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Ten years after

The long reach of the financial crisis

Ten years have now passed since the peak of the financial crisis. The global economy had ten years to "get back on its feet." Should we not now finally relegate the financial crisis to the history books and return to business as usual when observing the economy? I do not think so. In fact, I believe we cannot yet correctly assess the long-term consequences of the financial crisis. For that reason, my objective in this paper is to analyze where the aftershocks of the financial crisis are still being felt today - and in my view will continue to be felt for a very long time. This assertion is based on the answers to the following three questions:

- What are the ramifications of the financial crisis for the business cycle and growth?
- What impact has the central banks' bailout policy had on debt - the primary catalyst of the financial crisis - in the economy as a whole?
- What are the long-term economic-policy and geopolitical ramifications of the financial crisis?

While I believe that the (long-term) consequences of the financial crisis are – if anything – still being underestimated rather than overestimated, we should, nevertheless, guard against attempting to explain all current phenomena solely in terms of the financial crisis. The world is seldom mono-causal, and even the financial crisis is not a singular event to be observed in isolation from other developments: Ultimately, the financial crisis is in turn part of a bigger story.

What is the logical consequence of this? What are the implications for capital markets? What should investors expect? My analysis shows that when assessing the current situation the consequences are by no means exclusively negative. It suggests, for example, that it is precisely because of the financial crisis that the current economic upturn has lasted as long as it has.

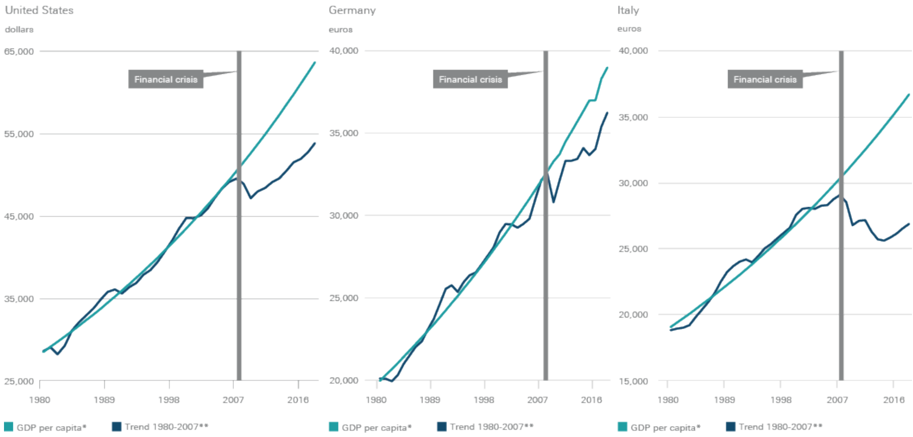
Business cycle and growth: Humming along – but weakened on a sustained basis

Economists differentiate between the business cycle and growth. By (true) growth they understand the long-term development of potential output. They define the business cycle as the short-term fluctuations of actual production around the long-term potential path.

In a nutshell

- Even ten years after the financial crisis, its aftershocks are still being felt in many ways.
- The business cycle is currently humming, precisely because the economic downturn had been so deep.
- Structurally, there are however strong headwinds:
- On the one hand, years of high unemployment and neglected investments are crimping productivity growth.
- On the other hand, the still high levels of global debt remain a drag on the future.
- Furthermore, above all the political aftershocks of the financial crisis (populism and protectionism) are likely preoccupy us for a very long time.

Real growth vs. pre-crisis trend: United States, Germany and Italy



Sources: International Monetary Fund, Haver Analytics Inc., Deutsche Asset Management Investment GmbH as of 06/2018
* In constant prices
** Trend growth based on data from 1980 to 2007

During the financial crisis, the economic downturn was substantially deeper than initially thought and, moreover, also left behind deep structural stress marks. In terms of the business cycle, virtually all industrialized countries are now back on firmer ground. The huge output gaps[1] that had emerged in the wake of the financial crisis have now more or less closed again; unemployment rates are normalizing, and some regions have even achieved full employment again; deflation concerns are extensively a thing of the past. In the United States, the upswing is entering its tenth year and is, therefore, lasting twice as long as average boom phases since the end of World War II. That this upswing has lasted so long and is still ongoing is, however, due to the depth of the preceding economic downturn and the weakness of the recovery.[2] While annual gross-domestic-product (GDP) growth in a normal recovery phase averages just over 4%, in the current upswing it is - at roughly 2% - almost half lower. Viewed in these terms, it is no wonder that this recovery has persisted for so long. For the same reason, we also assume that this recovery phase can last even longer. Even though the output gaps have already closed in some places, in most industrialized countries we are still far removed from signs of true overheating. This proposition is, for example, supported by the fact that in the United States, employment is still on the rise even though the unemployment rate has been indicating full employment for some time now. This could suggest that the full growth potential has not yet been completely exhausted.

Today, the growth potential, i.e. the long-term growth rate of an economy on normal utilization of production capacities, in the industrialized countries is below the level seen before the financial crisis. The long-term growth path was also impacted by the financial crisis. Potential output is determined primarily by three factors: demographics, labor-market participation, and above all productivity growth. While the impact of the financial crisis on demographics is likely to be small and only manifesting itself in

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[1] The output gap is defined as the difference between actual output and potential output of an economy.

[2] That recoveries after serious financial crises are slower and last longer has been discussed in depth in the academic literature, e.g. Reinhart, C.M. and Rogoff, K.S.: This Time is Different (2009).

economic terms many years from now, the consequences of the two other cited components are being felt clearly and directly.

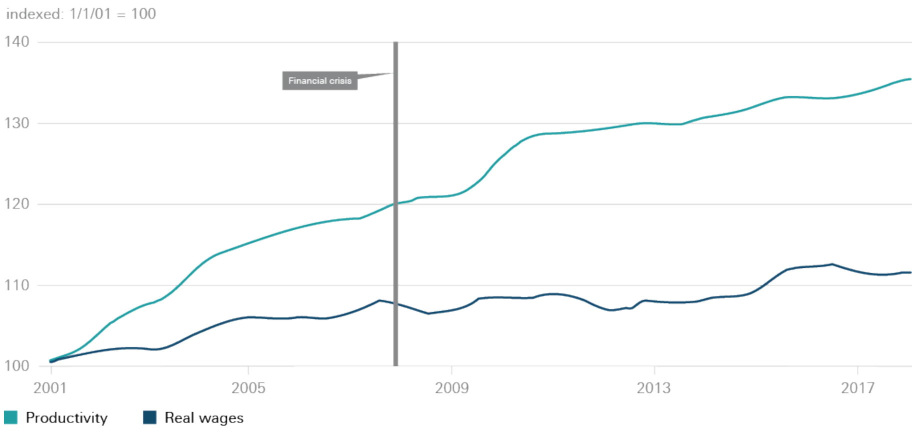
As a result of the long period of unemployment, many workers have lost part of their qualifications or have failed to obtain skills in the first place ("loss of skills"). If we assume an average working life does not exceed forty years, then many workers have "wasted" more than one quarter of their working life in a recession. This is particularly harsh for young people who were not able to live out - or even fully develop - their potential during their young years. Academic studies suggest that workers who start their first job during a recession earn less over the course of their entire working life than those who entered the workforce during a boom. For that reason it is also not surprising that many workers quit the workforce and joined the hidden labor force [3].

The loss of skills resulting from long unemployment is, however, reflected not only in a lower labor-force participation rate, which in the United States is already in a long-term downtrend because of the demographic development, but also in lower growth of productivity, i.e. hourly output per employee. Despite all the dire predictions of the apologists of digitalization, productivity growth in most industrialized countries has been extremely weak for years, and it weakened even further during the financial crisis. In part, this is however a statistical artifact: If in the crisis production falls more rapidly than companies downsize their workforce, then it is only natural that measured productivity declines during the crisis. For that reason we can assume that productivity will increase again , since output can be ramped up again because of the good demand situation without companies having to (re-)hire new personnel to the same extent. This applies particularly during a crisis as most companies attempt to let go of their least productive employees first.

But beyond this base effect, productivity has suffered in the aftermath of the multi-year economic downturn because numerous investments in industrialized countries were shelved during the financial crisis because of underutilized capacities. Since financial recessions, i.e. those triggered by financial crises, typically last long , the "investment backlog" in this case is also particularly large, and the outdated capital stock as a result creates an additional drag on productivity.

[3] The hidden labor force describes people of working age who would like to work but who are not actively seeking employment or have not even registered as looking for work. For that reason they do not appear in the usual unemployment statistics.

United States: Productivity and real wages

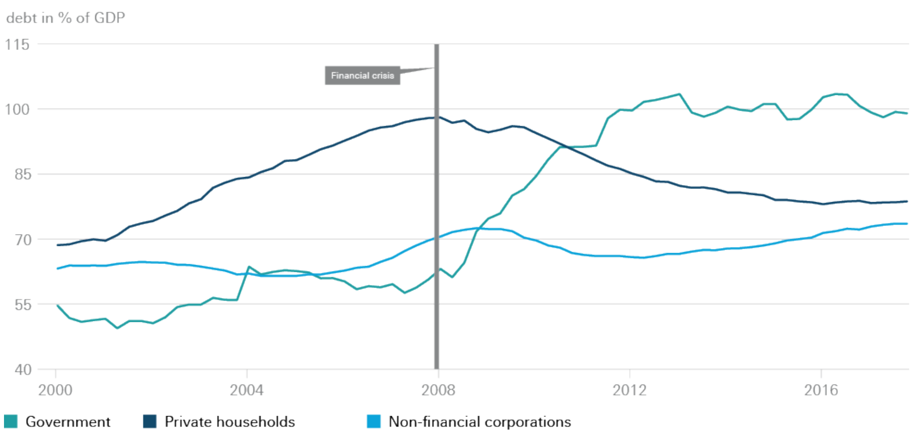


Sources: Haver Analytics Inc., Bureau of Labor Statistics, Deutsche Asset Management Investment GmbH as of 06/2018

Financial cycle: Debt migrating, but not disappearing...

Another reason why recoveries are particularly drawn-out affairs after financial crises is that banks, companies and households need time to get their finances back in order (buzzword: deleveraging). In the interim, banks in industrialized countries have substantially reduced their risks, equity capital has been strengthened, oversight tightened, and the banking union in the Eurozone is well advanced. So far so good. But based on data published by the Bank for International Settlements (BIS), it is clear that a great deal still has to be accomplished. In both industrialized countries and the emerging markets (EM), debt in the economy as a whole (government, corporate, and household) has not declined. On the contrary, debt as a percentage of GDP has even increased. This holds true above all for government debt, since governments intervened to offset the fall-off in demand from the private sector. This has functioned relatively well particularly in the United States, where an expansive fiscal policy was flanked by an accommodating monetary policy.

Debt structure in the United States



Sources: Bank for International Settlements, Deutsche Asset Management Investment GmbH as of 06/2018

In the Eurozone, however, such a policy quickly reached its institutional limits. In addition, the way in which the shock impacted the Eurozone was - in a certain sense - particularly asymmetrical. For numerous countries, such as Spain, Portugal and also Ireland, the introduction of the euro meant a massive cut in real interest rates. In the run-up to the financial crisis, this resulted in the domestic economy overheating – above all through excessive construction activity. There was no such real-interest-rate shock in countries like France and Germany. When the financial crisis hit, these countries did not, therefore, have to deal with such a strong contraction emanating from the construction industry. Germany, on the other hand, was more strongly exposed to the global economic downturn because of its pronounced focus on exports. The automatic stabilizers, which in other currency areas help offset the impact between the variously affected regions, are extensively lacking in the Eurozone. As a result, some Eurozone countries were forced to adopt fiscal adjustment measures ("austerity"), which initially exacerbated the crisis even further, turning it into a euro and sovereign-debt crisis.

The central banks attempted, to the best of their ability, to flank the measures adopted by the individual countries with an expansive monetary policy. While this was, by and large, very successful in the United States and the UK, the European Central Bank's (ECB's) hands were initially tied. Ultimately, however, it was only the decisive action taken by the ECB that contained the crisis in the Eurozone. Around the globe, central banks have expanded their monetary-policy toolkit and also made full use of these new instruments. The central banks have, for example, not only effectively lowered interest rates to zero (or even into negative territory) and left them there over extraordinarily long periods of time, but also drastically lowered long-term interest rates though forward guidance[4] and above all massive sovereign-bond purchases.

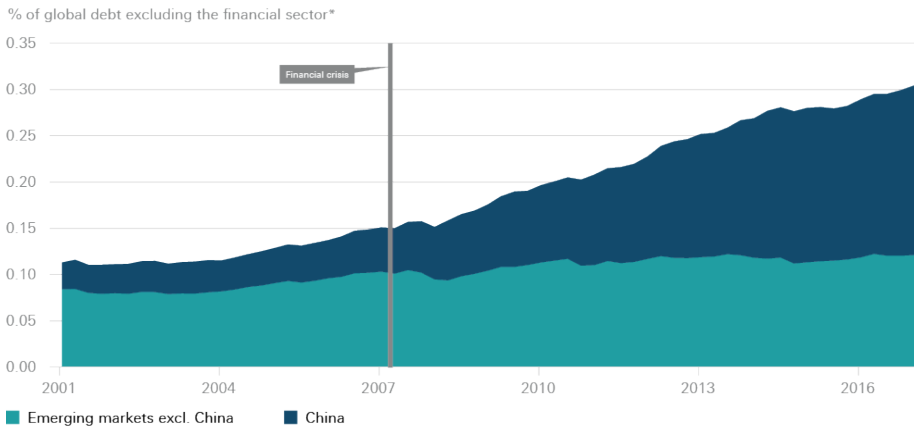
The extremely low (long-term) interest rates did, however, reduce the incentives to consolidate further. That is the reason why - now that this monetary-policy experiment is drawing to a close - the global mountain of debt (as a percentage of GDP) has not declined but increased. The debt has not declined, only the creditors have changed. Some trends can be discerned here. The private sector (banks, households, companies) has for the most part reduced its debt load. The corollary is an increase – in some cases dramatic - in sovereign debt in most countries. And since interest rates remain very low, bonds markets exercise relatively little discipline, as the example of the United States demonstrates. Now that the banks have cleaned up and above all shortened their balance sheets, corporates are deeper in debt with households via the capital market – either directly or indirectly via institutional investors, acting as financial intermediaries (insurance companies, pension funds, etc.) and (in turn) investing the money for households.

There has also been a further important shift: Debt is migrating (at least in relative terms) from industrialized to emerging-market countries, first and foremost China. While at the turn of the millennium the emerging markets still accounted for roughly 11%

[4]Forward guidance is the communication policy of the central banks to provide market participants with clarity on the longer-term direction of monetary policy.

of global debt[5], according to the BIS , this figure has risen to roughly 30% in the interim, with China alone accounting for roughly 18%. Although China was not impacted directly by the financial crisis, the crisis did threaten to impact the Chinese economy via exports. For that reason, the Chinese government counter-steered with a very expansive fiscal policy. While this was successful in large part, this policy did have a massive impact on the debt situation. In a figurative sense, the West has thereby "exported" a part of its indebtedness to the emerging markets, namely China.

Emerging markets' share of global total debt



Sources: Bank for International Settlements, Deutsche Asset Management Investment GmbH as of 06/2018
* Government, private households and non-financial corporations

Geopolitical aftershocks: Still very much underway

The most difficult aspect to grasp is the downstream tectonic shifts that are emerging as a result of the financial crisis. The frustration over the "failure of the elites" is triggering reactions such as Brexit or the election of Donald Trump. Not only financial experts were disavowed because of their inability to predict the crisis; expertise as such was quasi discredited by contamination. In part, this also explains why many generally refuse to listen to experts or other elites any more, and why "fake news" and conspiracy theories are attracting so many followers.

In a fascinating presentation at the 2016 "Zeitgeist" conference, British historian Niall Ferguson identified what he considers to be four essential ingredients for populism:[6]

- First, an economic or financial crisis that triggers major distortions within society
- Second, the – often concomitant – increase in inequality that fosters the perception of being left behind
- Third, a strong increase in immigration
- Fourth, a great mistrust of elites.

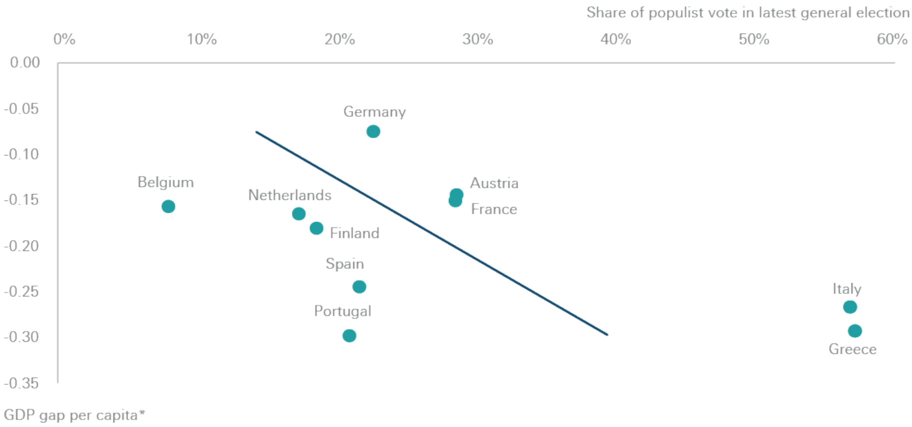
The pilloried grievances need not even be actual developments: Whether corruption in the country is in fact increasing or decreasing

[5] Debt of the non-banks, i.e. government, households and companies excluding the banking sector.
[6] https://www.zeitgeistminds.com/talk/4932305680334848/niall-ferguson-leaders-of-our-time-professor-niall-ferguson

is irrelevant; it is enough if many believe there is corruption afoot in their country and that the people's elected representatives no longer represent the interests of the "real people".

The global financial crisis was one of the decisive catalysts for the current political developments. The severity of the recession, the strong rise in unemployment, the extent of the uncertainty within the population but also the inability of the elites – which persists to this day to explain the events: All this has given a boost to the parties on the fringe of the political spectrum. In addition, the current recovery and the very expansive monetary policy are generating strong profits in capital markets, while the weak productivity growth, the persistently high unemployment in many countries and the weakened negotiating position of workers as a result of the crisis are contributing to very weak wage growth. Many have the feeling that the spoils of the recovery are again going to the rich. And in fact real incomes in the United States at the upper end of income distribution have risen strongly since the financial crisis, while real incomes at the lower end, which consist primarily of wages and salaries, have on average even fallen. There is in fact a clear correlation between the growth losses resulting from the financial crisis and the performance of populist parties at the polls.

Growth losses and populism



Sources: Bloomberg Finance LP, Deutsche Asset Management Investment GmbH, Timbro Institute Sweden as of 06/2018
* Relative deviation of 2018 GDP per capita from its pre-crisis trend (1980 - 2007)

Typically, the demagogues' hour of glory does not coincide with the peak of the crisis, when uncertainty among the population is at its greatest, but starts as soon as things begin to improve somewhat and many get the nagging feeling they have been left behind, while the elites have, in their view, not suffered and did not care about the less fortunate. The – leftist – protest parties in Greece and Spain, for example, celebrated their greatest election victories when effects of the reform policy started to show. Many more right-leaning populists are gaining support primarily in countries that have by and large already digested the financial crisis, for example in the United States or the UK.

The financial crisis was a crisis **within** Western capitalism. Many are attempting to reinterpret it as a crisis **of** Western capitalism itself. The doubts of the West about its own operating system cannot be explained without the financial crisis, and they are a major factor behind the rise of the populists. The consequences are far-reaching. Populists are extensively against globalization, i.e. against free trade and against immigration. The numerous trade disputes, tariffs and the like are also (albeit not entirely) a result of the financial crisis: The value system of the West has taken a hard hit. The U.S. President is calling into question the Western military alliance and the rules of free trade, while the new Italian government is questioning the existing EU treaties. Adhering to the agreements of the past is, however, essential if the Western business model is to function. We should also guard against assuming that the nightmare will be over soon. The migratory pressure will undoubtedly not abate in the coming years, and the megatrends digitalization and globalization suggest that the inequality in income distribution will increase further. Experience shows that restoring trust - once it has been lost - is a lengthy process. As a result, at least three of the four above-mentioned factors for populism should also continue to impact for years to come.

But it is not only in the West that doubts are emerging about the model thus far; that President Xi is talking openly of a "Chinese alternative" now (and no longer quietly emulating the Western ideal) is testimony to the growing self-confidence of China that was triggered by the financial crisis, which in China is understood as delegitimization of the Western business model and of its bid for hegemony. The consequences undoubtedly extend far beyond purely economic questions and will preoccupy us for a very long time to come.

What is the logical consequence of all this?

Addressing the three key points that are the basis of this analysis, the following conclusions can be drawn:

- Although the upswing is already entering its tenth year, we believe the **business cycle** can run well even longer, simply because the downswing was so deep and the subsequent recovery so anemic. At the moment, the entire global economy is effectively in an upswing; seen in this light, the financial crisis was a great "business-cycle synchronizer." As a result, however, the next downswing might also be particularly synchronous (and therefore deep). **Potential output** in the Western economies will - presumably for years - lag behind that of past decades, particularly as the boom possibly also overstated growth in the run-up to the crisis. We will probably have to become accustomed to weaker growth in the coming years – the high growth rates are a thing of the past. With weaker growth prospects, the attainable real yield should also be weaker going forward.
- Even though the banking sector in industrialized countries has in fact reduced its risks, the **debt problem** nevertheless remains the primary concern. In the final analysis, global debt has not declined but increased. When the next downswing comes – and it will come at some point – then it will encounter a mountain of debt that is even larger than at the onset of the financial crisis. Furthermore, central banks have extensively

used up their ammunition and have not yet reloaded. While the odds are good that the U.S. Federal Reserve (The Fed) will have raised interest rates to an adequate level again in time for the next recession and will have normalized its balance sheet to the extent it can react adequately to a downswing, the situation for the ECB looks very different. It is shadowing the policy of the Fed with a lag of roughly four years, and it is anything but certain that the next recession will also hit Europe with a similar lag.

- Even though the **political consequences** of the financial crisis are the most difficult to measure, they should not be underestimated. The West is facing the threat of further erosion of its position of preeminence, while the emerging markets, first and foremost China, could succeed. This holds all the more true since, if our analysis is correct, the wave of populism has probably not yet reached its zenith. As a result, the anti-globalization sentiment in the West could increase further – and with it protectionist measures such as the introduction of tariffs and the restriction of immigration. The Eurozone is facing an additional threat. The financial crisis has, on the one hand, brutally revealed the weaknesses of the Eurozone; on the other hand, however, it has produced a situation that clearly impedes the further development of the Eurozone required to overcome these weaknesses. The current development in Italy and the differences between France and Germany clearly highlight this.

What does that mean for the capital markets?

The realization that this upswing can last longer than normal upswings is also ensuring that the expansion in capital markets is persisting for an exceptionally long time and will presumably also continue for a while yet.

However, some of the consequences of the financial crisis analyzed above will likely weaken capital markets for years to come. That does not, however, mean that capital markets will turn in a weak performance but merely that they may perform less well than if there had been no financial crisis.

For the time being, the depressed productivity growth and with it the prospect of weaker GDP growth going forward are resulting in slightly less optimistic prospects in equity markets. The long-term growth expectations are below the average developments from the past. The anti-globalization sentiment in the United States and in other industrialized countries is not exactly helpful either. In addition, because of the expansive monetary policy and the concomitant low interest rates, valuations in equity markets are also comparatively high. The strong rise of the global equity indices cannot be attributed solely to increased earnings expectations but in part to the fact that future earnings are being discounted with now lower interest rates.

The years of expansive monetary policy and the exceptionally low nominal yield level have extensively eroded the natural investment "risk buffer." While in the past – at times of high nominal yields –

Bund coupons alone ensured an adequate return, this buffer has in the interim melted away. The average return of Bunds with a residual maturity of one to ten years is now in negative territory. Even a portfolio of 10-year Bunds, what was built up consistently over the last ten years (so also still including Bunds that are ten years old), now has an ordinary return of only well under 2%. Even a small uptick in yields is enough to push the overall performance of such a portfolio into negative territory.

In addition, private investors will probably be impacted more strongly than in the past by the next wave of bankruptcies. First, the banks are extending fewer corporate loans, with the result that more loans are being extended via the capital market. The banks are therefore missing as a risk buffer. Second, banking regulation, which was overhauled in the wake of the financial crisis, will probably result in banks being wound up more easily if the worst comes to the worst and no longer having to be bailed out with taxpayer money. While this is very desirable in terms of public policy, it also means that banks' struggles will be reflected more rapidly in a credit portfolio than it was the case in the past. The picture is also similar for public-sector debt, which as a result of the introduction of restructuring clauses can be restructured more easily in the future.

The emerging markets, in contrast, should fare comparatively better. The financial crisis was primarily a crisis of the industrialized nations, with the result that the consequences of it also tend to be seen there. While populism, for example, was earlier a problem primarily in the emerging markets, it has garnered support above all in Western countries as a result of the financial crisis. In the interim, the proponents of free trade are now no longer located in the United States or the UK but in China – even though this undoubtedly means free trade according to Chinese rules. The new forays in the direction of free trade are coming from Asia and also impact primarily the Asian countries.

Alongside entire regions, there are also individual companies that should now be in better shape (in relative terms) after the crisis. "Every crisis is an opportunity" as the saying goes, and that also holds true here. Because of the slump in demand, many companies, above all in the industrialized countries, were compelled to cut costs. They optimized their processes, streamlined their structures and – revitalized – are now encountering normalizing demand. Using a corresponding differentiated approach, investors can, therefore, easily find companies where "strong medicine" required by the financial crisis should positively impact their bottom line.

The further prospects

Even though it is undoubtedly still too early to draw a final conclusion on the financial crisis, this analysis nevertheless shows clearly that many of the consequences of the financial crisis will remain with us for many years to come, and that we are still far removed from a normal economic situation. We believe the growth potential is weakened for years to come . This is also demonstrated by the fact that this upswing is happening so slowly – but in turn can last all the longer. While the debt situation has improved in part since the financial crisis, taken as a whole debt around the globe has increased since then. That limits the scope to resolve future crises or to absorb economic downswings. The full scope of the (geo-)political consequences of the financial crisis cannot yet be predicted. The headwind that globalization is currently experiencing does not bode well. The business cycle can therefore hum along for a while yet, but the structural headwind should tend to crimp long-term growth. Investors should be prepared for this.

Glossary

Bank for International Settlements (BIS)

The Bank for International Settlements (BIS) is the international organization of central banks.

Banking union

The planned banking union in the Eurozone would hold the central responsibility for financial marketse oversight, securing of deposits and liquidation of financial instititution.

Brexit

Brexit is a combination of the words "Britain" and "Exit" and describes the possible exit of the United Kingdom of the European Union.

Bunds

Bunds is a commonly used term for bonds issued by the German federal government with a maturity of 10 years.

Deflation

Deflation is a sustained decrease in the general price level of goods and services.

Emerging markets (EM)

Emerging markets (EM) are economies not yet fully developed in terms of, amongst others, market efficiency and liquidity.

European Central Bank (ECB)

The **European Central Bank (ECB)** is the central bank for the Eurozone.

Eurozone

The **Eurozone** is formed of 19 European Union member states that have adopted the euro as their common currency and sole legal tender.

Financial crisis

The financial crisis refers to the period of market turmoil that started in 2007 and worsened sharply in 2008 with the collapse of Lehman Brothers.

Fiscal policy

Fiscal policy describes government spending policies that influence macroeconomic conditions. Through fiscal policy, the government attempts to improve unemployment rates, control inflation, stabilize business cycles and influence interest rates in an effort to control the economy.

Government (sovereign) debt/bonds

Government (sovereign) debts/bonds are debt/bonds issued and owed by a central government

Gross domestic product (GDP)

The **gross domestic product (GDP)** is the monetary value of all the finished goods and services produced within a country's borders in a specific time period.

Monetary policy

Monetary policy focuses on controlling the supply of money with the ulterior motive of price stability, reducing unemployment, boosting growth, etc. (depending on the central bank's mandate).

Nominal

In economics, a **nominal** value is not adjusted for inflation; a real value is.

Real

In economics, a **real** value is adjusted for inflation.

U.S. Federal Reserve Board (the Fed)

The **U.S. Federal Reserve Board**, often referred to as "**the Fed**", is the central bank of the United States.

Risk warning

Investments are subject to investment risk, including market fluctuations, regulatory change, possible delays in repayment and loss of income and principal invested. The value of investments can fall as well as rise and you might not get back the amount originally invested at any point in time.

Investments in Foreign Countries – Such investments may be in countries that prove to be politically or economically unstable. Furthermore, in the case of investments in foreign securities or other assets, any fluctuations in currency exchange rates will affect the value of the investments and any restrictions imposed to prevent capital flight may make it difficult or impossible to exchange or repatriate foreign currency.

Foreign Exchange/Currency – Such transactions involve multiple risks, including currency risk and settlement risk. Economic or financial instability, lack of timely or reliable financial information or unfavorable political or legal developments may substantially and permanently alter the conditions, terms, marketability or price of a foreign currency. Profits and losses in transactions in foreign exchange will also be affected by fluctuations in currency where there is a need to convert the product's denomination(s) to another currency. Time zone differences may cause several hours to elapse between a payment being made in one currency and an offsetting payment in another currency. Relevant movements in currencies during the settlement period may seriously erode potential profits or significantly increase any losses.

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Hedge Funds – An investment in hedge funds is speculative and involves a high degree of risk, and is suitable only for "Qualified Purchasers" as defined by the US Investment Company Act of 1940 and "Accredited Investors" as defined in Regulation D of the 1933 Securities Act. No assurance can be given that a hedge fund's investment objective will be achieved, or that investors will receive a return of all or part of their investment.

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