Q-Review 3/2017

September 2017

The world economy on the brink

- Since 2008, the global economic expansion has been driven mainly by one country: China
- This is alarming as the economic growth in China lays on a labile ground.
- In addition to a massive global asset bubble, the unorthodox central bank policies have created a "zombie economy", where growing share of companies survive only through cheap credit.
- In the global asset markets, there seems to be no way to avoid a serious correction movement or crash. We provide an estimate for the timing of this crash.

We warned about the risk of a global asset crash in March (see Q-review 1/2017). Regardless of hastened global economic growth, the probability of this crash has increased ever since as the asset markets have marched higher in the wake of the unorthodox monetary policies by the central banks. In this report, we will show why the current recovery lies on unsustainable foundations and why we are closing into a massive downturn in the world economy, a global depression.

If only one figure can be used to describe the problems of the world economy, it would be Figure 1 (see the Appendix). It presents the development of total factor productivity (TFP) since 1995. Productivity, measuring the output per unit of input (capital and labor), is one of the key parts of economic growth.[1] It has grown rather constantly from 1995 till 2008 with one brief dip. After 2008, TFP has been in a constant decline with the exception of the year 2010. This is alarming because it implies that our ability to increase production without increasing inputs is declining. This is also something that should not happen in a growing economy,[2] and begs a question: have we really grown?

The world economy enjoyed an around 15-year period of growth before the financial crisis hit in 2008. The fall of the Soviet Union put in motion a fast global growth and many of the poorest economies gained the advanced ones. This was an era of growth and prosperity worldwide.

In 2008, everything changed. Global growth sputtered and global productivity started its decline (see Figures 1 and 2). Governments and central banks enacted massive stimulus measures to keep the global economy from falling into an outright depression. They succeeded, but at what price?

Currently, the bond and stock markets are levitating. This is a paradox in itself. High bond prices (low interest rates) are associated with recessions and high stock prices are associated with economic booms. Which one is correct? The answer is neither. The price of every single financial asset class is distorted because of the exceptional monetary policy measures (buying of

[1] The Conference board defines the total factor productivity that it "accounts for the changes in output not caused directly by changes in labor and capital inputs. It represents the effect of technological change, efficiency improvements, innovation, and our inability to measure the contribution of all other inputs. It is estimated as the residual by subtracting the sum of two-period average labor share weighted input growth rates from the output growth rate."

[2] Markups may also play a role in the decline of productivity. See: https://growthecon.com/blog/DE-Markups/.

financial assets and extremely low interest rates) launched by the global central banks. Thus, the current asset prices reflect more the availability of cheap credit and artificial liquidity than the economic fundaments.

Who has driven global growth?

As we explained in June (see Q-review 2/2017), the credit growth is an excellent indicator of the economic activity, as credit grows in tandem with the economy. After the crash in 2008, the private credit to GDP ratio started to decline in advanced economies. At the same time, the governments threw their weight to support the global economy through debt-stimulus (see Figure 3). This kept the global economy from falling off the cliff.

When the sources of the global credit creation and capital formation are analyzed more deeply, a troubling picture emerges. A single country has been responsible for both the growth of the private credit and the real capital formation since 2009. That country is China. Without it, the global private debt of the non-financial sector would not have grown since 2008 (see Figure 4) and the capital formation of major industrial countries would have returned to their 2008-level only at the end of 2015 (see Figure 5). To put it bluntly, and to simplify a bit: since 2008, the world economy would not have grown without China.

The trouble with China

Recently, we have discussed the challenges and the unsustainability of the economic expansion in China (see Q-review 1/2017 and Q-review 2/2017). The main problem is that debt share to GDP runs very high in China (see Figure 6). In addition, the latest reports put the size of non-bank financial, or the *shadow banking* sector of China to massive 37 trillion dollars.[3] The rapid increase in the assets of the shadow banks occurred during 2016, when China launched its major stimulus program (for some details of the program, see Q-review 1/2017). This more than doubles the level of private debt (around $23 trillion in the traditional banking system) in the Chinese economy, thus raising its GDP-share to more than 500 %. It is obvious that, by any standards, this is not sustainable.[4]

Where has all this money gone? The simple answer is: into a growing volume of unproductive investments. Figure 7 shows the current, preposterous level of fixed asset investments in China.[5] Last year, they totaled to over 80 % of the GDP. A reasonable figure for a fast-growing developing economy would be 20-40 %. It is obvious that the majority of these investments will not be profitable. This is shown in the diminishing productivity of China (see Q-review 2/2017). It also means that the majority of the loans used for the investments will never be paid back.

China has kept its economy afloat with draconian capital controls, stemming the deposit and asset flight out of the country,[6] government support and

[3] See: http://www.businessinsider.com/chinas-shadow-banking-sector-is-exploding-in-size-2017-8?r=US&IR=T&IR=T.

[4] To compare, the liabilities of the US shadow banking sector were around $21 trillion vs. around $12 trillion of liabilities in the traditional banking sector in 2008 (Pozsar, Adrian, Ashcraft and Boesky 2012). Thus, the share of total (traditional and shadow) banking liabilities to GDP was around 235 % in the US in 2008.

[5] Fixed asset investments are investments in physical capital, including real estate infrastructure and machinery.

[6] See, e.g.: http://www.scmp.com/news/china/money-wealth/article/2101975/china-maintain-tight-rein-capital-outflows-despite-gains.

excessive credit stimulus since the last year. In 2016, the government expenditures reached new heights (see Figure 8). In 2016 and during the first half of 2017, the aggregate financing of the economy has also been at record levels (see Figure 9). So, all talk about deleveraging seems to have been just that, talk.

The big question is what happens after the 19th National Congress of the Communist Party of China held in the middle of October. It seems evident that the Chinese authorities will do their utmost to prevent any major shocks hitting the economy before that. China also has a 2020-plan, laid out in 2012, stating that China will double the size of its economy within ten years (2010 – 2020). However, achieving this seems unlikely. Chinese economic growth is extremely dependent on credit growth (which currently grows close to three times the rate of GDP) and the debt load is becoming too big to handle properly. Thus, the Chinese leaders may just choose to let the economy stabilize (crash) and try to control the aftermath of this crash. This option implies that they take their "foot of the gas" after the meeting in October. The implications of such a move for the global economy would be severe.

Whether the Chinese authorities decide to act in October or later this only changes the timing of the inevitable. Because of the massive levels of the debt and unproductive investments, the economy of China is heading to a crash.

Central banks, bubbles and zombies

The central banks pulled all the stops in their efforts to stop the deflation from emerging after the crisis of 2008. Their first "innovation" was the zero interest rate. Once this was not effective enough, the cbs' started the programs of *quantitative easing* (QE), in which they became active buyers in the government bond markets. The idea of QE was to lower the interest rates by buying government bonds and to increase the supply of money at the same time. Within the last two years, the central banks have expanded their unorthodox monetary policies by buying equities and other assets like the corporate bonds.

As we have argued many times, these measures are dangerous, because they hide the risk of financial assets from the markets (see Q-review 3/2013, Q-review 2/2014 and Q-review 2/2017). A recent study show that the QEs of the Federal Reserve (Fed) were "highly effective" on raising the equity markets across the globe.[7] When one adds the QE programs of other central banks to this result, one gets a massive global "liquidity-tsunami" that has distorted the prices and risks of the assets worldwide.

In the wake of the excess liquidity provided by the CB's, the combined balance sheet of four major central banks, The Peoples Bank of China (PBoC), The Bank of Japan (BoJ), The European Central Bank (ECB) and The Fed, swolled to 19 trillion dollars in July 2017 from around 6.5 trillion in 2007. The major central banks currently hold a fifth of their respective government debt. This expanding grip of the central banks on the asset universe has led to a situation, where we arguably live under fictitious markets. Because of the manipulated capital markets, capital has also been vastly misallocated worldwide. Anyone can infer what will happen to the asset prices when this liquidity is drawn out.

Some central banks now consider of doing just that. The announcement by the Fed to start the *quantitative tightening*, or QT, is expected in its next meeting. In QT, a central bank either sells the assets it is holding to secondary markets or does not roll-over them by buying new bonds when they are matured. Whether this threat carries the day or not, remains to be seen, but if the Fed really goes

[7] See: Fratzscehr, Lo Duca and Straub (2017).

through with it, a major pullback of equities will be almost guaranteed (granting that other major central banks will not increase their purchases to cover the diminishing liquidity on the part of the Fed).

However, the ECB has even bigger problems. It is closing the current limits (33% of issuer's outstanding securities) of its QE program. Currently, the ECB holds around 21 % of the European government debt universe. Recently, it seems to have gotten more difficult for the ECB to buy the bonds of some euro-countries, because they are also, e.g., held as collateral in the banking system. The program has also been challenged in constitutional court in Germany. The constitutional court handed the decision to the European Court of Justice (ECJ). Although it is unlikely that the ECJ rules against the QE -program, the ECB may be closing the technical and political limits of its monetary easing.

By the 8th of September 2017, the ECB had used staggering 2 186 billion euro to buy different assets.[8] From this, its public-sector purchase program, consisting on euro area government bonds, accounts for 1 720 billion. ECB's biggest problem is how to exit from the program. If it stops the purchases, the first domestic or international shock hitting, for example, Italy or other high-debt countries would send their sovereign yields rocketing and bring back the euro-crisis with vengeance. This can be avoided only if someone else takes the charge of a vast chunk of their debt. In practice, this can only be achieved through some sorts of Euro-bonds. That is, some part of the debt of the highly indebted countries needs to be mutually guaranteed by the governments of the Eurozone. The problem is that the Article 125 of Treaty of the Functioning of the European Union, TFEU, bans mutual fiscal responsibility. However, European leaders have been very crafty in twisting and bending the rules of the TFEU in the past. So, they can even manage to out-maneuver the Articles banning the creation of Euro-bonds. Still, anything short of shared mutual responsibility of a large share of the sovereign debt of the euro area will lead to resurfaced break-up risks whenever the ECB stops its QE -program.

The "unorthodox" monetary policies of the central banks have also created another somewhat under-reported problem. A recent study by the OECD documented the share of the so called zombie firms in the advanced economies (see also Q-review 2/2013).[9] Authors defined zombie firms as "old firms that have persistent problems meeting their interest payments". Figure 10 shows the steep rise in the number of zombie companies since 2008, which was the same year when CBs started their extraordinary monetary policy measures. Notably, the labor productivity falled at the same time. Historical evidence from Japan tells a similar story.[10] When ailing firms are provided with cheap credit, this depresses the job creation and hinders productivity growth.

The central banks have thus effectively created a "zombie economy", where unprofitable firms have been kept alive with cheap credit, and asset prices have been inflated by the massive asset buying programs. These programs have boosted the asset values to preposterous and artificial levels, which has effectively wiped out the natural market liquidity at the same time as no investor wants to hold an asset whose value is artificially inflated. So, when prices start to fall and the majority of investors want to sell their holdings, there may be no buyers (except maybe the central bank). This will cause the investors to stampede towards the "exists" leading to a fire sale covering, basically, the whole financial asset universe. Central banks cannot, for practical and technical reasons, own the

[8] https://www.ecb.europa.eu/press/pr/wfs/2017/html/ecb.fs170912.en.html.

[9] See McGowan, Andrews and Millot (2017).

[10] See Caballero, Hoshi and Kashyap (2008).

whole capital market, thus they may be unable to stem the panic. The market-wide crash will be followed by a flood of the bankruptcies of unprofitable firms, and by a global depression.

Forecasts

We estimate that the likelihood of a serious correction or crash in the asset markets is 80 % for the next twelve months. It is our view that, if the Fed starts its QT before the year end and the leaders of China stop or seriously cut back their stimulus programs after the Meeting of Communist Party in October, a major global correction will commence between Q4 2017 and Q2 2018.

The major correction in the asset markets would, arguably, lead to a reinvigoration and/or an increase in the asset purchase programs, at least by BoJ and the Swiss National Bank (SNB). However, it is unknown whether the central banks are able to stop the fall in the global asset markets. They cannot buy the whole capital market, as mentioned above, and the algorithm trade, estimated to account over 50% of the volume in the US exchanges, may decide that selling and shorting the market is the most profitable option. Algos act so fast that only thing stopping them would be circuit breakers.

Any major drop in indexes is likely to be accelerated by increasingly popular ETFs (Exchange Traded Funds) which accounts roughly 25% of the volume in the US exchanges. All the passive money the retail investors have poured in the ETF's has contributed to moving the underlying assets even higher regardless of the fundamentals or valuations, which in a downward market works the other way round, amplifying the fluctuations. In theory, an ETF is liquid and can always be sold. However, in practice, an ETF cannot be more liquid than the underlying asset and in crises, the assets may become very illiquid. What happens when masses decide to sell the ETF's on illiquid markets remains to be seen.

Should the CBs fail to contain the fall in assets markets, correction will morph into a global asset crash, and it will be unstoppable. It will also lead to a new global banking crisis.

We estimate that the likelihood of a global financial crisis is 70 % for the next twelve months. We evaluate the likelihood that a global financial crisis would morph into a systemic crisis is currently 25 % for the same period of time.

In Table 1 we present the *nowcasts* and the growth forecasts for the real GDP of Eurozone, Finland, and the United States under a consensus scenario.

Table 1. *Nowcasts* (nc) and forecasts for the growth rate of real GDP in the US, Eurozone and Finland under consensus scenario. Source: OECD, Bureau of Statistics and GnS Economics.

Quarter	Finland	Eurozone	USA
2017:1	1.17	0.55	0.31
2017:2	0.36	0.63	0.75
2017:3 (nc)	0.87	0.67	0.79
2017:4	0.75	0.32	0.49
2017	3.1	2.2	2.3
2018	-0.2	0.1	1.2
2019	-0.1	0.4	1.4

Forecasts presented in Table 1 show a downturn approaching. Although this year will be marked by a fast growth, next year will see global slowdown, according to our forecasts.

What would growth figures look like, if stock markets would crash in Q4 this year leading to a new financial crisis? In Table 2 we present the growth forecast under a scenario where global financial crisis starts in first quarter of next year. Under the crisis scenario, the economies of Eurozone, the US and Finland would still achieve decent growth this year. However, next year would see a rapid decline in the GDP. The economy of Finland would diminish by more than 10 percent, while the Eurozone GDP would diminish by more than 6 percent and that of the US by more than 4 percent.

Table 2. *Nowcasts* (nc) and forecasts for the growth rate of real GDP in the US, Eurozone and Finland under a crisis scenario. Source: OECD, Bureau of Statistics and GnS Economics.

Quarter	Finland	Eurozone	USA
2017:1	1.17	0.55	0.31
2017:2	0.36	0.63	0.75
2017:3 (nc)	0.87	0.67	0.79
2017:4	-0.15	-0.4	-0.25
2017	2.2	1.5	1.6
2018	-10.7	-6.3	-4.3
2019	-7.9	-3.6	-1.6

Any current growth forecast includes an exceptional amount of uncertainty as we have warned since March (see Q-review 1/2017). Growth could be faster next year than what is presented in Table 1 or GDP could also fall more than what is presented in Table 2. Growth outcomes are heavily dependent on central authorities unprecedented (if any left) actions to keep up the global bubble.

Conclusion

The current boom has been achieved through unsustainable credit stimulus in China and massive (tsunami-like) asset purchase programs by the central banks. These all but guarantee a massive correction ahead. This late-cycle boom is a mirage, and the longer it lasts, the deeper the hole at the end of it will grow.

The situation in the asset markets, and thus in the world economy, looks good, but it is only good until it suddenly is not. The artificially propped asset markets can turn a corner extremely fast. When the correction in the asset markets commences, it will likely be swift and brutal. If the cbs' are unable to stop it, the asset markets will crash thus starting a global depression.

The trigger for the correction can be almost anything. We have presented a scenario, where we think that the correction is inevitable: the removal of the stimulus of both Fed and China during the latter part of the year. Other possible triggers include a war breaking out, e.g., in the Korean Peninsula, the government shutdown in the US, ECJ ruling against ECB's QE-program forcing it immediate shutdown or deepening political crisis in EU, most notably in Italy. Withdrawal of the central bank liquidity, which many central bankers now plan, would also have a major effect in the markets. It should also be acknowledged that sometimes markets just crash without any distinct trigger.

If the inflection point does not occur between Q4 2017 – Q2 2018, it just means that policy makers have decided, and been able, to kick the can a bit further. Regardless of that, there will be no escaping of what is to come. The manipulated and debt-fuelled world economy is on the brink and all that is needed for it to fall is a push.

Appendix I: Figures

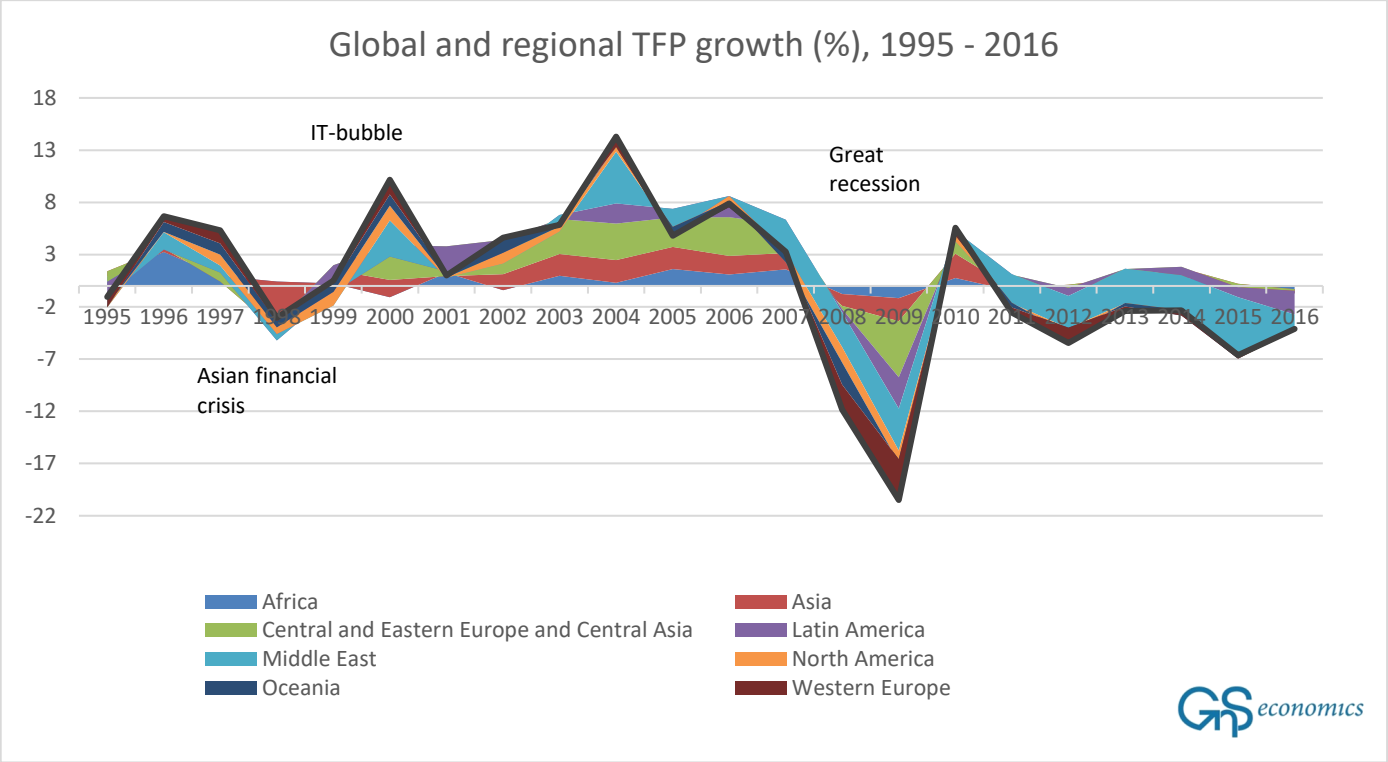

Figure 1. Global (back line) and regional growth of total factor productivity (%) from 1995 to 2016. Source: GnS Economics, The Conference Board

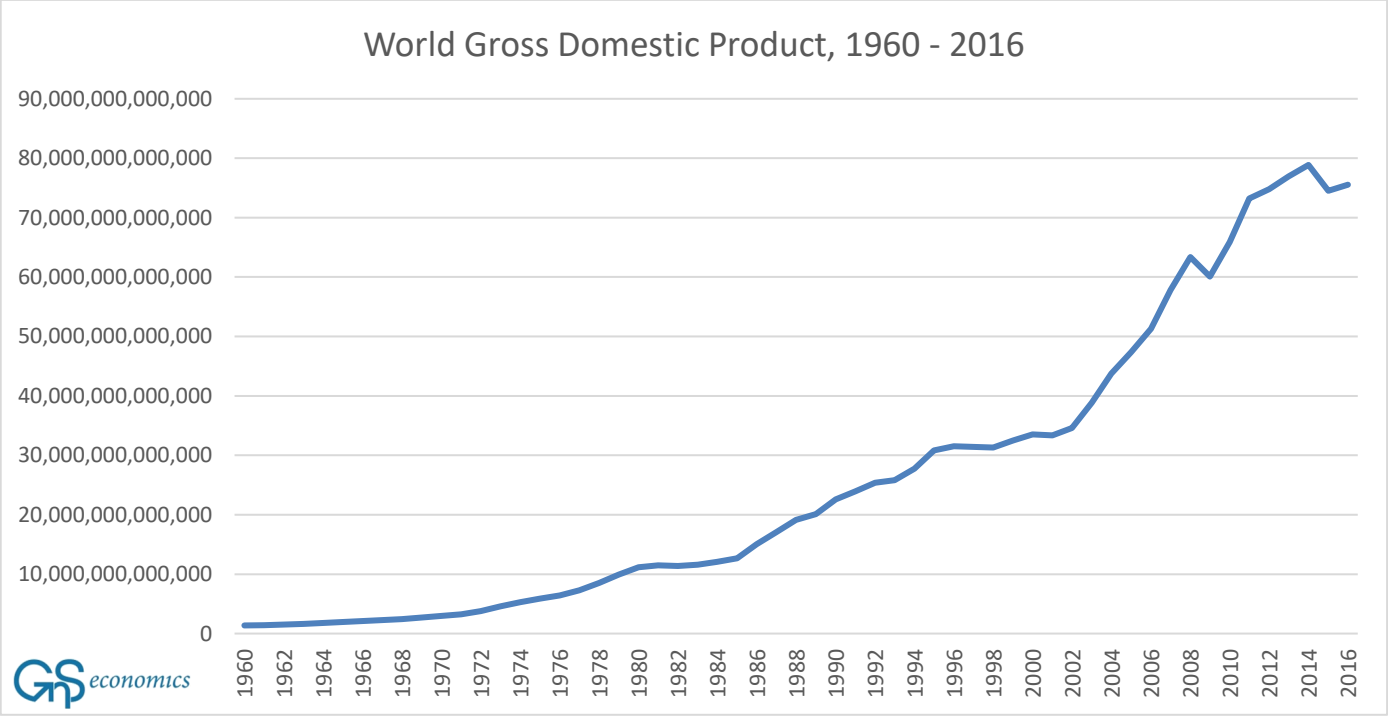

Figure 2. World gross domestic product in current US dollars. Source: World Bank.

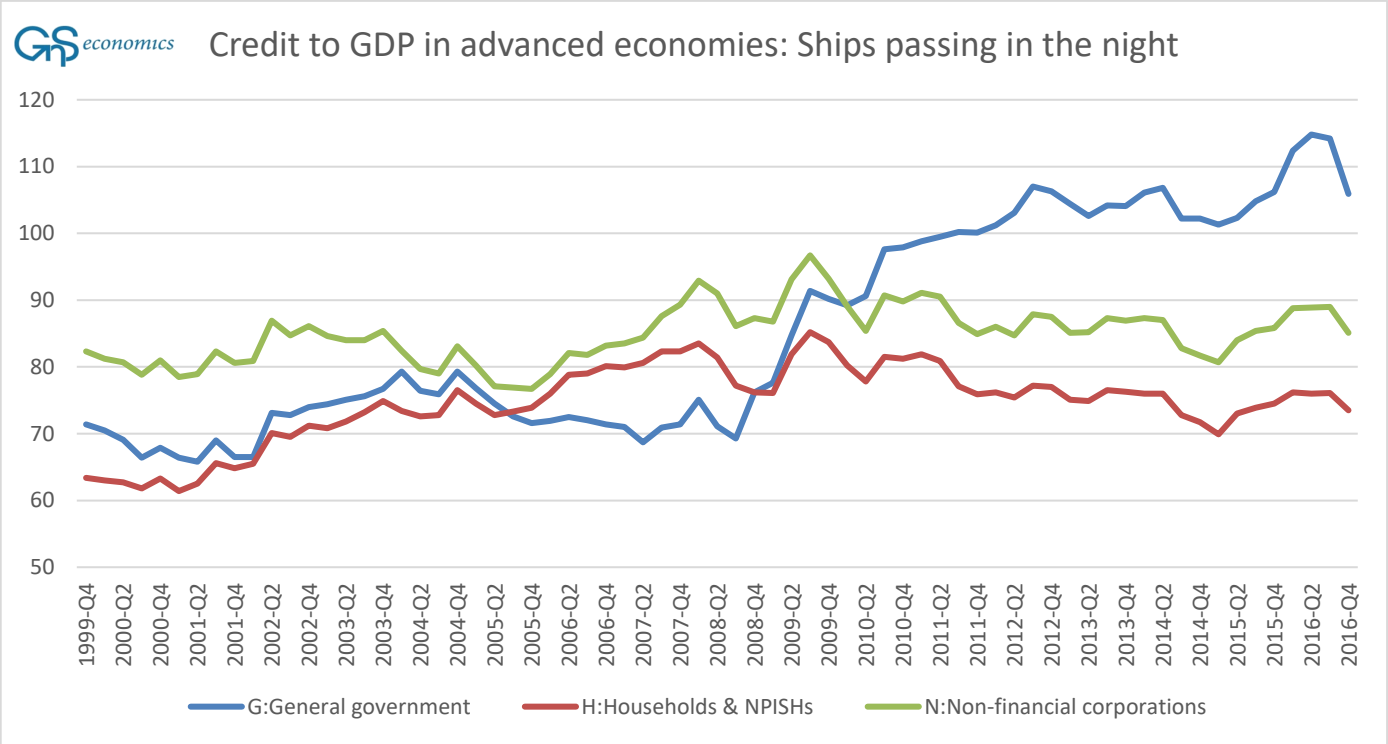

Figure 3. Total credit, measured as bank loans, debt securities and deposits & currency in advanced economies. Source: GnS Economics and BIS

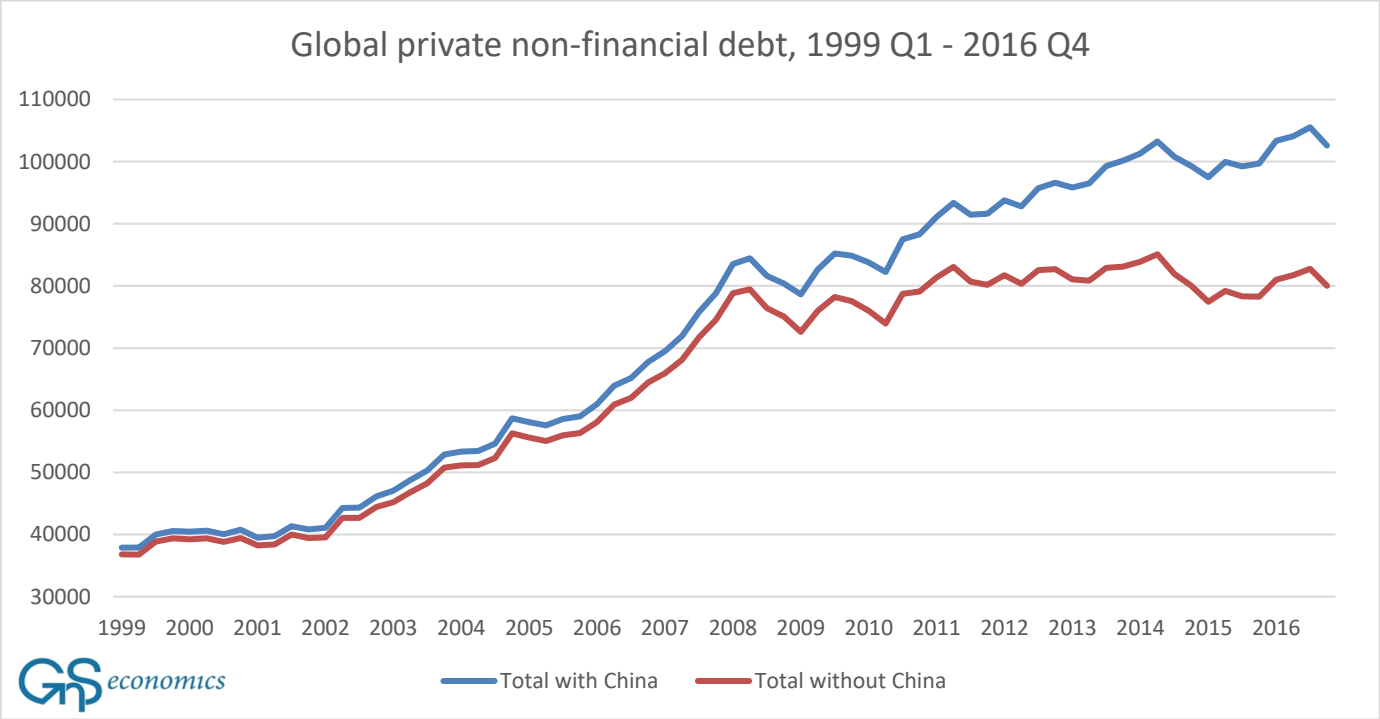

Figure 4. Non-financial debt of the private sector in 44 major countries. In billions US dollars. Sources: GnS Economics, BIS.

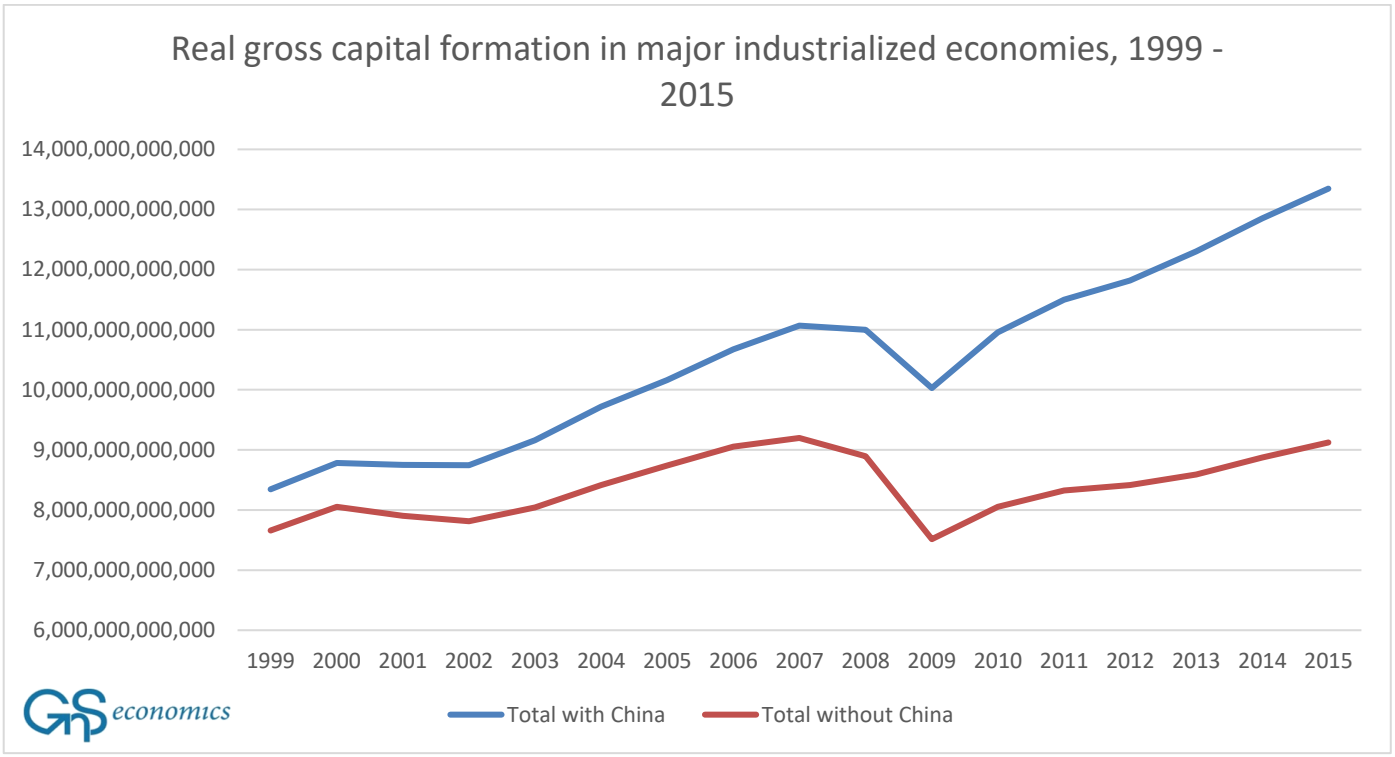

Figure 5. Gross capital formation in Australia, Canada, China, euro area, Japan, South Korea, the United Kingdom and the United States in constant (2010) US dollars. Sources: GnS Economics, World Bank

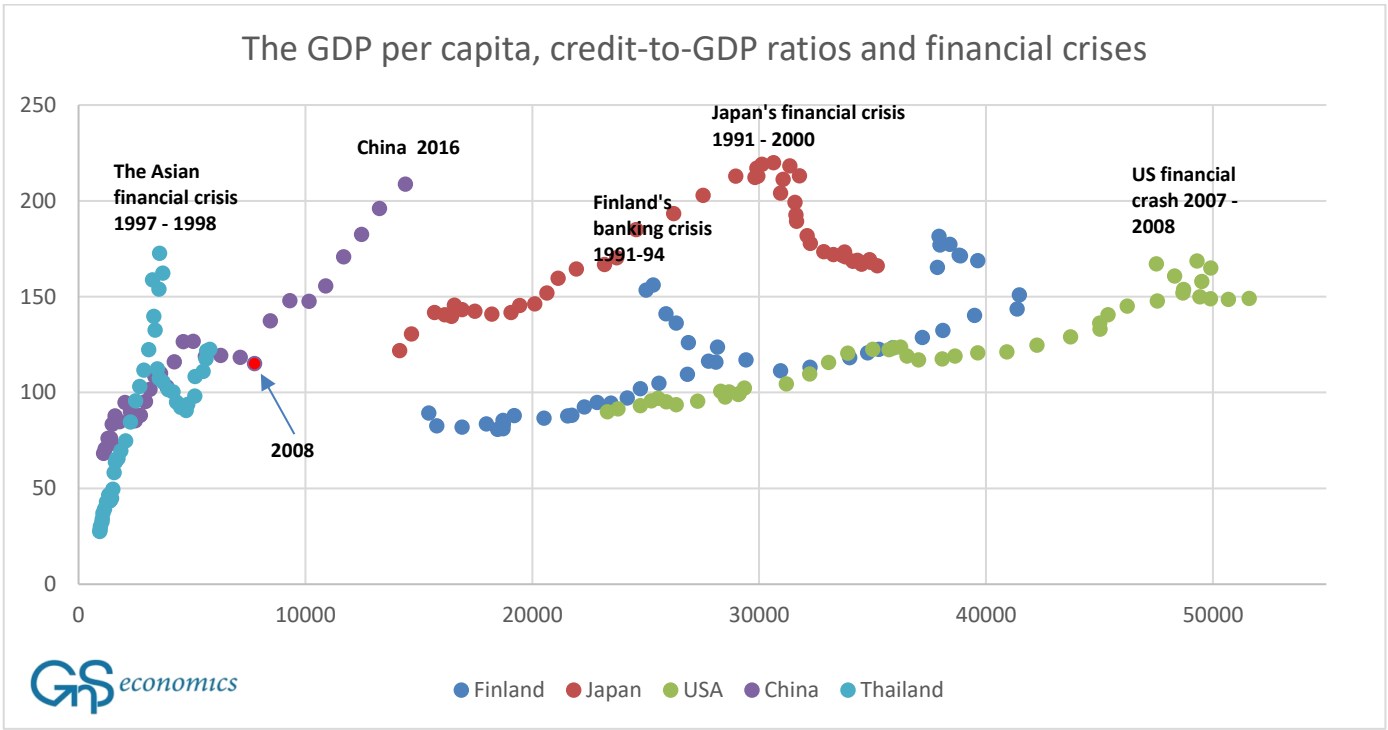

Figure 6. The GDP per capita (horizontal), credit-to-GDP ratios for non-financial private sector (vertical) and financial crises. Sources: GnS Economics, BIS, World Bank

Figure 7. Investments actually completed in fixed assets as a share of GDP (%) in China. Source: GnS Economics, NBS of China

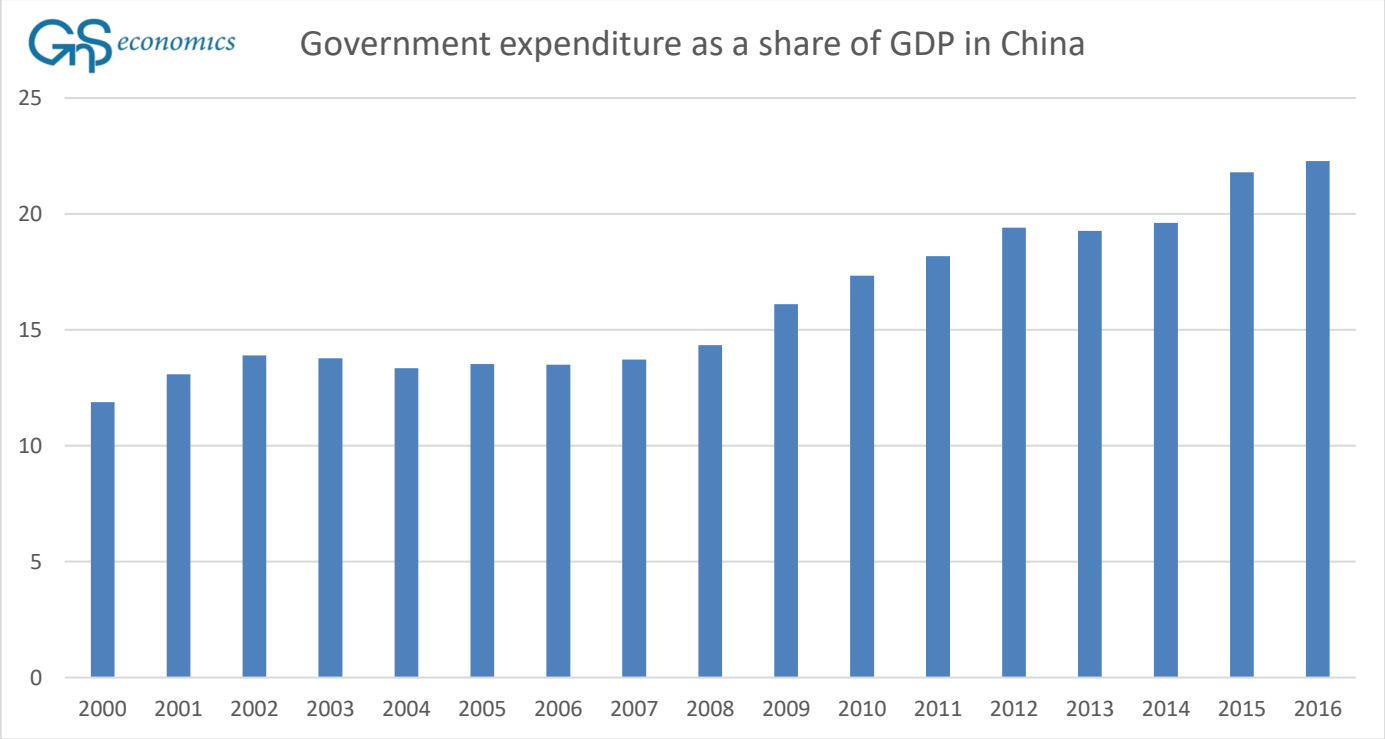

Figure 8. Accumulated government expenditure in November as a share of annual GDP. Source: GnS Economics, NBS of China

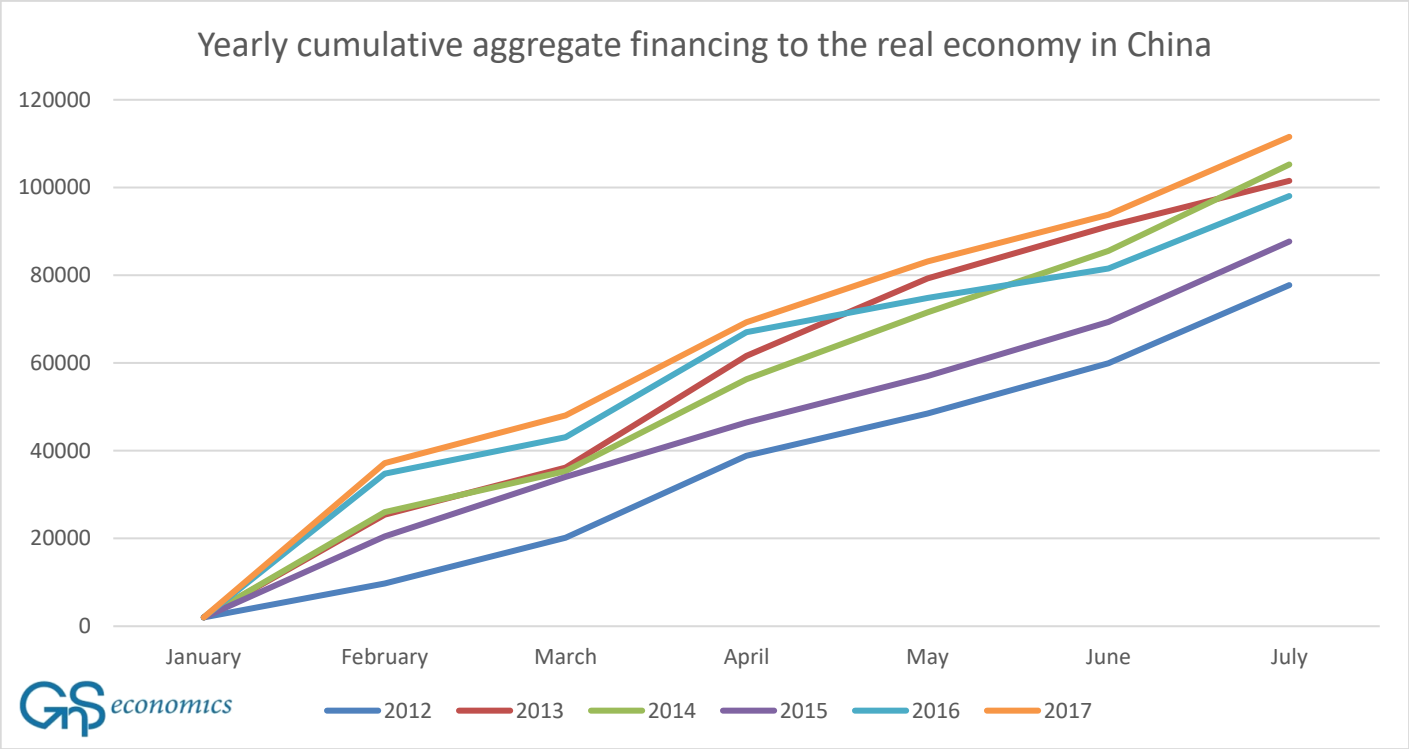

Figure 9. Yearly cumulative aggregate financing to the real economy (flow) in China. Source: GnS Economics, PBoC

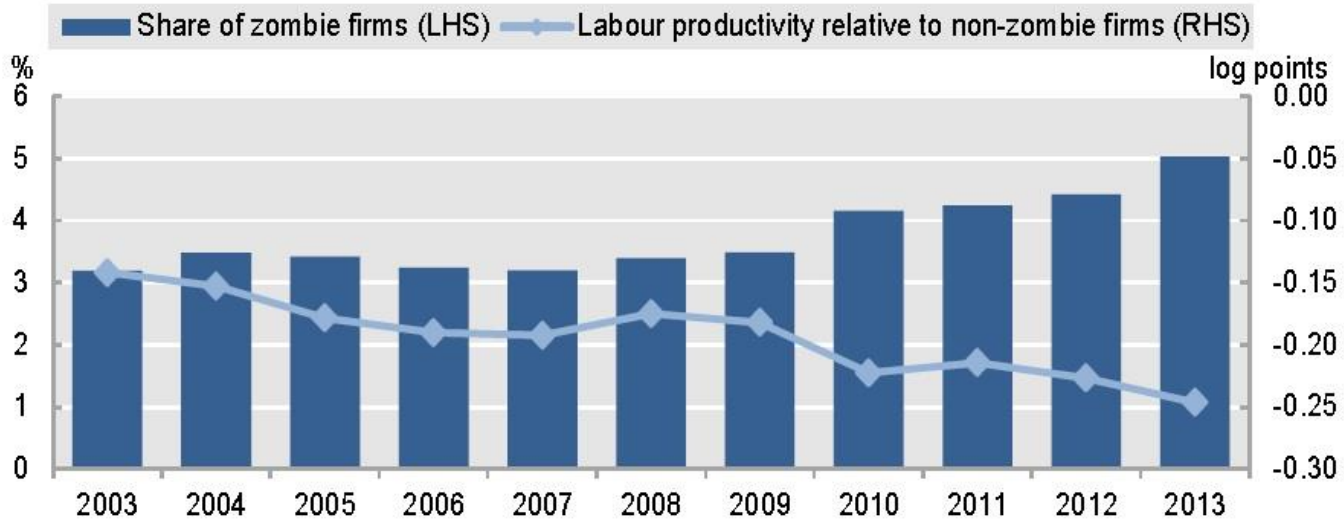

Figure 10. The share of zombie firms and labor productivity. Average over 8 OECD countries. Source: Caballero, Hoski and Kashyap (2017).

REFERENCES:

Caballero, R.J., T. Hoski and A.K. Kashyap (2008). Zombie lending and depressed restructuring in Japan. *American Economic Review*, 98(5): 1943 – 1977. Available at: http://economics.mit.edu/files/3770.

Fratzscher, M., M. Lo Duca and R. Straub (2017). On the international spillovers of US quantitative easing. *The Economic Journal* (forthcoming). Earlier version available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2164261.

McGowan, M.A., D. Andrews and V. Millot (2017). The walking dead? Zombie firms and productivity performance in OECD countries. Economics Department working papers no. 1372. Available at: https://www.oecd.org/eco/The-Walking-Dead-Zombie-Firms-and-Productivity-Performance-in-OECD-Countries.pdf.

Pozsar, Z., T. Adrian, A. Ashcraft and H. Boesky (2012). FRBNY Staff Report no. 458. Available at: https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr458.pdf.

Process descriptions

The forecasts reported in this Q-review are based on the statistical modeling methods from the most recent academic research on predicting business cycle fluctuations. Nowcasts refer to the forecasts of the growth rates of the real Gross Domestic Product (GDP) for the current quarter. Nowcasts are needed because the standard measures for the GDP are published after a considerable lag and are typically subject to subsequent revisions, indicating that the coincident state of the economy is always uncertain. Our nowcasts for the current quarter are based on statistical models where all relevant information available at the time of nowcasting is utilized.

The GDP forecasts for longer horizons (over the current quarter) are based on the dynamic forecasting models where forecasts are constructed iteratively. This means, for example, that the three-quarter forecast is essentially based on the two-quarter forecasts and so on. Forecasts are constructed for all three economic areas (the Eurozone, Finland and the US) indicating that they depend on each other. Finally, note that the forecast scenarios considered in this Q-review are based on the expert view of GnS Economics.

The next Q-review will be published in December 2017.

Contact information:

Tuomas Malinen, PhD
CEO

tel: +358 40 196 3909
email: tuomas.malinen@gnseconomics.com
www.gnseconomics.com