often referred to as the fear index. Remarkably, in 2009 an excess supply of global liquidity over liquidity demand seems to emerge for the G-11 countries, i.e. even when the BRICs are excluded.

<sup>32</sup> See A. Belke, W. Orth, and R. Setzer, op. cit., 11.

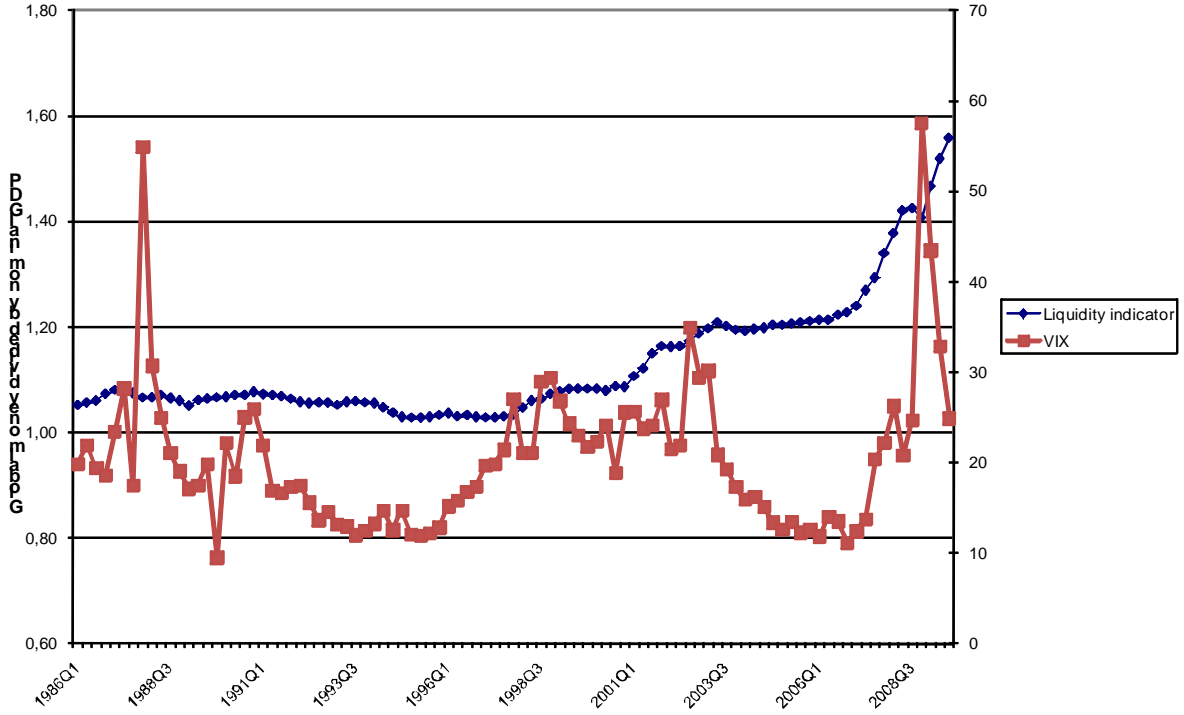


Figure 6: Global liquidity and global uncertainty I

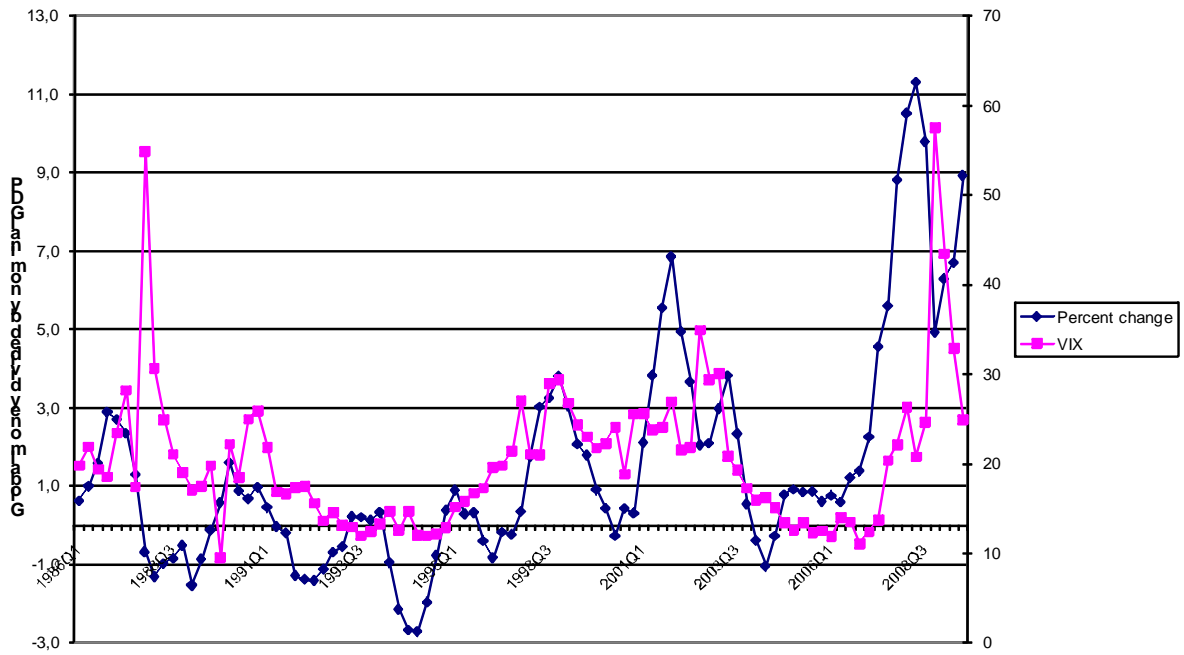


Figure 7: Global liquidity and global uncertainty II

But, as stated earlier, the need for coordination also arises because the new emerging economies, in general, are excess savers either because they are oil exporters or they are subsumed under the “China factor.”

### **Excess Savings**

Another challenge the next few years are likely to pose for policy makers is how to deal with a seemingly unstoppable ex ante savings surplus. Figure 8 below shows the data from the IMF for the global current account ‘imbalance,’ i.e. the simple sum of the current account balance of all countries. In theory, the sum of all current accounts should always be equal to zero. But in reality this has rarely been the case as Figure 8 shows. Ten years ago, the world used to run a current deficit with “outer space,” but over the last decade this was transformed into a surplus.

It is clear that for the past the (measured) global current account imbalance simply reflects measurement errors. But what is more interesting is that the IMF predicts that the global current account ‘imbalance’ will increase massively. The reason for this, apparently nonsensical, prediction is simple. The usual assumption in projections of international institutions is that of ‘unchanged policies.’ This is also the reason why they are called projections and not predictions. These data are meant to illustrate what is likely to happen if policy does not change. These projections thus contain a simple story: the current constellation of policy is not sustainable because it would lead to an ever increasing global savings surplus. Figure 8 also shows that the global current account ‘imbalance’ is tightly correlated with the current account surplus of the emerging and developing world.

It is clear that these projections of the IMF cannot materialize: the world cannot run an ever increasing current account surplus with “outer space.” Something will have to give. If the savings surplus of the developing countries (mainly China plus oil exporters) continues to grow, other regions will have to run corresponding deficits. But if no other region is willing and/or able to run large deficits, the developing world cannot run such large surpluses.

The present crisis was one very ‘efficient’ way to reduce the global savings surplus as can be seen from the chart which shows a sharp reduction in the global imbalance in 2008 and 2009. But how can the world economy recover without re-creating the imbalances that led to the crisis in the first place?

This is the key challenge facing policy makers today and also the reason why global policy coordination is indispensable. Without some coordination, the ex ante global savings surplus

might be reduced in the worst possible way, namely by means of a global economy that does not recover.

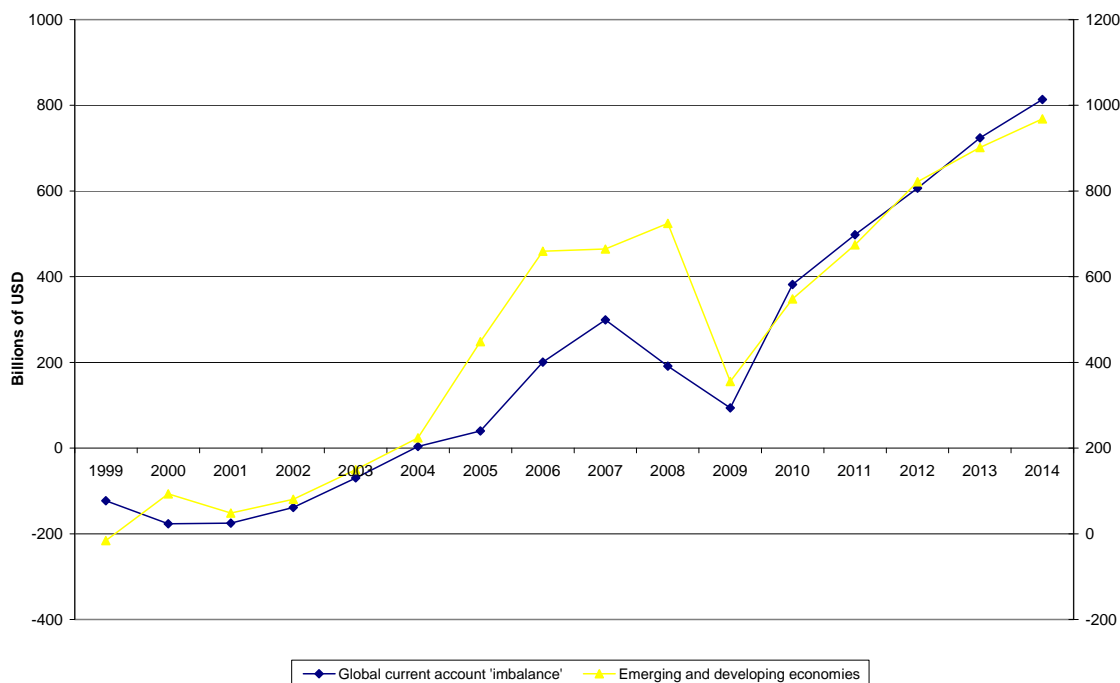


Figure 8: Global current account imbalance and the emerging and developing World

## Conclusions and Outlook

We argued that the global imbalances of the 2000s and the recent global financial crisis are intimately connected. Both originate in economic policies followed in a couple of countries in the 2000s and in distortions that influenced the transmission of these policies through US and ultimately through global financial markets. In the US, the interaction among the Fed's monetary stance, global real interest rates, distorted incentives in credit markets, and financial innovation created the toxic mix of conditions which made the US the epicenter of the global financial crisis. Exchange rate and other economic policies followed by emerging markets such as China and the oil-exporting countries contributed to the US ability to borrow cheaply abroad and thereby finance its unsustainable housing bubble. But at the same time, the lower real interest rates resulting from the rise in oil prices and the ever increasing Chinese savings surplus, in turn, have facilitated adjustment to the subprime crisis.

Especially now, a coordination of monetary policy is advisable as during the financial crisis, central banks flooded the markets with ample liquidity. Drying out this excess liquidity will be one major task for central banks worldwide as our analysis has shown that liquidity will

first show up in asset price inflation and finally end in consumer goods inflation. If the exit from this very expansive monetary policy is not coordinated, this might cause additional problems for the world economy.